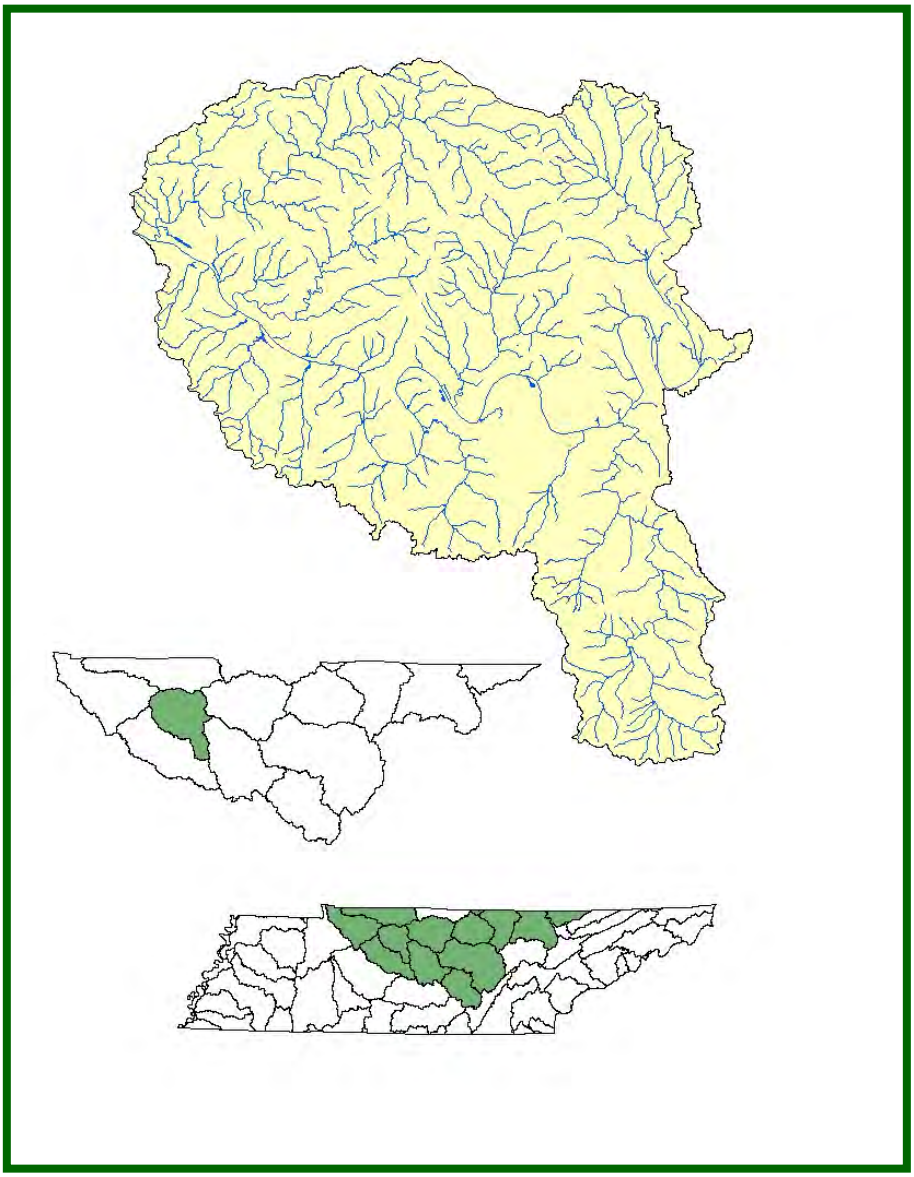
CHEATHAM LAKE WATERSHED (05130202) OF THE CUMBERLAND RIVER BASIN

WATERSHED WATER QUALITY MANAGEMENT PLAN



TENNESSEE DEPARTMENT OF ENVIRONMENT AND CONSERVATION
DIVISION OF WATER POLLUTION CONTROL
WATERSHED MANAGEMENT SECTION

CHEATHAM LAKE WATERSHED
WATER QUALITY MANAGEMENT PLAN

TABLE OF CONTENTS

GLOSSARY

1Q20. The lowest average 1 consecutive days flow with average recurrence frequency of once every 20 years.

30Q2. The lowest average 3 consecutive days flow with average recurrence frequency of once every 2 years.

7Q10. The lowest average 7 consecutive days flow with average recurrence frequency of once every 10 years.

303(d). The section of the federal Clean Water Act that requires a listing by states, territories, and authorized tribes of impaired waters, which do not meet the water quality standards that states, territories, and authorized tribes have set for them, even after point sources of pollution have installed the minimum required levels of pollution control technology.

305(b). The section of the federal Clean Water Act that requires EPA to assemble and submit a report to Congress on the condition of all water bodies across the Country as determined by a biennial collection of data and other information by States and Tribes.

AFO. Animal Feeding Operation.

Ambient Sites. Those sites established for long term instream monitoring of water quality.

ARAP. Aquatic Resource Alteration Permit.

Assessment. The result of an analysis of how well streams meet the water quality criteria assigned to them.

Bankfull Discharge. The momentary maximum peak flow before a stream overflows its banks onto a floodplain.

Basin. An area that drains several smaller watersheds to a common point. Most watersheds in Tennessee are part of the Cumberland, Mississippi, or Tennessee Basin (The Conasauga River and Barren River Watersheds are the exceptions).

Benthic. Bottom dwelling.

Biorecon. A qualitative multihabitat assessment of benthic macroinvertebrates that allows rapid screening of a large number of sites. A Biorecon is one tool used to recognize stream impairment as judged by species richness measures, emphasizing the presence or absence of indicator organisms without regard to relative abundance.

BMP. An engineered structure or management activity, or combination of these, that eliminates or reduces an adverse environmental effect of a pollutant.

BOD. Biochemical Oxygen Demand. A measure of the amount of oxygen consumed in the biological processes that break down organic and inorganic matter.

CAFO. Concentrated Animal Feeding Operation.

Designated Uses. The part of Water Quality Standards that describes the uses of surface waters assigned by the Water Quality Control Board. All streams in Tennessee are designated for Recreation, Fish and Aquatic Life, Irrigation, and Livestock Watering and Wildlife. Additional designated uses for some, but not all, waters are Drinking Water Supply, Industrial Water Supply, and Navigation.

DMR. Discharge Monitoring Report. A report that must be submitted periodically to the Division of Water Pollution Control by NPDES permitees.

DO. Dissolved oxygen.

EPA. Environmental Protection Agency. The EPA Region 4 web site is http://www.epa.gov/region4/

Field Parameter. Determinations of water quality measurements and values made in the field using a kit or probe. Common field parameters include pH, DO, temperature, conductivity, and flow.

Fluvial Geomorphology. The physical characteristics of moving water and adjoining landforms, and the processes by which each affects the other.

HUC-8. The 8-digit Hydrologic Unit Code corresponding to one of 54 watersheds in Tennessee.

HUC-10. The 10-digit NRCS Hydrologic Unit Code. HUC-10 corresponds to a smaller land area than HUC-8.

HUC-12. The 12-digit NRCS Hydrologic Unit Code. HUC-12 corresponds to a smaller land area than HUC-10.

MRLC. Multi-Resolution Land Classification.

MS4. Municipal Separate Storm Sewer System.

Nonpoint Source (NPS). Sources of water pollution without a single point of origin. Nonpoint sources of pollution are generally associated with surface runoff, which may carry sediment, chemicals, nutrients, pathogens, and toxic materials into receiving waterbodies. Section 319 of the Clean Water Act of 1987 requires all states to assess the impact of nonpoint source pollution on the waters of the state and to develop a program to abate this impact.

NPDES. National Pollutant Discharge Elimination System. Section 402 of the Clean Water Act of 1987 requires dischargers to waters of the U.S. to obtain NPDES permits.

NRCS. Natural Resources Conservation Service. NRCS is part of the federal Department of Agriculture. The NRCS home page is http://www.nrcs.usda.gov

Point Source. Any discernable, confined, and discrete conveyance, including but not limited to any pipe, ditch, channel, tunnel, conduit, well, discrete fissure, container, rolling stock, concentrated animal feeding operation, or vessel or other floating craft, from which pollutants are or may be discharged. This term does not include agricultural storm water discharges and return flows from irrigated agriculture (Clean Water Act Section 502(14)).

Q Design. The average daily flow that a treatment plant or other facility is designed to accommodate.

Reference Stream (Reference Site). A stream (site) judged to be least impacted. Data from reference streams are used for comparisons with similar streams.

SBR. Sequential Batch Reactor.

Stakeholder. Any person or organization affected by the water quality or by any watershed management activity within a watershed.

STATSGO. State Soil Geographic Database. STATSGO is compiled and maintained by the Natural Resources Conservation Service.

STORET. The EPA repository for water quality data that is used by state environmental agencies, EPA and other federal agencies, universities, and private citizens. STORET (Storage and Retrieval of National Water Quality Data System) data can be accessed at http://www.epa.gov/storet/

TDA. Tennessee Department of Agriculture. The TDA web address is http://www.state.tn.us/agriculture

TDEC. Tennessee Department of Environment and Conservation. The TDEC web address is http://www.tdec.net

TMDL. Total Maximum Daily Load. A TMDL is a calculation of the maximum amount of a pollutant that a waterbody can receive and still meet water quality standards, and an allocation of the amount to the pollutant's sources. A TMDL is the sum of the allowable loads of a single pollutant from all contributing point and nonpoint sources. The calculation includes a margin of safety to ensure that the waterbody can be used for the purposes the State has designated. The calculation must also account for seasonal variation in water quality. A TMDL is required for each pollutant in an impaired stream as described in Section 303 of the Federal Clean Water Act of 1987. Updates and information on Tennessee's TMDLs can be found at http://www.tdec.net/wpc/tmdl/

TMSP. Tennessee Multi-Sector Permit.

USGS. United States Geological Survey. USGS is part of the federal Department of the Interior. The USGS home page is http://www.usgs.gov/.

WAS. Waste Activated Sludge.

Water Quality Standards. A triad of designated uses, water quality criteria, and antidegradation statement. Water Quality Standards are established by Tennessee and approved by EPA.

Watershed. A geographic area which drains to a common outlet, such as a point on a larger stream, lake, underlying aquifer, estuary, wetland, or ocean.

WET. Whole Effluent Toxicity.

WWTP. Waste Water Treatment Plant

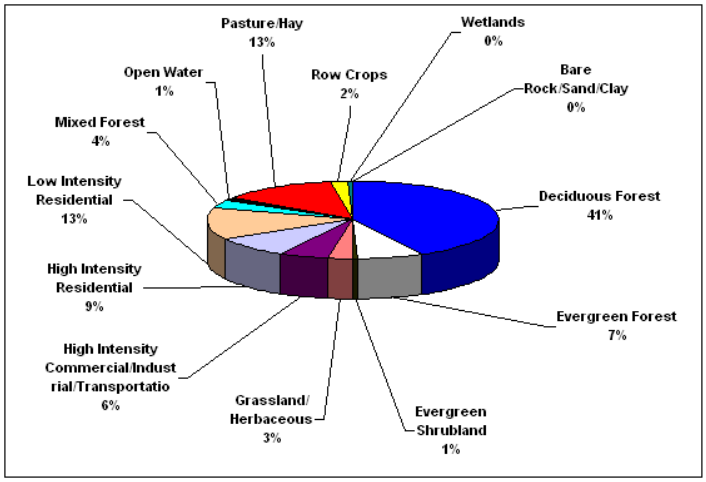
Summary – Cheatham Lake Watershed (05130202)

In 1996, the Tennessee Department of Environment and Conservation Division of Water Pollution Control adopted a watershed approach to water quality. This approach is based on the idea that many water quality problems, like the accumulation of point and nonpoint pollutants, are best addressed at the watershed level. Focusing on the whole watershed helps reach the best balance among efforts to control point sources of pollution and polluted runoff as well as protect drinking water sources and sensitive natural resources such as wetlands. Tennessee has chosen to use the USGS 8-digit Hydrologic Unit Code (HUC-8) as the organizing unit.

The Watershed Approach recognizes awareness that restoring and maintaining our waters requires crossing traditional barriers (point *vs.* nonpoint sources of pollution) when designing solutions. These solutions increasingly rely on participation by both public and private sectors, where citizens, elected officials, and technical personnel all have opportunities to participate. The Watershed Approach provides the framework for a watershed-based and community-based approach to address water quality problems.

Chapter 1 of the Cheatham Lake Watershed Water Quality Management Plan discusses the Watershed Approach and emphasizes that the Watershed Approach is not a regulatory program or an EPA mandate; rather it is a decision-making process that reflects a common strategy for information collection and analysis as well as a common understanding of the roles, priorities, and responsibilities of all stakeholders within a watershed. Traditional activities like permitting, planning and monitoring are also coordinated in the Watershed Approach.

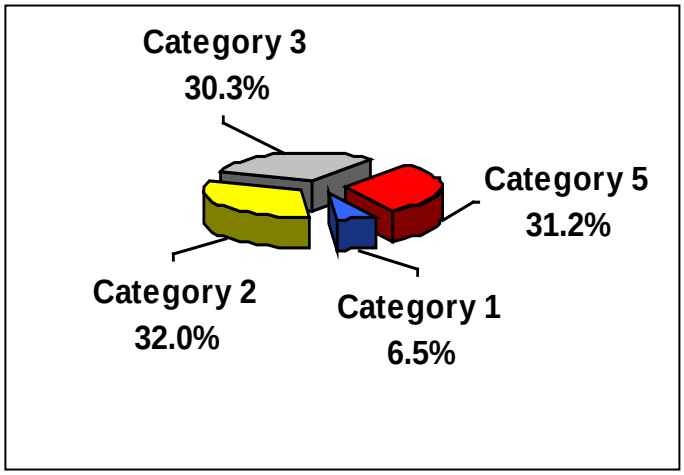
A detailed description of the watershed can be found in Chapter 2. The Cheatham Lake Watershed is approximately 647 square miles and includes parts of six counties. A part of the Cumberland River drainage basin, the watershed has 773.3 stream miles and 7,507 lake acres.



Land Use Distribution in the Cheatham Lake Watershed.

One wildlife management area, and one stream listed in the National Rivers Inventory are located in the watershed. Sixty rare plant and animal species have been documented in the watershed, including five rare fish species, one rare crayfish species, and one rare mussel species.

A review of water quality sampling and assessment is presented in Chapter 3. Using the Watershed Approach to Water Quality, 800 sampling events occurred in the Cheatham Lake Watershed in 2000-2005. These were conducted at ambient, ecoregion or watershed monitoring sites. Monitoring results support the conclusion that 55.0% of stream miles assessed fully support one or more designated uses.



Water Quality Assessment of Streams and Rivers in Cheatham Lake Watershed. Assessment data are based on the 2006 Water Quality Assessment of 773.3 stream miles in the watershed.

Also in Chapter 3, a series of maps illustrates overall use support in the watershed, as well as use support for the individual uses of Fish and Aquatic Life Support, Recreation, Irrigation, and Livestock Watering and Wildlife. Additional maps illustrate streams that are listed for impairment by specific causes (siltation, nutrients, E. coli).

Point and Nonpoint Sources are addressed in Chapter 4 which is organized by HUC-12 subwatersheds. Maps illustrating the locations of STORET monitoring sites and stream gauging stations are also presented in each subwatershed.

HUC-8	HUC-10	HUC-12
05130202	0513020201	051302020101 (Cumberland River)
		051302020102 (Madison Creek)
		051302020103 (Cumberland River)
		051302020104 (Cumberland River)
		051302020105 (Whites Creek)
		051302020106 (Richland Creek)
		051302020107 (Cumberland River)
		051302020108 (Marrowbone Creek)
	0513020202	051302020201 (Mill Creek, Upper)
		051302020202 (Mill Creek, Lower)
	0513020203	051302020301 (Sycamore Creek, Upper)
		051302020302 (Sycamore Creek, Middle)
		051302020303 (Sycamore Creek, Lower)

The Cheatham Lake Watershed is Composed of thirteen USGS-Delineated Subwatersheds (12-Digit Subwatersheds).

Point source contributions to the Cheatham Lake Watershed consist of 35 individual NPDES-permitted facilities. Other permits in the watershed (as of October 13, 2008) are Mining Permits (5), Aquatic Resource Alteration Permits (323), Tennessee Multi-Sector Permits (247), Construction General Permits (297), UST Permits (1), and Ready Mix Concrete Plant Permits (15). Agricultural operations include cattle, chicken, hog, and sheep farming. Maps illustrating the locations of permit sites and tables summarizing livestock practices are presented in each subwatershed.

Chapter 5 is entitled *Water Quality Partnerships in the Cheatham Lake Watershed* and highlights partnerships between agencies and between agencies and landowners that are essential to success. Programs of federal agencies (Natural Resources Conservation Service, U.S. Fish and Wildlife Service, U.S. Geological Survey, and U.S. Army Corps of Engineers), and state agencies (TDEC/State Revolving Fund, TDEC Division of Water Supply, Tennessee Department of Agriculture, and Tennessee Wildlife Resources Agency). Local initiatives of organizations active in the watershed (Cumberland River Compact, Central Basin RC&D Council, Five Rivers RC&D Council) are also described.

Point and Nonpoint source approaches to water quality problems in the Cheatham Lake Watershed are addressed in Chapter 6. Chapter 6 also includes comments received during public meetings, links to EPA-approved TMDLs in the watershed, and an assessment of needs for the watershed.

The full Cheatham Lake Watershed Water Quality Management Plan can be found at: http://www.state.tn.us/environment/wpc/watershed/wsmplans/

CHAPTER 1

WATERSHED APPROACH TO WATER QUALITY

1.1 BACKGROUND. The Division of Water Pollution Control is responsible for administration of the Tennessee Water Quality Control Act of 1977 (TCA 69–3–101). Information about the Division of Water Pollution Control, updates and announcements, may be found at http://www.state.tn.us/environment/wpc/index.html, and a summary of the organization of the Division of Water Pollution Control may be found in Appendix I.

The mission of the Division of Water Pollution Control is to abate existing pollution of the waters of Tennessee, to reclaim polluted waters, to prevent the future pollution of the waters, and to plan for the future use of the waters so that the water resources of Tennessee might be used and enjoyed to the fullest extent consistent with the maintenance of unpolluted waters.

The Division monitors, analyzes, and reports on the quality of Tennessee's water. In order to perform these tasks more effectively, the Division adopted a Watershed Approach to Water Quality in 1996.

This Chapter summarizes TDEC's Watershed Approach to Water Quality.

1.2 WATERSHED APPROACH TO WATER QUALITY. The Watershed Approach to Water Quality is a coordinating framework designed to protect and restore aquatic systems and protect human health more effectively (EPA841-R-95-003). The Approach is based on the concept that many water quality problems, like the accumulation of pollutants or nonpoint source pollution, are best addressed at the watershed level. In addition, a watershed focus helps identify the most cost-effective pollution control strategies to meet clean water goals. Tennessee's Watershed Approach, updates and public participation opportunities, may be found on the web at http://www.state.tn.us/environment/wpc/wshed1.htm.

Watersheds are appropriate as organizational units because they are readily identifiable landscape units with readily identifiable boundaries that integrate terrestrial, aquatic, and geologic processes. Focusing on the whole watershed helps reach the best balance among efforts to control point source pollution and polluted runoff as well as protect drinking water sources and sensitive natural resources such as wetlands (EPA-840-R-98-001).

Four main features are typical of the Watershed Approach: 1) Identifying and prioritizing water quality problems in the watershed, 2) Developing increased public involvement, 3) Coordinating activities with other agencies, and 4) Measuring success through increased and more efficient monitoring and other data gathering.

Typically, the Watershed Approach meets the following description (EPA841-R-95-003):

- Features watersheds or basins as the basic management units
- Targets priority subwatersheds for management action
- Addresses all significant point and nonpoint sources of pollution
- Addresses all significant pollutants
- Sets clear and achievable goals
- Involves the local citizenry in all stages of the program
- Uses the resources and expertise of multiple agencies
- Is not limited by any single agency's responsibilities
- Considers public health issues

An additional characteristic of the Watershed Approach is that it complements other environmental activities. This allows for close cooperation with other state agencies and local governments as well as with federal agencies such as the Tennessee Valley Authority and the U.S. Army Corps of Engineers, U.S. Department of Agriculture (*e.g.*, Natural Resources Conservation Service, United States Forest Service), U.S. Department of the Interior (*e.g.* United States Geological Survey, U.S. Fish and Wildlife Service, National Park Service). When all permitted dischargers are considered together, agencies are better able to focus on those controls necessary to produce measurable improvements in water quality. This also results in a more efficient process: It encourages agencies to focus staff and financial resources on prioritized geographic locations and makes it easier to coordinate between agencies and individuals with an interest in solving water quality problems (EPA841-R-003).

The Watershed Approach is not a regulatory program or a new EPA mandate; rather it is a decision making process that reflects a common strategy for information collection and analysis as well as a common understanding of the roles, priorities, and responsibilities of all stakeholders within a watershed. The Watershed Approach utilizes features already in state and federal law, including:

- Water Quality Standards
- National Pollutant Discharge Elimination System (NPDES)
- Total Maximum Daily Loads (TMDLs)
- Clean Lakes Program
- Nonpoint Source Program
- Groundwater Protection

Traditional activities like permitting, planning, and monitoring are also coordinated in the Watershed Approach. A significant change from the past, however, is that the Watershed Approach encourages integration of traditional regulatory (point source pollution) and nonregulatory (nonpoint sources of pollution) programs. There are additional changes from the past as well:

THE PAST	WATERSHED APPROACH
Focus on fixed-station ambient monitoring	Focus on comprehensive watershed monitoring
Focus on pollutant discharge sites	Focus on watershed-wide effects
Focus on WPC programs	Focus on coordination and cooperation
Focus on point sources of pollution	Focus on all sources of pollution
Focus on dischargers as the problem	Focus on dischargers as an integral part of the solution
Focus on short-term problems	Focus on long-term solutions

Table 1-1. Contrast Between the Watershed Approach and the Past.

This approach places greater emphasis on all aspects of water quality, including chemical water quality (conventional pollutants, toxic pollutants), physical water quality (temperature, flow), habitat quality (channel morphology, composition and health of benthic communities), and biodiversity (species abundance, species richness).

1.2.A. Components of the Watershed Approach. Tennessee is composed of fifty-five watersheds corresponding to the 8-digit USGS Hydrologic Unit Codes (HUC-8). These watersheds, which serve as geographic management units, are combined in five groups according to year of implementation.

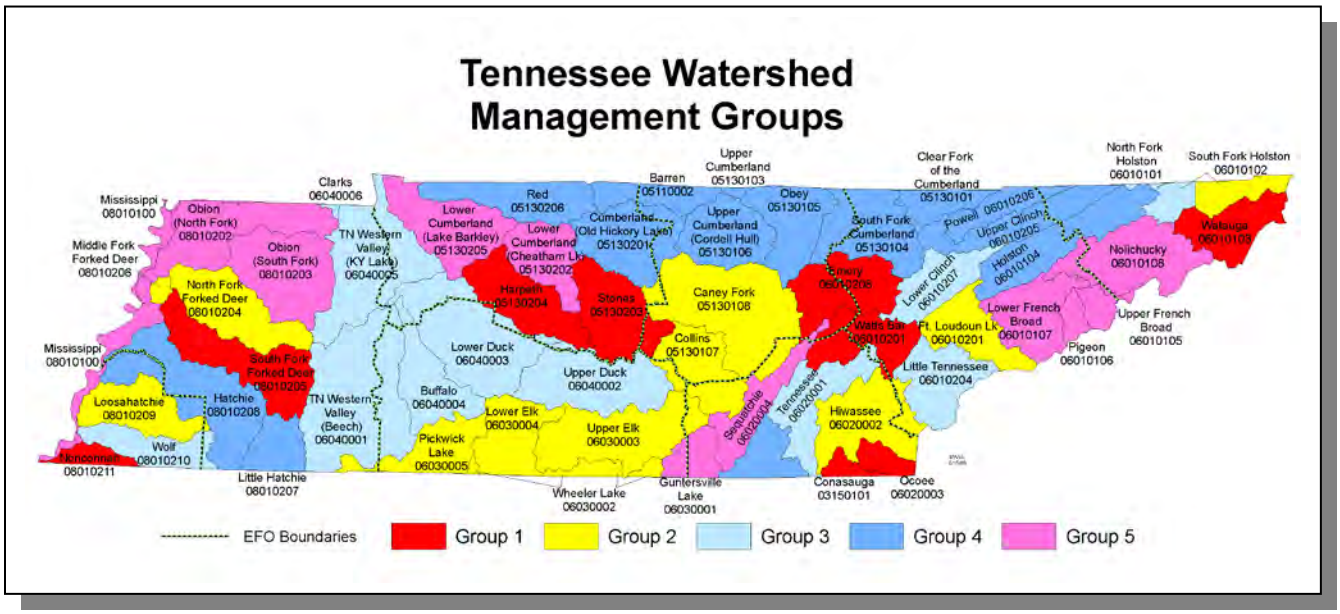


Figure 1-1. Watershed Groups in Tennessee's Watershed Approach to Water Quality.

Each year, TDEC conducts monitoring in one-fifth of Tennessee's watersheds; assessment, priority setting and follow-up monitoring are conducted in another one fifth of watersheds; modeling and TMDL studies in another one fifth; developing management plans in another one fifth; and implementing management plans in another one fifth of watersheds.

GROUP	WEST TENNESSEE	MIDDLE TENNESSEE	EAST TENNESSEE
1	Nonconnah South Fork Forked Deer	Harpeth Stones	Conasauga Emory Ocoee Watauga Watts Bar
2	Loosahatchie Middle Fork Forked Deer North Fork Forked Deer	Caney Fork Collins Lower Elk Pickwick Lake Upper Elk Wheeler Lake	Fort Loudoun Hiwassee South Fork Holston (Upper) Wheeler Lake
3	Tennessee Western Valley (Beech River) Tennessee Western Valley (KY Lake) Wolf River	Buffalo Lower Duck Upper Duck	Little Tennessee Lower Clinch North Fork Holston South Fork Holston (Lower) Tennessee (Upper)
4	Lower Hatchie Upper Hatchie	Barren Obey Red Upper Cumberland (Cordell Hull Lake) Upper Cumberland (Old Hickory Lake) Upper Cumberland (Cumberland Lake)	Holston Powell South Fork Cumberland Tennessee (Lower) Upper Clinch Upper Cumberland (Clear Fork)
5	Mississippi North Fork Obion South Fork Obion	Guntersville Lake Lower Cumberland (Cheatham Lake) Lower Cumberland (Lake Barkley)	Lower French Broad Nolichucky Pigeon Upper French Broad

Table 1-2. Watershed Groups in Tennessee's Watershed Approach.

In succeeding years of the cycle, efforts rotate among the watershed groups. The activities in the five year cycle provide a reference for all stakeholders.

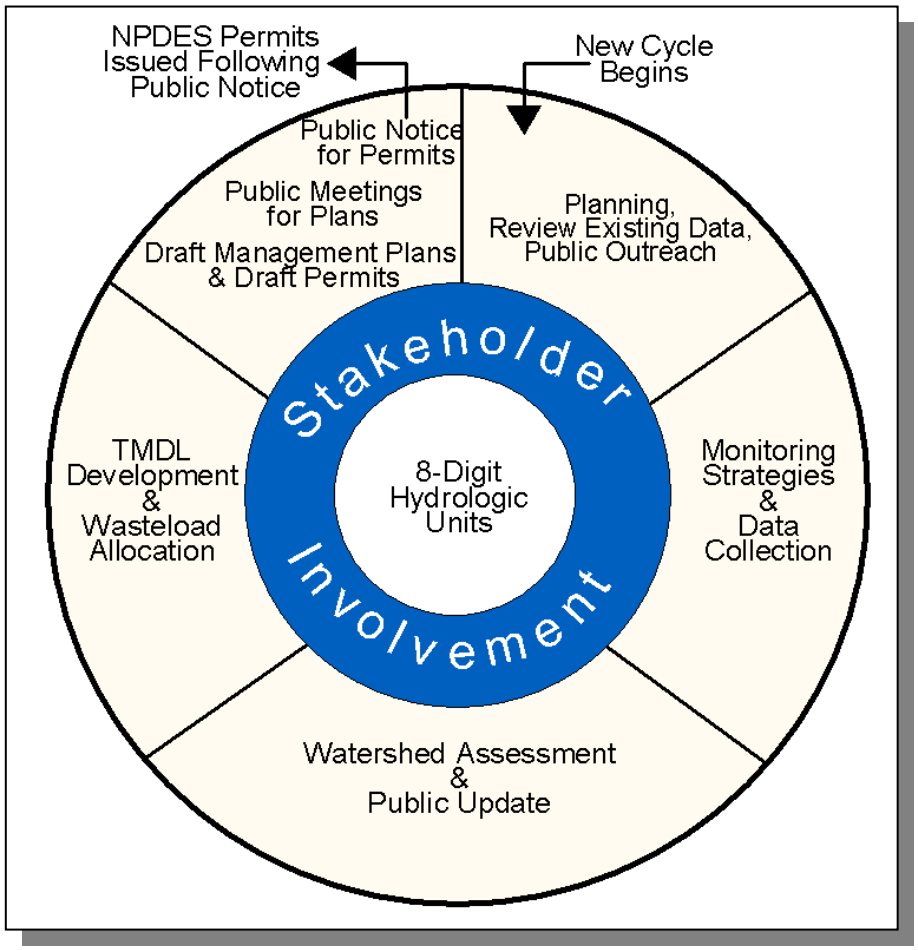


Figure 1-2. The Watershed Approach Cycle.

The six key activities that take place during the cycle are:

1. Planning and Existing Data Review. Existing data and reports from appropriate agencies and organizations are compiled and used to describe the current conditions and status of rivers and streams. Reviewing all existing data and comparing agencies' work plans guide the development of an effective monitoring strategy.

2. Monitoring. Field data is collected for streams in the watershed. These data supplement existing data and are used for the water quality assessment.

3. Assessment. Monitoring data are used to determine the status of the stream's designated use supports.

4. Wasteload Allocation/TMDL Development. Monitoring data are used to determine nonpoint source contributions and pollutant loads for permitted dischargers releasing wastewater to the watershed. Limits are set to assure that water quality is protected.

5. Permits. Issuance and expiration of all discharge permits are synchronized based on watersheds. Currently, 1700 permits have been issued in Tennessee under the federally delegated National Pollutant Discharge Elimination System (NPDES).

6. Watershed Management Plans. These plans include information for each watershed including general watershed description, water quality goals, major water quality concerns and issues, and management strategies.

Public participation opportunities occur throughout the entire five year cycle. Participation in Years 1, 3 and 5 is emphasized, although additional meetings are held at stakeholder's request. People tend to participate more readily and actively in protecting the quality of waters in areas where they live and work, and have some roles and responsibilities:

- Data sharing
- Identification of water quality stressors
- Participation in public meetings
- Commenting on management plans
- Shared commitment for plan implementation

1.2.B. Benefits of the Watershed Approach. The Watershed Approach fosters a better understanding of the physical, chemical and biological effects on a watershed, thereby allowing agencies and citizens to focus on those solutions most likely to be effective. The Approach recognizes the need for a comprehensive, ecosystem-based approach that depends on local governments and local citizens for success (EPA841-R-95-004). On a larger scale, many lessons integrating public participation with aquatic ecosystem-based programs have been learned in the successful Chesapeake Bay, Great Lakes, Clean Lakes, and National Estuary Programs.

Benefits of the Watershed Approach include (EPA841-R-95-004):

- Focus on water quality goals and ecological integrity rather than on program activities such as number of permits issued.

- Improve basis for management decisions through consideration of both point and nonpoint source stressors. A watershed strategy improves the scientific basis for decision making and focuses management efforts on basins and watersheds where they are most needed. Both point and nonpoint control strategies are more effective under a watershed approach because the Approach promotes timely and focused development of TMDLs.

- Enhance program efficiency, as the focus becomes watershed. A watershed focus can improve the efficiency of water management programs by facilitating consolidation of programs within each watershed. For example, handling all point source dischargers in a watershed at the same time reduces administrative costs due to the potential to combine hearings and notices as well as allowing staff to focus on more limited areas in a sequential fashion.

- Improve coordination between federal, state and local agencies including data sharing and pooling of resources. As the focus shifts to watersheds, agencies are better able to participate in data sharing and coordinated assessment and control strategies.

- Increase public involvement. The Watershed Approach provides opportunities for stakeholders to increase their awareness of water-related issues and inform staff about their knowledge of the watershed. Participation is via three public meetings over the five-year watershed management cycle as well as meetings at stakeholder's request. Additional opportunities are provided through the Department of Environment and Conservation homepage and direct contact with local Environmental Assistance Centers.

