GALLATIN COUNTY
WATER SUPPLY PLAN

PLAN FORMULATION DOCUMENT
AND
FINAL PLAN DOCUMENT

Prepared by the Northern Kentucky Area Development District

TABLE OF CONTENTS

LIST OF MAPS iii

LIST OF FIGURES iv

LIST OF TABLES v

Chapter **Page**

1. Description of the Planning Unit 1-1
2. Planning Council 2-1
3. Planning Objectives and Conflicts 3-1
4. County Base Map 4-1
5. Water Use and Water Use Forecast 5-1
6. Water Supplier Source Assessment 6-1
7. Water Supply Adequacy 7-1
8. Supply Protection 8-1
9. Water Resources Inventory 9-1
10. Water Supply Alternatives 10-1
11. Primary Water Supply Alternative 11-1
12. Emergency Plans 12-1
13. Implementation Plan 13-1
14. Plan Approvals 14-1

Appendix A: Minutes
Appendix B: Notifications and Information Review
Appendix C: Workplan
Appendix D: Survey
Appendix E: Soils
Appendix F: Obstacles to the Planning Process
Appendix G: Paying for the Planning Process
Appendix H: Regulatory Protection Measures

LIST OF MAPS

Map		Page
1.	Planning Unit	1-2
2.	County Base Map	4-1
3.	Water Use Map	5-47
4.	Service Areas and Planned Expansions	5-48
5.	Bullock Pen Lake: Recommended Protection Area	6-6
6.	Bullock Pen Lake: Potential Pollutants	8-2

LIST OF FIGURES

Figure		Page
1.1	Gallatin County Population Growth	1-2
5.1	CCWD: Actual Vs. Projected Demand	5-14
5.2	CCWD: 1990 Actual Use	5-15
5.3	CCWD: 1990 Projected Use	5-16
5.4	CCWD: 1995 Actual Use	5-17
5.5	CCWD: 1995 Projected Use	5-18
5.6	CCWD: 2000 Projected Use	5-19
5.7	CCWD: 2005 Projected Use	5-20
5.8	CCWD: 2010 Projected Use	5-21
5.9	CCWD: 2015 Projected Use	5-22
5.10	CCWD: 2020 Projected Use	5-23
5.11	Warsaw Water Service Area: Projected Demand	5-25
5.12	Warsaw Water Service Area: 1990 Projected Use	5-26
5.13	Warsaw Water Service Area: 1995 Projected Use	5-27
5.14	Warsaw Water Service Area: 2000 Projected Use	5-28
5.15	Warsaw Water Service Area: 2005 Projected Use	5-29
5.16	Warsaw Water Service Area: 2010 Projected Use	5-30
5.17	Warsaw Water Service Area: 2015 Projected Use	5-31
5.18	Warsaw Water Service Area: 2020 Projected Use	5-32
5.19	BPWD: Actual Vs. Projected Demand	5-35
5.20	BPWD: 1990 Actual Use	5-36
5.21	BPWD: 1990 Projected Use	5-37
5.22	BPWD: 1995 Actual Use	5-38
5.23	BPWD: 1995 Projected Use	5-39
5.24	BPWD: 2000 Projected Use	5-40
5.25	BPWD: 2005 Projected Use	5-41
5.26	BPWD: 2010 Projected Use	5-42
5.27	BPWD: 2015 Projected Use	5-43
5.28	BPWD: 2020 Projected Use	5-44
5.29	BPWD: Water Sources Vs. Demand	5-45
5.30	CCWD: Projected Demand Vs. Treatment Capacity	5-49
5.31	Warsaw Water Service Area: Projected Demand Vs. Treatment Capacity	5-50

LIST OF TABLES

Table		Page
6.1	Source Availability	6-7
8.1	Bullock Pen Lake: Potential Pollutants & Degree of Hazard	8-3

CHAPTER 1
DESCRIPTION OF THE PLANNING UNIT

I. INTRODUCTION

Gallatin County, located in the Outer Bluegrass Region of Northern Kentucky, has a land area of 98 square miles making it the smallest county in the state. The county seat, Warsaw, is located on the Ohio River across from Florence, Indiana.

Highways serving the area are Interstate 71, US Highways 42 and 127, and State Highways 35 and 467.

II. PHYSIOGRAPHY

The geology of Gallatin 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.

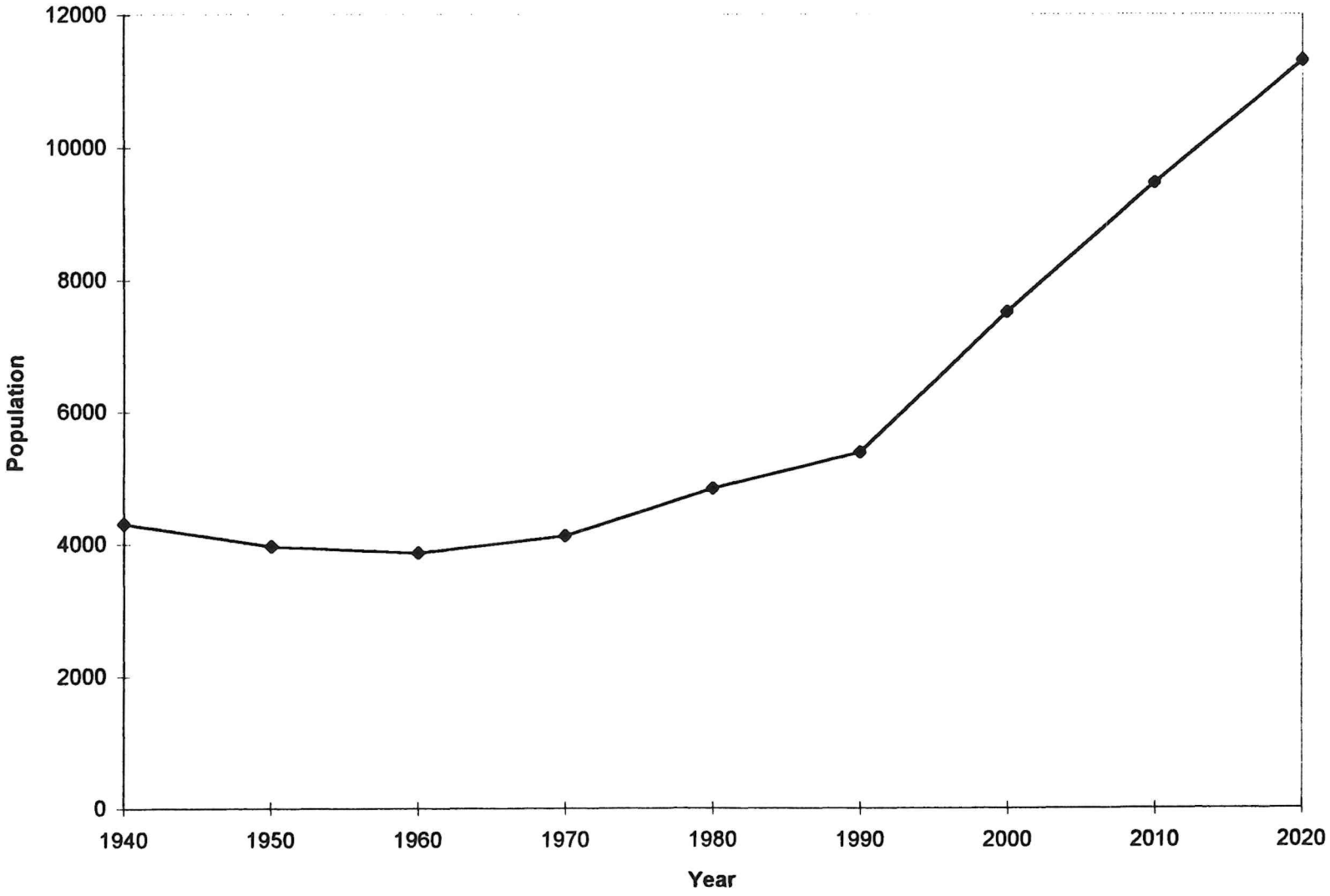
The terminal moraine of the Illinois Continental Glaciation parallels the Ohio River and is intermingled with the residual river hills. Soils of glacial origins are negligible. Pleistocene glaciation is responsible for locating the Ohio River channel, creating raised terraces and raising the levels of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

III. DEMOGRAPHIC AND SOCIO-ECONOMIC PROFILE

Gallatin County's 1998 population was estimated at 7,182, an increase of 33.2 percent since 1990. Population projections show this rapid growth continuing with a 2020 population of 11,321 (Figure 1.1). The total number of households is projected to increase from 1,941 in 1990 to 4,713 by 2020. According to 1995 Census Bureau estimates, 22.0 percent of residents had incomes below the poverty level, up from 15.5 percent in 1989. In 1998, approximately 1,787 people were employed in the County with 39 percent of those working in the manufacturing sector.

Figure 1.1

Gallatin County Population Growth: 1940 - 2020



MAP 1
Planning Unit

1410000
1440000
1470000
1500000
480000
450000

Warsaw

N

1:90000

1 0 1 2 Miles

LEGEND

- County Seat
- Watershed Boundaries
- Gallatin County

Map intended for planning purposes only.
NKADD
Lauri J. Jones
7/99

CHAPTER 2
PLANNING COUNCIL

I. FORMATION OF THE PLANNING UNIT

The planning unit is defined by the boundaries of Gallatin County, as shown in Map 1. The County water needs are served by Carroll County Water District No. 1, Warsaw Water Works, Tri-Village Water District, Bullock Pen Water District, and Gallatin County Water District.

II. PLANNING COUNCIL AND PLANNING REPRESENTATIVE

Planning Council

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

Morris Courtney, Gallatin County Water District, Planning Council Chair
Judge/Executive George W. Zubaty, Gallatin County Fiscal Court
Eric Moore, Warsaw Water Works
Mayor Earl Richard Wood, City of Warsaw
Jim Smith, Carroll County Water District No. 1
Carol Tudor, Tri-Village Water District
Brian Bell, Gallatin County Health Department
Representative, City of Glencoe
Representative, City of Sparta

Bullock Pen Water District elected not to serve on the water supply planning council because they serve a very limited number of customers in Gallatin County. Water supply planning council summaries can be found in Appendix A.

Planning Representative

NKADD was selected as the planning representative. The primary responsible staff member is Ramona Reynolds, with oversight provided by Heidi Van Keuren. No other 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.

Insert map1 gallatin county base map

CHAPTER 3
PLANNING OBJECTIVES AND CONFLICTS

I. PLANNING OBJECTIVES

Description of Process

A public hearing was held Friday, November 6, 1998 to consider the planning objectives and to obtain the input of citizens. The meeting was advertised in the Kentucky Post (See Appendix B for a copy of the notice). No members of the public attended. The objectives were adopted at the meeting immediately following the hearing.

Planning Objectives

Planning objectives are as follows:

1. Encourage conservation to the maximum extent practical;

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

3. Compatibility with existing plans or 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;

7. Encourage expansion where feasible.

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

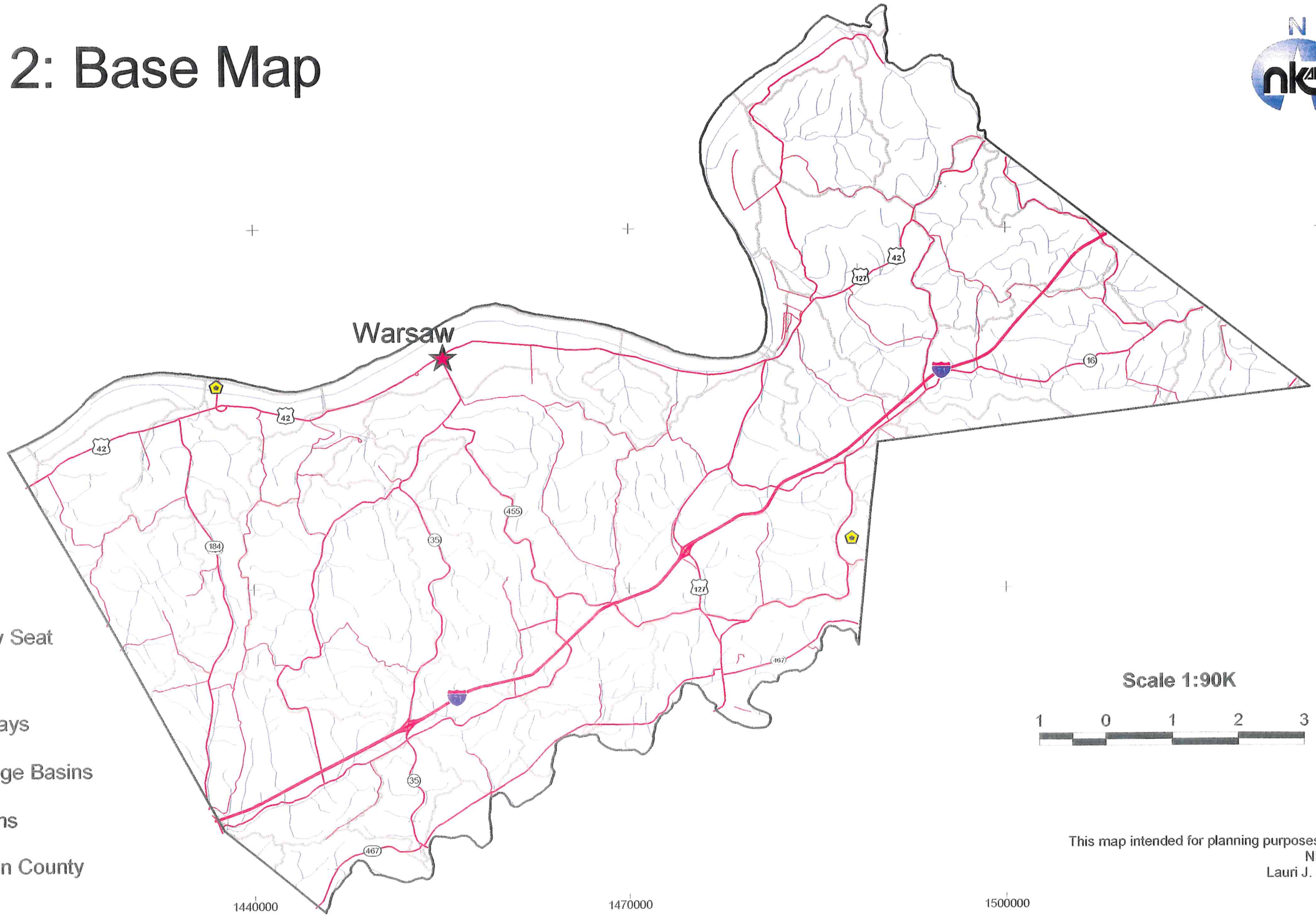
Water Supply Planning Conflicts

No conflicts have been identified.

II. REVIEW OF EXISTING PLANS

The Warsaw Comprehensive Plan, completed in 1995, was reviewed with no significant information found.

MAP 2: Base Map



- County Seat
- Dams
- Highways
- Drainage Basins
- Streams
- Gallatin County

Scale 1:90K

1 0 1 2 3 Miles

This map intended for planning purposes only.
NKADD
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7/99

CHAPTER 5
WATER USE AND WATER USE ASSESSMENT

I. WATER USE ASSESSMENT

The following pages contain an informational profile for Gallatin County Water suppliers and distributors that completed a water use survey. A copy of the survey can be found in Appendix D.

Water Supplier

WARSAW WATERWORKS

Address: P.O. Box 785
Warsaw, KY 41095

Phone: (606)567-5900

Contact: Eric Moore

Raw Water Source: Groundwater

Number of Customers: 625

Treatment Plant:

Location:	Warsaw
Capacity:	720,000 gpd
Date Built:	1940
Condition:	Good
Type Treatment:	Disinfection only, chlorination, and fluoridation.

Treated Water Storage:

Location	Type	Capacity(Gallons)
Boazman Dr.	Elevated	500,000

Major Users (1997 Avg GPD)

Industrial
Dorman Products (2,400)
American Racing (44,000)
Gallatin Health Care (3,260)

Commercial
Gallatin County Water District (240,000)
Car Wash (4,600)

Institutional
Gallatin County Elementary School (2,300)
Gallatin County Middle School (1,800)
Gallatin County High School (1,050)

Residential
Parkside Apartments (4,100)
Royal Pines Apartments (2,000)
Riverside Square (1,200)
Fredericksburg Apartments (2,100)

Other
Warsaw Park (200)
Gallatin County Park (230)

Leak Detection Methods: Visual.

Conservation Measures: None.

Planned Improvements: New wells.

Future Growth: Growth is anticipated.

Water Supplier

CARROLL COUNTY WATER DISTRICT NO. 1

Address: P.O. Box 350
Ghent, KY 41045

Phone: (502)347-9470

Contact: Jim Smith

Number of Customers:

Gallatin County: 258
Owen County: 292
Carroll County: 1,313

Treatment Plants:

Plant 1

Location:	Ghent, KY
Design Capacity:	650,000 gpd
24 Hour Rated Capacity:	520,000 gpd
Condition:	Excellent
Type of Treatment:	Disinfection only, chlorination and fluoridation

Plant 2

Location:	Gallatin County
Design Capacity:	720,000 gpd
24 Hour Rated Capacity:	576,000 gpd
Condition:	Excellent
Type of Treatment:	Disinfection only, chlorination and fluoridation

Treated Water Storage:

Location	Type	Capacity (gallons)
Plant	Ground	80,000
Dividing Ridge Rd.	Standpipe	200,000
Jackson Ridge Rd.	Standpipe	120,000
Ghent	Ground	50,000
M & T Road	Ground	50,000
Worthville	Ground	50,000
Sanders	Ground	50,000

Location	Type	Capacity (gallons)
Montgomery Rd.	Elevated	150,000

Major Users (1997 Average gpd)

Industrial
North American Stainless (115,000)
Steel Technologies (2,000)
Gallatin Steel (60,000)
Dayton Walther (13,000)

Commercial
3 motels (5,000)
Tandy Nursery (2,000)
City of Ghent (1,000)

Residential
Camelia Courts (4,000)
Riverside Apartments (1,850)
Smith Mobile Home Park (2,000)

Other
Carroll County Park (360)
County Pool (1,640)

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

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

Planned Improvements: Line extensions.

Future Growth: Growth is anticipated with planned line extensions and additional growth related to the NASCAR race track.

Water Distributor

GALLATIN COUNTY WATER DISTRICT

Address: P.O. Box 159
Warsaw, KY 41095

Phone: (606)567-2268

Contact: Morris Courtney

Number of Customers: 1,300

Treated Water Source: Warsaw Waterworks

Treated Water Storage:

Location	Type	Capacity(gallons)
Eagle Tunnel Rd.	Elevated	100,000
Boone Rd.	Standpipe	106,000

Major Users (1997 Average GPD):

Commercial
Sugar Bay Golf Course (244)
Gallatin Fish & Game (80)
Elmo Greer & Sons (397)
KY Speedway L.L.C. (82)
Sparta Pike Carry-out (863)
Walton Contracting (393)
Exit 62 Restaurant (2,882)
Glencoe Truck & Trailer (40)
Hall Brothers Body Shop (323)
Napoleon Grocery (28)
Trenwa Inc (285)
James Etheridge (731)
Bullock Oil Company (1,980)
Rayne Master (364)

Leak Detection Methods: Visual.

Conservation Methods: None.

Planned Improvements: New pumping station should be completed in 1999. Drill new wells in the near future.

Future Growth: Major growth anticipated.

Water Supplier

BULLOCK PEN WATER DISTRICT

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

Phone: (606)428-2112

Contact: Bill Catlett

Number of Customers:

Gallatin County: 311
Grant County: 3,662
Boone County: 616
Kenton County: 110
Pendleton County: 82

Raw Water Source (max permitted withdrawal in gpd): Bullock Pen Lake (850,000)

Treatment Plant:

Location: Bullock Pen Lake
Date Built: 1960
Capacity: 1 mgd
Type of Treatment: Surface water full treatment

Treated Water Storage:

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

Major Users (1997 Average GPD):

Industrial
Grant County Foods (1,133)
Joseph Edwards Company (233)

Miami Valley Paper (133)

Commercial
PBS Car Wash (2,500)
PBS Wash/Dry (3,067)
KOA Campground (2,000)
Ashland Mart/Restaurant (2,033)

Institutional
Northern Kentucky Treatment Center (3,500)
Crittenden Mt. Zion Elementary School (2,100)
Walton-Verona Elementary School (1,567)
Piner Elementary School (1,100)

Residential
Lightleaf Apts. (1,000)
Winterwood Inc. (533)
Winterwood Inc. (833)
Winterwood Inc. (633)
Aireshire Apts. (892)

Other
Eagle Creek Country Club (2,700)
Crittenden Sewage Treatment Plant (1,367)
Grant County Park (1,200)

Leak Detection Methods: Telemetry system.

Conservation Methods: During dry periods, the District has advertised by radio, asking customers not to water their lawns, etc...

Planned Improvements: The District is currently looking for alternative water sources. A new water tower and upgrading of small lines within the system are planned.

Future Growth: This service area is one of the fastest growing areas in the state. A great deal of growth is anticipated.

Water Distributor

TRI-VILLAGE WATER DISTRICT

Address: 3700 Highway 27N
Owenton, KY 40359

Phone: (502)484-5774

Contact: Carol Tudor

Treated Water Source (maximum gpd): Owenton Water Works (500,000)

Treated Water Storage:

Location	Type	Capacity (gallons)
Long Ridge	Standpipe	100,000
Wheatley	Elevated	23,000
Glencoe	Standpipe	100,000
Sparta	Standpipe	50,000
Bromley	Standpipe	177,000
Hesler	Standpipe	230,000
Monterey	Standpipe	117,000

Major Users:

Commercial
34 users totaling an average of 9,924 gpd.

Institutional
7 users totaling an average of 9,244 gpd.

Other
Golf Course using an average of 1,175 gpd.

Leak Detection Methods: Master meters and driving lines.

Conservation Methods: Checking master meters daily to detect leaks as quickly as possible.

Planned Improvements: Adding more storage tanks and line extensions. Updating smaller lines.

Future Growth: Growth is anticipated.

Small Water Suppliers

River's Edge Campground did not respond to any notifications. Therefore, no information is available.

Permitted Water Users

Other than the water suppliers listed previously, there are no additional permitted water users.

Agricultural Water Use

Agricultural water use in the county includes tobacco farming, livestock production, and dairy farming. David Hull, the Gallatin County Extension Agent, was consulted for estimates on approximate water usage and water sources for each agricultural activity.

One agricultural water use is tobacco irrigation. The tobacco fields are only irrigated during dry spells. There are approximately 100 irrigation systems in the county. All of the farmers with these systems use farm ponds or streams. No estimation of seasonal water usage by these systems could be given.

Livestock production in the county consists mainly of small farms with between 5 and 25 head of cattle. The largest cattle producers have no more than 100 head of cattle. Most of the cattle are watered by farm ponds, but up to 25 percent are watered with city water sometime during the summer.

Only two dairies are still in operation in Gallatin County. One has 25 cows and the other has 85 to 90 cows. Both dairies use private wells for their water. No estimates of usage are available.

II. WATER USE FORECAST

The IWR-MAIN model, developed by the U.S. Army Corps of Engineers, was used to forecast demand for water, for the major suppliers, Carroll County Water District No. 1 (CCWD), Warsaw Water Works, and Bullock Pen Water District (BPWD) through 2020. IWR-MAIN forecasts future demand for water by sector including residential, commercial/institutional, industrial, and public/unaccounted. The model requires extensive data inputs including both demographic and economic information.

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

In addition, the opening of a NASCAR racetrack in the county is expected to spur growth;

however, it is very difficult to predict the extent of development. The track is anticipating that on its biggest annual race weekend, 150,000 gallons of water will be utilized over a three-day period. There will be smaller races, throughout the year, as well.

The Carroll County Community Development Corporation Executive Director, Bill Mitchell, recently visited a number of NASCAR tracks to determine how much and what types of development might be anticipated. Many of the tracks did not have much development around them and the types of development that were found were primarily gas stations and fast food. Apparently, the majority of race fans are likely to stay in nearby metropolitan areas where there are ample entertainment options. In this development scenario, Louisville and the Northern Kentucky area (particularly Florence) would be the most likely to host racetrack visitors and to experience additional growth. Both areas are within easy driving distance of the new track.

For the purposes of water supply planning, however, it was assumed that new development would be spurred, particularly in the period 2000 to 2010. Also, recently approved riverboat gambling in Switzerland County, Indiana (directly across the Ohio River and accessible via the Markland Dam) will also make the area attractive for development and tourism. Growth is expected primarily in the commercial/institutional sector.

A. CARROLL COUNTY WATER DISTRICT NO. 1

The Carroll County Water District No. 1 (CCWD) serves 258 customers in Gallatin County, 1,313 customers in Carroll County, and 292 customers in Owen County.

Data Sources

Sources used included the 1990 Census of Population and Housing, County Business Patterns (1985-1995), Kentucky Directory of Manufacturers (1985 - 1997), and How Many Kentuckians: Population Forecasts 1995-2020 (1998 edition). These sources were used to provide the demographic and economic data required for the IWR-MAIN model. In addition, information from the water supply planning survey and the Governor's Commission on Water Resources survey was also utilized.

Assumptions

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

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

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

3. Significant growth is anticipated in this water service area. There are a number of planned expansions to serve additional residential customers. There are also some significant industrial users and Carroll County continues to seek new industry and commercial

enterprises. The new NASCAR track in Gallatin County will probably generate some new customers, particularly in the commercial sector.

Methodology and Verification

1990 was selected as the base year. Forecast years are 1995, 2000, 2005, 2010, 2015, and 2020. 1990 and 1995 were used as comparison years for calibration and verification.

While the model understated water use in 1990, in 1995, water use was within .03 percent. However, after consultation with Jim Smith, Manager of CCWD, total water use was calibrated upwards for forecast years. The increases were based on local knowledge of growth and planned improvements and expansions. Figure 5.1 compares actual and projected demand for water. While projected demand is probably high, it was considered to be appropriate for planning purposes since there is uncertainty regarding the extent of future growth. IWR-MAIN is probably underestimating maximum day use at 8 to 10 percent above average demand; however, since the projected average demand is high, this was not adjusted.

Conclusions

Significant growth will occur in this water service area. Figures 5.2 through 5.10 show actual and projected demand for water by sector. The commercial/institutional sector will increase as a percentage of total demand during the planning period.

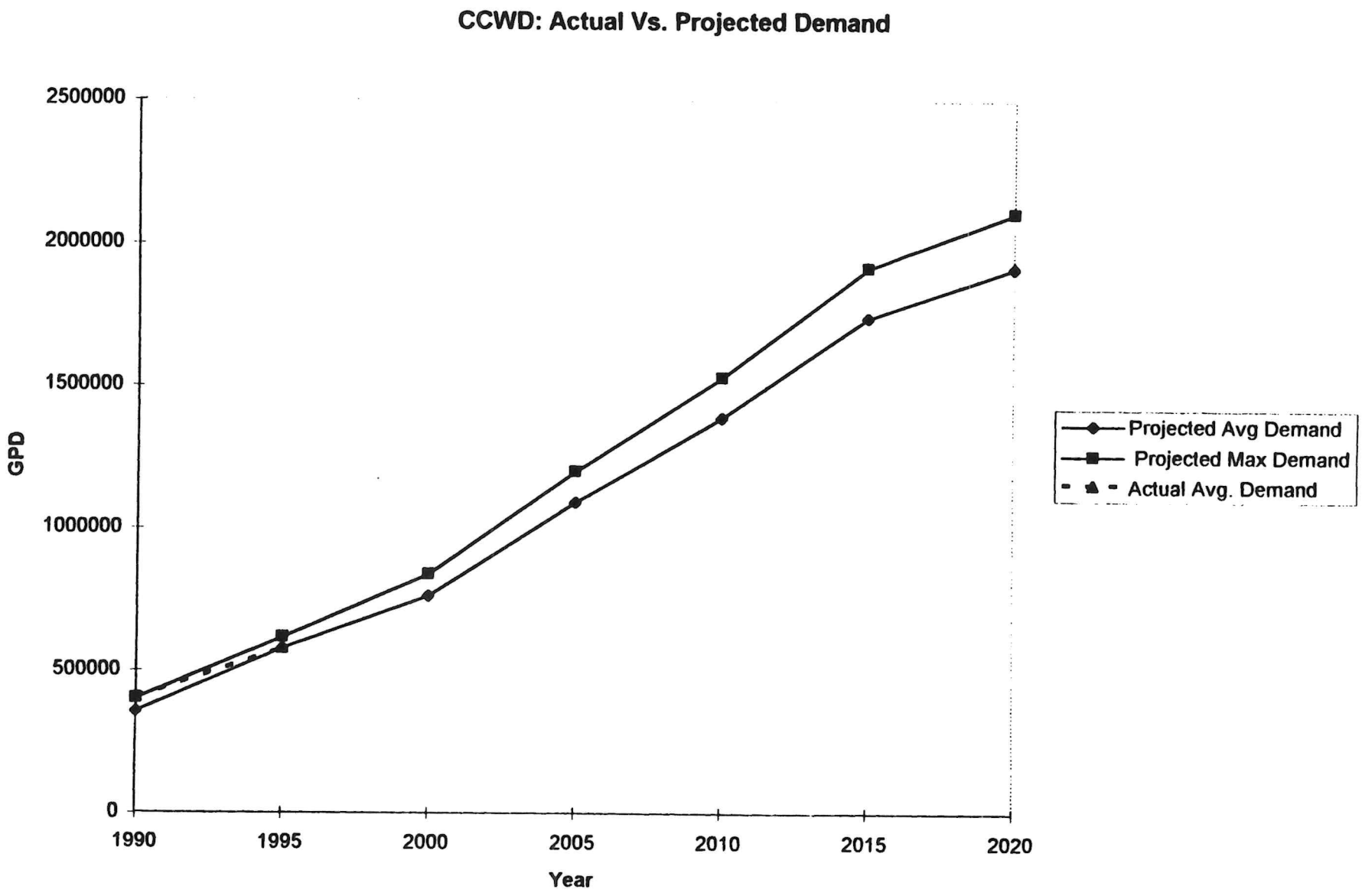

CCWD: Actual Vs. Projected Demand
2500000
2000000
1500000
1000000
500000
0
GPD
1990
1995
2000
2005
2010
2015
2020
Year
Projected Avg Demand
Projected Max Demand
Actual Avg. Demand

