

Prepared in cooperation with the TENNESSEE DEPARTMENT OF ENVIRONMENT AND CONSERVATION, DIVISION OF WATER SUPPLY

Public Water-Supply Systems and Associated Water Use in Tennessee, 2000

Water-Resources Investigations Report 03-4264





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By Ank Webbers

U.S. GEOLOGICAL SURVEY

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Conversion Factors, Datum, and Acronyms

Multiply	Ву	To obtain
inch (in.)	2.54	centimeter (cm)
square mile (mi ²)	2.590	square kilometer (km ²)
gallon (gal)	3.785	liter (L)
gallon (gal)	0.003785	cubic meter (m ³)
million gallons (Mgal)	3,785	cubic meters (m ³)
acre-foot (acre-ft)	1,233	cubic meter (m ³)
gallon per minute (gal/min)	0.06309	liter per second (L/s)
gallon per day (gal/d)	0.003785	cubic meter per day (m ³ /d)
million gallons per day (Mgal/d)	0.04381	cubic meter per second (m ³ /s)

Temperature in degrees Fahrenheit (°F) may be converted to degrees Celsuis (°C) as follows: $^{\circ}$ C = (°F-32)/1.8

Vertical coordinate information is referenced to the National Geodetic Vertical Datum of 1929 (NGVD 29).

Acronyms

PWSID Public Water System Identification Number

TDEC Tennessee Department of Environment and Conservation

USGS U.S. Geological Survey

GLOSSARY

Hydrologic region: Hydrologic regions are used in the United States to divide and subdivide areas of drainage, based on the direction of water flow. Each division is identified by a unique hydrologic unit code (HUC) consisting of two to eight digits. A region (major geographic area) contains either the drainage area of a major river or the combined drainage areas of a series of rivers. A subregion includes the area drained by a river system, a reach of a river, and its tributaries in that reach, a closed basin(s) or a group of streams forming a coastal drainage area.

Public water supply: Public water supply refers to water withdrawn by public and private utilities for delivery to domestic, commercial, and industrial users and for municipal services such as firefighting. Water lost by leaky pipes in the distribution system (conveyance losses) and system maintenance is included in this category.

Water use: In this report, the quantity of water use for a specific category is the combination of water-supply withdrawals and public-supply deliveries. In a restrictive sense, the term refers to water that is actually used for a specific purpose such as for domestic use, irrigation, or industrial processing. More broadly, water use pertains to human interaction with the hydrologic cycle, and includes dimensions such as water withdrawal, delivery, consumptive use, wastewater release, reclaimed wastewater, return flow, and instream use.

Public Water-Supply Systems and Associated Water Use in Tennessee, 2000

By Ank Webbers

ABSTRACT

Public water-supply systems in Tennessee provide water to meet customer needs for domestic, industrial, and commercial users and municipal services. In 2000, more than 500 public watersupply systems distributed about 890 million gallons per day (Mgal/d) of surface water and ground water to a population of about 5 million in Tennessee. Surface-water sources provided 64 percent (about 569 Mgal/d) of the State's water supplies, primarily in Middle and East Tennessee. Ground water produced from wells and springs in Middle and East Tennessee and from wells in West Tennessee provided 36 percent (about 321 Mgal/d) of the public water supplies. Springs in Middle and East Tennessee provided about 14 percent (about 42 Mgal/d) of ground-water supplies used in the State. Per capita water use for Tennessee in 2000 was about 136 gallons per day. An additional 146 public water-supply systems provided approximately 84 Mgal/d of water supplies that were purchased from other water systems.

Water withdrawals by public water-supply systems in Tennessee have increased by over 250 percent; from 250 Mgal/d in 1955 to 890 Mgal/d in 2000. Although Tennessee public water-supply systems withdraw less ground water than surface water, ground-water withdrawal rates reported by these systems continue to increase. In addition, the number of public water-supply systems reporting ground-water withdrawals of 1 Mgal/d or more in West Tennessee is increasing.

INTRODUCTION

Tennessee has an abundant supply of water that is readily available within the State. Man-made lakes along major rivers such as the Tennessee River and the Cumberland River in West and Middle Tennessee, respectively, can store more than 2 trillion gallons of water. Ground water in the aquifers in Tennessee is estimated in excess of 200 trillion gallons. Approximately 1 percent of these water supplies are used by public water-supply systems, which withdraw, treat, and distribute the water to commercial, industrial, and municipal services.

The population of Tennessee in 2000 was reported as 5,689,283 by the U.S. Census Bureau (2003). As Tennessee's population has increased with time, so too has the number of people relying on public water-supply systems for their water. In 2000, a total population served of 5,019,687 was reported by the public water-supply systems in Tennessee, which is about 88 percent of the population of the State. The withdrawal rates reported by the public water-supply systems are directly influenced by the demand for water supplies across the State. Studies documenting the number of public water-supply systems and their withdrawal rates can provide local and regional government agencies with a better understanding of past, current, and future water use.

Purpose and Scope

The U.S. Geological Survey (USGS), in cooperation with the Tennessee Department of Environment and Conservation (TDEC), Division of Water Supply (DWS), prepared this report to provide information on water use by public water-supply systems in Tennessee. The report describes and quantifies the source and amount of water withdrawn and delivered by public

water-supply systems in Tennessee for 2000, and describes the sources of water used by the public water-supply systems.

Water-use data for the calendar year 2000 were obtained from TDEC, DWS, which regulates public water-supply system withdrawals and usage within Tennessee. Water-use data prior to 2000 were obtained from historical reports. The data analyses for this report include graphic summaries, descriptions of water use, and changes in water use in Tennessee from 1950 to 2000.

Description of the Study Area

Tennessee is located in the central southeastern region of the United States, bounded by the Mississippi River on the west and extending to the Blue Ridge Physiographic Province and Appalachian Mountains on the east. Tennessee encompasses an area of 42,126 square miles (mi²), which includes 926 mi² of inland water. Land-surface elevations range from about 180 feet above NGVD 29 along the Mississippi River to over 6,600 feet above NGVD 29 in the mountains of East Tennessee. Rainfall in Tennessee is approximately 50 to 54 inches per year. The three divisions of Tennessee-West, Middle, and East-are characterized by distinct differences in geology, physiography, and hydrography. In West Tennessee, thick unconsolidated sedimentary aquifers provide millions of gallons of ground water for public water supplies. In Middle and East Tennessee, public water supplies primarily come from surface water with additional supplies produced from ground water, some of which comes from springs flowing from fractured rock.

Hydrography

Tennessee's hydrography consists of surfaceand ground-water resources that exhibit unique patterns of surface drainage and underground flow, respectively (table 1). Three major hydrologic regions divide the State's surface-water hydrography from West Tennessee to East Tennessee—the Lower Mississippi, the Ohio, and the Tennessee hydrologic regions (fig. 1). A small part of southeastern Tennessee is in the South Atlantic-Gulf region. Within the major hydrologic regions are smaller hydrologic subregions, containing river basins and tributaries that determine water drainage within the State.

In Middle and East Tennessee, the Ohio hydrologic region includes the Cumberland River and its tributaries, and the Tennessee hydrologic region

includes the Tennessee River and its tributaries. The Cumberland and Tennessee River Basins sustain an extensive network of reservoirs that store about 8.12 million acre-feet (2,647 billion gallons) of water (Hutson, 1990). In West Tennessee, the Lower Mississippi hydrologic region drains about 8,907 mi² of water. Surface-water characteristics of the hydrologic subregions and major river basins in Tennessee are described in table 1.

Ground water for public supply in Tennessee is supplied by eight of the nine principal aquifers (fig. 2, table 2), which, depending on structure and material content, can store and transport water within intergranular openings, fractures, or solution-enlarged openings. The principal aquifers in Tennessee that are used for public water supply are the Alluvial, Tertiary sand, Cretaceous sand, Mississippian carbonate, Ordovician carbonate rock, Pennsylvanian sandstone, Cambrian-Ordovician carbonate, and the crystalline rock aquifers (Bradley and Hollyday, 1985). About 75 percent of the ground water used for public supplies in Tennessee is produced from the Tertiary sand aquifers, primarily the Memphis aguifer, in West Tennessee. In Middle and East Tennessee, ground water may discharge at large springs, which also are used for water supplies. Information about the aquifers and production well characteristics in Tennessee is given in table 2. Detailed descriptions and water-quality information for the aquifers in Tennessee can be found in the following reports: Brahana and Bradley (1985); Brahana, Bradley, and Mulderink (1986); Brahana, Macy, and others (1986); Brahana, Mulderink, and others (1986); Brahana, Mulderink, Macy, and Bradley (1986); Parks and Carmichael (1989); and Kingsbury and Parks (1993).

Physiography

The diverse topography of Tennessee includes eight physiographic divisions (fig. 2, table 1) that range from broad flood plains in the Coastal Plain Physiographic Province of West Tennessee, to rolling hills and karst plains in the Highland Rim and Central Basin of Middle Tennessee, to steep mountains and deep narrow valleys in the Valley and Ridge Physiographic Province of East Tennessee. The geology of Tennessee includes unconsolidated sediments of the Coastal Plain in West Tennessee; limestone and dolomite of the Highland Rim and Central Basin in Middle Tennessee; and limestone, sandstone, and shale of the Cumberland Plateau, limestone, dolomite and shale in the Valley and Ridge Province, and metamorphic and

Table 1. Surface-water characteristics of hydrologic subregions and major river basins in Tennessee

Hydrologic subregion ¹	Subregion Major river basin and division associated river (Miller, 19)		Response to drought	Remarks
Lower Mississippi-Hatchie	Hatchie-Obion Obion Hatchie Loosahatchie Wolf Nonconnah Forked Deer	Coastal Plain	Sustained flow from ground water in main stem during dry months. Small streams will be dry.	Few available storage sites. High sediment load and poor water quality limits use; pumps must use filters.
Cumberland (including the Green River basin in Tennessee)	Upper Cumberland Obey Caney Lower Cumberland Harpeth Stones Red	Central Basin Highland Rim Cumberland Plateau	Many small unregulated streams are characterized by no flow or low flow during dry periods. The Cumberland River is regulated.	In the Central Basin, streamflow is highly responsive to rainfall and flows are poorly sustained. Streamflows are fairly well sustained in the Highland Rim. The Sequatchie River streamflows in the Cumberland Plateau are poorly sustained.
Lower Tennessee	Lower Tennessee Duck Buffalo Beech Big Sandy	Highland Rim Central Basin Western Valley	In late summer and early fall, unregulated streams go dry or sustain low flows.	In the Central Basin, streamflow is highly responsive to rainfall and flows are poorly sustained. Streamflows are fairly well sustained in the Highland Rim. Streamflow is adequately sustained for supply in the Western Valley.
Middle Tennessee-Elk	Middle Tennessee-Elk Elk Shoal Flint	Highland Rim Cumberland Plateau Central Basin	Commonly in late summer, unregulated streams go dry, particularly along the basin rim.	In the Central Basin, streamflow is highly responsive to rainfall and flows are poorly sustained. Streamflows are fairly well sustained in the Highland Rim. In the Cumberland Plateau, streamflows are poorly sustained.
Upper Tennessee	French Broad-Holston French Broad Holston Nolichucky Upper Tennessee Clinch Powell Little Tennessee Little Tellico	Blue Ridge Valley and Ridge Cumberland Plateau	Commonly in late summer, unregulated streams go dry. Many small unregulated streams may sustain low flow with ground-water inflow.	In the Blue Ridge, steep terrain and low permeability result in high runoff rates. Many springs are in the area. Surface-water impoundments enhance water supplies in the Valley and Ridge. In the Cumberland Plateau, streamflows are poorly sustained.
Middle Tennessee-Hiwassee (including the Alabama region)	Middle Tennessee- Hiwassee Hiwassee Sequatchie	Blue Ridge Valley and Ridge Cumberland Plateau Sequatchie Valley	Commonly in late summer, unregulated streams go dry, particularly along the basin rim. Even streams having watersheds exceeding 100 square miles may cease to flow.	In the Blue Ridge, steep terrain and low permeability result in high runoff rates. Many springs are in the area. Surface-water impoundments enhance water supplies in the Valley and Ridge. In the Cumberland Plateau, streamflows are poorly sustained.
South Atlantic-Gulf ²	Conasauga	Blue Ridge Valley and Ridge	Commonly in late summer, unregulated streams go dry, particularly along the basin rim.	In the Blue Ridge, steep terrain and low permeability result in high runoff rates. Many springs are in the area. Surface-water impoundments can enhance water supplies.

 $^{^{1}}$ Refer to figure 1 for location on map. 2 South Atlantic-Gulf Region extending from Alabama.

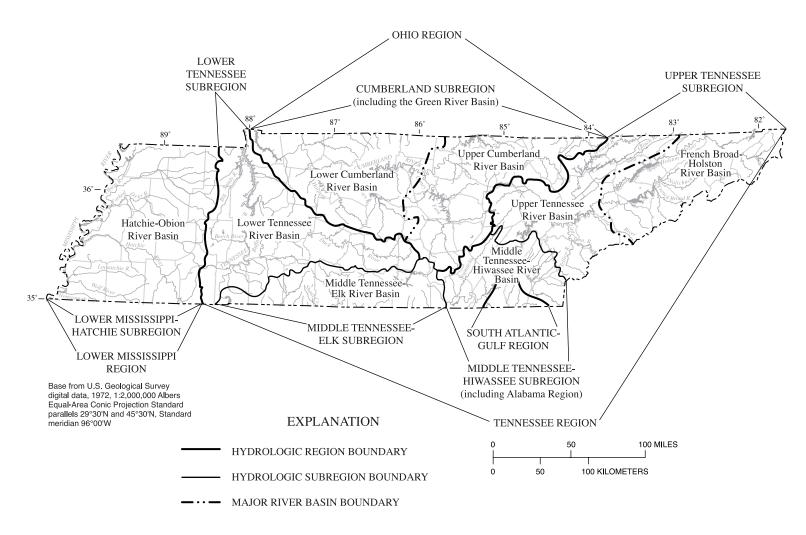
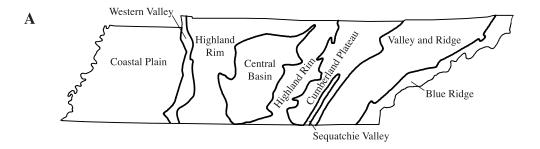
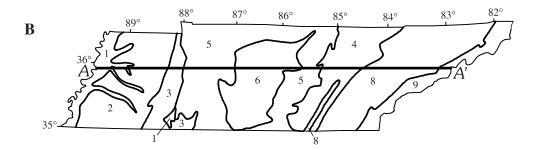
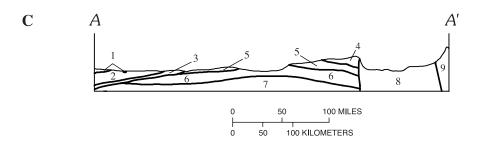


Figure 1. Major hydrologic regions and subregions and major river basins in Tennessee.







EXPLANATION

PRINCIPAL AQUIFERS

- 1 Alluvial (Quaternary)
- Tertiary sand
- Cretaceous sand
- Pennsylvanian sandstone
- Mississippian carbonate
- 6 Ordovician carbonate rock
- Knox (Cambrian-Ordovician)
- Cambrian-Ordovician carbonate
- Crystalline rock (Precambrian and Cambrian)
- A A' Trace of Geologic Section

Figure 2. (A) Major physiographic divisions (modified from Fenneman, 1946, and Miller, 1974), (B) principal aquifers (modified from Hollyday and Bradley, 1985), and (C) generalized geologic section in Tennessee (Hollyday and Bradley, 1985).

Table 2. Aquifer and well characteristics in Tennessee (modified from Hollyday and Bradley, 1985)

		Well chara	cteristics		
Aquifer name and description	Depth	(feet)	Yield (gallo	ons/minute)	- Remarks
Aquiler name and description	Common range	May exceed	Common range	May exceed	
Alluvial: Sand, gravel, and clay. Unconfined.	10 - 75	100	20 - 50	1,500	High iron concentrations in some areas.
Tertiary sand: Multi-aquifer unit of sand, clay, silt, and some gravel and lignite. Confined; unconfined in the outcrop area.	100 - 1,300	1,500	200 - 1,000	2,000	Includes Memphis Sand of Claiborne Group and Fort Pillow Sand of Wilcox Group. Problems with high iron concentrations in some places.
Cretaceous sand: Multi-aquifer unit of interbedded sand, clay, marl, and gravel. Confined; unconfined in the outcrop area.	100 - 1,500	2,500	50 - 500	1,000	Includes McNairy and Coffee Sands, and Tuscaloosa Formation. Water withdrawn primarily in the outcrop area.
Pennsylvanian sandstone: Multi-aquifer unit, primarily sandstone and conglomerate, interbedded shale and some coal. Unconfined near land surface; confined at depth.	100 - 200	250	5 - 50	200	Permeability is from fractures, faults, and bedding-plane openings. Principal water-bearing units are Rockcastle and Sewanee Conglomerates. High iron concentrations are a problem.
Mississippian carbonate: Multi-aquifer unit of lime- stone, dolomite, and some shale. Unconfined or partly confined near land surface; may be confined at depth.	50 - 200	250	5 - 50	400	Water occurs in solution and bedding-plane openings. Principal water-bearing units are Ste. Genevieve (Monteagle), St. Louis and Warsaw Limestones and Fort Payne Formation. Water generally hard; high iron, sul- fide, or sulfate concentrations are a problem in some areas.
Ordovician carbonate rock: Multi-aquifer unit of limestone, dolomite, and shale. Partly confined to unconfined near land surface; confined at depth.	50 - 150	200	5 - 20	300	Principal water-bearing units are Bigby, Carters, Ridley, and Murfreesboro Limestones. Water generally hard; some high sulfide or sulfate concentrations in places.
Knox: Primarily dolomite, some limestone; confined. Does not have the structural complexity of the Cambrian-Ordovician carbonate aquifer.	700 - 1,200	1,400	1 - 10	20	Deep aquifer; present beneath most of central and western Tennessee. Away from Central Basin, water generally has high concentrations of dissolved solids.
Cambrian-Ordovician carbonate: Highly faulted multi-aquifer unit of limestone, dolomite, sandstone, and shale; structurally complex. Unconfined; confined at depth.	100 - 300	400	5 - 200	2,000	Principal water-bearing units are carbonate rocks in Chickamauga Limestone, Knox Group, and Honaker Dolomite. Water is generally hard. Brine below 3,000 feet.
Crystalline rock: Multi-aquifer unit of dolomite, granite gneiss, phyllite, and metasedimentary rocks overlain by thick regolith; alluvium and colluvium in some valleys. Generally unconfined.	50 - 150	200	5 - 50	1,000	High yields occur primarily in dolomite or deep colluvium and alluvium. Shady Dolomite is a principal aquifer. Low pH and high iron concentrations may be problems in some areas.

Refer to figure 2 for location map.

igneous crystalline rocks of the Blue Ridge Physiographic Province in East Tennessee (Miller, 1974).