- Greater consistency and responsiveness. Developing goals and management plans for a basin or watershed with stakeholder involvement results in increased responsiveness to the public and consistency in determining management actions. In return, stakeholders can expect improved consistency and continuity in decisions when management actions follow a watershed plan.

Additional benefits of working at the watershed level are described in the Clean Water Action Plan (EPA-840-R-98-001), and can be viewed at http://www.cleanwater.gov/action/toc.html.

The Watershed Approach represents awareness that restoring and maintaining our waters requires crossing traditional barriers (point *vs.* nonpoint sources of pollution) when designing solutions. These solutions increasingly rely on participation by both public and private sectors, where citizens, elected officials and technical personnel all have opportunity to participate. This integrated approach mirrors the complicated relationships in which people live, work and recreate in the watershed, and suggests a comprehensive, watershed-based and community-based approach is needed to address these (EPA841-R-97-005).

CHAPTER 2

DESCRIPTION OF THE CHEATHAM LAKE WATERSHED

2.1. BACKGROUND. Cheatham Lake is an impoundment of the Cumberland River and includes 320 miles of shoreline that extends 67.5 miles up the Cumberland River from Cheatham Dam, through Nashville, to Old Hickory Dam. The Lock and Dam were authorized by Congress in 1946 as a navigation project to enhance the development of the Cumberland River and Cheatham Lake was filled and the lock opened to the public in December 1952. The *Tennessee Blue Book* states that Cheatham County, where the lock and dam are located, was named for Edwin S. Cheatham, Speaker of the Tennessee Senate from 1855 to 1861. However, noted history holds that Cheatham County was named for the man who settled it, J.R. Cheatham. Another theory passed along since the project was completed is that it was named after Confederate General Benjamin F. Cheatham. In any case, Cheatham Lake is maintained by the U.S. Army Corps of Engineers.

This Chapter describes the location and characteristics of the Cheatham Lake Watershed.

2.2. DESCRIPTION OF THE WATERSHED.

2.2.A. General Location. The Cheatham Lake Watershed is located in Middle Tennessee and includes parts of Cheatham, Davidson, Robertson, Rutherford, Sumner, and Williamson Counties.

Figure 2-1. General Location of the Cheatham Lake Watershed.

COUNTY	% OF WATERSHED IN EACH COUNTY
Davidson	59.73
Cheatham	24.33
Robertson	6.30
Rutherford	5.50
Sumner	4.05
Williamson	0.08

Table 2-1. The Cheatham Lake Watershed Includes Parts of Six Middle Tennessee Counties.

2.2.B. Population Density Centers. Four interstates and twenty highways serve the major communities in the Cheatham Lake Watershed.

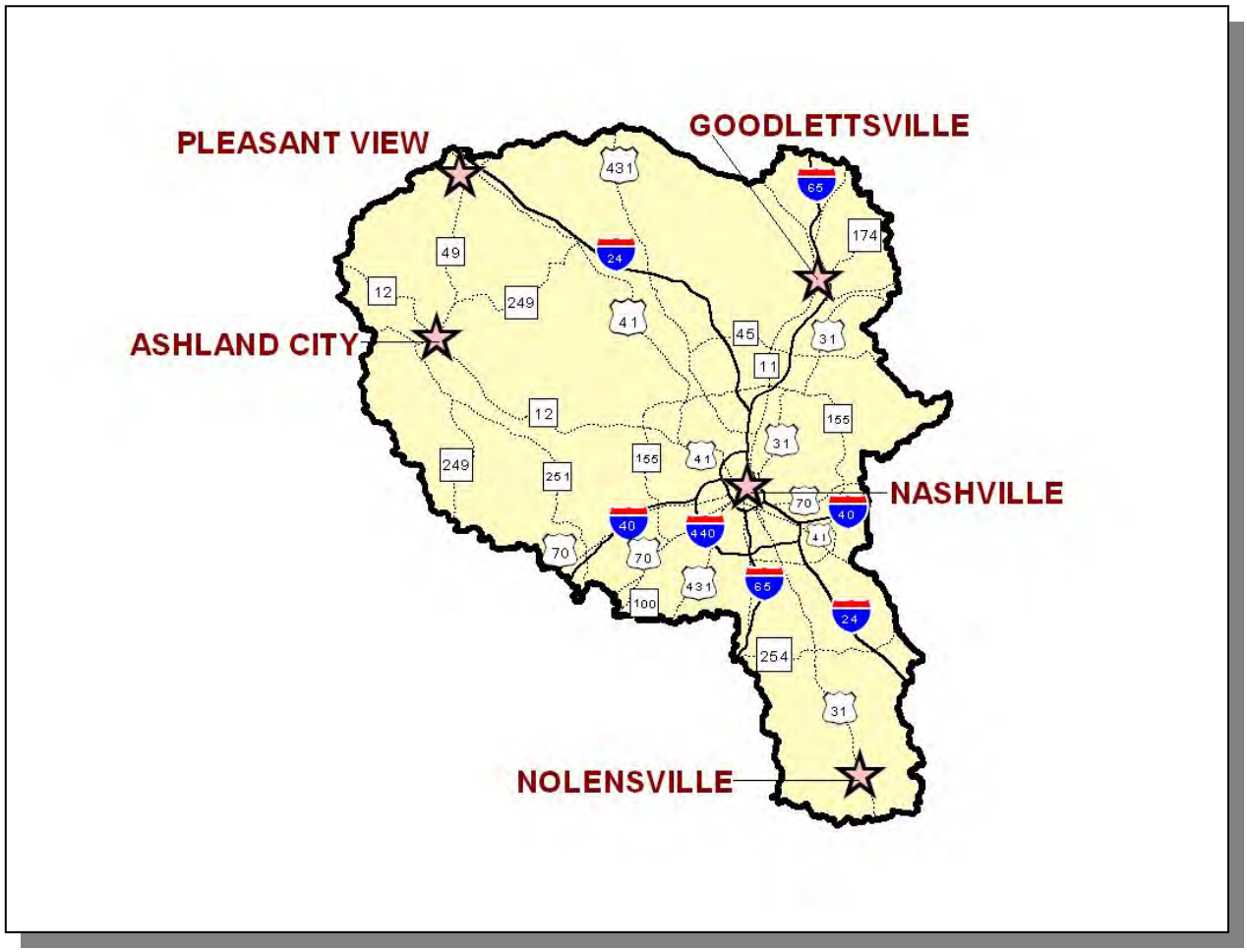


Figure 2-2. Communities and Roads in the Cheatham Lake Watershed.

MUNICIPALITY	POPULATION	COUNTY
Nashville*	545,524	Davidson
Goodlettsville	13,780	Sumner, Davidson
Ashland City*	3,641	Cheatham
Nolensville	3,099	Williamson
Pleasant View	544	Cheatham

Table 2-2. Municipalities in Cheatham Lake Watershed. *Population based on 2000 census (Tennessee Blue Book) or http://www.hometownlocator.com. Asterisk (*) indicates county seat.*

2.3. GENERAL HYDROLOGIC DESCRIPTION.

2.3.A. Hydrology. The Cheatham Lake Watershed, designated 05130202 by the USGS, is approximately 647 square miles and drains to the Cumberland River.

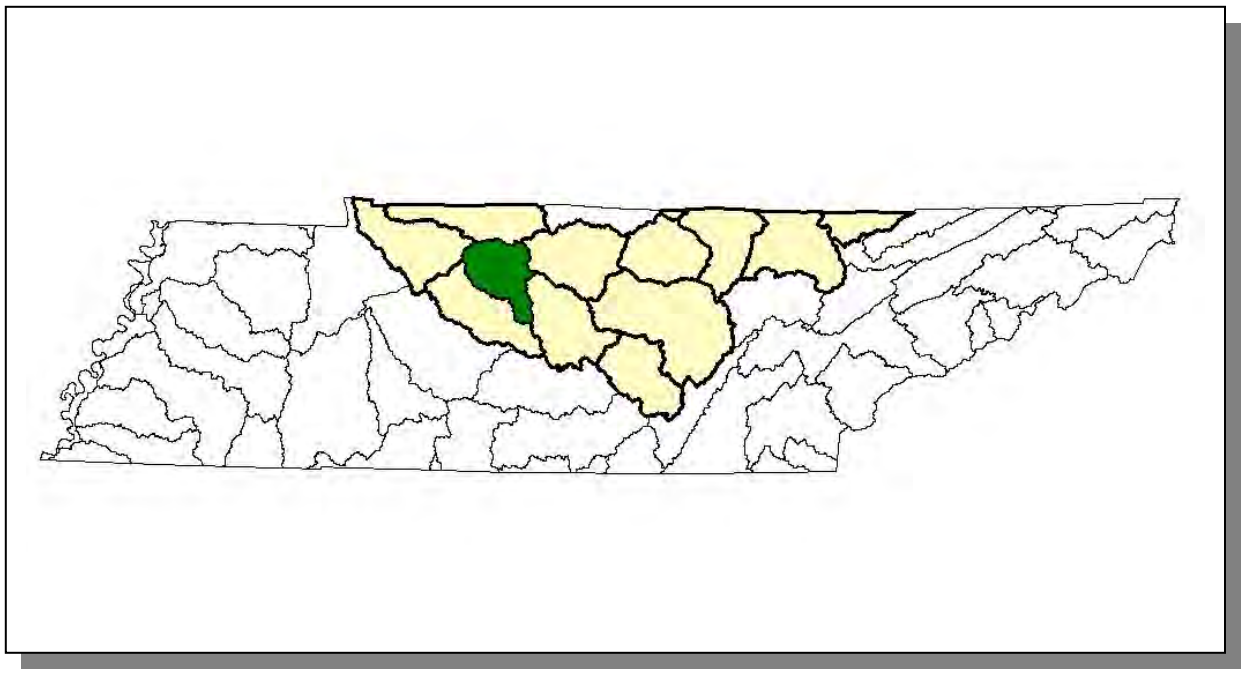


Figure 2-3. The Cheatham Lake Watershed is Part of the Cumberland River Basin.

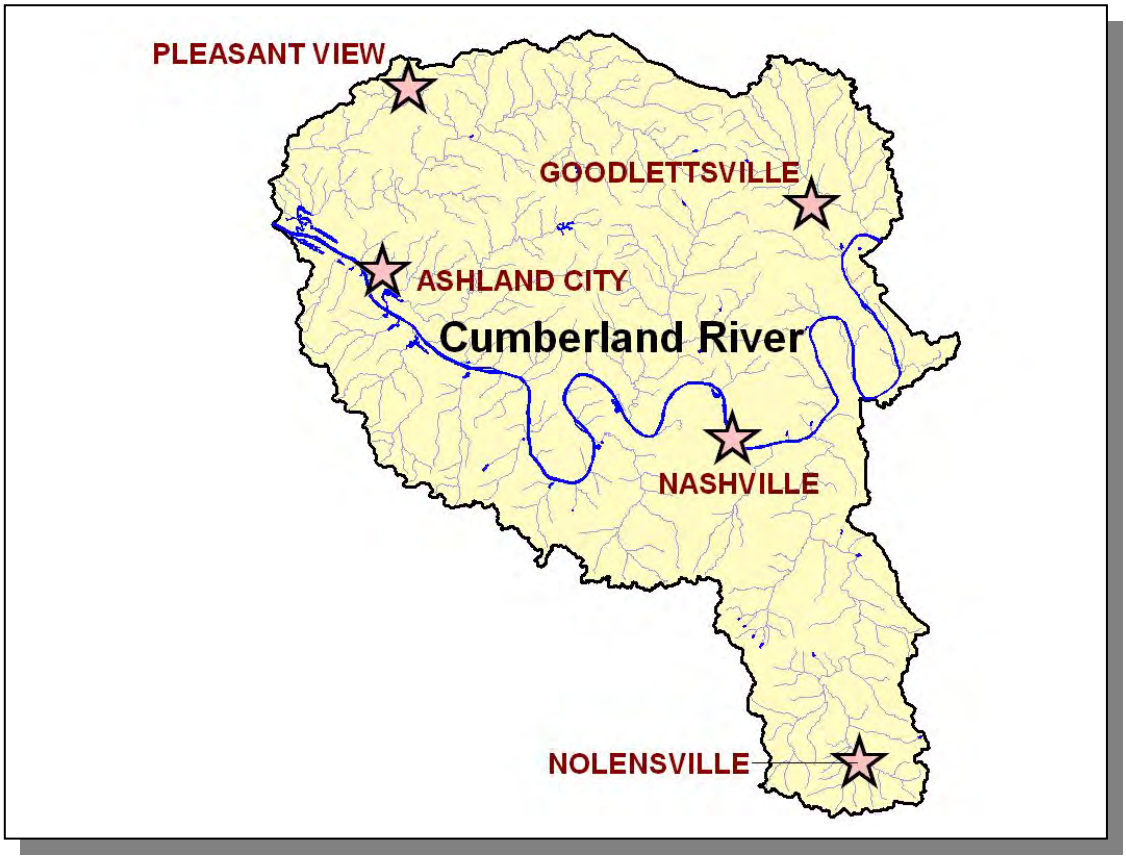


Figure 2-4. Hydrology in the Cheatham Lake Watershed. *There are 773.3 stream miles and 7,507 lake acres recorded in River Reach File 3 in the Cumberland River (Cheatham Lake) Watershed. Location of the Cumberland River, and the cities of Ashland City, Goodlettsville, Nashville, Nolensville, and Pleasant View are shown for reference.*

2.3.B. Dams. There are 34 dams inventoried by TDEC Division of Water Supply in the Cheatham Lake Watershed. These dams either retain 30 acre-feet of water or have structures at least 20 feet high.

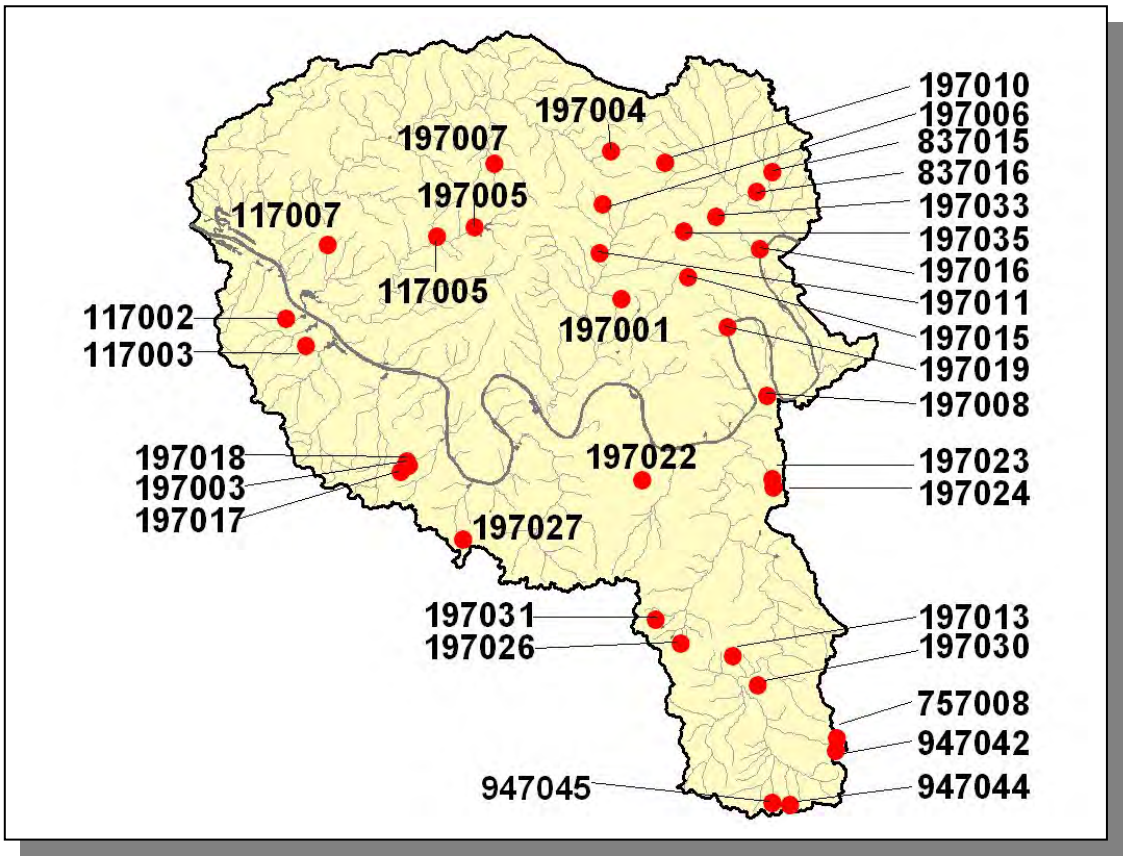


Figure 2-5. Location of Inventoried Dams in the Cheatham Lake Watershed. *More information, including identification of inventoried dams labeled, is provided in Appendix II and at http://gwidc.memphis.edu/website/dams/viewer.htm.*

2.4. LAND USE. Land Use/Land Cover information was provided by EPA Region 4 and was interpreted from 2001 Multi-Resolution Land Cover (MRLC) satellite imagery.

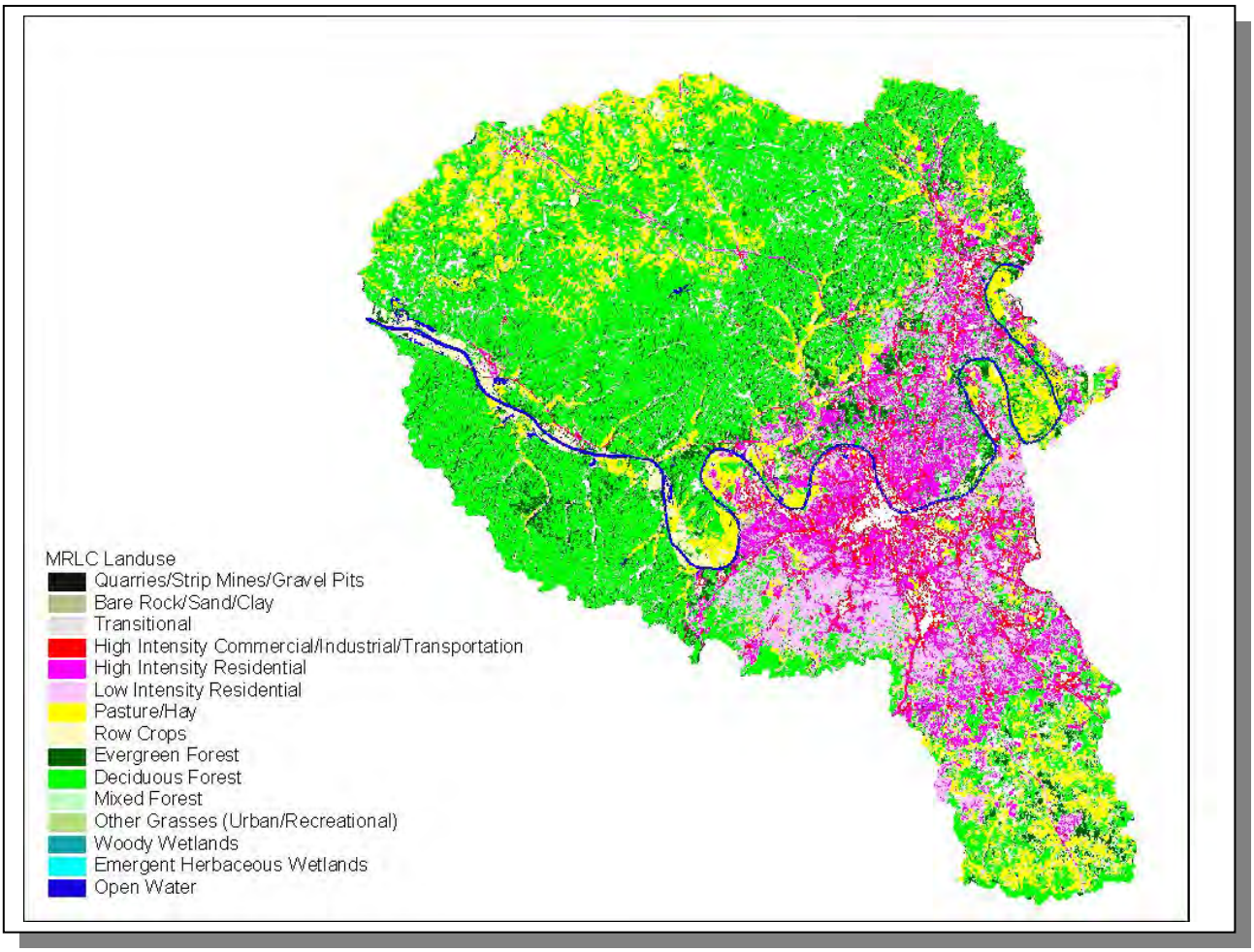


Figure 2-6. Illustration of Select Land Cover/Land Use Data from MRLC Satellite Imagery.

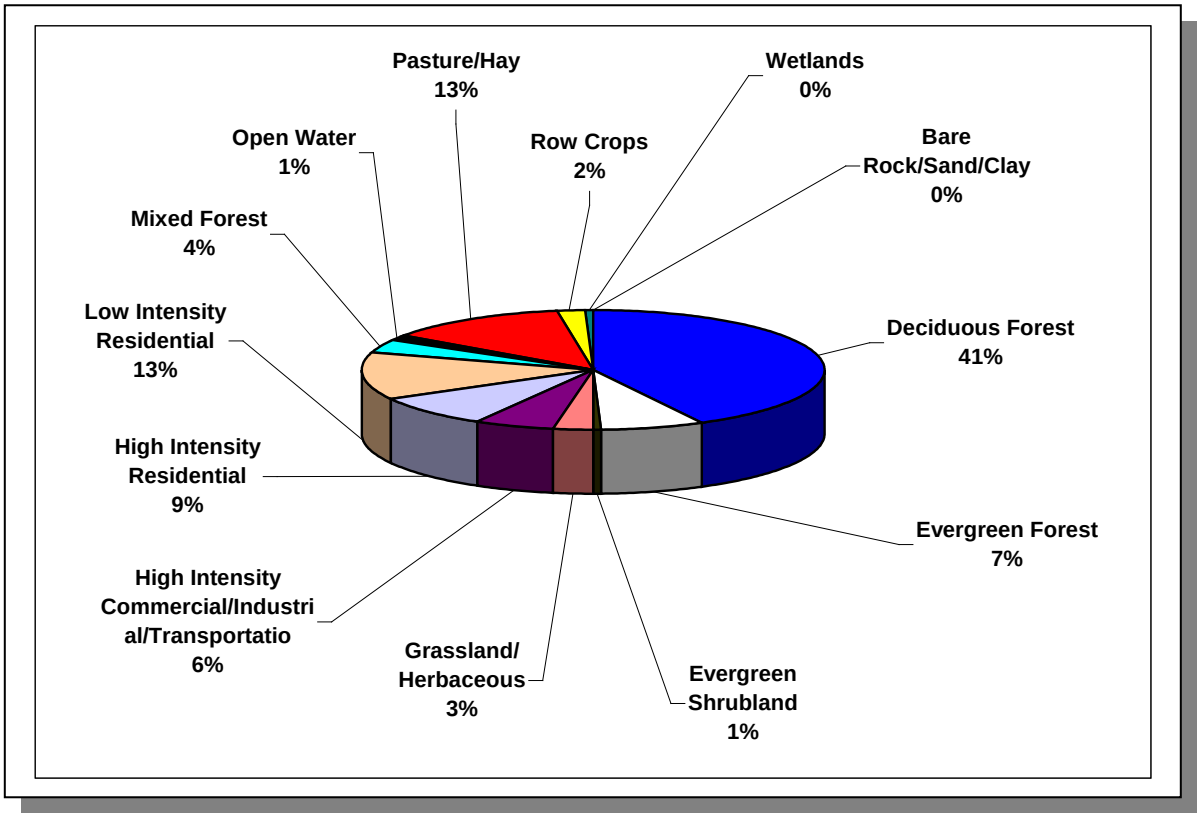


Figure 2-7. Land Use Distribution in the Cheatham Lake Watershed. *More information is provided in Appendix II.*

Sinkholes, springs, disappearing streams and caves characterize karst topography. The term "karst" describes a distinctive landform that indicates dissolution of underlying soluble rocks by surface water or ground water. Although commonly associated with limestone and dolomite (carbonate rocks), other highly soluble rocks such as gypsum and rock salt can be sculpted into karst terrain. In karst areas, the ground water flows through solution-enlarged channels, bedding planes and microfractures within the rock. The characteristic landforms of karst regions are: closed depressions of various size and arrangement; disrupted surface drainage; and caves and underground drainage systems. The term "karst" is named after a famous region in the former country of Yugoslavia.

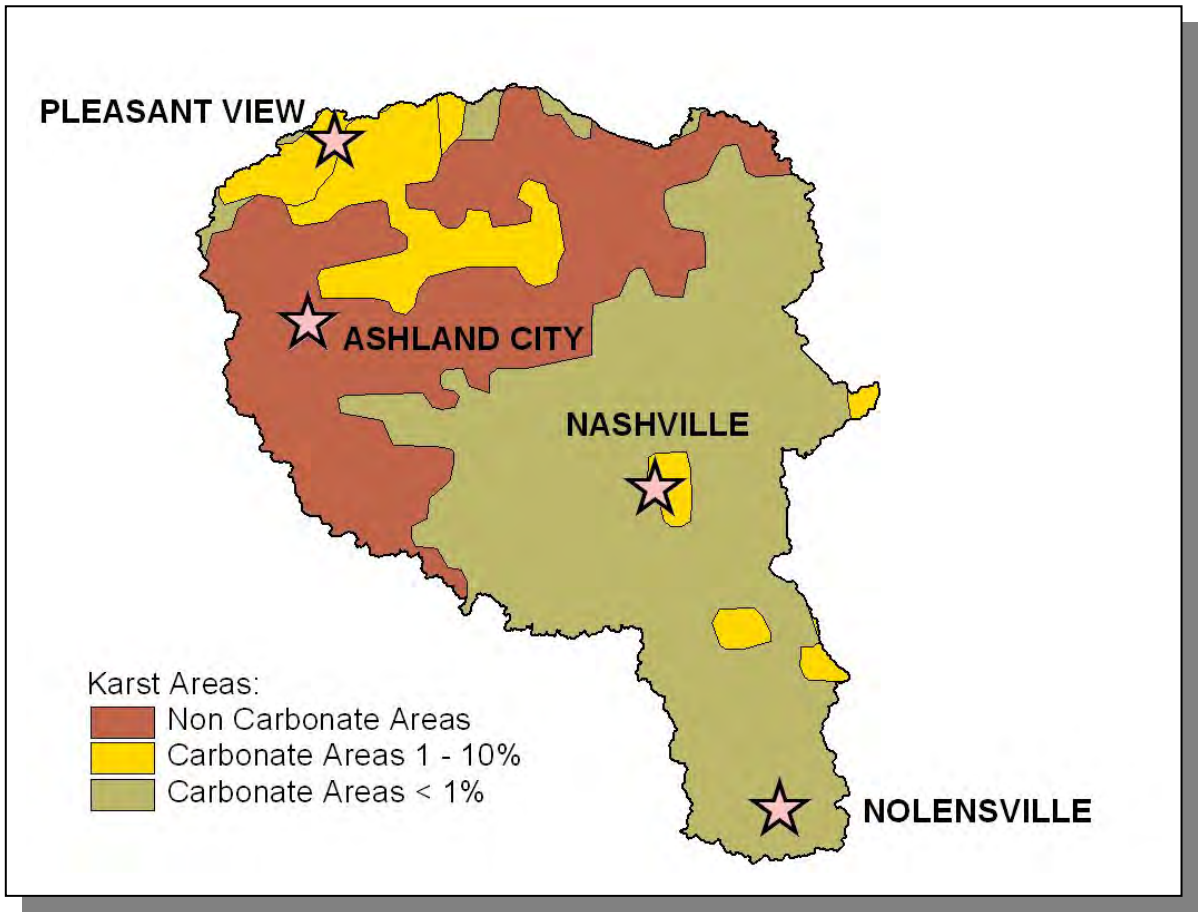


Figure 2-8. Illustration of Karst Areas in Cheatham Lake Watershed. *Locations of communities in the watershed are shown for reference.*

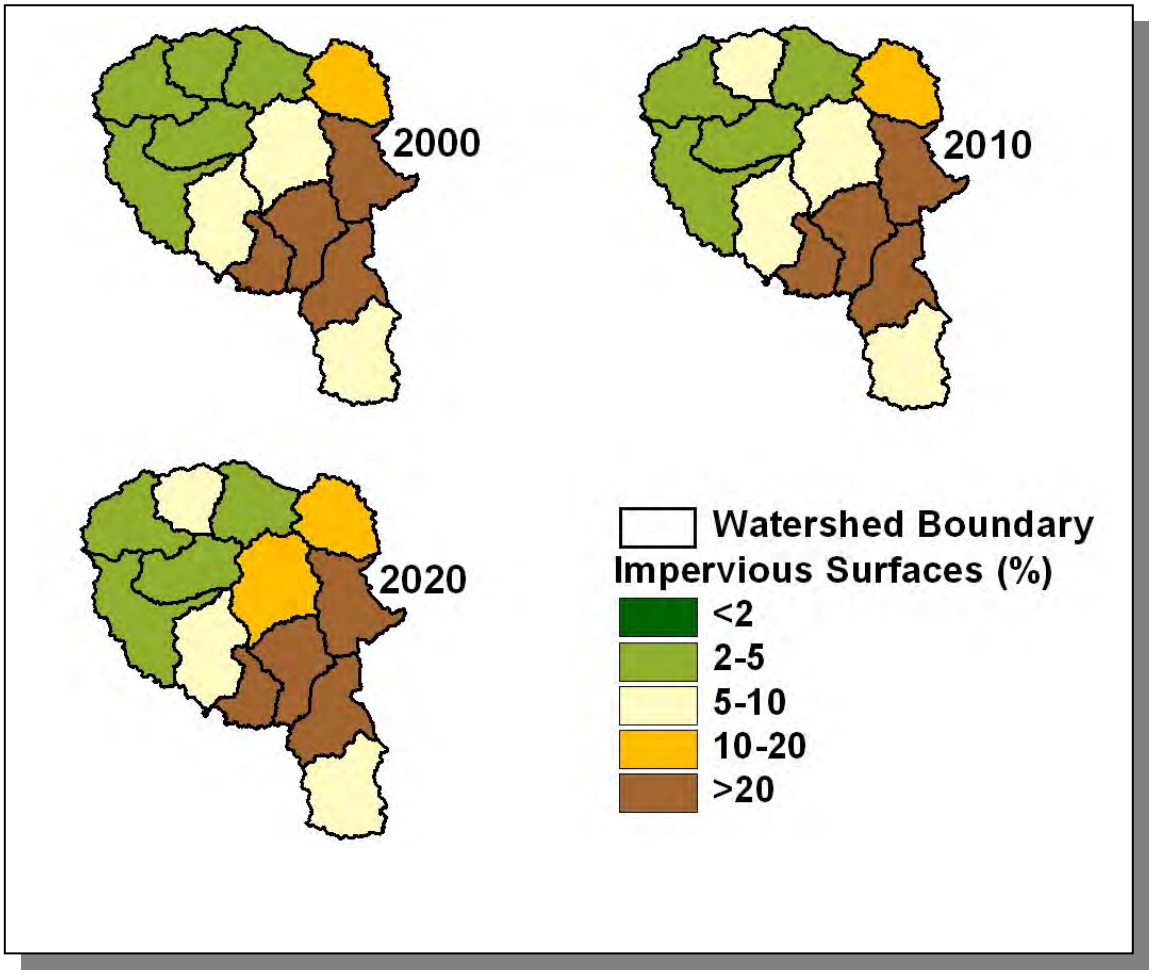


Figure 2-9. Illustration of Total Impervious Area in the Cheatham Lake Watershed. *All HUC-12 subwatersheds are shown. Current estimates and projected total impervious cover calculated by HUC-12 are provided by EPA Region 4. More information can be found at: http://www.epa.gov/ATHENS/research/impervious/.*

2.5. ECOREGIONS AND REFERENCE STREAMS. Ecoregions are relatively homogeneous areas of similar geography, topography, climate and soils that support similar plant and animal life. Ecoregions serve as a spatial framework for the assessment, management, and monitoring of ecosystems and ecosystem components. Ecoregion studies can aid the selection of regional stream reference sites, identifying high quality waters, and developing ecoregion-specific chemical and biological water quality criteria.