Figure 5.2
Carroll Co. W.D. No. 1: 1990 Actual Use

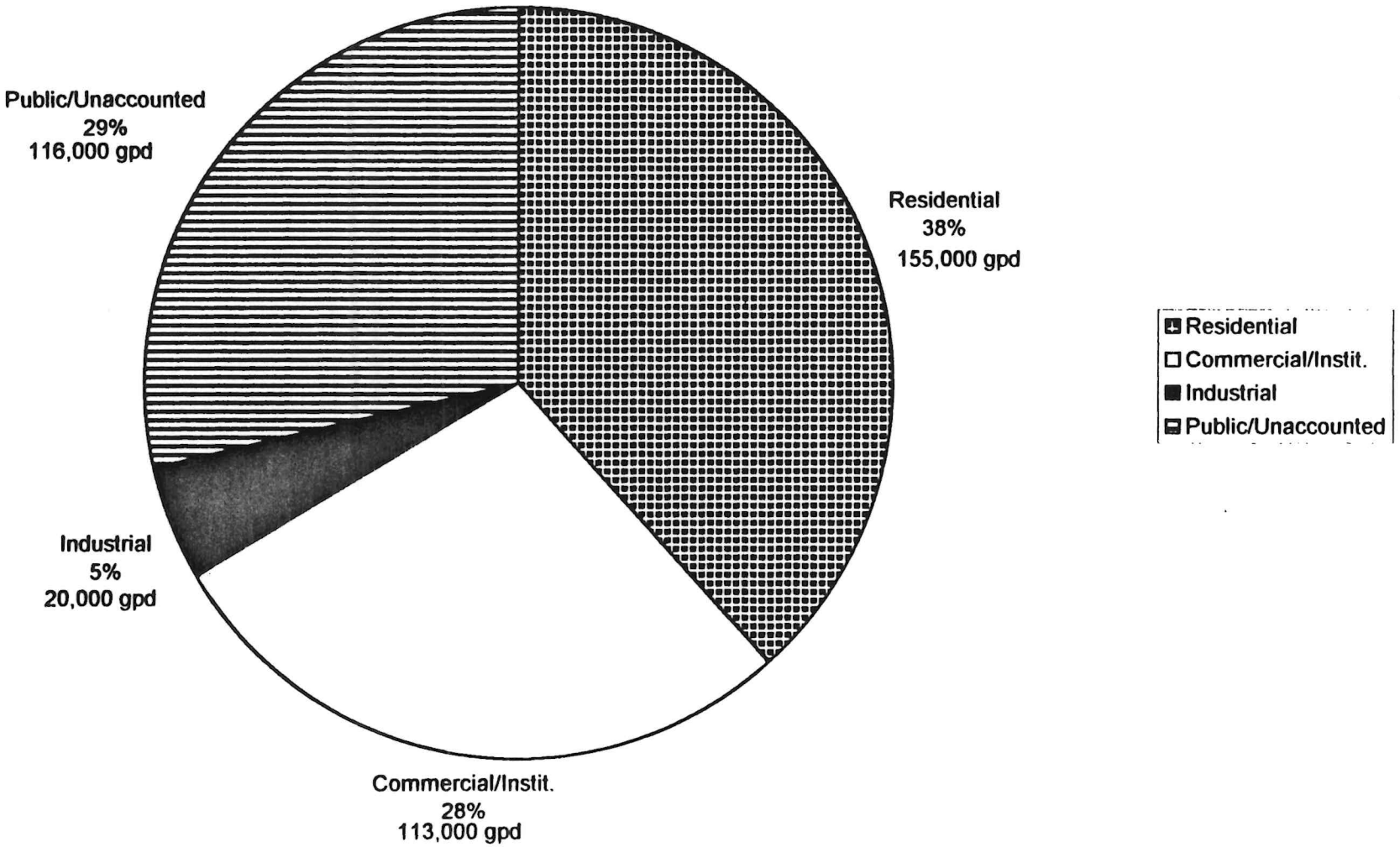


Figure 5.3

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

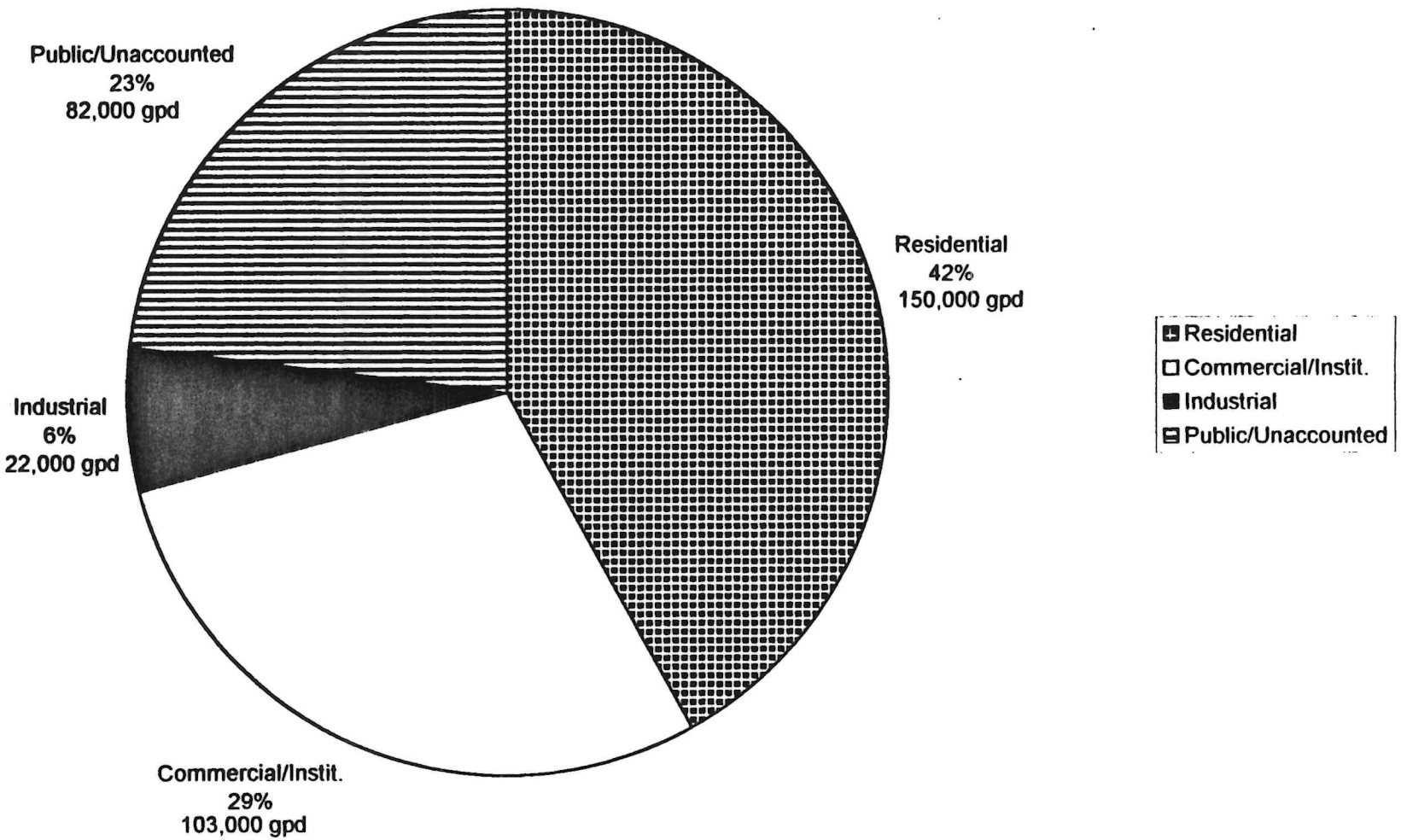


Figure 5.4

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

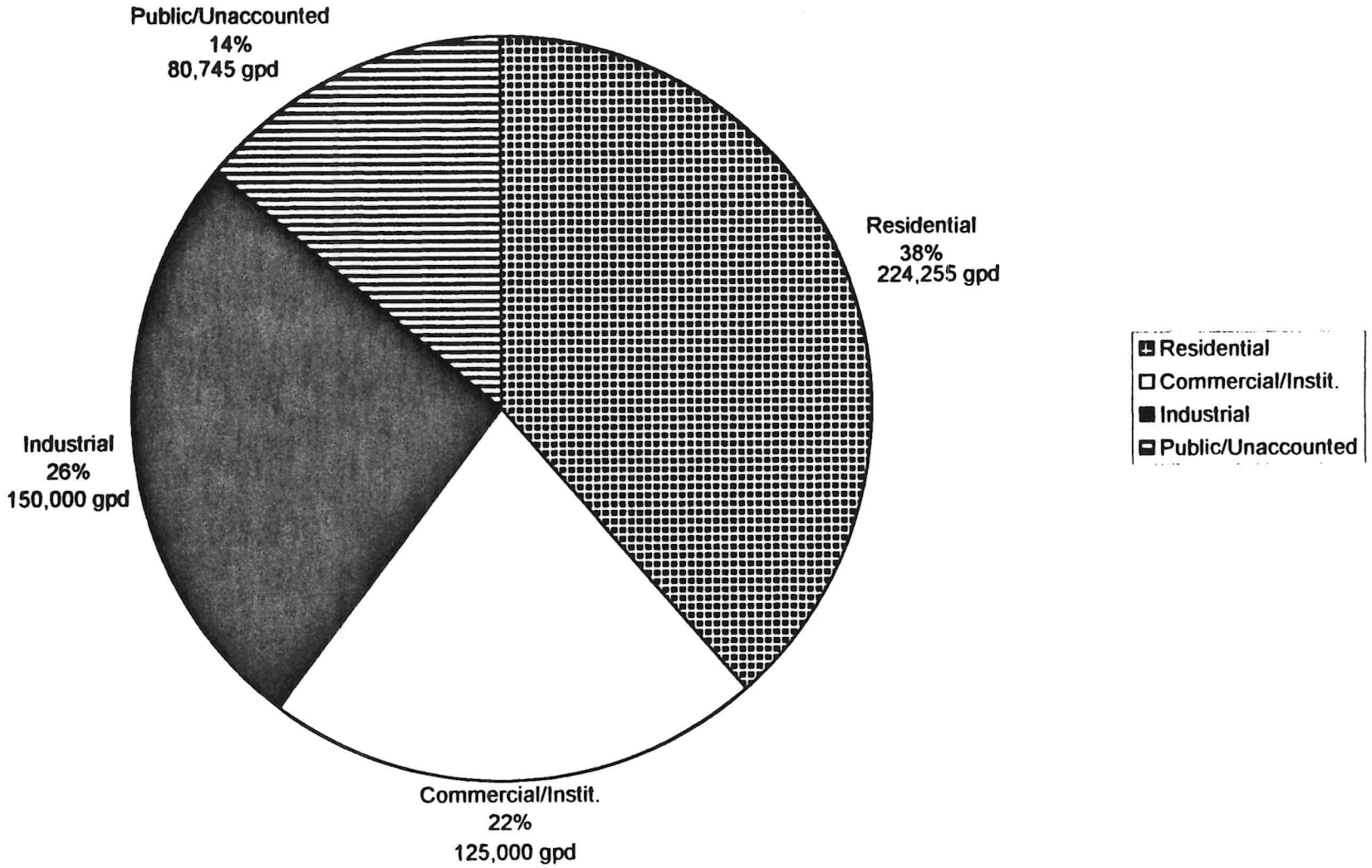
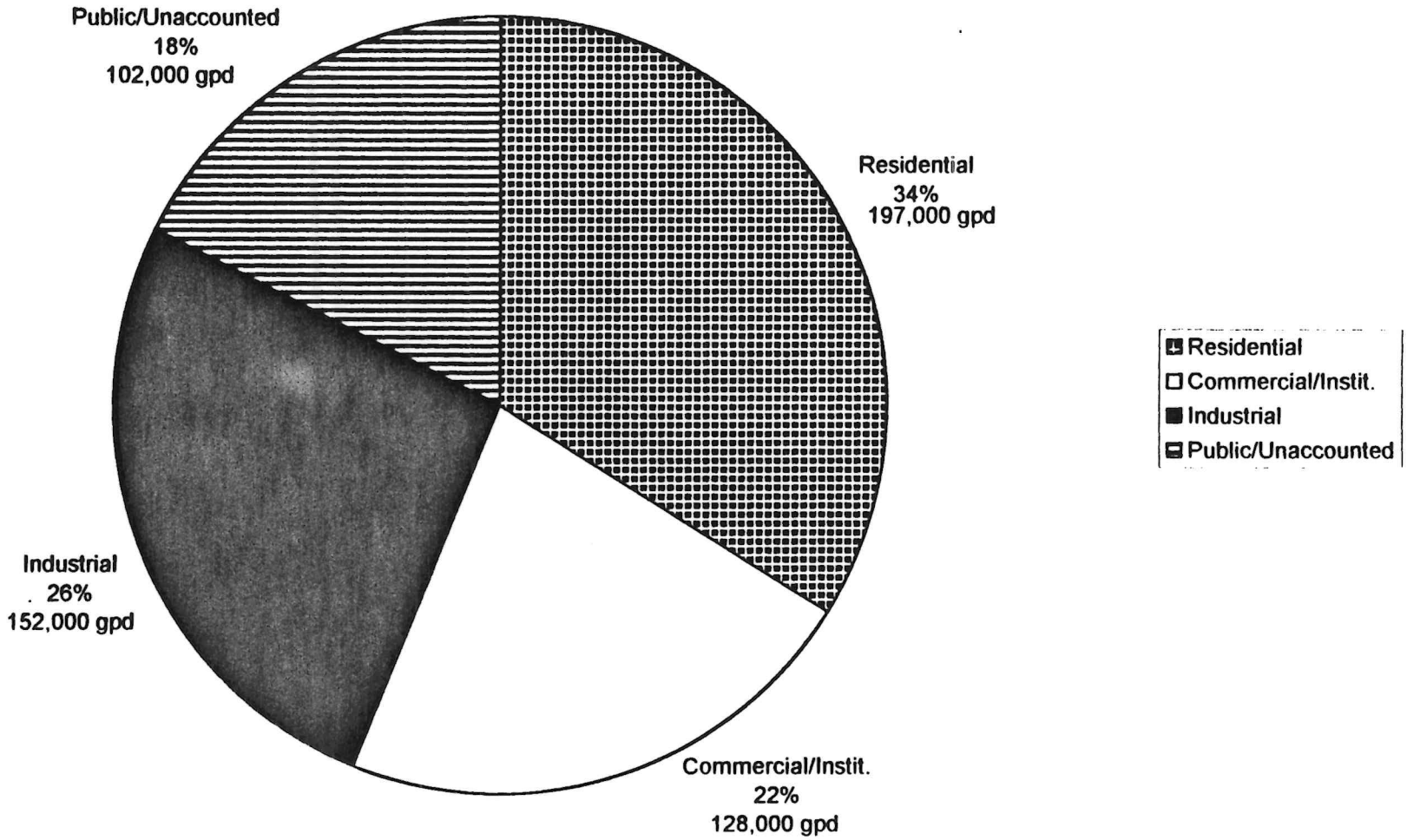
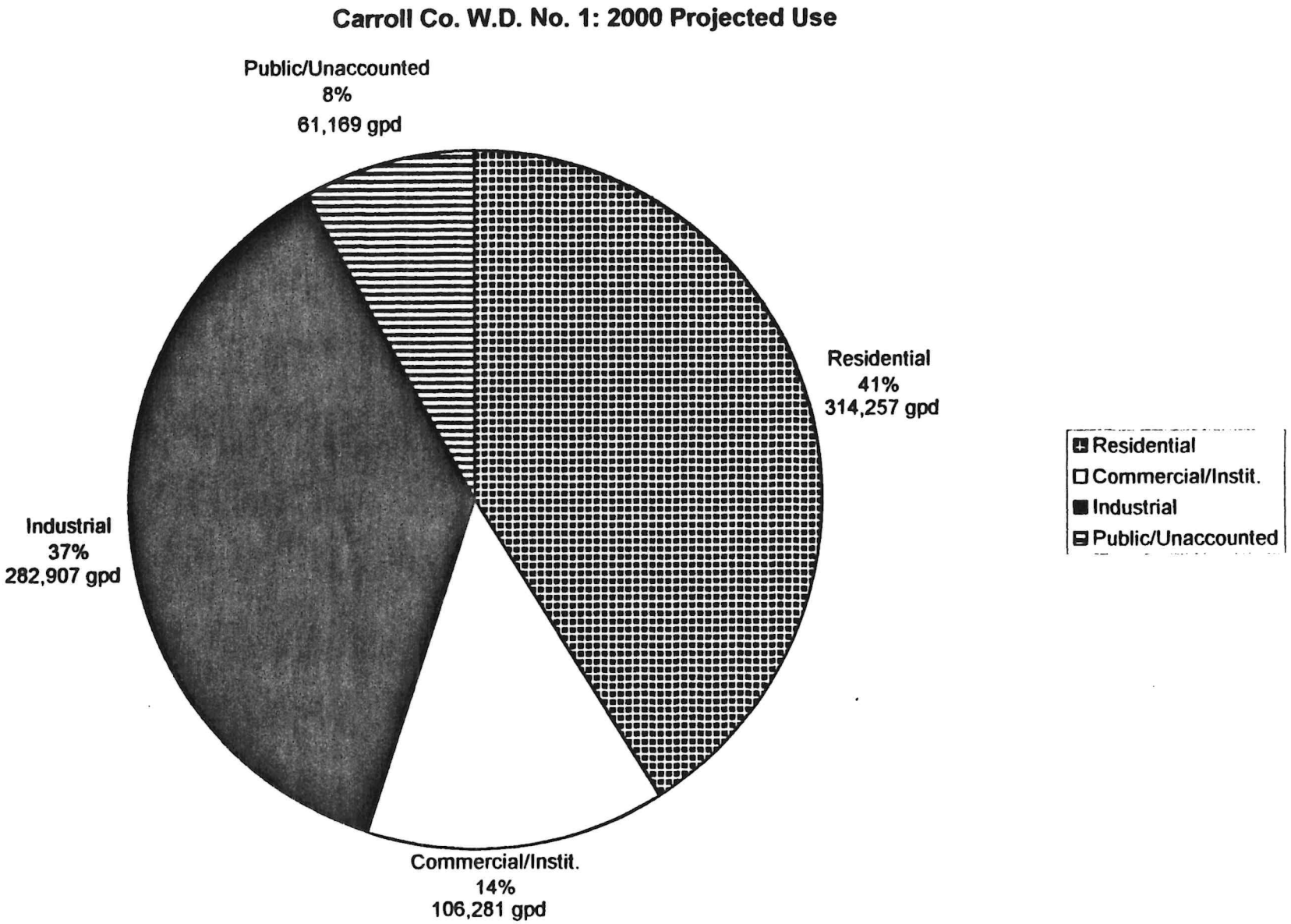
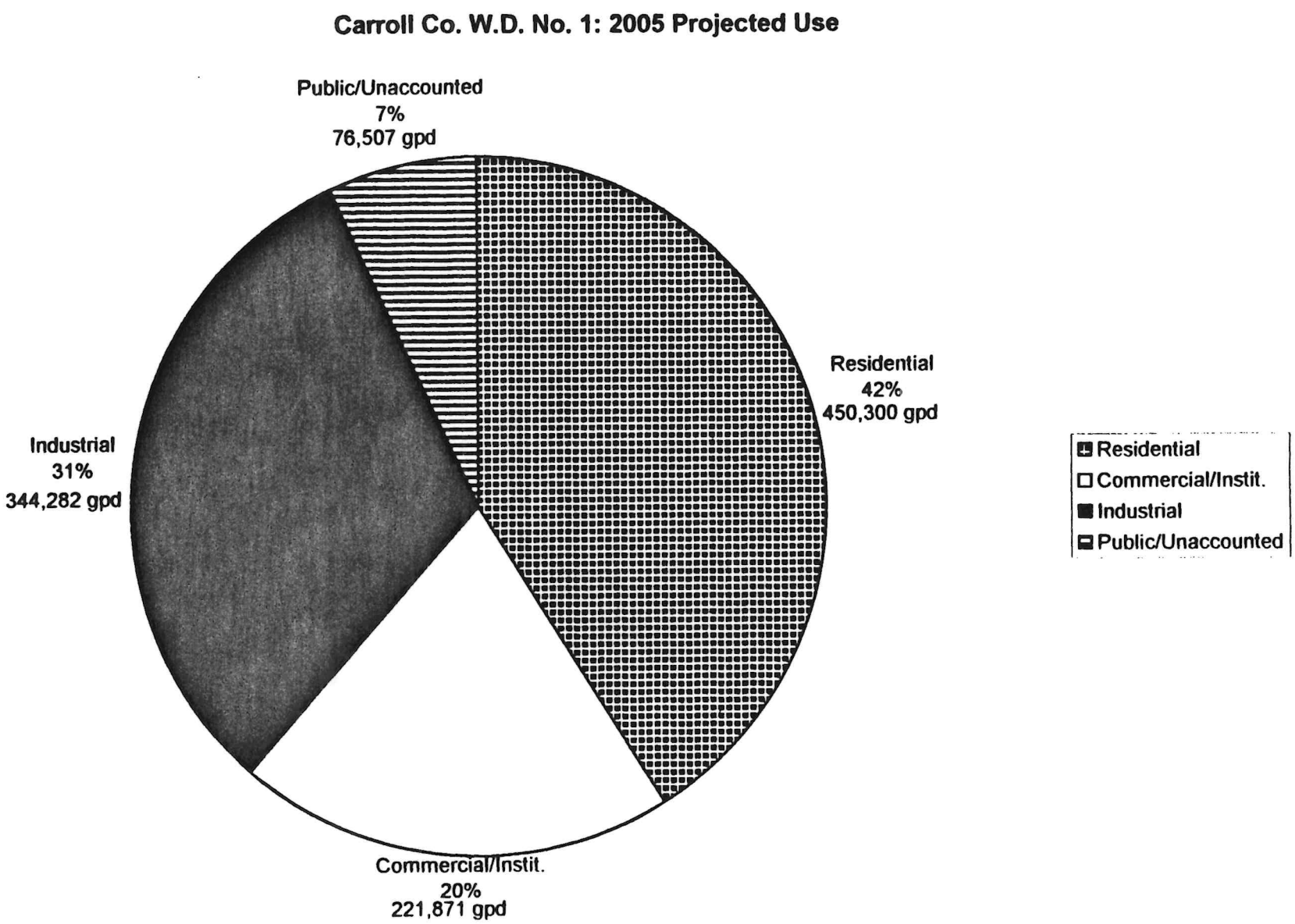


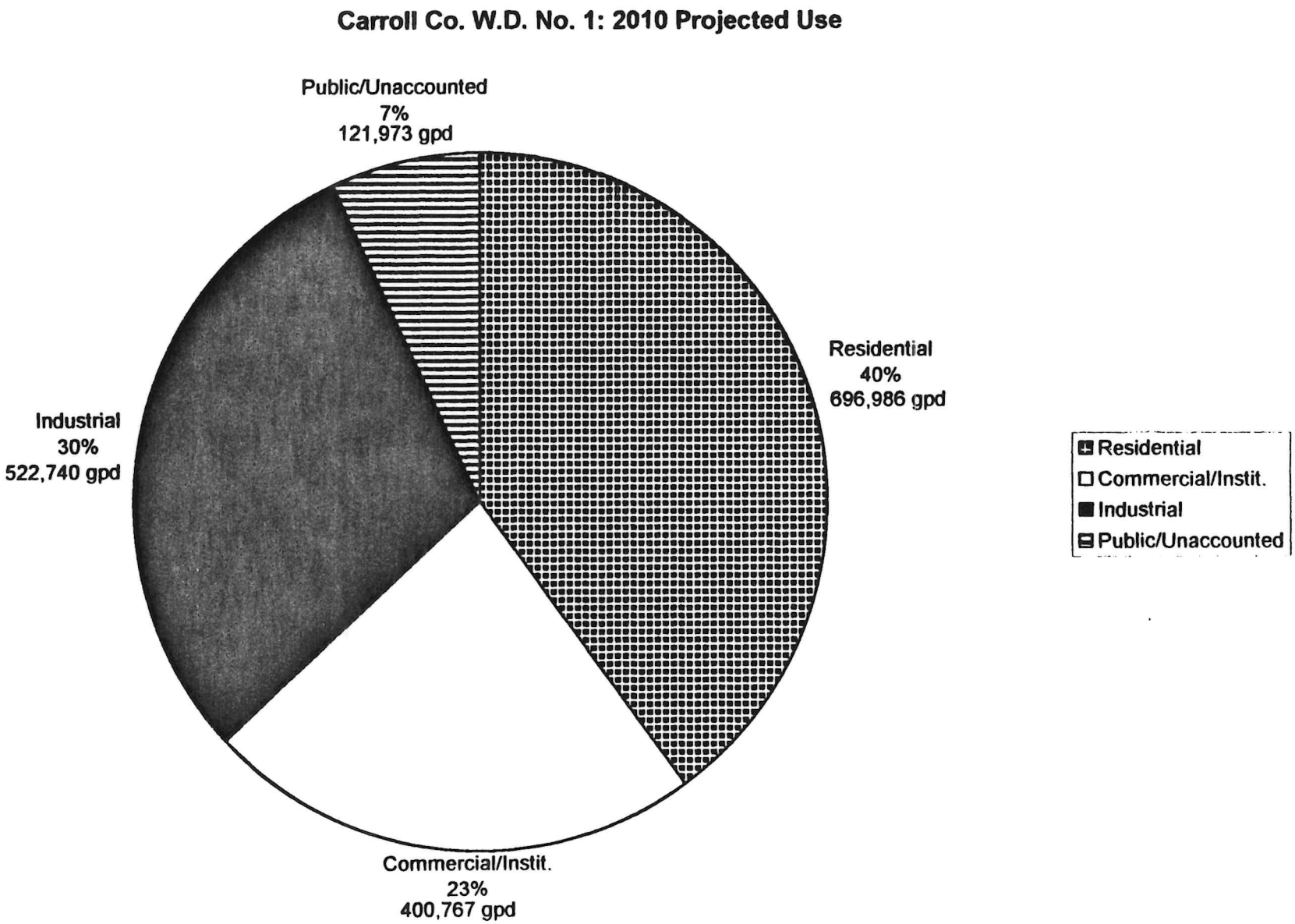
Figure 5.5

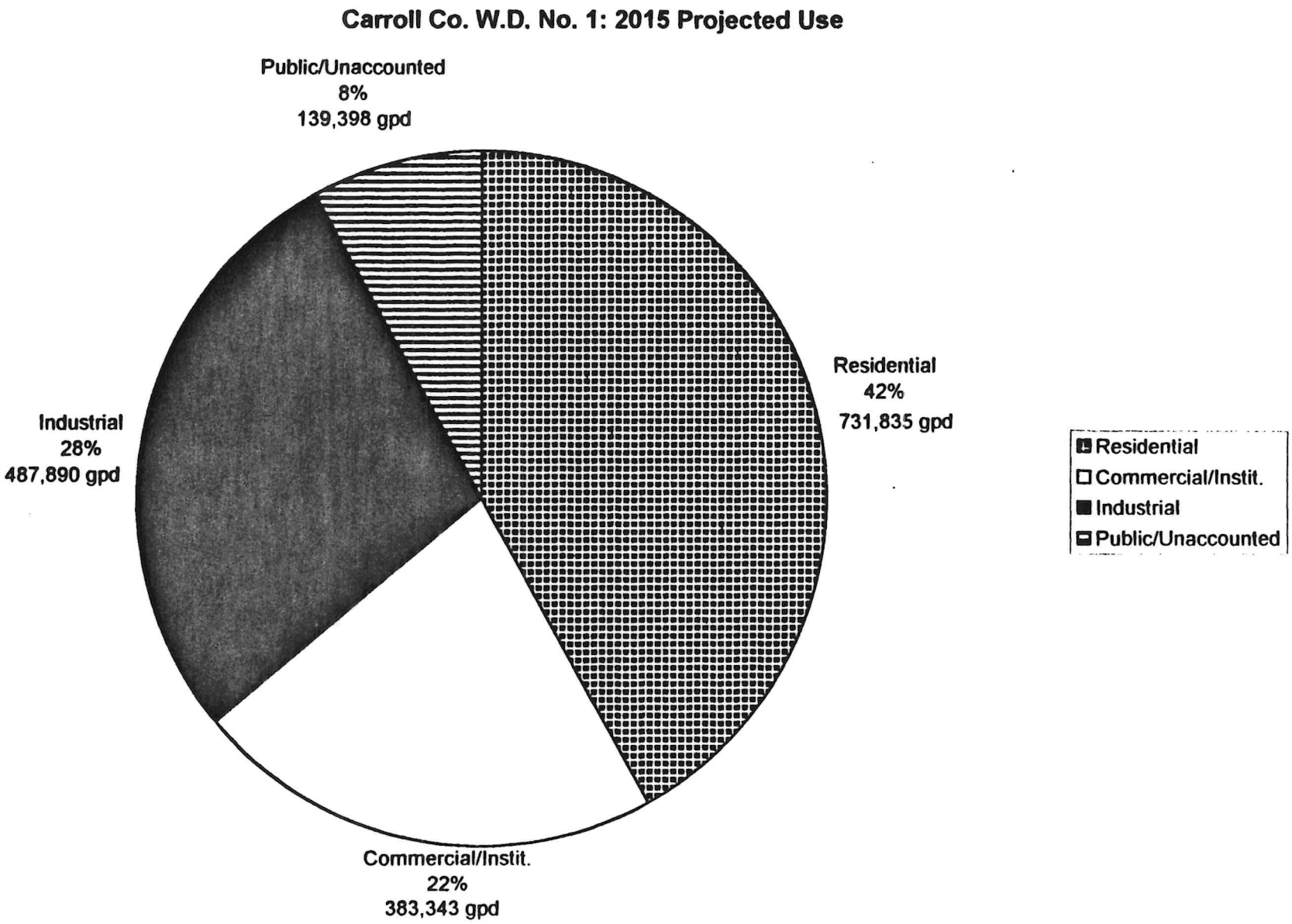
Carroll Co. W.D. No. 1: 1995 Projected Use

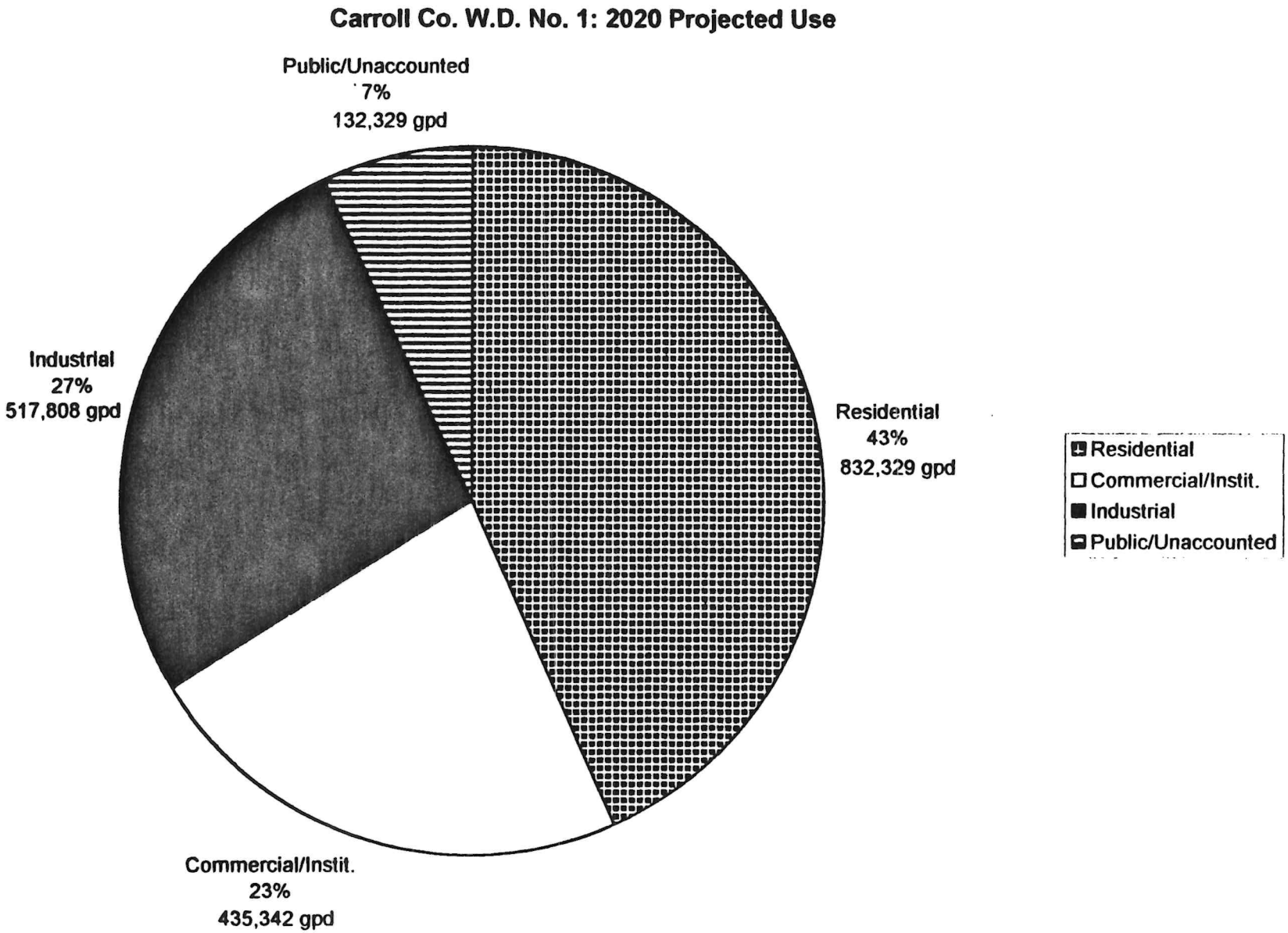



Carroll Co. W.D. No. 1: 2000 Projected Use
Public/Unaccounted
8%
61,169 gpd
Residential
41%
314,257 gpd
Industrial
37%
282,907 gpd
Commercial/Instit.
14%
106,281 gpd
Residential
Commercial/Instit.
Industrial
Public/Unaccounted


Carroll Co. W.D. No. 1: 2005 Projected Use
Public/Unaccounted
7%
76,507 gpd
Residential
42%
450,300 gpd
Industrial
31%
344,282 gpd
Commercial/Instit.
20%
221,871 gpd
Residential
Commercial/Instit.
Industrial
Public/Unaccounted


Carroll Co. W.D. No. 1: 2010 Projected Use
Public/Unaccounted
7%
121,973 gpd
Residential
40%
696,986 gpd
Industrial
30%
522,740 gpd
Commercial/Instit.
23%
400,767 gpd
Residential
Commercial/Instit.
Industrial
Public/Unaccounted


Carroll Co. W.D. No. 1: 2015 Projected Use
Public/Unaccounted
8%
139,398 gpd
Residential
42%
731,835 gpd
Industrial
28%
487,890 gpd
Commercial/Instit.
22%
383,343 gpd
Residential
Commercial/Instit.
Industrial
Public/Unaccounted


Carroll Co. W.D. No. 1: 2020 Projected Use
Public/Unaccounted
7%
132,329 gpd
Industrial
27%
517,808 gpd
Residential
43%
832,329 gpd
Commercial/Instit.
23%
435,342 gpd
Residential
Commercial/Instit.
Industrial
Public/Unaccounted

B. WARSAW WATER WORKS

Warsaw Water Works serves 625 customers or a population of 1,500. In addition, Warsaw sells water to the Gallatin County Water District. The Gallatin County Water District currently has 1,264 customers in Gallatin County and 10 customers in Grant County.