Previous Investigations

A review of previous investigations describing water use by public water-supply systems in Tennessee from 1950 to 1995 indicate that (1) water withdrawals by public water-supply systems in Tennessee have increased since the 1950s, (2) surface water provided most (60-64 percent) of Tennessee's public water supplies, and (3) surface-water use has increased at a faster rate than ground-water use (MacKichan, 1951, 1957; Murray and Reeves, 1972, 1977; Hutson, 1989, 1991, 1999; Hutson and Morris, 1992; Solley and others, 1993). MacKichan (1951) prepared one of the earliest water-use reports in Tennessee. The combined municipal supplies of ground water and surface water were estimated at 160 Mgal/d in 1950, with ground-water use estimated to be 85 Mgal/d and surface-water use estimated to be 75 Mgal/d. In 1955, total public water withdrawals for Tennessee were an estimated 250 Mgal/d (MacKichan, 1957). By 1970, total public water withdrawals had reached approximately 440 Mgal/d (Murray and Reeves, 1977). From 1988 to 1990, surface-water withdrawals decreased slightly from 446 to 426 Mgal/d, respectively, which corresponded with a decrease in the population of Tennessee from 4.92 to 4.88 million. Ground-water withdrawals in the State, however, increased slightly during the same time period by 7 Mgal/d from 262 Mgal/d (Hutson and Morris, 1992) to 269 Mgal/d (Solley and others, 1993). In 1995, total withdrawals by public water-supply systems reached 779 Mgal/d (Hutson, 1999), which is a 53-percent increase since 1980 (510 Mgal/d). According to Hutson and Morris (1992), overall growth in public water supplies during 1988 was attributed to changing water-use demands and changing water-use patterns in the commercial and industrial sectors. However, the number of water systems distributing public water supplies in Tennessee decreased from 541 in 1988 (Hutson and Morris, 1992) to 530 systems in 1995 (Hutson, 1999).

Approach and Methods

To assess water use in Tennessee, data were collected and analyzed for public water-supply systems active between January 1 and December 31, 2000. The public water-supply systems included investor-owned

water companies, private water companies, municipal water departments, regional water authorities, institutions, residential developments, mobile home parks, and homeowner associations. Each water system supplied TDEC, DWS, with monthly operating reports that included information on the source of water, mean daily or monthly water withdrawal rates, and the population served. In some instances, phone calls were made directly to a public water-supply system to supplement missing data.

Monthly and annual average water withdrawals of each public water-supply system were separated into categories of surface water, ground water, and purchased water. The withdrawal rates of systems using surface- and ground-water supplies were calculated and compared with historic withdrawal rates and with changes in the population served. The amounts of water purchased by public water-supply systems are not included in the calculations for the amount of water withdrawn from the surface-water basins or from the aquifers. The amount of purchased water used by a system is included in the gross per capita water use listed in the supplemental tables (A, B, and C) near the end of this report.

Acknowledgments

The author thanks the managers of the public water-supply systems for providing data on which this report is based. The author also thanks David Draughon, Director of the Division of Water Supply, and Jeff Bagwell of the Tennessee Department of Environment and Conservation, who initiated the data-collection program and coordinated transmittal of survey forms from the public water-supply systems to the TDEC Environmental Field Office managers and staff in Chattanooga, Cookeville, Jackson, Johnson City, Knoxville, and Nashville, Tennessee.

PUBLIC WATER-SUPPLY SYSTEMS

Public water-supply systems may use a readily available river or stream as a surface-water source, withdraw water from a drilled well or spring as a ground-water source, or purchase water from another water system. In 2000, Tennessee was served by 526 public water-supply systems with 380 systems providing non-purchased ground-water or surface-water supplies. The remaining 146 systems provided about 84 Mgal/d of purchased water supplies to Tennessee

residents. Purchased supplies are water purchased or obtained from another public water-supply system (Hutson, 1999).

Of the 380 public water-supply systems using non-purchased water, 144 systems withdrew surface water for their public water supplies and 256 systems withdrew ground water, with about 20 of these systems using both surface and ground water. These numbers represent an increase of 30 systems using surface water and an increase of 46 systems using ground water, since 1995 (Hutson, 1999). Supplements A, B, and C list each public water-supply system based on water withdrawal from one of three major hydrologic regions in Tennessee. The supplemental tables provide information about the water source(s) for each public water-supply system; the amount of water withdrawn, sold, or purchased; the population served by each system; the gross per capita water use for each system; and the storage and design capacities of each supply system when such information is known. An index of all the public water-supply systems in Tennessee from which water-use data were available is included in the report. The index is sorted by system name and provides the public water-supply system identification number and the page number in the supplemental tables where data for the system are located.

Each of Tennessee's 95 counties was served by at least one public water-supply system in 2000 (fig. 3). The largest ground-water withdrawal rate (about 167 Mgal/d) by a single public water-supply system was reported by Memphis Light, Gas and Water (MLGW), which served 644,275 people in Shelby County in 2000. The greatest number of individual public water-supply systems (17) was recorded in Gibson County.

PUBLIC WATER SUPPLIES AND WATER USE DURING 2000

During 2000, non-purchased water supplies withdrawn by Tennessee's public water-supply systems was about 890 Mgal/d, which is a combined withdrawal of 64 percent surface water (568.78 Mgal/d) and 36 percent ground water (320.72 Mgal/d) (fig. 4). The amount of public water-supply withdrawals of surface water and ground water in 2000 marks a 450-percent increase (730 Mgal/d) since 1950. A discussion of surface- and ground-water withdrawals during 2000 and how they compare to previous years' withdrawals follows.

Surface Water

In 2000, surface water provided approximately 569 Mgal/d of the total non-purchased public water supplies distributed by water systems in Tennessee. This quantity represents an increase of about 69 Mgal/d (about 14 percent) since 1995 (500 Mgal/d) (fig. 5). The ratio of surface-water to ground-water withdrawals for 1995 and 2000 are higher than in previous years, suggesting a more intensive demand for surface-water supplies. Ninety public water systems in 2000 withdrew surface-water supplies of 1 Mgal/d or more. The largest surface-water withdrawals by public water-supply systems in the State occurred in counties located in the Ohio and Tennessee hydrologic regions and came primarily from the Cumberland River (173.30 Mgal/d) and the Tennessee River (100.17 Mgal/d). Other rivers in Tennessee provided about 178 Mgal/d of the State's potable water supplies in 2000 (table 3).

Surface-water use increased in 2000 in Middle and East Tennessee, but was not a factor in West Tennessee. Water-supply systems serving the Metropolitan Nashville/Davidson County area served over 514,000 customers in 2000 and withdrew about 120 Mgal/d

Table 3. Surface-water withdrawals from Tennessee rivers in 2000 [Withdrawals in million gallons per day]

	Surface-water
River name	withdrawal
Cumberland	173.30
Tennessee	100.17
South Holston	23.99
Clinch	20.83
Duck	19.74
East Fork Stones	18.13
Little	12.28
Hiwassee	11.87
Watauga	10.91
Barron Fork	10.86
Nolichucky	10.10
Priest Lake/Stones	9.87
Holston	9.58
French Broad	7.99
Little Tennessee	3.66
Harpeth	2.57
Sequatchie	2.28
Caney Fork	1.48
Piney	1.21
Buffalo	0.75

HYDROLOGIC REGIONS AND SUBREGIONS

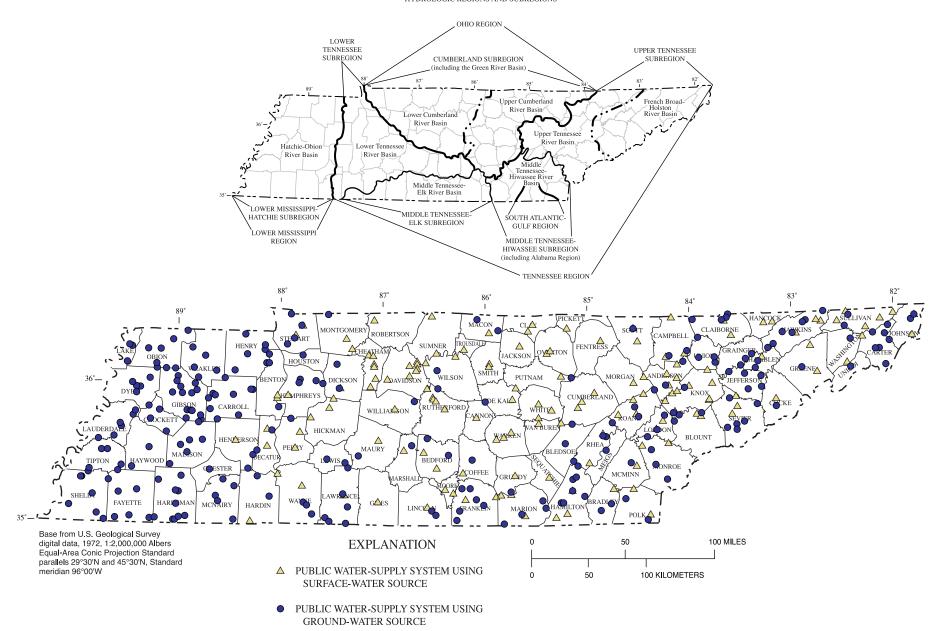


Figure 3. Distribution of public water-supply systems using surface water or ground water in Tennessee in 2000.

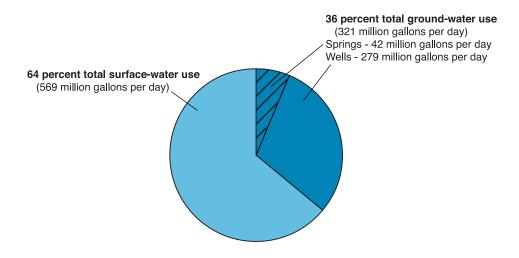


Figure 4. Sources of water for public water-supply systems in Tennessee in 2000.

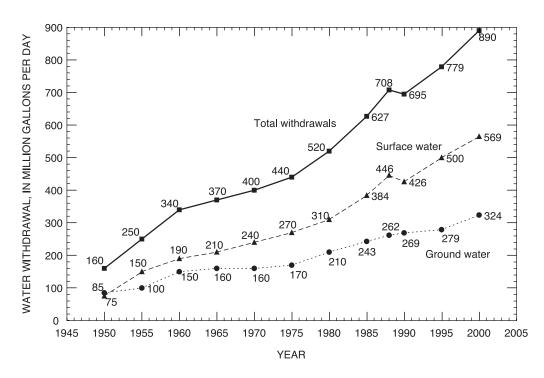


Figure 5. Surface-water and ground-water withdrawals by public water-supply systems in Tennessee, 1950 to 2000.

from the Cumberland River. This was the largest surface-water withdrawal in the State during 2000, and represents a 13-percent increase since 1995 (Hutson, 1999). Large amounts of surface water were withdrawn from the Tennessee River in the Chattanooga and Knoxville metropolitan areas (Supplement A). Surface water was not a primary source for public water-supply systems in the Lower Mississippi hydrologic region of West Tennessee, primarily because of abundant and easily available ground-water supplies (Hutson, 1999; Hutson and Morris, 1992). The distribution of surface-water withdrawals in Tennessee counties during 2000 is shown in figure 6. Additional information about surface-water sources and withdrawal rates are presented in Supplements A, B, and C.

Ground Water

Ground water supplied about 321 Mgal/d in 2000 (fig. 4), an increase of approximately 45 Mgal/d (about 16 percent) since 1995 (Hutson, 1999). Almost 80 percent of the ground water withdrawn for public supply during 2000 was reported from West Tennessee. In Shelby County, Tennessee, alone, ground-water withdrawals yielded 188 Mgal/d (fig. 7), providing potable water for more than 764,000 customers. The largest total withdrawal (167 Mgal/d) by a single water system in Tennessee occurred in Memphis by MLGW, which served a population of 644,275. Approximately 257 Mgal/d of ground water were withdrawn from the Tertiary sand, Cretaceous sand, and alluvial aquifers (figs. 8 and 9). In contrast to the large amount of ground water used in West Tennessee, the combined withdrawals from aguifers in Middle and East Tennessee yielded about 66 Mgal/d for more than 730,000 customers.

A review of historical ground-water use reported by large public water-supply systems withdrawing 1 Mgal/d or more in Tennessee from 1988 through 2000 indicates that, within the 13-year period, several of these systems substantially increased their withdrawal rates (table 4). Thirty-four systems reported increased withdrawals in 2000, and 10 systems increased withdrawals by more than 1 Mgal/d. The greatest total increase (44.34 Mgal/d, table 4) in withdrawal rates was reported by systems located in the Lower Mississippi hydrologic region of West Tennessee. More than 60 percent (166.73 Mgal/d) of the ground-water withdrawals in this region were by MLGW in Shelby County, which reported an increase of about 26 Mgal/d in withdrawals since 1988.

Springs are used by public water-supply systems as a ground-water source in Middle and East Tennessee. In 2000, springs provided about 42 Mgal/d to 53 systems in 34 counties in this area. Ten public watersupply systems withdrew 1 Mgal/d or more of water from springs in the Mississippian carbonate aquifer of Middle Tennessee and from the crystalline rock aquifer and Cambrian-Ordovician carbonate aquifer in East Tennessee. About 62 percent (27 Mgal/d) of the total spring water withdrawals was from springs emerging from the Cambrian-Ordovician aguifer. Public watersupply systems in Carter, Hamilton, Montgomery, and Washington Counties reported withdrawals from springs ranging between 3.7 and 5.4 Mgal/d. The highest withdrawal from a single spring (4.42 Mgal/d) during 2000 was in Montgomery County. Elizabethton, in Carter County, withdrew the most spring water, 5.39 Mgal/d, from three springs in 2000. Most of the public water-supply systems withdrawing spring water for their supplies are in East Tennessee (fig. 10).

Gross Per Capita Water Use

Gross per capita water use is the calculated amount of water used in gallons per day per person, and is a means of normalizing or approximating the distribution of water use for county populations within a state or for populations across state lines.

For this report, the gross per capita (in gallons per day) for a public water-supply system was calculated from the gross water use divided by the number of customers (population) served by the system. The gross water use is calculated from the amount of water (million gallons per day) withdrawn and purchased from specific sources, less the amount of water sold to other public water-supply systems. An average of all gross per capita values was calculated for 2000 and compared to previous years' values. Because some public water systems provide water only to large corporations or industry, the gross per capita values for these systems are extremely large (greater than 1,000 gal/d) and do not reflect the actual population being served by a system. Per capita values for such systems were not included in the per capita average calculation for 2000 for Tennessee.

Gross per capita water use in Tennessee for 2000 was about 136 gal/d. This value is less than reported in 1995 (176 gal/d) by Hutson (1999). Per capita values for all public water-supply systems (using surface water, ground water, and purchased water) that were active in Tennessee during 2000 are listed in Supplements A, B, and C.

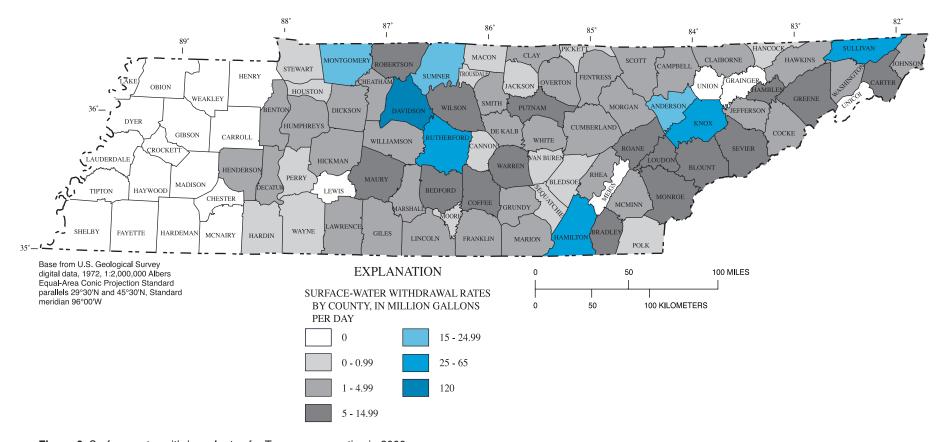


Figure 6. Surface-water withdrawal rates for Tennessee counties in 2000.

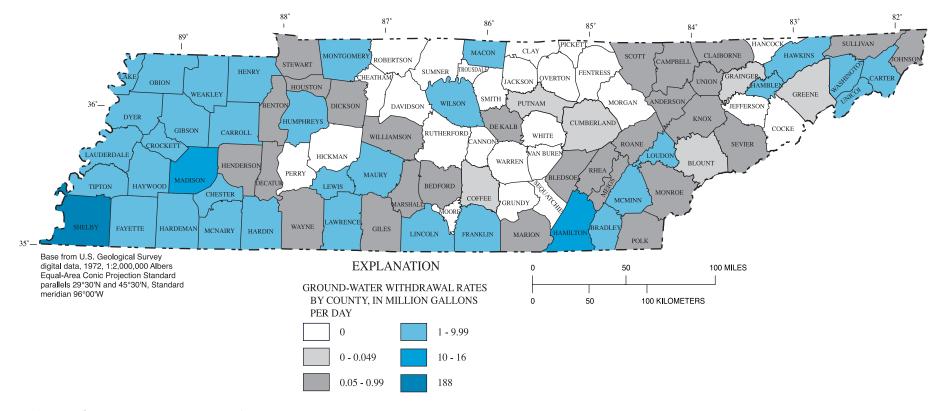
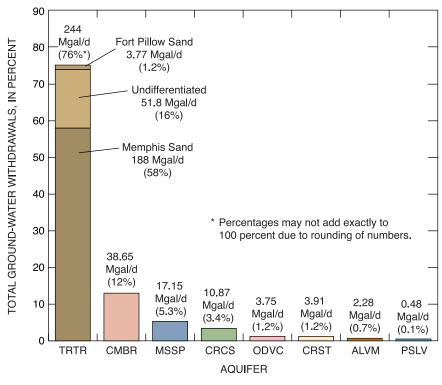


Figure 7. Ground-water withdrawal rates for Tennessee counties in 2000.



EXPLANATION

AQUIFER NAME

TRTR TERTIARY SAND

CMBR CAMBRIAN-ORDOVICIAN CARBONATE

MSSP MISSISSIPPIAN CARBONATE

CRCS CRETACEOUS SAND

ODVC ORDOVICIAN CARBONATE ROCK

CRST CRYSTALLINE ROCK

ALVM ALLUVIAL

PSLV PENNSYLVANIAN SANDSTONE

Figure 8. Ground-water withdrawals, in million gallons per day, from principal aquifers in Tennessee in 2000.

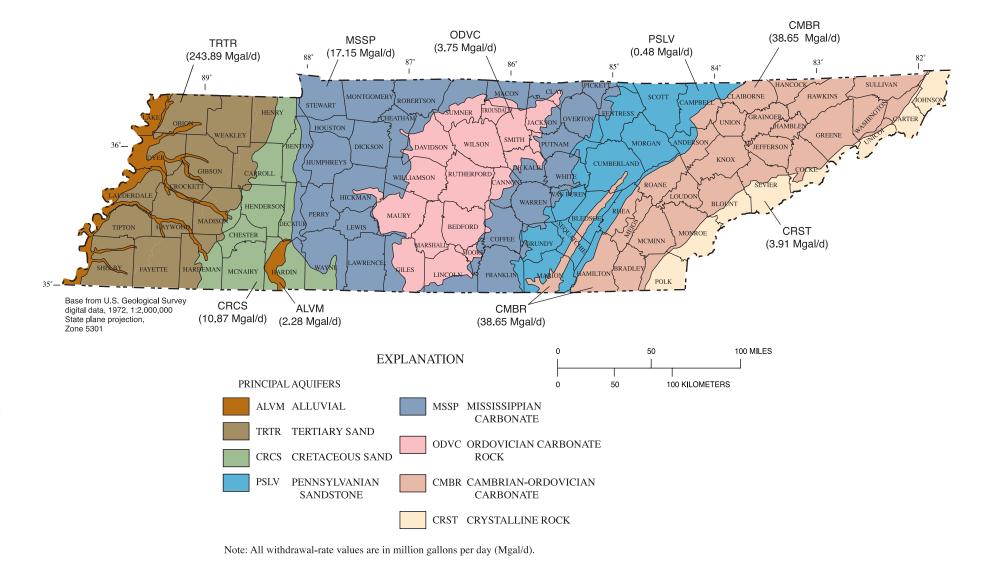


Figure 9. Principal aquifers and withdrawal rates in Tennessee in 2000.