There are eight Level III Ecoregions and twenty-five Level IV subecoregions in Tennessee. The Cheatham Lake Watershed lies within 1 Level III ecoregion (Interior Plateau) and contains 4 Level IV subecoregions:

- The **Western Pennyroyal Karst (71e)** is a flatter area of irregular plains, with fewer perennial streams, compared to the open hills of the Western Highland Rim (71f). Small sinkholes and depressions are common. The productive soils of this notable agricultural area are formed mostly from a thin loess mantle over residuum of Mississippian-age limestones. Most of the region is cultivated or in pasture; tobacco and livestock are the principal agricultural products, with some corn, soybeans, and small grains. The natural vegetation consisted of oak-hickory forest with mosaics of bluestem prairie. The barrens of Kentucky that extended south into Stewart, Montgomery, and Robertson counties, were once some of the largest natural grasslands in Tennessee.

- The **Western Highland Rim (71f)** is characterized by dissected, rolling terrain of open hills, with elevations of 400 to 1000 feet. The geologic base of Mississippian-age limestone, chert, and shale is covered by soils that tend to be cherty, acidic and low to moderate in fertility. Streams are characterized by coarse chert gravel and sand substrates with areas of bedrock, moderate gradients, and relatively clear water. The oak-hickory natural vegetation was mostly deforested in the mid to late 1800's, in conjunction with the iron ore related mining and smelting of the mineral limonite, but now the region is again heavily forested. Some agriculture occurs on the flatter areas between streams and in the stream and river valleys: mostly hay, pasture, and cattle, with some cultivation of corn and tobacco.

- The **Outer Nashville Basin (71h)** is a more heterogeneous region than the Inner Nashville Basin, with more rolling and hilly topography and slightly higher elevations. The region encompasses most all of the outer areas of the generally non-cherty Ordovician limestone bedrock. The higher hills and knobs are capped by the more cherty Mississippian-age formations, and some Devonian-age Chattanooga shale, remnants of the Highland Rim. The region's limestone rocks and soils are high in phosphorus, and commercial phosphate is mined. Deciduous forests with pasture and cropland are the dominant land covers. Streams are low to moderate gradient, with productive nutrient-rich waters, resulting in algae, rooted vegetation, and occasionally high densities of fish. The Nashville Basin as a whole has a distinctive fish fauna, notable for fish that avoid the region, as well as those that are present.

- The **Inner Nashville Basin (71i)** is less hilly and lower than the Outer Nashville Basin. Outcrops of the Ordovician-age limestone are common, and the generally shallow soils are redder and lower in phosphorus than those of the Outer Basin. Streams are lower gradient than surrounding regions, often flowing over large expanses of limestone bedrock. The most characteristic hardwoods within the Inner Basin are a maple-oak-hickory-ash association. The limestone cedar glades of Tennessee, a unique mixed grassland/forest/cedar glades vegetation type with many endemic species, are located primarily on the limestone of the Inner Nashville Basin. The more xeric, open characteristics and shallow soils of the cedar glades also result in a distinct distribution of amphibian and reptile species.

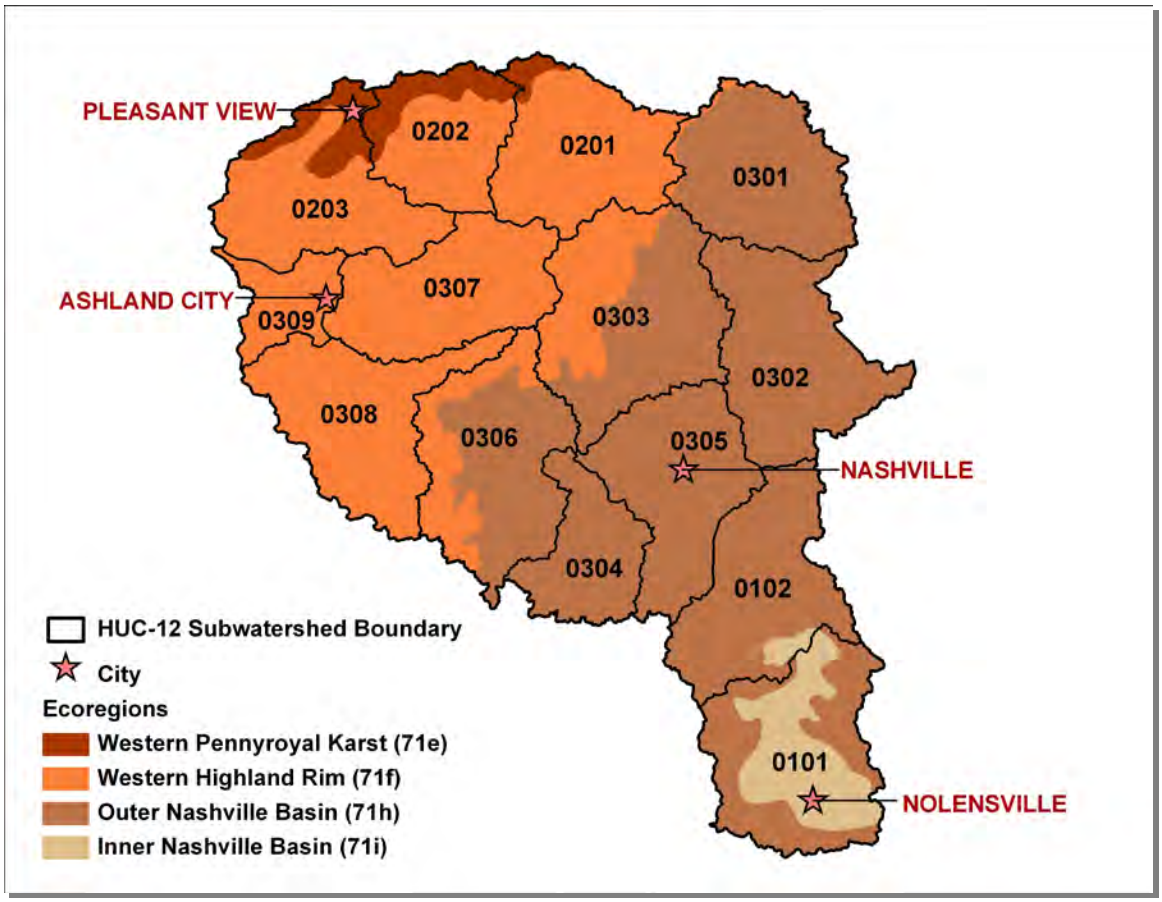


Figure 2-10. Level IV Ecoregions in Cheatham Lake Watershed. *HUC-12 subwatershed boundaries and locations of Nashville, Nolensville, and Pleasantview are shown for reference.*

Each Level IV Ecoregion has at least one reference stream associated with it. A reference stream represents a least impacted condition within that ecoregion and may not be representative of a pristine condition.

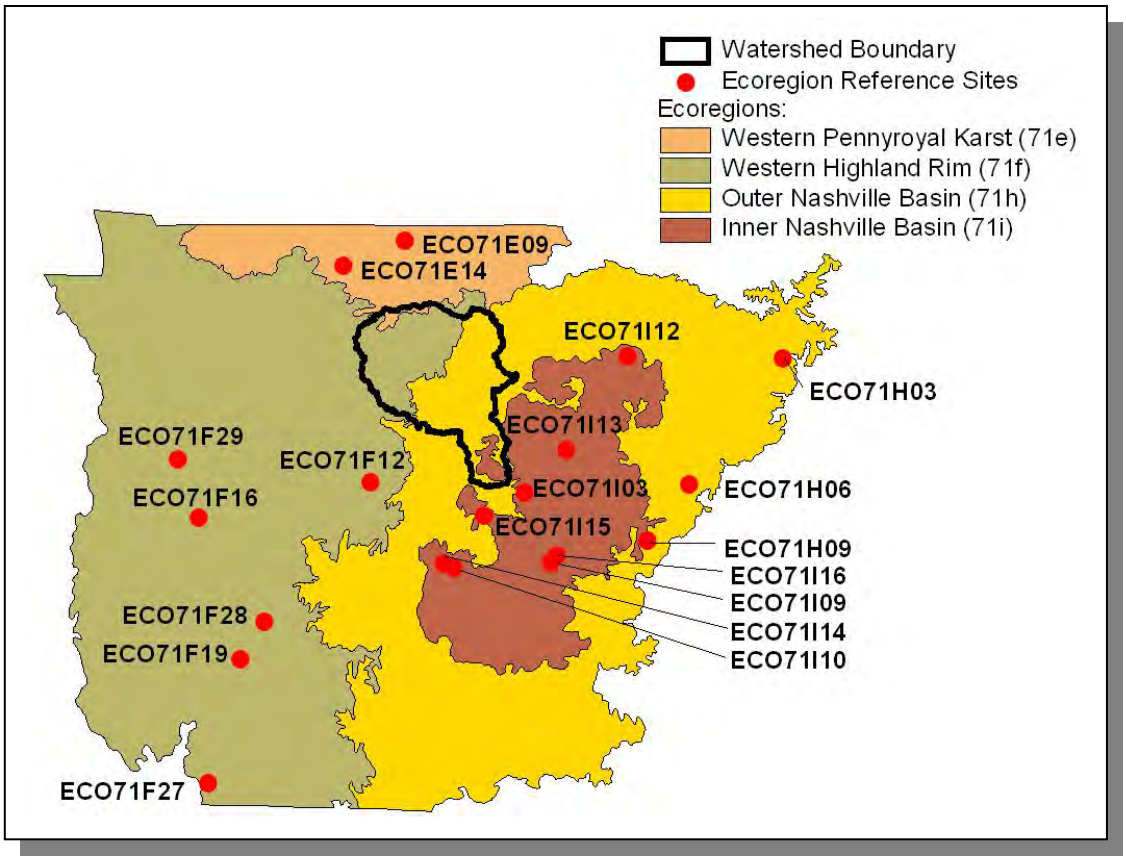


Figure 2-11. Ecoregion Monitoring Sites in Level IV Ecoregions 71e, 71f, 71h and 71i. *The Cheatham Lake Watershed is shown for reference. More information, including which ecoregion reference sites were inactive or dropped prior to 06/01/2006, is provided in Appendix II.*

2.6. NATURAL RESOURCES.

2.6.A. Rare Plants and Animals. The Heritage Program in the TDEC Division of Natural Areas maintains a database of rare species that is shared by partners at The Nature Conservancy, Tennessee Wildlife Resources Agency, the US Fish and Wildlife Service, and the Tennessee Valley Authority. The information is used to: 1) track the occurrence of rare species in order to accomplish the goals of site conservation planning and protection of biological diversity, 2) identify the need for, and status of, recovery plans, and 3) conduct environmental reviews in compliance with the federal Endangered Species Act.

GROUPING	NUMBER OF RARE SPECIES
Crustaceans	1
Insects	1
Mussels	1
Other	1
Amphibians	3
Birds	7
Fish	5
Mammals	2
Reptile	1
Plants	38
Total	**60**

Table 2-3. There are 60 Known Rare Plant and Animal Species in the Cheatham Lake Watershed.

In the Cheatham Lake Watershed, there are five known rare fish species, three known rare amphibian species, one rare crustacean species, and one known rare mussel species.

SCIENTIFIC NAME	COMMON NAME	FEDERAL STATUS	STATE STATUS
Acipenser fulvensis	Lake sturgeon		E
Etheostoma luteovinctum	Redband Darter		D
Etheostoma microlepidum	Finescale Darter		D
Cycleptus elongates	Blue sucker		T
Ichthyomyzon unicuspis	Silver Lamprey		D
Ambystoma barbouri	Streamside Salamander		D
Cryptobranchus alleganiensis	Hellbender		D
Hemidactylium scutatum	Four-toed Salamander		D
Orconectes shoupi	Nashville Crayfish	LE	E
Epioblasma brevidens	Cumberlandian Combshell	LE	E

Table 2-4. Rare Aquatic Species in the Cheatham Lake Watershed. *Federal Status: LE, Listed Endangered by the U.S. Fish and Wildlife Service. State Status: T, Listed Threatened by the Tennessee Wildlife Resources Agency; E, Listed Endangered by the Tennessee Wildlife Resources Agency; D, Deemed in Need of Management by the Tennessee Wildlife Resources Agency. More information may be found at http://www.state.tn.us/environment/na/.*

2.6.B. Wetlands. The Division of Natural Areas maintains a database of wetland records in Tennessee. These records are a compilation of field data from wetland sites inventoried by various state and federal agencies. Maintaining this database is part of Tennessee's Wetland Strategy, which is described at:

http://www.state.tn.us/environment/na/wetlands/

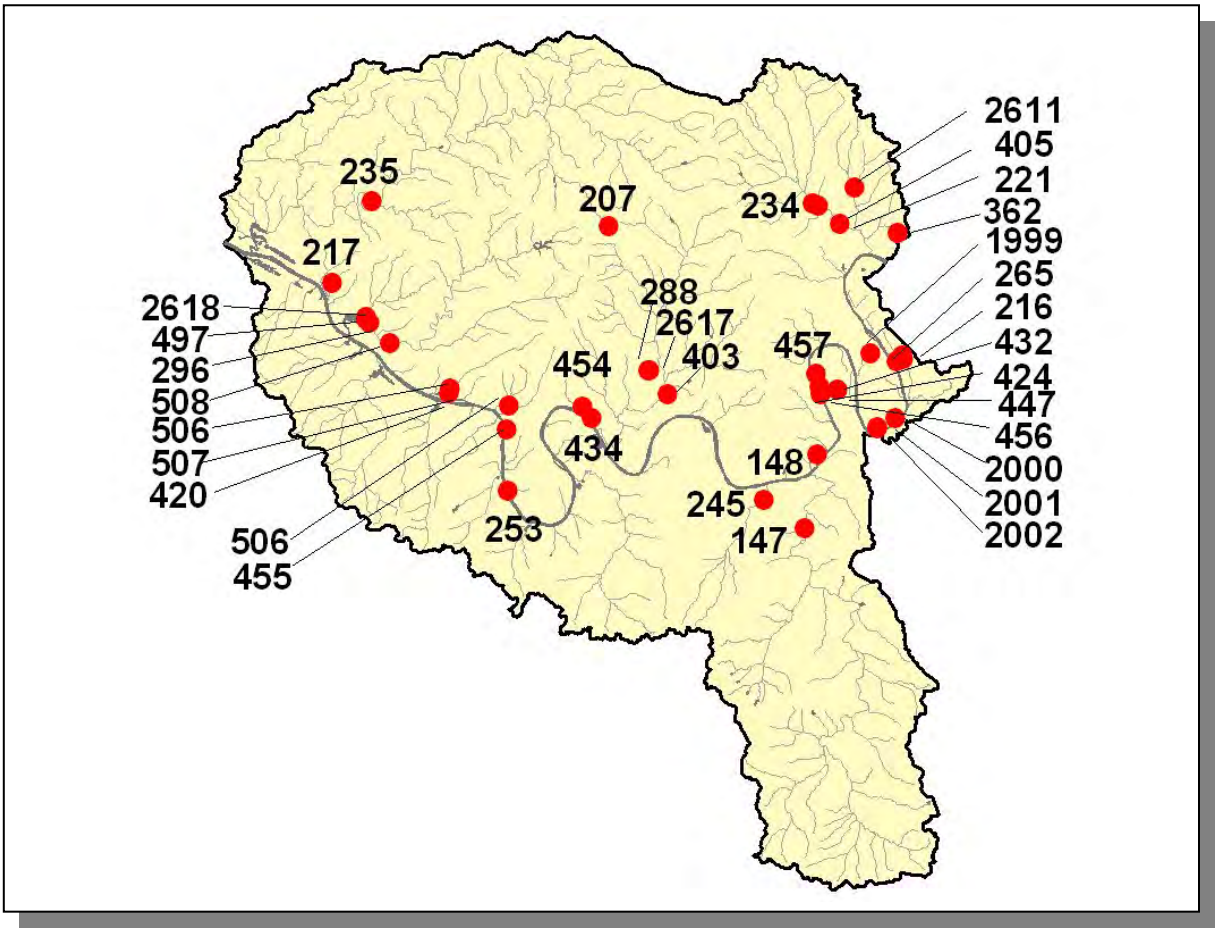


Figure 2-12. Location of Wetland Sites in TDEC Division of Natural Areas Database in Cheatham Lake Watershed. This map represents an incomplete inventory and should not be considered a dependable indicator of the presence of wetlands. *There may be additional wetland sites in the watershed. More information, including identification of wetland sites labeled, is provided in Appendix II.*

2.7. CULTURAL RESOURCES.

2.7.A. Nationwide Rivers Inventory. The Nationwide Rivers Inventory, required under the Federal Wild and Scenic Rivers Act of 1968, is a listing of free-flowing rivers that are believed to possess one or more outstanding natural or cultural values. Exceptional scenery, fishing or boating, unusual geologic formations, rare plant and animal life, cultural or historic artifacts that are judged to be of more than local or regional significance are the values that qualify a river segment for listing. The Tennessee Department of Environment and Conservation and the Rivers and Trails Conservation Assistance branch of the National Park Service jointly compile the Nationwide Rivers Inventory from time to time (most recently in 1997). Under a 1980 directive from the President's Council on Environmental Quality, all Federal agencies must seek to avoid or mitigate actions that would have an adverse effect on Nationwide Rivers Inventory segments.

The most recent version of the Nationwide Rivers Inventory lists a portion of one stream in the Cheatham Lake Watershed:

Sycamore Creek (RM 3 to RM 17) is an excellent recreational stream with many steep scenic bluffs and forested banks and an abundance of wildlife.

RIVER	SCENIC	RECREATION	GEOLOGIC	FISH	WILDLIFE	HISTORIC	CULTURAL
Sycamore Creek	X	X	X	X	X	X	X

Table 2-5. Attributes of Streams Listed in the Nationwide Rivers Inventory.

Additional information may be found online at http://www.ncrc.nps.gov/rtca/nri/

2.7.B. Public Lands. Some sites representative of the cultural heritage are under state or federal protection:

- Cheatham Wildlife Management Area is a 20,800-acre property in Cheatham County managed by Tennessee Wildlife Resources Agency. More information may be found at: http://tennessee.gov/twra/reg2wmas.html
- Bordeaux Heronry is located in Davidson County, Tennessee and has been in existence since 1908.
- Mill Creek Bottoms Greenway currently includes three distinct segments which are either completed or under construction. More information may be found at: http://www.nashville.gov/greenways/driving_directions_05.htm
- Edwin and Percy Warner Parks, collectively known as "The Warner Parks," comprise 2684 acres and are managed by the Metropolitan Board of Parks and Recreation of Nashville and Davidson County. More information may be found at: http://www.nashville.gov/parks/warner.htm

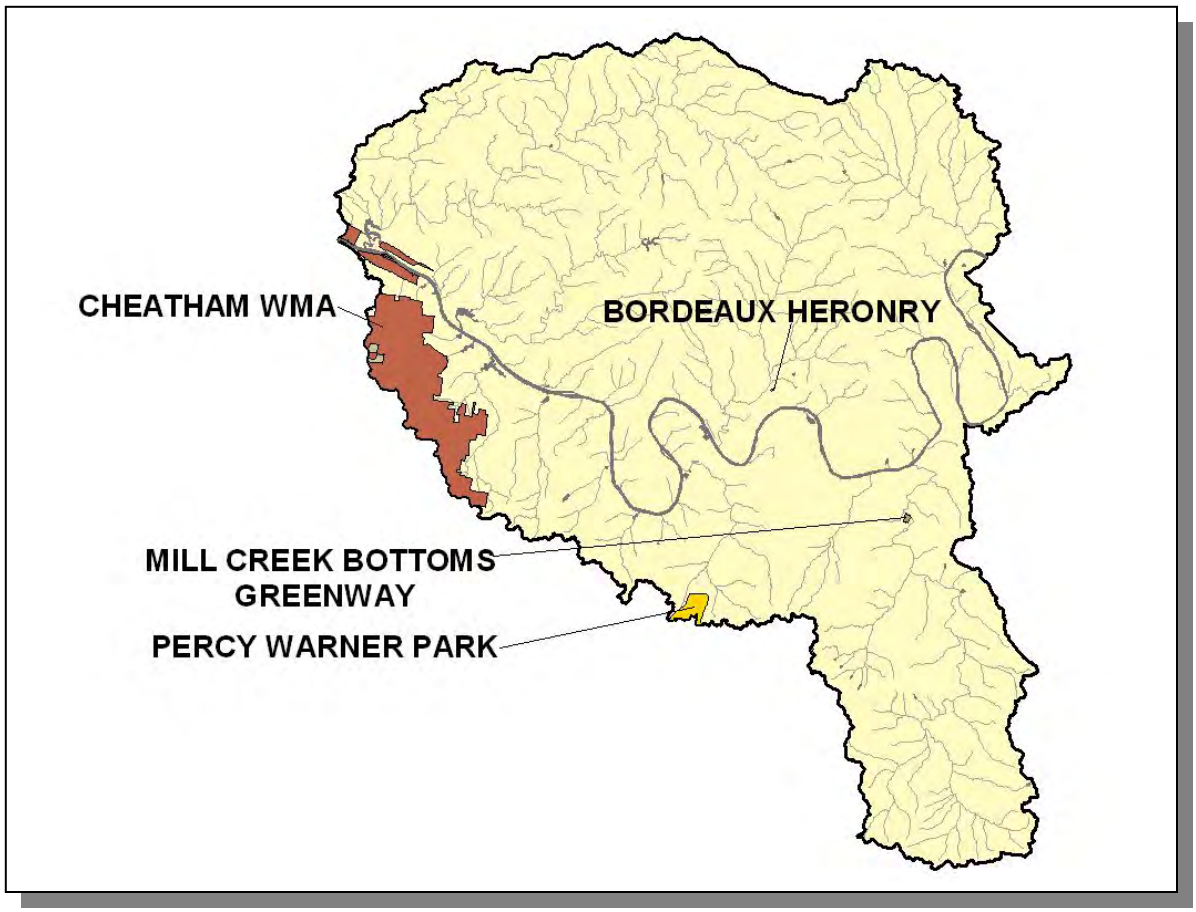


Figure 2-13. Public Lands in the Cheatham Lake Watershed. *Data are from Tennessee Wildlife Resources Agency. WMA, Wildlife Management Area.*

2.8. TENNESSEE RIVERS ASSESSMENT PROJECT. The Tennessee Rivers Assessment is part of a national program operating under the guidance of the National Park Service's Rivers and Trails Conservation Assistance Program. The Assessment is an inventory of river resources, and should not be confused with "Assessment" as defined by the Environmental Protection Agency. A more complete description can be found in the Tennessee Rivers Assessment Summary Report, which is available from the Department of Environment and Conservation and on the web at:

http://www.state.tn.us/environment/wpc/publications/riv/

STREAM	NSQ	RB	RF	STREAM	NSQ	RB	RF
Big Bluff Creek				Mill Creek	3	3	1
Browns Creek	4		4	North Fork Sycamore Creek	2		
Bullrun Creek	3			Pond Creek	3		
Cumberland River	2,3	2	1,4	Sams Creek	2		1
Little Marrowbone Creek	3		1	South Fork Sycamore Creek	2		
Long Creek	2	3		Sulfur Branch Sycamore Creek	2	2	2
Marrowbone Creek	3	3	1	Whites Creek	3	3	2

Table 2-6. Tennessee Rivers Assessment Project Stream Scoring in the Cheatham Lake Watershed.

Categories: NSQ, Natural and Scenic Qualities
RB, Recreational Boating
RF, Recreational Fishing

Scores: 1. Statewide or greater Significance; Excellent Fishery
2. Regional Significance; Good Fishery
3. Local Significance; Fair Fishery
4. Not a significant Resource; Not Assessed

CHAPTER 3

WATER QUALITY ASSESSMENT OF THE CHEATHAM LAKE WATERSHED.

3.1. BACKGROUND. Section 305(b) of The Clean Water Act requires states to report the status of water quality every two years. Historically, Tennessee's methodologies, protocols, frequencies and locations of monitoring varied depending upon whether sites were ambient, ecoregion, or intensive survey. Alternatively, in areas where no direct sampling data existed, water quality may have been assessed by evaluation or by the knowledge and experience of the area by professional staff.

In 1996, Tennessee began the watershed approach to water quality protection. In the Watershed Approach, resources—both human and fiscal—are better used by assessing water quality more intensively on a watershed-by-watershed basis. In this approach, water quality is assessed in year three of the watershed cycle, following one to two years of data collection. More information about the Watershed Approach may be found in Chapter 1 and at http://www.state.tn.us/environment/wpc/watershed/

The assessment information is used in the 305(b) Report (The Status of Water Quality in Tennessee) and the 303(d) list as required by the Clean Water Act.

The 305(b) Report documents the condition of the State's waters. Its function is to provide information used for water quality based decisions, evaluate progress, and measure success.

Tennessee uses the 305(b) Report to meet four goals (from 2008 305(b) Report):

1. Describe the water quality assessment process.

2. Categorize waters in the State by placing them in the assessment categories suggested by federal guidance.

3. Identify waterbodies that pose eminent human-health risks due to elevated bacteria levels or contamination of fish.

4. Provide detailed information on each watershed.

EPA aggregates the state use support information into a national assessment of the nation's water quality. This aggregated use support information can be viewed at EPA's "Surf Your Watershed" site at http://cfpub.epa.gov/surf/locate/index.cfm.

The 303(d) list is a compilation of the waters of Tennessee that fail to support some or all of their classified uses. The 303(d) list does not include streams determined to be fully supporting designated uses nor streams the Division of Water Pollution Control cannot assess due to lack of water quality information. Also absent are streams where a control strategy is already in the process of being implemented.

Once a stream is placed on the 303(d) list, it is considered a priority for water quality improvement efforts. These efforts not only include traditional regulatory approaches such as permit issuance, but also include efforts to control pollution sources that have historically been exempted from regulations, such as certain agricultural and forestry activities. If a stream is on the 303(d) list, the Division of Water Pollution Control cannot use its regulatory authority to allow additional sources of the same pollutant(s) for which it is listed.

States are required to develop Total Maximum Daily Loads (TMDLs) for 303(d)-listed waterbodies. The TMDL process establishes the maximum amount of a pollutant that a waterbody can assimilate without exceeding water quality standards and allocates this load among all contributing pollutant sources. The purpose of the TMDL is to establish water quality objectives required to reduce pollution from both point and nonpoint sources and to restore and maintain the quality of water resources.

The current 303(d) List is available on the TDEC homepage at:
http://tennessee.gov/environment/wpc/publications/303d2008.pdf

and information about Tennessee's TMDL program may be found at:
http://www.state.tn.us/environment/wpc/tmdl/.

This chapter provides a summary of water quality in the Cheatham Lake Watershed, summarizes data collection and assessment results, and describes impaired waters.

3.2. DATA COLLECTION. The following figures and table represent data collected in the last 5-year cycle (July 1, 2000 through June 30, 2005). Water quality data are from one of four site types: (1) Ambient sites, (2) Ecoregion sites, (3) Watershed Screening sites, or (4) Tier Evaluation sites.

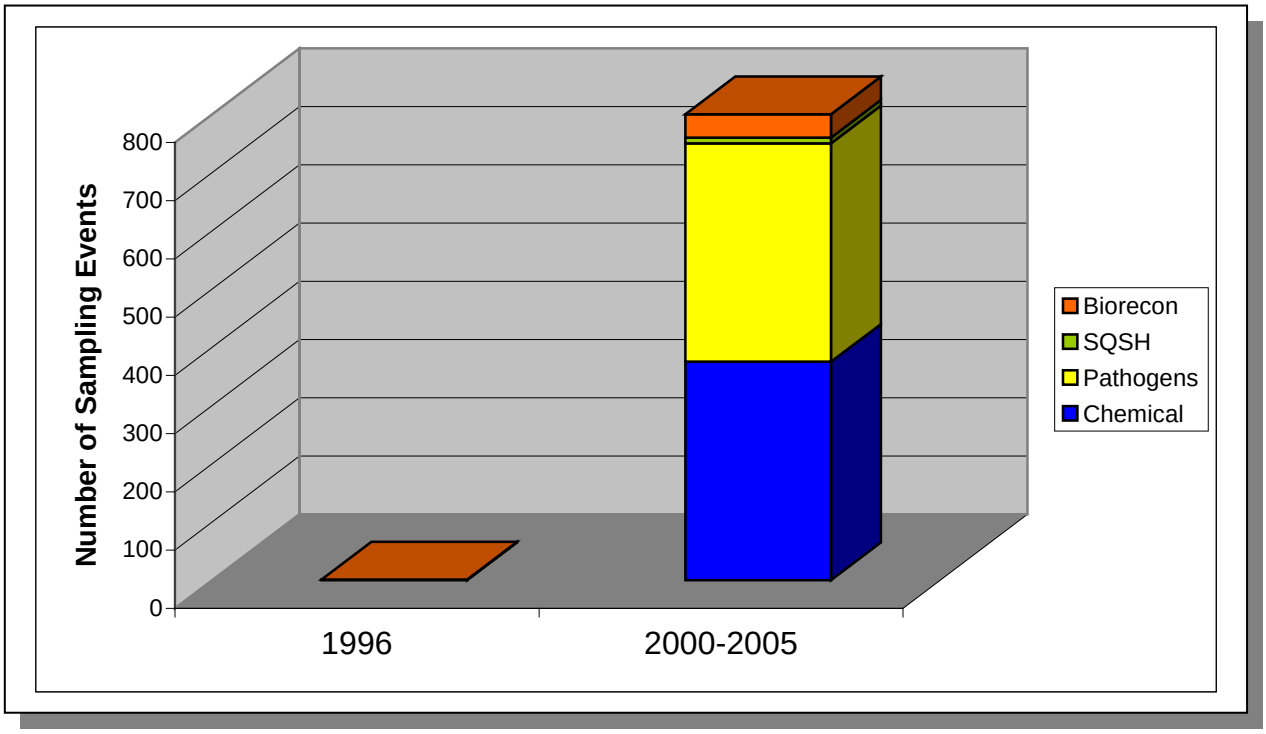


Figure 3-1. Number of Sampling Events Using the Traditional Approach (1996) and Watershed Approach (July 1, 2000 through June 30, 2005) in the Cheatham Lake Watershed.

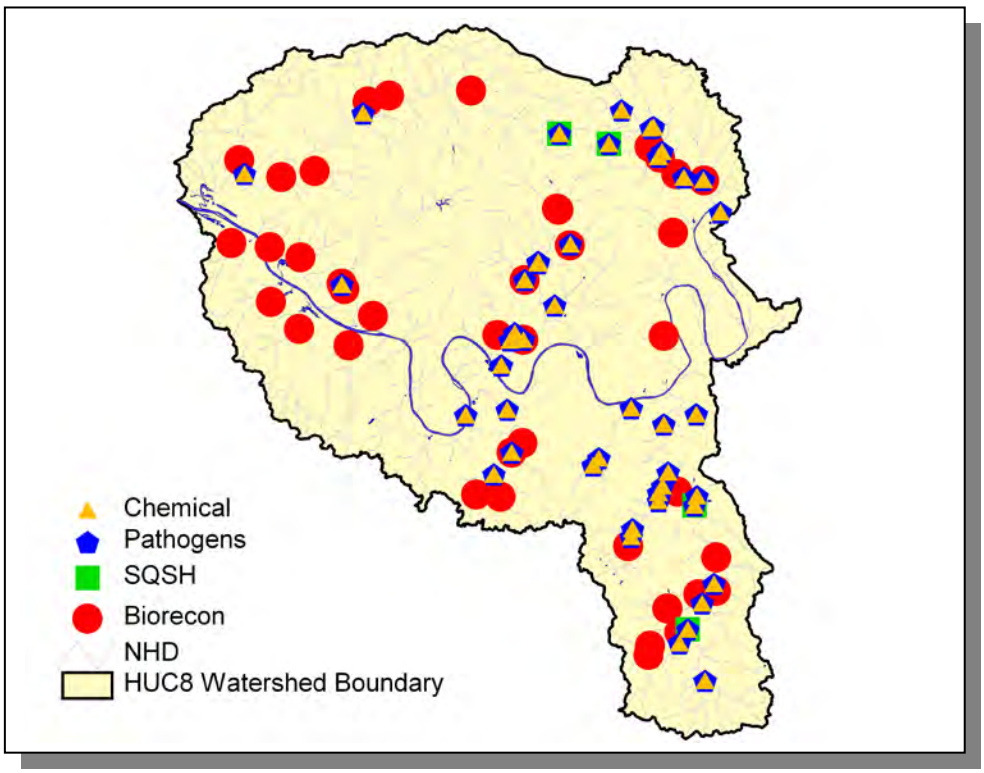


Figure 3-2. Location of Monitoring Sites in the Cheatham Lake Watershed (July 1, 2000 through June 30, 2005). *Pathogens include E. coli and fecal coliform; NHD, National Hydrography Dataset of Streams; SQSH, Semi-Quantitative Single Habitat Assessment.*

	1996	2000-2005
Chemical	0	375
Pathogens	0	375
SQSH	0	10
Biorecon	1	40
Total	**1**	**800**

Table 3-1. Number of Sampling Events in the Cheatham Lake Watershed 1996 and in the last 5-Year Cycle (July 1, 2000 through June 30, 2005).