Data Sources

The data sources were the same as those used in the CCWD forecast. Please refer to page 5-12.

Assumptions

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

2. The majority of the growth will occur as a result of wholesale water sales. The City of Warsaw does not have much developable land and therefore, most growth will occur in the Gallatin County Water District service area. The Gallatin County Water District will probably also be providing water to the race track.

Methodology and Verification

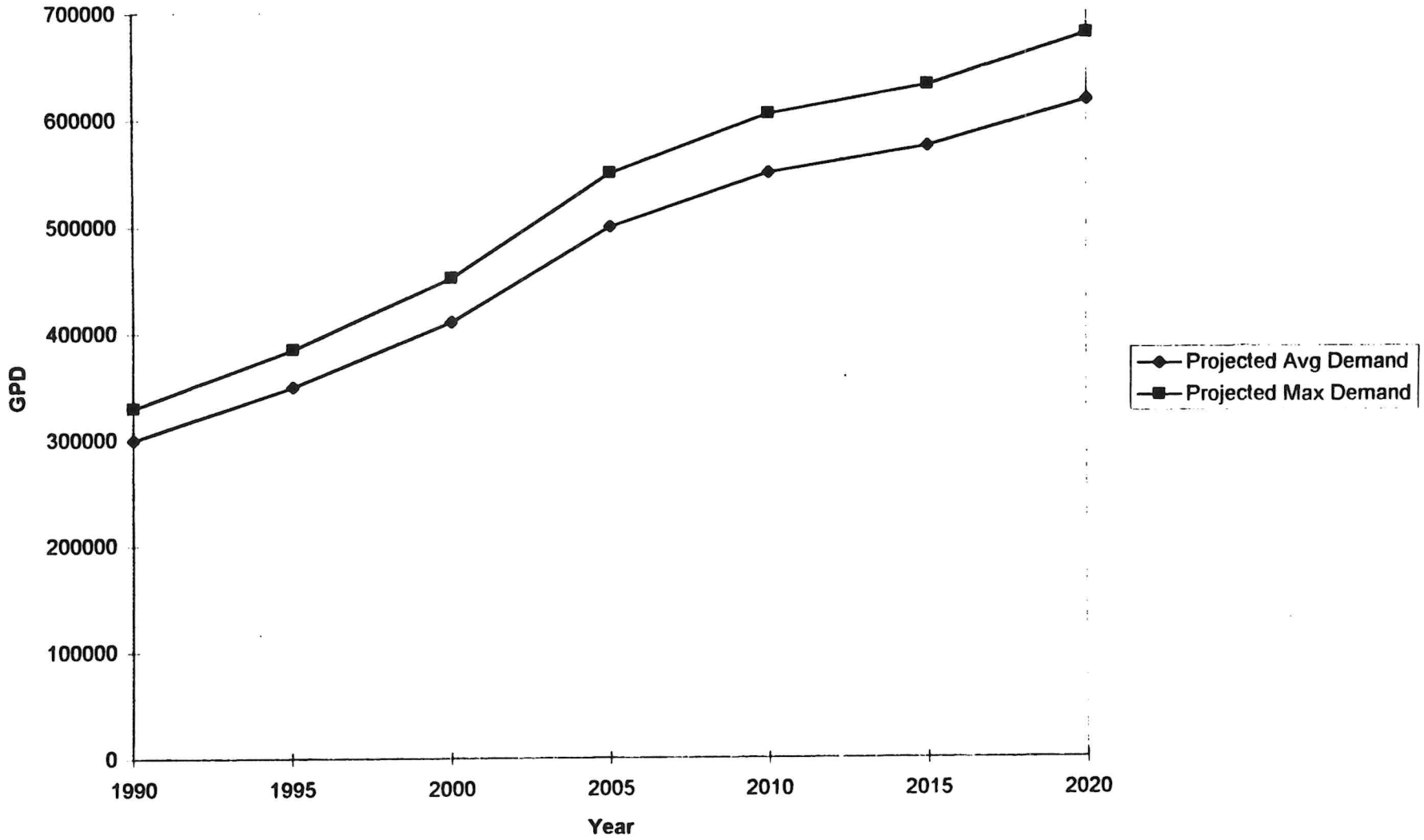
1990 was used as the base year, with projection years of 1995, 2000, 2005, 2010, 2015, and 2020. Data for actual water use for 1990 and 1995 were not available. The only comparison data was water use for a recent year, 1997. The model is overestimating water use by approximately 6 percent, which was considered to be acceptable. Sectoral data is less accurate with residential water use being understated by more than 10 percent; however, no calibrations were made because there wasn't enough data. IWR-MAIN estimated maximum day use at 50 to 60 percent above average day use, which was considered to be much too high. Maximum day use is averaging 10 to 20 percent above normal use and therefore, projections were calibrated accordingly. Figure 5.11 shows projected demand through the planning period. Figures 5.12 through 5.18 show demand by sector through 2020.

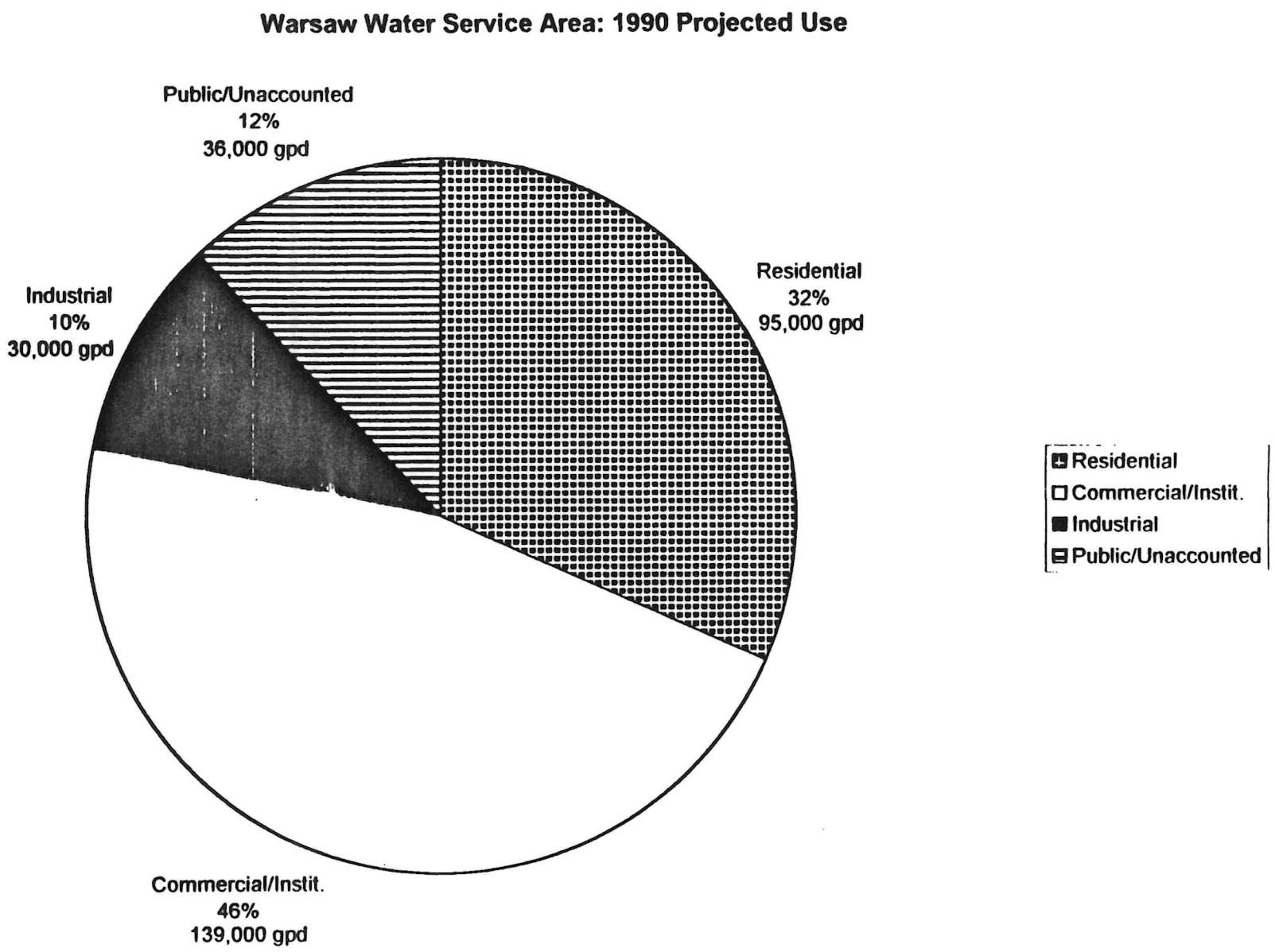
Conclusions

There is potential for growth in this service area; however, it is difficult to predict the extent. Again, the commercial/institutional sector is the most likely to experience growth. The growth will primarily be fueled by the wholesale demand for water. However, if the Gallatin County Water District does develop its own well fields and treatment system, then demand will be fairly flat in Warsaw.

Figure 5.11

Warsaw Water Service Area: Projected Demand




Warsaw Water Service Area: 1990 Projected Use
Public/Unaccounted
12%
36,000 gpd
Residential
32%
95,000 gpd
Industrial
10%
30,000 gpd
Commercial/Instit.
46%
139,000 gpd
Residential
Commercial/Instit.
Industrial
Public/Unaccounted

Warsaw Water Service Area: 1995 Projected Use

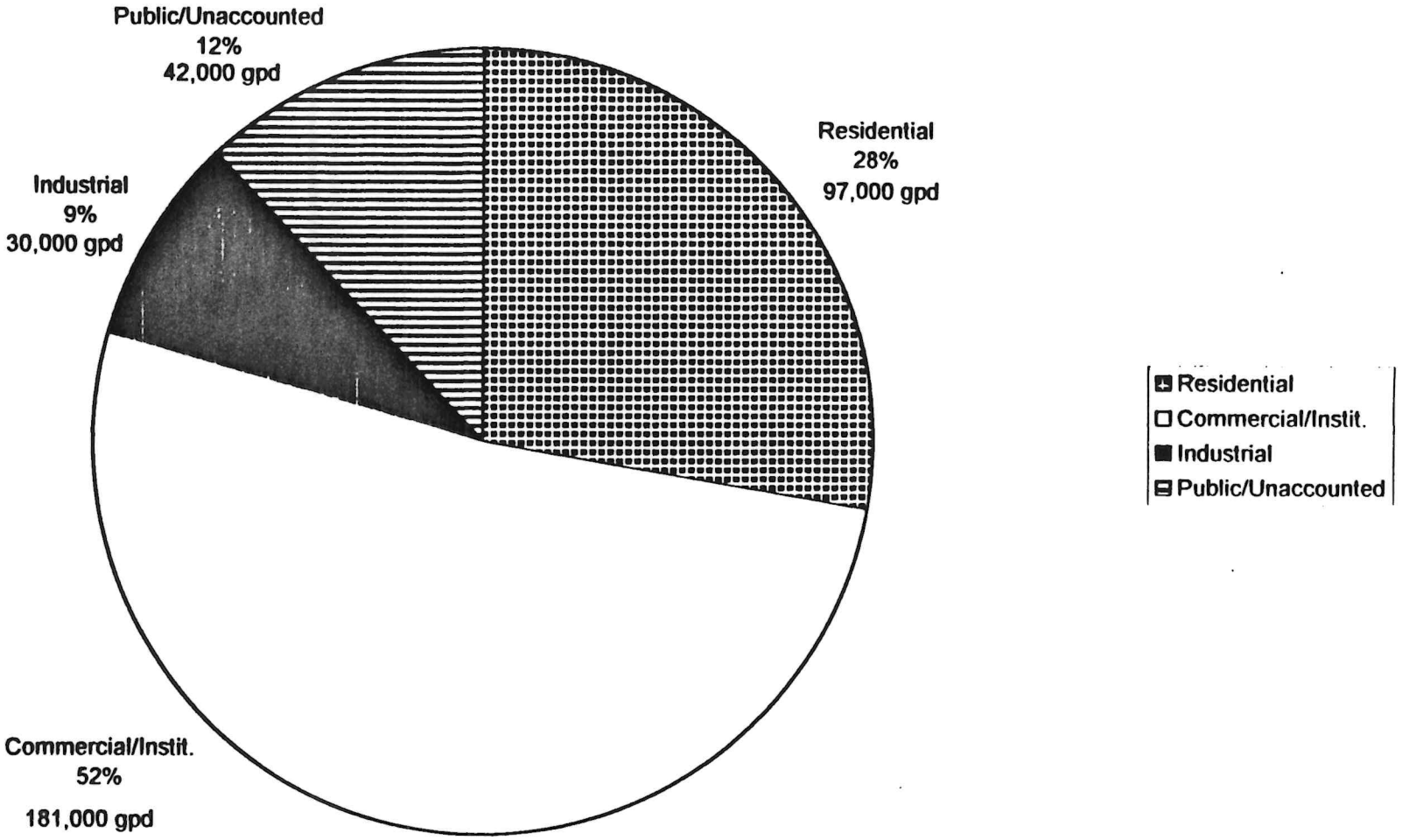
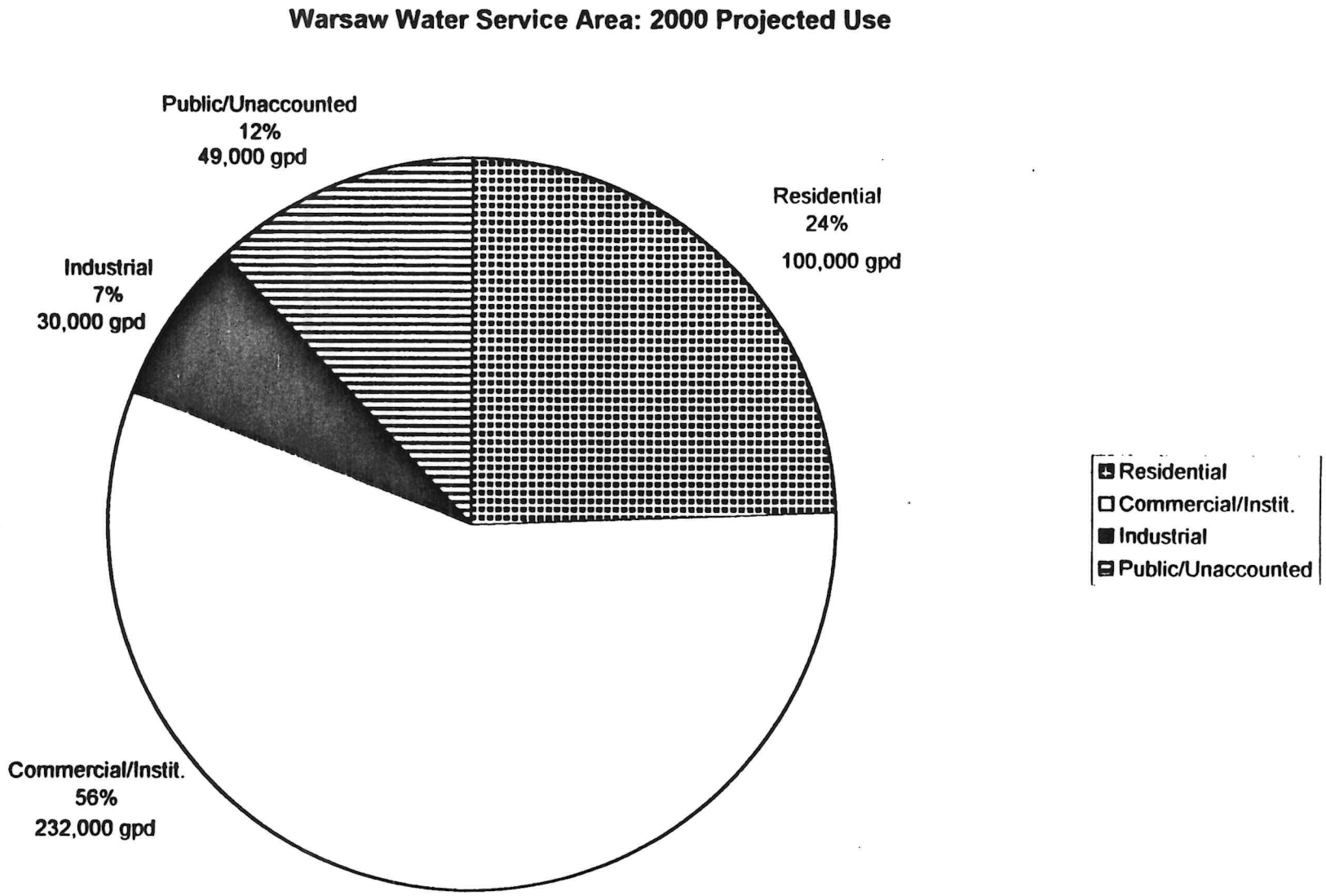
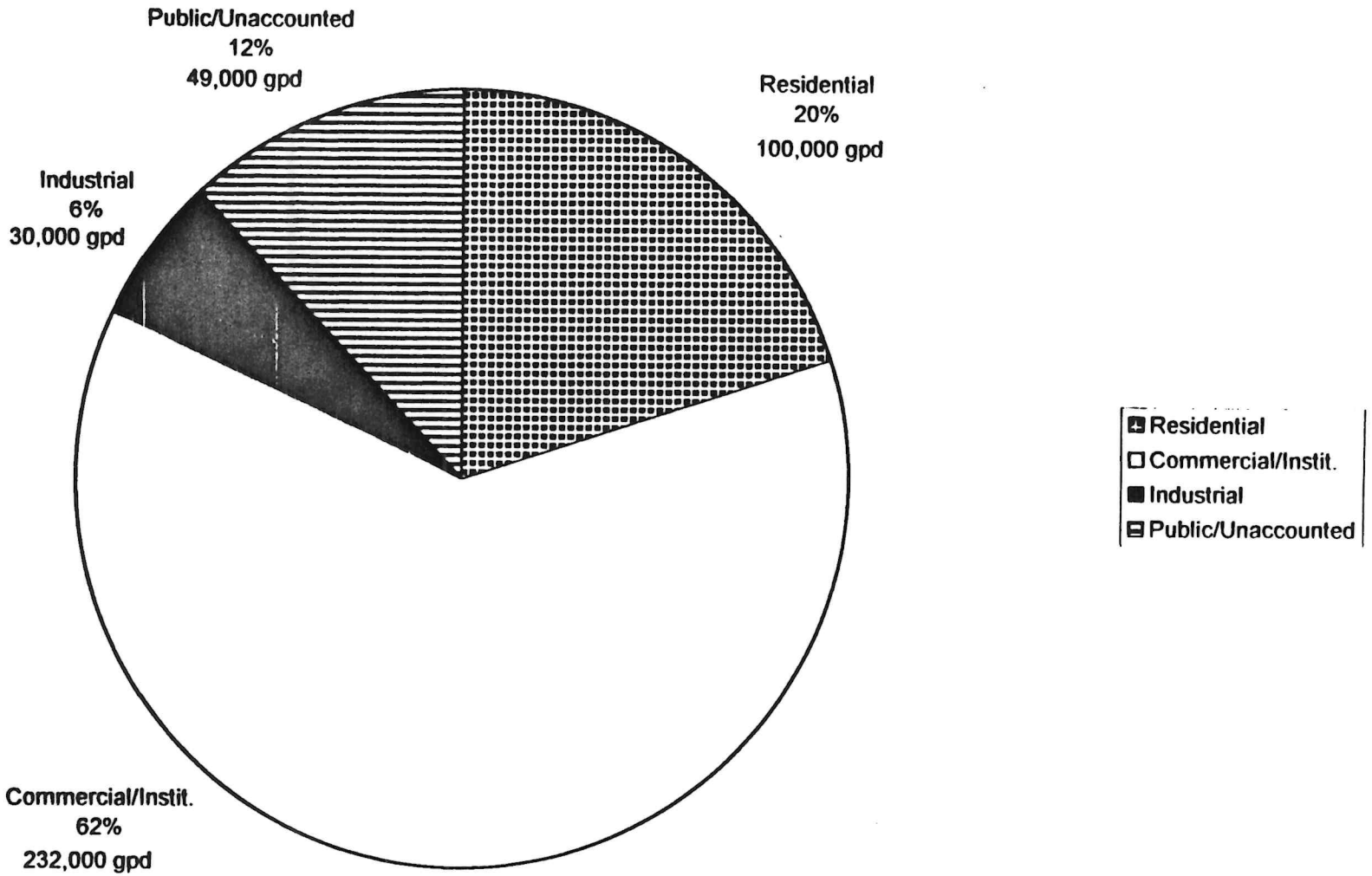
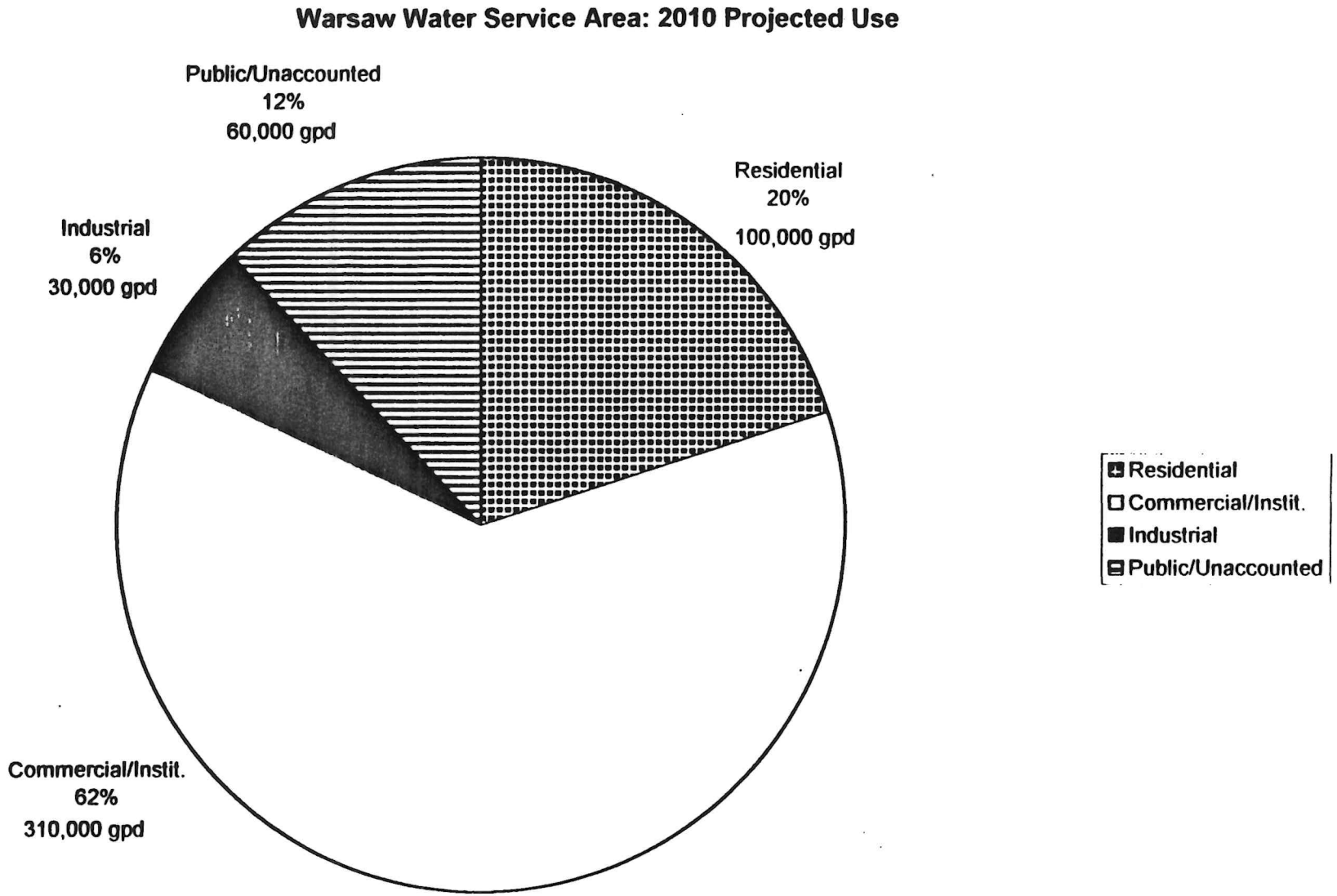


Figure 5.14


Warsaw Water Service Area: 2000 Projected Use
Public/Unaccounted
12%
49,000 gpd
Residential
24%
100,000 gpd
Industrial
7%
30,000 gpd
Commercial/Instit.
56%
232,000 gpd
Residential
Commercial/Instit.
Industrial
Public/Unaccounted

Warsaw Water Service Area: 2005 Projected Use




Warsaw Water Service Area: 2010 Projected Use
Public/Unaccounted
12%
60,000 gpd
Residential
20%
100,000 gpd
Industrial
6%
30,000 gpd
Commercial/Instit.
62%
310,000 gpd
Residential
Commercial/Instit.
Industrial
Public/Unaccounted

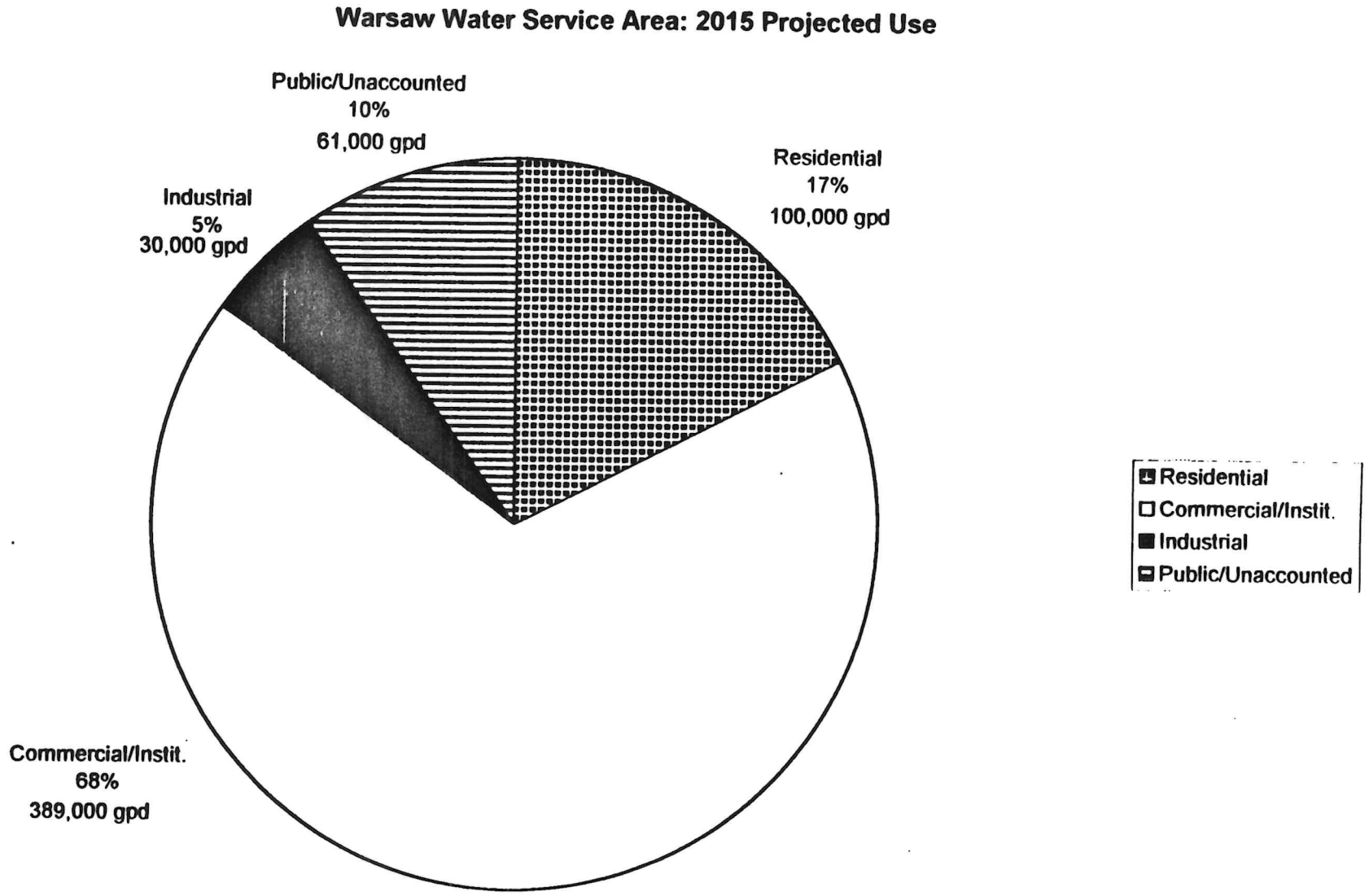
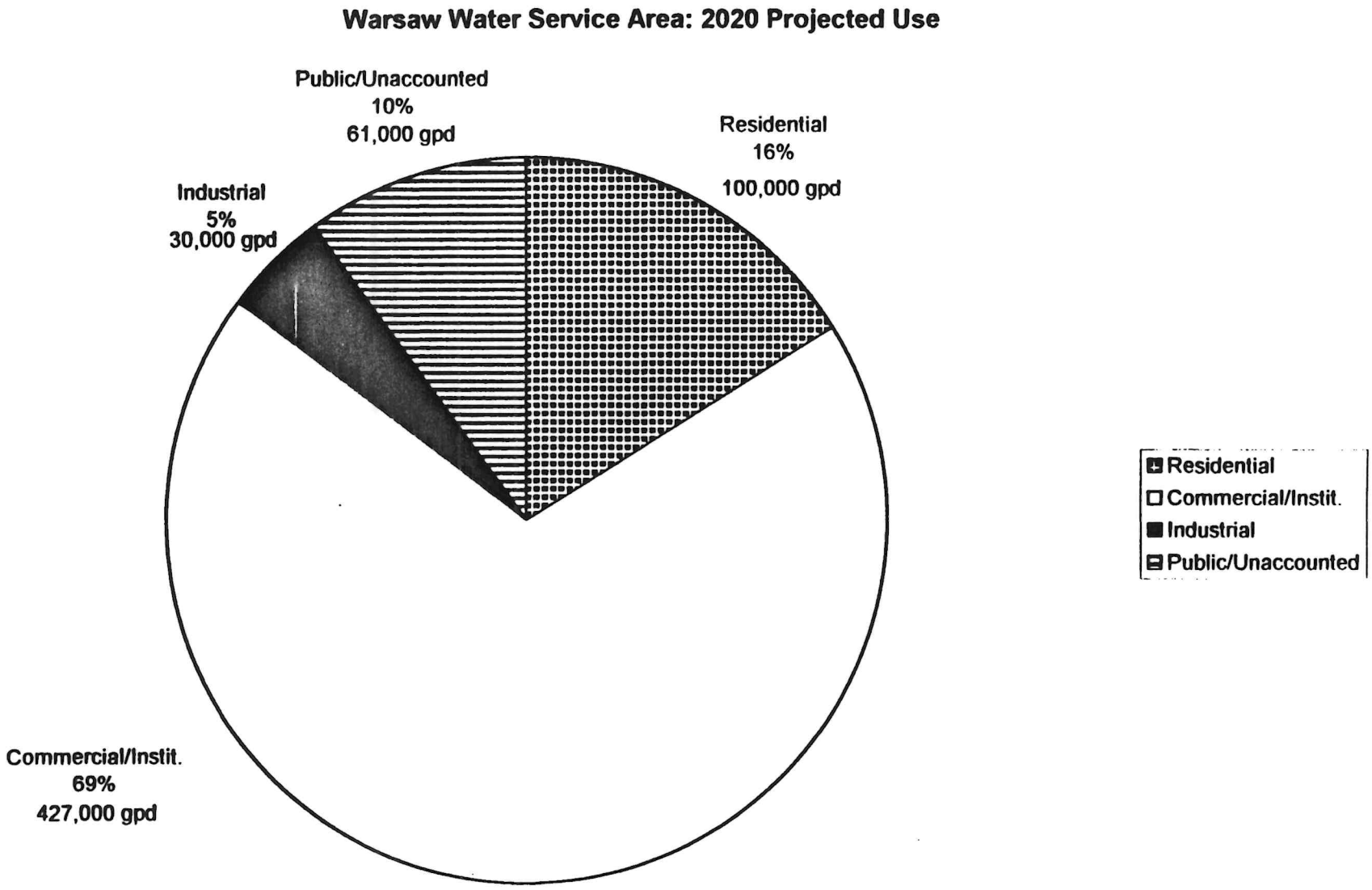

Warsaw Water Service Area: 2015 Projected Use
Public/Unaccounted
10%
61,000 gpd
Residential
17%
100,000 gpd
Industrial
5%
30,000 gpd
Commercial/Instit.
68%
389,000 gpd
Residential
Commercial/Instit.
Industrial
Public/Unaccounted

Figure 5.18


Warsaw Water Service Area: 2020 Projected Use
Public/Unaccounted
10%
61,000 gpd
Residential
16%
100,000 gpd
Industrial
5%
30,000 gpd
Commercial/Instit.
69%
427,000 gpd
Residential
Commercial/Instit.
Industrial
Public/Unaccounted

C. BULLOCK PEN WATER DISTRICT

Bullock Pen Water District (BPWD) serves 311 customers in Gallatin County, 616 customers in Boone County, 110 customers in Kenton County, 3,662 customers in Grant County, and 82 customers in Pendleton County. Bullock Pen currently meets 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 Williamstown with a 150,000 gallon per day minimum, with no stated limit. BPWD also purchases water from the City of Walton with a 100,000 gallon per day maximum.