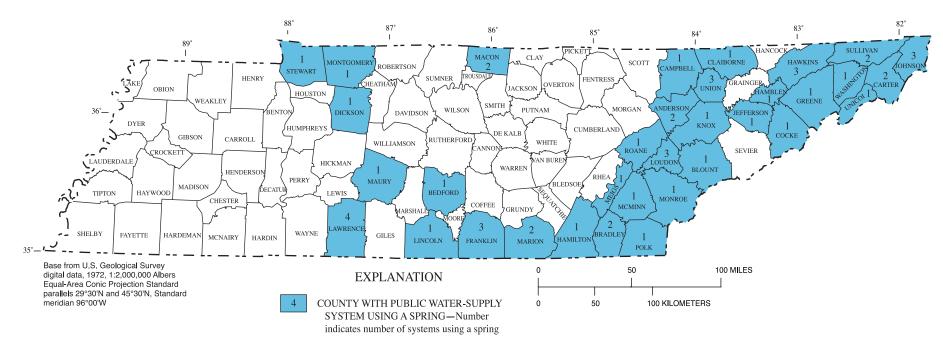


Figure 10. Tennessee counties with public water-supply systems using springs for water supply in 2000.

Table 4. Ground-water withdrawals by public water-supply systems in Tennessee using 1 million gallons per day or more in 2000

[- - no ground-water withdrawal reported by system; Aquifer names—TRTR, Tertiary sand; CRCS, Cretaceous sand; CMBR, Cambrian-Ordovician carbonate; CRST, Crystalline rock; ALVM, Alluvial; MSSP, Mississippian carbonate; ODVC, Ordovician carbonate rock]

Public water cumply eveter	Withdrawal rate	Change in withdrawals	Aquifor		
Public water-supply system	1988	1995	2000	(1988-2000)	Aquifer
	Lower Mississippi	Hydrologic Re	gion		
Memphis Light, Gas and Water	141.00	148.00	166.73	25.73	TRTR
Jackson Water System	10.20	12.10	15.03	4.83	TRTR
Germantown Water Department	4.91	3.96	7.28	2.37	TRTR
Bartlett Water System/Bartlett-Ellendale	1.36/1.77	4.44	5.99	2.86	TRTR
Collierville Water Department	2.37	3.41	5.82	3.45	TRTR
Dyersburg Water Department	4.35	4.12	4.00	-0.35	TRTR
Union City Water Department	2.85	3.45	3.96	1.11	TRTR
Gibson Co. Municipal Water Districts	0.73	0.81	1.34	0.61	TRTR
Humboldt Utilities Water Department	1.84	2.28	2.37	0.53	TRTR
Selmer Water System	2.10	2.13	2.24	0.13	CRCS
Covington Water Department	1.40	1.43	2.23	0.83	TRTR
Ripley Water System	1.83	1.52	2.03	0.20	TRTR
Brownsville Water Department	1.71	2.05	1.77	0.05	TRTR
Poplar Grove Utility District	0.21	1.00	1.76	1.55	TRTR
Martin Water Department	1.51	1.40	1.50	-0.01	TRTR
Milan Water Department	1.34	1.31	1.33	-0.01	TRTR
County Wide Utility District	0.96	1.13	1.01	0.05	TRTR
Bolivar Water System	1.37	1.17	1.28	-0.09	CRCS
McKenzie Water Department	0.72	1.19	1.22	0.49	TRTR
Henderson Water Department	0.86	1.02	1.15	0.29	CRCS
Millington Water Department	1.10	1.17	1.10	0.0	TRTR
Munford Water Department	0.38	0.72	1.05	0.67	TRTR
Naval Support Activity Memphis	1.91	1.56	0.93	-0.98	TRTR
Subtotal withdrawal 1 Mgal/d or more	188.78	201.37	233.12	44.34	
	Tennessee Hyd	rologic Region	1		
Hixson Utility District	5.61	6.19	6.70	1.09	CMBR
Elizabethton Water Department	5.26	5.35	5.39	0.13	CMBR
Johnson City Water Department	3.18	3.93	3.72	0.54	CRST
Jefferson City Water and Sewer Comm.	1.51	2.34	2.70	1.19	CMBR
Athens Utilities Board	1.76	1.12	2.60	0.84	CMBR
Paris Board of Public Utilities	2.17	2.41	2.57	0.40	TRTR
Savannah Public Utilities Department	1.73	1.60	2.27	0.54	ALVM
Erwin Utilities	1.28	2.08	2.21	0.93	CRST
Lincoln County Board of Public Utilities #1		1.42	1.68	0.94	MSSP
Savannah Valley Utility District	0.80	0.90	1.66	0.86	CMBR

Table 4. Ground-water withdrawals by public water-supply systems in Tennessee using 1 million gallons per day or more in 2000—Continued

Dublic water county costs w	Withdrawal ra	ates, in million ga	allons per day	Change in withdrawals	A!£
Public water-supply system	1988	1995	2000	(1988-2000)	Aquifer
Ter	nessee Hydrolo	gic Region—Con	tinued		
Hohenwald Water System	0.90	1.18	1.48	0.58	MSSP
Ocoee Utility District	0.56	1.47	1.33	0.77	CMBR
Lawrenceburg Water System	1.07	1.32	1.27	0.20	MSSP
Cleveland Utilities	1.25	1.47	1.23	-0.02	CMBR
First Utility District of Carter County	0.76	1.06	1.12	0.36	ODVC
Mount Pleasant Water System #1	0.93	1.06	1.03	0.1	ODVC
Mountain City Water Department	1.10	0.45	0.83	-0.27	CMBR
Eastside Utility District	3.77		0.00	-3.77	CMBR
Sweetwater Utility Board	1.10	0.47	0.00	-1.10	CMBR
Subtotal withdrawal 1 Mgal/d or more	35.67	35.82	39.79	4.12	
Ohio	(Cumberland F	River) Hydrologi	c Region		
Fort Campbell Water System	4.98	4.69	4.42	-0.56	MSSP
Lafayette Water System	0.64	0.81	1.48	0.84	MSSP
Gladeville Utility District #1		0.97	1.06	1.06	ODVC
Subtotal withdrawals 1 Mgal/d or more	5.62	6.47	6.96	1.34	
Total Statewide	230.07	243.66	279.87	49.80	

SUMMARY

In 2000, public water-supply systems provided approximately 890 Mgal/d of non-purchased surfacewater and ground-water supplies to about 88 percent of the population in Tennessee. Gross per capita water use in the State was about 136 gal/d.

Tennessee's public water supplies came from 144 systems that withdrew about 569 Mgal/d of surface water and 256 systems that withdrew about 321 Mgal/d of ground water, with 20 of these systems withdrawing from both sources. A separate category of public water sources came from purchased water supplies, in which systems purchased about 84 Mgal/d of their water from other systems. The largest combined surface-water withdrawals (about 173 Mgal/d) were reported in Middle Tennessee where more than 824,000 customers in Nashville and the surrounding area were supplied by water from the Cumberland River. The single largest ground-water withdrawal (about 167 Mgal/d) by one water system was in West Tennessee where Memphis Light, Gas and Water served more than 644,000 customers in 2000.

The sources of water used for public water supplies in Tennessee are directly related to the diverse physiographic and hydrologic regions across the State. Surface water is used primarily by water systems in Middle and East Tennessee and, in 2000, about 42 Mgal/d of ground water were withdrawn from natural springs in these two regions of the State. In West Tennessee, where ground water is the primary source for public water-supply systems, about 75 percent of the State's potable ground water was produced from the Tertiary sand aquifers.

Historical data available for public water use in Tennessee between 1955 and 2000 indicate surfacewater and ground-water withdrawals have increased by about 250 percent. Surface water generally has provided from 60 to 64 percent of the total public water supplies in Tennessee, and ground water has provided the remaining 36 to 40 percent. Within the last 5 to 10 years, surface-water withdrawals have increased more than ground-water withdrawals. Since 1988, the number of public water-supply systems distributing water supplies for the State has declined; however, the number of systems distributing only ground-water supplies has increased during the same time period.

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Supplement A. Public water-supply systems and associated water use in the Tennessee hydrologic region (Modified from Alexander and others, 1984, and from Hutson and Morris, 1992)

[PWSID, Public Water System Identification number; Mgal/d, million gallons per day; gal/d, gallons per day; UB, Utility Board; Co., County; UD, Utility District; ---, not applicable; gw, ground water; WD, Water Department; DOE, Department of Energy; DPW, Department of Public Works; WS, Water System; SS, Services System; WC, Water Cooperative; sw, surface water; UB, Utility Board; UC, Utility Commission; BU, Board of Utilities; PWD, Power and Water Department; BPU, Board of Public Utilities; WSC, Water and Sewer Commission; POA, Property Owner's Association; MHP, mobile home park; HOA, homeowners association; principal aquifer: 1, alluvial; 2, Tertiary sand; 3, Cretaceous sand; 4, Pennsylvanian sandstone; 5, Mississippian carbonate; 6, Ordovician carbonate rock; 8, Cambrian-Ordovician carbonate; 9, crystalline rock; Gross water use = (withdrawal + purchased) - water sold; Gross per capita = (gross water use/population served) x 1,000,000]

County, PWSID, and system		Principal aquifer	With- drawal (Mgal/d)	Water purchased (Mgal/d)	Water sold (Mgal/d)	Gross water use (Mgal/d)	Popula- tion served	Gross per capita use (gal/d)	Storage capacity (million gallons)	Design capacity (million gallons)
		Ter	nnessee region	ı						
Anderson County										
120 Clinton Utility Board	Clinch River Anderson Co. UB (seller) Anderson Co. UB (buyer)		2.431	0.071	0.012	2.490	14,118	177	4.20	3.30
383 Lake City Water Department	North Anderson Co. UD (seller)			0.244		0.244	2,223	110	0.75	
513 Norris Water Commission	Clear Creek Spring Anderson Co. UB (seller) Anderson Co. UB (buyer)	8	0.295	0.012	0.089	0.218	1,852	118	0.750	0.432
514 North Anderson County Utility District	Anderson Co. UB (seller) Clinch River Lake City WD (buyer)		1.428	0.137	0.244	1.315	10,045	131	1.72	2.00
	Caryville-Jacksboro UD (buyer)				0.006					
522 Oak Ridge Department of Public Works	DOE Johnson Control (seller) Clinch river		15.650	0.974		16.624	30,015	554	3.92	28.0
523 Oliver Springs Water Board	Anderson Co. UB (seller) Bacon Spring	8	0.665	0.383		0.953	5,275	181	1.00	0.864
	Anderson Co. UB (buyer)				0.095					

County, PWSID, and system	Source of supply (seller, buyer)	Principal aquifer	With- drawal (Mgal/d)	Water purchased (Mgal/d)	Water sold (Mgal/d)	Gross water use (Mgal/d)	Popula- tion served	Gross per capita use (gal/d)	Storage capacity (million gallons)	Design capacity (million gallons)
Anderson County—Continued										
768 Anderson County UB	Clinch River		1.111			0.704	7,981	88	2.06	2.00
	Clinton Utility Board (seller)			0.012						
	Norris Water Commission (seller)			0.089						
	N. Anderson Co. UD (buyer)				0.137					
	Oliver Springs Water Board (seller)			0.095						
	Clinton Utility Board (buyer)				0.071					
	Norris Water Co. (buyer)				0.012					
Bedford County										
044 Bell Buckle Water System	Wartrace WS (seller)			0.035		0.046	1,502	31	0.600	
	Bedford County UD (seller)			0.011						
517 Bedford County Utility	Duck River		1.303			1.34	11,090	121	2.15	3.70
District #1	Tullahoma Board of Utilities			0.052						
	(seller)				0.011					
	Bell Buckle WS (buyer)				0.011					
628 Shelbyville Water	Duck River		4.438			4.275	18,715	228	4.50	6.05
System	Flat Creek Cooperative (buyer)				0.163					
629 Flat Creek Cooperative	Shelbyville WS (seller)			0.163		0.164	1,515	108	0.30	
	Tullahoma Board of Utilities (seller)			0.001			-,2		3.2 3	
730 Wartrace Water System	spring	6	0.830			0 .809	1,963	412	1.15	
750 Wallace Water System	Bell Buckle WS (buyer)	O	0.050		0.035	0.007	1,703	112	1.13	
8115 Jarrell Mobile Home Park	well	6	0.004			0.004	36	111		

Supplement A. Public water-supply systems and associated water use in the Tennessee hydrologic region—Continued

County, PWSID, and system	Source of supply (seller, buyer)	Principal aquifer	With- drawal (Mgal/d)	Water purchased (Mgal/d)	Water sold (Mgal/d)	Gross water use (Mgal/d)	Popula- tion served	Gross per capita use (gal/d)	Storage capacity (million gallons)	Design capacity (million gallons)
Benton County 051 Big Sandy Water Department	3 wells	3	0.119			0.119	957	124	0.15	0.17
055 Harbor Utility District (formerly Kentucky Lake Heights Water System)	3 wells	3	0.038			0.038	428	89	0.01	0.07
090 Camden Water Department	Tennessee River		1.38			1.38	9,367	147	2.45	1.80
950 Dry Branch Water System	2 wells	5	0.003			0.003	42	71		
Bledsoe County 551 Pikeville Water System	4 wells	8	0.394			0.394	3,398	116	1.65	0.467
Blount County 007 Alcoa Water System	Little River Tuckaleechee UD (buyer) South Blount UD (buyer)		10.535		0.82 3.422	7.03	23,606	298	11.7	24.3
249 Friendsville Utility District	South Blount UD (seller)			0.291		0.291	3,040	96	0.250	
438 Maryville Utilities Board	Little River		1.748			1.748	30,153	58	4.25	6.05
643 South Blount Utility District	Alcoa WS (seller) Tellico Area SS (seller) Friendsville water works (buyer) County Acres Farm (buyer)			3.422 0.778	0.291	3.908	25,401	154	3.80	

County, PWSID, and system	Source of supply (seller, buyer)	Principal aquifer	With- drawal (Mgal/d)	Water purchased (Mgal/d)	Water sold (Mgal/d)	Gross water use (Mgal/d)	Popula- tion served	Gross per capita use (gal/d)	Storage capacity (million gallons)	Design capacity (million gallons)
Blount County—continued 714 Tuckaleechee Utility District	Alcoa WS (seller) Knox-Chapman UD (seller)			0.82 0.07		0.89	6,784	131	1.31	
805 Bays Mountain Mobile Home Park	spring	8	0.008			0.008	90	89	0.007	0.010
974 Allen Dale Drive Mobile Home Park	well		0.005			0.005	90	56		
8003 Country Acres Farm	South Blount Utility District (seller) well		0.006	0.001		0.007	100	70		
Bradley County 117 Cleveland Utilities	Hiwassee River Waterville Spring (South-Atlantic Gulf Region) Eastside Utility District (seller Savannah Valley(seller) Ocoee UD (buyer) Hiwassee UC (seller)	8	5.271 1.228	0.495 0.024 1.988	0.121	8.885	66,317	134	12.00	7.00
525 Ocoee Utility District	springs Benton Water System (seller Cleveland UD(seller)	8	1.329	0.067 0.121		1.517	10,876	139	1.60	2.02

County, PWSID, and system	Source of supply (seller, buyer)	Principal aquifer	With- drawal (Mgal/d)	Water purchased (Mgal/d)	Water sold (Mgal/d)	Gross water use (Mgal/d)	Popula- tion served	Gross per capita use (gal/d)	Storage capacity (million gallons)	Design capacity (million gallons)
and system	(Seller, Duyer)	aquilei	(Mgal/u)	(wigai/u)	(wigai/u)	(wgai/u)	Serveu	(gai/u)	ganons)	ganons)
Bradley County—Continued 831 Hiwassee Utility	Hiwassee River		3.60			0.340	97		1.75	7.50
Commission	Athens UB (buyer)		2.00		0.664	0.5 10	,		1.75	7.50
	Cleveland Utilities (buyer)				1.988					
	Calhoun-Charleston UD (buyers)				0.158					
	Niota Water System (buyer)				0.258					
	Riceville UD (buyer)				0.190					
Campbell County										
322 Caryville-Jacksboro	Cove Lake		0.453			0.961	8,843	109	1.92	1.66
Utility Commission	Cave Spring	4	0.504							
	North Anderson Co. UD (seller)			0.006						
	La Follette WD (buyer)				0.002					
374 La Follette Water	Carryville-Jack (seller)			0.0002		1.867	21,730	87	3.87	5.00
Department	Norris Lake		1.867				·			
494 Spring Village Mobile										
Home Pk	well	8	0.006			0.006	86	70		
Carroll County										
081 Bruceton Water System	6 wells	3	0.206			0.206	1,750	118	0.400	0.756
115 Clarksburg Utility District	3 wells	3	0.120			0.120	1,325	90	0.405	0.230
310 Hollow Rock Water Department	3 wells	3	0.241			0.241	875	275	0.200	0.540

County, PWSID, and system	Source of supply (seller, buyer)	Principal aquifer	With- drawal (Mgal/d)	Water purchased (Mgal/d)	Water sold (Mgal/d)	Gross water use (Mgal/d)	Popula- tion served	Gross per capita use (gal/d)	Storage capacity (million gallons)	Design capacity (million gallons)
Carter County 060 Blue Springs Utility District	First UD of Carter Co. (seller)			0.210		0.210	1,668	126	0.100	
094 First Utility District of Carter County	2 wells Blue Springs UD (buyer)	8	1.119		0.210	0.941	5,752	164	2.26	1.493
221 Elizabethton Water Department	springs N. Elizabethton WC (buyer)	8	5.394		0.158	4.925	25,528	192	6.810	8.350
	Siam UD (buyer) Chinquapin Grove UD (buyer) Johnson City (seller)			0.006	0.237 0.080					
223 North Elizabethton Water Cooperative	Elizabethton WD (seller)			0.158		0.158	1,213	130	0.100	0.144
282 Hampton Utility District	spring S. Elizabethton UD (buyer)	8	0.899		0.417	0.482	3,409	141	0.802	1.498
584 Roan Mountain Utility District	5 wells	9	0.115			0.115	795	145	0.309	0.094
633 Siam Utility District	Elizabethton WD (seller)			0.237		0.237	2,361	100	0.100	0.260
646 South Elizabethton UD	Hampton UD (seller)			0.417		0.417	5,124	81	0.450	
802 Peters Hollow Water System	well	9	0.01			0.01	132	76	0.015	0.003

Supplement A. Public water-supply systems and associated water use in the Tennessee hydrologic region—Continued