3.2.A. Ambient Monitoring Sites. These fixed-station chemical monitoring sites are sampled quarterly or monthly by the Environmental Field Office-Nashville staff (this is in addition to samples collected by water and wastewater treatment plant operators and MS4 permittees). Samples are analyzed by the Tennessee Department of Health, Division of Environmental Laboratory Services. Ambient monitoring data are used to assess water quality in major bodies of water where there are NPDES facilities and to identify trends in water quality. Water quality parameters traditionally measured at ambient sites in the Cheatham Lake Watershed are provided in Appendix IV.

Data from ambient monitoring stations are entered into the STORET (Storage and Retrieval) system administered by EPA.

3.2.B. Ecoregion Sites. Ecoregions are relatively homogeneous areas of similar geography, topography, climate and soils that support similar plants and animals. The delineation phase of the Tennessee Ecoregion Project was completed in 1997 when the ecoregions and subecoregions were mapped and summarized (EPA/600/R-97/022). There are eight Level III Ecoregions and twenty-five Level IV subecoregions in Tennessee (see Chapter 2 for more details). The Cheatham Lake Watershed lies within 1 Level III ecoregions (Interior Plateau) and contains 4 subecoregions (Level IV):

- Western Pennyroyal Karst (71e)
- Western Highland Rim (71f)
- Outer Nashville Basin (71h)
- Inner Nashville Basin (71i)

Ecoregion reference sites are chemically monitored using methodology outlined in the Division's Chemical Standard Operating Procedure (Standard Operating Procedure for Modified Clean Technique Sampling Protocol). Macroinvertebrate samples are collected in spring and fall. These biological sample collections follow methodology outlined in the Tennessee Biological Standard Operating Procedures Manual. Volume 1: Macroinvertebrates and EPA's Revision to Rapid Bioassessment Protocols for use in Streams and Rivers.

Ecoregion stations are scheduled to be monitored during the watershed sampling time period.

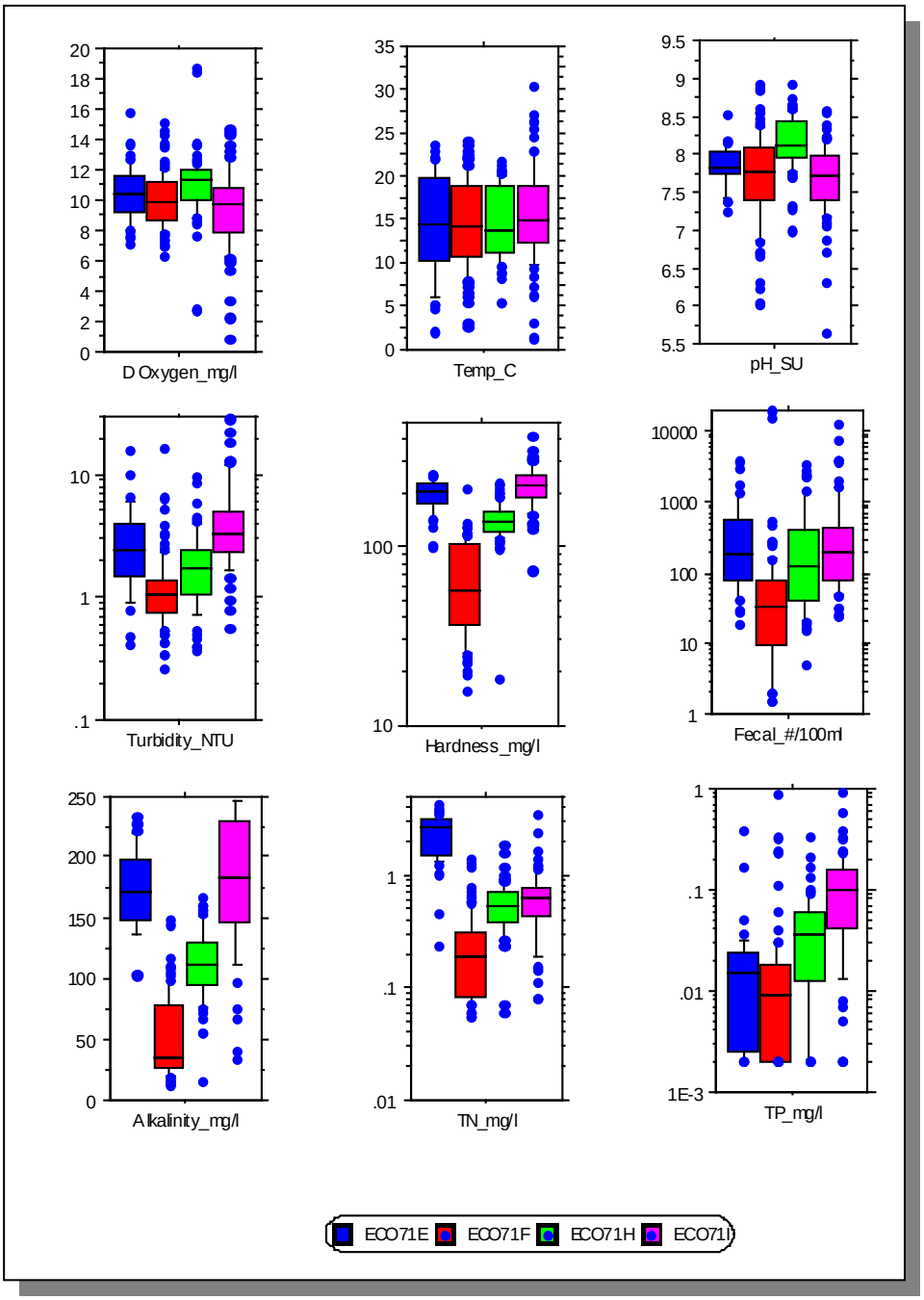


Figure 3-3. Select Chemical Data Collected in the Cheatham Lake Watershed Ecoregion Sites. *Boxes and bars illustrate 10th, 25th, median, 75th, and 90th percentiles. Extreme values are also shown as dots. Fecal, fecal coliform bacteria; TN, Total Nitrogen; TP, Total Phosphorus.*

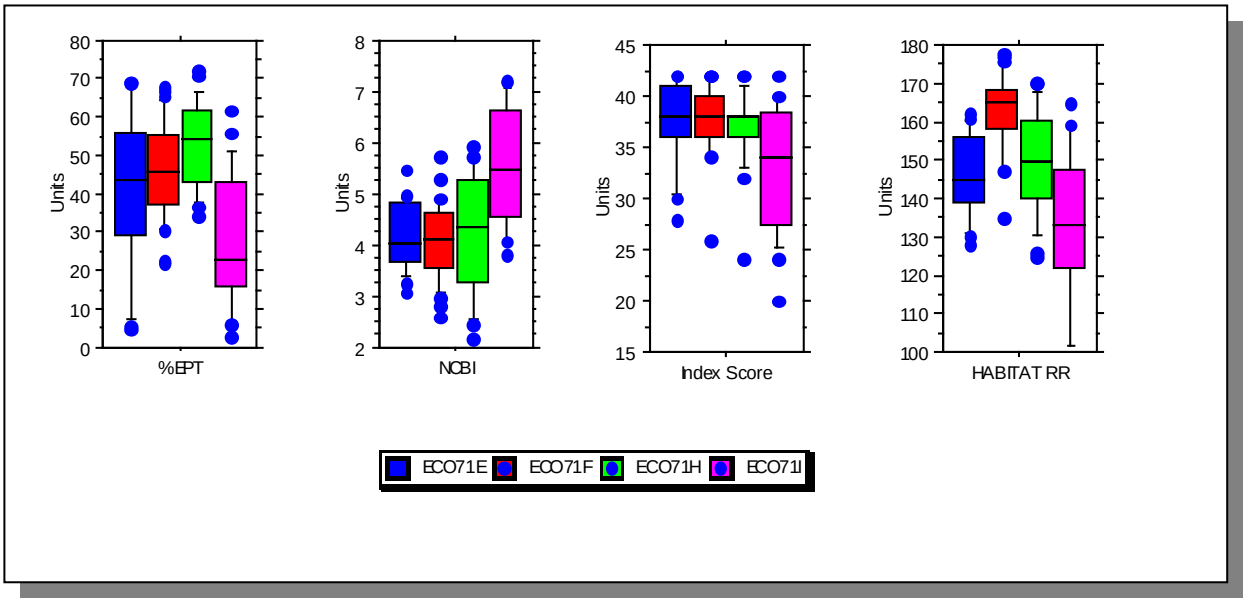


Figure 3-4. Benthic Macroinvertebrate and Habitat Scores for Cheatham Lake Watershed Ecoregion Sites. *Boxes and bars illustrate 10th, 25th, median, 75th, and 90th percentiles. Extreme values are also shown as dots. NCBI, North Carolina Biotic Index. Index Score and Habitat Riffle/Run scoring system are described in TDEC's Quality System Standard Operating Procedure for Macroinvertebrate Surveys (2002).*

3.2.C. Watershed Screening Sites. Activities that take place at watershed sites are benthic macroinvertebrate stream surveys, physical habitat determinations and/or chemical monitoring. Following review of existing data, watershed sites are selected in Year 1 of the watershed approach when preliminary monitoring strategies are developed. Additional sites may be added in Year 2 when additional monitoring strategies are implemented.

A Biological Reconnaissance (BioRecon) is used as a screening tool to describe the condition of water quality, in general, by determining the absence or presence of clean water indicator organisms, such as EPT (Ephemeroptera [mayfly], Plecoptera [stonefly], Trichoptera [caddisfly]). Factors and resources used for selecting BioRecon sites are:

- The current 303(d) list,
- HUC-12 maps (every HUC-12 is considered for a BioRecon)
- Land Use/Land Cover maps
- Topographic maps
- Locations of NPDES facilities
- Sites of recent ARAP activities.

An intensive multiple or single habitat assessment involves the regular monitoring of a station over a fixed period of time. Intensive surveys (Rapid Bioassessment Protocols) are performed when BioRecon results warrant it.

3.2.D. Special Surveys. These investigations are performed when needed and include:

- ARAP in-stream investigation
- Time-of-travel dye study
- Sediment oxygen demand study
- Lake eutrophication study

3.3. STATUS OF WATER QUALITY. Use support determinations, which can be classified as monitored or evaluated, are based on:

- Data less than 5 years old (monitored)
- Data more than 5 years old (evaluated)
- Knowledge and experience of the area by technical staff (evaluated)
- Complaint investigation (monitored, if samples are collected)
- Other readily available Agencies' data (monitored)
- Readily available Volunteer Monitoring data (monitored, if certain quality assurance standards are met)

All readily available data are considered, including data from TDEC Environmental Field Offices, Tennessee Department of Health (Aquatic Biology Section of Laboratory Services), Tennessee Wildlife Resources Agency, National Park Service, Tennessee Valley Authority, U.S. Army Corps of Engineers, U.S. Environmental Protection Agency, U.S. Geological Survey, U.S. Forest Service, universities and colleges, the regulated community, and the private sector.

Waterbodies are assessed by comparing monitored water conditions to water quality standards for the stream, river, or reservoir's designated uses. Data that meet quality control standards and collection techniques are used to generate assessments. After use support is determined, waterbodies are placed in one of the following five categories recommended by EPA.

Use Support Categories: (from 2008 305(b) Report)

Category 1 waters are **fully supporting of all designated uses**. These streams, rivers, and reservoirs have been monitored and meet the most stringent water quality criteria for all designated uses for which they are classified. The biological integrity of Category 1 waters is comparable with reference streams in the same subecoregion and pathogen concentrations are at acceptable levels.

Category 2 waters are **fully supporting of some designated uses**, but have not been assessed for all uses. In many cases, these waterbodies have been monitored and are fully supporting of fish and aquatic life, but have not been assessed for recreational use.

Category 3 waters are **not assessed** due to insufficient or outdated data.

Category 4 waters are **impaired**, but a TMDL is not required. Category 4 has been further subdivided into three subcategories.

Category 4a impaired waters that have already had all necessary TMDLs approved by EPA.

Category 4b impaired waters do not require TMDL development since "other pollution control requirements required by local, State or Federal authority are expected to address all water-quality pollutants" (EPA, 2003). An example of a 4b

stream might be where a discharge point will be moved in the near future to another waterbody with more assimilative capacity.

Category 4c impaired waters in which the impacts are not caused by a pollutant (e.g., certain habitat or flow alterations).

Category 5 waters have been monitored and found to not meet one or more water quality standards. These waters have been identified as **not supporting** their designated uses. Category 5 waterbodies are moderately to highly impaired by pollution and need to have TMDLs developed for the known impairments. These waters are included in the 303(d) List of impaired waters in Tennessee.

Category Assessment	Stream Miles	Reservoir Acres
Total	773.3	7,507
Assessed	539.0	7,447
Category 1	50.5	6,453
Category 2	247.6	0
Category 3	234.3	60
Category 4	0.0	0
Category 5	240.9	994

Table 3.2. Use Support Categories (Stream Miles and/or Reservoir Acres) in the Cheatham Lake Watershed.

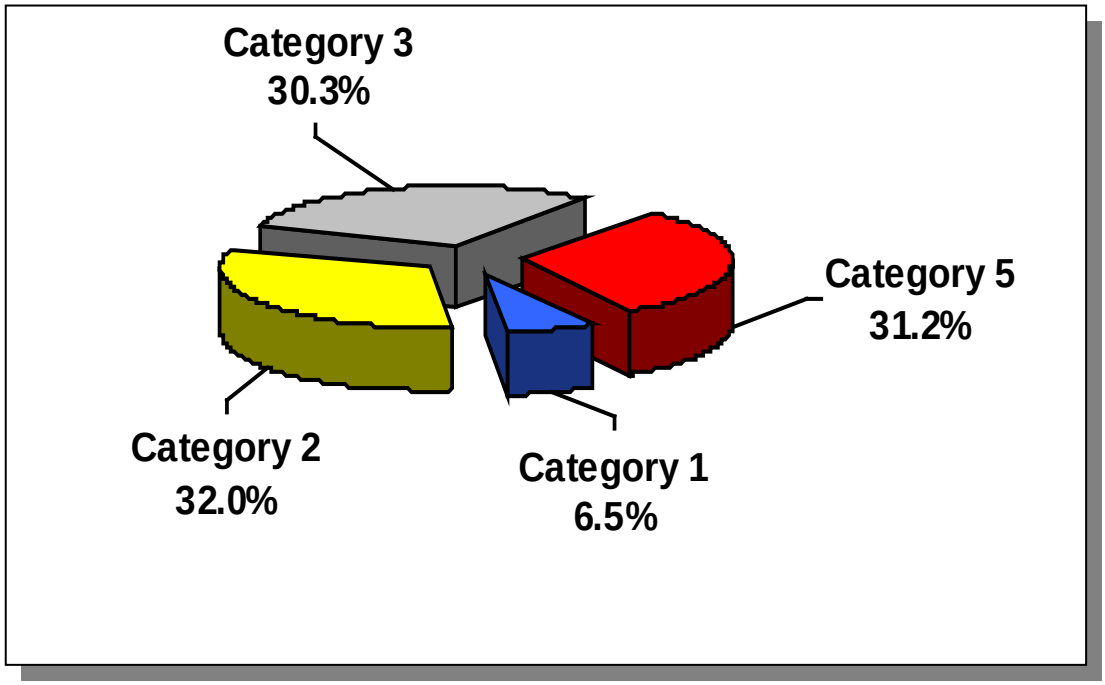


Figure 3-5. Water Quality Assessment of Streams in the Cheatham Lake Watershed. *Assessment data are based on the 2006 Water Quality Assessment of 773.3 stream miles in the watershed.*

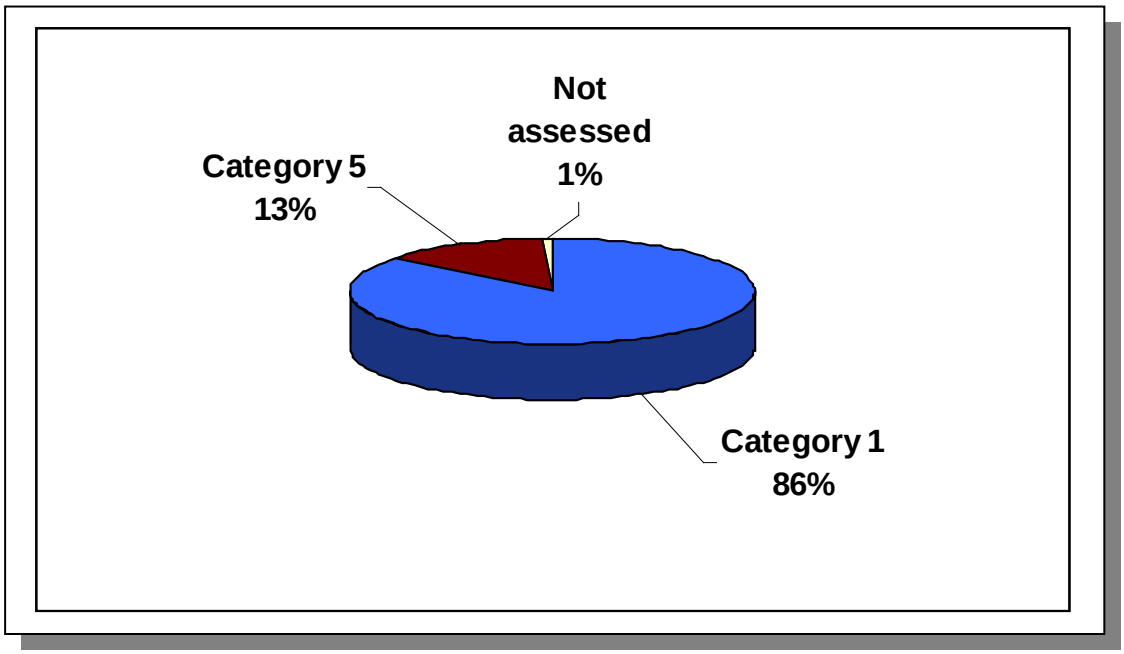


Figure 3-6. Water Quality Assessment of Lakes in the Tennessee Portion of the Cheatham Lake Watershed. *Assessment data are based on the 2006 Water Quality Assessment of 7,507 lake acres in the watershed.*

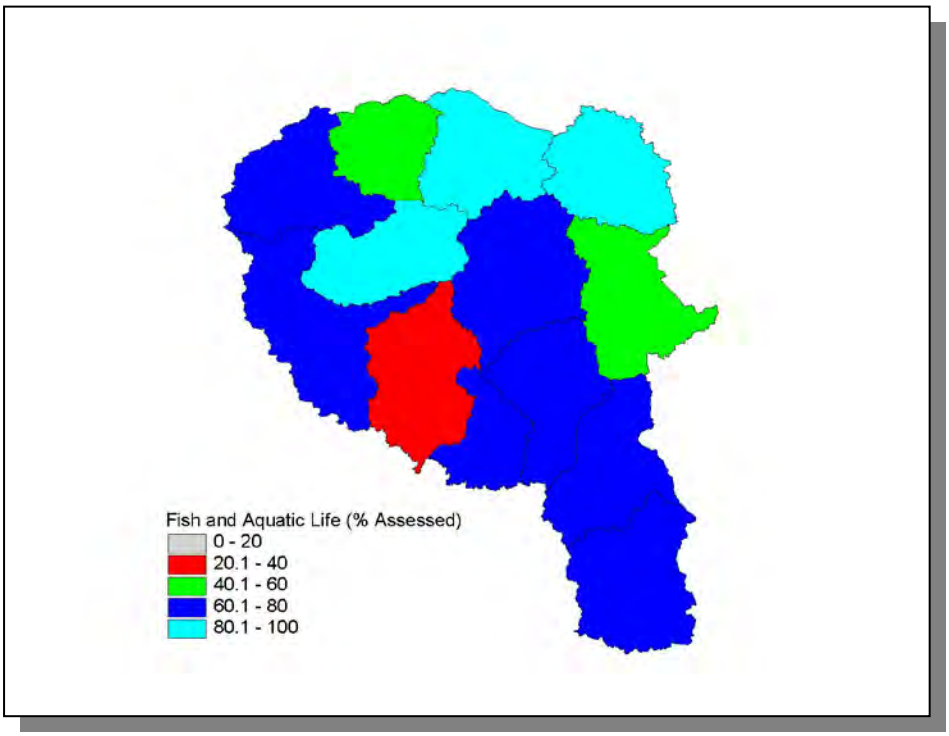


Figure 3-7. Percentage of Stream Miles Assessed for Support of Fish and Aquatic Life Designated Use in HUC-12 Subwatersheds.

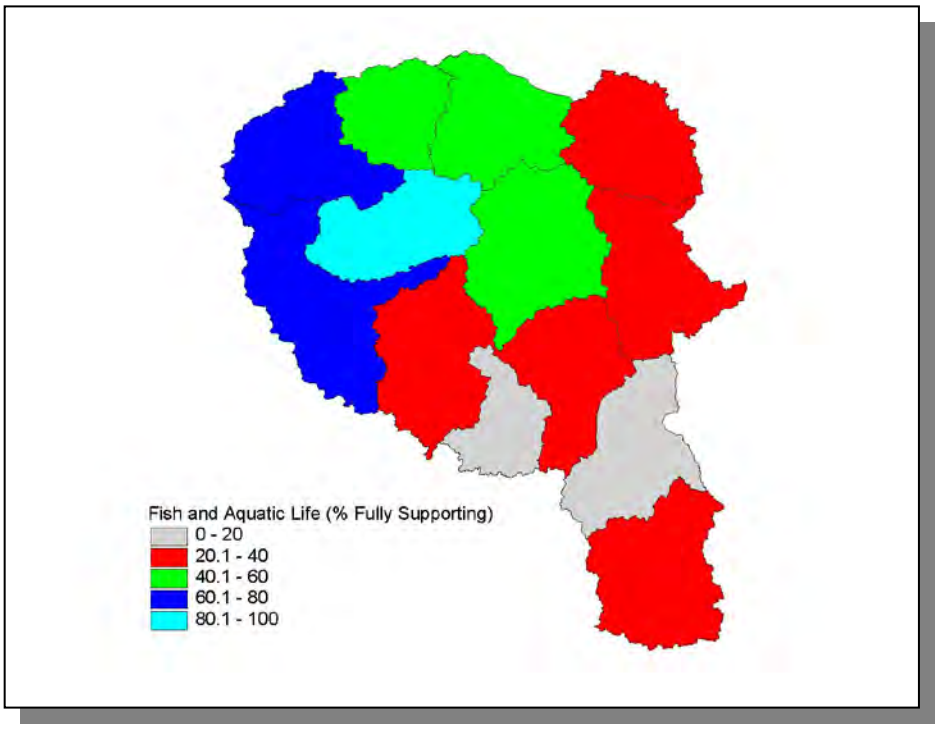


Figure 3-8. Percentage of Stream Miles Fully Supporting for Fish and Aquatic Life Designated Use in HUC-12 Subwatersheds.

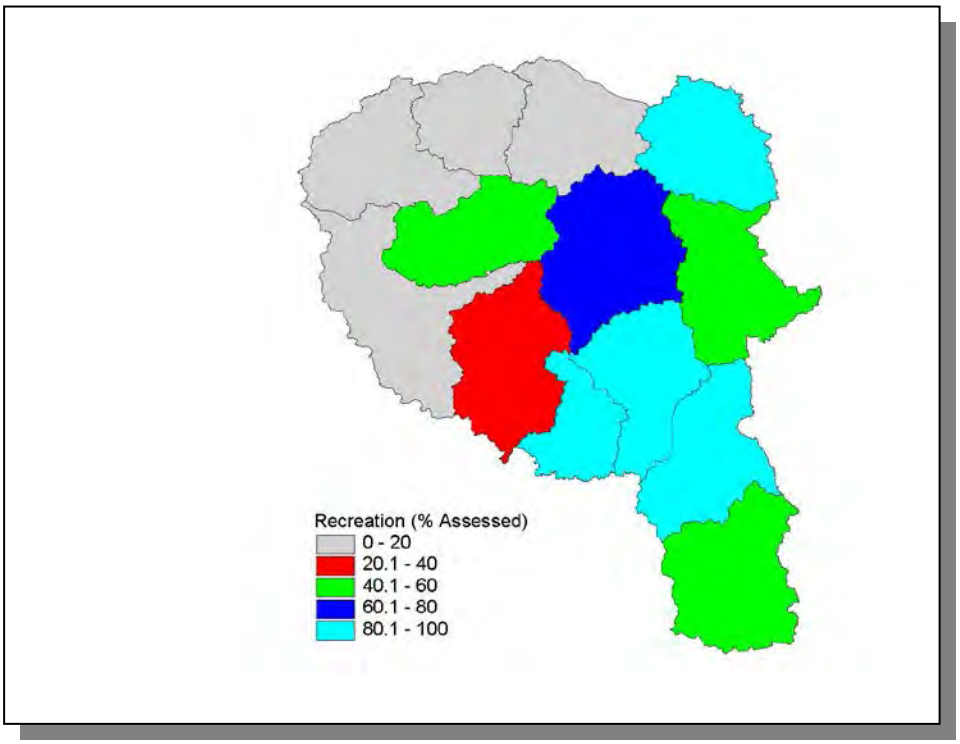


Figure 3-9. Percentage of Stream Miles Assessed for Support of Recreation Designated Use in HUC-12 Subwatersheds.

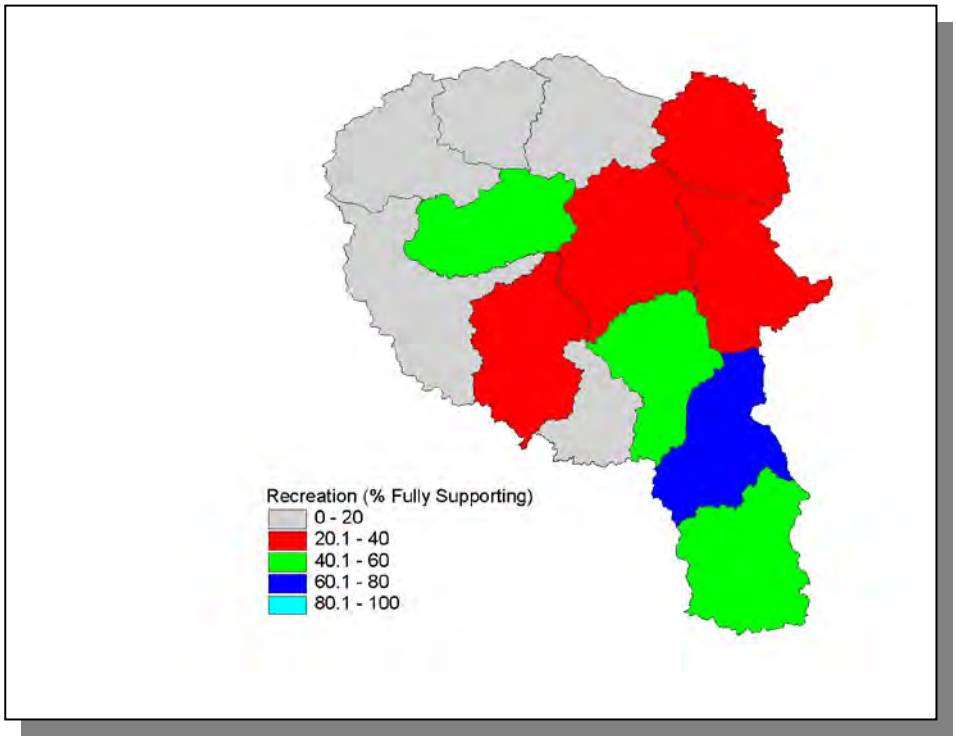


Figure 3-10. Percentage of Stream Miles Fully Supporting for Recreation Designated Use in HUC-12 Subwatersheds.

3.3.A. Assessment Summary.