Data Sources

Data sources were the same as those utilized in the CCWD forecast. Please refer to page 5-12.

Assumptions

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. Public/Unaccounted water use was calibrated at five percent rather than the ten percent automatically set by the IWR-MAIN model. According to BPWD, this is a more representative figure.

Methodology and Verification

1990 was the base year and 1995 was used as a calibration year for the projections. The projections were compared against actual water use for 1990 and 1995. Figure 5.19 shows projected and actual water use. 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 5.20 through 5.28 show actual and projected water use by sector.

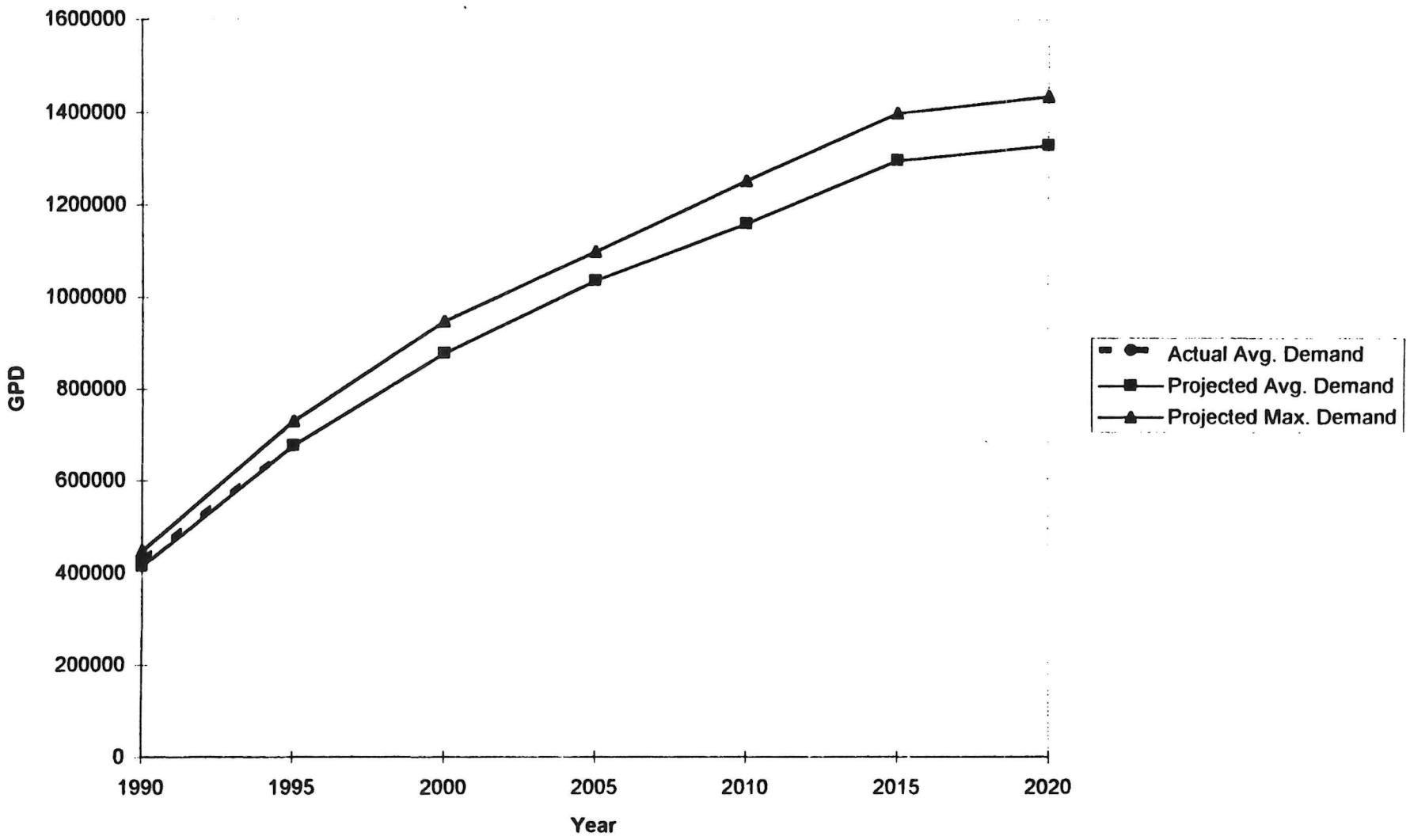
Conclusions

Figure 5.29 compares the projected demand for water with the available supply. As mentioned previously, the maximum permitted withdrawal from Bullock Pen Lake is 850,000 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 have a maximum limit, only a minimum limit of 150,000 gpd. However, for planning purposes, it was assumed that the City of Williamstown could not provide

more than 600,000 gpd. Therefore, a total of 1,450,000 gallons 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 5.19

BPWD: Actual Vs. Projected Demand



Fi 5.20

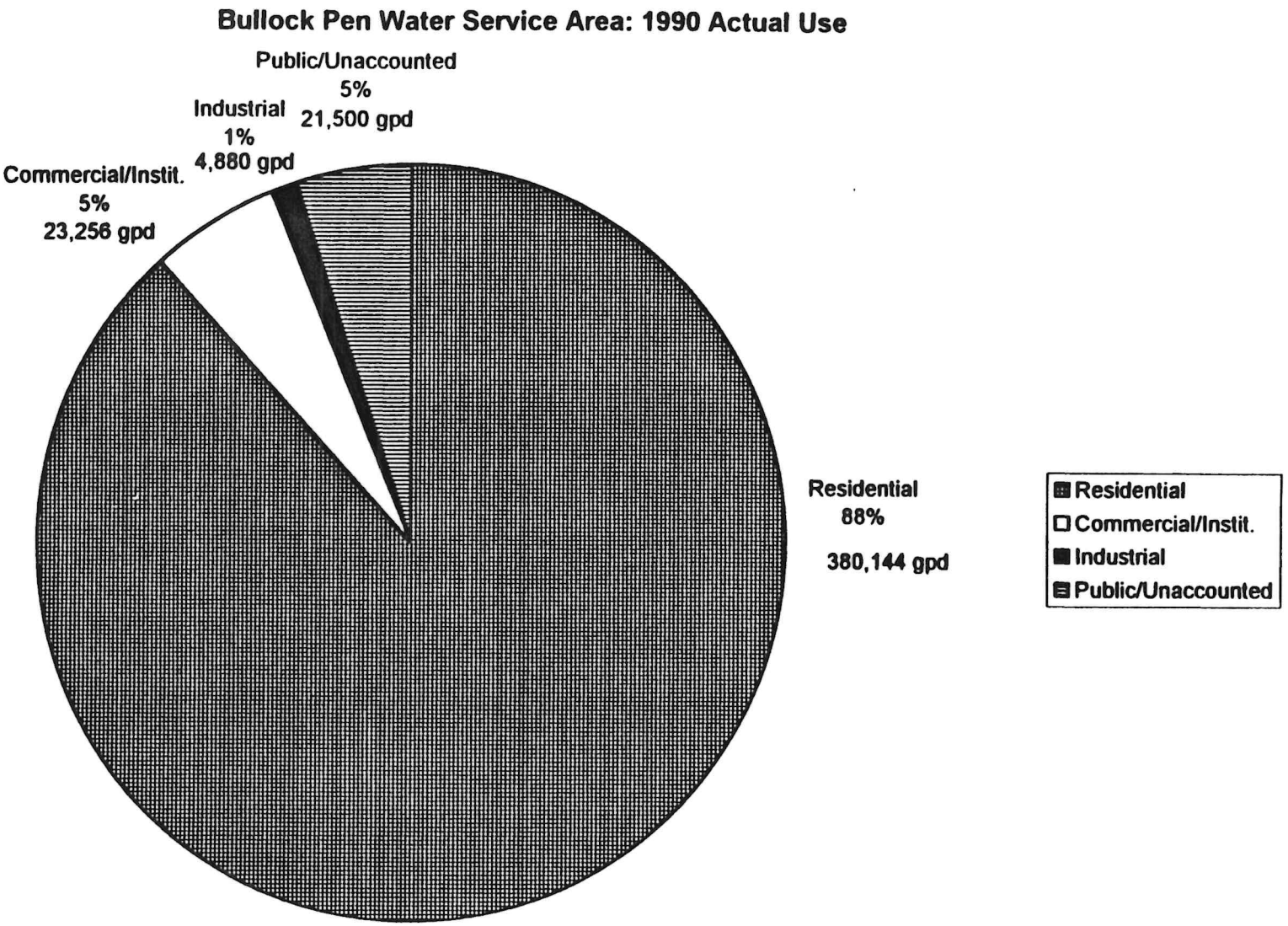
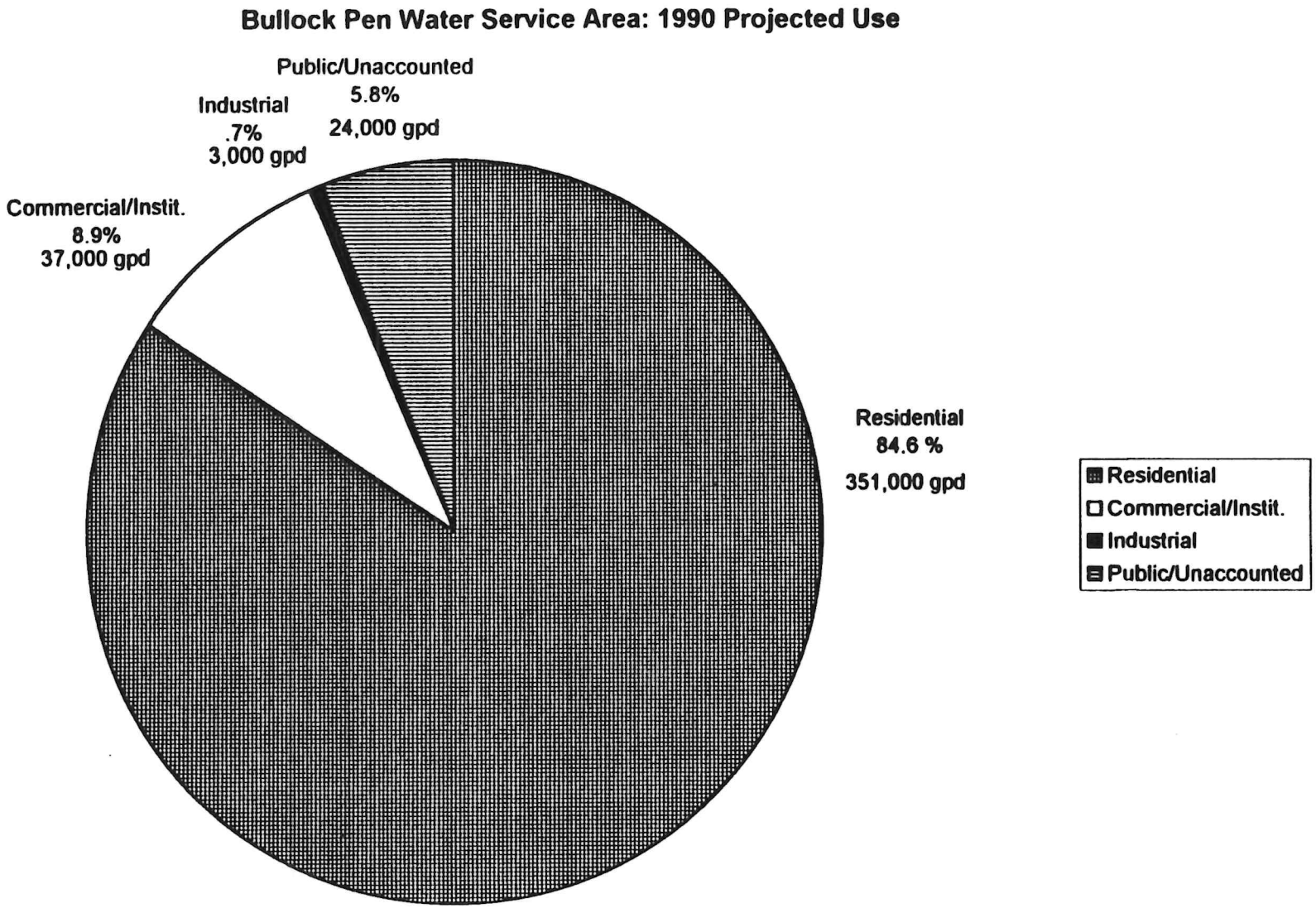

Bullock Pen Water Service Area: 1990 Actual Use
Public/Unaccounted
5%
21,500 gpd
Industrial
1%
4,880 gpd
Commercial/Instit.
5%
23,256 gpd
Residential
88%
380,144 gpd
Residential
Commercial/Instit.
Industrial
Public/Unaccounted

Figure 5


Bullock Pen Water Service Area: 1990 Projected Use
Public/Unaccounted
5.8%
24,000 gpd
Industrial
.7%
3,000 gpd
Commercial/Instit.
8.9%
37,000 gpd
Residential
84.6 %
351,000 gpd
Residential
Commercial/Instit.
Industrial
Public/Unaccounted

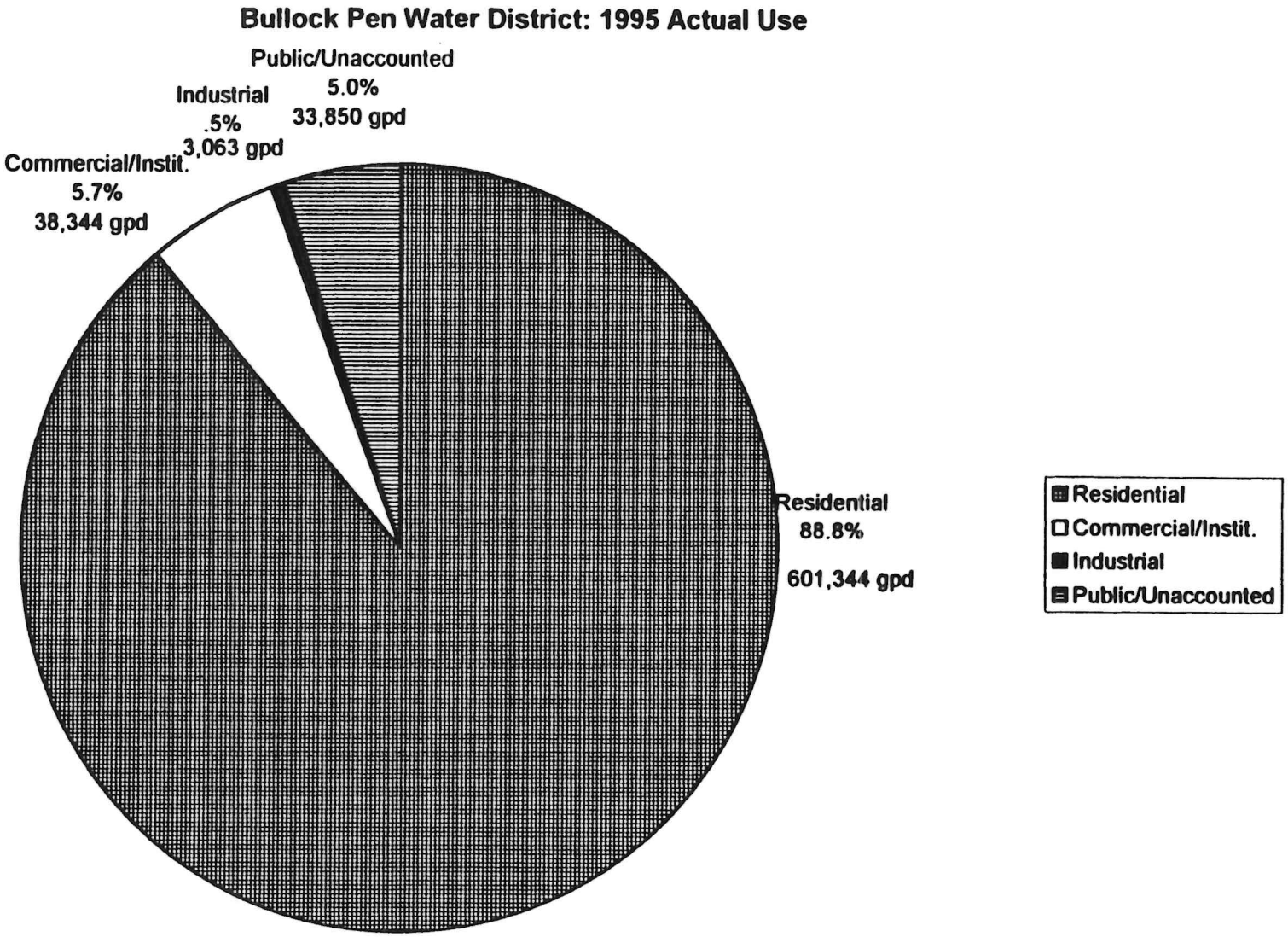

Bullock Pen Water District: 1995 Actual Use
Public/Unaccounted
5.0%
33,850 gpd
Industrial
.5%
3,063 gpd
Commercial/Instit.
5.7%
38,344 gpd
Residential
88.8%
601,344 gpd
Residential
Commercial/Instit.
Industrial
Public/Unaccounted

Fig 5.23

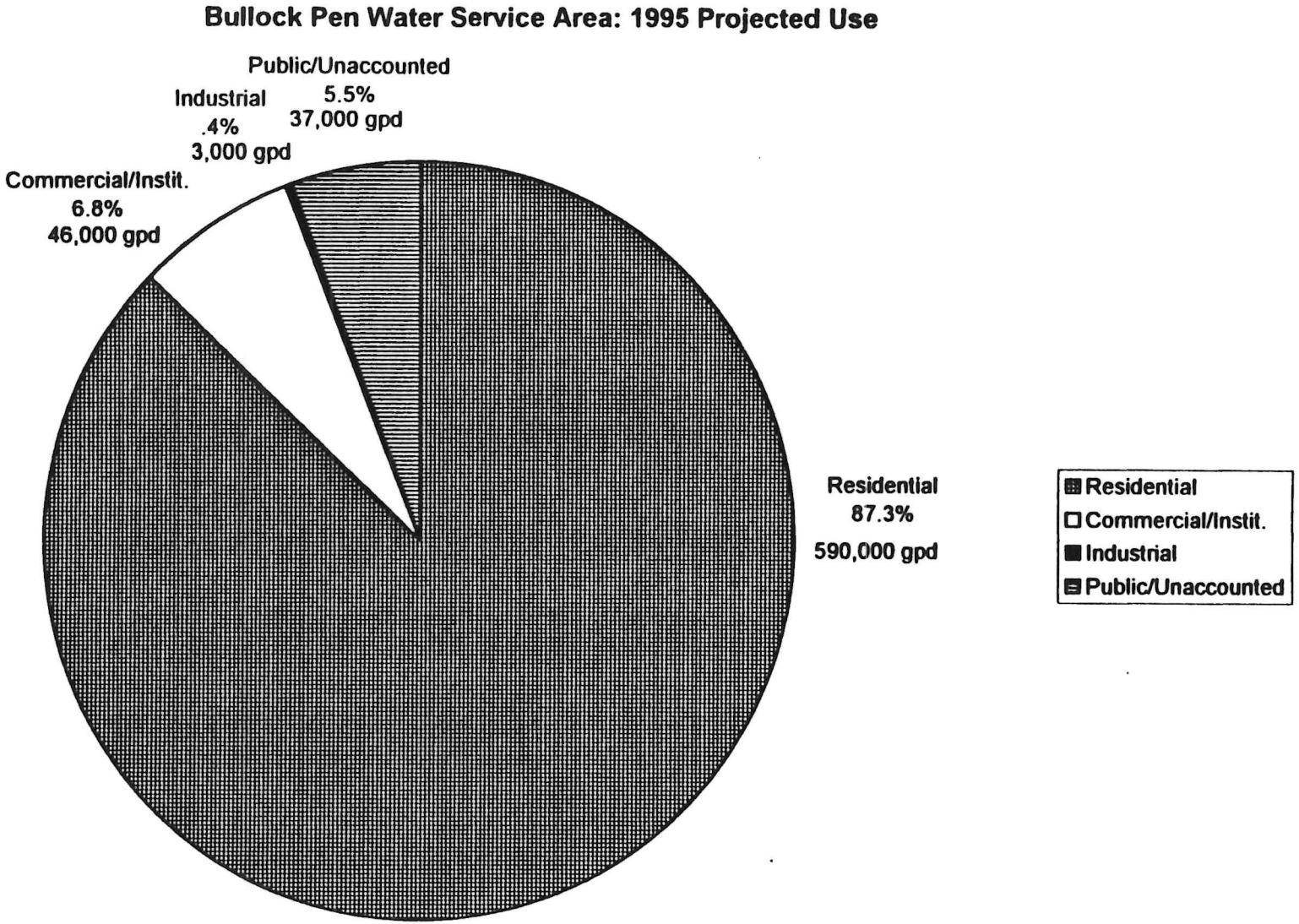
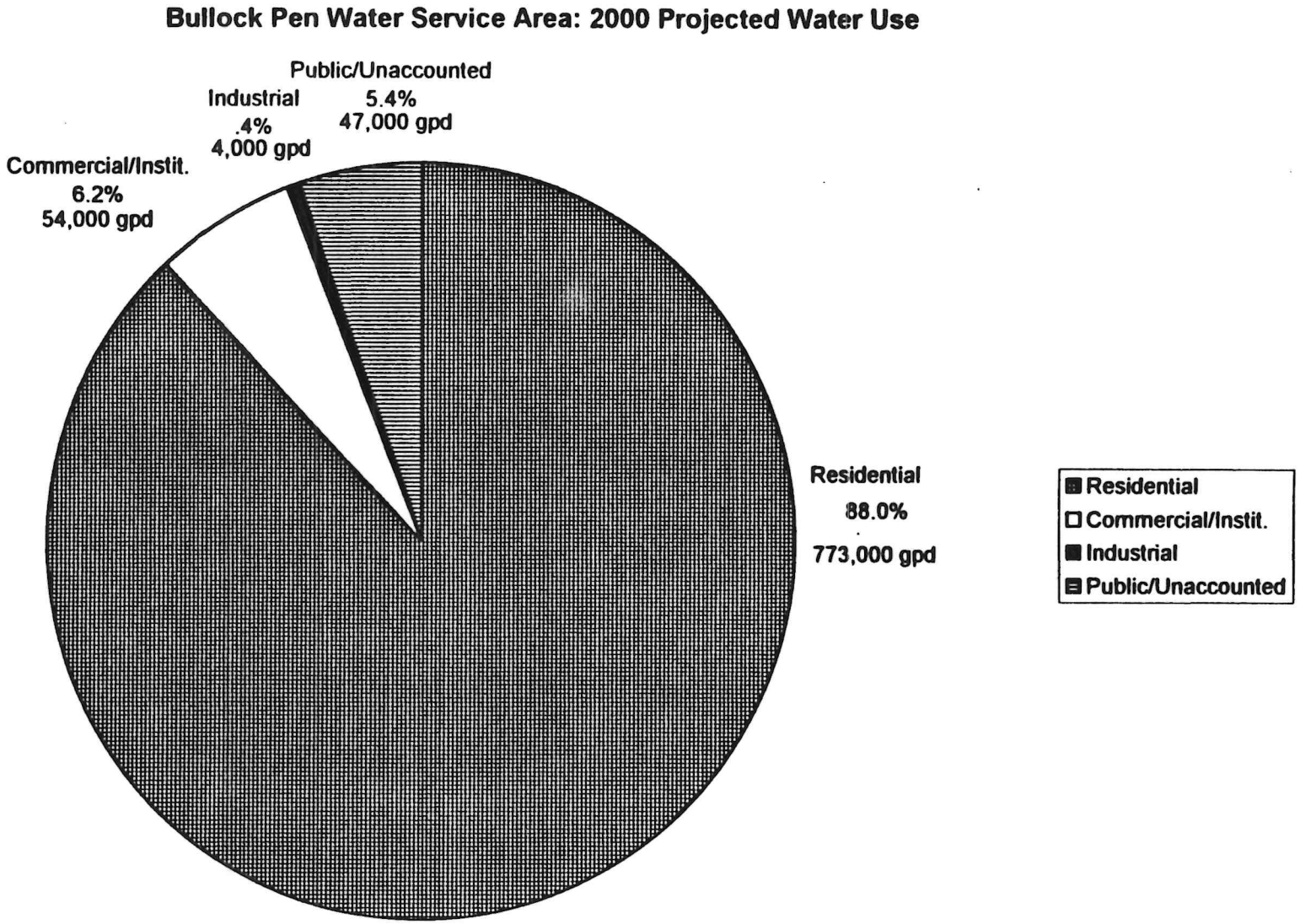

Bullock Pen Water Service Area: 1995 Projected Use
Public/Unaccounted
5.5%
37,000 gpd
Industrial
.4%
3,000 gpd
Commercial/Instit.
6.8%
46,000 gpd
Residential
87.3%
590,000 gpd
Residential
Commercial/Instit.
Industrial
Public/Unaccounted

Figure 5.24


Bullock Pen Water Service Area: 2000 Projected Water Use
Public/Unaccounted
5.4%
47,000 gpd
Industrial
.4%
4,000 gpd
Commercial/Instit.
6.2%
54,000 gpd
Residential
88.0%
773,000 gpd
Residential
Commercial/Instit.
Industrial
Public/Unaccounted