County, PWSID, and system	Source of supply (seller, buyer)	Principal aquifer	With- drawal (Mgal/d)	Water purchased (Mgal/d)	Water sold (Mgal/d)	Gross water use (Mgal/d)	Popula- tion served	Gross per capita use (gal/d)	Storage capacity (million gallons)	Design capacity (million gallons)
Claiborne County 022 Arthur-Shawanee Utility District	Powell River		1.431			1.431	6,625	216	1.60	1.73
113 Claiborne County Utility District	Norris Lake		1.161			1.161	11,652	100	1.575	2.088
161 Cumberland Gap Water Services	Lincoln Memorial University (seller)			0.058		0.058	276	210		
290 Lincoln Memorial University	spring Cumberland Gap WS (buyer)	4	0.207		0.058	0.149	1,870	80	0.500	0.324
890 Pump Springs Mobile Home Park	well	8	0.007			0.007	100	70	0.001	
920 Indian Creek Trailer Park	well	8	0.006			0.006	87	69		
955 Mockingbird Hill Estates	well	8	0.003			0.003	40	75		
Cocke County			4.000			• • • •	10.04	201		- 00
500 Newport Utilities Board	French Broad River Webb Creek UD (buyer)		4.093		0.098	3.995	19,364	206	6.20	5.80
959 White Springs Water Assn	Spring	9	0.004			0.004	62	65		
Coffee County 429 Manchester Water Department	Duck River UC (seller) Hillsville UD (buyer)			2.413	0.596	1.817	11,462	158	2.88	

Supplement A. Public water-supply systems and associated water use in the Tennessee hydrologic region—Continued

County, PWSID, and system	Source of supply (seller, buyer)	Principal aquifer	With- drawal (Mgal/d)	Water purchased (Mgal/d)	Water sold (Mgal/d)	Gross water use (Mgal/d)	Popula- tion served	Gross per capita use (gal/d)	Storage capacity (million gallons)	Design capacity (million gallons)
Coffee County—Continued 430 Hillsville Utility District	Manchester WD (seller)			0.596		0.596	5,960	100	0.400	
715 Tullahoma Board of Utilities	Duck River UC (seller) Bedford Co. UD (buyer) Flat Creek Coop (buyer)			2.758	0.052 0.001	2.705	21,536	126	4.00	
821 Duck River Utility Commission	Duck River, Normandy Reservoir Manchester WD (buyer) Tullahoma BU (buyer)		5.196		2.413 2.758	0.025	25	1,000	0.000	7.50
Cumberland County 147 Crab Orchard Utility District	Otter Creek impoundment Wilshire Hills Apt (buyer)		1.409		0.034	1.375	13,446	102	1.75	2.02
150 Crossville Water* Department	Meadow Park Lake Holiday Hills Lake Catoosa UD (buyer) S. Cumberland UD (buyer) Grandview UD (buyer) W. Cumberland UD (buyer)		1.091 1.844		0.518 0.450 0.071 0.125	1.771	16,506	107	3.68	5.04
158 Catoosa Utility District	Crossville WD* (seller)			0.518		0.518	7,650	68	0.07	
159 South Cumberland UD (formerly Lantana UD)	Crossville WD (seller)			0.450		0.450	7,563	59	1.02	
848 Cumberland Mountain Retreat	2 wells	6	0.006			0.006	107	56	0.001	

^{*} See Supplement B

County, PWSID, and system	Source of supply (seller, buyer)	Principal aquifer	With- drawal (Mgal/d)	Water purchased (Mgal/d)	Water sold (Mgal/d)	Gross water use (Mgal/d)	Popula- tion served	Gross per capita use (gal/d)	Storage capacity (million gallons)	Design capacity (million gallons)
Decatur County 186 Decaturville Water System	9 wells	6	0.195			0.195	2,080	94	0.500	0.288
541 Parsons Water Department	Beech River Perryville UD (buyer)		0.914		0.171	0.743	4,198	177	1.00	1.44
543 Perryville Utility District	Parsons WD (seller)			0.171		0.171	2,283	75	0.150	
679 Woodlawn Shores WaterWorks	2 wells	3	0.015			0.015	142	106	0.013	0.029
883 North Decatur County Utility District	Tennessee River		0.206			0.206	2,428	85	0.400	0.684
Dickson County										
191 Dickson Water Department	City Lake (spring fed) West Piney River Turnbull UD* (seller)		0.353 1.151	0.232		1.423	12,336	115	4.85	2.07
	Sylvia-Tenn City Pond UD (buyer)			0.232	0.287					
	well Harpeth UD* (buyer)	5	0.014		0.039					
691 Sylvia-Tenn City-Pond Utility District	Dickson WD (seller)			0.287		0.287	3,487	82	1.60	
Franklin County 046 Belvidere Rural Utility District	wells	5	0.187			0.187	1,251	149	0.182	0.806

^{*} See Supplement B

County, PWSID, and system	Source of supply (seller, buyer)	Principal aquifer	With- drawal (Mgal/d)	Water purchased (Mgal/d)	Water sold (Mgal/d)	Gross water use (Mgal/d)	Popula- tion served	Gross per capita use (gal/d)	Storage capacity (million gallons)	Design capacity (million gallons)
Franklin County—Continued 101 Center Grove-Winchester Springs Utility District #1	Cleek Spring	5	0.480			0.480	5,420	88	0.500	1.30
146 Cowan Board of Public Utilities	spring	5	0.194			0.194	2,244	86	0.250	0.504
187 Decherd Water Department	2 wells Winchester WS (seller)	5	0.460	0.022		0.482	3,722	129	0.700	1.01
232 Estill Springs Water Department	Estill Spring	5	0.465			0.465	3,596	129	0.575	1.00
317 Huntland Water System	4 wells	5	0.186			0.186	1,637	114	0.475	0.403
623 Sewanee Utility District	Lake O'Donnell		0.320			0.320	4,315	74	0.643	0.691
754 Winchester Water System	Elk River, (Tims Ford Reservoir) Decherd Water (buyer)		2.060		0.022	2.038	17,588	116	2.55	6.00
Giles County 018 Ardmore Water System	well (Tennessee) 2 wells (Alabama)	5	0.282			0.228	1,367	206	0.375	0.331
419 Lynnville Water Department	Fairview UD (seller)			0.070		0.070	722	97	0.075	
469 Minor Hill Utility District	Pulaski WS (seller) Limestone Co. WA (Alabama)			0.219 0.021		0.24	4,585	52	0.400	

Supplement A. Public water-supply systems and associated water use in the Tennessee hydrologic region—Continued

County, PWSID, and system	Source of supply (seller, buyer)	Principal aquifer	With- drawal (Mgal/d)	Water purchased (Mgal/d)	Water sold (Mgal/d)	Gross water use (Mgal/d)	Popula- tion served	Gross per capita use (gal/d)	Storage capacity (million gallons)	Design capacity (million gallons)
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Giles County—Continued 562 Pulaski Water System	Richland Creek Minor Hill UD (buyer) Fairview UD (buyer) Tarpley Shop UD (buyer)		3.372		0.219 0.459 0.187	2.507	9,886	253	6.125	7.20
563 Fairview Utility District	Pulaski WS (seller) Lynnville WD (buyer) Tarpley Shop UDC (buyer)			0.459	0.070 0.008	0.381	2,838	134	0.400	
566 Tarpley Shop Utility District	Pulaski WS (seller) Fairview UD (seller)			0.187 0.008		0.195	2,198	89	0.100	
649 South Giles Utility District	Limestone Co. Water Authority, Alabama (seller)			0.287		0.287	3,225	89	0.400	0.288
Grainger County 041 Bean Station Utility District	Morristown WD (seller) Rutledge WS (buyer)			0.578	0.132	0.446	4,488	99	1.00	
600 Rutledge Water System	Bean Station UD (seller)			0.132		0.132	1,336	99	0.400	
846 Lakeshore Heights Subdivision	2 wells	8	0.009			0.009	121	74		
913 Gilmore Water System	2 wells	8	0.010			0.010	127	79		
943 Hoppers Bluff Subdivision	well	8	0.008			0.008	108	74		
8036 Holston River Bend UD	well	8	0.004			0.004	40	100		

County, PWSID, and system	Source of supply (seller, buyer)	Principal aquifer	With- drawal (Mgal/d)	Water purchased (Mgal/d)	Water sold (Mgal/d)	Gross water use (Mgal/d)	Popula- tion served	Gross per capita use (gal/d)	Storage capacity (million gallons)	Design capacity (million gallons)
Grainger County—Continued 8114 Clinch View MHP	well	8	0.002			0.002				
Greene County 108 Chuckey Utility District	Greeneville Water and Light Commission (seller) Glen Hills UD (seller) Jonesboro WD (seller)			0.719 0.136 0.102		0.957	8,190	117	1.05	
149 Cross Anchor Utility District	Greeneville Water and Light Commission (seller)			0.698		0.698	6,126	114	0.800	0.800
266 Glen Hills Utility District	Greeneville UD (seller) Chuckey UD (buyer)			1.122	0.136	0.986	11,516	86		1.00
273 Greeneville Water and Light Commission	Nolichucky River Chuckey UD (buyer) Cross Anchor UD (buyer) Glen Hills UD (buyer) Mosheim UD (buyer) Old Knox Highway UD (buyer)		7.648		0.719 0.698 1.122 0.215 0.765	4.129	22,611	183	6.40	12.44
274 North Greene Utility District	Lick Creek Mosheim UD (seller)		0.455	0.041		0.496	4,375	113	1.15	0.755
478 Mosheim Utility District	Greeneville Water and Light Commission (seller) Old Knoxville Highway UD (buyer) North Greene UD (buyer)			0.215	0.203 0.041	0.154	1,638	88	0.500	
530 Old Knoxville Highway Utility District	Greeneville Water and Light Commission (seller) Moshiem UD (seller)			0.765 0.203		0.968	6,300	154	1.72	

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County, PWSID, and system	Source of supply (seller, buyer)	Principal aquifer	With- drawal (Mgal/d)	Water purchased (Mgal/d)	Water sold (Mgal/d)	Gross water use (Mgal/d)	Popula- tion served	per capita use (gal/d)	Storage capacity (million gallons)	Design capacity (million gallons)
Greene County—Continued 8013 Cedar Creek HOA	Cedar Creek spring	8	0.007			0.007	98	71		
Grundy County 470 Monteagle Public Utility Board	Laurel Creek Lake		0.354			0.354	3,256	109	0.500	0.703
706 Tracy City Water System	Big Fiery Gizzard Foster Falls UD* (buyer)		0.392		0.021	0.371	3,542	105	0.978	0.806
Hamblen County 014 Alpha-Talbott Utility District	Morristown WS (seller)			1.595		1.595	13,373	119	1.60	
474 Morristown Water System	Holston River, Cherokee Lake	0	8.142			5.561	29,824	186	12.04	15.00
	Havley Spring Alpha-Talbott UD (buyer) Bean Station UD (buyer) Russellville Whitesburg UD (buyer)	8	1.033		1.595 0.578 1.186					
476 Rine's Mobile Home Park	Witt UD (buyer) well	8	0.004		0.255	0.004	54	74		
598 Russellville Whitesburg Utility District	Morristown WD (seller)			1.186		1.186	13,568	87	0.861	
650 Witt Utility District	Morristown WD (seller)			0.255		0.255	2,949	86	0.235	
943 Hoppers Bluff Subdivision	wells	8	0.008			0.008	108	74		

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^{*} See Supplement B

County, PWSID, and system	Source of supply (seller, buyer)	Principal aquifer	With- drawal (Mgal/d)	Water purchased (Mgal/d)	Water sold (Mgal/d)	Gross water use (Mgal/d)	Popula- tion served	Gross per capita use (gal/d)	Storage capacity (million gallons)	Design capacity (million gallons)
Hamilton County	2 11	0	0.202			0.204	2 200	0.5	0.200	0.605
037 Union Fork-Bakewell Utility District	3 wells Soddy Daisy UD (seller) Sale Creek UD (buyer)	8	0.303	0.016	0.015	0.304	3,208	95	0.300	0.605
107 Tennessee-American	Tennessee River		44.038			41.56	171,470	242	20.356	64.80
Water Company	Signal Mountain WS (buyer)		44.036		0.939	41.30	1/1,4/0	242	20.530	04.80
	Eastside UD (buyer)				1.543					
168 Mowbray Mountain Utility District	Soddy-Daisy UD (seller)			0.260		0.260	2,613	99	0.500	0.461
169 Soddy-Daisy-Falling Water Utility District	Soddy Creek embayment well	8	1.069 0.569			1.362	9,390	145	2.10	5.97
	Mowbray Mountain UD (buyer)				0.260					
	Union Fork-Bakewell UD (buyer)				0.016					
219 Eastside Utility	Tennessee River		5.323			6.37	35,865	178	5.03	16.00
District	TN-American WC (seller) Cleveland Utilities (buyer)			1.54	0.495					
303 Hixson Utility District	Cave Springs	8	4.767			6.7	52,210	128	9.40	9.22
	Walker well	8	1.933							
605 Sale Creek Utility District	3 wells Union Fork-Bakewell UD (seller)	8	0.258	0.015		0.273	1,188	230	0.400	0.369

Supplement A. Public water-supply systems and associated water use in the Tennessee hydrologic region—Continued

County, PWSID, and system	Source of supply (seller, buyer)	Principal aquifer	With- drawal (Mgal/d)	Water purchased (Mgal/d)	Water sold (Mgal/d)	Gross water use (Mgal/d)	Popula- tion served	Gross per capita use (gal/d)	Storage capacity (million gallons)	Design capacity (million gallons)
Hamilton County—Continued 613 Savannah Valley Utility District	wells Cleveland Utilities (buyer)	8	1.664		0.024	1.64	12,988	126	3.40	1.66
634 Signal Mountain Water System	Tennessee-American Water Company (seller)			0.939		0.939	7,585	124	2.75	
635 Walden Ridge Utility District	3 wells	8	0.900			0.900	6,188	145	2.182	1.01
Hancock County 640 Sneedville Utility District	Brier Creek Clinch River		0.141 0.215			0.356	2,160	165	0.655	0.623
Hardin County 546 First Utility District of Hardin County	Tennessee River		0.736			0.736	5,171	142	1.150	1.01
606 Saltillo Utility District	3 wells	3	0.126			0.126	1,592	79	0.200	0.216
611 Savannah Public Utilities Department	8 wells Aqua Utilities Company, Inc. (buyer)	1	2.273		0.028	2.245	16,814	133	2.075	2.448
	Harbert Hills Academy (buyer)				0.0001					
923 Harbert Hills Academy	2 wells Savannah Public UD (seller)	1	0.006	0.0001		0.006	89	68	0.001	
948 Aqua Utilities Company, Inc.	Savannah Public Utilities Department (seller)			0.028		0.028	207	135		

County, PWSID, and system	Source of supply (seller, buyer)	Principal aquifer	With- drawal (Mgal/d)	Water purchased (Mgal/d)	Water sold (Mgal/d)	Gross water use (Mgal/d)	Popula- tion served	Gross per capita use (gal/d)	Storage capacity (million gallons)	Design capacity (million gallons)
Hawkins County			0.021			1.20	0.025	144	0.010	2.01
109 First Utility District of Hawkins County #1	Alexander Creek Hord Creek		0.921 0.455			1.30	9,035	144	0.910	2.01
	New Canton UD Surgoinsville (buyer)				0.040 0.036					
384 Lakemont Utility District	well	8	0.008			0.008	111	72	0.012	0.036
472 Mooresburg Utility District	spring	8	0.098			0.098	810	121	0.250	0.173
593 Rogersville Water	Big Creek		1.5			1.01	8,586	118	1.25	1.92
System	well Persia UD (buyer)	8	0.072		0.242					
	Lakeview UD (buyer)				0.157					
	Striggersville UD (buyer)				0.088					
	Mid-Hawkins Co. UD (buyer)				0.069					
	Surgoinsville UD (buyer)				0.006					
594 Persia Utility District	Rogersville WS (seller)			0.242		0.242	3,501	69	0.336	
596 Lakeview Utility	Rogersville WS (seller)			0.157		0.165	2162	76		
District	well	8	0.008							
673 Striggersville Utility District	Rogersville WS (seller)			0.088		0.088	1,094	80		

Supplement A. Public water-supply systems and associated water use in the Tennessee hydrologic region—Continued

County, PWSID, and system	Source of supply (seller, buyer)	Principal aquifer	With- drawal (Mgal/d)	Water purchased (Mgal/d)	Water sold (Mgal/d)	Gross water use (Mgal/d)	Popula- tion served	Gross per capita use (gal/d)	Storage capacity (million gallons)	Design capacity (million gallons)
Hawkins County—Continued										
682 Surgoinsville Utility District	Jennings Spring First UD of Hawkins Co. #1 (seller)	8	0.219	0.036		0.261	1,947	134	1.188	0.288
	Rogersville WS			0.006						
761 New Canton Utility District	First UD of Hawkins Co. #1 (seller)			0.040		0.040	364	110		
855 First Utility District of Hawkins County #2	springs	8	0.591			0.591	7,095	83	0.450	1.56
939 Mid Hawkins County Utility District	Rogersville WS (seller) well	8	0.219	0.069		0.288	501	575	0.105	
Henderson County										
402 Lexington Water System	Beech River, Beech Reservoir		3.536			3.536	20,772	170	1.25	5.04
609 Sardis Water System	4 wells	3	0.072			0.072	917	78	0.050	0.134
614 Scotts Hill Water System	11 wells	3	0.293			0.293	3,586	82	0.404	0.405
Henry County										
536 Paris Board of Public Utilities	3 wells South Paris Water Coop.	3	2.569		0.215	2.212	11,725	189	2.30	6.05
	(buyer) NW Henry Co. UD (buyer)				0.142					
537 South Paris Water Cooperative	Paris BPU (seller)			0.215		0.215	1,694	127		

County, PWSID, and system	Source of supply (seller, buyer)	Principal aquifer	With- drawal (Mgal/d)	Water purchased (Mgal/d)	Water sold (Mgal/d)	Gross water use (Mgal/d)	Popula- tion served	Gross per capita use (gal/d)	Storage capacity (million gallons)	Design capacity (million gallons)
Henry County—Continued 539 Antioch Water Company	well	3	0.033			0.033	186	177	0.002	0.144
540 Northeast Henry County Utility District	3 wells	3	0.355			0.355	3,214	110	0.900	0.576
568 Puryear Water System	2 wells	2	0.087			0.087	908	96	0.216	0.216
838 Northwest Henry County Utility District	Paris BPU (seller)			0.142		0.142	985	144	0.150	
933 Country Junction	3 wells	3	0.003			0.003	41	81	0.005	
Hickman County 066 Bon Aqua-Lyles Utility District	Fairview WS (seller)* Piney River		0.763	0.011		0.774	7,638	101	0.800	1.30
103 Centerville Water System	Big Swan Creek		1.24			1.24	7,388	168	1.47	2.304
533 Turney Center	Duck River		0.285			0.285	1,000	285	1.00	0.864
Houston County 698 Tennessee Ridge Water System	3wells Erin (seller)*	5	0.162	0.076		0.238	2,695	88	0.650	0.331
Humphreys County 420 McEwen Water Department	2 wells	5	0.290			0.290	2,588	112	0.600	1.01

^{*} See Supplement B

Supplement A. Public water-supply systems and associated water use in the Tennessee hydrologic region—Continued