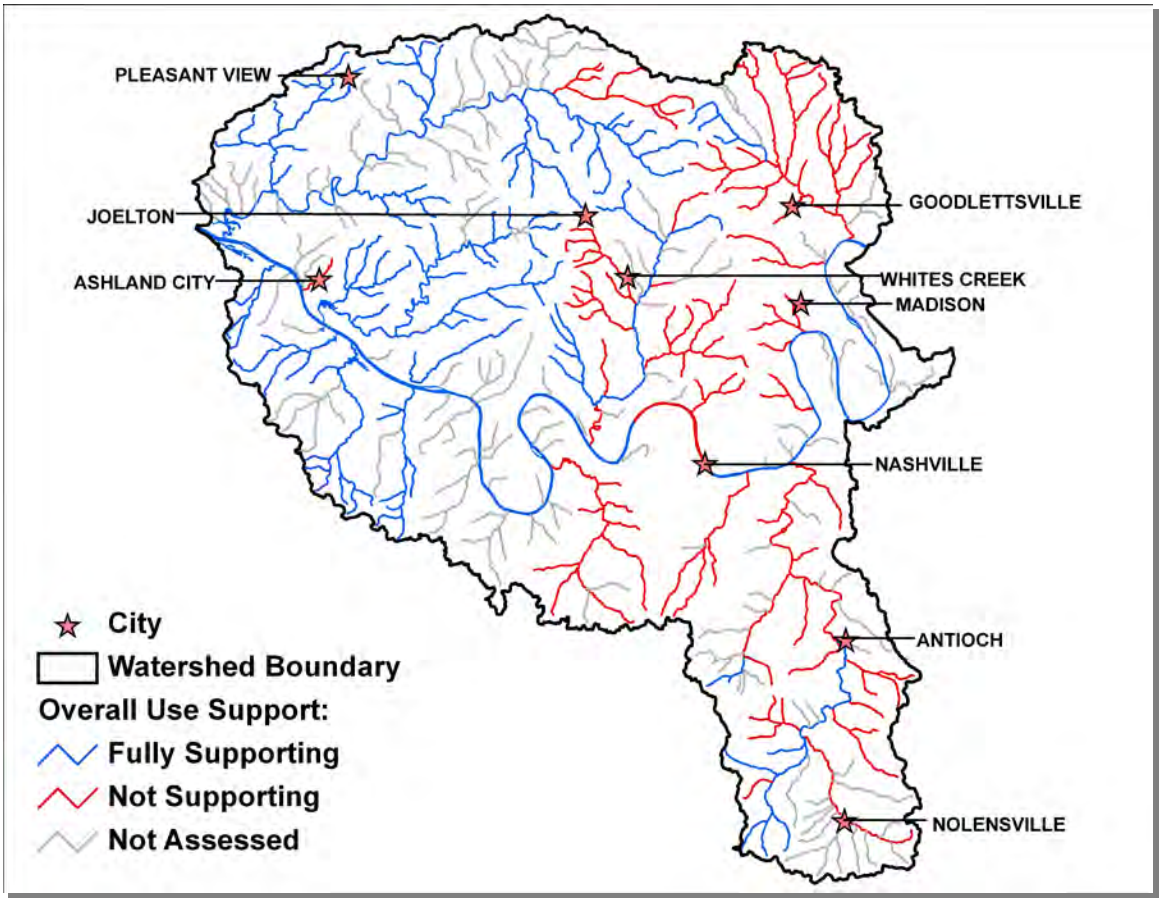


Figure 3-11. Overall Use Support Attainment in the Cheatham Lake Watershed. *Assessment data are based on the 2006 Water Quality Assessment. Water Quality Standards are described at http://www.state.tn.us/sos/rules/1200/1200-04/1200-04.htm. Locations of Antioch, Ashland City, Goodlettsville, and Nashville are shown for reference. More information is provided in Appendix III.*

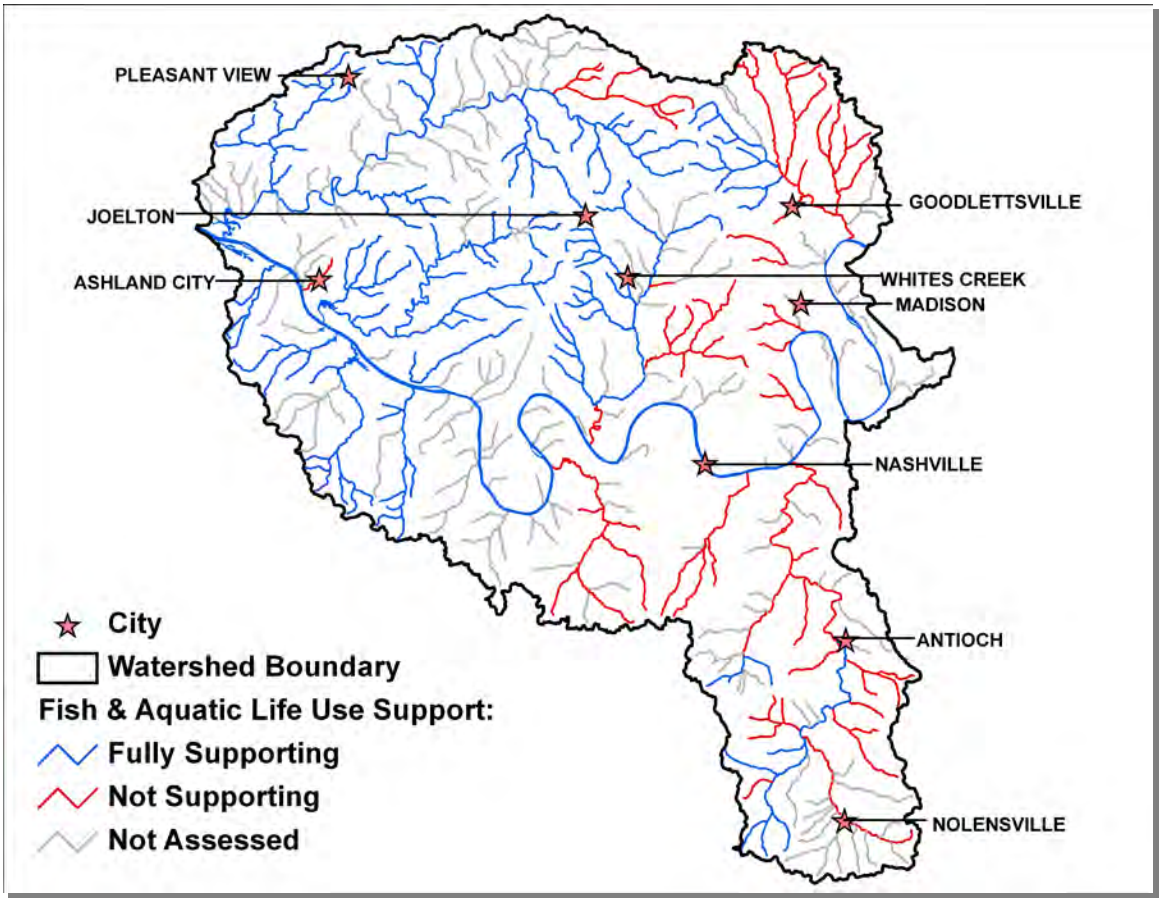


Figure 3-12. Fish and Aquatic Life Use Support Attainment in the Cheatham Lake Watershed. *Assessment data are based on the 2006 Water Quality Assessment. Water Quality Standards are described at http://www.state.tn.us/sos/rules/1200/1200-04/1200-04.htm. Locations of Antioch, Ashland City, Goodlettsville, and Nashville are shown for reference. More information is provided in Appendix III.*

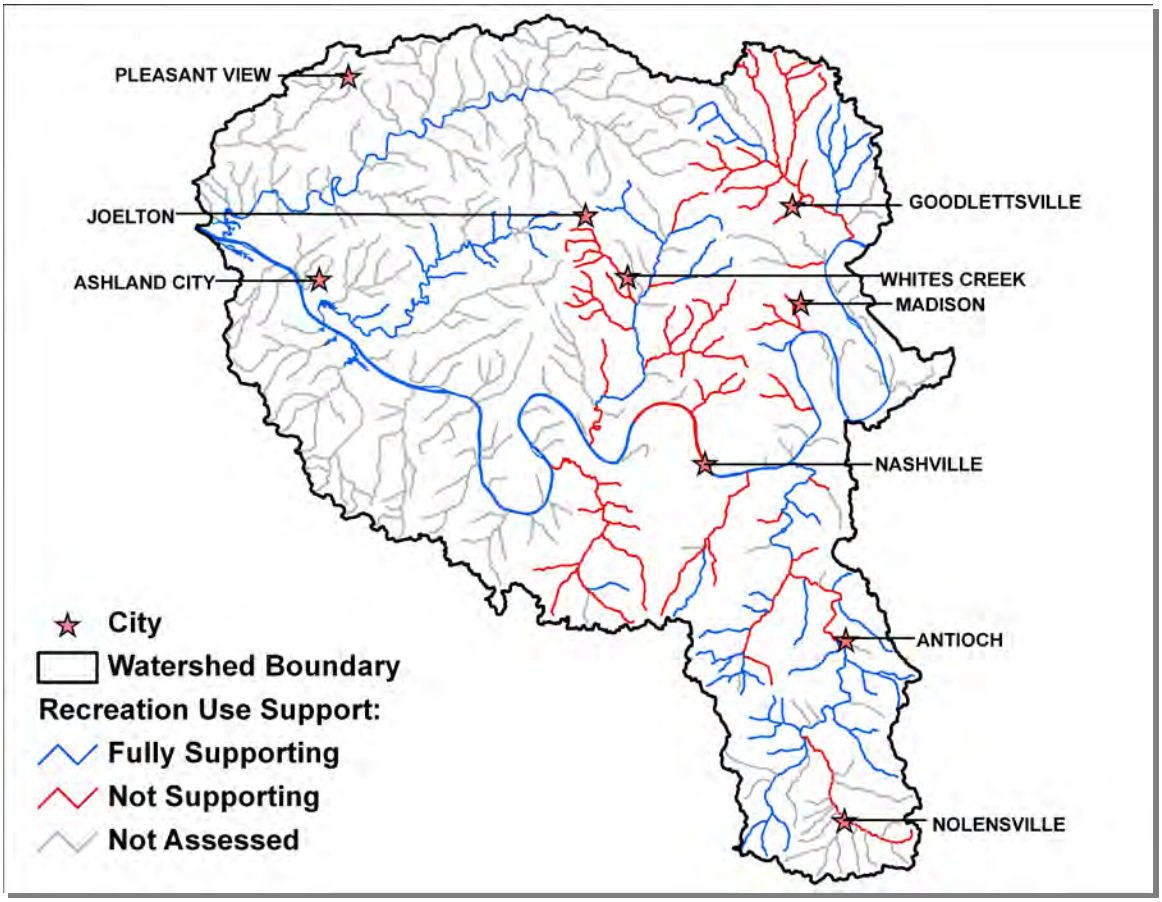


Figure 3-13. Recreation Use Support Attainment in the Cheatham Lake Watershed. *Assessment data are based on the 2006 Water Quality Assessment. Water Quality Standards are described at http://www.state.tn.us/sos/rules/1200/1200-04/1200-04.htm. Locations of Antioch, Ashland City, Goodlettsville, and Nashville are shown for reference. More information is provided in Appendix III.*

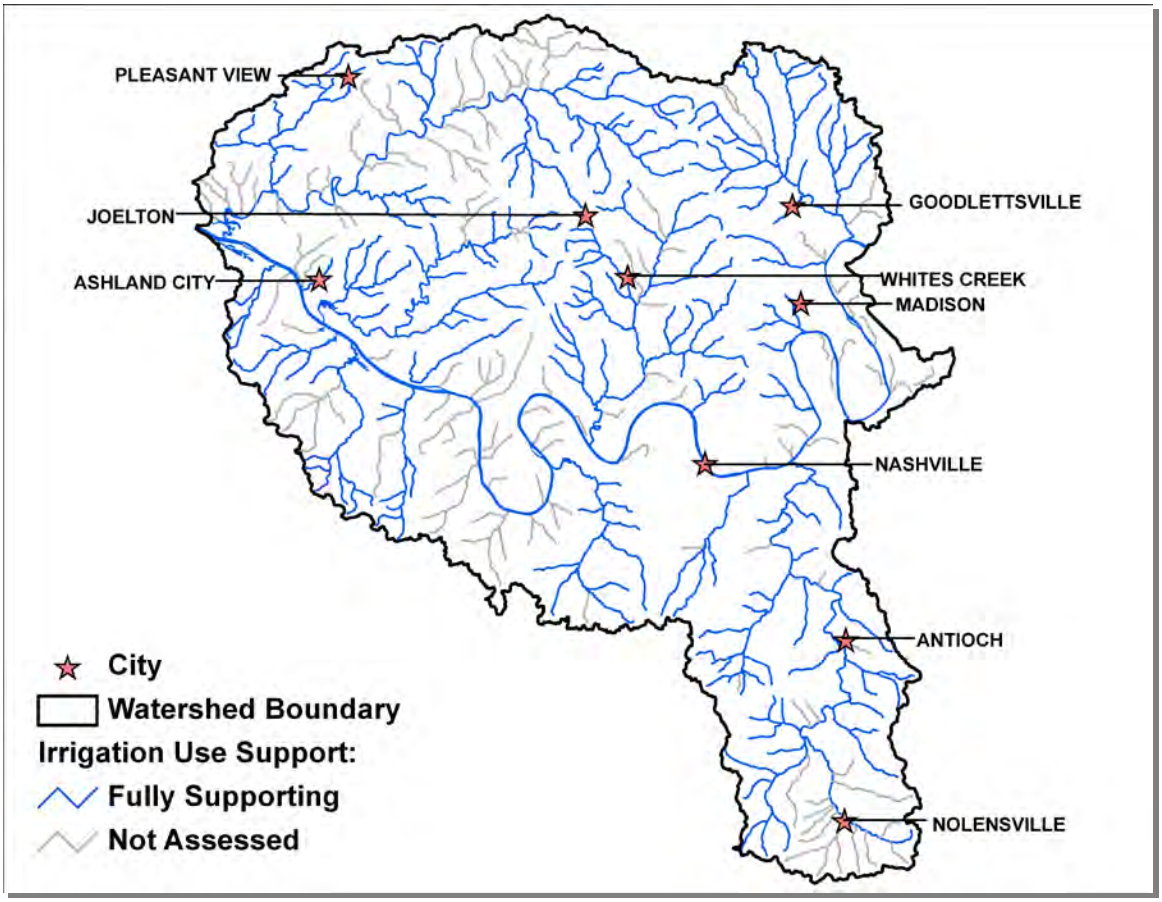


Figure 3-14. Irrigation Use Support Attainment in the Cheatham Lake Watershed. *Assessment data are based on the 2006 Water Quality Assessment. Water Quality Standards are described at http://www.state.tn.us/sos/rules/1200/1200-04/1200-04.htm. Locations of Antioch, Ashland City, Goodlettsville, and Nashville are shown for reference. More information is provided in Appendix III.*

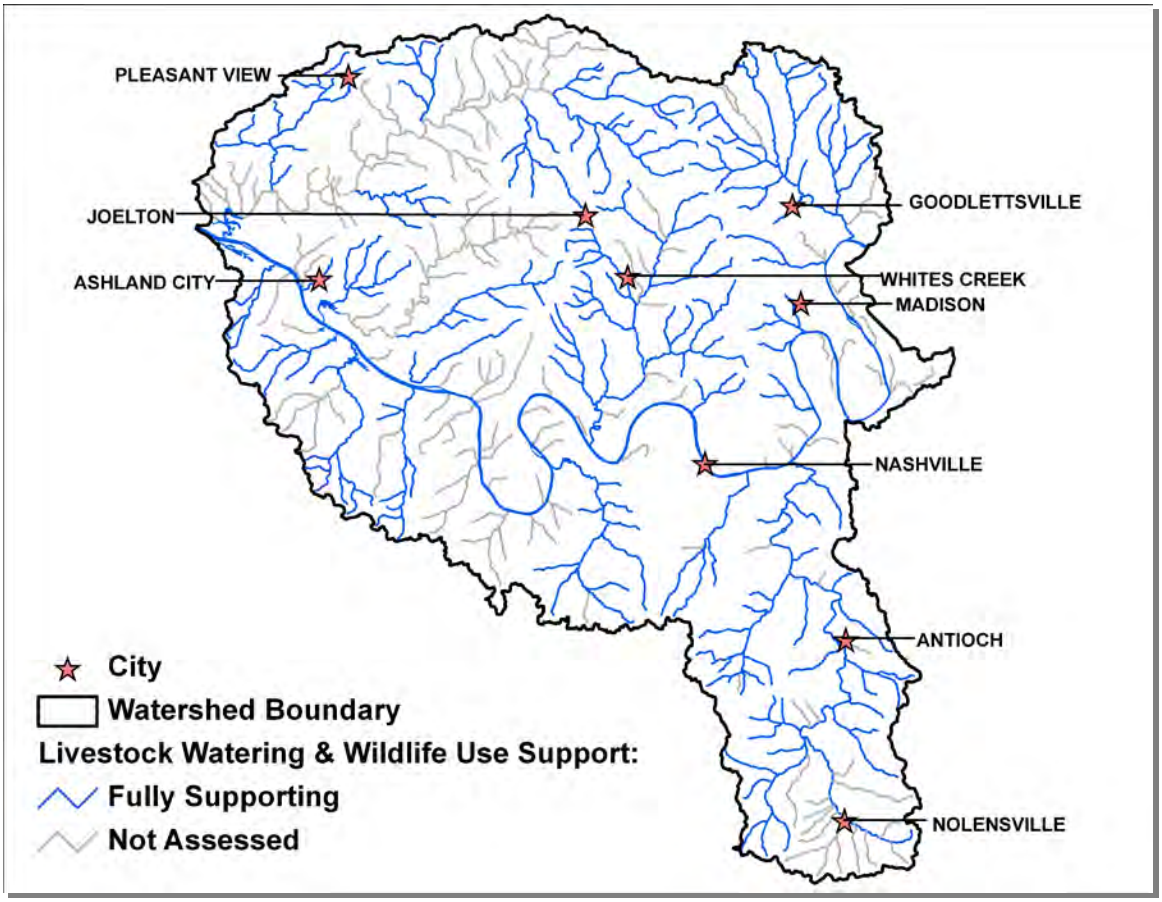


Figure 3-15. Livestock Watering and Wildlife Use Support Attainment in the Cheatham Lake Watershed. *Assessment data are based on the 2006 Water Quality Assessment. Water Quality Standards are described at http://www.state.tn.us/sos/rules/1200/1200-04/1200-04.htm. Locations of Antioch, Ashland City, Goodlettsville, and Nashville are shown for reference. More information is provided in Appendix III.*

3.3.B. Use Impairment Summary.

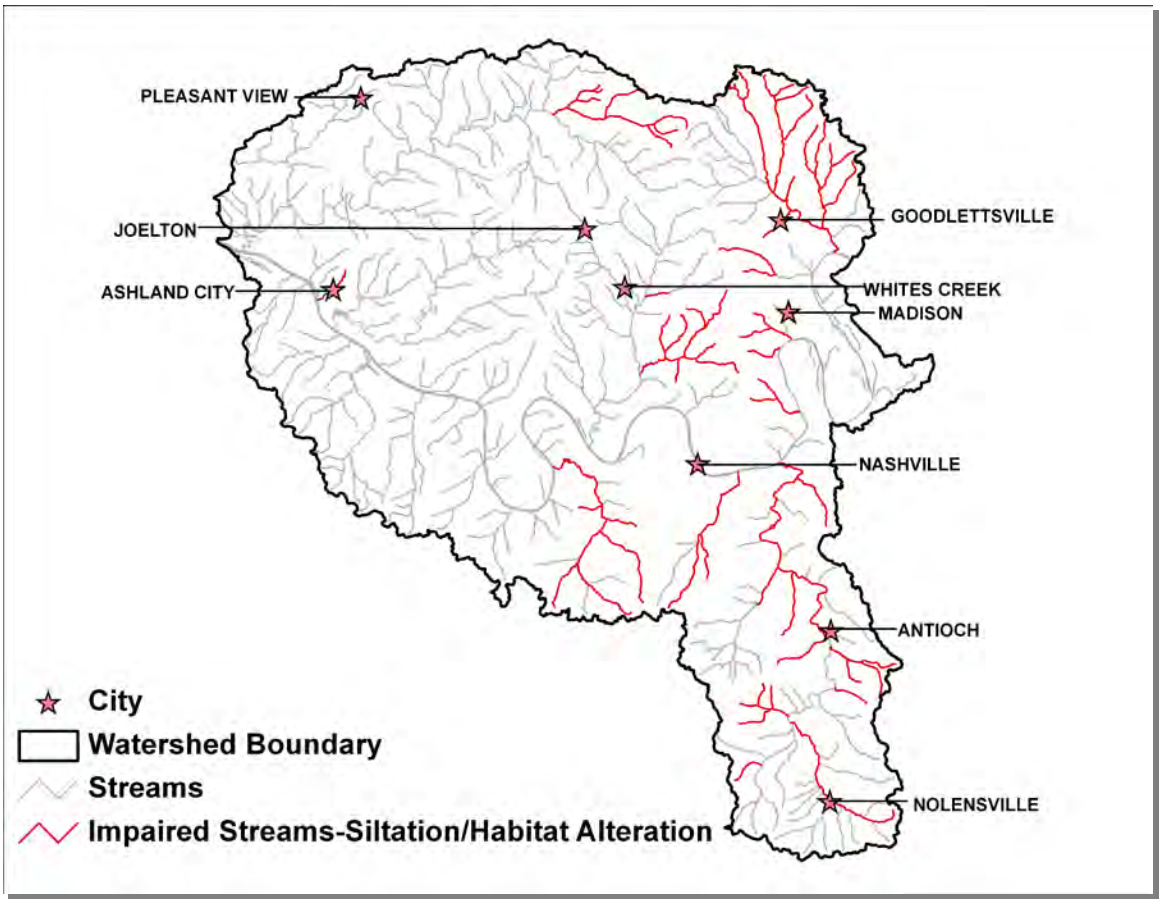


Figure 3-16. Impaired Streams Due to Siltation in the Cheatham Lake Watershed. *Assessment data are based on the 2006 Water Quality Assessment. Locations of Antioch, Ashland City, Goodlettsville, and Nashville are shown for reference. More information is provided in Appendix III.*

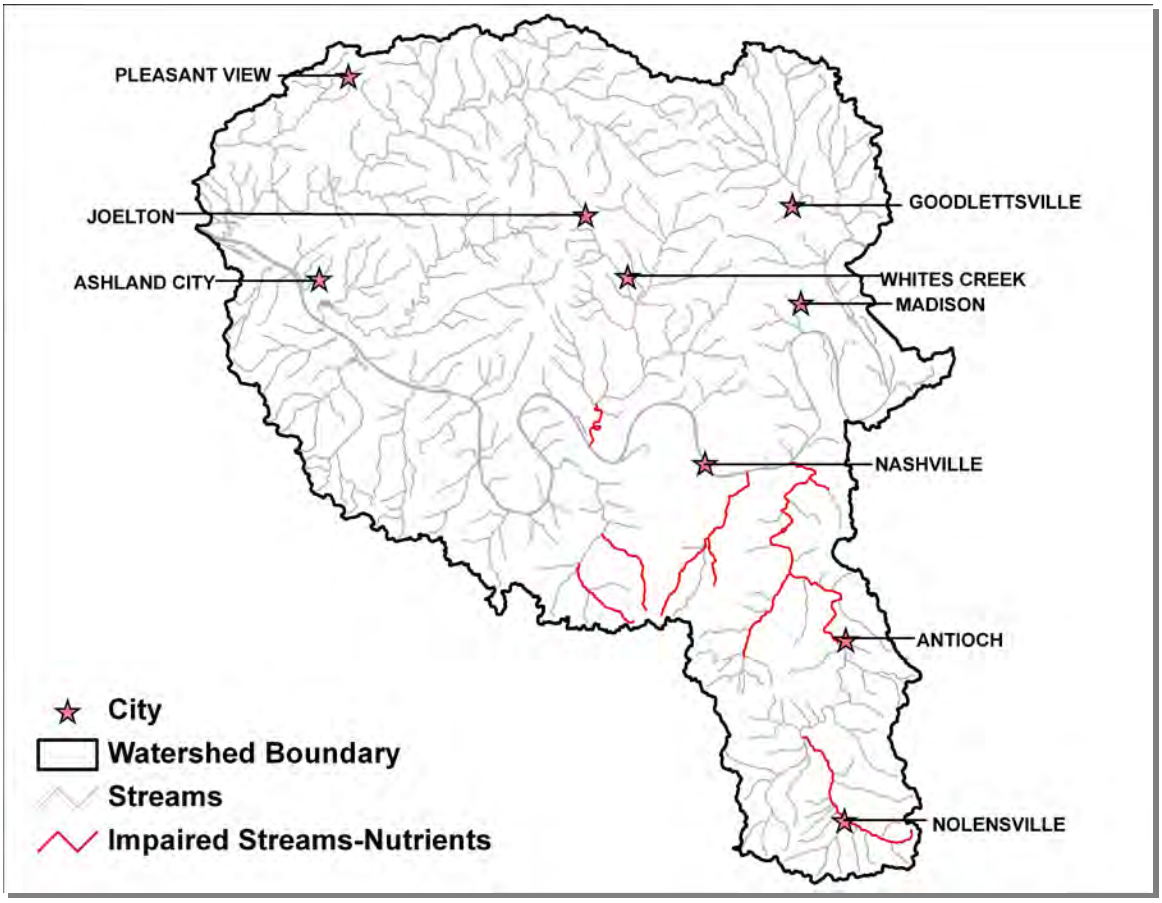


Figure 3-17. Impaired Streams Due to Nutrients in the Cheatham Lake Watershed. *Assessment data are based on the 2006 Water Quality Assessment. Locations of Antioch, Ashland City, Goodlettsville, and Nashville are shown for reference. More information is provided in Appendix III.*

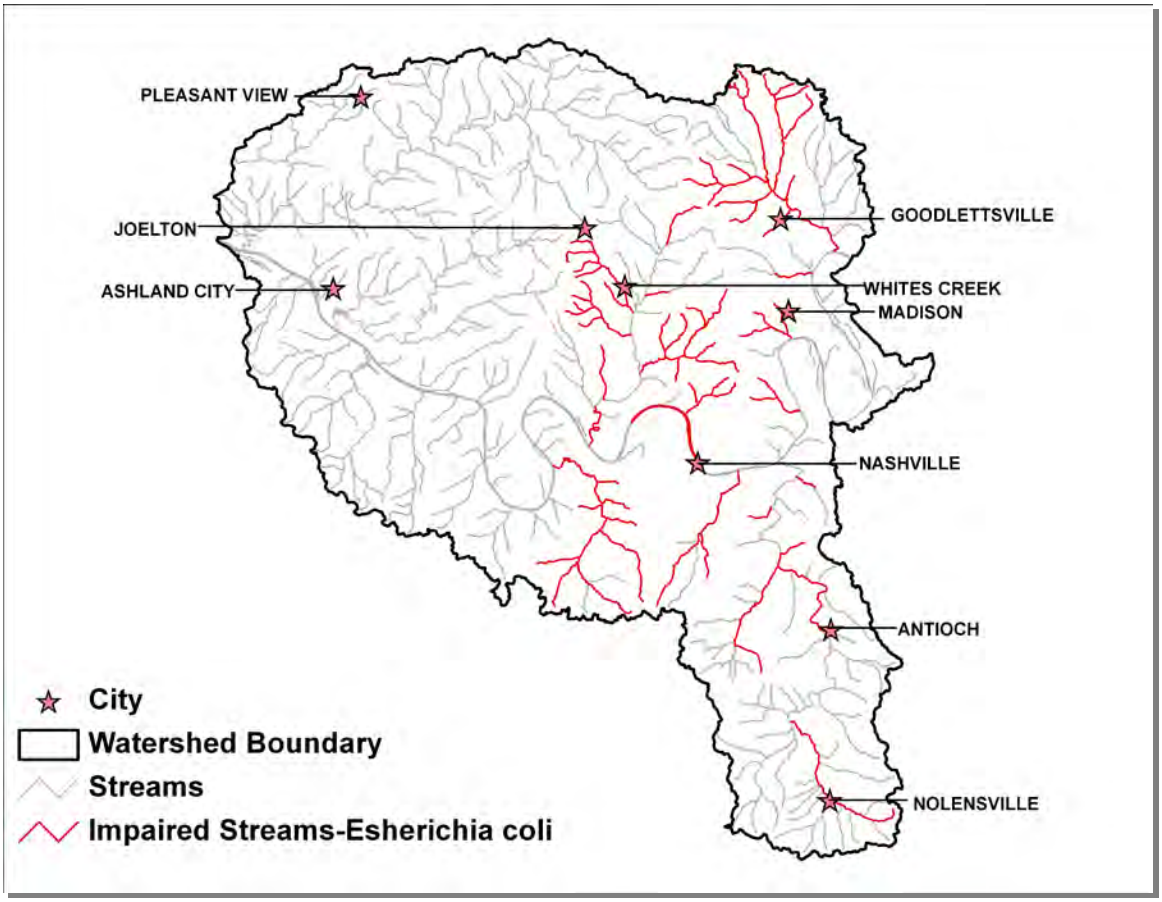


Figure 3-18. Impaired Streams Due to Escherichia coli in the Cheatham Lake Watershed. *Assessment data are based on the 2006 Water Quality Assessment. Locations of Antioch, Ashland City, Goodlettsville, and Nashville are shown for reference. More information is provided in Appendix III.*

The listing of impaired waters that do not support designated uses (the 303(d) list) is traditionally submitted to EPA every two years. A copy of the most recent 303(d) list may be downloaded from http://www.state.tn.us/environment/wpc/publications/.

Since the year 2002, the 303(d) list is compiled by using EPA's ADB (Assessment Database) software developed by RTI (Research Triangle Institute). The ADB allows for a more detailed segmentation of waterbodies. While this results in a more accurate description of the status of water quality, it makes it difficult when comparing water quality assessments with and without using this tool. A more meaningful comparison will be between assessments completed in Year 3 of each succeeding five-year cycle.

The ADB was used to create maps that illustrate water quality. These maps may be viewed at http://gis3.memphis.edu/wpc/.

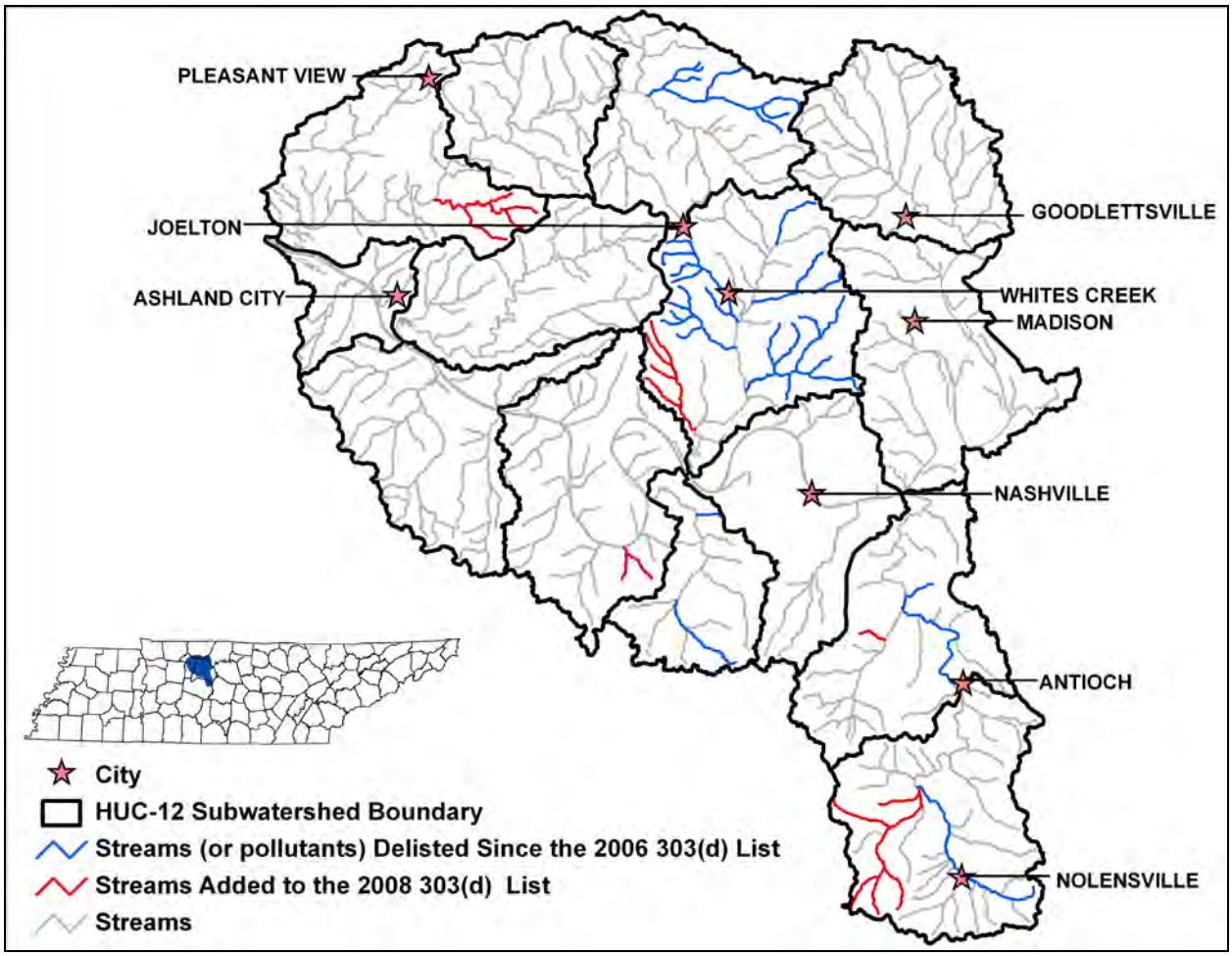


Figure 3-19. Changes to the 303(d) List of Impaired Waters in the Cheatham Lake Watershed Since Approval of the 2006 List by EPA. *More information is provided in Appendix III.*

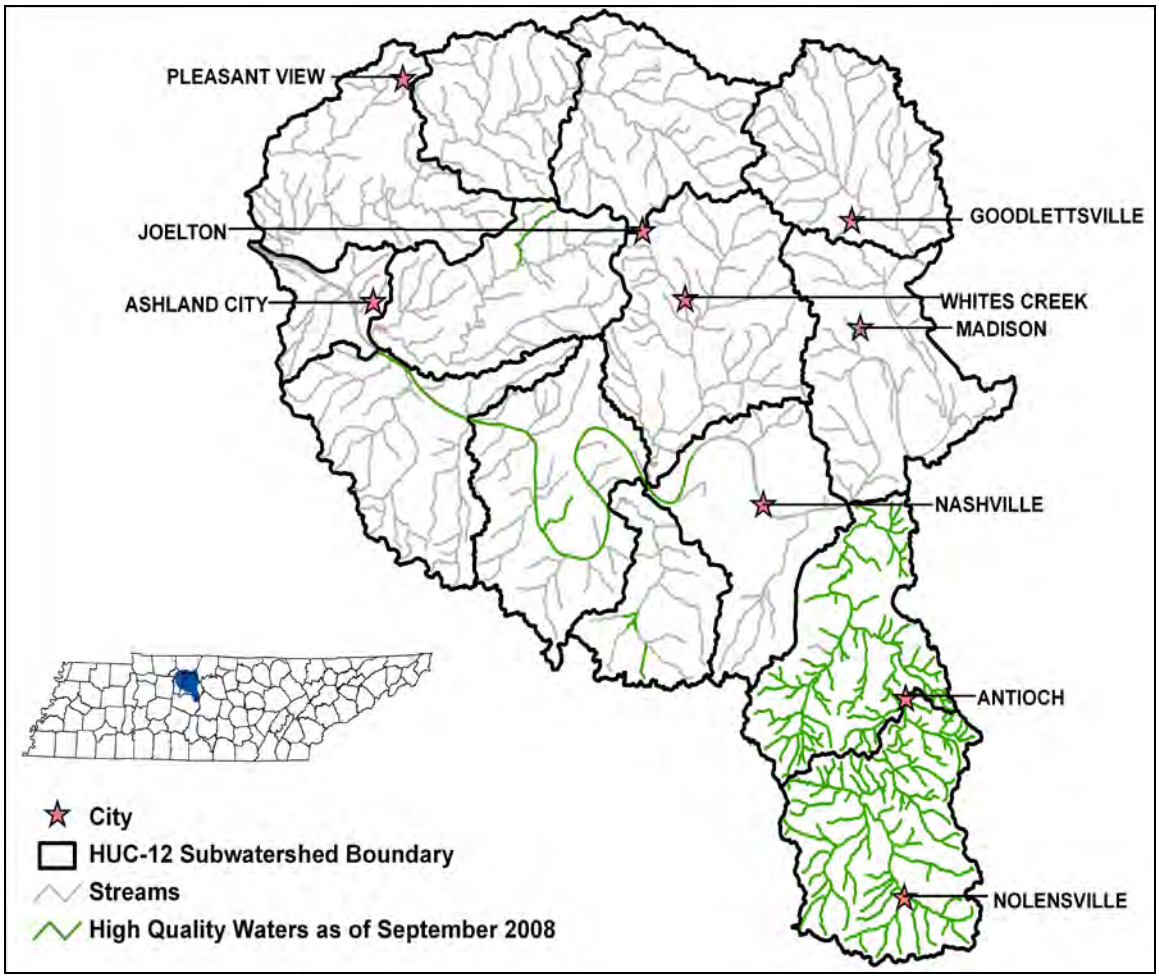


Figure 3-20. High Quality Waters Identified in the Cheatham Lake Watershed. *More information is provided in Appendix III.*

CHAPTER 4

POINT AND NONPOINT SOURCE CHARACTERIZATION OF THE CHEATHAM LAKE WATERSHED

4.1. BACKGROUND. This chapter is organized by HUC-12 subwatershed, and the description of each subwatershed is divided into four parts:

i. General description of the subwatershed
ii. USGS (United States Geological Survey) gaging stations and STORET sites
iii. Location of permitted activities
iv. Description of nonpoint source contributions

The HUC can range from 2 to 16 digits long, more digits indicating a smaller and smaller portion of the watershed is represented. The Cheatham Lake Watershed (HUC 05130202) has been delineated into thirteen HUC-12 subwatersheds.