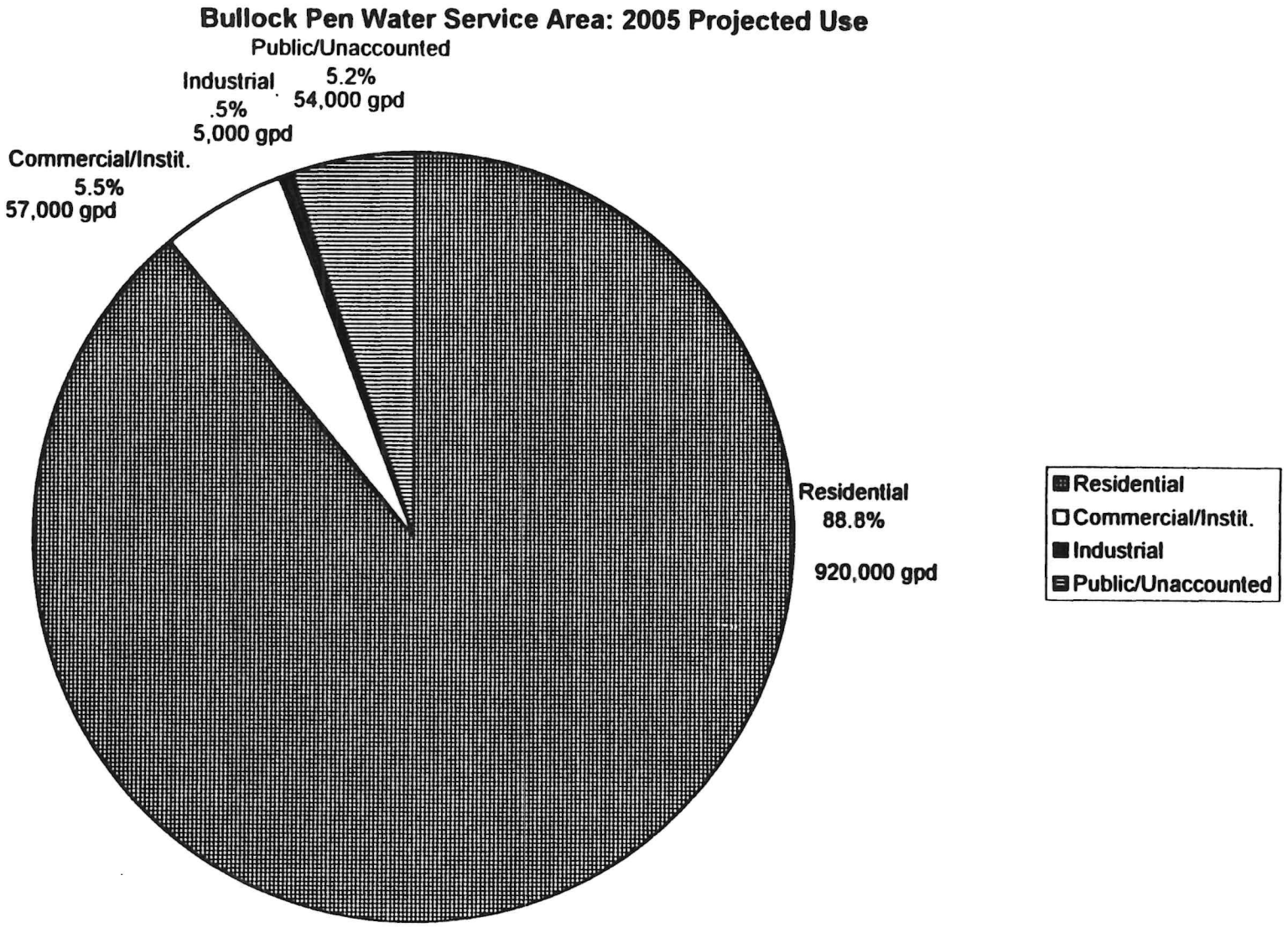
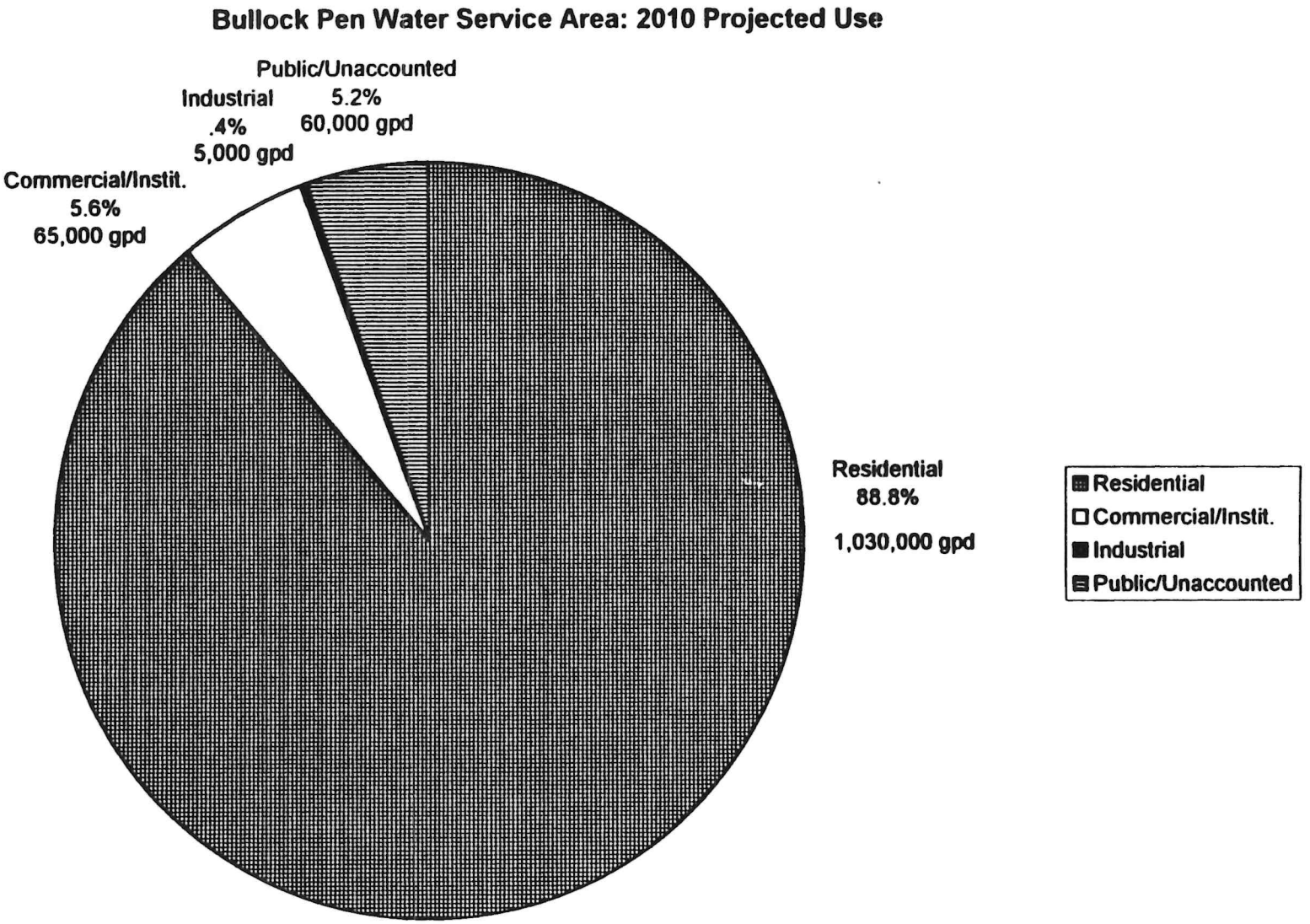
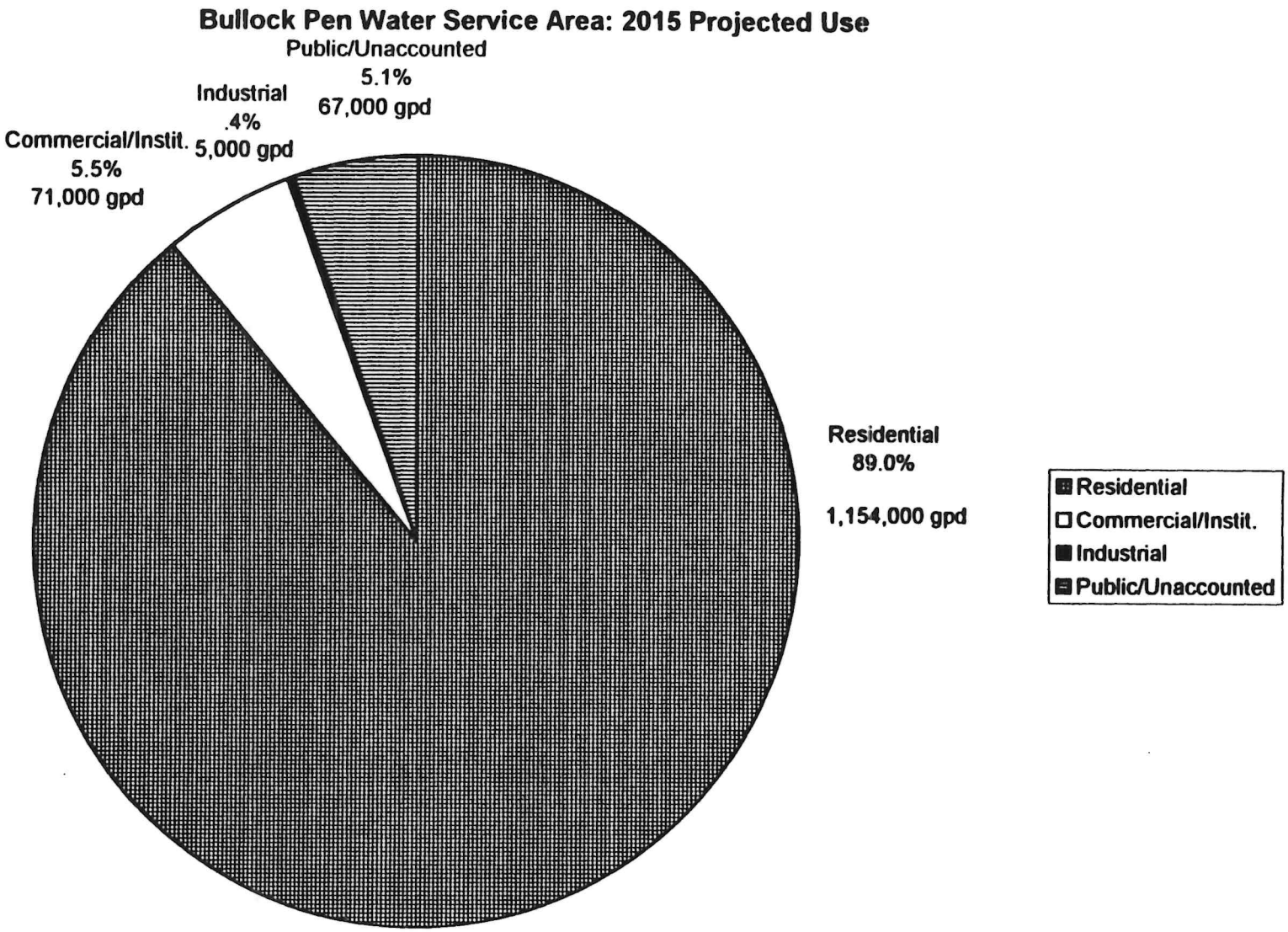

Bullock Pen Water Service Area: 2005 Projected Use
Public/Unaccounted
5.2%
54,000 gpd
Industrial
.5%
5,000 gpd
Commercial/Instit.
5.5%
57,000 gpd
Residential
88.8%
920,000 gpd
Residential
Commercial/Instit.
Industrial
Public/Unaccounted

Fig 5.26


Bullock Pen Water Service Area: 2010 Projected Use
Public/Unaccounted
5.2%
60,000 gpd
Industrial
.4%
5,000 gpd
Commercial/Instit.
5.6%
65,000 gpd
Residential
88.8%
1,030,000 gpd
Residential
Commercial/Instit.
Industrial
Public/Unaccounted


Bullock Pen Water Service Area: 2015 Projected Use
Public/Unaccounted
5.1%
67,000 gpd
Industrial
.4%
5,000 gpd
Commercial/Instit.
5.5%
71,000 gpd
Residential
89.0%
1,154,000 gpd
Residential
Commercial/Instit.
Industrial
Public/Unaccounted

Figur 3

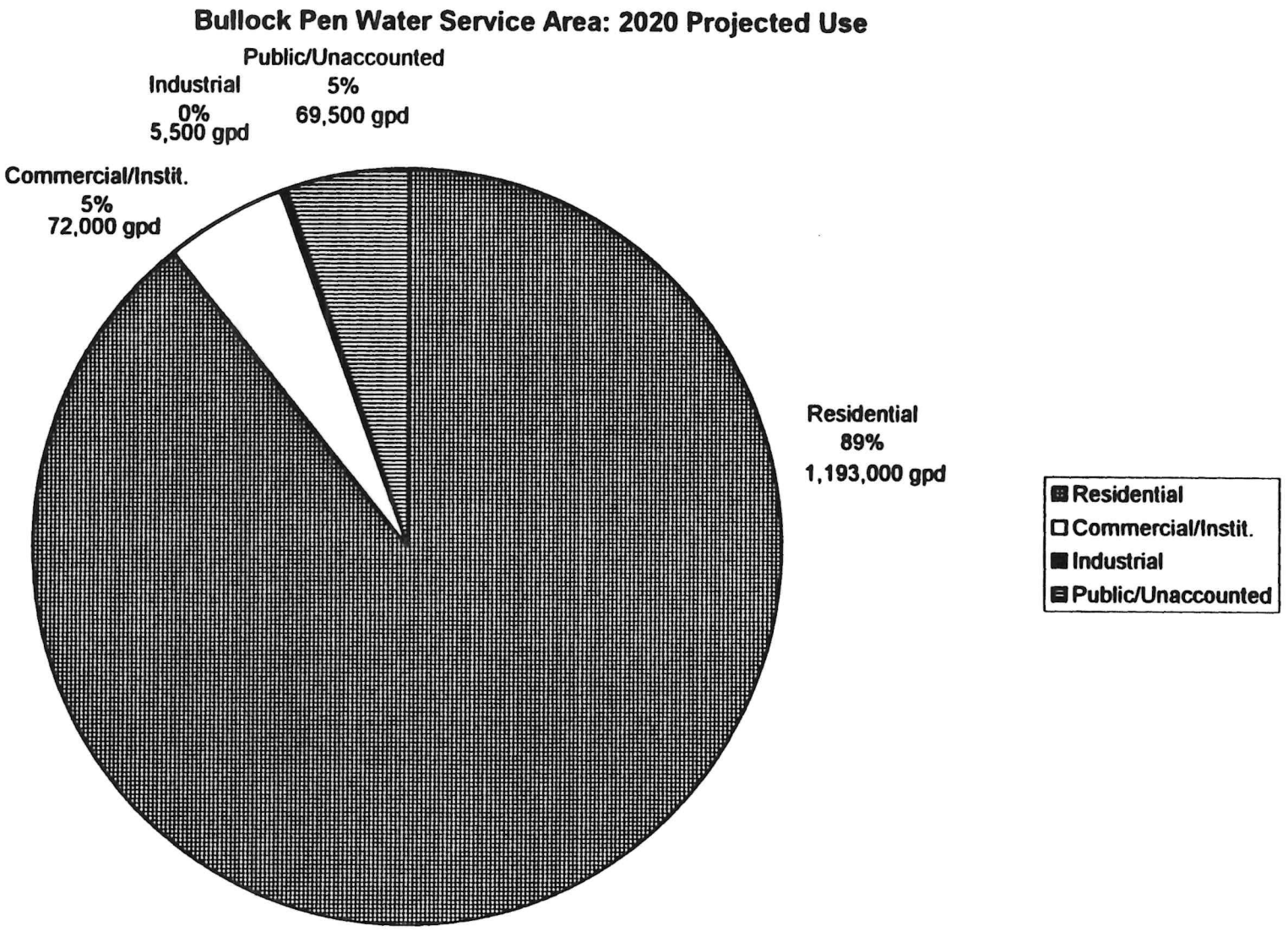
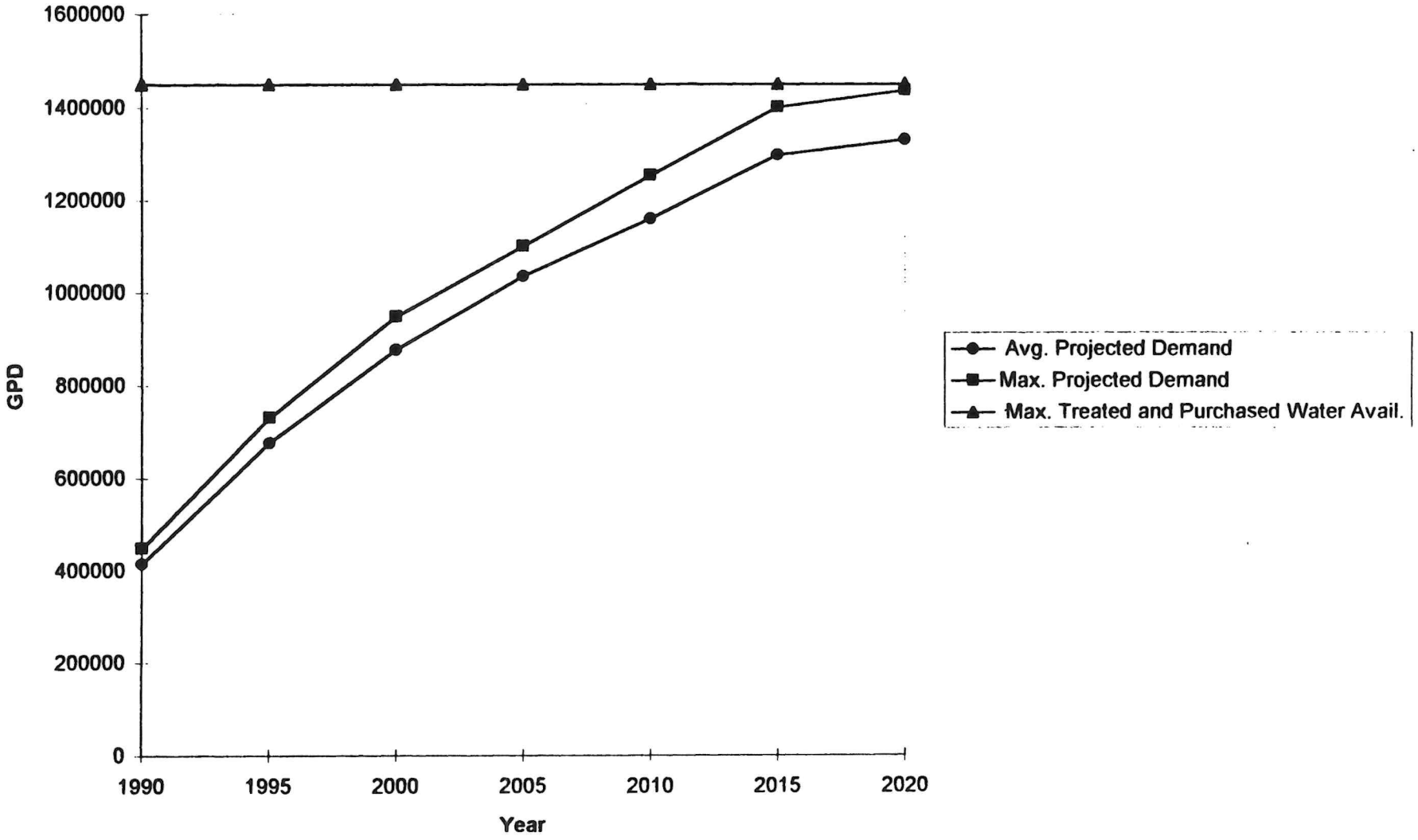

Bullock Pen Water Service Area: 2020 Projected Use
Public/Unaccounted
5%
69,500 gpd
Industrial
0%
5,500 gpd
Commercial/Instit.
5%
72,000 gpd
Residential
89%
1,193,000 gpd
Residential
Commercial/Instit.
Industrial
Public/Unaccounted

Figure 5.29

BPWD: Water Sources Vs. Demand



III. INFRASTRUCTURE ASSESSMENT

This section provides a general assessment of the infrastructure and treatment capacity, if applicable, of the major suppliers and distributors in Gallatin County. Map 3 shows water use in the County. Map 4 shows the areas currently served by the major suppliers and distributors, as well as planned expansions.

Carroll County Water District No. 1

Carroll County Water District No. 1 (CCWD) uses groundwater and has wellfields in Ghent and western Gallatin County. CCWD has two treatment plants, one recently upgraded and expanded and one newly constructed, both in 1998. The Ghent treatment plant has a capacity of 650,000 gpd and the Gallatin County plant has a capacity of 720,000 gpd. Treatment includes chlorination and fluoridation only. There are no water quality problems. Comparing projected demand to treatment capacity, it appears that if anticipated growth occurs, additional capacity will be needed by 2010 (Figure 5.30). It is anticipated that the additional capacity will be needed at the Ghent plant based on current trends.

Total storage capacity is 750,000 gallons in previously noted locations. Storage capacity is considered adequate for a typical day; however, with several large industrial users, it is possible to deplete all the storage within a few hours. The storage tanks at Dividing Ridge, Montgomery Rd., and Jackson Ridge have functional radio telemetry. There is a routine for stored water exchange.

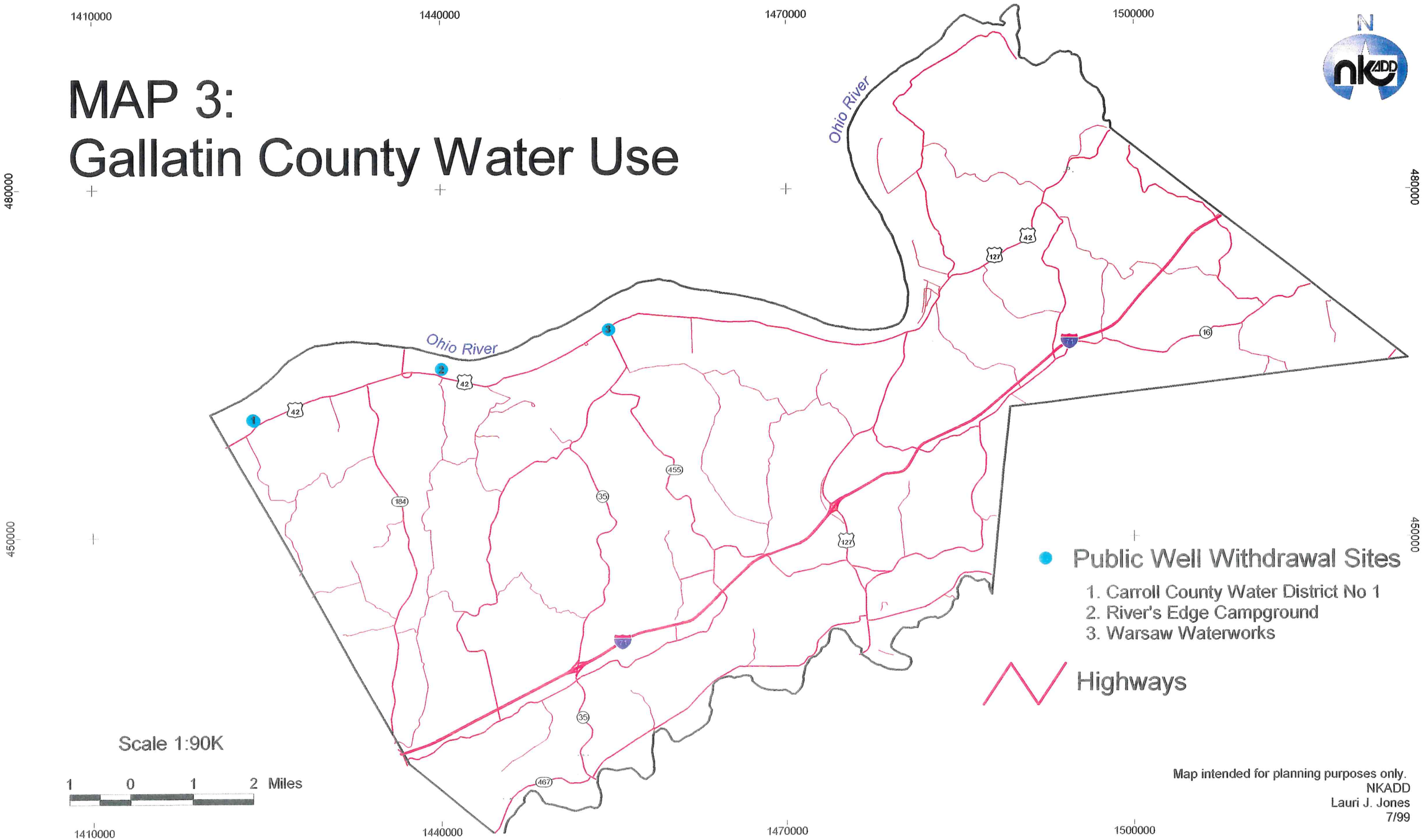
Water losses are estimated at 7.9 percent. Leak detection methods include visual inspection and sequencing valve closures while monitoring appropriate locations with leak detectors. There are periodic line breaks, primarily caused by the rock on the lines coming under stress. Another major cause is contractor hits during construction. The biggest problem area for construction related breaks is KY 227. CCWD has 7.1 miles of 2" lines, 23.6 miles of 3" lines, 34 miles of 4" lines, 41 miles of 6" lines, 14.1 miles of 8" lines, and 1.4 miles of 10" lines for a total of 121.2 miles of water lines in Carroll, Gallatin, and Owen Counties combined.

No single user was identified that purchases 20 percent or more of the water produced. The system is metered. Planned improvements to the system include extending distribution lines wherever financially feasible. Current, grant funds will be required to complete any major line extensions.

Warsaw Water Works

Warsaw Water Works (WWW) uses groundwater as a source and treatment capacity of 720,000 gpd. The treatment plant was expanded in 1997. Treatment consists of chlorination and fluoridation. Comparing projected demand to treatment capacity, capacity is adequate for the planning period (Figure 5.31). WWW currently lacks enough holding time after chlorination. As a remedy, WWW plans to convert a 100,000 gallon storage tank on Main Cross St. into a holding tank.

MAP 3:
Gallatin County Water Use

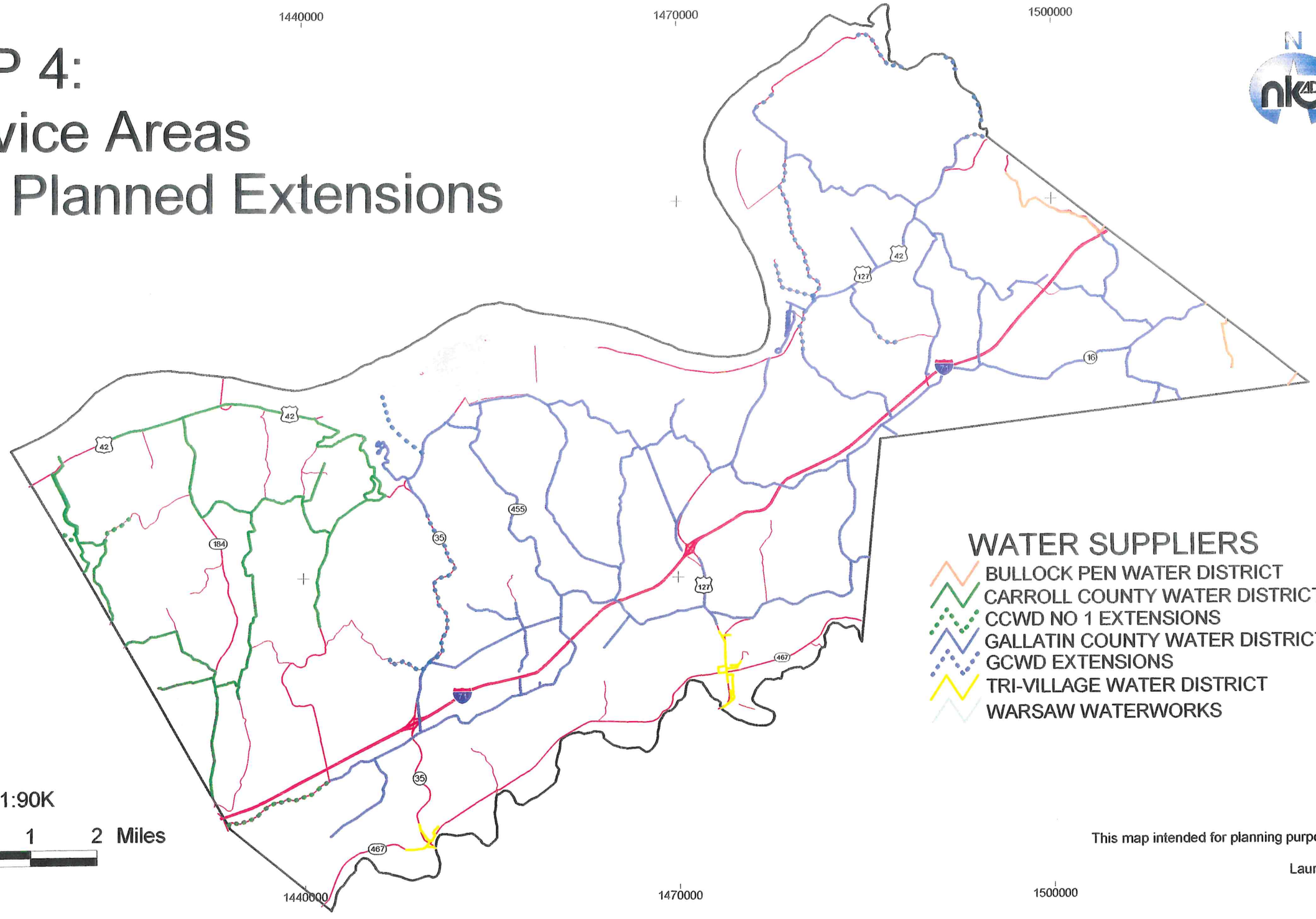


MAP 4:
Service Areas
and Planned Extensions

1410000 1440000 1470000 1500000

480000 480000

450000 450000



N

nkADD

WATER SUPPLIERS

- BULLOCK PEN WATER DISTRICT
- CARROLL COUNTY WATER DISTRICT NO 1
- CCWD NO 1 EXTENSIONS
- GALLATIN COUNTY WATER DISTRICT
- GCWD EXTENSIONS
- TRI-VILLAGE WATER DISTRICT
- WARSAW WATERWORKS

scale 1:90K

1 0 1 2 Miles

1410000 1440000 1470000 1500000

This map intended for planning purposes only.
NKADD
Lauri J. Jones
8/99

Fig. 5.30

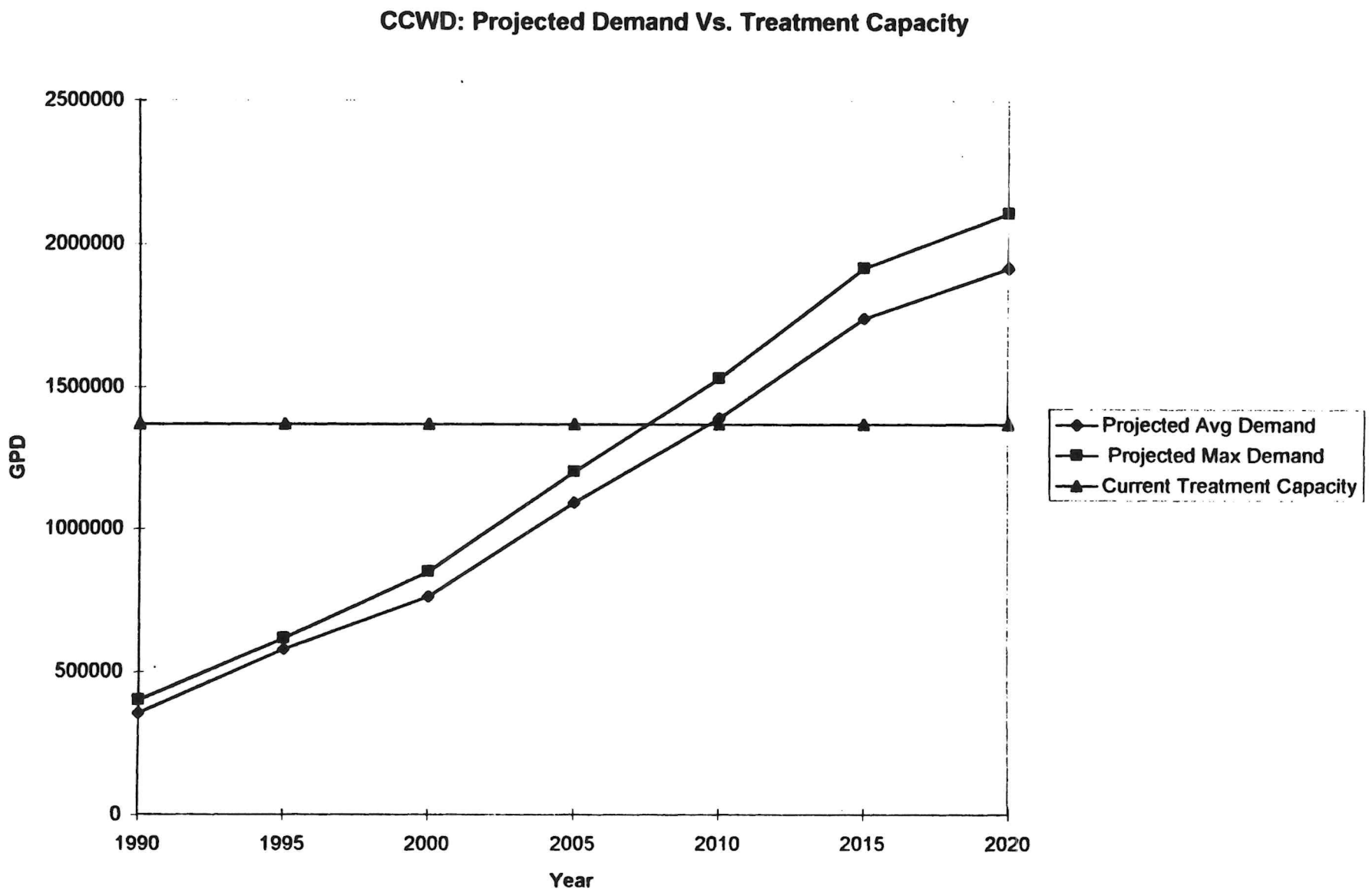
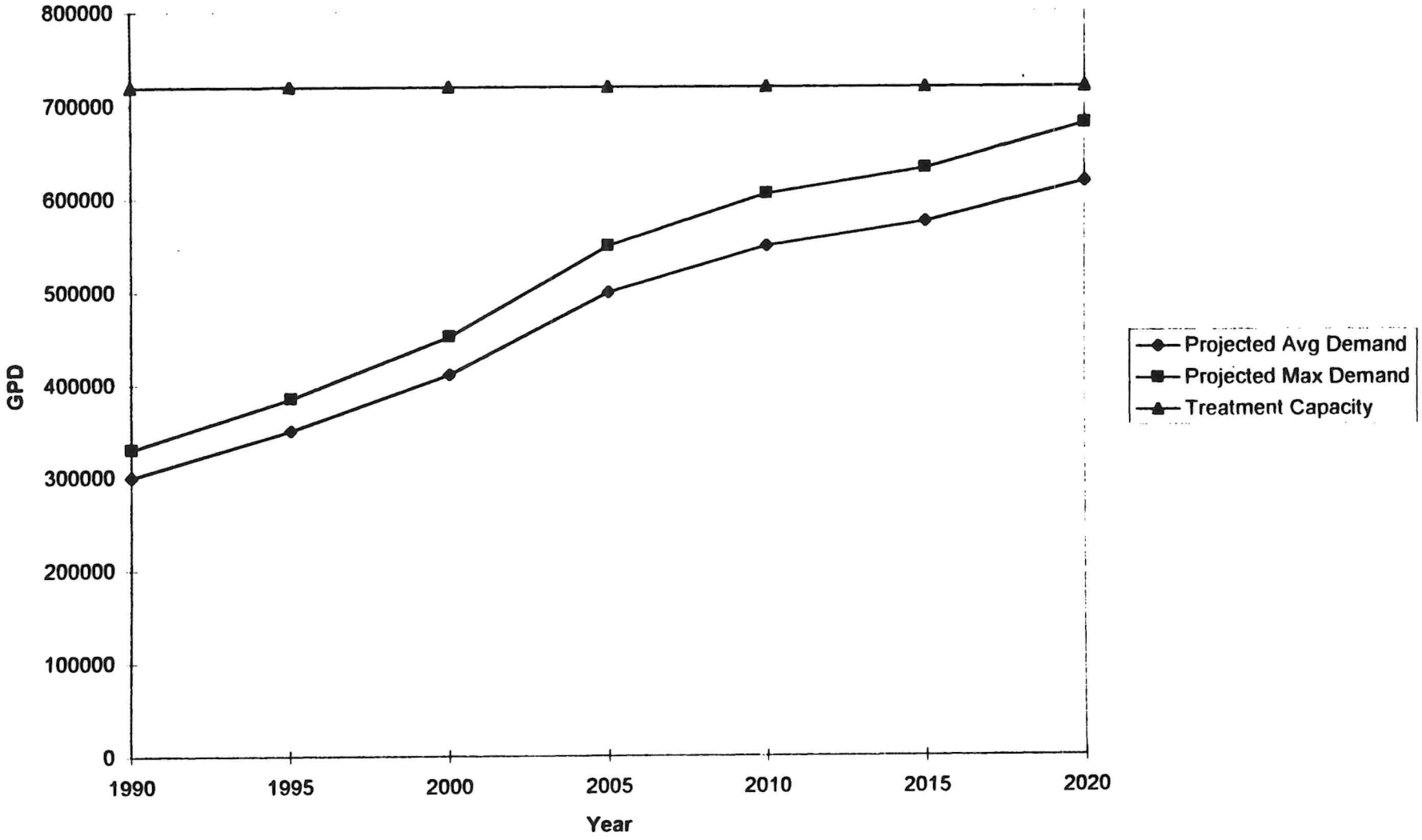

CCWD: Projected Demand Vs. Treatment Capacity
2500000
2000000
1500000
1000000
500000
0
GPD
1990
1995
2000
2005
2010
2015
2020
Year
Projected Avg Demand
Projected Max Demand
Current Treatment Capacity

Figure 5.31

Warsaw Water Service Area: Projected Demand Vs. Treatment Capacity



Total storage is 500,000 gallons in locations noted previously. Storage capacity is considered adequate. Storage system has direct wiring telemetry. WWW has .2 miles of 1" lines, 2.4 miles of 2" lines, .3 miles of 3" lines, 2.4 miles of 4" lines, 3.4 miles of 6" lines, 3.3 miles of 8" lines, 1.5 miles of 10" lines, and .5 miles of 12" lines for a total of 14 miles. Line size is not a problem as the smaller lines serve only downtown residential areas, while the larger lines are on main roads.