County, PWSID, and system	Source of supply (seller, buyer)	Principal aquifer	With- drawal (Mgal/d)	Water purchased (Mgal/d)	Water sold (Mgal/d)	Gross water use (Mgal/d)	Popula- tion served	Gross per capita use (gal/d)	Storage capacity (million gallons)	Design capacity (million gallons)
Humphreys County—Continued 497 New Johnsonville Water Department	Tennessee River		0.713			0.713	2,176	328	0.800	1.44
733 Waverly Water System	3 wells Duck River	5	0.893 0.403			1.296	6,400	202	1.15	1.50
921 Natchez Trace Youth Academy formerly Seven Hawks Wilderness Program	well	5	0.002			0.002	45	44		
958 Wildwood Estates	2 wells	5	0.007			0.007	64	109		
961 Acorn Village Mobile Home Park	well	5	0.002			0.002	38	57		
Jefferson County 170 Dandridge Water Department	springs and well Jefferson City WSC (seller)	8	0.194	0.215		0.410	3,697	111	1.36	0.230
328 Jefferson City Water and Sewer Commission	Mossy Creek New Market UD (buyer) Shady Grove UD (buyer) Dandridge (buyer)		2.702		0.379 0.938 0.215	1.17	6,956	168	3.14	5.07
329 Baneberry Utility District	4 wells	8	0.044			0.044	464	95	0.100	0.144
499 New Market Utility District	Jefferson City WSC (seller)			0.379		0.379	3,748	101	0.448	

Supplement A. Public water-supply systems and associated water use in the Tennessee hydrologic region—Continued

County, PWSID, and system	Source of supply (seller, buyer)	Principal aquifer	With- drawal (Mgal/d)	Water purchased (Mgal/d)	Water sold (Mgal/d)	Gross water use (Mgal/d)	Popula- tion served	Gross per capita use (gal/d)	Storage capacity (million gallons)	Design capacity (million gallons)
Jefferson County—Continued 626 Shady Grove Utility District	Jefferson City WSC (seller) Knoxville UB (seller)			0.938 0.488		1.426	11,348	126	0.700	
746 White Pine Water System	3 wells	8	0.289			0.289	2,402	120	1.20	0.70
Johnson County 085 Carderview Utility District	2 wells	8	0.046			0.046	549	84	0.08	0.102
479 Mountain City Water Department	Rambo Spring Silver Lake Spring Silver Lake Creek Dry Run UD (buyer)	8	0.508 0.318 1.196		0.015	2.01	9,623	209	3.095	3.096
480 Brownlow Utility District	Vaughts Creek		0.020			0.020	453	44	0.052	
485 Cold Springs Utility District	Cold Springs	8	0.052			0.052	640	81	0.30	0.778
919 Dry Run Utility District	Mountain City WD (seller)			0.015		0.015	383	39	0.010	
8033 Cold Springs II WS	spring	9	0.001			0.001	25	40		
Knox County 280 Hallsdale-Powell Utility District	Beaver Creek Melton Hill Reservoir Granny Bright Spring Fowler Springs	8 8	0.596 4.763 0.119 0.808			6.29	53,721	117	8.60	8.30

Supplement A. Public water-supply systems and associated water use in the Tennessee hydrologic region—Continued

County, PWSID,	Source of supply	Principal	With- drawal	Water purchased	Water sold	Gross water use	Popula- tion	Gross per capita use	Storage capacity (million	Design capacity (million
and system	(seller, buyer)	aquifer	(Mgal/d)	(Mgal/d)	(Mgal/d)	(Mgal/d)	served	(gal/d)	gallons)	gallons)
Knox County—Continued										
366 Knoxville Utilities	Tennessee River		35.36			34.87	170,351	205	28.00	62.50
Board #1	Shady Grove UD (buyer)				0.488					
367 Knox-Chapman Utility	French Broad River		2.844			2.837	23,607	120	4.20	3.88
District	Tuckaleechee UD (buyer)				0.007		,			
369 First Utility District	Sinking Creek embayment		9.6			9.034	62,061	145	12.19	21.00
of Knox County	Dixie Lee UD (buyer)		7.0		0.477	7.031	02,001	115	12.17	21.00
•	Martel UD (buyer)				0.089					
371 West Knox Utility	Melton Hill Reservoir		5.201			5.201	44,852	116	7.25	12.76
District							,			
515 Northeast Knox Utility	Holston River		1.436			1.285	12,826	100	2.86	2.30
District	Luttrell-Blaine-Corryton		1.130		0.013	1.203	12,020	100	2.00	2.50
	UD (buyer)				0.420					
	Maynardville WD (buyer)				0.138					
892 Knoxville Utility Board #3	French Broad River		1.051			1.051	9,685	108	1.25	2.02
954 Colonial Harbor WS	wells	8	0.002			0.002	30	67		
754 Colonial Harbot W5	WCHS	O	0.002			0.002	30	07		
Lawrence County										
239 Fall River Road Utility District	Lawrenceburg WS (seller)			0.151		0.151	2,452	61	0.075	
•	-									0.00-
320 Iron City Utility District	St. Joseph WS (seller) City Spring	5	0.004	0.044		0.048	668	72	0.100	0.086
DISHICL	City Spring	J	0.00 4							
389 Northeast Lawrence	Lawrenceburg WS			0.063		0.063	1,090	58		
Utility District	(seller)									

Supplement A. Public water-supply systems and associated water use in the Tennessee hydrologic region—Continued

County, PWSID, and system	Source of supply (seller, buyer)	Principal aquifer	With- drawal (Mgal/d)	Water purchased (Mgal/d)	Water sold (Mgal/d)	Gross water use (Mgal/d)	Popula- tion served	Gross per capita use (gal/d)	Storage capacity (million gallons)	Design capacity (million gallons)
Lawrence County—Continued 391 New Prospect Utility District	Lawrenceburg WS (seller)	<u> </u>		0.120		0.120	1,821	66	0.100	
392 Lawrenceburg Water System	Shoal Creek Hope Spring Fall River Road UD (buyer) NE Lawrence UD (buyer) New Prospect UD (buyer)	5	1.905 1.267		0.151 0.063 0.120	2.84	16,912	168	5.57	8.00
399 Leoma Utility District	well	5	0.187			0.187	1,834	102	0.100	0.144
408 Loretto Water Department	Stillhouse Spring St Joseph WS (seller) Westpoint UD (buyer)	5	0.409	0.037	0.050	0.396	2,982	133	0.773	0.864
604 St. Joseph Water System	spring Loretto WD (buyer) Iron City UD (buyer)	5	0.258		0.037 0.044	0.221	1,218	181	0.300	0.252
676 Summertown Water System	4 wells	5	0.182			0.182	2,659	68	0.168	0.180
740 Westpoint Utility District	Loretto WD (seller)			0.050		0.050	288	173	0.050	0.072
Lewis County 304 Hohenwald Water System	3 wells	5	1.48			1.48	8,448	175	1.27	2.74
678 The Farm Water System	2 wells	5	0.028			0.028	186	150	0.040	0.086

County, PWSID, and system	Source of supply (seller, buyer)	Principal aquifer	With- drawal (Mgal/d)	Water purchased (Mgal/d)	Water sold (Mgal/d)	Gross water use (Mgal/d)	Popula- tion served	Gross per capita use (gal/d)	Storage capacity (million gallons)	Design capacity (million gallons)
Lincoln County			4.000					1.50	2.10	
242 Fayetteville Water System	Elk River Teal Hollow Spring	5	1.309 0.535			1.62	9,972	162	3.10	5.21
System	Petersburg WS (buyer)	3	0.555		0.065					
	Lincoln Co. BPU #1 (buyer)				0.019					
	Lincoln Co. BPU #2				0.141					
	(buyer)									
544 Petersburg Water	Fayetteville WS			0.065		0.065	828	78	0.250	
System	(seller)									
764 Lincoln County Board of	wells (Elora)	5	0.198			1.695	15,035	113	2.30	2.15
Public Utilities #1	wells (Taft)	5	0.940							
	Flintville wells	5	0.538	0.010						
	Fayetteville WS (seller)			0.019						
884 Lincoln County Board of Public Utilities #2	Fayetteville WS (seller)			0.141		0.141	1,311	107	0.25	
Loudon County										
396 Lenoir City Utility	Tennessee River		0.903			1.581	7,648	206	3.82	3.01
Board	Allen Fine Spring	8	0.807				.,.			
	Dixie Lee UD (buyer)				0.129					
397 Dixie Lee Utility	Allen Fine Spring	8	0.791			1.235	9,743	127	1.45	0.86
District Le Fir	Lenoir City UB (seller)			0.129						
	First UD Knox County (seller)			0.477						
	Martel UD (buyer)				0.145					
409 Loudon Utilities	Piney Spring	8	0.393			7.919	10,391	762	8.19	10.00
Board	Tennessee River		7.526							

Supplement A

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Supplement A. Public water-supply systems and associated water use in the Tennessee hydrologic region—Continued

County, PWSID, and system	Source of supply (seller, buyer)	Principal aquifer	With- drawal (Mgal/d)	Water purchased (Mgal/d)	Water sold (Mgal/d)	Gross water use (Mgal/d)	Popula- tion served	Gross per capita use (gal/d)	Storage capacity (million gallons)	Design capacity (million gallons)
Loudon County—Continued 434 Martel Utility District	Dixie Lee UD (seller) First UD Knox Co. (seller)			0.145 0.089		0.234	2,997	78	0.20	
971 Creekside Mobile Home Subdivision	well	8	0.003			0.003	45	67		
McMinn County 024 Athens Utilities Board	Hiwassee UC (seller) 2 springs 2 wells	8 8	1.36 1.24	0.664		3.264	16,774	195	4.50	4.15
106 Calhoun-Charleston Utility District	Hiwassee UC (seller)			0.158		0.158	1,795	88	0.200	
224 Englewood Water Department	Middle Creek		0.340			0.340	2,823	120	0.695	0.576
233 Etowah Utilities District	Hiwassee River Hiwassee Water Coop (buyer)		2.55		0.007	2.54	9,185	277	3.10	3.46
510 Niota Water System	Hiwassee UC (seller)			0.258		0.258	2,259	114	0.300	
576 Riceville Utility District	Hiwassee UC (seller)			0.190		0.190	2,241	85	0.330	
McNairy County 002 Adamsville Water System	2 wells	3	0.787			0.787	7,111	111	0.66	0.64
454 Michie Water Department	3 wells	3	0.253			0.253	2,344	108	0.200	0.403

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County, PWSID, and system	Source of supply (seller, buyer)	Principal aquifer	With- drawal (Mgal/d)	Water purchased (Mgal/d)	Water sold (Mgal/d)	Gross water use (Mgal/d)	Popula- tion served	Gross per capita use (gal/d)	Storage capacity (million gallons)	Design capacity (million gallons)
Marion County										
278 Griffith Creek Utility District	Big Creek UD* (seller)			0.100		0.100	1,218	82	0.101	0.180
325 Jasper Water Department	Blue Spring Sequatchie river	8	0.713 1.048			1.761	8,581	205	2.50	1.69
535 Orme Water System	2 springs	8	0.030			0.030	93	322	0.050	0.144
651 South Pittsburg Water System	Tennessee River		1.089			1.089	6,429	169	2.35	1.87
749 Whitwell Water Department	Sequatchie River West Valley Water Association (buyer)		0.587		0.147	0.44	4,181	105	0.66	1.20
750 West Valley Water Association	Whitwell WD (seller)			0.147		0.147	2,537	58	0.21	
909 Suck Creek Utility District	3 wells	5	0.046			0.046	494	93	0.100	0.108
924 River Landing Development	2 wells	5	0.003			0.003	56	57		
8049 Foster Falls Utility District	Tracy City WS (seller)			0.021		0.0211				
Marshall County 104 Chapel Hill Water System	well Marshall Co. BPU #1 (seller) Marshall Co. BPU #1 (buyer)	6	0.152	0.017	0.058	0.111	1,164	95	0.100	

^{*} See Supplement B

Supplement A. Public water-supply systems and associated water use in the Tennessee hydrologic region—Continued

County, PWSID, and system	Source of supply (seller, buyer)	Principal aquifer	With- drawal (Mgal/d)	Water purchased (Mgal/d)	Water sold (Mgal/d)	Gross water use (Mgal/d)	Popula- tion served	Gross per capita use (gal/d)	Storage capacity (million gallons)	Design capacity (million gallons)
Marshall County—Continued 105 Marshall County Board of Public Utilities #1	Lewisburg WS (seller) Chapel Hill (seller) Chapel Hill (buyer)			0.404 0.058	0.017	0.445	3,354	133	0.517	
139 Cornersville Water Department	Lewisburg WS (seller) Marshall Co. BPU #3 (buyer)			0.121	0.016	0.137	1,061	129	0.200	
400 Lewisburg Water System	Duck River (181.0) Marshall Co. BPU #1 (buyer) Cornersville WD (buyer) Marshall Co. BPU #2 (buyer) Marshall Co. BPU #3 (buyer)		2.756		0.404 0.121 0.045 0.047	2.24	12,958	173	5.30	4.00
857 Marshall County Board of Public Utilities #2	Lewisburg WS (seller)			0.045		0.045	375	120		
858 Marshall County Board of Public Utilities #3	Lewisburg WS (seller) Cornersville WD (seller)			0.047 0.016		0.061	447	136		
Maury County 128 Columbia Water Department	Duck River Spring Hill WD (buyer) Maury Co. WS (buyer)		10.556		1.297 1.045	8.214	44,676	184	13.90	15.24

Supplement A. Public water-supply systems and associated water use in the Tennessee hydrologic region—Continued

County, PWSID, and system	Source of supply (seller, buyer)	Principal aquifer	With- drawal (Mgal/d)	Water purchased (Mgal/d)	Water sold (Mgal/d)	Gross water use (Mgal/d)	Popula- tion served	Gross per capita use (gal/d)	Storage capacity (million gallons)	Design capacity (million gallons)
Maury County—Continued 488 Mount Pleasant Water System #1	springs	6	1.027			1.027	6,012	171	1.36	1.30
667 Spring Hill Water Department	Columbia WD (seller) HB & TS UD (buyer)			1.297	0.406	0.891	6,039	148	2.94	
770 Maury County Water System	Columbia WD (seller)			1.045		1.045	11,853	88	2.20	
Meigs County 183 Decatur Water Department	Eaves Spring Eaves well	8 8	0.269 0.315			0.584	4,110	142	1.00	1.00
Monroe County 425 Madisonville Water Department	Tellico Area SS (seller)			0.916		0.916	8,213	112	2.50	2.02
426 Hiwassee College	Hiwassee Spring	8	0.058			0.058	350	166	0.140	0.165
687 Sweetwater Utility Board	Sweetwater Creek		1.349			1.349	9,010	150	2.20	3.32
693 Tellico Plains Water Department	8 wells	8	0.502			0.502	4,652	108	0.734	1.397
726 Tellico Area Services System	Little Tennessee River, Tellico Reservoir Madisonville UD (buyer) South Blount UD (buyer) Tellico Village POA (buyer)		3.659		0.916 0.778 0.498	1.467	4,681	313	6.00	3.46

Supplement A. Public water-supply systems and associated water use in the Tennessee hydrologic region—Continued

Source of supply (seller, buyer)	Principal aquifer	With- drawal (Mgal/d)	Water purchased (Mgal/d)	Water sold (Mgal/d)	Gross water use (Mgal/d)	Popula- tion served	Gross per capita use (gal/d)	Storage capacity (million gallons)	Design capacity (million gallons)
Tellico Area SS (seller)			0.498		0.498	5,004	99		
4 wells	8	0.009			0.009	79	114	0.006	
East Fork Mulberry Creek Tims Ford Lake		0.313 0.237			0.550	2,638	208	0.55	0.576
Lake impoundment		0.169			0.169	500	338	0.700	1.04
Crooked Fork Creek Sunbright UD (buyer)*		0.878		0.148	0.730	5,115	143	1.10	2.02
Harriman UB (seller)			0.232		0.232	2,504	93	0.211	
Buffalo River		0.492			0.492	3,528	139	0.700	0.972
Buffalo River		0.256			0.256	1,781	144	0.800	0.576
	Tellico Area SS (seller) 4 wells East Fork Mulberry Creek Tims Ford Lake Lake impoundment Crooked Fork Creek Sunbright UD (buyer)* Harriman UB (seller) Buffalo River	Tellico Area SS (seller) 4 wells 8 East Fork Mulberry Creek Tims Ford Lake Lake impoundment Crooked Fork Creek Sunbright UD (buyer)* Harriman UB (seller)	Source of supply (seller, buyer) Tellico Area SS (seller) 4 wells 8 0.009 East Fork Mulberry Creek Tims Ford Lake 0.237 Lake impoundment Crooked Fork Creek Sunbright UD (buyer)* Harriman UB (seller) Buffalo River 0.492	Source of supply (seller, buyer) Principal aquifer drawal (Mgal/d) purchased (Mgal/d) Tellico Area SS (seller) 0.498 4 wells 8 0.009 East Fork Mulberry Creek 0.313 Tims Ford Lake 0.237 Lake impoundment 0.169 Crooked Fork Creek Sunbright UD (buyer)* 0.878 Harriman UB (seller) 0.232	Source of supply (seller, buyer) Principal aquifer drawal (Mgal/d) purchased (Mgal/d) sold (Mgal/d) Tellico Area SS (seller) 0.498 0.498 4 wells 8 0.009 0.498 East Fork Mulberry Creek 0.313 0.237 0.237 Lake impoundment 0.169 0.878 0.148 Crooked Fork Creek Sunbright UD (buyer)* 0.232 0.232 Buffalo River 0.492 0.492	Source of supply (seller, buyer) Principal aquifer With-drawal (Mgal/d) Water purchased (Mgal/d) Water void (Mgal/d) water use (Mgal/d) Tellico Area SS (seller) 0.498 0.498 0.498 4 wells 8 0.009 0.009 East Fork Mulberry Creek Tims Ford Lake 0.237 0.550 Lake impoundment 0.169 0.169 Crooked Fork Creek Sunbright UD (buyer)* 0.878 0.148 Harriman UB (seller) 0.232 0.232 Buffalo River 0.492 0.492	Source of supply (seller, buyer)Principal aquiferWith-drawal (Mgal/d)Water purchased (Mgal/d)Water sold (Mgal/d)water use water use (Mgal/d)Population servedTellico Area SS (seller)0.4980.4980.4985,0044 wells80.0090.00979East Fork Mulberry Creek Tims Ford Lake0.2370.5502,638Lake impoundment0.1690.1690.169500Crooked Fork Creek Sunbright UD (buyer)*0.8780.1480.148Harriman UB (seller)0.2320.2322,504Buffalo River0.4920.4920.4923,528	Source of supply (seller, buyer) Principal aquifer Witth drawal (Mgal/d) Water purchased (Mgal/d) Water sold (Mgal/d) Water wise use use use (gal/d) Popular capital tion use (gal/d) Tellico Area SS (seller) 0.498 0.498 0.498 5,004 99 4 wells 8 0.009	Source of supply (seller, buyer) Principal aquifer With drawal drawal aquifer Water burchased (Mgal/d) Water sold (Mgal/d) Water sold (Mgal/d) Popula cition served capita (ining apacity) Storage capacity (apacity) Tellico Area SS (seller) 0.498 0.498 5,004 99 4 wells 8 0.009 0.009 79 114 0.006 East Fork Mulberry Creek 0.237 0.550 2,638 208 0.55 Lake impoundment 0.169 0.169 500 338 0.700 Crooked Fork Creek Sunbright UD (buyer)* 0.878 0.232 0.148 0.232 2,504 93 0.211 Buffalo River 0.492 0.492 0.492 3,528 139 0.700

^{*} See Supplement B.