Information for this chapter was obtained from databases maintained by the Division of Water Pollution Control or provided in the WCS (Watershed Characterization System) data set. The WCS used was version 2.1 (developed by Tetra Tech, Inc for EPA Region 4) released in 2003.

WCS integrates with ArcView® v3.x and Spatial Analyst® v1.1 to analyze user-delineated (sub)watersheds based on hydrologically connected water bodies. Reports are generated by integrating WCS with Microsoft® Word. Land Use/Land Cover information from 2001 MRLC (Multi-Resolution Land Cover) data are calculated based on the proportion of county-based land use/land cover in user-delineated (sub)watersheds.

Nonpoint source data in WCS are based on agricultural census data collected 1992–1998; nonpoint source data were reviewed by Tennessee NRCS staff.

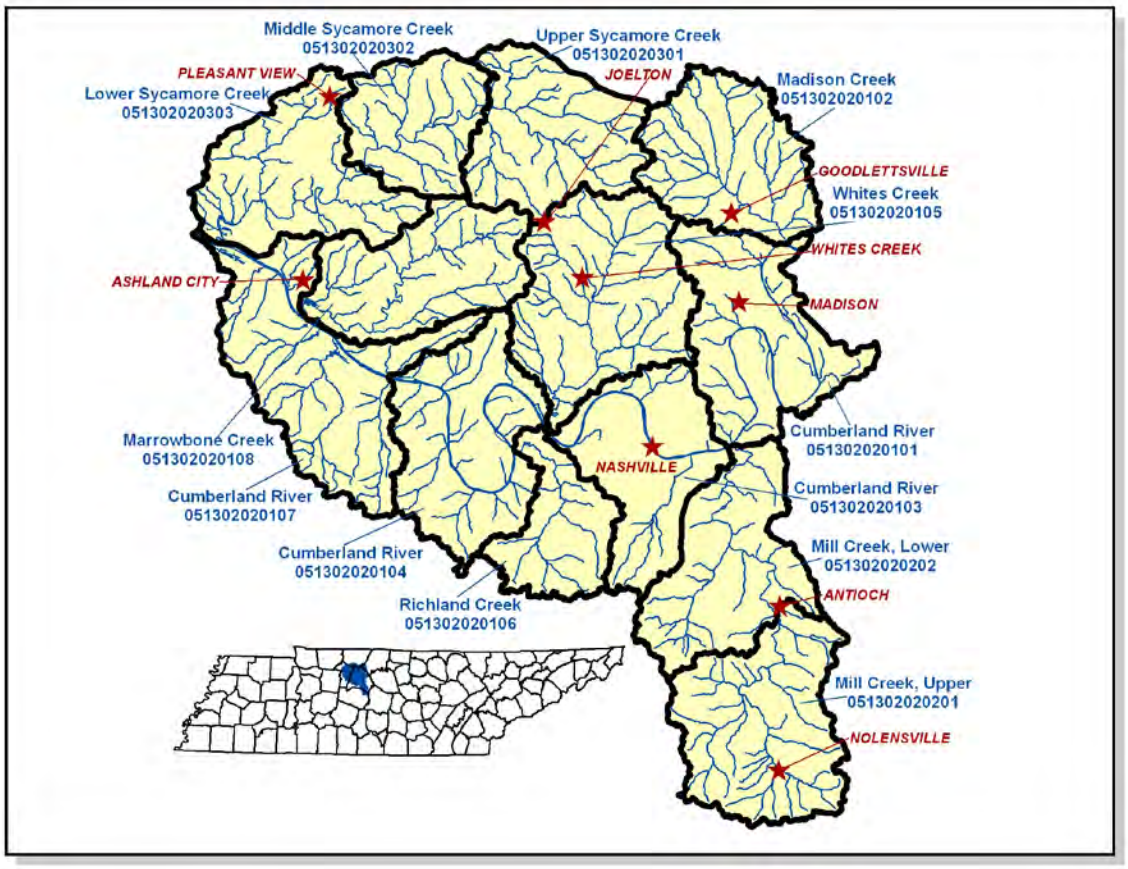


Figure 4-1. The Cheatham Lake Watershed is Composed of Thirteen USGS-Delineated Subwatersheds (12-Digit Subwatersheds).

4.2. CHARACTERIZATION OF HUC-12 SUBWATERSHEDS. The Watershed Characterization System (WCS) software and data sets provided by EPA Region IV were used to characterize each subwatershed in the Cheatham Lake Watershed.

HUC-8	HUC-10	HUC-12
05130202	0513020201	051302020101 (Cumberland River)
		051302020102 (Madison Creek)
		051302020103 (Cumberland River)
		051302020104 (Cumberland River)
		051302020105 (Whites Creek)
		051302020106 (Richland Creek)
		051302020107 (Cumberland River)
		051302020108 (Marrowbone Creek)
	0513020202	051302020201 (Mill Creek, Upper)
		051302020202 (Mill Creek, Lower)
	0513020203	051302020301 (Sycamore Creek, Upper)
		051302020302 (Sycamore Creek, Middle)
		051302020303 (Sycamore Creek, Lower)

Table 4-1. HUC-12 Drainage Areas are Nested Within HUC-10 Drainages. *NRCS worked with USGS to delineate the HUC-10 and HUC-12 drainage boundaries.*

4.2.A. 051302020101 (Cumberland River).

4.2.A.i. General Description.

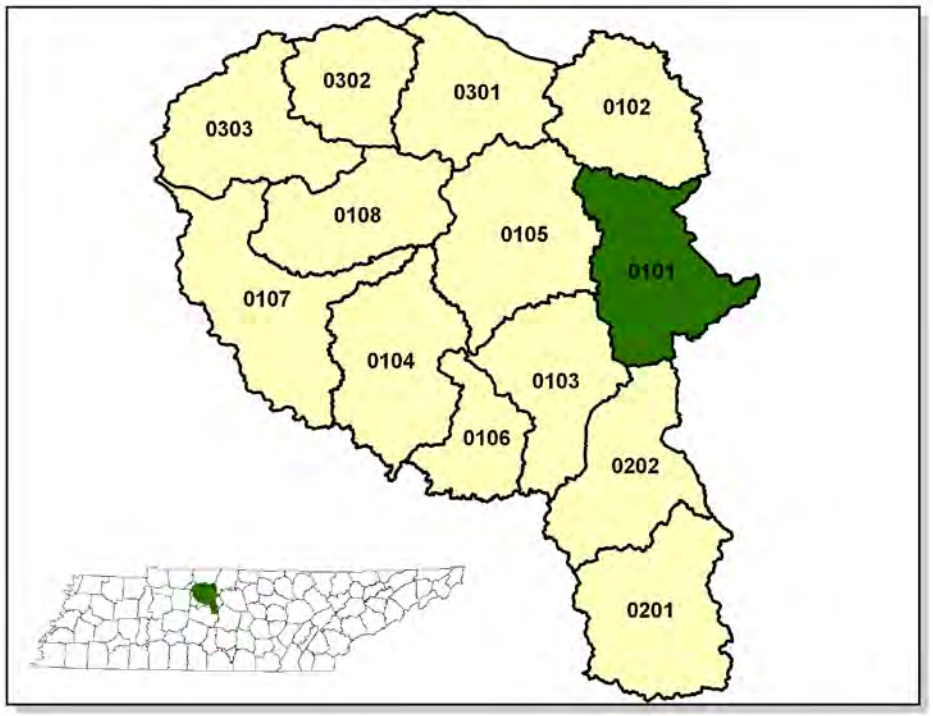


Figure 4-2. Location of Subwatershed 051302020101. *All Cheatham Lake HUC-12 subwatershed boundaries are shown for reference.*

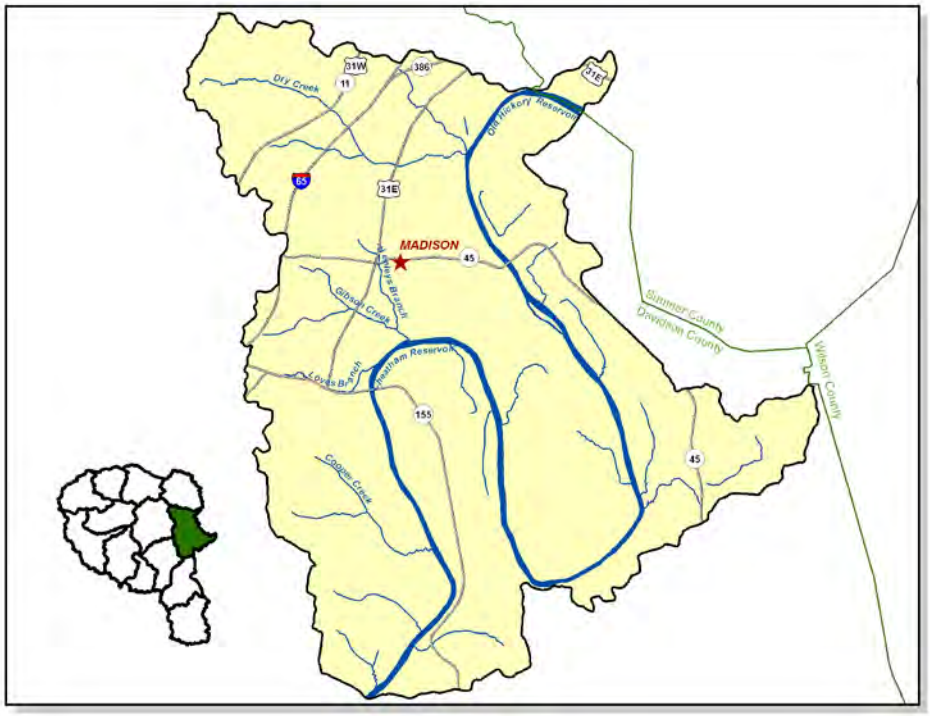


Figure 4-3. Locational Details of Subwatershed 051302020101.

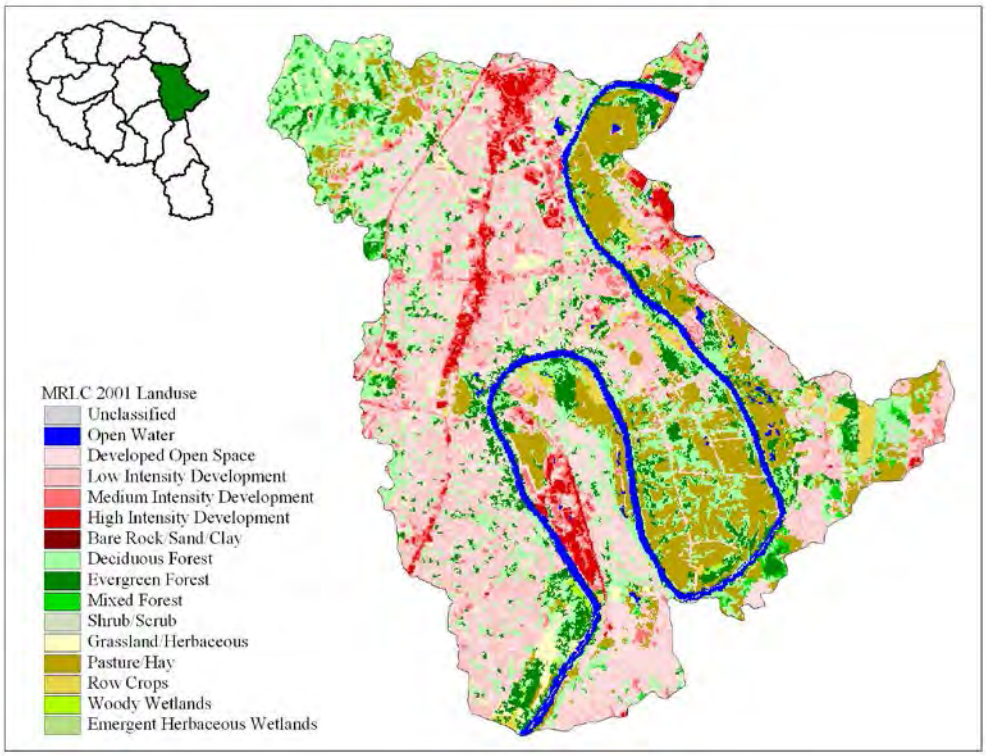


Figure 4-4. Illustration of Land Use Distribution in Subwatershed 051302020101.

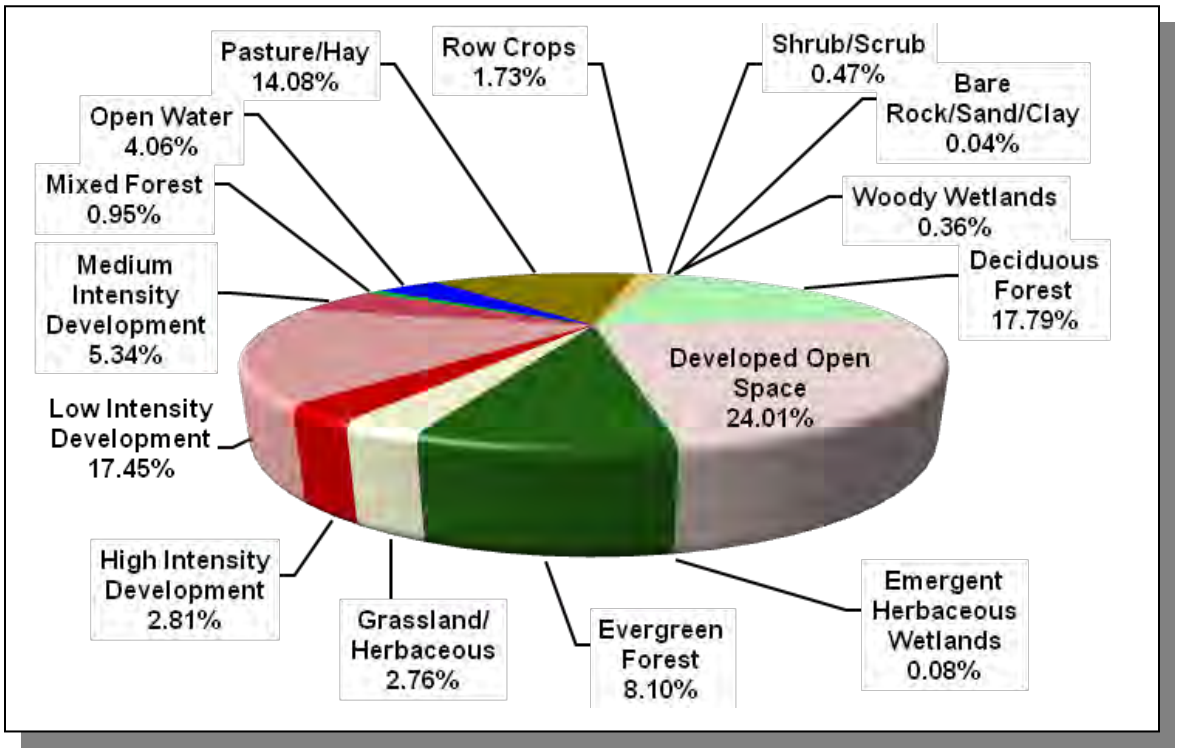


Figure 4-5. Land Use Distribution in Subwatershed 051302020101. *More information is provided in Appendix IV.*

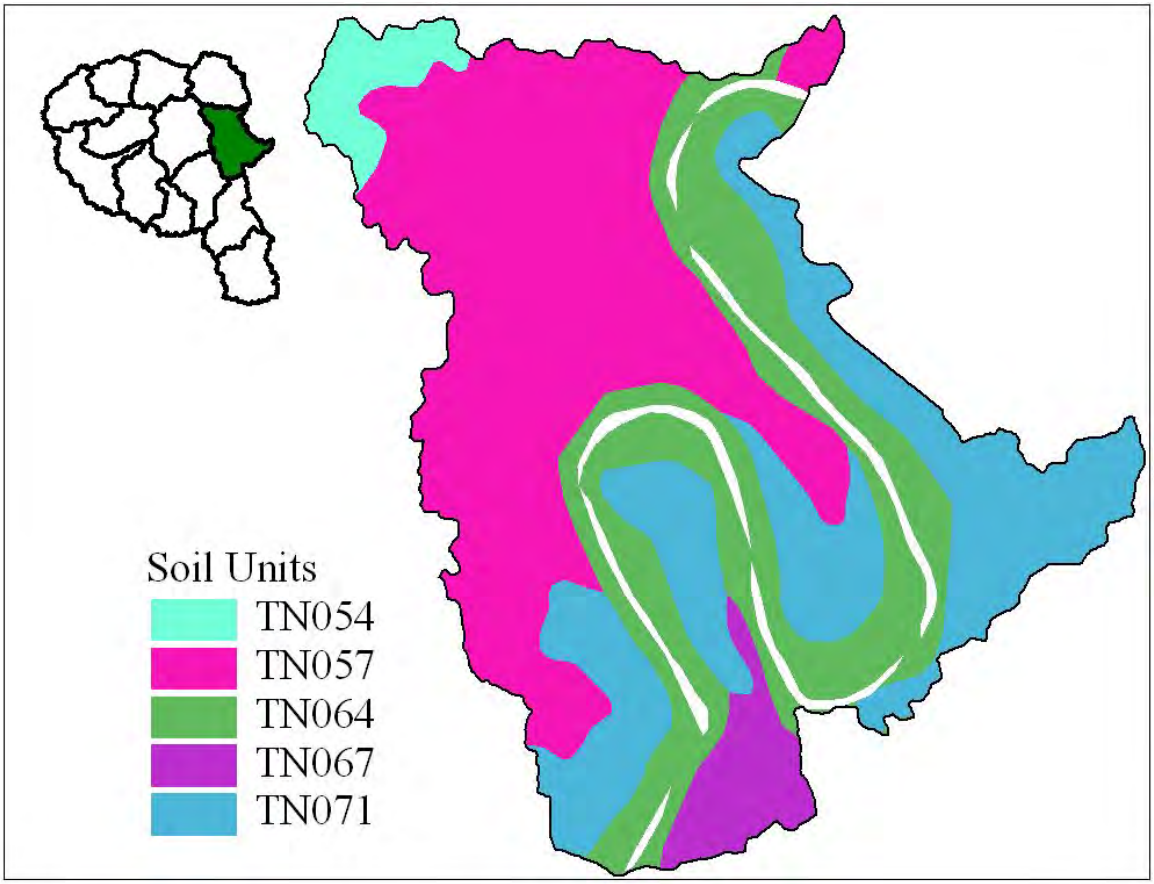


Figure 4-6. STATSGO (State Soil Geographic Database) Soil Map Units in Subwatershed 051302020101.

STATSGO MAP UNIT ID	PERCENT HYDRIC	HYDROLOGIC GROUP	PERMEABILITY (in/hour)	SOIL pH	ESTIMATED SOIL TEXTURE	SOIL ERODIBILITY
TN054	0.00	C	3.04	4.84	Loam	0.32
TN057	0.00	C	1.14	5.01	Clay Loam	0.33
TN064	7.00	C	1.19	5.82	Silty Loam	0.37
TN067	2.00	C	2.69	5.51	Silty Loam	0.35
TN071	0.00	C	2.37	5.70	Silty Loam	0.33

Table 4-2. Soil Characteristics by STATSGO (State Soil Geographic Database) Soil Map Units in Subwatershed 051302020101. *The definition of "Hydrologic Group" is provided in Appendix IV.*

	COUNTY POPULATION				ESTIMATED POPULATION IN WATERSHED			
County	1990	1997	2000	% of County in Watershed	1990	1997	2000	% Change (1990-2000)
Davidson	510,784	535,032	569,891	10.05	51,327	53,764	57,267	11.60
Sumner	103,281	121,936	130,449	0.07	75	88	94	25.30
Totals	**614,065**	**656,968**	**700,340**		**51,402**	**53,852**	**57,361**	**11.60**

Table 4-3. Population Estimates in Subwatershed 051302020101.

			NUMBER OF HOUSING UNITS			
Populated Place	County	Population	Total	Public Sewer	Septic Tank	Other
Hendersonville	Sumner	32,188	12,472	8,395	4,069	8
Goodlettsville	Davidson	11,219	4,761	4,263	489	9
Lakewood	Davidson	1,867	830	582	248	0
Nashville-Davidson	Davidson	488,518	219,521	203,640	15,576	305
Total		**533,792**	**237,584**	**216,880**	**20,382**	**322**

Table 4-4. Housing and Sewage Disposal Practices of Select Communities in Subwatershed 051302020101.

4.2.A.ii. USGS Gaging Stations and STORET Sites.

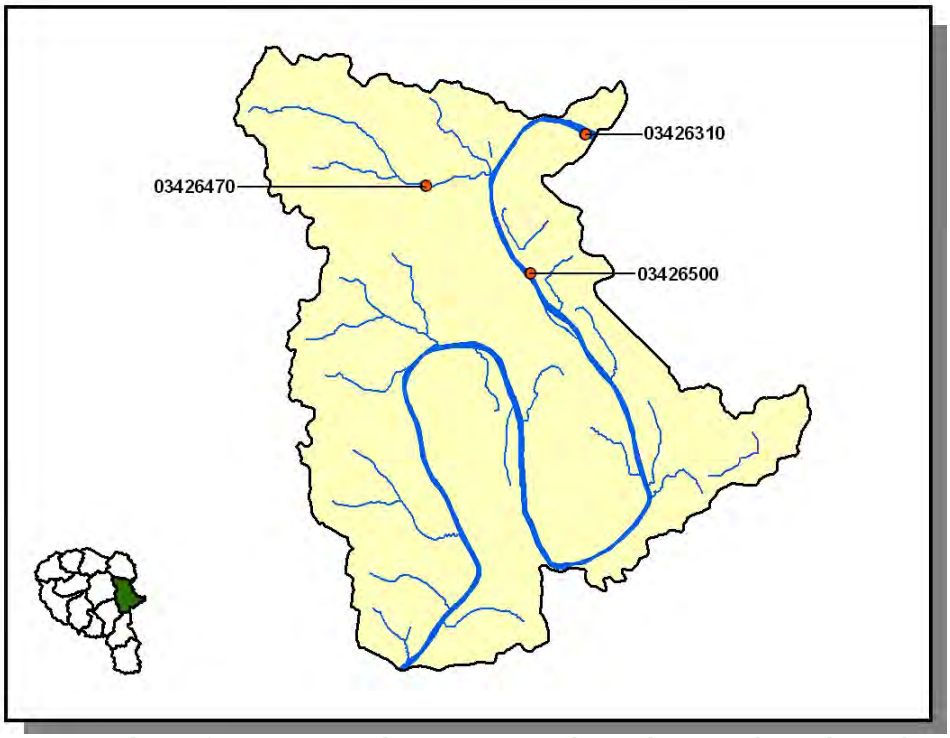


Figure 4-7. Location of USGS Continuous Record Gaging Stations in Subwatershed 051302020101. *More information is provided in Appendix IV.*

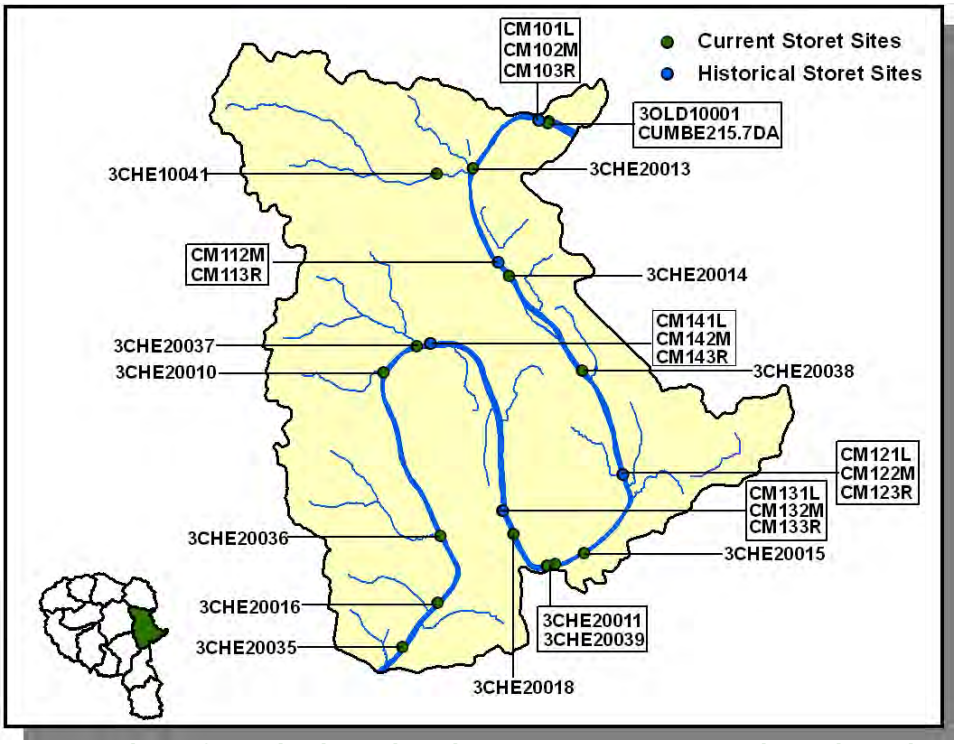


Figure 4-8. Location of Monitoring Sites in EPA's STORET Database in Subwatershed 051302020101. *More information, including site names and locations, is provided in Appendix IV.*

4.2.A.iii. Permitted Activities.

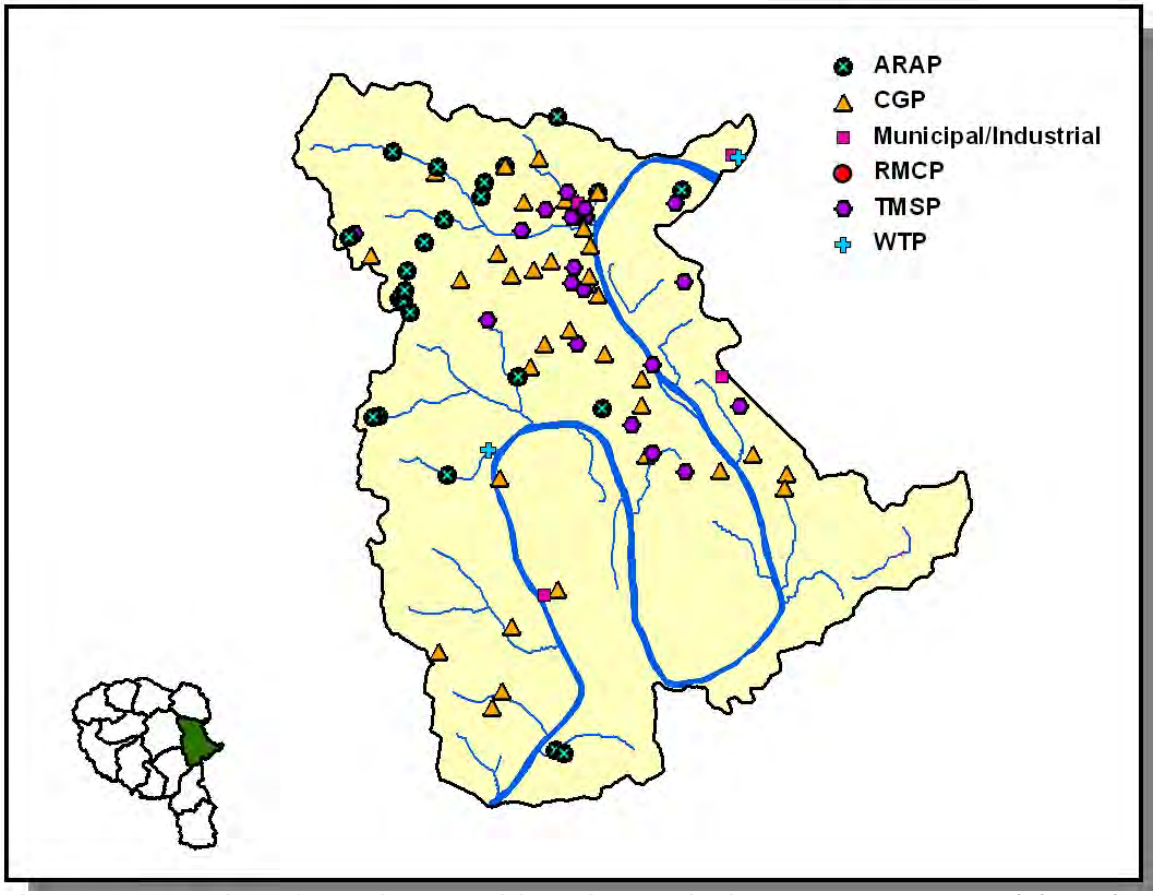


Figure 4-9. Location of Permits Issued in Subwatershed 051302020101. *More information, including the names of facilities, is provided in Appendix IV.*

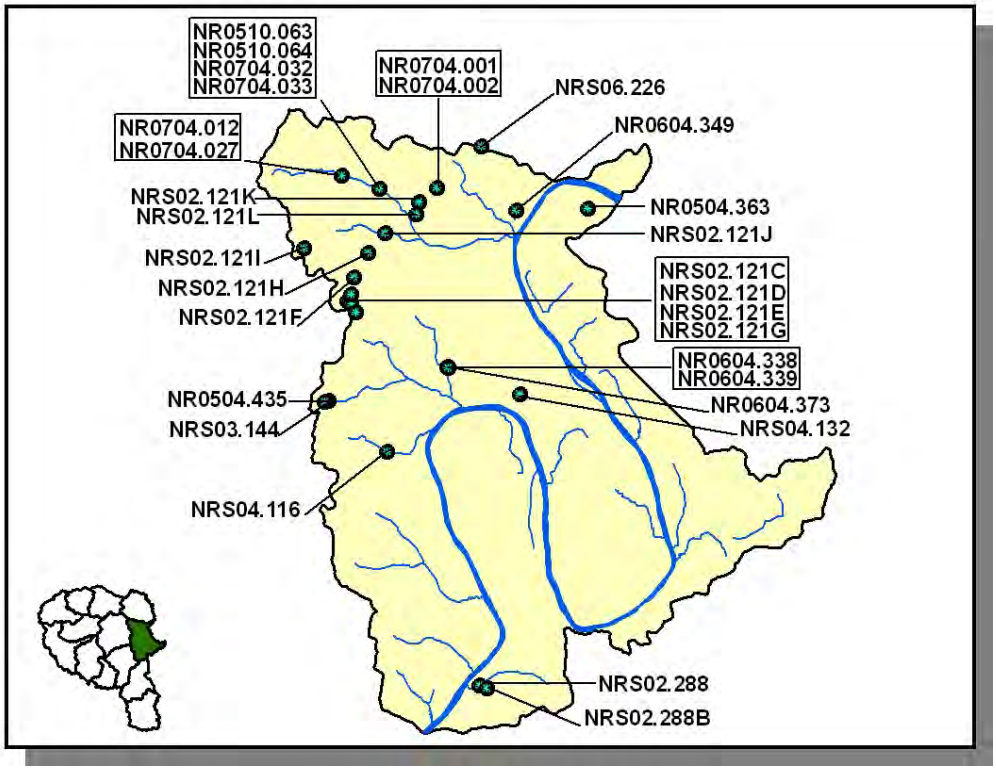


Figure 4-10. Location of ARAP (Aquatic Resource Alteration Permit) Sites in Subwatershed 051302020101. *More information is provided in Appendix IV.*