Water losses are estimated at 11 percent. Leak detection methods include visual inspection and driving lines. Overall, the water lines are in good condition. The system is metered and there is a testing/replacement program. Gallatin County Water District purchases over 20 percent of the water produced.

Gallatin County Water District

Gallatin County Water District (GCWD) purchases all of its water from Warsaw Water Works. GCWD has 206,000 gallons of storage in locations noted previously. The system is metered.

Water losses are estimated at 14 percent and the primary leak detection method is visual inspection. GCWD has 7.5 miles of 3" lines, 38.4 miles of 4" lines, 30.7 miles of 6" lines, and 2.3 miles of 8" lines for a total of 79 miles in Gallatin and Grant Counties combined. GCWD plans to add a new pump station during the summer of 1999.

Currently, GCWD is using 250,000 gpd from Warsaw Water Works. Their maximum contractual allowance of water is 13 mg per month which averages out to 433,333 gpd. It seems likely that GCWD will be supplying water to the new racetrack and the surrounding area. Line size doesn't seem to be a limiting factor at this time. The possibility of supplying water to the Cities of Glencoe and Sparta, which are currently served by Tri-Village Water District, is being entertained as well as an emergency connection to Carroll County Water District. Due to the anticipated growth, GCWD is currently looking for a tract of land to purchase with the intent of drilling wells to supplement the water purchased from Warsaw Water Works. GCWD will likely become a supplier as well as a distributor during the planning period.

Bullock Pen Water District

The Bullock Pen Water District (BPWD) currently has a treatment capacity of 1 mgd and a permit withdrawal maximum of 850,000 gpd from Bullock Pen Lake. The treatment plant, constructed in 1962 and subsequently upgraded, is in good condition. BPWD also purchases treated water from Walton and Williamstown. The maximum amount of water available is 100,000 gpd from Walton and 500,000 gpd (limit for planning purposes because Williamstown only states a minimum purchase in its contract) from Williamstown. Therefore, total available capacity is 1.45 mgd (refer to Figure 5.29).

BPWD has a storage capacity of 925,000 gallons in locations noted previously. With an average demand of 865,000 gpd in 1998, storage capacity is adequate at this time. The storage system is

in generally good condition.

BPWD serves approximately 300 customers in Gallatin County with 3 miles of 6" line. BPWD has 1.4 miles of 2" lines, 0.5 miles of 3" lines, 18.1 miles of 4" lines, 146 miles of 6" lines, and 16.4 miles of 8" lines for a total of 182.4 miles of distribution lines in Boone, Grant, Kenton, Pendleton, and Gallatin Counties combined.

Water losses are estimated at 4.92 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.

BPWD is currently looking for another water source due to growth in the service area. Two alternatives being considered are the purchase of treated water from the Northern Kentucky Water Service District and the construction of a new lake.

Tri-Village Water District

Tri-Village purchases all of its water from Owenton Water Works. Tri-Village has 800,000 gallons of storage in locations noted previously. The storage system is in good condition. Recently water losses have been estimated at 20 percent. According to the Rural Water Association, as a rule-of-thumb, the cost of finding the leaks would be approximately $4,000 ($35 per mile) and fixing the leaks would be $15,430 ($125 per mile).

Tri-Village serves 90 customers in Gallatin County, mainly in the Cities of Glencoe and Sparta, through less than 5 miles of 6" lines. Tri-Village has .7 miles of 1.5" lines, 9 miles of 2" lines, 20 miles of 3" lines, 55 miles of 4" lines, 22.6 miles of 6" lines, and 7 miles of 8" lines for a total of 114.3 miles in Gallatin, Grant, and Owen Counties combined.

During the summer of 1997, during semi-drought conditions, Tri-Village experienced serious distribution problems in the northern portion of the county. Although Owenton Water Works was able to supply adequate water at good pressure to Tri-Village, residents of North Owen had little or no water pressure. County Judge/Executive Tom Olds declared a water emergency. A hydraulic study was recently completed by Gastineau & Associates to determine the cause of and solution to the problem. In the study, it was noted that the increase in customers in the Wheatley area had reduced the ability of the Water District to provide sufficient volume and pressure during periods of extremely high water demand. After studying water use records, it appeared that there was an unusually high demand for agricultural purposes, such as setting tobacco, and also for residential lawn watering. The high demand prevented the storage tanks from refilling during off-peak periods as they normally would.

In the hydraulic study, analyses identified several problems in the Wheatley area. First, the Wheatley storage tank has an overflow elevation that provides only a small margin of excess pressure beyond the required 30 PSI. Second, the tank has a small head range from full to empty

making it difficult to keep enough water in the tank to provide pressure under peak demand. Finally, the tank provides less than one day of storage under normal conditions. The study also noted that under present conditions, a maximum of 209 gpm can be delivered into the Tri-Village system (Gastineau & Associates, p. 7).

The hydraulic study recommended improvements and modifications to the storage and distribution system to help alleviate the problems outlined above. The Wheatley tank should be replaced with one at a higher overflow elevation and a booster pump should be installed near the US 127/227 intersection. Another recommendation of the study was to re-negotiate the contract with Owenton to provide a maximum delivery rate of 433 gpm. To increase the delivery rate, piping between Owenton and the Bromley storage tank would need to be enlarged. Finally, the flow tests indicated that there may be some major restriction in the City of Owenton's 12" line serving Tri-Village. Further tests were needed.

Growth is anticipated in this system. No single user purchasing 20 percent or more of the water was identified. Kentucky American is currently negotiating to purchase the Tri-Village Water District.

River's Edge Campground

Since, this supplier is a non-participant, no information is available regarding the infrastructure.

CHAPTER 6
WATER SUPPLIER SOURCE ASSESSMENT

I. INTRODUCTION

Both Carroll County Water District No. 1 and Warsaw Water Works use groundwater from the Ohio River alluvial aquifer as a water supply source. Bullock Pen Water District uses a combination of purchased water and water from Bullock Pen Lake. This chapter assesses the amount of water available to each supplier under normal and drought conditions.

II. GEOLOGIC AND SOIL CONDITIONS

Geology

Please refer to Chapter 1 for a brief description of the geology of the region.

Soils

There are five major soil associations in Gallatin County: Eden, Lowell-Nicholson, Otwell-Nolin-Markland, Wheeling-Huntington, and Fairmount-Rock Outcrop-Lowell. A generalized soils map can be found in Appendix E.

Eden Association soils comprise the largest portion of Gallatin County at 80 percent of the total land area. These soils are found on highly dissected uplands that have narrow ridgetops and narrow bottom lands. These soils are underlain by soft calcareous shale that has thin layers of limestone and beds of siltstone. The soils are fairly deep, contribute to rapid run-off, and have severe potential for erosion.

Lowell-Nicholson Association soils comprise 22 percent of the county's land. Limestone, calcareous shale, and beds of siltstone underlie the soils. Lowell soils are found on sloping to gently sloping hillsides and ridgetops. The soils are deep, well-drained, and have a clayey lower subsoil. Nicholson soils are gently sloping and are also found on fairly broad ridgetops. They are deep, well-drained to moderately well-drained, with a fragipan.

Wheeling-Huntington-Alluvial soils make up nine percent of the county's land area. Wheeling soils are nearly level to moderately steep, found on stream terraces. They are deep and well-drained. Huntington soils are nearly level, deep, well-drained, and found on flood plains. Alluvial land is mostly on steep breaks between the terraces and flood plains and is found along the banks of rivers.

Otwell-Nolin-Markland Association soils comprise seven percent of the county's land area.

These soils are generally found on stream terraces and floodplains. Otwell soils are nearly level to sloping and are deep, moderately well-drained soils that have a loamy subsoil and a fragipan.. Nolin soils are nearly level and can be found on floodplains. They are deep, well-drained soils that have a loamy subsoil. Markland soils are gently sloping to steep and are on stream terraces. They are deep, moderately well-drained to well-drained, with a clayey subsoil.

Fairmount-Rock Outcrop-Lowell Association land makes up less than one percent of the county's land. These soils are steep to gently sloping soils that have a clayey subsoil on hillsides and narrow ridges. Fairmount soils are somewhat droughty and shallow with a rapid run-off. Lowell soils are deep and well-drained.

Hydric Soils

Hydric soils are defined as those which are saturated, flooded, or ponded long enough during the growing season to develop anaerobic conditions in the upper layer. Hydric soils may be an indication of wetlands. A wetland, under current definition, will include hydric soils, hydrophytic vegetation, and wetland hydrology. In Gallatin County, four hydric soils are found: Huntington silt loam (630 acres/1% of total acreage), Ashton silt loam (140 acres/.2% of total acreage), Otwell silt loam (2,280 acres/3.5% of total acreage), and Robertsville silt loam (10 acres). Huntington silt loam and Ashton silt loam are found primarily along the Ohio River. The remaining hydric soils are found along Eagle Creek in southern Gallatin County or along smaller streams within the county.

III. SOURCE ASSESSMENT

A. Carroll County Water District No. 1

CCWD utilizes two wellfields, one in Ghent and one in western Gallatin County. The following calculations estimate the maximum "theoretical" daily yield of each well. Of course, the assumption is that well design is sufficient to obtain the maximum yield, which is unlikely. However, this provides a reasonable measure of water quantity for assessment purposes.

Well 1 (Ghent - used intermittently)

28 gpm/ft (specific capacity) X 35 ft (total available drawdown) = 980 gpm
980 gpm X 1,440 (minutes per day) = 1,411,200 gallons (maximum theoretical daily yield)

Well 2 (Ghent - used intermittently)

33 gpm/ft (specific capacity) X 38 ft (total available drawdown) = 1,254 gpm
1,254 gpm X 1,440 (minutes per day) = 1,805,760 gallons (maximum theoretical daily yield)

Well 3 (Ghent)

44 gpm/ft (specific capacity) X 55 ft (total available drawdown) = 2,420 gpm
2,420 gpm X 1,440 (minutes per day) = 3,484,800 gallons (maximum theoretical daily yield)

Well 4 (Ghent)

56 gpm/ft (specific capacity) X 38 ft (total available drawdown) = 2,128 gpm
2,128 gpm X 1,440 (minutes per day) = 3,064,320 gallons (maximum theoretical daily yield)

Well 7 (Gallatin County)

69 gpm/ft (specific capacity) X 51 ft (total available drawdown) = 3,519 gpm
3,519 gpm X 1,440 (minutes per day) = 5,067,360 gallons (maximum theoretical daily yield)

Well 8 (Gallatin County)

110 gpm/ft (specific capacity) X 51 ft (total available drawdown) = 5,610 gpm
5,610 gpm X 1,440 (minutes per day) = 8,078,400 gallons (maximum theoretical daily yield)

Comparing the maximum day projected demand of 2.1 mgd in 2020 to the total maximum theoretical daily yield of 22.9 mgd, it is evident that the supply is more than adequate. Again the limiting factors would be well design and construction and pump capacity.

According to a memorandum from the Groundwater Branch of the Division of Water regarding "safe yield" of the aquifer, the amount of water available to CCWD is "not so much limited by the hydrologic conditions of the well field but rather by the number, design, and operation of the wells in the well field (Tracy M. Burgess III, DOW, 6/18/99) . This is because the major contributor to aquifer recharge is induced infiltration from the Ohio River and its tributaries.

Wellhead Protection Plan

CCWD has made the completion of both Phase I and Phase II of the Wellhead Protection Plan a priority. CCWD intends to have the Phase I plan completed by the end of September 1999 and the Phase II plan completed by the end of December 1999.

The Wellhead Protection Plan will delineate the recommended protection areas for the wells, including required maps.

B. Warsaw Water Works

Warsaw Water Works utilizes two wells in the Ohio River aquifer for its water supply. The following calculations estimate the maximum "theoretical" daily yield of each well. Again, this assumes that well design and construction is sufficient to obtain the maximum yield.

Well 1

33.7 gpm/ft (specific capacity) X 18.4 ft (total available drawdown) = 620.08 gpm
620.08 gpm X 1,440 (minutes per day) = 892,915 gallons (maximum theoretical daily yield)

Well 2

16.7 gpm/ft (specific capacity) X 29.5 ft (total available drawdown) = 492.65 gpm
492.65 gpm X 1,440 (minutes per day) = 709,416 gallons (maximum theoretical daily yield)

Comparing the maximum day projected demand of 680,000 gpd in 2020 to the total theoretical daily yield of 1,602,331 gpd, it is apparent that the supply is adequate. In fact, the City recently completed a study to look at the need for drilling a new well, since the existing wells were constructed over 60 years ago. However, the study concluded the existing wells were adequate.

Wellhead Protection Plan

WWW will complete the Phase I Wellhead Protection Plan by December of 1999 and the Phase II by December of 2000. The Phase I plan will delineate the wellhead protection areas and will include required maps.

C. River's Edge Campground

No information is available because they have not been participating in the planning process. It is assumed that since they are withdrawing water from the Ohio River alluvial aquifer that the supply is adequate. A tentative wellhead protection schedule is for completion of Phase I by December of 1999 and Phase II by December 2000.

D. 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. BPWD has a variable permitted withdrawal limit ranging from 550,000 gpd to 850,000 gpd. Average withdrawals range from 550,000 gpd to 650,000 gpd. In the drought of the 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, BPWD is not considered one of Kentucky's drought vulnerable water systems, undoubtedly because it has utilizes other sources as

previously noted.

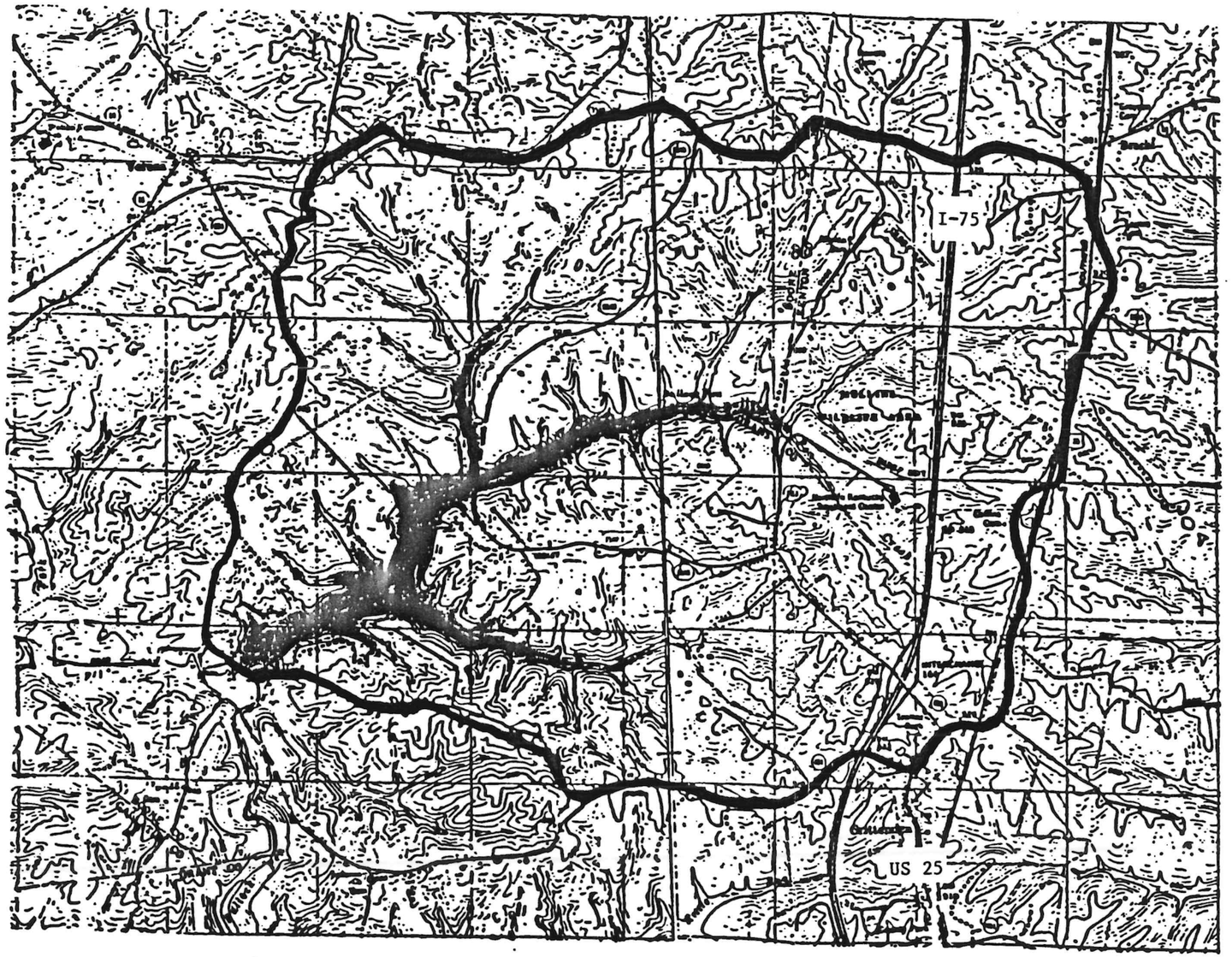
According to minimum standards for reservoirs with a small contributing watershed of less than 10 miles set forth in water supply planning regulations, a source is adequate if the available volume at normal pool provides at least 200 days of supply at the average rate of water use. The following calculations show the number of days of supply at the average withdrawal rate and at the maximum permitted withdrawal rate of 850,000 gallons.

Bullock Pen Lake Normal Pool Volume: 803,264,000 gallons
Bullock Pen Water District Average Daily Use from Lake: 650,000 gallons
Number of Days to Deplete Source: 1,236
Number of Days to Deplete Source Using Maximum Withdrawal Limit: 945

As mentioned previously, BPWD currently purchases water to meet demand and this is expected to continue. According to projections, demand will exceed 850,000 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 5 shows the recommended protection area for Bullock Pen Lake. Supply protection will be discussed in Chapter 8.

Table 6.1 shows source availability for each water supplier.



MAP 5
Revised 7/21/99

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BULLOCK PEN LAKE:
RECOMMENDED PROTECTION AREA

1 inch = 2600 feet

TABLE 6.1
SOURCE AVAILABILITY

PUBLIC WATER SUPPLIER	SOURCE	SOURCE TYPE	NORMAL/1	MINIMUM/2	DROUGHT/3
Carroll County Water District No. 1	Well 1 Well 2 Well 3 Well 4 Well 7 Well 8	Groundwater Groundwater Groundwater Groundwater Groundwater Groundwater	28 gpm/ft 33 gpm/ft 44 gpm/ft 56 gpm/ft 69 gpm/ft 110 gpm/ft	Not Available.	Refer to text discussion of safe yield issue.
Warsaw Water Works	Well 1 Well 2	Groundwater Groundwater	33.7 gpm/ft 16.7 gpm/ft	Not Available.	Refer to text discussion of safe yield issue.
River's Edge Campground	Well	Groundwater	Unknown.	Unknown.	Refer to text discussion of safe yield issue.
Bullock Pen Lake	Bullock Pen Lake	Reservoir	803,246,000 gallons	Not Available.	Not Available.
Footnotes	Wells	Reservoirs			
/1	Specific Capacity	Full Reservoir			
/2	Specific Capacity	7Q10 Inflow			
/3	Safe Yield	7Q20 Inflow			

CHAPTER 7
WATER SUPPLY ADEQUACY

I. ADEQUACY STANDARDS

The Gallatin County Water Supply Planning Council elected to plan for the provision of a continuous level of supply under all conditions, while strongly encouraging conservation during times of drought or emergency.

II. APPLICATION OF ADEQUACY STANDARDS

Carroll County Water District No. 1

The Ohio River alluvial aquifer is an adequate source throughout the planning period. As noted in Chapter 5, the need for additional treatment capacity is anticipated at the Ghent plant by 2010, if growth occurs as expected. There are a number of competing users of the aquifer, including industries and other water suppliers. The model developed by the USGS will be utilized to study the impact of increased withdrawals or new withdrawals on the aquifer. The water suppliers and industries will continue to cooperate and share information to maintain the aquifer as a viable resource for all users.

Warsaw Water Works

The Ohio River alluvial aquifer is an adequate source throughout the planning period. No infrastructure inadequacies were identified during the planning period.

River's Edge Campground

While no information is available about infrastructure, it is assumed that the aquifer is an adequate source. As water testing demands continue to increase, it is questionable if this supplier can continue to operate. It may be more feasible for the Gallatin County Water District to provide service.

Bullock Pen Water District

The Bullock Pen Water District (BPWD) 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 850,000 gpd) by 2000, the combination of treated and purchased water is adequate through the planning period. The availability of purchased water from the City of Williamstown is assured through a contract that is in effect until 2015. However, with the growth in this water service area, supply adequacy should be reviewed regularly. BPWD is negotiating the purchase of

treated water from the Northern Kentucky Water Service District also. The Grant County Water Supply Plan can be referenced for more details about water supply alternatives.

CHAPTER 8
SUPPLY PROTECTION

I. POTENTIAL CONTAMINANT SOURCES

A. Carroll County W.D. No. 1, Warsaw Water Works, and River's Edge

Each of these water suppliers rely on groundwater to meet demand. As a part of the required wellhead protection plan, a complete contaminant inventory will be conducted in the delineated wellhead protection areas (Please refer to Chapter 6 for the wellhead protection plan schedule). Maps showing the location of the potential contaminants will also be prepared. It should be noted that while these suppliers rely on groundwater, there is infiltration from the Ohio River (a surface water source) into the aquifer.

B. Bullock Pen Lake

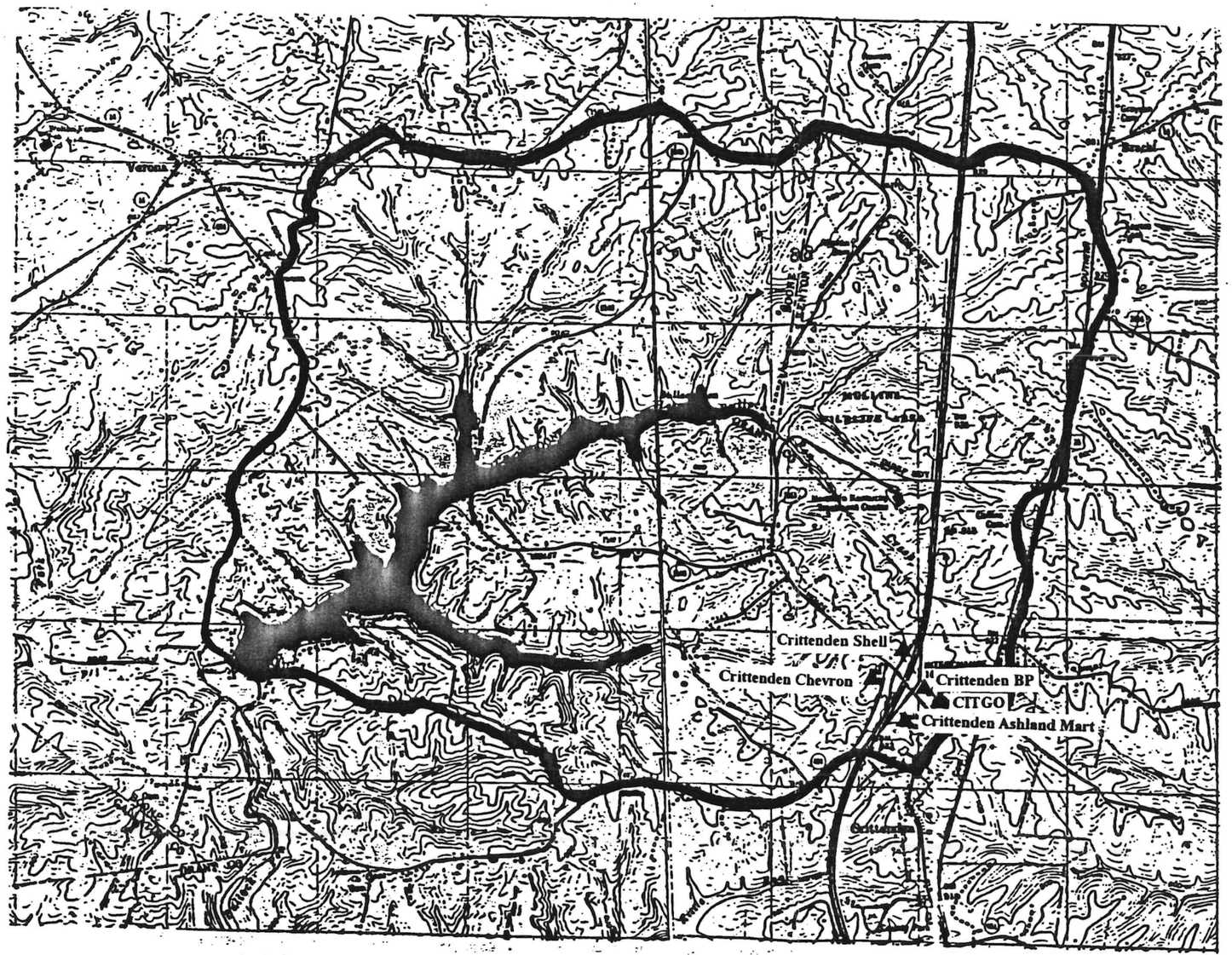
Bullock Pen Water District, as noted previously, relies on a combination of treated and purchased water to meet demand. The treated water source is Bullock Pen Lake. Bullock Pen Lake, located on the border of Grant and Boone Counties, is a 134 acre man-made reservoir, owned and operated by the Kentucky Department of Fish & Wildlife Resources. There are no public recreational facilities and the area is a nature preserve. The 1998 Kentucky Report to Congress on Water Quality found that the lake fully supported all its uses and was not impaired. Map 6 shows the location of potential contaminants in the recommended protection area.

Point Sources

There are 26 underground storage tanks (USTs) located at the I-75 interchange. The Chevron USA is also a RCRA notifier. There are no known point source discharges to the lake. A potential point source could be the railroad tracks that are 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.



MAP 6

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BULLOCK PEN LAKE: POTENTIAL POLLUTANTS

1 inch = 2600 feet

8/17/99

II. SUSCEPTIBILITY ANALYSIS

A. Carroll County W.D. No. 1, Warsaw Water Works, and River's Edge

After the contaminant inventory is completed in the wellhead protection areas, a susceptibility analysis will determine the term, chance of contaminant release, and degree of hazard for each potential pollutant identified.

B. Bullock Pen Lake

Table 8.1 shows potential point and non-point sources of 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.

Table 8.1
Bullock Pen Lake: Potential Pollutants & Degree of Hazard

SOURCES OF POLLUTION	SHORT-TERM VS. LONG-TERM HAZARD	CHANCE OF CONTAMINANT RELEASE	DEGREE OF HAZARD
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

III. SOILS AND GEOLOGY

A. Carroll County W.D. No. 1, Warsaw Water Works, and River's Edge

All of the water suppliers that rely on groundwater have wells located in the Ohio River alluvial aquifer. The Ohio River alluvial aquifer is characterized by large deposits of sand and gravel. Soils and near-surface deposits are typically a mixture of clays, silts, and fine-grained sands to a depth of 10 to 30 feet. In addition to water stored in alluvial deposits, the aquifer has induced infiltration from the Ohio River and lateral flow from the valley walls.

The wells for Carroll County W.D. No. 1 (both Ghent and Gallatin Co.) and Warsaw Water Works are located in Wheeling silt loam (WhA) soil. This soil typically has a surface layer of brown silt loam that is approximately 9 inches thick. The subsoil is mostly brown and extends to a depth of about 60 inches. The underlying material is stratified layers of sand, gravel, and silt. Permeability is moderate and run-off is slow to medium.

The River's Edge campground well is located in Markland silt loam (MaB) soil. The surface layer of the soil is brown silt loam about 6 inches thick. The subsoil extends to a depth of about 30 inches. The underlying material is brown clay that extends to a depth of 60 inches or more. Permeability is moderately slow in the upper part of the subsoil and slow in the lower part. Run-off is characterized as medium.

B. Bullock Pen Lake

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.

IV. EXISTING REGULATORY AND NON-REGULATORY PROTECTION MEASURES

The primary focus of this section is on local, rather than state or federal, regulatory and non-regulatory protection measures for Gallatin County's water supply. No regulatory or non-regulatory measures that specifically address protection of the water supply were identified. Gallatin County does not have county-wide planning and zoning. However, Gallatin County has initiated the comprehensive planning process and expects to begin compiling a plan in the fall of 1999.

The City of Warsaw does have a comprehensive plan and zoning ordinance. The zoning ordinance does mention protection of the existing, as well as potential, water supply sources. There is also a designated conservancy zone that is the floodplain area of the city. See Appendix H for excerpts.

The County does have an ordinance that regulates the storage, collection, transportation, processing, and disposal of solid waste. A copy is included in Appendix H.

V. PROTECTION RECOMMENDATIONS

Supply protection recommendations will be formulated and presented for public comment as a part of the wellhead protection plan process. The adopted recommendations will then be amended into this plan.

VI. SECURITY OF ACCESS

Bullock Pen Lake

The Kentucky Department of Fish & Wildlife, as mentioned previously, owns the lake and limits activity on the lake to fishing and the area is also 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.

Carroll County Water District No. 1

In Ghent, three out of four wells are fenced and locked. The fourth well is not. The Gallatin County wells are patrolled by Gallatin Steel security and there is no access from the road; however, if one were determined, it would be possible to reach the wells from the woods adjacent to the Ohio River.

Warsaw Waterworks

The wells are located in an enclosed portion of the City Building and security procedures are strictly enforced.

River's Edge Campground

Since this water supplier is not participating in the planning process, no information is available regarding security of access to its well.

CHAPTER 9
WATER RESOURCES INVENTORY

As detailed in Chapters 6 and 7, Gallatin County's water supply sources have been determined to be adequate. Therefore, an inventory of water resources was not conducted.

CHAPTER 10
WATER SUPPLY ALTERNATIVES

No water supply inadequacies were identified in Gallatin County. However, the Carroll County Water District No. 1 does anticipate the need for additional treatment capacity at its Ghent (Carroll Co.) treatment plant between 2005 and 2010. This need is based on projected growth associated with the Kentucky Speedway development, riverboat gambling in Florence, Indiana, and new development in Carroll County, including a Super Wal-Mart. However, the extent of this growth is still speculative at this time.