Supplement A. Public water-supply systems and associated water use in the Tennessee hydrologic region—Continued

			With-	Water	Water	Gross water	Popula-	Gross per capita	Storage capacity	Design capacity
County, PWSID, and system	Source of supply (seller, buyer)	Principal aquifer	drawal (Mgal/d)	purchased (Mgal/d)	sold (Mgal/d)	use (Mgal/d)	tion served	use (gal/d)	(million gallons)	(million gallons)
Polk County										
048 Benton Water System	well Hiwassee Water Coop (buyer)	8	0.381		0.106	0.208	2,394	86	0.600	1.58
	Ocoee Utility District (buyer)				0.067					
049 Hiwassee Water Cooperative	Etowah UD (seller) Benton WS (seller)			0.007 0.106		0.113	931	121		
136 Copperhill Water Department	McCaysville, Ga (seller)			0.655		0.655	766	855	0.350	0.727
138 Cherokee Hills Utility District	4 springs	8	0.053			0.053	319	166	0.080	0.137
844 Copper Basin Utility District	Campbell Cove Lake		0.193			0.193	2,035	93	0.60	0.749
Rhea County	Tennessee River		2.261			2.25	16 051	133	4.62	4.03
174 Dayton Water Department	Laurelbrook school (buyer)		2.201		0.011	2.25	16,851	155	4.02	4.03
178 Laurelbrook School	well Dayton WD (seller)	4	0.021	0.011		0.032	85	376	0.055	0.086
269 Graysville Water Department	4 wells	4	0.192			0.192	1,742	110	0.330	0.518
656 Spring City Water System	Piney River, North UD of Rhea (buyer)		0.445		0.130	0.315	2,490	126	0.950	1.66

Supplement A. Public water-supply systems and associated water use in the Tennessee hydrologic region—Continued

County, PWSID, and system	Source of supply (seller, buyer)	Principal aquifer	With- drawal (Mgal/d)	Water purchased (Mgal/d)	Water sold (Mgal/d)	Gross water use (Mgal/d)	Popula- tion served	Gross per capita use (gal/d)	Storage capacity (million gallons)	Design capacity (million gallons)
Rhea County—Continued 657 Newport Resort Water System	well	8	0.009			0.009	123	73	0.030	0.043
663 Yost Trailer Park	3 wells	8	0.001			0.001	25	40		
863 Grandview Utility District	Crossville WD* (seller)			0.071		0.071	1,228	58	0.270	
872 Watts Bar Utility District	2 wells	8	0.569			0.569	6,569	87	0.833	0.792
970 North UD of Rhea County	Spring City WS (seller)			0.130		0.130	1,067	122		
Roane County 287 Harriman Utility Board	Emory River Swan Pond UD (buyer) Wolfe Branch UD (buyer)		1.993		0.056 0.232	1.705	9,108	187	2.40	3.30
360 Kingston Water System	spring Tennessee River, East Roane Co. UD (buyer)	8	0.187 0.938		0.083	1.042	7,438	140	1.00	2.00
361 Lewands Water System	2 wells	8	0.004			0.004	61	66		
457 Roane Central UD	Rockwood WS (seller)			0.419		0.419	3,795	110	0.400	
531 Cumberland UD	Little Emory river Sunbright UD* (buyer)		1.088		0.186	0.902	9,796	92	3.68	2.45
590 Rockwood Water System	Tennessee River, Roane Central UD (buyer)		2.126		0.419	1.707	8,586	199	3.00	5.00

^{*} See Supplement B

County, PWSID, and system	Source of supply (seller, buyer)	Principal aquifer	With- drawal (Mgal/d)	Water purchased (Mgal/d)	Water sold (Mgal/d)	Gross water use (Mgal/d)	Popula- tion served	Gross per capita use (gal/d)	Storage capacity (million gallons)	Design capacity (million gallons)
Roane County—Continued 686 Swan Pond Utility District	Harriman UB (seller)			0.056		0.056	620	90		
976 Helton Estates	well	8	0.004			0.004	53	75		
969 East Roane Co. UD	Kingston WS (seller)			0.083		0.083	1,283	65		
Sequatchie County 205 Dunlap Water System 927 Cagle-Fredonia Utility District	Sequatchie River Big Creek UD* (seller) Warren County UD*		0.649	0.108	0.032	0.649 0.076	5,118 1,330	127 57	2.350 0.150	0.864
Sevier County	(buyer)				0.002					
256 Gatlinburg Water Department	West Prong Little Pigeon River Pigeon Forge WS (seller) 2 wells	9	0.001	0.369		2.178	8,323	262	6.596	2.889
	Chalet Village North (buyer)	,	0.001		0.069					
261 Webb Creek Utility District	Newport UB (seller)			0.098		0.098	1,050	93	0.368	
270 Great Smoky Mountains National Park	well	9	0.013			0.013	40	325	0.250	0.200

^{*} See Supplement B

County, PWSID, and system	Source of supply (seller, buyer)	Principal aquifer	With- drawal (Mgal/d)	Water purchased (Mgal/d)	Water sold (Mgal/d)	Gross water use (Mgal/d)	Popula- tion served	Gross per capita use (gal/d)	Storage capacity (million gallons)	Design capacity (million gallons)
Sevier County—Continued 548 Pigeon Forge Water System	Walden Creek Douglas Lake Sevierville WS (seller) Gatlinburg WD (buyer)		0.626 2.411	0.047	0.369	2.715	8,325	326	6.65	7.15
617 Sevierville Water System	East Prong Little Pigeon River Pigeon Forge WS (buyer)		2.372		0.047	2.325	14,456	161	3.40	4.00
618 East Sevier County Utility District	2 wells	9	0.159			0.159	299	532	0.263	
841 Norton Creek Water System	well	8	0.008			0.008	106	75	0.026	
849 Chalet Village North	Gatlinburg WD (seller) well	9	0.035	0.069		0.104	1,241	84	0.100	0.086
925 Riverside Campground	2 wells	9	0.006			0.006	84	71		
998 Cove Mountain Mobile Home Park	2 wells	9	0.007			0.007	98	71		
Sullivan County 056 Bloomingdale Utility District	Reedy Creek Kingsport WD (seller) Kingsport WD (buyer)		1.095	0.093	0.016	1.172	12,201	96	1.44	1.38

Supplement A. Public water-supply systems and associated water use in the Tennessee hydrologic region—Continued

County, PWSID, and system	Source of supply (seller, buyer)	Principal aquifer	With- drawal (Mgal/d)	Water purchased (Mgal/d)	Water sold (Mgal/d)	Gross water use (Mgal/d)	Popula- tion served	Gross per capita use (gal/d)	Storage capacity (million gallons)	Design capacity (million gallons)
Sullivan County—Continued										
057 Blountville Utility District	Bristol WD (seller) Bristol-Bluff City UD (seller)			0.640 0.330		0.973	9,318	104	0.400	
	Tri-Cities Sullivan UD (seller)			0.003						
058 Tri-Cities/Sullivan Utility District	Bristol-Bluff City UD (seller)			0.170		0.259	3,165	82	0.544	
	Johnson City WD (seller) Blountville UD (buyer)			0.092	0.003					
061 Bluff City Water Dept.	Bristol Bluff City UD (seller)			0.024		0.264	2,214	119	0.300	0.325
	Underwood spring	9	0.240							
062 Chinquapin Grove	Wildcat Springs	8	0.096			0.214	1,980	108	0.250	0.230
Utility District	Johnson City WD (seller) Elizabethton WD (seller)			0.038 0.080						
073 Bristol Water Dept.	South Fork Holston River		5.856				27,402	180	10.150	10.138
	Blountville UD (buyer)				0.640					
	Holston UD (buyer)				0.163					
	Bristol-Bluff City WS (buyer)				0.054					
	Intermont UD (buyer) South Bristol-Weaver Pike UD (buyer)				0.060 0.352					
074 Holston Utility District	Bristol WS (seller)			0.163		0.163	1,680	97	0.212	

County, PWSID, and system	Source of supply (seller, buyer)	Principal aquifer	With- drawal (Mgal/d)	Water purchased (Mgal/d)	Water sold (Mgal/d)	Gross water use (Mgal/d)	Popula- tion served	Gross per capita use (gal/d)	Storage capacity (million gallons)	Design capacity (million gallons)
Sullivan County—Continued 078 Jacobs Creek Job Corps System	Little Jacob Creek		0.029			0.029	300	97	0.050	0.077
079 Bristol-Bluff City Utility District	South Fork Holston River Bristol WD (seller) Blountville UD (buyer) Tri Cities/Sullivan UD (buyer) Bluff City WS (buyer) South Bristol-Weaver Pike UD (buyer)		1.686	0.054	0.330 0.170 0.024 0.332	0.884	4,818	183	1.40	2.40
319 Intermont Utility District	Bristol WS (seller)			0.060		0.060	520	115		
349 Kingsport Water Department	South Fork Holston River Johnson City WD (seller) Bloomingdale (seller) Bloomingdale (buyer)		16.448	0.070 0.016	0.093	16.441	84,757	194	15.75	28.00
644 South Bristol-Weaver Pike Utility District	Bristol-Bluff City WD (seller) Bristol WD (seller)			0.332 0.352		0.684	5,334	128	0.500	
854 Foxfire Homeowners Association	2 wells	8	0.010			0.010	110	91	0.027	
926 Robindale Water Association	wells	8	0.004			0.004	53	75	0.005	

County, PWSID, and system	Source of supply (seller, buyer)	Principal aquifer	With- drawal (Mgal/d)	Water purchased (Mgal/d)	Water sold (Mgal/d)	Gross water use (Mgal/d)	Popula- tion served	Gross per capita use (gal/d)	Storage capacity (million gallons)	Design capacity (million gallons)
Unicoi County 231 Erwin Utilities	3 wells spring	8	1.909 0.299			1.790	11,985	149	2.25	3.69
	Unicoi UD (buyer)	ŏ	0.299		0.418					
719 Unicoi Water Utility District	Erwin Utilities (seller)			0.418		0.418	4,017	104	0.250	
Union County										
415 Luttrell-Blaine-Corryton Utility District	3 springs N.E. Knox UD (seller)	8	0.267	0.013		0.607	5,703	106	0.512	1.584
Ounty District	Graveston Mil Place		0.327	0.013						
442 Maynardville Water	2 springs	8	0.294			0.432	4,373	99	0.750	0.648
Department	N.E. Knox			0.138						
899 Hickory Star Marina	spring	8	0.009			0.009	113	80	0.050	
Washington County										
331 Johnson City Water	spring	9	3.720			14.43	78,231	187	16.10	21.00
Department	Watauga river		10.912		0.020					
	Chinquapin Grove (buyer) Kingsport Water Dept. buyer)				0.038 0.070					
	Tri-Cities/ Sullivan UD (buyer)				0.092					
	Elizabethton WD (buyer)				0.006					
338 Jonesboro Utility	Nolichucky River		2.457			2.355	18,522	127	3.29	4.00
District	Chuckey UD (buyer)				0.102					

Supplement A. Public water-supply systems and associated water use in the Tennessee hydrologic region—Continued

County, PWSID, and system	Source of supply (seller, buyer)	Principal aquifer	With- drawal (Mgal/d)	Water purchased (Mgal/d)	Water sold (Mgal/d)	Gross water use (Mgal/d)	Popula- tion served	Gross per capita use (gal/d)	Storage capacity (million gallons)	Design capacity (million gallons)
Wayne County										
119 Clifton Water Department	Tennessee River		0.411			0.411	1,102	373	0.565	0.645
127 Collinwood Water Department	well	5	0.200			0.200	2,109	95	0.300	0.396
736 Waynesboro Water System	Green River		0.422			0.422	3,739	113	0.600	0.865
934 Southwest Wayne County Utility District	West Lauderdale County, Alabama (seller)			0.004		0.004	98	41	0.200	
967 Southgate Terrace	well	3	0.001			0.001	25	40		
8045 Silver Pines Mobile Home Park	well	5	0.003			0.003	42	71		
Williamson County				0.406				100	• • • •	4.40
699 HB & TS Utility District	Spring Hill WD (seller) Harpeth Valley UD* (seller)			0.406 0.913		1.319	12,214	108	3.90	1.40

^{*} See Supplement B

Supplement B. Public water-supply systems and associated water use in the Ohio hydrologic region (Modified from Alexander and others, 1984, and from Hutson and Morris, 1992)

[PWSID, Public Water System Identification number; Mgal/d, million gallons per day; gal/d, gallons per day; UD, Utility District; WC, Water Company; WD, Water Department; WS, Water System; Co., county; ---, not applicable; Principal aquifer: 4, Pennsylvanian sandstone; 5, Mississippian carbonate; 6, Ordovician carbonate rock; 8, Cambrian-Ordovician carbonate; Gross water use = (withdrawal + purchased water) - water sold; Gross per capita = (gross water/population)* 1,000,000]

County, PWSID, and system	Source of supply (seller, buyer)	Principal aquifer	With- drawal (Mgal/d)	Water purchased (Mgal/d)	Water sold (Mgal/d)	Gross water use (Mgal/d)	Popula- tion served	Gross per capita use (gal/d)	Storage capacity (million gallons)	Design capacity (million gallons)
Di la G			Ohio reg	ion						
Bledsoe County 553 Taft Youth Center	Bee Creek Fall Creek Falls UD (buyer)		0.637		0.351	0.286	1,000	286	1.46	0.605
Campbell County 330 Jellico Water Department	Proctors Hollow Creek (impoundment)		0 .695			0.695	4,500	154	1.25	1.50
912 Deerfield Resort Water System	well	8	0.007			0.007	101	69		
Cannon County 756 Woodbury Water System	East Fork Stones River DeKalb UD #1 (seller) W. Warren-Viola UD (seller)		0.698	0.007 0.020		0.725	7,540	96	1.45	0.846
Cheatham County 023 Ashland City Water Department	Marrowbone Creek, Cheatham Reservoir		0.890			0.890	4,202	212	1.60	1.728
218 East Montgomery Utility District	Cunningham E. Mont.UD (seller)			1.212		1.212	12,036	101	1.80	
558 Pleasant View Utility District	Springfield WS (seller) Sycamore Creek (new Sycamore Creek (old)		0.387 0.586	0.012		0.985	11,565	85	1.60	0.800

Supplement B. Public water-supply systems and associated water use in the Ohio hydrologic region (Modified from Alexander and others, 1984, and from Hutson and Morris, 1992)—Continued

County, PWSID, and system	Source of supply (seller, buyer)	Principal aquifer	With- drawal (Mgal/d)	Water purchased (Mgal/d)	Water sold (Mgal/d)	Gross water use (Mgal/d)	Popula- tion served	Gross per capita use (gal/d)	Storage capacity (million gallons)	Design capacity (million gallons)
Cheatham County—Continued 582 River Road Utility District	Brush Creek Harpeth Valley UD (seller)		0.075	0.086		0.161	1,579	102	0.70	0.144
645 Second South Cheatham Utility District	Harpeth River		0.661			0.661	6,345	104	0.300	2.10
Claiborne County 826 Clear Fork Utility District	wells	4	0.100			0.100	1,566	64	0.350	0.288
Clay County 099 Celina Water System	Obey River		0.750			0.750	4,227	177	1.50	2.00
573 Northwest Clay County Utility District	Cumberland River Plant		0.345			0.345	2,861	120	0.400	
Coffee County 880 Stacey Ann's Mobile Home Park	wells	5	0.009			0.009	123	73		
Cumberland County 150 Crossville Water Department	Meadow Park Lake and Holiday Hills Lake Catoosa UD* (buyer) South Cumberland UD* (buyer) West Cumberland UD* (buyer) Grandview UD* (buyer))	2.935		0.518* 0.450 0.125 0.071	1.771	16,506	107	3.68	5.04

^{*} See Supplement A

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Supplement B. Public water-supply systems and associated water use in the Ohio hydrologic region (Modified from Alexander and others, 1984, and from Hutson and Morris, 1992)—Continued

County, PWSID, and system	Source of supply (seller, buyer)	Principal aquifer	With- drawal (Mgal/d)	Water purchased (Mgal/d)	Water sold (Mgal/d)	Gross water use (Mgal/d)	Popula- tion served	Gross per capita use (gal/d)	Storage capacity (million gallons)	Design capacity (million gallons)
Cumberland County—Continued 557 West Cumberland Utility Dis (formerly Pleasant Hill Utility District)	trict Bon de Croft UD (seller) Crossville WD (seller)			0.125 0.125		0.25	3,759	66	0.650	
995 Wilshire Hills Apartments	Crab Orchard UD (seller)			0.034		0.034	515	66		
Davidson County 286 Harpeth Valley Utility District	Cumberland River River Road UD (buyer) Brentwood Water Dept. (buyer) Fairview Water System (buyer) Franklin Water Dept. (buyer) HB & TS UD* (buyer) Mallory Valley UD (buyer) Milcrofton UD (buyer)		15.042		0.086 2.787 0.361 3.872 0.913 1.689 0.979	4.355	29,070	150	11.85	18.90
297 Cumberland Utility District of Davidson County	Cumberland River		5.36			5.36	27,848	192	6.60	7.78
424 Madison Suburban UD	Cumberland River		8.08			8.08	41,666	194	12.00	16.00
494 Nashville Water Department #1	Cumberland River Brentwood Water Dept. (buyer	·)	90.76		0.623	90.13	412,067	218	88.17	131
527 Old Hickory Utility District	Cumberland River, Lakewood WD (buyer) Nashville WD #2 (buyer)		0.886		0.216 0.294	0.376	3,948	95	1.00	1.90
528 Lakewood Water Department	Old Hickory UD (seller)			0.216		0.216	2,242	96		

^{*} See Supplement A

Supplement B. Public water-supply systems and associated water use in the Ohio hydrologic region (Modified from Alexander and others, 1984, and from Hutson and Morris, 1992)—Continued

County, PWSID, and system	Source of supply (seller, buyer)	Principal aquifer	With- drawal (Mgal/d)	Water purchased (Mgal/d)	Water sold (Mgal/d)	Gross water use (Mgal/d)	Popula- tion served	Gross per capita use (gal/d)	Storage capacity (million gallons)	Design capacity (million gallons)
Davidson County—Continued 529 Nashville Water Department #2	Old Hickory UD (seller)			0.294		0.294	1,290	228		
DeKalb County 008 Alexandria Water System	Smith UD #1 (seller)			0.164		0.164	1,885	87	0.450	
188 DeKalb Utility District #1	Smithville WS (seller) Woodbury WS (buyer)			0.641	0.007	0.634	8,412	75	1.00	
403 Dowelltown-Liberty Utility District	2 wells	6	0.082			0.082	1,000	82	0.175	0.432
637 Smithville Water System	Caney Fork River, (Center Hill Lake) Dekalb UD #1 (buyer)		1.190		0.641	0.549	5,365	102	2.10	4.15
835 Dekalb Utility District #4	Baxter WD (seller)			0.034		0.034	377	90		
Dickson County 285 Harpeth Utility District	Dickson Water (seller) Turnbull-White Bluff UD (seller)			0.039 0.238		0.277	2,876	96	0.300	0.288
716 Turnbull-White Bluff Utility District	Turnbull Creek Dickson WD (buyer)* Harpeth UD (buyer) Fairview WS (buyer)		2.554		0.232 0.238 0.257	1.827	14,310	128	4.25	4.50

^{*} See Supplement A

Supplement B

Supplement B. Public water-supply systems and associated water use in the Ohio hydrologic region (Modified from Alexander and others, 1984, and from Hutson and Morris, 1992)—Continued