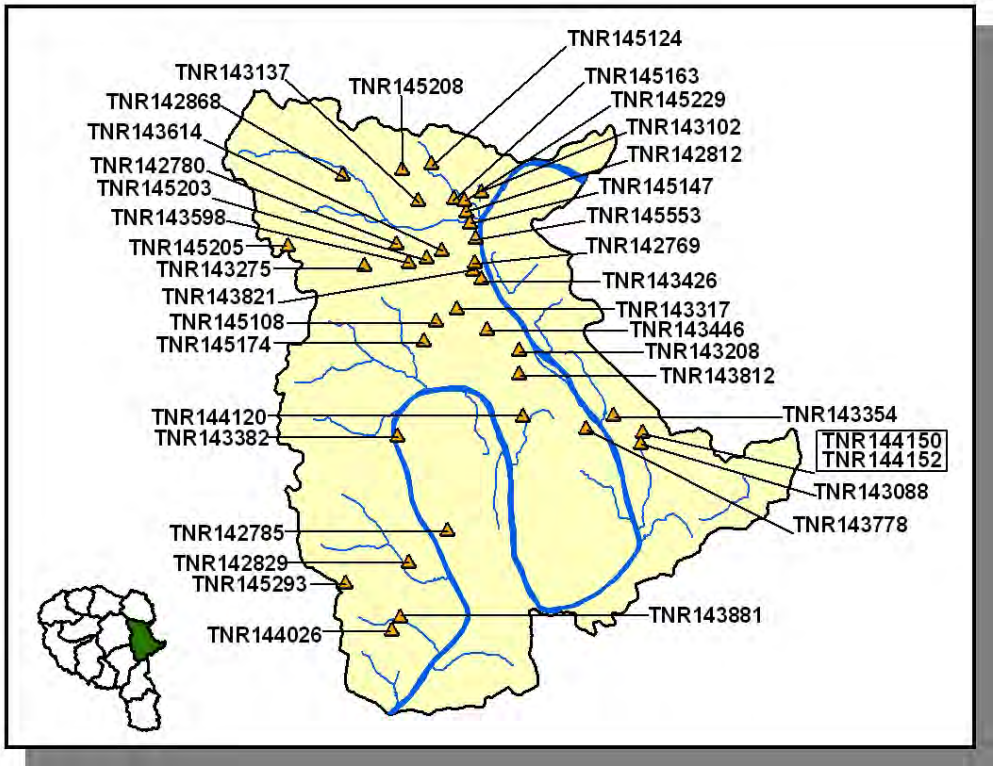


Figure 4-11. Location of CGP (Construction General Permit) Sites in Subwatershed 051302020101. *More information is provided in Appendix IV.*

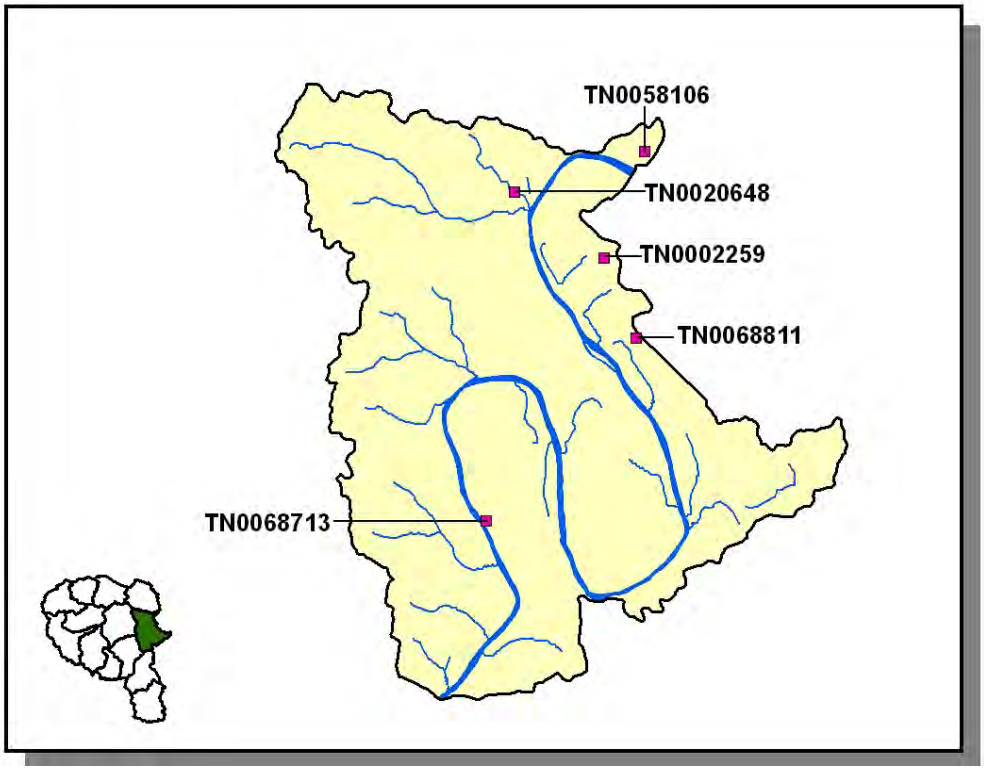


Figure 4-12. Location of Permitted Municipal and Industrial Facilities in Subwatershed 051302020101. *More information, including the name of the facility is provided in Appendix IV.*

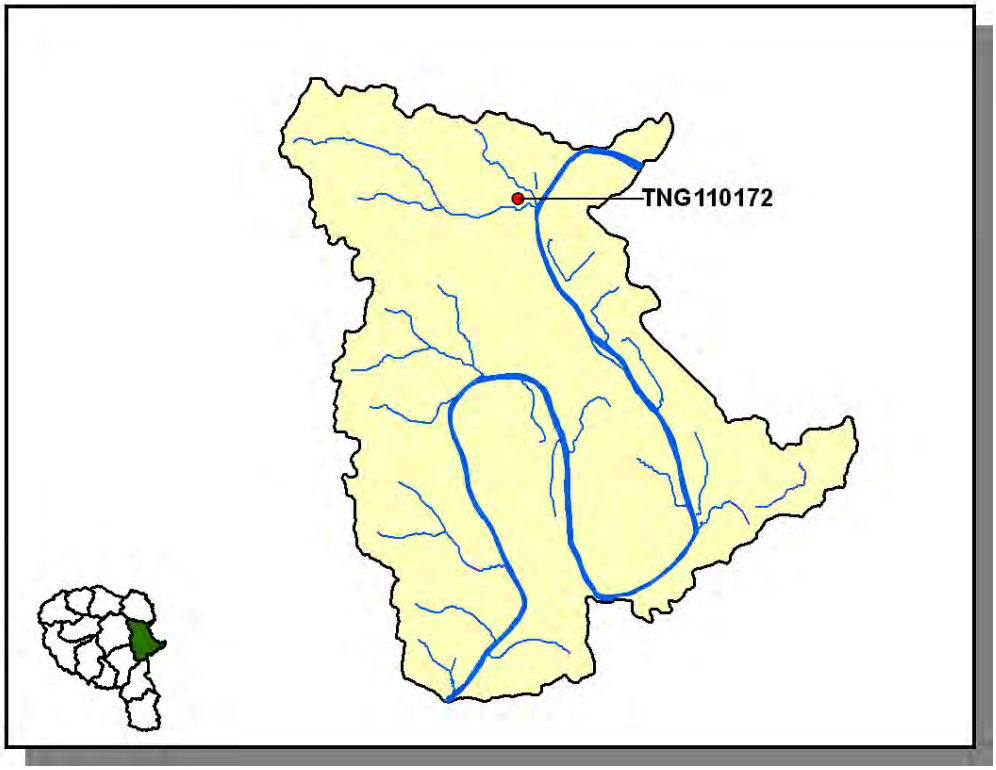


Figure 4-13. Location of RMCP (Ready Mix Concrete Plant) facilities in Subwatershed 051302020101. *More information, including the names of facilities, is provided in Appendix IV.*

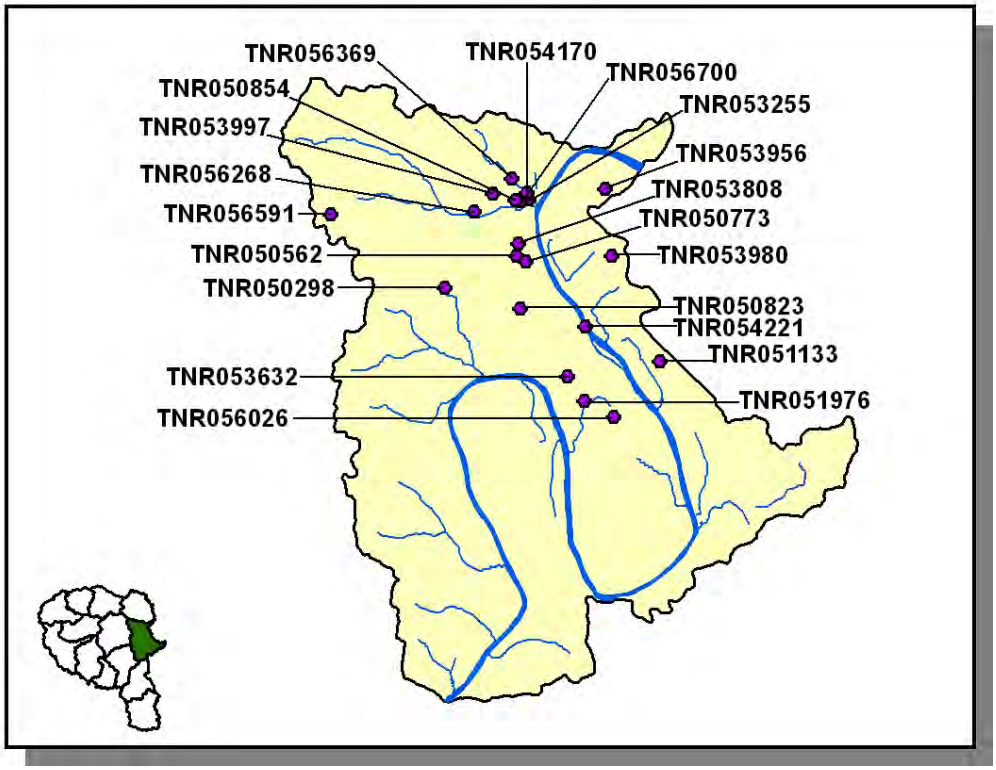


Figure 4-14. Location of TMSP (Tennessee Multi Sector Permit) Sites in Subwatershed 051302020101. *More information is provided in Appendix IV.*

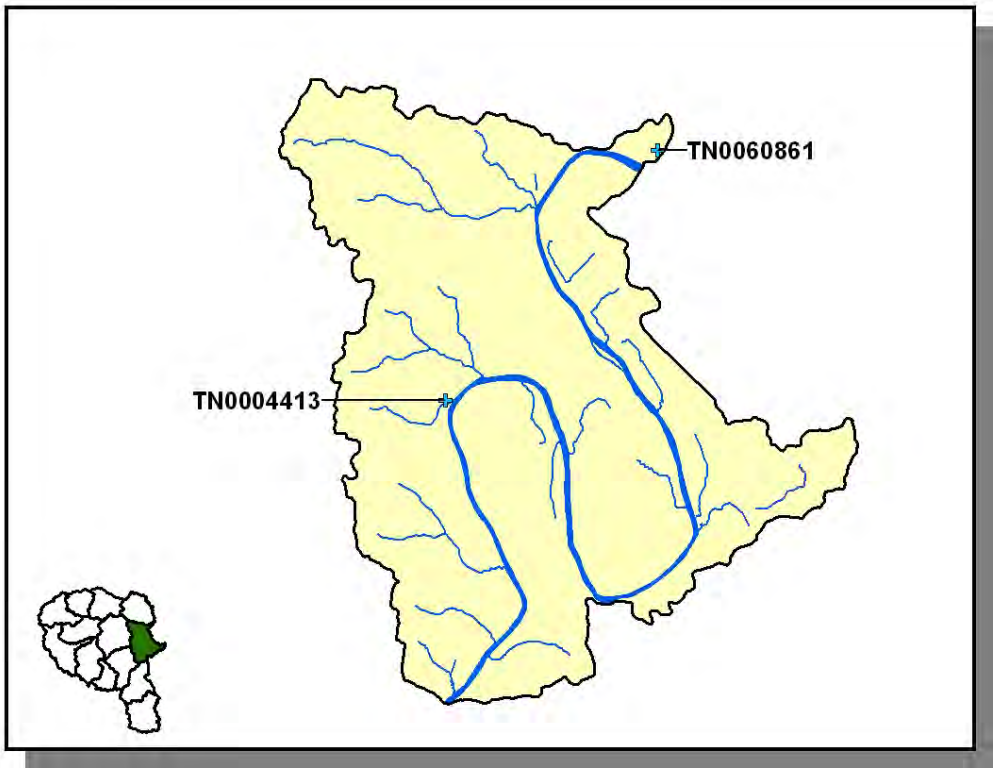


Figure 4-15. Location of Active WTP (Water Treatment Plant) Facilities in Subwatershed 051302020101. *More information, including the names of facilities, is provided in Appendix IV.*

4.2.A.iv. Nonpoint Source Contributions.

LIVESTOCK COUNTS						
County	Beef Cow	Cattle	Milk Cow	Chickens (Layers)	Hogs	Sheep
Davidson		9,207		1,572	73	
Sumner	22,296	45,116	1,515	50	2,500	189

Table 4-5. Summary of Livestock Count Estimates by County. *According to the 1997 Census of Agriculture (http://www.agcensus.usda.gov/), "Cattle" includes heifers, heifer calves, steers, bulls and bull calves; "Chickens" are layers 20 weeks and older.*

	INVENTORY		REMOVAL RATE	
County	Forest Land (thousand acres)	Timber Land (thousand acres)	Growing Stock (million cubic feet)	Sawtimber (million board feet)
Davidson	108.7	108.1	2.3	9.7
Sumner	88.2	88.2	2	6.3

Table 4-6. Forest Acreage and Annual Removal Rates (1987-1994) by County.

CROPS	TONS/ACRE/YEAR
Other Cropland not Planted	19.23
Soybeans (Row Crops)	14.98
Corn (Row Crops)	12.32
All Other Close Grown Cropland	2.26
Grass Forbs Legumes Mixed (Pastureland)	0.53
Grass (Pastureland)	0.44
Farmsteads and Ranch Headquarters	0.33
Conservation Reserve Program Land	0.26
Legume Grass (Hayland)	0.23
Legume (Hayland)	0.12
Grass (Hayland)	0.08

Table 4-7. Annual Estimated Total Soil Loss in Subwatershed 051302020101.

4.2.B. 051302020102 (Madison Creek).

4.2.B.i. General Description.

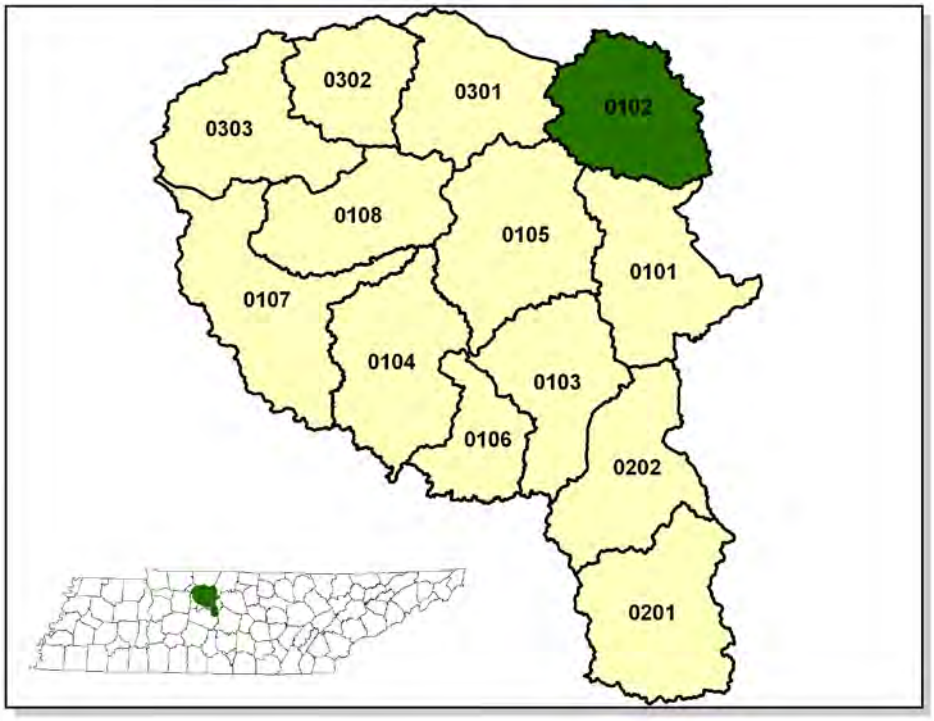


Figure 4-16. Location of Subwatershed 051302020102. *All Cheatham Lake HUC-12 subwatershed boundaries are shown for reference.*

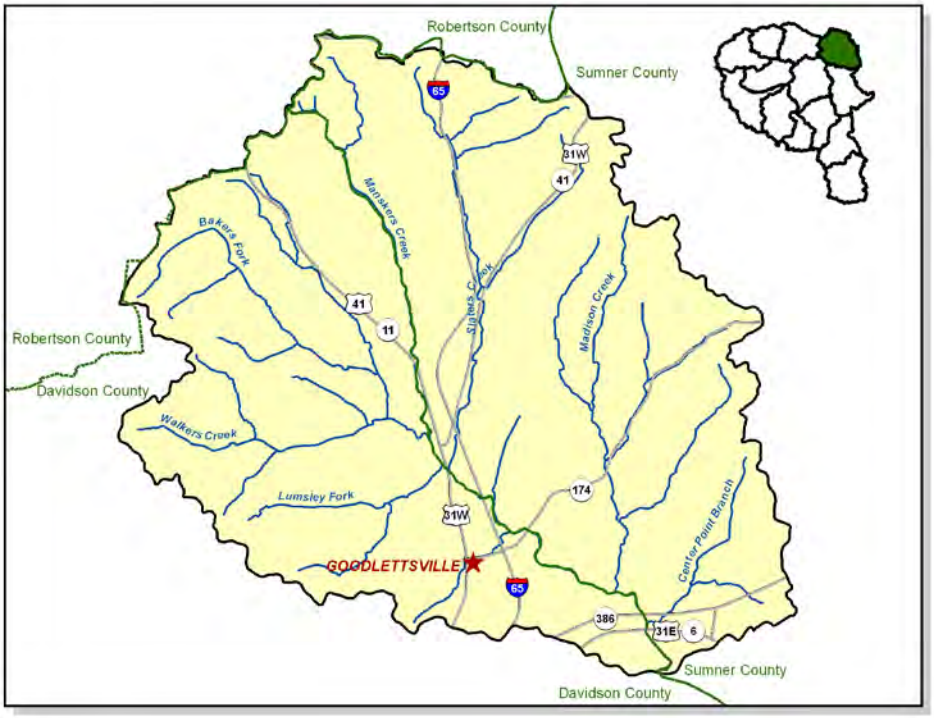


Figure 4-17. Locational Details of Subwatershed 051302020102.

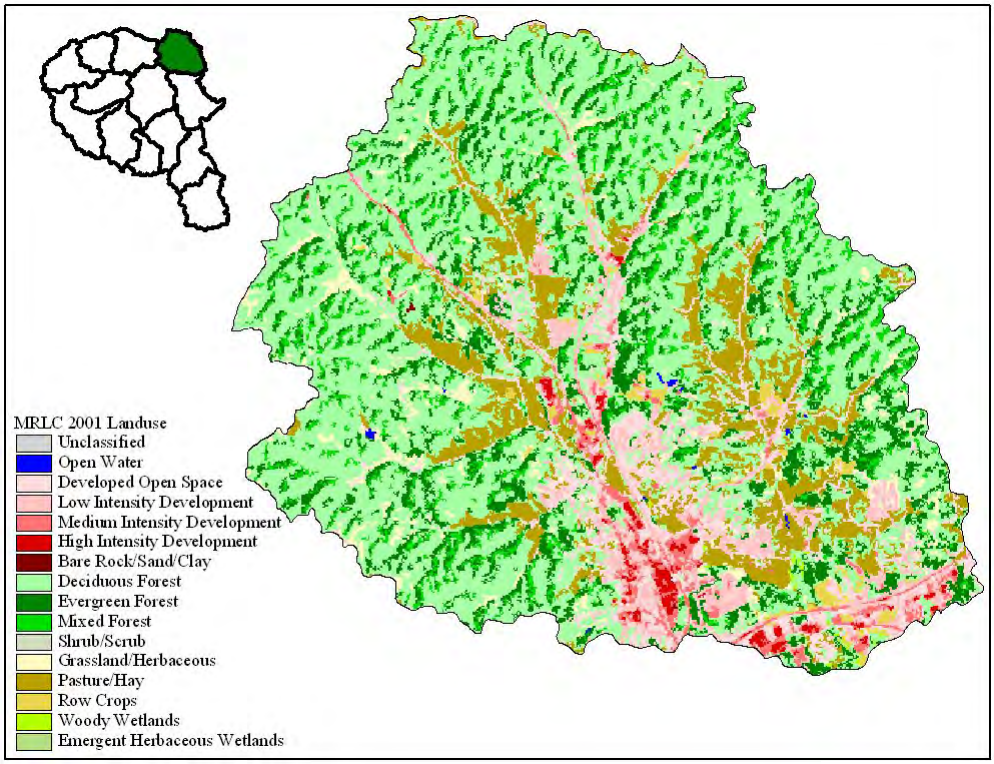


Figure 4-18. Illustration of Land Use Distribution in Subwatershed 051302020102.

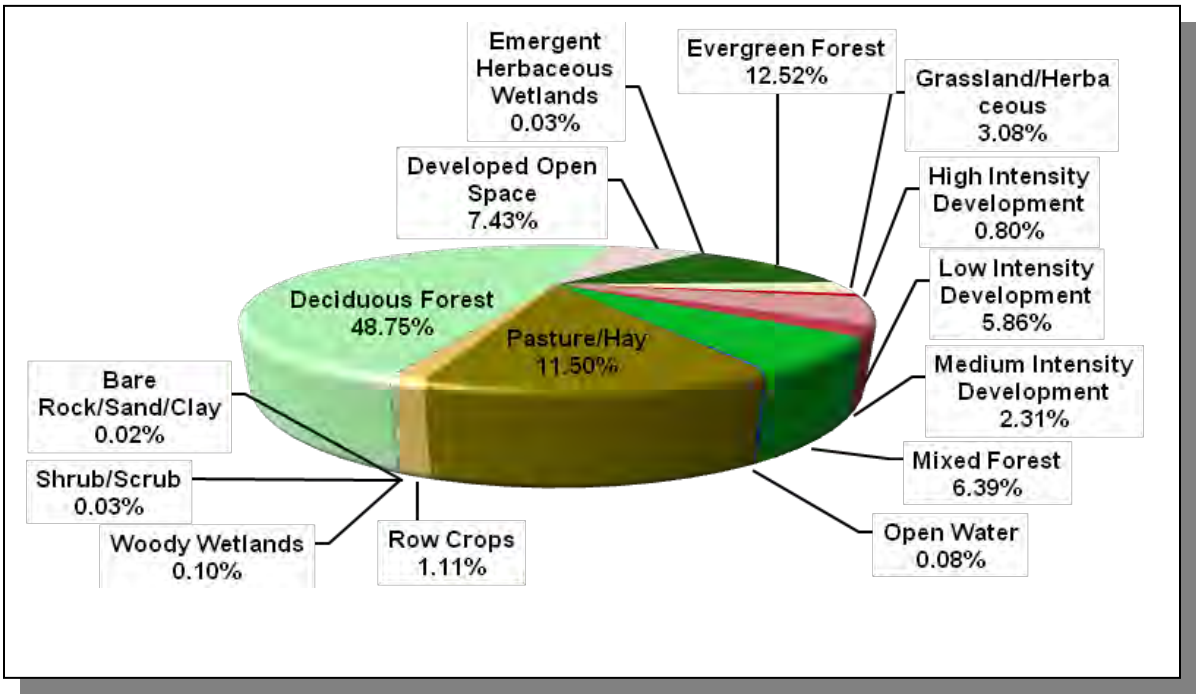


Figure 4-19. Land Use Distribution in Subwatershed 051302020102. *More information is provided in Appendix IV.*

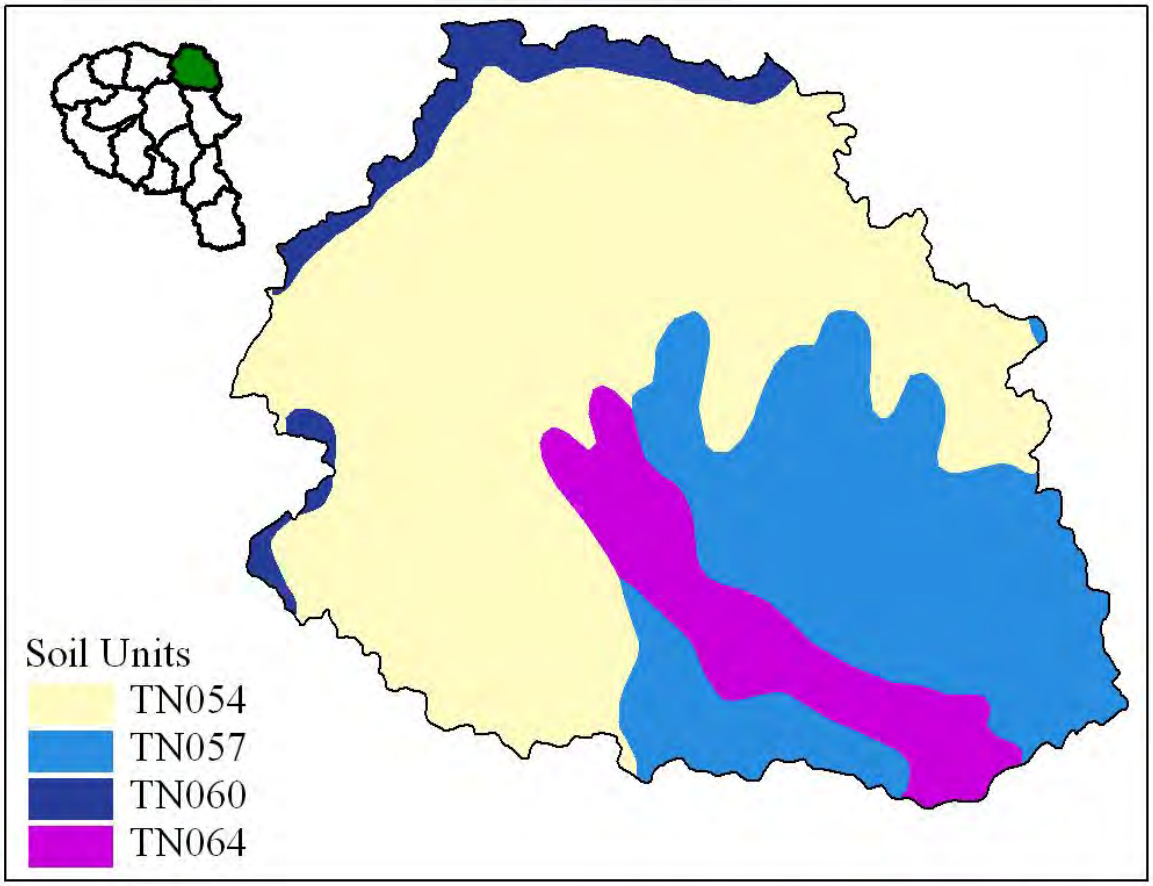


Figure 4-20. STATSGO (State Soil Geographic Database) Soil Map Units in Subwatershed 051302020102.

STATSGO MAP UNIT ID	PERCENT HYDRIC	HYDROLOGIC GROUP	PERMEABILITY (in/hour)	SOIL pH	ESTIMATED SOIL TEXTURE	SOIL ERODIBILITY
TN054	0.00	C	3.04	4.84	Loam	0.32
TN057	0.00	C	1.14	5.01	Clay Loam	0.33
TN060	5.00	B	1.30	5.32	Silty Loam	0.39
TN064	7.00	C	1.19	5.82	Silty Loam	0.37

Table 4-8. Soil Characteristics by STATSGO (State Soil Geographic Database) Soil Map Units in Subwatershed 051302020102. *The definition of "Hydrologic Group" is provided in Appendix IV.*

	COUNTY POPULATION				ESTIMATED POPULATION IN WATERSHED			
County	1990	1997	2000	% of County in Watershed	1990	1997	2000	% Change (1990-2000)
Davidson	510,784	535,032	569,891	4.40	22,487	23,554	25,089	11.60
Robertson	41,494	51,533	54,433	0.36	151	188	199	31.80
Sumner	103,281	121,936	130,449	3.89	4,022	4,749	5,081	26.30
Totals	**655,559**	**708,501**	**754,773**		**26,660**	**28,491**	**30,369**	**13.90**

Table 4-9. Population Estimates in Subwatershed 051302020102.

			NUMBER OF HOUSING UNITS			
Populated Place	County	Population	Total	Public Sewer	Septic Tank	Other
Goodlettsville	Sumner	11,219	4,761	4,263	489	9
Hendersonville	Sumner	32,188	12,472	8,395	4,069	8
Millersville	Sumner	2,544	1,033	849	180	4
Ridgetop	Robertson	1,129	396	7	389	0
Goodlettsville	Davidson	11,219	4,761	4,263	489	9
Nashville-Davidson	Davidson	488,518	219,521	203,640	15,576	305
Total		**546,817**	**242,944**	**221,417**	**21,192**	**335**

Table 4-10. Housing and Sewage Disposal Practices of Select Communities in Subwatershed 051302020102.

4.2.B.ii. USGS Gaging Stations and STORET Sites.