An estimated additional 350,000 gallons of treatment capacity will be needed in Ghent between 2005 and 2010. Needed improvements will include an additional well with associated piping and controls, an addition to the chlorination system, and a booster. The estimated cost is $400,000 (1999$).

If an additional 500,000 gallons of treatment capacity is needed between 2010 and 2020, it is estimated that the cost would be approximately $2,000,000 (1999$). Needed improvements include improvements to the electrical system, larger piping in the distribution system leading out of Ghent, a step-out plant, and real estate acquisition.

Since this is strictly an infrastructure issue, no other alternatives have been considered, especially as the growth is rather speculative. Obviously, if growth does not occur at the anticipated rate, these improvements will not be undertaken.

These infrastructure improvements are consistent with the objectives of the plan to provide a continuous level of supply under all conditions and to encourage expansion where feasible. Conservation is not a viable means to expand service to additional customers. No adverse environmental impacts are anticipated and the water supply has been determined to be adequate.

CHAPTER 11
PRIMARY WATER SUPPLY ALTERNATIVE

As stated previously, no water supply inadequacies were identified. However, if predicted growth occurs, the Carroll County Water District No. 1 will need additional treatment capacity at its Ghent plant. Additional treatment capacity will be added in two phases with components and costs as outlined below.

PHASE I (Time Frame-Between 2005 and 2010)

Additional well with associated piping and controls
Addition to chlorination system
Booster

Estimated Cost (1999$) = $400,000

Potential Funding Sources: Community Development Block Grant, Rural Development Grants and Loans, State Drinking Water Revolving Loan Fund, KIA, and local contributions.

PHASE II (Time Frame-Between 2010 and 2020)

Step-Out plant
Electrical system improvements
Larger piping in the distribution system leading out of Ghent
Real estate acquisition

Estimated Cost (1999$) = $2,000,000

Potential Funding Sources: Community Development Block Grant, Rural Development Grants and Loans, State Drinking Water Revolving Loan Fund, KIA and local contributions.

Because the proposed improvements are related to infrastructure only, a public hearing was not held. Obviously, if growth does not occur as projected, additional treatment capacity will not be added.

CHAPTER 12
EMERGENCY PLANS

I. WATER SHORTAGE RESPONSE PLAN

None of the County's water suppliers are drought-vulnerable. Therefore, no water shortage response plans were completed.

II. SUPPLY CONTAMINATION RESPONSE PLANS

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

A. Carroll County Water District No. 1

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

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

Distribution Problems
No problems were identified that would hinder CCWD's ability to cope with a contamination event.

Threat of Contamination
If there were a threat of contamination, pumping from potentially contaminated areas would stop until the threat could be evaluated.

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 Williamstown), 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. Warsaw Waterworks

Notification Procedures
The Waterworks Supervisor would be responsible for notifying the public and applicable state and federal agencies. The Supervisor would also contact the Gallatin County Water District. The public would be notified through local radio and television stations and the newspaper.

Emergency Water Sources
In a short-term emergency, Warsaw would rely on stored water. In a long-term emergency, an alternative water supply source, such as the Ohio River, would need to be considered. Also, if the Gallatin Water District does begin withdrawing and treating water, it could possibly supply water to the City if its wells were unaffected.

Distribution System Problems
No distribution problems were identified that would hinder the City's ability to cope with a contamination event.

Threat of Contamination
If a threat of contamination occurred, Warsaw would utilize stored water until the potential threat could be evaluated.

D. River's Edge Campground

This small water supplier has not participated in the planning process and therefore, little information about its emergency procedures is available. The population served is quite small and it would be possible to notify all customers by going door-to-door. Also, the Carroll County Water District No. 1 has a waterline running along US 42, going directly past this supplier, which could be a source in a long-term contamination event.

CHAPTER 13
IMPLEMENTATION PLAN

I. ANNUAL MEETING

The Gallatin County Water Supply Planning Council plans to meet annually and the next meeting is tentatively planned for September 15, 1999, at the County Extension Office Building.

II. PLAN UPDATES

Once the Gallatin County Water Supply Plan has been approved by the Division of Water, all participants will receive a hard copy of the plan. NKADD will be available on a contractual basis to provide assistance with future updates and amendments.

III. IMPLEMENTATION

The two primary implementation activities will be completion of the wellhead protection plans and improvements to the infrastructure including those necessary to serve the Kentucky Speedway.

Wellhead Protection Plans

The schedule for completion is contained in Chapter 6.

Ghent Treatment Plant Expansion

CCWD will monitor growth in demand at the Ghent plant over the next two years. If growth is progressing as anticipated, preliminary design work and the search for funding sources will begin.

Kentucky Speedway Infrastructure Improvements

The Gallatin County Water District will construct a 10" water line from Warsaw to the Kentucky Speedway site (see Map 4) where it will tie-in to a 500,000 gallon storage tank. The storage tank will be constructed, at its own expense, by the Kentucky Speedway and donated to the Gallatin County Water District. The water line will tentatively follow KY 35 and will serve 10 to 15 residential customers as well as the Speedway. It is possible that the location of the water line will change somewhat after all engineering design is completed.

The Gallatin County Water District is in the process of applying for loan funds, in the amount of $600,000, from KIA's Infrastructure Revolving Loan Fund to construct the project.

CHAPTER 14
PLAN APPROVALS

Council Members

Morris Courtney, Council Chair
Gallatin County Water District _____

Judge/Executive George W. Zubaty
Gallatin County Fiscal Court _____

Eric Moore
Warsaw Water Works _____

Mayor E. Richard Wood
City of Warsaw _____

Jim Smith
Carroll County Water District No. 1 _____

Carol Tudor
Tri-Village Water District _____

Brian Bell
Gallatin County Health Department _____

Representative
City of Glencoe _____

Representative
City of Sparta _____

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

Appendix A: Minutes

GALLATIN COUNTY WATER SUPPLY PLANNING COUNCIL

October 23, 1998 Meeting Summary

In attendance:

Morris Courtney, Gallatin County Water District
Eric Moore, Warsaw Water Works
Jim Smith, Carroll County Water District No. 1
Earl Richard Wood, City of Warsaw
Brian Bell, Gallatin County Health Department
Rick Cayton, City of Sparta
Ramona Reynolds, Northern Kentucky Area Development District

The meeting began at 10:10 a.m. with a review of the planning process. Phase I focuses on data collection and projecting the demand for water over the twenty-year planning period. Phase II, assuming the water supply is adequate concentrates on supply protection and emergency response plans. Ms. Reynolds distributed surveys to water suppliers and distributors with a three week deadline for completion. The rest of the surveys will be mailed to those who were unable to attend.

Mr. Courtney was elected Planning Council Chair. After some discussion, the quorum was set at three members. Those who are eligible to be a part of the planning council will we called to ascertain interest. If they do not wish to participate, their names will be removed from the planning council membership. Carol Tudor of Tri-Village Water District notified Ms. Reynolds earlier this week to say she wishes to participate in the planning council, but will not be able to attend the first meeting. She will be sent a copy of today's meeting summary.

Ms. Reynolds reviewed the notification process for the water supply plan. All the Judge/Executives, Mayors, and water suppliers from Boone, Owen, Grant, and Carroll Counties must be notified and asked to provide any relevant information or water-related plans. Ms. Reynolds will handle the notification process which must be completed within two weeks of the meeting. In addition, the public must be notified through the newspaper.

The planning objectives suggested by the water supply planning regulations were reviewed. A public hearing will be held on Friday, November 6, 1998 at 10:00a.m. at the Gallatin County Extension Office.

Under general discussion, Mr. Smith and Mr. Moore both said that at this point nobody knows who will be supplying the new racetrack being built in Gallatin County.

The meeting adjourned at 10:45a.m..

GALLATIN COUNTY WATER SUPPLY PLANNING COUNCIL

Meeting Summary

November 6, 1998

In Attendance:

Carol Tudor
Michael Murphy
Morris Courtney
Eric Moore
Ramona Reynolds

The public hearing to consider the planning objectives opened at 10:00 a.m. with no members of the public present. The hearing closed at 10:10 a.m.. The planning council meeting began at 10:15 a.m.. The planning council adopted the planning objectives unanimously after a motion by Mr. Moore and a second by Carol Tudor.

Mr. Moore said that he was having problems with the Wellhead Protection Plan and has requested assistance. Ms. Reynolds said she would get in touch with the Division of Water about this. Mr. Moore also requested information about source water protection. Mr. Moore and Mr. Courtney completed and returned the questionnaires and Mrs. Tudor has already faxed a copy of hers to the Northern Kentucky Area Development District. The remaining questionnaires are due next Friday November 13,1998. The date for the next meeting was not set. Ms. Reynolds will set up the next meeting as needed and notify the members of the time, date, and place.

The meeting adjourned at 10:45 a.m..

Appendix B: Notifications

APPENDIX B
NOTIFICATIONS

Notifications to Adjacent Counties

A notification letter was sent to mayors, county judges/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 Larry Burcham, Boone County
Judge Executive Tom Olds, Owen County
Judge Executive Shirley Howard, Grant County
Judge Executive Gene McMurry, Carroll County
Mayor Evelyn Kalb, City of Florence
Mayor Warren Moore, City of Union
Mayor Phillip Trzop, City of Walton
Mayor Martha Hicks, City of Crittenden
Mayor Kent Avender, City of Corinth
Mayor Norman Ferguson, City of Dry Ridge
Mayor Glenn Caldwell, City of Williamstown
Mayor Billy Stamper, City of Gratz
Mayor Rebecca Albaugh, City of Monterey
Mayor K.F. "Jr." Ballard, City of Owenton
Mayor Bill Welty, City of Carrollton
Mayor Rick Flynn, City of Ghent
Mayor Jack Ogden Jr., City of Sanders
Mayor David White, City of Worthville
Mayor Mervin Kindoll Sr., City of Prestonville
Carrollton Utilities
Carroll County Water District No. 1
Green Acres Mobile Homes Court
Dow Corning Corporation
Alumax AASP
Kentucky Utilities Ghent Operating Station
Owenton Water Works
Elk Lake Water Company
Bullock Pen Water District
Williamstown Municipal Water
I-75 Campers Village
Northern Kentucky Water Service District
Arlinghaus Property
Rauh Water Supply
Birkle Water Supply
Trapp Water Company
Hillside Trailer Park

Bullittsburg Baptist Camp
Camp and Boat Club
River Ridge Park
Kelly Elementary School
Big Bone Lick State Park

Notification to Local Governments and Water Suppliers in the Planning Unit
A letter was also sent to local units of government in Gallatin County, water suppliers that provide water for use in Gallatin County, and all local governments that share the same water sources. Please note that most governments having the same water sources received the letter above which had the same content. The letter notified recipients of Gallatin County water supply planning activities and requested pertinent information (see sample).

The following is a list of recipients:

Mayor Richard Wood, City of Warsaw
Mayor Michael Murphy, City of Glencoe
Mayor Brenda Henry, City of Sparta
Warsaw Water Works

Public Notifications
A Notice of Intent to Plan was placed in the legal section of the legal section of the October 29, 1998 Gallatin County News. The public hearing notice for the planning objectives was placed in the October 29,1998 Kentucky Post. Copies of the notices are included at the end of this appendix.

Notification to Water Quality Management Section, Division of Water
A letter of Intent to Plan was sent to Ed Neal at the Division of Water. A copy of this letter can be found at the end of the appendix.

Notification to the Kentucky River Authority
A letter of Intent to Plan was sent to the Kentucky River Authority. This letter had the same content as the one sent to the Division of Water.

Information Review
No information was received.

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

YEARS OF SERVICE

John Mays, Executive Director

DATE: October 27, 1998

TO: Boone/Carroll/Grant/Owen County Judges, Mayors and water suppliers

FROM: Ramona Reynolds, Planning Representative

RE: Water Supply Plan

Gallatin 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 supply protection recommendations for the county and its municipalities. 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 Gallatin Water Supply Planning Council currently consists of:

Clarence Davis-Gallatin County Fiscal Court
Morris Courtney-Gallatin County Water District
Eric Moore-Warsaw Water Works
Jim Smith-Carroll County Water District No. 1
Carol Tudor-Tri-Village Water District
Earl Richard Wood-City of Warsaw
Representative-City of Glencoe
Representative-City of Sparta

In compliance with the planning requirements and in the interests of cooperation, please submit any pertinent information, such as the following, to me by November 14, 1998:

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 government or water system want the planning process to examine or address, including water use rights, access and conservation; and
3) A description of any expected changes that may alter current growth trends, including existing ordinances and planning goals.

If you would like to attend planning council meetings, or submit written comments involving the plan or planning process, please contact me at (606) 283-1885, P O Box 668, Florence, KY 41022-0668.

NORTHERN KENTUCKY AREA DEVELOPMENT DISTRICT

MEMORANDUM

November 2, 1998

Ed Neal
Division of Water
Water Quality Management Section
Frankfort Office Park
14 Reilly Road .
Frankfort, KY 40601

Dear Ed:

Gallatin County has begun the process of preparing a water supply plan in accordance with state law, KRS 151.110 through 116. The planning unit is Gallatin County.

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

Clarence Davis-Gallatin County Fiscal Court
Morris Courtney-Gallatin County Water District
Eric Moore-Warsaw Water Works
Jim Smith-Carroll County Water District No. 1
Carol Tudor-Tri-Village Water District
Earl Richard Wood-City of Warsaw
Representative-City of Glencoe
Representative-City of Sparta
Brian Bell-Gallatin County Health Department

If you have any questions or need any additional assistance, please don't hesitate to contact me at (606)283-1885.

Sincerely,

Ramona L. Reynolds
Planning Representative

...stroem share the setting duties.

REGION 6

...enior outside hitter Candra ...dson was named most valuable ...n the regional tournament after ... Boone County to its ... championship. She en... ...e tournament with a team- ...37 kills, followed by Jenna Mar... ...no with 139. Lauren Maegly is ...e setter in coach Tracy Schae... ...neup.

Regional runner-up St. Henry re... ...o the state tournament with a ...team. Coach Maureen Kaiser's ...s include freshman hitters Cal... ...h and Rachel Kuebbing, sopho... setter Lisa Boh and junior hitter ...n Suedkamp. Ruh leads the Crusaders in kills with 115, fol... by Suedkamp with 108.

REGION 7

Notre Dame's seniors have one four teammates who have 100 kills or more. The leaders are Kendra Hornsby with 195 kills and Stephanie Darrell with 160. Hornsby also has a team-high 66 service aces.

REGION 8

■ Lexington Henry Clay won its first regional volleyball championship under new coach Dale Grupe, who guided Woodford County to the regional title the last four years. The Blue Devils' team leaders are senior setter Molly Bushong, junior outside hitter Laura Borg and 5-foot-11 middle blocker Lauren Crissey.

■ The tallest players in regional runner-up Lexington Dunbar's starting lineup are 5-foot-8 middle hitters Sarah Wilmoth and Lindsey Muessing. To offset their lack of height, the Bulldogs rely on the experienced leadership of senior setter Bridget Purdue and senior outside hitter Alaina Wallace.

...waste water (not storm water) from areas within the City to the treatment facility of the District; and WHEREAS, Senate Bill No. 255 was enacted by the 1994 Kentucky General Assembly; and is codified in K.R.S.220.135; and became effective on July 15, 1994; and ... provides for the operation... sewer and drainage system... each city located within a ... tation district organized and ... erated under K.R.S. Cha... 220 to become the propert... of the sanitation district on Ju... 1, 1995, unless the City enact... an ordinance before Septemb... 1, 1994, stating the inten... on thereof not to become a pa... of the District; and WHERE...S, the City enacted Independ...ce Ordinance No. 1994-0-20 be...re September 1, 1994, statin... the intention thereof not to be... a part of the District; ...nd WHEREAS, the City now ...e... sires for the operational s...er and drainage system there... to become the property o... the District, with the District ...v... ing all of the rights and re... sibilities for the operation, ...e, maintenance, repair and r... struction thereof, at the ... cost and expense of the ...s... trict; and the District is a... able thereto according t... the terms, conditions and ... sions of the Agreement ... tached hereto and incorp... ed herein by reference; N... THEREFORE, BE IT OR... DAINED BY THE CITY OF INDEPENDENCE, IN KENTON COUNTY, KENTUCKY AS FOLLOWS: SECTION I: In order to provide for the transfer of the operational sanitary sewer system of the City to Sanitation District No. 1, with the District having all of the rights and responsibilities for the operation, use, maintenance, repair and reconstruction thereof, as the sole cost and expense of the District, the Mayor of the City

...vide ... notify the commission's staff of your requirements at least sev... en (7) days prior ... sched... ... public hearing. This request does not have to be in writing. 14958/893265

PUBLIC HEARING NOTICE

To all interested citizens. The Gallatin County Water Supply Planning Council will hold a public hearing to solicit input concerning goals and objectives for the Gallatin County 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 alternative water source. NOTE: The Plan's scope is limited to water sources and does not address the construction or extension of any infrastructure. The hearing will be held Friday, November 6, 1998 at 10:00 AM at the Gallatin County Extension Office, Highway 42, Warsaw, KY. For more information or to submit written comments, contact: Ramona Reynolds, Northern Kentucky Area Development District, 16 Spiral Drive, PO Box 668, Florence, KY 41022-0668, (606) 283-1885. 41992/893106

COMMONWEALTH OF KENTUCKY TRANSPORTATION CABINET - DEPARTMENT OF HIGHWAYS ... CONTRACTORS

Sealed bids will be received by the Department of Highways in the Division of Contract Procurement and/or the Auditorium located on the 1st Floor of the State Office Building, Frankfort, Kentucky, until 10:00 AM, EASTERN STANDARD TIME on the 20th day of NOVEMBER, 1998 at which time bids will be publicly opened and read for the improvement of: KENTON COUNTY, CM 8120 (35), FD52 059 0025 008-009: Dixie Highway (US 25) Left turn lane at Turkeyfoot Road, a distance of 0.728 kilometer. Grade, Drain, and High Type Surface. Bid proposals for all projects will be available until 9:00 AM, EASTERN STANDARD TIME, FRIDAY, NOVEMBER 20, 1998, 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. 33553/892708

REQUEST FOR PORPOSALS

The Northern Kentucky Area Planning Commission is requesting submission of proposals (RFP), in behalf of PlaNet GIS Partnership, for providing services on, and assisting with, a program marketing the value and benefits of the PlaNet GIS (a Geographic Information System). This GIS is a computerized mapping and database system offering unlimited uses for public ad private sector purposes. Parties requesting a copy of the FRP should contact: Northern Kentucky Area Planning Commission, 2332 Royal Drive, Fort Mitchell, Kentucky 41017, Telephone: (606) 331-8980; Fax (606) 331-8987; E-Mail: postmaster@orion.nkapc.cog.ky.us. 27109/889514

SUMMONS
State of Wisconsin:
Circuit Court:
Milwaukee County
File No. 98-CV-006063
Auto Tort 30101

Name: Hector Longoria, Address: 924 Echo Drive, City, State, Zip: Burlington, WI 53105, Plaintiff, vs. Name: David W. McKinney, Address: 423 Lakeview Drive, City, State, Zip: Fort Mitchell, KY 41017, Defendant. THE STATE OF WISCONSIN - To each person named above as a defendant: You are hereby notified that the plaintiff named above has filed a lawsuit or other legal action against you. The complaint, which is also served on you, states the nature and basis of the legal action. Within 45 days after October 26, 1998, you must respond with a written answer, as that term is used in chapter 802 of the Wisconsin Statutes, to the complaint. The court may reject or disregard an answer that does not follow the requirements of ...

...of-the-century brick home, completely remodeled, like new. Enjoy quiet times on your large secluded new deck. 2nd floor laundry w/brand new w/d. 3/4 br, 2.5 tiled ba. Stunning new kit., new furnace/C/A, 10 min. to downtown. 936 N. Ft. Thomas Ave. $149,900. For more information 781-5847.

FT THOMAS—Open Sun 1-4. 2 BR, 1 BA, brick ranch. 38 Warren Ct. $112,500. 441-3325

Ft. Wright-7 rm Brick. Beechwood Schls, new furn, 2 blcks from trans & shopping, level lot, for appt. 606-331-06907

Independence—3 bdrm 2 story w/... porch, gas heat, on level ... $133,900 Possible 100% owner financing available. 35...190

INDEPENDENCE--Exceptional 2 yr old bi-level, 3 BR, 2½ BA, fin. LL, lg eat-in kit, lg back yard. $120,000. Call 525-...11 or 786-9246 lv mesg

INDEPENDENCE—Open Sun 2-4. ... Sty, 4 BR, on wooded lot, 2½ BA, wbfp, bay wind, mstr BR w/cath ceil. 647-9483

NEWPORT—Home + income, 2 family, 8 rms, vinyl siding, fenced, $59,900 441-4373

PARK HILLS OPEN SUN 12-2 Stately 2-stry brick in exceptional area 4BR, 2 FP's, gourmet kit. New winds. 2-car det. gar. Slate roof, new circular drive. Walk to 2 parks. $329,000. 491-4808

WALTON—Open Sat & Sun, 2-4. 142 Bedinger. $112,000. New 3 BR, 3 BA, 2 car gar. 485-4217

WILLIAMSTOWN

Ranch, fin bsmt, 3-4 BR, 2 BA, subd. .35 acres, all appls stay. Reduced. $75,000. Call for appt. 824-3282

117 Mobile Homes/Lots

Beechwood Schools, Ft. Mitchell. Immed. occ. 2 Bed. Incl. all major appl. Cent. Air, Covered porch. In Beechwood Comm. Finan. avail., no closing costs. 341-8254

Beautiful country setting. Both Single and Doublewide Homes available. Payments starting at $450/mo. Please call for appt. and loan qualifications. 283-2300.

EASTGATE AREA
A Must See! Greenbriar Estates. 2 BDRM, 2 Bath, deck, awning, skirting, and air. Low DP. Payments aprx. $235/mo Call 283-2300 for details.

ONE WEEK ONLY—12 mos free lot rent. 1995 Redman at Sherman Estates. 1995 Fleetwood at Mosby Point. Villa Homes, 371-0051

DELUXE FURNITURE PKG included with this gorgeou... pkg. D&W, upgrade appli... ances, only $2000 down. EZ Financing. Call 428-1864

STOP!
$0 Down $0 Monthly Pymt. On a 3-4 bedroom Home Thanks to L.I.L. & B.U.B.B.A. Call Luv Homes (606)824-70...

REPO DOUBLE - WIDES... All located in nice North K... Park. Fireplaces, and delux... kitchens. Only $1000 dow... EZ financing Call 428-1864

FLORENCE '91 Fleetwood, ... BR, 1 BA, vinyl siding, shing... roof, C/A, take over pa... ments. Call 525-8113

HELP! Must sell 16x80—skylights, 2x6 walls, ceramic ti... Sacrifice @ $24,500. Won't last! 606-525-8476

Immediate Delivery. New ... glewide's you may quali... for. Only $500 Dep. Call tod... and let's find out. 283-2300

BRAND NEW DOUBLEWI... already set up in Beaut... Park in Florence. Move ... today! $999 dwn.606-525-8...

ONLY $500 DOWN ! And ... can own your own 2 or 3 ... single set-up in nice park. ... financing. Call 428-1864

GORGEOUS SINGLEWI... set up in newest park. Pr... location, move in toni... $499 down. (606) 525-846...

'76. 12x65. 2 BR, very nic... appls stay, priced to ... $3500. Avail. 11/1. 727-46...

Spacious 2 BR, 1 BA m... home, in quiet, peaceful p... $2300. 441-6854

DOUBLEWIDE, MUST S... $17,400. Call for info: 606-525-8490

Mobile home in Green... Mobile Park 2BR, air 2 d... shed $11,000/obo. 341-7...

BRAND NEW 3 BR 2 ... appls with W/D, $217...

This Wildc[illegible] squad is among the m[illegible] thletic ever to play at UK with four players (Laura Meadows, Tanesha Sea[illegible]ton, Stephanie Christman and Shantia Owens) having the [illegible]

[illegible] aging 25 points, 15 rebounds and five blocks a game at August Martin High School in Queens, N.Y.

Two Kentucky natives also are expected to contribute.

They just [illegible] ngs, that you think, 'Th[illegible] has come on.' It's just experience and those players growing up. I think our system is a difficult one to learn but once you learn it, it's fun and exciting. And they like it."

State volleyball teams at a glance

last three in the row. Coach Ron Kordes has another strong team this year. The 33-2 Rockets are rated No. 1 in the state coaches poll and No. 9 in the nation by the "vball.com" web page. The lineup features 6-foot-2 juniors Jenni Benningfield and Shelly O'Bryan, senior outside hitters Tiffany Whitlock and Trish Ladusaw and junior setter Sara Taylor.

■ Louisville Seneca earned the regional runner-up berth with a young team that has only two seniors on the roster. Coach Dave Wirth said sophomore Kristy Coogle handles the setting duties and junior Leigh Ann Stutzenberger was the team's best hitter during the regional tournament.

REGION 4

■ Louisville Sacred Heart finished the regular season ranked No. 2 in the state coaches poll and won four straight matches in the regional tournament to push its record to 27-7. Coach Kelly Grimes' tall starting lineup includes 6-foot-5 senior Lisa Arpabright, 6-foot sophomore Katie Hall and 5-foot-11 senior Sara Schmitt. Senior setter Sara Noe is a second-year starter for the Valkyries.

■ The Ballard Bruins are making their state tournament debut with a young regional runner-up team. Outside hitter Anna Gerber is the only senior in coach Dee Singleton's starting lineup. The tallest players are 5-foot-10 juniors Eleonora Yelin and Johanna Anderson with freshman Rici Boone as the starting setter.

REGION 5

■ Campbell County used a balanced attack to win its second straight regional championship. Junior Dawn Sparks leads the 28-4 Camels in kills per game with a 3.5 average. Jennifer Kennedy and sisters Charmian and Lindsay Craig are all tied for second place with 2.1 averages. Coach Dena Ravenscraft's starting setter is junior Leah Ballinger.

■ Regional runner-up Newport Central Catholic is making its fifth straight state tournament appearance with a 30-7 record. Coach Jenny Mertle has five players with 100 kills or more. The leaders are 6-foot middle blocker Ginny Thomas (147) and outside hitter Maggie McCord (143). Junior Angie Tullis and senior Peggy Wetterstroem share the setting duties.

REGION 6

■ Senior outside hitter Candra Richardson was named most valuable player in the regional tournament after leading 24-11 Boone County to its third straight championship. She enters the state tournament with a team-high 187 kills, followed by Jenna Marckesano with 139. Lauren Maegly is the lone setter in coach Tracy Schaefer's lineup.

■ Regional runner-up St. Henry returns to the state tournament with a young team. Coach Maureen Kaiser's starters include freshman hitters Caitlin Ruh and Rachel Kuebbing, sophomore setter Lisa Boh and junior hitter Lauren Suedkamp. Ruh leads the 14-20 Crusaders in kills with 1.15, followed by Suedkamp with 108.

REGION 7

■ Notre Dame's seniors have one last chance to win a state championship before they graduate. The 30-5 Pandas won their 18th straight regional title behind the steady play of three seniors — setter Christie Davis, outside hitter Emily Kubala and middle hitter Julie Neiser — who were named to the all-tournament team by coach Kim Gunning. Neiser has more than 250 kills this season for the Pandas, who are ranked No. 3 in the state coaches poll and No. 12 in the nation by the "vball.com" web page.

■ Simon Kenton earned a regional runner-up berth in the state tournament for the fifth straight year under new head coach Julie Clair. Junior setter Katie Day distributes the ball to four teammates who have 100 kills or more. The leaders are Kendra Hornsby with 195 kills and Stephanie Darrell with 160. Hornsby also has a team-high 66 service aces.

REGION 8

■ Lexington Henry Clay won its first regional volleyball championship under new coach Dale Grupe, who guided Woodford County to the regional title the last four years. The Blue Devils' team leaders are senior setter Molly Bushong, junior outside hitter Laura Borg and 6-foot-11 middle blocker Lauren Crissey.

■ The tallest players in regional runner-up Lexington Dunbar's starting lineup are 5-foot-8 middle hitters Sarah Wilmoth and Lindsey Muessing. To offset their lack of height, the Bulldogs rely on the experienced leadership of senior setter Bridget Purdue and senior outside hitter Alaina Wallace.

[illegible] cord when Butler looked at them April 2, 1996. The documents also contend that Butler used the information in winning the county contract.

[illegible] ler has said he did nothing [illegible]

Announcing [illegible]

[illegible] limited to the cost of the first publication of the advertisement(s).

If you need any additional information, please call 768-8184, 8:00 a.m. to 5:00 p.m., Monday through Friday.

LEGAL NOTICE
ORDINANCE NO. 1998-0-19
AN ORDINANCE OF THE CITY OF INDEPENDENCE, IN KENTON COUNTY, KENTUCKY, IN REGARD TO THE TRANSFER OF THE OPERATIONAL SANITARY SEWER SYSTEM OF THE CITY TO THE SANITATION NO. 1. WHEREAS, the Sanitation District No. 1 is a body politic and corporate municipality organized pursuant to the provision of K.R.S. Chapter 220, which shall hereinafter be identified and referred to as the "District"; and WHEREAS, the district owns and operates a sewage treatment facility and various collector sewers extending therefrom; and WHEREAS, the City is located within the boundaries of the District; and the City owns an operational sanitary sewer system which includes, without limitation, sanitary sewers, sanitary sewer easements, sanitary sewer manholes, sanitary sewer pumping stations, sanitary sewer force mains and sanitary sewer real and tangible personal property; and WHEREAS, the operational sanitary sewer system of the City is connected to the various collector sewers of the District extending from the sewage treatment facility thereof, for the collection and drainage of waste water (not storm water) from areas within the City to the treatment facility of the District; and WHEREAS, Senate Bill No. 255 was enacted by the 1994 Kentucky General Assembly; and is codified in K.R.S. 220.135; and became effective on July 15, 1994; and it provides for the operational sewer and drainage system of each city located within a sanitation district organized and operated under K.R.S. Chapter 220 to become the property of the sanitation district on July 1, 1995, unless the City enacts an ordinance before September 1, 1994, stating the intention thereof not to become a part of the District; and WHEREAS, the City enacted Independence Ordinance No. 1994-0-[illegible] before September 1, 1994, stating the intention thereof not to become a part of the District; and WHEREAS, the City now desires for the operational sewer and drainage system thereof to become the property of the District, with the District having all of the rights and responsibilities for the operation, use, maintenance, repair and reconstruction thereof, at the sole cost and expense of the District; and the District is agreeable thereto according to the terms, conditions and provisions of the Agreement attached hereto and incorporated herein by reference; NOW, THEREFORE, BE IT ORDAINED BY THE CITY OF INDEPENDENCE, IN KENTON COUNTY, KENTUCKY AS FOLLOWS: SECTION I: In order to provide for the transfer of the operational sanitary sewer system of the City to Sanitation District No. 1, with the District having all of the rights and responsibilities for the operation, use, maintenance, repair and reconstruction [illegible]

[illegible] summary. The full text of Ordinance 1998-17 is available for examination in the office of the City Clerk of the City of Fort Mitchell, Kentucky in the Fort Mitchell Municipal Building, Dixie Highway and Highland Avenue, Fort Mitchell, Kentucky 41017. CERTIFICATION: I hereby certify that Ordinance 1998-17 was duly enacted by the City of Fort Mitchell, Kentucky at its regular meeting October 19, 1998 and that the foregoing summary of Ordinance was prepared by Robert C. Ziegler, Attorneys for the City of Fort Mitchell, Kentucky duly licensed to practice in the Commonwealth of Kentucky.
Lois J. Wessling, City Clerk
7966/893322

LEGAL NOTICE
The Kenton County Board of Adjustment will hold a public hearing at the Kenton County Court House, 303 Court Street, 2nd Floor, Covington, KY, MONDAY, NOVEMBER 16, 1998 AT 2:30 PM, to consider the following issue: AN APPLICATION TO THE BOARD OF ADJUSTMENT BY: WILLIAM H. FAEHR, ON BEHALF OF THE PINER FISKBURG FIRE DISTRICT, REQUESTING A CONDITIONAL USE PERMIT AND A SIDE YARD SETBACK VARIANCE TO BUILD A NEW FIREHOUSE AT 1851 BRACHT PINER ROAD. Information submitted to the Kenton County Board of Adjustment relative to the subject application is available for examination by interested parties at the offices of the Northern Kentucky Area Planning Commission, 2332 Royal Drive, Fort Mitchell, KY (Phone 331-8980). If anyone has a disability for which the planning commission needs to provide accommodations, please notify the commission's staff of your requirements at least seven (7) days prior to the scheduled public hearing. This request does not have to be in writing.
14958/893265

PUBLIC HEARING NOTICE
To all interested citizens: The Gallatin County Water Supply Planning Council will hold a public hearing to solicit input concerning goals and objectives for the Gallatin County 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 alternative water source. NOTE: The Plan's scope is limited to water sources and does not address the construction or extension of any infrastructure. The hearing will be held Friday, November 6, 1998 at 10:00 AM at the Gallatin County Extension Office, Highway 42, Warsaw, KY. For more information or to submit written comments, contact: Ramona Reynolds, Northern Kentucky Area Development District, 16 Spiral Drive, PO Box 668, Florence, KY 41022-0668, (606) 283-1885.
41592/893106

COMMONWEALTH OF KENTUCKY
TRANSPORTATION CABINET - DEPARTMENT OF HIGHWAYS
NOTICE TO CONTRACTORS
Sealed bids will be received by the Department of Highways in the Division of Contract Procurement and/or the Auditorium located on the 1st Floor of the State Office Building, Frankfort, Kentucky until 10:00 AM, EASTERN STANDARD TIME on the [illegible]

| person with refer-
591

: Country Living 6
bedroom 1 1/2
ly quipped kitchen,
er hookup and car-
yard. $450 plus de-
ferences. 643-4399

T: Cottage on Craigs
Carvers Trail. Partly
Deposit required. Ref-
7-6461.