County, PWSID, and system	Source of supply (seller, buyer)	Principal aquifer	With- drawal (Mgal/d)	Water purchased (Mgal/d)	Water sold (Mgal/d)	Gross water use (Mgal/d)	Popula- tion served	Gross per capita use (gal/d)	Storage capacity (million gallons)	Design capacity (million gallons)
Dickson County—Continued 724 Vanleer Water System	spring Erin (buyer)	5	0.215		0.013	0.202	2,343	86	0.450	0.200
Fentress County 010 Allardt Water System	Fentress County UD (seller)			0.166		0.166	2,149	77	0.40	
244 Fentress County Utility District	Jamestown WD (seller) Allardt WS (buyer)			0.868	0.166	0.702	9,076	77	0.600	
324 Jamestown Water Department	North White Oak Creek Fentress County UD (buyer)		1.36		0.868	0.492	3,274	150	2.25	3.00
875 Chanute-Pall Mall Utility District	Byrdstown WD (seller)			0.061		0.061	950	64	0.200	
Grundy County 122 Big Creek Utility District	Ranger Creek impoundment Griffith Creek UD* (buyer) Cagle-Fredonia UD* (buyer)		0.891		0.100 0.108	0.683	7,631	90	1.49	1.87
Houston County 230 Erin	Cumberland River, Tennessee Ridge WS* (buyer) Vanleer WS (seller) Cumberland City WS (buyer))	0.969	0.013	0.076 0.039	0.867	4,740	183	2.00	1.06
Jackson County 251 Gainesboro Water System	Cumberland River, Jackson Co. UD #3 (buyer)		0.491		0.107	0.384	1,386	277	1.00	0.75

Supplement B. Public water-supply systems and associated water use in the Ohio hydrologic region (Modified from Alexander and others, 1984, and from Hutson and Morris, 1992)—Continued

County, PWSID, and system	Source of supply (seller, buyer)	Principal aquifer	With- drawal (Mgal/d)	Water purchased (Mgal/d)	Water sold (Mgal/d)	Gross water use (Mgal/d)	Popula- tion served	Gross per capita use (gal/d)	Storage capacity (million gallons)	Design capacity (million gallons)
Jackson County—Continued 252 Jackson County Utility District #1	Old Gainesboro Road UD (seller)			0.027		0.027	338	80	0.235	
817 Jackson County Utility District #2	Livingston WD (seller)			0.087		0.087	1,283	68		
845 Jackson County Utility District #3	Gainesboro WS (seller)			0.107		0.107	1,507	71	0.17	
859 Jackson County Utility District #4	Red Boiling Springs WS (seller)			0.090		0.090	1,339	67	0.022	
Macon County 373 Lafayette Water System	Adams Spring Spring Creek Spring Barron River	5	0.334 1.143 0.281			1.758	11,578	152	1.30	2.45
572 Red Boiling Springs Water System	Cordel Hudson spring McClelland Spring 2 Sabens spring plant Jackson Co. UD #4 (buyer)	5	0.008 0.391 0.366		0.090	0.675	3,855	175	1.00	0.933
Montgomery County 116 Clarksville Water Department	Cumberland River, Cumberland Heights UD (buyer)		13.961		0.219	13.73	108,800	126	14.50	24.00
166 Cumberland Heights Utility District	Woodlawn UD (buyer) Clarksville WD (seller) Cunningham UD (seller)			0.219 0.012	0.547	0.231	2,698	86	0.50	
167 Cunningham Utility District	Cunningham East Montgomery UD (seller) Cumberland Heights UD (buyer)			0.908	0.012	0.896	9,408	95	3.00	

Supplement B

Supplement B. Public water-supply systems and associated water use in the Ohio hydrologic region (Modified from Alexander and others, 1984, and from Hutson and Morris, 1992)—Continued

County, PWSID, and system	Source of supply (seller, buyer)	Principal aquifer	With- drawal (Mgal/d)	Water purchased (Mgal/d)	Water sold (Mgal/d)	Gross water use (Mgal/d)	Popula- tion served	Gross per capita use (gal/d)	Storage capacity (million gallons)	Design capacity (million gallons)
Montgomery County—Continued 758 Woodlawn Utility District	Clarksville WD (seller) North Stewart UD (buyer)			0.547	0.004	0.543	8,029	68	1.00	
820 Fort Campbell Water System	Little West Fork, Red River, Boiling Springs	5	4.421			4.421	40,000	110	2.75	7.60
929 Cunningham-East Montgomery Utility District	Cumberland River Cunningham UD (buyer) East Montgomery UD (buyer)		2.260		0.908 1.212	0.140	25	5,600		4.10
Morgan County 681 Sunbright Utility District	Huntsville UD (seller) Cumberland UD of Roane County (seller) Plateau UD (seller)			0.102 0.186 0.148		0.436	3,866	113	0.700	
Overton County 013 North Overton Utility District	Livingston WD (seller)			0.233		0.233	2,937	79	0.350	
405 Livingston Water Department	Carr Creek (impoundment) Roaring River North Overton UD (buyer) West Overton UD (buyer) Jackson County UD #2 (buyer))	2.082 0.715		0.233 0.171 0.087	2.306	10,847	212	4.00	3.10
578 West Overton Utility District	Algood WS (seller) Livingston WD (seller)			0.215 0.171		0.386	4,470	86	0.700	

Supplement B. Public water-supply systems and associated water use in the Ohio hydrologic region (Modified from Alexander and others, 1984, and from Hutson and Morris, 1992)—Continued

County, PWSID, and system	Source of supply (seller, buyer)	Principal aquifer	With- drawal (Mgal/d)	Water purchased (Mgal/d)	Water sold (Mgal/d)	Gross water use (Mgal/d)	Popula- tion served	Gross per capita use (gal/d)	Storage capacity (million gallons)	Design capacity (million gallons)
Overton County—Continued 853 East Fork Utility District	Monterey WD (seller)			0.144		0.144	1,841	78	0.200	
Pickett County 088 Byrdstown Water Department	Obey River, Chanute-Pall Mall UD (buyer)		0.589		0.061	0.528	4,765	111	0.850	0.864
Putnam County 009 Algood Water System	Cookeville WD (seller) West Overton UD (buyer)			0.742	0.215	0.675	5,108	132	0.375	
038 Bangham Utility District	Cookeville WD (seller)			0.496		0.496	5,336	93		
040 Baxter Water Department	Cookeville WD (seller) DeKalb UD #4 (buyer) Southside UD #2 (buyer)			0.594	0.034 0.019	0.541	4,207	128	0.300	
133 Cookeville Water Department	Caney Fork River, Center Hill Reservoir Algood WS (buyer) Bangham UD (buyer) Baxter WD (buyer) Cookeville Boat Dock Road (buyer) Old Gainesboro Road UD (buyer) Double Springs UD (buyer)		10.82		0.742 0.496 0.594 0.565 0.511	7.46	28,797	259	10.00	14.98

Supplement B. Public water-supply systems and associated water use in the Ohio hydrologic region (Modified from Alexander and others, 1984, and from Hutson and Morris, 1992)—Continued

County, PWSID, and system	Source of supply (seller, buyer)	Principal aquifer	With- drawal (Mgal/d)	Water purchased (Mgal/d)	Water sold (Mgal/d)	Gross water use (Mgal/d)	Popula- tion served	Gross per capita use (gal/d)	Storage capacity (million gallons)	Design capacity (million gallons)
Putnam County—Continued 134 Cookeville Boat Dock Road Utility District	Cookeville WD (seller)			0.565		0.565	5,067	111		
135 Old Gainesboro Road Utility District	Cookeville WD (seller) Jackson County UD #1 (buyer)			0.511	0.027	0.484	4,704	103	0.100	
192 Double Springs Utility District	Cookeville WD (seller)			0.453		0.453	4,866	93		
471 Monterey Water Department	City Lake Meadow Creek Lake East Fork UD (buyer)		1.188		0.144	1.044	4,300	243	1.70	2.00
952 Heritage Academy	well	5	0.016			0.016	80	200	0.03	0.04
Robertson County 001 Adams-Cedar Hill Water System	Red River		0.341			0.341	3,701	92	0.660	0.349
271 Greenbrier Water and Sewer Department	Springfield WS (seller)			0.402		0.402	5,501	73	0.500	
666 Springfield Water System	Red River Greenbrier Water and Sewer Department (buyer) Pleasant View UD (buyer)		4.866		0.402 0.012	4.452	26,381	169	10.00	4.60

Supplement B

County, PWSID, and system	Source of supply (seller, buyer)	Principal aquifer	With- drawal (Mgal/d)	Water purchased (Mgal/d)	Water sold (Mgal/d)	Gross water use (Mgal/d)	Popula- tion served	Gross per capita use (gal/d)	Storage capacity (million gallons)	Design capacity (million gallons)
Rutherford County 386 La Vergne Water System	Stones River, J. Percy Priest Reservoir		2.478			2.478	17,135	145	5.00	4.50
491 Murfreesboro Water Department	East Fork Stones River Smyrna WS (seller)		9.503	0.161		9.664	61,101	158	9.00	15.67
639 Smyrna Water System	Stones River, J. Percy Priest Reservoir Nolensville-College Grove UI (buyer))	7.393		0.916	6.316	25,119	251	10.22	15.29
791 Consolidated Utility District of Rutherford County #1	Murfreesboro WD (buyer) East Fork Stones River Wilson County Water and Wastewater (buyer)		7.931		0.161	7.928	66,021	120	13.45	8.00
Scott County 318 Huntsville Utility District	New River Oneida Water and Sewer Commission (buyer) Sunbright UD (buyer)		1.38		0.340 0.102	0.938	10,542	89	1.76	3.20
532 Oneida Water and Sewer Commission	Baker Lake Huntsville UD (seller) Verdun well	4	1.004 0.100	0.340		1.444	10,016	144	1.50	3.20
Smith County 095 Carthage Water System	Cumberland River, Cordell Hull UD (buyer) Twenty Five UD (buyer)		0.630		0.156 0.133	0.341	2,597	131	0.600	1.50

Supplement B

Supplement B. Public water-supply systems and associated water use in the Ohio hydrologic region (Modified from Alexander and others, 1984, and from Hutson and Morris, 1992)—Continued

County, PWSID, and system	Source of supply (seller, buyer)	Principal aquifer	With- drawal (Mgal/d)	Water purchased (Mgal/d)	Water sold (Mgal/d)	Gross water use (Mgal/d)	Popula- tion served	Gross per capita use (gal/d)	Storage capacity (million gallons)	Design capacity (million gallons)
Smith County—Continued 096 Cordell Hull Utility District	Carthage WS (seller)			0.156		0.156	1,785	87	0.200	
636 Smith Utility District #1	Caney Fork River Alexandria WS (buyer) South Side UD #1 (buyer)		1.088		0.164 0.140	0.784	5,828	134	2.60	3.00
718 Twenty Five Utility District	Carthage WS (seller) South Side UD #3 (buyer)			0.133	0.004	0.129	1,556	83	0.600	
904 South Side Utility District #1	Smith UD #1 (seller)			0.140		0.140	1,628	86		
910 South Side Utility District #2	Baxter WD (seller)			0.019		0.019	261	73		
953 South Side Utility District #3	Twenty Five UD (seller)			0.004		0.004	130	31		
Stewart County 083 Loon Bay Property Owners Association	3 wells	5	0.006			0.006	129	46	0.003	
162 Cumberland City Water System	Erin (seller)			0.039		0.039	650	60	0.300	
193 Dover Water Department	Cumberland River		0.266			0.266	2,644	101	0.800	0.800

Supplement B. Public water-supply systems and associated water use in the Ohio hydrologic region (Modified from Alexander and others, 1984, and from Hutson and Morris, 1992)—Continued

County, PWSID, and system	Source of supply (seller, buyer)	Principal aquifer	With- drawal (Mgal/d)	Water purchased (Mgal/d)	Water sold (Mgal/d)	Gross water use (Mgal/d)	Popula- tion served	Gross per capita use (gal/d)	Storage capacity (million gallons)	Design capacity (million gallons)
Stewart County—Continued 195 North Stewart Utility District	Spring Lake Brandon spring 2 wells Woodlawn UD(seller)	5	0.070 0.216 0.130	0.004		0.420	3,795	111	1.25	0.432
916 Leatherwood Water District, Inc.	2 wells	5	0.011			0.011	316	35		
960 Hidden Hollow WS	well	5	0.003			0.003	78	38		
962 Decalogue Stone Country WS	3 wells	5	0.006			0.006	150	40		
8137 Johnson and Collins	well	5	0.002			0.002	53	38		
Sumner County 097 Castalian Springs- Bethpage Utility District	Westmoreland WS (seller) Gallatin WD (seller) Hartsville WD (seller			0.036 0.888 0.027		0.951	7,202	132	0.913	
253 Gallatin Water Department	Cumberland River, Old Castalian Springs-Bethpage UD (buyer) Westmoreland WS (buyer)		6.285		0.888 0.412	4.985	27,988	178	7.50	8.06
294 Hendersonville Utility District	Cumberland River		5.037			5.037	36,827	137	6.70	8.00
559 Portland Water System	City Lake Drakes Creek Franklin, Ky (seller) Sportsman Lake White House UD (seller)		1.016 0.661 0.048	0.017 0.011		1.753	12,844	136	1.52	2.30

Supplement B. Public water-supply systems and associated water use in the Ohio hydrologic region (Modified from Alexander and others, 1984, and from Hutson and Morris, 1992)—Continued

County, PWSID, and system	Source of supply (seller, buyer)	Principal aquifer	With- drawal (Mgal/d)	Water purchased (Mgal/d)	Water sold (Mgal/d)	Gross water use (Mgal/d)	Popula- tion served	Gross per capita use (gal/d)	Storage capacity (million gallons)	Design capacity (million gallons)
Sumner County—Continued 738 Westmoreland Water System	Gallatin WD (seller) Castalian Springs- Bethpage UD (buyer)			0.412	0.036	0.376	3,324	113	0.500	
745 White House Utility District	Cumberland River Portland Water System(buyer)		11.55		0.011	11.54	57,137	202	9.90	13.80
Trousdale County 291 Hartsville Water Department	Cumberland River, Castalian Springs (buyer)		0.725		0.027	0.698	6,141	114	1.80	2.00
Van Buren County 552 Fall Creek Falls Utility District	Taft Youth Center (seller)			0.351		0.351	3,333	105	0.930	
655 Spencer Water System	Caney Fork River Laurel Lake		0.396 0.505			0.901	4,245	212	0.925	1.01
Warren County 423 McMinnville Water Department	Barron Fork River		9.309			9.309	15,297	608	4.00	0.004
742 West Warren-Viola Utility District	Barron Fork River Woodbury WS (buyer)		1.271		0.020	1.251	8,432	148	1.00	1.50
818 Warren County Utility District	Collins River Cagle-Fredonia UD* (seller)		1.724	0.032		1.756	17,304	101	4.85	4.00

^{*} See Supplement A

Supplement B. Public water-supply systems and associated water use in the Ohio hydrologic region (Modified from Alexander and others, 1984, and from Hutson and Morris, 1992)—Continued

County, PWSID, and system	Source of supply (seller, buyer)	Principal aquifer	With- drawal (Mgal/d)	Water purchased (Mgal/d)	Water sold (Mgal/d)	Gross water use (Mgal/d)	Popula- tion served	Gross per capita use (gal/d)	Storage capacity (million gallons)	Design capacity (million gallons)
White County 190 Dewhite Utility District	Sparta WS (seller)			0.590		0.590	5,176	114	0.607	
526 O'Connor Utility District	Sparta WS (seller)			0.564		0.564	6,258	90	1.09	
569 Quebeck Walling Utility District #1	Sparta WS (seller)			0.279		0.279	3,423	81	0.300	
652 Sparta Water System	Calfkiller River Dewhite UD (buyer) O'Connor UD (buyer) Quebeck Walling UD #1 (buyer)		3.084		0.590 0.564 0.279	1.651	8,224	201	3.55	4.00
653 Bon de Croft Utility District	Billys Branch Prices Switch WC (buyer) West Cumberland UD (buyer)		0.404		0.040 0.125	0.239	2,714	88	0.70	0.648
836 Prices Switch Water Company	Bon de Croft UD (seller)			0.040		0.040	182	220		
Williamson County 069 Brentwood Water Department	Nashville WD #1 (seller) Harpeth Valley UD (seller)			0.623 2.787		3.41	19,751	173	9.00	
236 Fairview Water System	Harpeth Valley UD (seller) Turnbull-White Bluff UD (seller) Bon Aqua-Lyles UD* (buyer)			0.361 0.257	0.011	0.607	6,244	97	0.550	0.187
246 Franklin Water Department	Harpeth River Mallory Valley UD (buyer) Harpeth Valley UD (seller) Milcrofton UD (seller)		1.914	3.872 0.543	0.405	5.924	38,673	153	9.50	2.40

^{*} See Supplement A

Supplement B. Public water-supply systems and associated water use in the Ohio hydrologic region (Modified from Alexander and others, 1984, and from Hutson and Morris, 1992)—Continued

County, PWSID, and system	Source of supply (seller, buyer)	Principal aquifer	With- drawal (Mgal/d)	Water purchased (Mgal/d)	Water sold (Mgal/d)	Gross water use (Mgal/d)	Popula- tion served	Gross per capita use (gal/d)	Storage capacity (million gallons)	Design capacity (million gallons)
Williamson County—Continued 247 Milcrofton Utility District	Harpeth Valley UD (seller) Franklin WD (buyer)			0.979	0.543	1.522	8,447	180	2.23	
428 Mallory Valley Utility District	Franklin WD (seller) Harpeth Valley UD (seller)			0.405 1.690		2.095	8,208	255	6.35	
511 Nolensville-College Grove Utility District	Smyrna WS (seller) wells	6	0.138	0.916		1.054	8,614	122	1.50	0.45
Wilson County 264 Gladeville Utility District # 1	2 wells Lebanon WS (seller) W. Wilson UD (seller)	6	1.059	0.235 0.046		1.34	11,118	120	1.70	4.00
393 Lebanon Water System	Cumberland River Gladeville UD #1 (buyer) Gladeville UD #2 (buyer) Laguardo UD (buyer) Wilson Co. Water & W.W (buyer)		7.104		0.235 0.237 0.305 0.880	5.447	23,224	234	8.00	12.00
394 Laguardo Utility District	Lebanon WS (seller) W. Wilson UD(seller)			0.305 0.233		0.538	5,102	105	1.00	
732 Watertown Water System	3 wells	6	0.200			0.200	1,682	119	0.400	0.324
743 West Wilson Utility District	Cumberland River Gladeville UD #1 (buyer) Laguardo UD (buyer)		3.543		0.046 0.233	3.264	35,109	93	13.00	8.00

Supplement B. Public water-supply systems and associated water use in the Ohio hydrologic region (Modified from Alexander and others, 1984, and from Hutson and Morris, 1992)—Continued

County, PWSID, and system	Source of supply (seller, buyer)	Principal aquifer	With- drawal (Mgal/d)	Water purchased (Mgal/d)	Water sold (Mgal/d)	Gross water use (Mgal/d)	Popula- tion served	Gross per capita use (gal/d)	Storage capacity (million gallons)	Design capacity (million gallons)
Wilson County—Continued										
790 Wilson County Water	Lebanon WS (seller)			0.880		0.89	11,565	77	1.14	
and Wastewater	Consolidated UD of Ruther-									
	ford Co. #1 (seller)			0.003						
	Gladeville UD #2 (seller)			0.007						
941 Gladeville Utility District #2	Lebanon WS (seller)			0.237		0.230	586	392		
Ž	Wilson County Waste Water									
	Association (buyer)				0.007					

Supplement C

Supplement C. Public water-supply systems and associated water use in the Lower Mississippi hydrologic region (Modified from Alexander and others, 1984, and from Hutson and Morris, 1992)

[PWSID, Public Water System Identification number; Mgal/d, million gallons per day; gal/d, gallons per day; MLGW, Light, Gas and Water Division; WC, Water Company; UD, Utility District; WD, Water Department; WC, Water Company; WS, Water System; WA, Water Association; e, estimated; ---, not applicable; a, governing board, billing through Memphis Light, Gas and Water Division (MLGW), "water use" and "population served" combined with MLGW totals; Principal aquifer: 2, Tertiary sand; 3, Cretaceous sand; Gross water use = (withdrawal + purchased water) - water sold; Gross per capita = (gross water use/population served)*1,000,000]

County, PWSID, and system	Source of supply (seller, buyer)	Principal aquifer	With- drawal (Mgal/d)	Water purchased (Mgal/d)	Water sold (Mgal/d)	Gross water use (Mgal/d)	Popula- tion served	Gross per capita use (gal/d)	Storage capacity (million gallons)	Design capacity (million gallons)
		Lov	ver Mississij	ppi region						
Carroll County 035 Atwood Water System	3 wells	2	0.133			0.133	1,312	101	0.350	0.230
098 Cedar Grove Utility District	2 wells	2	0.054			0.054	1,288	42	0.400	0.360
316 Huntingdon Water Department	2 wells	3	0.621			0.621	5,715	109	1.20	1.26
421 McKenzie Water Department	3 wells	2	1.217			1.217	5,745	212	1.40	1.95
422 McLemoresville Water Department	3 wells	2	0.129			0.129	348	371	0.100	0.864
710 Trezevant Water System	2 wells	2	0.085			0.085	1,135	75	0.150	0.432
Chester County 293 Henderson Water Department	5 wells Pinson UD (buyer)	3	1.151		0.089	1.062	7,023	151	1.90	1.22
Crockett County 005 Alamo Water Department	4 wells	2	0.312			0.312	3,036	103	0.500	0.792

Supplement C. Public water-supply systems and associated water use in the Lower Mississippi hydrologic region (Modified from Alexander and others, 1984, and from Hutson and Morris, 1992)—Continued

County, PWSID, and system	Source of supply, (seller, buyer)	Principal aquifer	With- drawal (Mgal/d)	Water purchased (Mgal/d)		Gross water use (Mgal/d)	Popula- tion served	Gross per capita use (gal/d)	Storage capacity (million gallons)	Design capacity (million gallons)
Crockett County—Continued 006 County Wide Utility District	Gadsden wells Gum Flat well	2	0.048 0.227			1.01	8,286	122	0.775	1.48
District	Salem well Bonicord well Old Field well Egg Hill well Highway 20 well		0.227 0.233 0.091 0.177 0.112 0.123							
045 Bells Public Utility District	2 wells	2	0.245			0.245	2,459	100	0.400	0.490
148 Crockett Mills Utility District	2 wells	2	0.104			0.104	792	131	0.100	0.173
248 Friendship Water Company	2 wells Friendship Distribution System (buyer)	2	0.113		0.113	0	665	0		0.216
441 Maury City Water Department	2 wells	2	0.079			0.079	1,265	62	0.275	0.360
928 Friendship Distribution System	Friendship WC (seller)			0.113		0.113	837	134	0.150	
Dyer County 211 Dyersburg Water Department	7 wells	2	4.00			4.00	20,122	199	4.50	12.00
212 Dyersburg Suburban Consolidated Utility District	3 wells Northwest Dyersburg UD (buyer)	2	0.777		0.016	0.761	3,471	219	0.300	0.864

from Hutson and Morris, 1992)—Continued

Gross Gross Design per Storage With-Water Water water Populacapita capacity capacity Source of supply County, PWSID, **Principal** drawal purchased sold use tion use (million (million and system (seller, buyer) aquifer (Mgal/d) (Mgal/d) (Mgal/d) (Mgal/d) (gal/d) gallons) served gallons) Dyer County—Continued 496 Newbern Water Department 2 0.941 0.941 3 wells 7,472 126 1.09 1.51 518 Northwest Dyersburg 2 wells 2 0.365 0.381 3,614 105 0.450 0.864 **Utility District** Dyersburg Sub. Consold. UD 0.016 (seller) 711 Trimble Water System 2 806 149 0.200 3 wells 0.120 0.120 0.468 888 Midway Trailer Court well 2 0.003 0.003 42 71 **Fayette County** 254 Gallaway Water Department 3 wells 2 0.230 0.230 1,013 0.749 227 0.350 382 La Grange Water Department 3 wells 2 0.027 0.027 223 121 0.100 0.187 2 477 Moscow Water Department 2 wells 0.074 0.074 642 115 0.175 0.261 521 Oakland Water Department 2 0.537 0.537 3,900 138 0.300 0.600 3 wells 2 0.063 422 597 Rossville Water System 2 wells 0.063 149 0.200 0.274 641 Somerville Water System 5 wells 2 0.624 0.551 4,247 130 0.900 1.94 Williston WS (buyer) 0.073 Somerville WS (seller) 0.073 0.073 725 753 Williston Water System 101 0.100 842 Piperton Water System Collierville WD (seller) 0.245 0.245 840 291 Gibson County 1,359 90 0.300 067 Bradford Water System 2 0.123 0.123 0.864 2 wells

Supplement C. Public water-supply systems and associated water use in the Lower Mississippi hydrologic region (Modified from Alexander and others, 1984, and

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Supplement C. Public water-supply systems and associated water use in the Lower Mississippi hydrologic region (Modified from Alexander and others, 1984, and from Hutson and Morris, 1992)—Continued

County, PWSID, and system	Source of supply, (seller, buyer)	Principal aquifer	With- drawal (Mgal/d)	Water purchased (Mgal/d)		Gross water use (Mgal/d)	Popula- tion served	Gross per capita use (gal/d)	Storage capacity (million gallons)	Design capacity (million gallons)
Gibson County—Continued 209 Dyer Water Department	3 wells	2	0.314			0.314	2,852	110	1.35	0.821
263 Gibson Water Department	2 wells	2	0.040			0.040	479	83	0.500	0.432
314 Humboldt Utilities Water Department	4 wells	2	2.367			2.367	9,600	246	1.05	3.60
445 Medina Water Department	2 wells	2	0.111			0.111	1,404	79	0.250	0.200
458 Milan Water Department	4 wells	2	1.334			1.334	10,074	132	1.50	6.480
599 Rutherford Water System	2 wells Kenton WD (buyer)	2	0.172		0.012	0.160	1,513	106	0.150	0.720
707 Trenton Water System	3 wells	2	0.663			0.663	5,483	121	1.75	2.30
709 Gibson County Municipal Water District #1	Grier's Chapel well	2	0.379			0.379	2,832	134	0.200	0.432
788 Gibson County Municipal Water District #2	Concord wells	2	0.154			0.154	1,160	133	0.150	0.216
798 Milan Arsenal #1	3 wells	2	0.456			0.456	775	588	0.950	1.87
812 Gibson County Municipal Water District #3	Eaton Central well	2	0.263			0.263	1,193	220	0.075	0.216
813 Gibson County Municipal Water District #4	Fruitland well	2	0.348			0.348	1,627	214	0.075	0.216

Supplement C

Supplement C. Public water-supply systems and associated water use in the Lower Mississippi hydrologic region (Modified from Alexander and others, 1984, and from Hutson and Morris, 1992)—Continued

County, PWSID, and system	Source of supply (seller, buyer)	Principal aquifer	With- drawal (Mgal/d)	Water purchased (Mgal/d)		Gross water use (Mgal/d)	Popula- tion served	Gross per capita use (gal/d)	Storage capacity (million gallons)	Design capacity (million gallons)
Gibson County—Continued 815 Gibson County Municipal Water District #5	Goat City well	2	0.137			0.137	1,017	135	0.150	0.216
816 Gibson County Municipal Water District #6	Idlewild Well	2	0.057			0.057	451	126	0.150	0.150
935 Mason Hall Development Corporation	3 wells	2	0.019			0.019	202	94	0.002	
8132 County Line Trailer Park	2 wells	2	0.005			0.005	74	67		
Hardeman County 063 Bolivar Water System	4 wells Hornsby UD (buyer) Spring Creek UD (buyer)	3	1.282		0.118 0.183	0.981	7,779	126	1.55	3.99
064 Western Mental Health Institute	2 wells	2	0.079			0.079	250	316	0.300	1.08
267 Grand Junction Water Department	2 wells Saulsbury UD (buyer)	2	0.209		0.061	0.148	874	169	0.325	0.432
312 Hornsby Water Department	Bolivar WS (seller)			0.118		0.118	1,010	117	0.150	
446 Woodrun Lakes Subdivision	2 wells	3	0.026			0.026	126	206	0.120	0.144
451 Grand Valley Lakes Owners Association	well	2	0.084			0.084	751	112	0.110	0.216
455 Middleton Water Department	2 wells	3	0.194			0.194	1,040	186	0.250	0.432

Supplement C. Public water-supply systems and associated water use in the Lower Mississippi hydrologic region (Modified from Alexander and others, 1984, and from Hutson and Morris, 1992)—Continued

County, PWSID, and system	Source of supply, (seller, buyer)	Principal aquifer	With- drawal (Mgal/d)	Water purchased (Mgal/d)		Gross water use (Mgal/d)	Popula- tion served	Gross per capita use (gal/d)	Storage capacity (million gallons)	Design capacity (million gallons)
Hardeman County—Continued 452 Rogers Spring POA	2 wells	3	0.020			0.020	109	183	0.063	0.036
610 Saulsbury Utility District	Grand Junction WD (seller)	J	0.020	0.061		0.061	565	108		
664 Spring Creek Utility District	Bolivar WS (seller)			0.183		0.183	2,446	75	0.400	
704 Toone Water System	3 wells	2	0.144			0.144	486	296	0.64	0.35
748 Whiteville Water Department	5 wells	2	0.565			0.565	1,573	359	0.200	1.44
797 Riviera Utilities of Tennessee	2 wells	3	0.052			0.052	137	379	0.065	0.302
Haywood County 080 Brownsville Water Department	6 wells Haywood Co. UD (buyer)	2	1.765		0.038	1.727	14,234	121	2.10	6.45
672 Stanton Water System	2 wells Haywood Co. UD (buyer)	2	0.121		0.026	0.095	827	115	0.300	0.720
999 Haywood County Utility District	Brownsville WD (seller) Stanton WS (seller)			0.038 0.026		0.064	797	80		0.144
Henry County 296 Henry Water System	2 wells	2	0.078			0.078	547	142	0.100	0.36
838 Northwest Henry Co. UD	Paris Board of Public Utilities* (seller)			0.142		0.142				

^{*} See Supplement A

Supplement C

Supplement C. Public water-supply systems and associated water use in the Lower Mississippi hydrologic region (Modified from Alexander and others, 1984, and from Hutson and Morris, 1992)—Continued

County, PWSID, and system	Source of supply (seller, buyer)	Principal aquifer	With- drawal (Mgal/d)	Water purchased (Mgal/d) (Gross water use (Mgal/d)	Popula- tion served	Gross per capita use (gal/d)	Storage capacity (million gallons)	Design capacity (million gallons)
Lake County 575 Reelfoot Utility District	2 wells Samburg UD (buyer)	2	0.195		0.094	0.101	660	153	0.100	0.432
579 Ridgely Water System	2 wells	2	0.241			0.241	2,250	107	0.375	0.546
700 Tiptonville Water System	4 wells	2	0.831			0.831	2,250	369	0.800	1.40
Lauderdale County 245 West Tenneseee State Penitentiary	3 wells	2	0.300			0.300	1,200	250	0.630	1.08
255 Gates Water Department	2 wells	2	0.090			0.090	841	107	0.125	0.216
279 Halls Water System	3 wells	2	0.616			0.616	5,440	113	1.00	1.07
295 Henning Water Department	2 wells	2	0.151			0.151	1,380	109	0.430	0.288
580 Ripley Water System	5 wells Lauderdale Co. WS (buyer)	2	2.03		0.138	1.892	8,528	221	1.70	3.03
581 Lauderdale County Water System	4 wells Ripley Water System (seller)	2	0.732	0.138		0.870	9,648	90	0.852	1.022
McNairy County 050 Bethel Springs Water System	2 wells	3	0.084			0.084	1,007	83	0.100	0.180
570 Eastview Utility District	Selmer WS (seller)			0.153		0.153	1,649	93		

Supplement C. Public water-supply systems and associated water use in the Lower Mississippi hydrologic region (Modified from Alexander and others, 1984, and from Hutson and Morris, 1992)—Continued

County, PWSID, and system	Source of supply, (seller, buyer)	Principal aquifer	With- drawal (Mgal/d)	Water purchased (Mgal/d)		Gross water use (Mgal/d)	Popula- tion served	Gross per capita use (gal/d)	Storage capacity (million gallons)	Design capacity (million gallons)
McNairy County—Continued 571 Ramer Water Department	1 well	3	0.058			0.058	540	107	0.100	0.266
3/1 Kamer Water Department	i well	3	0.056			0.056	340	107	0.100	0.200
615 Selmer Water System	3 wells Eastview UD (buyer)	3	2.236		0.153	2.08	16,802	124	2.15	3.82
Madison County 298 Whispering Pines Trailer Court	2 wells	2	0.009			0.009	125	72		
299 Jackson Water System	North wells South wells Pinson UD (buyer)	2	11.650 3.380		0.108	14.922	74,294	201	16.55	23.00
453 Jackson UD Mercer Plant	2 wells	2	0.021			0.021	153	137	0.130	0.086
556 Pinson Utility District	Henderson WD (seller) Jackson Water System (seller)			0.089 0.108		0.197	1,645	119	0.218	
8130 Lewis Trailer Park	3 wells	2	0.008			0.008	110	73		
8131 Country Valley Estates	2 wells	2	0.004			0.004	50	80		
Obion County 220 Elbridge Water Association	3 wells Hornbeak UD (buyer)	2	0.481		0.099	0.382	3,099	123	0.774	0.576
311 Hornbeak Utility District	Elbridge WA (seller)			0.099		0.099	1,320	75	0.200	0.216
347 Kenton Water Department	2 wells Rutherford WS (seller)	2	0.129	0.012		0.141	1,584	89	0.600	0.648

Supplement C. Public water-supply systems and associated water use in the Lower Mississippi hydrologic region (Modified from Alexander and others, 1984, and from Hutson and Morris, 1992)—Continued

County, PWSID, and system	Source of supply (seller, buyer)	Principal aquifer	With- drawal (Mgal/d)	Water purchased (Mgal/d)		Gross water use (Mgal/d)	Popula- tion served	Gross per capita use (gal/d)	Storage capacity (million gallons)	Design capacity (million gallons)
Obion County—Continued 524 Obion Water Department	2 wells	2	0.295			0.295	1,834	161	0.250	0.432
		2	0.293				ŕ			0.432
607 Samburg Utility District	Reelfoot UD (seller)			0.094		0.094	809	116	0.100	
648 South Fulton Water System	2 wells	2	0.503			0.503	4,491	112	1.00	1.238
712 Troy Water System	3 wells	2	0.258			0.258	2,026	127	0.650	0.720
720 Union City Water Department	5 wells Reelfoot WA (buyer)	2	3.959		0.059	3.90	16,948	230	2.12	10.00
757 Reelfoot Water Association	Union City WD (seller)			0.059		0.059	696	85		
901 Cloar's Trailer Park	2 wells	2	0.001			0.001	25	40		
935 Mason Hall Development Corporation	3 wells	2	0.019			0.019	202	94		
Shelby County										
126 Collierville Water Department	wells Piperton WS (buyer)	2	5.817		0.245	5.572	28,864	193	3.20	11.88
262 Germantown Water Department	17 wells Memphis Light Gas & Water (seller)	2	7.284	0.089		7.373	36,381	203	0.575	15.00

Supplement C. Public water-supply systems and associated water use in the Lower Mississippi hydrologic region (Modified from Alexander and others, 1984, and from Hutson and Morris, 1992)—Continued

County, PWSID, and system	Source of supply, (seller, buyer)	Principal aquifer	With- drawal (Mgal/d)	Water purchased (Mgal/d)		Gross water use (Mgal/d)	Popula- tion served	Gross per capita use (gal/d)	Storage capacity (million gallons)	Design capacity (million gallons)
Shelby County—Continued										
450 Memphis Light, Gas	Mallory well field	2	17.649			167	644,275	259	5.15	277
and Water Division	Sheahan well field		21.768							
	Allen well field		24.125							
	McCord well field		17.474							
	Lichterman well field		22.961							
	Davis well field		14.726							
	LNG well field		0.362							
	Palmer well field		5.054							
	Morton well field		19.728							
	Shaw well field		22.885		0.000					
	Germantown WD (buyer) Poplar Grove UD (buyer)				0.089 0.005					
463 Millington Water Department	6 wells	2	1.095			1.095	6,585	166	0.500	2.59
468 Naval Support Activity Memphis	5 wells	2	0.928			0.928	5,143	180	0.500	4.20
765 Bartlett Water System	well	2	5.986			5.986	42,880	140	2.750	9.50
Tipton County						0.007	2245			
033 Atoka Water System	Munford WD (seller)			0.335		0.335	3,315	101		
070 Brighton Water System	3 wells Poplar Grove UD(seller)	2	0.065	0.287		0.352	2,631	134	0.125	0.245
144 Covington Water Department	4 wells	2	2.232			2.232	10,150	220	1.55	4.79

Supplement C

Supplement C. Public water-supply systems and associated water use in the Lower Mississippi hydrologic region (Modified from Alexander and others, 1984, and from Hutson and Morris, 1992)—Continued

County, PWSID, and system	Source of supply (seller, buyer)	Principal aquifer	With- drawal (Mgal/d)	Water purchased (Mgal/d)		Gross water use (Mgal/d)	Popula- tion served	Gross per capita use (gal/d)	Storage capacity (million gallons)	Design capacity (million gallons)
Tipton County—Continued 201 Poplar Grove Utility District	3 wells MLGW (seller) Munford WD (seller) Brighton WS (buyer)	2	1.765	0.005 0.0003	0.287	1.483	12,804	116	0.700	2.09
440 Mason Water Department	3 wells	2	0.244			0.244	2,031	120	0.200	0.302
490 Munford Water Department	4 wells Atoka WS (buyer) Poplar Grove UD (buyer)	2	1.047		0.335 0.0003	0.712	6,864	104	0.400	2.592
703 First Utility District of Tipton County	4 wells	2	0.880			0.880	7,808	113	0.250	1.15
Weakley County 196 Dresden Water Department	3 wells	2	0.418			0.4180	3,885	107	1.375	1.44
265 Gleason Water Department	2 wells	2	0.263			0.263	1,687	156	0.350	0.720
276 Greenfield Water Department	2 wells	2	0.236			0.236	2,470	95	0.325	0.720
435 Martin Water Department	5 wells	2	1.5			1.5	12,156	123	0.975	5.34
627 Sharon Water System	3 wells	2	0.123			0.123	1,321	93	0.155	0.720

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