OR RENT: Warsaw.
hs, living room, eat-in
A, city water. $725 +
o pets. Call 606-485-

KIDS NEED A COMPUTER: for school work today. If you don't have a couple thousand for a new system, I have good used systems starting at $300 w/ 30 day exchange warranty. Call 606-643-3660.
40-4p

FOR SALE: 20% off all Mary Kay in stock until November 15. Della's Haircare 567-2376
40-5p

FOR SALE: 3 box tobacco baler w/ cylinder. Good shape. 567-2286 or 567-2409.
42-2p

FOR SALE: hay and farm equipment. 567-4393.
42-3p

FOR SALE: Treadmill in very good condition. $100. 567-2570
42-2p

rate of one dollar and fifty cents ($1.50) per thousand gallons.

SECTION 2.

That all other Ordinance or parts thereof

Prepared by:
John G. Wright
43-1c

PUBLIC NOTICE: Miss Karen's Preschool and Child Care Center, Inc. announces participation in the USDA Child and Adult Care Food Program administered by the Kentucky Department of Education.

Meals will be served at no separate charge to enrolled participants at the center and are provided without regard to race, color, national origin, sex, religion, age or handicap. If you believe you or any individual has been discriminated agianst in the Child and Adult Care Food Program, write to the Secretary of AGriculture, Washington, D.C. 20250.

Participants eligible for free and/or reduced price meals must have a complete application with documentation of eligibility information which may include a Food Stamp or K-TAP case number, or names of household members and income information.

If you have questions regarding the program, please contact Karen Judy or Freda Siler at 606-567-2490.

Income guidelines for free/reduced price meals effective 7/1/98 thru 6/30/99.

FAMILY SIZE	FREE MEALS MONTHLY	FREE MEALS YEARLY	REDUCED PRICE MEALS MONTHLY	REDUCED PRICE MEALS YEARLY
1	$0-$873	$0-$10,465	$874-$1,242	$10,466-$14,893
2	$0-$1,176	$0-$14,105	$1,177-$1,673	$14,106-$20,073
3	$0-$1,479	$0-$17,745	$1,480-$2,105	$17,746-$25,253
4	$0-$1,783	$0-21,385	$1,784-$2,537	$21,386-$30,433
5	$0-$2,086	$0-$25,025	$2,087-$2,968	$25,026-$35,613
6	$0-$2,389	$0-$28,665	$2,390-$3,400	$28,666-$40,793
7	$0-$2,693	$0-$32,305	$2,694-$3,832	$33,306-$45,973
8	$0-$2,996	$0-$35,945	$2,997-$4,263	$35,946-$51,153
For each additional family member add	$304	$3,640	$432	$5,180

NOTICE OF INTENT TO CREATE A WATER SUPPLY PLAN

Gallatin County announces its intent to participate in teh water supply planning process as mandated by KRS Chapter 151. The purpose of the plan is to assess the water resources avialbable to to the county. The planning process consisits of two phases, the first of which will include planning initiaion and data collection. Phase two includes planning for embergines, supply protectionm, and, if necessary, selcting an alternative water source. The proposed planning unit is Gallatin County.

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

Morris Courtney - Gallatin County Water District
Eric Moore - Warsaw Water and Sewer Department
Jim Smith - Carroll County Water District No.1
Carol Tudor - Tri-Village Water District
Earl Richard Wood - City of Warsaw
Brian Bell - Gallatin County Health Department
Representative - City of Sparta

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 ocunil meeting will be Friday, November 6, 1998, at 10:00 a.m. at the Gallatin County Extension Office.

For more information, contact:
Ramona Reynolds
Northern Kentucky Area Development District
16 Spiral Drive, PO Box 668
Florence, KY 41022-0668
(606) 283-1885
43-1c

REQUEST FOR QUALIFICATIONS

To all interested engineering firms:

On behalf of the Carroll, Gallatin, Owen Infrastructure Planning Committee, the Northern Kentucky Area Development District (NKADD) is requesting qualifications from engineering firms to perform engineering services relative to a regional wastewater planning and feasibility study. Scope of services will include: a preliminary planning and feasibility study, 201 Facilities Plan preparation and may be expanded to include preliminary engineering work, design, contract bidding and inspection services. The proposed project may be funded in part with a U.S. Department of Housing and Urban Development Community Development Block Grant (CDBG); and an Economic Development Administrations SSED Disaster Assistance Grant. Attention of all respondents is called to the following regulations and requirements: Title VI of the 1964 Civil Rights Act; Section 3, Housing and Urban Development Act of 1968; Segregated Facilities; Section 109 of Housing and Community Development Act of 1974 and Executive Order 11246. Minority firms are encouraged to submit. Attention is also called to all applicable provisions and regulations of the Kentucky Division of Water, Natural Resources and Environmental Protection Cabinet, USDA Rural Development, USDA Utility Service funds and/or Kentucky Infrastructure (KIA) funds.

Factors used in the evaluation and selection of engineering firm will be: experience; performance record; personnel of firm to be employed; familiarity with local conditions and whether the firm is minority owned. Fees for service will not be considered as a criteria for initial selection. Final selection of engineer will be based on competitive negotiations.

A RFQ packet can be obtained form NKADD, PO Box 668, 16 Spiral Drive, Florence KY 41022-0668; between the hours of 9:00 a.m. and 4:00 p.m., Monday through Friday, (606) 283-1885. Deadline for submission is close of business, Friday, November 13, 1998. Proposals should be addressed "Regional Wastewater Study."

"Equal Employment Opportunity"

John Mays, Executive Director
Northern Kentucky Area Development District
16 Spiral Drive PO Box 668
Florence, KY 41022-0668
606-283-1885
43-1c

Appendix C: Workplan

GALLATIN COUNTY WATER SUPPLY PLANNING COUNCIL
WORK PLAN AND COST PROPOSAL

I. TASK TO BE PERFORMED

The Northern Kentucky Area Development District (NKADD) will 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 WORK PLAN 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 permitees 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 suppler well.

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

5. Determine if vertical elevation of an intake or capacity of 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 the 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 action 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 aquifer, including confining layers, flow characteristics and predicted maximum yield; and ownership of dams or water body 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.

II. TIMETABLE WITH QUARTERLY GOALS

It is estimated that completion of the plan will take 6 months. Phase I work would begin in October 1998 and would be completed in January of 1999. Phase II work would begin in February of 1999 and would be completed in April 1999.

Timetable

October 1998 - December1998

-Formulation of Goals and Objectives
-Public meetings
-Information review
-Begin mapping requirements (Phase I)
-Data Collection (Phase I)
-Data Analysis
-Computer forecasting using IWR-MAIN

January 1999 - March 1999

-Complete mapping requirements (Phase I)
-Prepare Plan Formulation Document (Phase I)
-Prepare Final Plan Document (Phase I)
-Data collection (Phase II)
-Mapping requirements (Phase II)
-Alternative sources (if determined necessary by Phase I)
-Prepare supply protection recommendations
-Prepare contamination response plans

April 1999

-Public meetings
-Prepare Final Plan Document (Phase II)

III. COST

The total project cost is $9,940.00. The following shows costs for each phase. It is assumed that the county will contribute its 20 hours of free time to the project. If grand funds should be secured through the Division of Water, the total cost to the county would be reduced. However, at this time, no funds are available.

Phase I	
Gallatin County 20 Free Hours	$ 0.00
Gallatin County 125 Hours X 36.00	$ 4,500.00
Total	**$ 4,500.00**
Phase II	
Gallatin County 90 Hours X 36.00	**$ 3,240.00**
Additional Costs	
Public Notice Newspaper Advertisements	$ 200.00
Mapping	$ 2,000.00
Total	**$ 2,200.00**
GRAND TOTAL	**$ 9,940.00**

Appendix D: Survey

NORTHERN KENTUCKY AREA DEVELOPMENT DISTRICT
GALLATIN COUNTY WATER SUPPLY PLAN
WATER SUPPLY QUESTIONNAIRE

GENERAL INFORMATION

UTILITY NAME_____
MAILING ADDRESS_____
_____
OPERATIONS MANAGER_____
BUSINESS PHONE_____
PERSON COMPLETING QUESTIONNAIRE_____

BEST ESTIMATE OF SYSTEM EFFICIENCY

	WATER LOSSES
1985	_____ %
1990	_____ %
1995	_____ %
1997	_____ %
1998	_____ %

LEAK DETECTION METHODS_____
_____

NON-REVENUE SYSTEM USAGE

	ANNUAL AVERAGE(gpd)	MAXIMUM(gpd)
FIRE PROTECTION	_____	_____
OTHER	_____	_____

MAJOR WATER USERS BY CATEGORY

	AVERAGE GPD	PEAK GPD
INDUSTRIAL		
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____
COMMERCIAL (RETAIL, WHOLESALE, CAR WASHES, ETC.)		
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____

INSTITUTIONAL (SCHOOLS, HOSPITALS, ETC.)

RESIDENTIAL (APARTMENTS, TRAILER PARKS, ETC.)

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

PLEASE DESCRIBE ANY WATER QUALITY PROBLEMS

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 5 YEARS? 10 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 RAMONA REYNOLDS AT (606)283-1885.

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

Fax #: (606)283-8178

NKADD
16 SPIRAL DRIVE
PO BOX 668
FLORENCE, KY 41022-0668
ATTN; RAMONA REYNOLDS

Appendix E: Soil Map

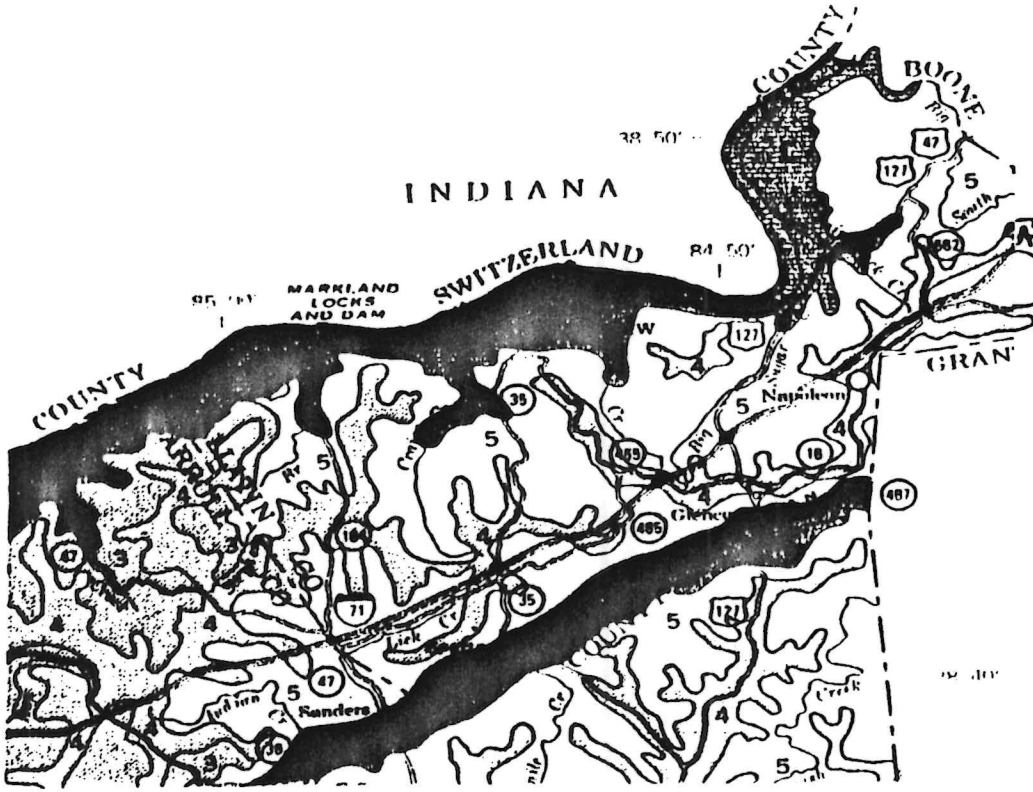
U. S. DEPARTMENT OF AGRICULTURE
SOIL CONSERVATION SERVICE
KENTUCKY AGRICULTURAL EXPERIMENT STATION

GENERAL SOIL MAP

CARROLL, GALLATIN, AND OWEN COUNTIES, KENTUCKY

Scale 1:253,440
1 0 1 2 3 4 Miles

N



SOIL ASSOCIATIONS

Wheeling-Huntington Alluvial land association: Nearly level to steep soils that have a loamy subsoil; on stream terraces and flood plains

Otwell-Nolin-Markland association: Nearly level to steep soils that have a loamy and clayey subsoil; on stream terraces and flood plains

3 Eramosa-Rock outcrop-Lowell association: Steep to gently sloping soils that have a clayey subsoil; on hillsides and narrow ridges

4 Lowell-Nicholson association: Strongly sloping to gently sloping soils that have a loamy and clayey subsoil; on upper hillsides and fairly broad ridges

5 Eden association: Moderately steep and strongly sloping soils that have a clayey subsoil; on hillsides and narrow ridges

Compiled 1974

Appendix F: Obstacles to the Planning Process

APPENDIX F
OBSTACLES TO THE PLANNING PROCESS

Gallatin County began the planning process in September of 1998 which allowed less than one year until the July 15, 1999 deadline for an approved plan. Other than a late start, no significant obstacles to the planning process were uncovered.

Appendix G: Paying for the Planning Process

APPENDIX G
PAYING FOR THE PLANNING PROCESS

The Gallatin County Fiscal Court and NKADD entered into a contract to pay for the planning process. The Phase I project cost is $6,700 with $4,500 for plan preparation, $2,000 for GIS mapping services, and $200.00 for public notice newspaper advertisements. It is anticipated that Phase II will be paid for through grant funds provided by the Kentucky Infrastructure Authority. Any additional costs, in excess of grant funds, will be paid by the County.

Appendix H: Regulatory Protection Measures

ARTICLE 13

CONSERVANCY DISTRICT

13.1 INTENT. This district is created to protect the public health and to reduce the financial burdens imposed on the community (governmental units and individuals) which may result from improper use of lands having an extremely high water table or which are subject to frequent and periodic floods and overflow. The boundaries of this zone have been determined from the published data and maps of the United States Geological Survey and of the United States Corps of Engineers, with reference to the 100 year flood level, elevation of 473.5 feet above sea level (see Development Plan, Warsaw, Kentucky, Physiography Section). In the event that it can be clearly demonstrated that any such lands are not subject to inundation by the high water level of 473.5 feet, or by a headwater from any creek or ditch, or if such lands are adequately drained or sufficiently protected from the risk of overflow, they may be reclassified into a different zone. Such determination and reclassification shall be made in the manner described in Article 7 of this Ordinance.

13.2 PERMITTED USES.

13.21 – Any use that does not require the erection of a structure or structures intended for year-round use or occupancy. This does not apply to structures that float in the river but are tethered, attached or connected to the riverbank within the city limits of Warsaw. Plans for such structure as may float on the river shall be reviewed and approved by the Planning Commission. Any business that operates on the waterfront as covered by this section must apply for a business license.

13.22 – General agricultural operations, including crop or tree farming and truck gardening, but this shall not include or permit a use or activity engaged in within three hundred (300) feet of any residential or business district boundary, if such use or activity results in unreasonable and continuous odor or dust. In the event that such use or activity is conducted within three hundred (300) feet of a residential or business structure adjacent to the district boundary line, no right shall be acquired to continue such use after the erection of a residential or business structure adjacent to the district boundary line.

13.23 – Public parks, playgrounds, recreational areas, provided no structure intended for regular occupancy is erected.

13.24 – The construction, installation, operation and maintenance of water and gas pipes, mains and conduits, electric transmission and distribution lines, telephone, television and telegraph lines, oil pipe lines, and sewer lines, provided such facilities are properly screened and protected.

ARTICLE 8

AGRICULTURAL ZONE (A)

8.1 INTENT. The intent of the Agricultural Zone (A) is to preserve, promote and protect the rural character of the land including agricultural uses, significant natural features, wooded areas, water courses, existing and potential lake sites, wild life habitat, present and future water supplies, other recreational and conservation resources, and to minimize erosion of soil, siltation and pollution of streams and lakes.

8.2 PERMITTED USES. Uses permitted in an (A) Zone are: agriculture including farming, dairying, stock raising, greenhouses and nurseries, and forestry; recreational uses and facilities including parks, playgrounds, golf courses, country clubs, sportsman farms, riding stables, fishing lakes, and campgrounds; and other uses substantially similar to those listed herein.

8.3 ACCESSORY USES. The following uses and structures which are customarily accessory, clearly incidental and subordinate to principal permitted uses shall be permitted as accessory uses; accessory uses and structures to principal permitted uses e.g. tenant homes, agricultural structures, stables, parking areas, and garages; home occupations; the sale on the premises of agricultural products produced on the premises (when sold from a roadside stand, the stand shall be a temporary structure, removed during the winter months, set back from any road at least 50 feet and constructed in such location as to not create a traffic hazard, and have adequate off-road parking); keeping of roomers or boarders by a resident family.

8.4 CONDITIONAL USES. The following conditional uses may be permitted only upon the approval of the Board of Adjustment: airports, landing strips, cemeteries, sewage treatment plants, landfills, disposal of garbage or refuse, hospitals, sanitariums, golf driving ranges, radio and T.V. transmitting or relay facilities; art or antique shops, private marina or commercial boat dock, public utility non-service facilities; commercial kennels; churches, sunday schools and parish houses; school and colleges for academic and vocational education.

AN ORDINANCE REGULATING SOLID WASTE MANAGEMENT
(Storage, Collection, Transportation, Processing and Disposal)

ORDINANCE NO. 5-10-90

AN ORDINANCE: PERTAINING TO PUBLIC HEALTH, SAFETY, AND WELFARE; REGULATING STORAGE, COLLECTION, TRANSPORTATION, PROCESSING AND DISPOSAL OF SOLID WASTE; PROVIDING A PENALTY FOR VIOLATION OF THE PROVISIONS OF THIS ORDINANCE; AND REPEALING ALL ORDINANCES IN CONFLICT HEREWITH.

BE IT ORDAINED by the Fiscal Court of the county of Gallatin, Kentucky, that this ordinance shall be known as the Solid Waste Management Ordinance.

SECTION 1. DEFINITIONS
For the purposes of this ordinance the following terms shall be deemed to have the meaning indicated below:

APPROVED INCINERATOR - an incinerator which complies with all current regulation of the responsible local, State, and Federal air pollution control agencies.

BULKY RUBBISH - non-putrescible solid wastes consisting of combustible and/or non-combustible waste materials from dwelling units, commercial, industrial, institutional, or agricultural establishments which are either too large or too heavy to be safely and conveniently loaded in solid waste transportation vehicles by solid waste collectors, with the equipment available therefor.

COUNTY - the unincorporated area of Gallatin County, Kentucky.

COLLECTION - removal of solid waste from the designated pickup location to the transportation vehicle.

DEMOLITION AND CONSTRUCTION WASTE - waste materials from the construction or destruction of residential, industrial or commercial structures.

DIRECTOR - the director of the Solid Waste Management Program of the County shall be the County Judge/Executive or his designate.

DISPOSABLE SOLID WASTE CONTAINER - disposable plastic or paper sacks with a capacity of 20 to 35 gallons specifically designed for storage of solid waste.

DWELLING UNIT - any room or group of rooms located within a structure, and forming a single habitable unit with facilities which are used, or are intended to be used, for living, sleeping, cooking and eating.

HAZARDOUS WASTE - any waste or combination of wastes which is determined by the Kentucky Department for Environmental Protection, because of its quantity, concentration, or physical, chemical or

infectious characteristics may cause or significantly contribute to an increase in mortality or an increase in serious irreversible, or incapacitating reversible, illness, or pose a substantial present or potential threat to human health or the environment when improperly treated, stored, transported or disposed of, or otherwise managed.

MULTIPLE HOUSING FACILITY - a housing facility containing more than ore dwelling unit under one roof.

OCCUPANT - any person who, alone or jointly or severally with others, shall be in actual possession of any dwelling unit or of any other improved real property, either as owner or as a tenant.

PERSON - any individual, partnership, corporation, association, joint stock company, trust, estate, political subdivision, or organization of any kind, or their legal representative, agent or assigns.

PROCESSING - incinerating, composting, baling, shredding, salvaging, compacting and other processes whereby solid waste characteristics are modified or solid waste quantity is reduced.

SOLID WASTE - any garbage, refuse, sludge and other discarded material, including solid, liquid, semisolid, or contained gaseous material resulting from industrial, commercial, mining (excluding coal mining waste, coal mining by-products, refuse and overburden), and agricultural operations, and from community activities, but does not include solid or dissolved material in domestic sewage, or solid or dissolved materials in irrigation return flows or industrial discharges.

(a) Commercial solid waste - solid waste resulting from the operation of any commercial, industrial, institutional or agricultural establishment.

(b) Residential solid waste - solid waste resulting from the maintenance and operation of dwelling units.

SOLID WASTE CONTAINER - receptacle used by any person to store solid waste during the interval between solid waste collections.

SOLID WASTE DISPOSAL - the process of discarding or getting rid of unwanted material. In particular the final deposition of solid waste by man.

SOLID WASTE MANAGEMENT - the administration of solid waste activities: storage, collection, source separation, transportation, processing, treatment and disposal.

STORAGE - keeping, maintaining or storing solid waste from the time of its production until the time of its collection.

TRANSPORTATION - the transporting of solid waste from the place of collection or processing to a solid waste processing facility or solid waste disposal area.

YARD WASTES - grass clippings, leaves, tree trimmings.

SECTION 2. SOLID WASTE STORAGE

SECTION 2.1: Storage Containers Required.

The occupant or owner of every dwelling unit and of every institutional, commercial or business, industrial or agricultural establishment producing solid waste within the corporate limits of the County, shall provide sufficient and adequate containers for the storage of all solid waste except bulky rubbish and demolition and construction waste to serve each such dwelling unit and/or establishment; and to maintain such solid waste containers at all times in good repair.

SECTION 2.2: Solid Waste to be Stored in a Manner Prescribed by Ordinance.

The occupant or owner of every dwelling unit and of every institutional, commercial, industrial, agricultural or business establishment shall place all solid waste to be collected in proper solid waste containers, except as otherwise provided herein, and shall maintain such solid waste containers and the area surrounding them in a clean, neat and sanitary condition at all times. Solid waste shall be stored in a manner that will not provide harborage to rodents and vermin and will not create a fire hazard.

SECTION 2.3: Standards for Residential Storage Containers.

Residential solid waste shall be stored in containers of not more than 35 gallons nor less than 10 gallons in nominal capacity. Containers shall be leakproof, waterproof, and fitted with a fly-tight lid and shall be properly covered at all times except when depositing waste therein or removing the contents thereof. The containers shall have handles, bails or other suitable lifting devices or features. Containers shall be of a type originally manufactured for residential solid waste, with tapered sides for easy emptying. They shall be of light weight and sturdy construction. The weight of any individual container and contents shall not exceed 75 pounds. Galvanized metal containers, or rubber, fiberglass, or plastic containers which do not become brittle in cold weather, may be used. Disposable solid waste containers with suitable frames or containers as approved by the (Director) may also be used for storage of residential solid waste.

SECTION 2.4: Standards for Commercial Storage Containers.

Commercial solid waste shall be stored in solid waste containers as approved by the (Director). The containers shall be waterproof, leakproof and shall be covered at all times except when depositing waste therein or removing the contents thereof; and shall meet all requirements as set forth by Section 6.

SECTION 2.5: Yard Wastes.

Tree limbs less than 4" in diameter, lumber and brush shall be securely tied in bundles not larger than 48" long and 18" in diameter when not placed in storage containers. The weight of any individual bundle shall not exceed 75 pounds. Yard wastes shall be stored in containers so constructed and maintained as to prevent the dispersal of wastes placed therein upon the premises served, upon adjacent premises, or upon adjacent public rights of way. The weight of any individual container and contents shall not exceed 75 pounds.

SECTION 2.6: Air Tight Containers.

No owner, occupant, tenant or lessee of any building or dwelling may leave outside the dwelling or building, in a place accessible to children, any abandoned or unattended icebox, refrigerator or other receptacle that has an airtight door without first removing the door.

SECTION 2.7: Storage Containers Not in Compliance.

Solid waste containers which do not meet the specifications as outlined in this Section shall be considered waste and may be collected together with their contents and disposed of.

SECTION 3. TRANSPORTATION OF SOLID WASTE

SECTION 3.1: collection Vehicle Standards.

All transportation vehicles shall be maintained in a safe, clean and sanitary condition, and shall be so constructed, maintained and operated as to prevent spillage of solid waste therefrom. All vehicles to be used for transportation of solid waste shall be constructed with watertight bodies and with covers which shall be an integral part of the vehicle or shall be a separate cover of suitable material with fasteners designed to secure all sides of the cover to the vehicle and shall be secured where ever the vehicle is transporting solid waste, or, as an alternate, the entire bodies thereof shall be enclosed, with only loading hoppers exposed. No solid waste shall be transported in the loading hoppers. They shall be cleaned as often as necessary to prevent a nuisance and insect breeding and shall be maintained in good repair.

SECTION 4. DISPOSAL OF SOLID WASTE

SECTION 4.1: Disposal in Approved Sites.

Solid wastes shall be deposited at a processing facility or disposal area approved by the County and complying with all requirements of Kentucky Revised Statutes 224.830, 224.835, 224.855 and the rules and regulations adopted thereunder. The County may designate the processing or disposal facility to be utilized by persons operating under Section 5 of this ordinance.

SECTION 4.2: Hazardous Waste Disposal.

Hazardous wastes under provisions will require special handling and shall be disposed of only in a manner authorized by State regulations.

SECTION 5. PERMITS

SECTION 5.1: Permit Requirements

No person shall engage in the business of collecting, transporting or processing of solid waste within the corporate limits of the County, without first obtaining an annual permit therefor from the County; provided, that this provision shall not be deemed to apply to employees of the holder of any such permit.

SECTION 5.1: Insurance Requirements

No such permit shall be issued until and unless the applicant therefor, in addition to all other requirements set forth, shall file and maintain with the Director evidence of a satisfactory public liability insurance policy, covering all operations of such applicant pertaining to such business and all vehicles to be operated in the conduct thereof, in the amount of not less that $200,000.00 for each person injured or killed, and in the amount of not less than $600,000.00 in the event of injury or death of two or more persons in any single accident, and in the amount of not less than $100,000.00 for damage to property. Such policy may be written to allow the first $5000.00 of liability for damage to property to be deductible. Should any policy be cancelled, the Director shall be notified of such cancellation by the insurance carrier in writing not less than 10 days prior to the effective date of such cancellation, and provisions to that effect shall be incorporated in such policy, which shall also place upon the company writing such policy the duty to give such notice,

SECTION 5.3: Permit Application.

Each applicant for any such permit shall state in his application therefor; (a) the nature of the permit desired, as to collect, transport, or process of solid waste or any combination thereof; (b) name and address of the applicant and whether a sole proprietorship, corporation, or partnership, with disclosure of the ownership interests; (c) the number of employees and solid waste collection vehicles to be operated thereunder; (d) schedule of fees the applicant plans to charge; (e) the precise location or locations of solid waste processing or disposal facilities to be used; (f) boundaries of the collection area; and (g) such other information as required by the Director.

SECTION 5.4: Permit Issuance.

If the application shows that the applicant will collect, transport and process of solid wastes without hazard to the public health or damage to the environment and in conformity with the laws of

the Commonwealth of Kentucky and this ordinance, the Director may issue the permit authorized by this ordinance. The Director shall have the authority to limit the number of annual permits issued under this section in order to preserve the health, comfort, safety and welfare of the residents, to promote energy conservation, and to provide for collection and disposal consistent with good solid waste management practices. The permit shall be issued for a period of one year, and each applicant shall pay therefor a fee of $ 100 per. If modifications can be made to the application regarding service, equipment, or mode of operation, so as to bring the application within the intent of this ordinance, the Director shall notify the applicant in writing setting forth the modification to be made and the time in which it shall be done.

SECTION 5.5: Application Denial.

If the applicant does not make the modifications pursuant to the notice in 5.4 within the time limit specified therein, or if the application does not clearly show that the collection, transportation, or processing of solid wastes will create no public health hazard or be without harmful effects on the environment, the application shall be denied and the applicant notified by the Director, in writing, stating the reason for such denial. Nothing in this section shall prejudice the right of the applicant to reapply - after the rejections of his application provided that all aspects of the reapplication comply with the provisions of this ordinance. Nothing in this section shall prevent the denial of a permit should the total number of annual permits have already been issued.

SECTION 5.6: Annual Fee.

The annual permit may be renewed upon payment of the fee or fees as designed herein if the business has not been modified, the collection vehicles meet the requirements of Section 4 of this ordinance, and the renewal is approved by the Director. If modifications have been made, the applicaht shall reapply for a permit as set forth in Sections 5.2 and 5.3. No permits authorized by this ordinance shall be transferrable from person to person.

SECTION 5.7: Inspections.

In order to insure compliance with the laws of the Commonwealth, this ordinance and the rules and regulations authorized herein, the Director is authorized to inspect all phases of solid waste management within the County of Gallatin. No inspection shall be made in any residential unit unless authorized by the occupant or by due process of law. In all instances where such inspections reveal violation of this ordinance, the Director shall issue notice for each such violation stating therein the violation or violations found, the time and date and the corrective measure to be taken, together with the time in which such corrections shall be made.

SECTION 5.8: Permit Suspension.

In all cases, when the corrective measures have not been taken within the time specified, the Director shall suspend or revoke the permit or permits involved in the violations, however, in those cases where an extension of time will permit correction and there is no public health hazard created by the delay, one extension of time not to exceed the original time period may be given.

SECTION 5.9: Injunctive Relief.

In the event a permit is revoked and the person continues to operate, the Director may request the action of a court of law to enjoin the acts and to enforce compliance with this ordinance or any rule or regulation promulgated thereunder. In any such action, the court may grant to the County such prohibitory or mandatory injunctive relief as the facts may warrant.

SECTION 6. RULES AND REGULATIONS

The Director may make, amend, revoke, and enforce reasonable rules and regulations, governing, but not limited to:

(a) Preparation, drainage and wrapping of garbage deposited in solid waste containers.

(b) Specifications for solid waste containers, including the type, composition, equipment, size and shape thereof.

(c) Identification of solid waste containers and of the covers thereof, and of equipment thereto appertaining, if any.

(d) Weight limitations on the combined weight of solid waste containers and the contents thereof, and weight and size limitations on bundles of solid waste too large for solid waste containers.

(e) Storage of solid waste in solid waste containers.

(f) Sanitation, maintenance and replacement of solid waste containers.

(g) Schedules of and routes for collection and transportation of solid waste.

(h) Collection points of solid waste containers.

(i) Collection, transportation, processing and disposal of solid waste.

(j) Processing facilities and fees for the use thereof.

(k) Disposal facilities and fees for the use thereof.