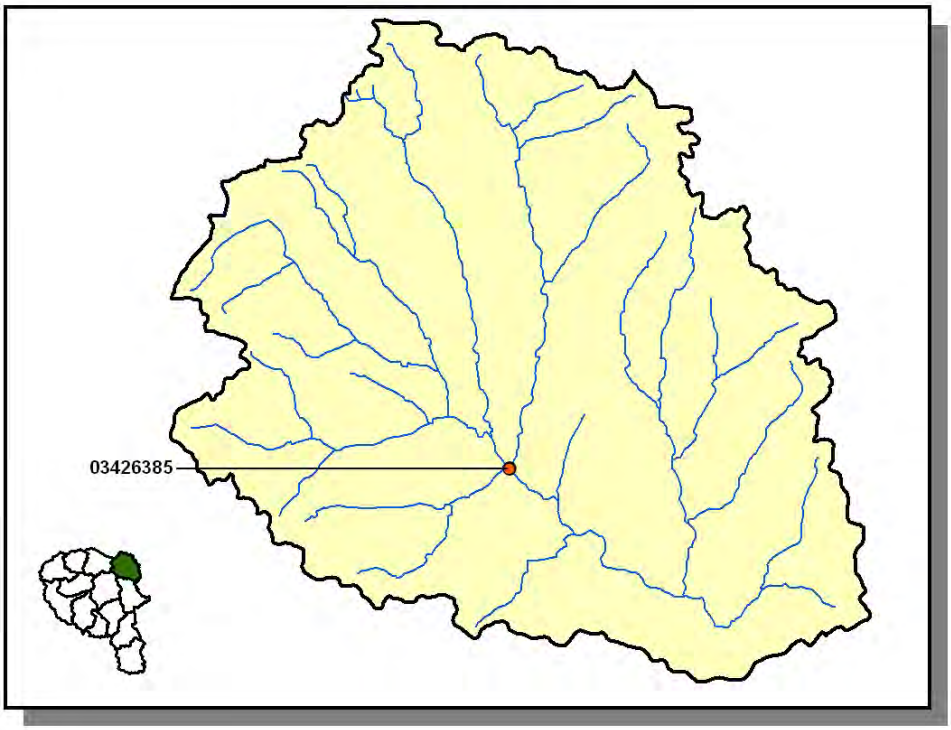


Figure 4-21. Location of USGS Continuous Record Gaging Stations in Subwatershed 051302020102. *More information is provided in Appendix IV.*

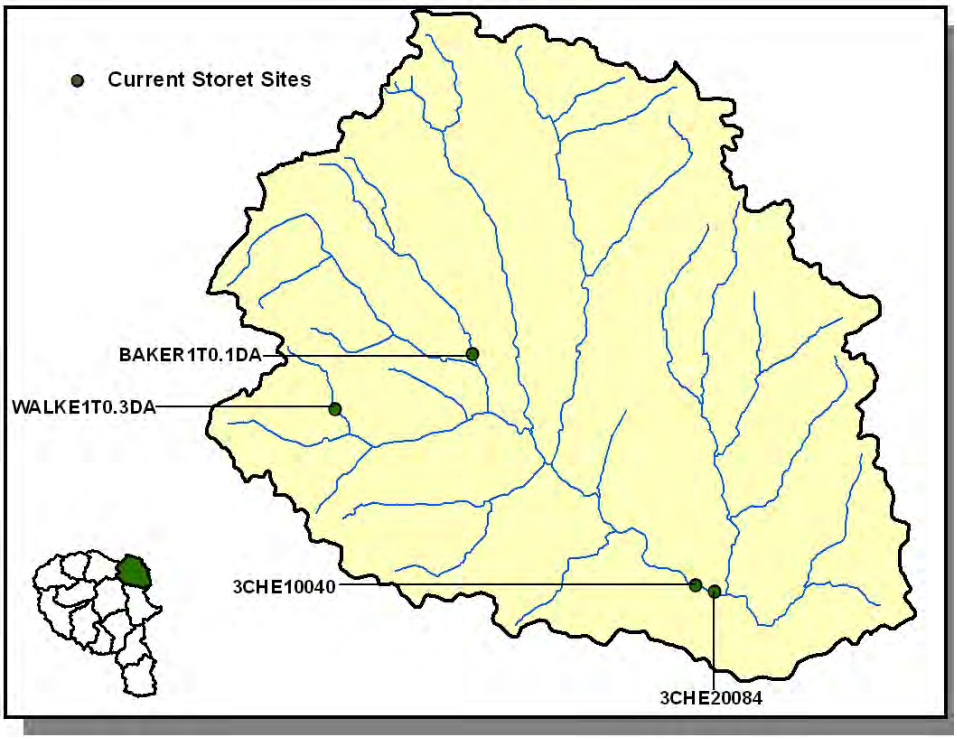


Figure 4-22. Location of Monitoring Sites in EPA's STORET Database in Subwatershed 051302020102. *More information, including site names and locations, is provided in Appendix IV.*

4.2.B.iii. Permitted Activities.

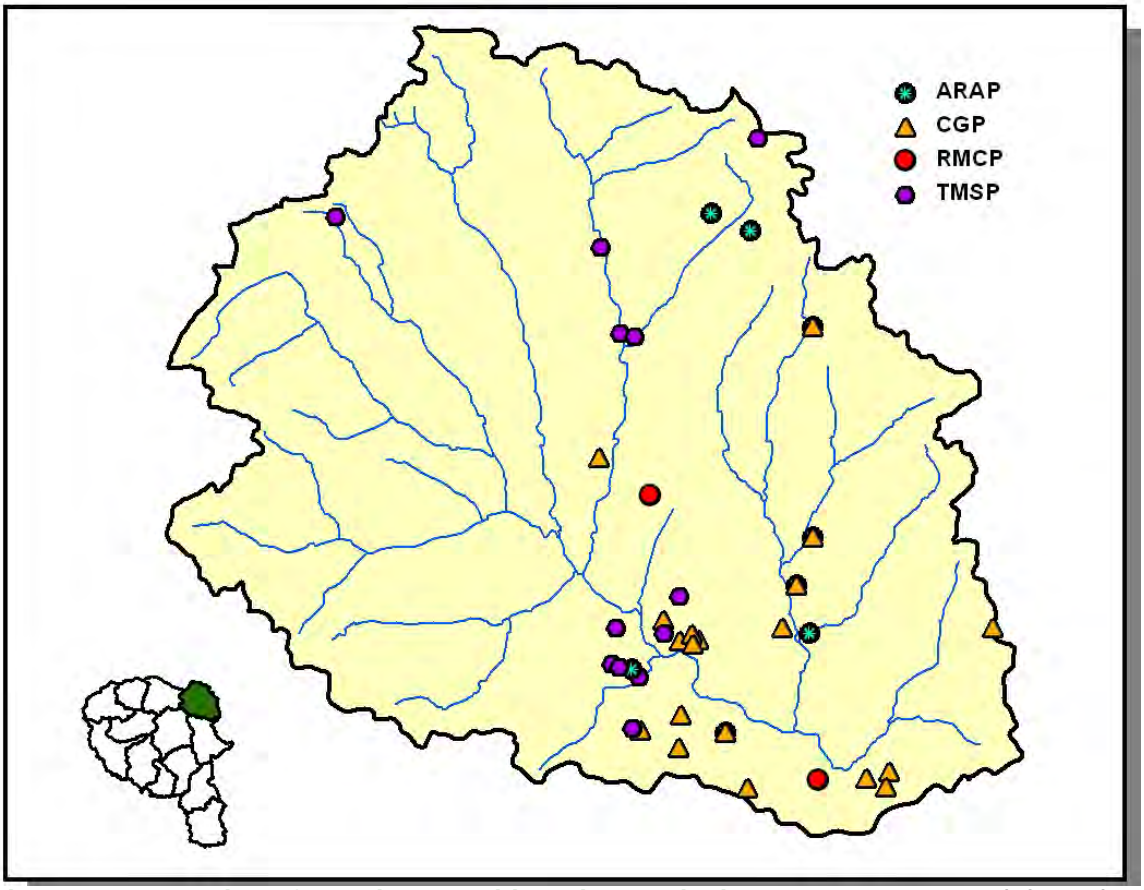


Figure 4-23. Location of Permits Issued in Subwatershed 051302020102. *More information, including the names of facilities, is provided in Appendix IV.*

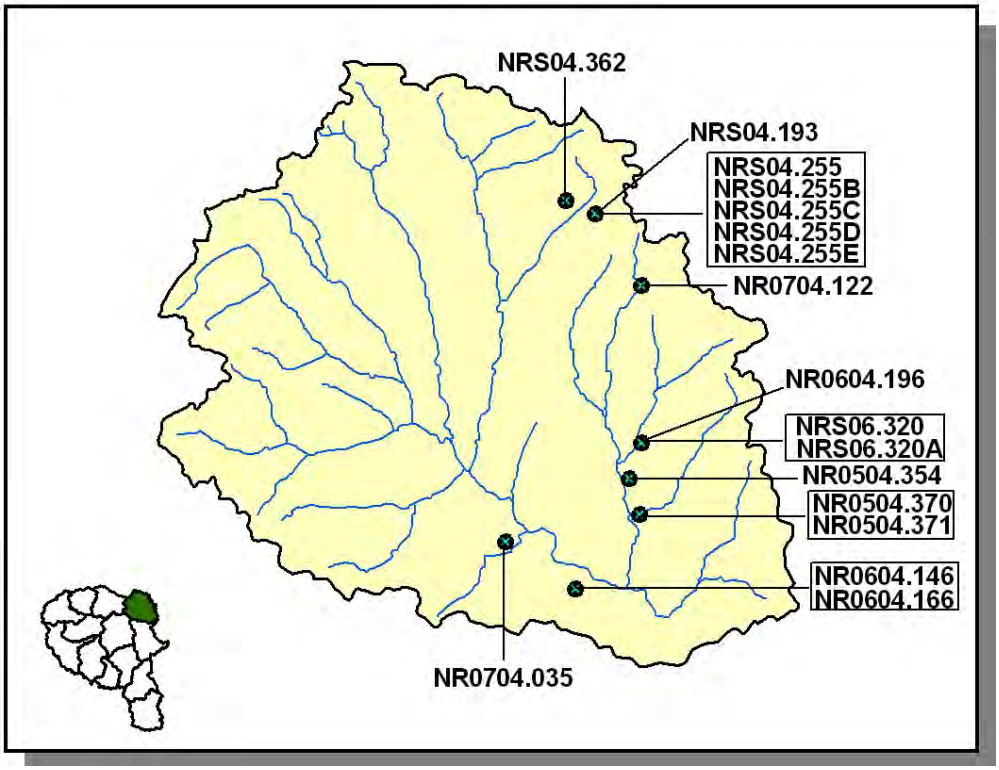


Figure 4-24. Location of ARAP (Aquatic Resource Alteration Permit) Sites in Subwatershed 051302020102. *More information is provided in Appendix IV.*

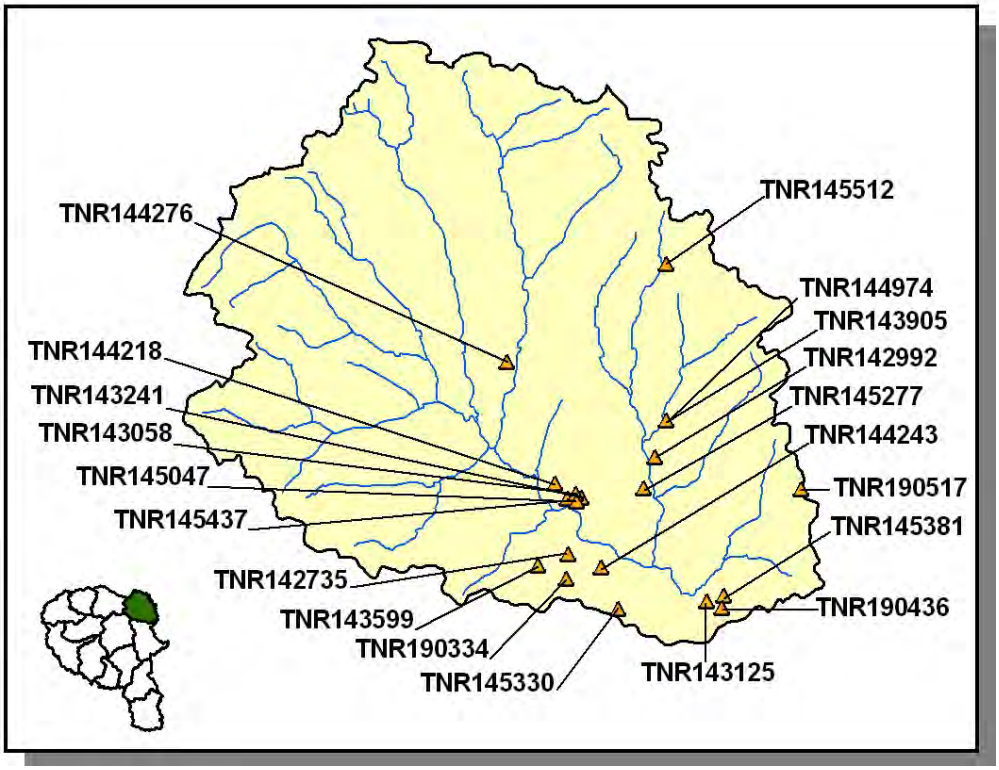


Figure 4-25. Location of CGP (Construction General Permit) Sites in Subwatershed 051302020102. *More information is provided in Appendix IV.*

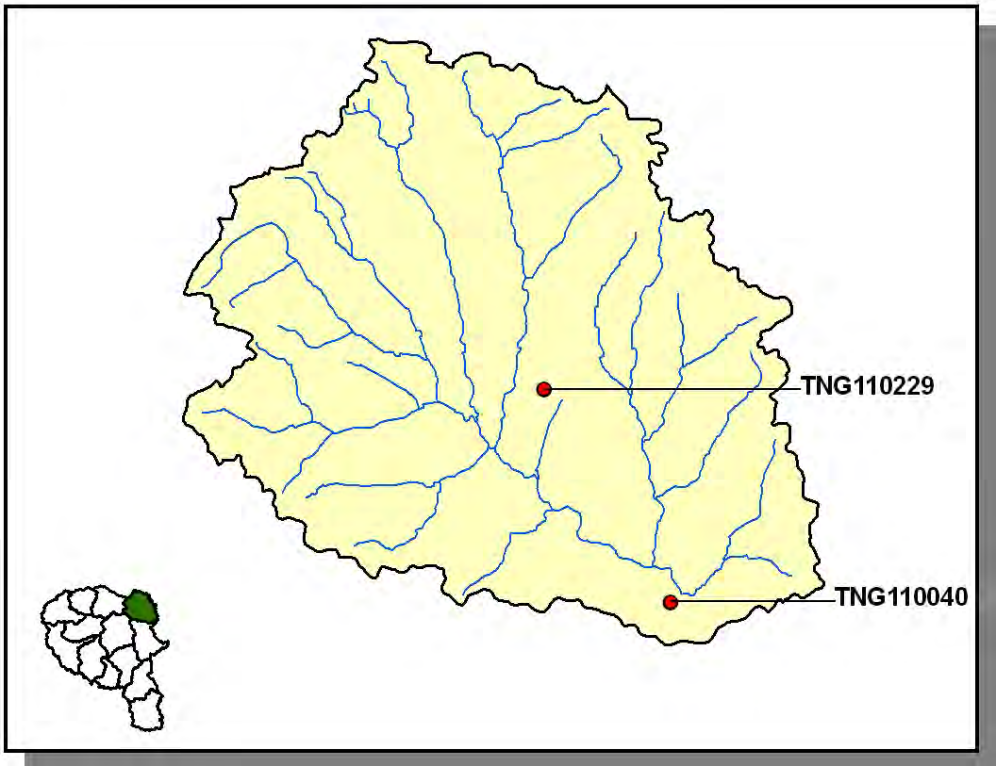


Figure 4-26. Location of RMCP (Ready Mix Concrete Plant) facilities in Subwatershed 051302020102. *More information, including the names of facilities, is provided in Appendix IV.*

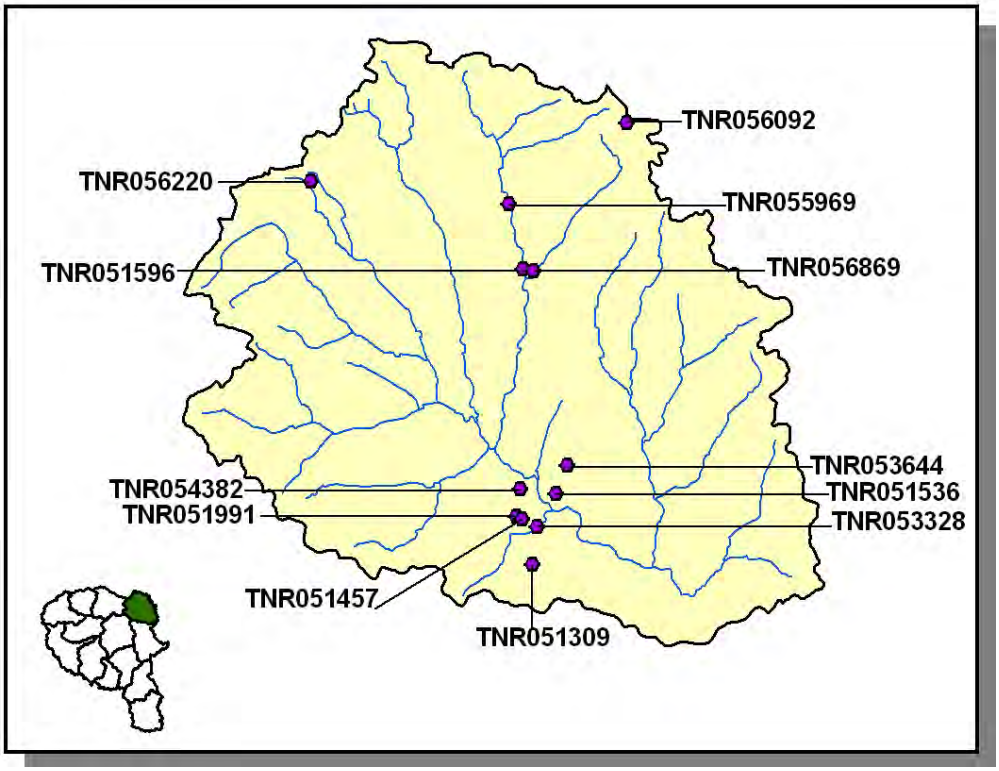


Figure 4-27. Location of TMSP (Tennessee Multi Sector Permit) Sites in Subwatershed 051302020102. *More information is provided in Appendix IV.*

4.2.B.iv. Nonpoint Source Contributions.

LIVESTOCK COUNTS						
County	Beef Cow	Cattle	Milk Cow	Chickens (Layers)	Hogs	Sheep
Davidson		9,207		1,572	73	
Robertson	22,502	47,887	3,478	31	6,982	279
Sumner	22,296	45,116	1,515	50	2,500	189

Table 4-11. Summary of Livestock Count Estimates by County. *According to the 1997 Census of Agriculture (http://www.agcensus.usda.gov/), "Cattle" includes heifers, heifer calves, steers, bulls and bull calves; "Chickens" are layers 20 weeks and older.*

	INVENTORY		REMOVAL RATE	
County	Forest Land (thousand acres)	Timber Land (thousand acres)	Growing Stock (million cubic feet)	Sawtimber (million board feet)
Davidson	108.7	108.1	2.3	9.7
Robertson	53.0	53.0	2.2	9.7
Sumner	88.2	88.2	2.0	6.3

Table 4-12. Forest Acreage and Annual Removal Rates (1987-1994) by County.

CROPS	TONS/ACRE/YEAR
Other Cropland not Planted	18.49
Soybeans (Row Crops)	13.08
Tobacco (Row Crops)	11.87
Corn (Row Crops)	11.77
All Other Close Grown Cropland	2.26
Wheat (Close Grown Cropland)	1.68
Grass Forbs Legumes Mixed (Pastureland)	0.53
Grass (Pastureland)	0.46
Farmsteads and Ranch Headquarters	0.36
Conservation Reserve Program Land	0.27
Other Land in Farms	0.27
Legume Grass (Hayland)	0.25
Grass (Hayland)	0.20
Legume (Hayland)	0.17

Table 4-13. Annual Estimated Total Soil Loss in Subwatershed 051302020102.

4.2.C. 051302020103 (Cumberland River).

4.2.C.i. General Description.

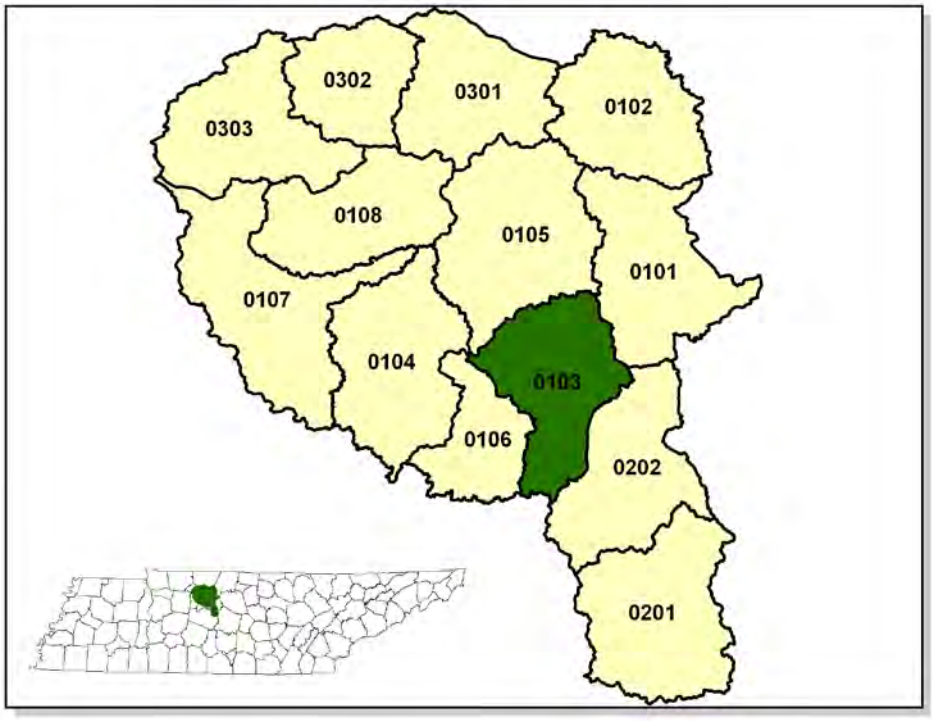


Figure 4-28. Location of Subwatershed 051302020103. *All Cheatham Lake HUC-12 subwatershed boundaries are shown for reference.*

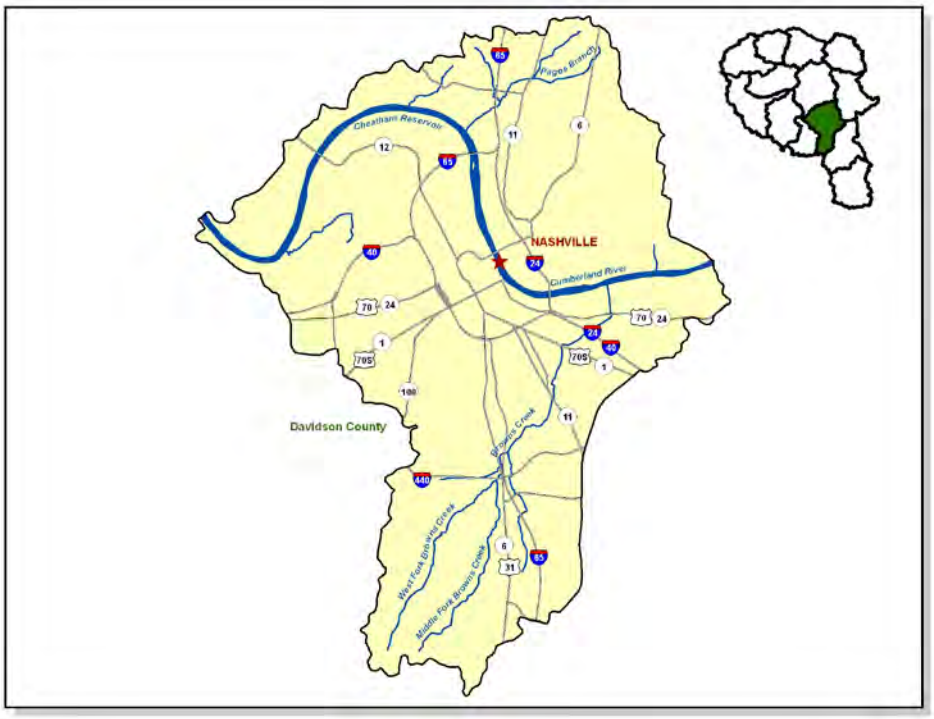


Figure 4-29. Locational Details of Subwatershed 051302020103.

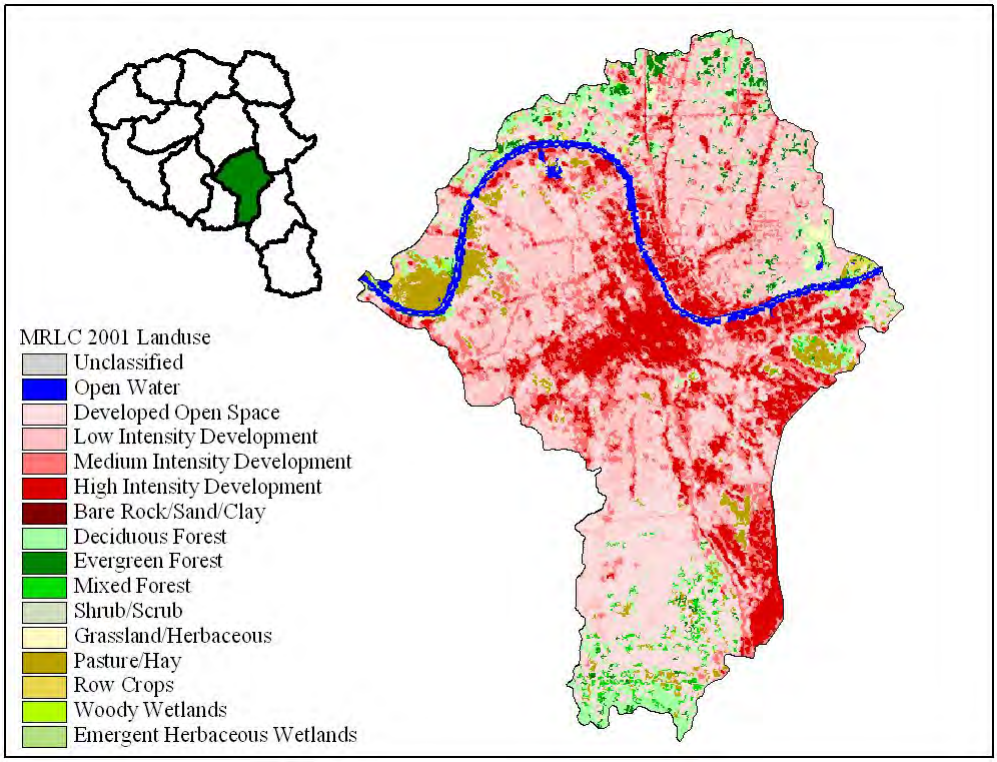


Figure 4-30. Illustration of Land Use Distribution in Subwatershed 051302020103.

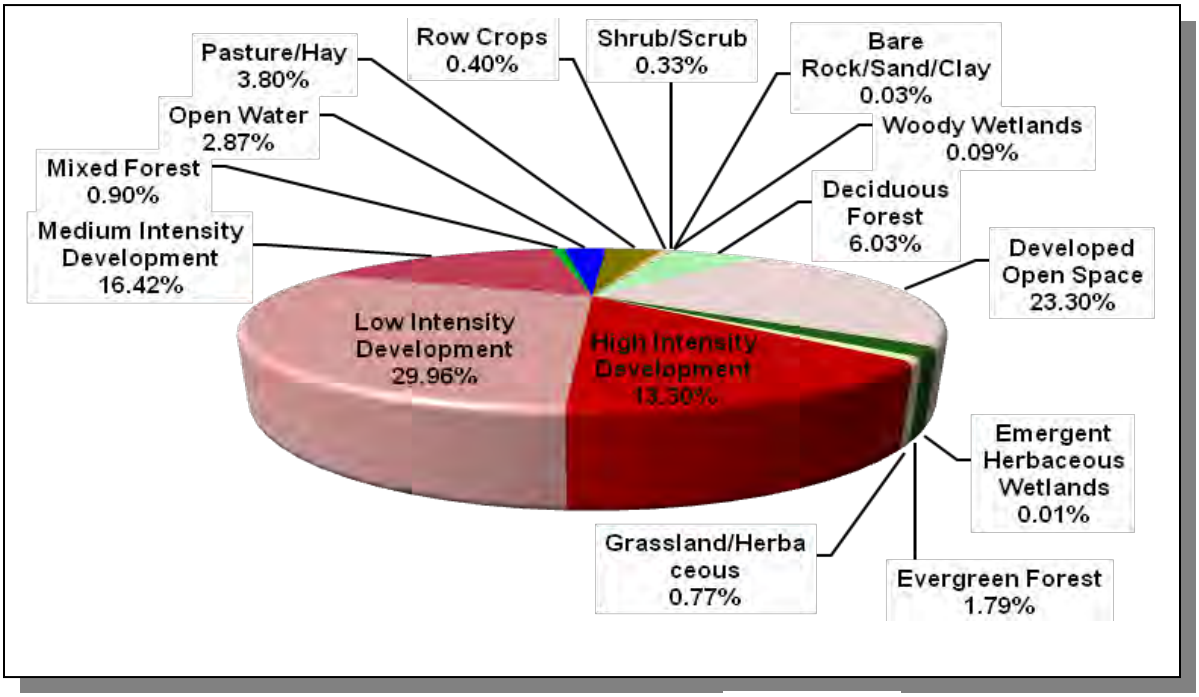


Figure 4-31. Land Use Distribution in Subwatershed 051302020103. *More information is provided in Appendix IV.*

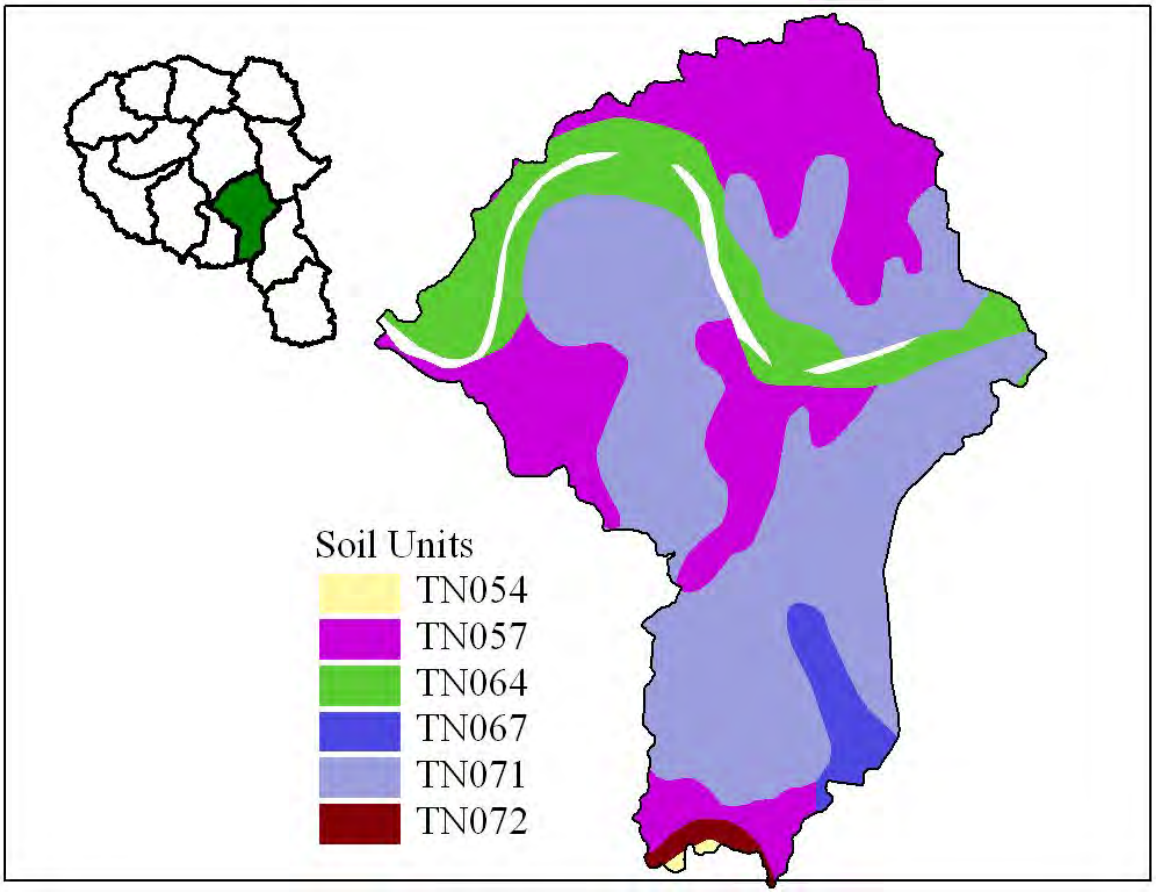


Figure 4-32. STATSGO (State Soil Geographic Database) Soil Map Units in Subwatershed 051302020103.

STATSGO MAP UNIT ID	PERCENT HYDRIC	HYDROLOGIC GROUP	PERMEABILITY (in/hour)	SOIL pH	ESTIMATED SOIL TEXTURE	SOIL ERODIBILITY
TN054	0.00	C	3.04	4.84	Loam	0.32
TN057	0.00	C	1.14	5.01	Clay Loam	0.33
TN064	7.00	C	1.19	5.82	Silty Loam	0.37
TN067	2.00	C	2.69	5.51	Silty Loam	0.35
TN071	0.00	C	2.37	5.70	Silty Loam	0.33
TN072	0.00	B	3.70	5.57	Loam	0.31

Table 4-14. Soil Characteristics by STATSGO (State Soil Geographic Database) Soil Map Units in Subwatershed 051302020103. *The definition of "Hydrologic Group" is provided in Appendix IV.*

	COUNTY POPULATION				ESTIMATED POPULATION IN WATERSHED			
County	1990	1997	2000	% of County in Watershed	1990	1997	2000	% Change (1990-2000)
Davidson	510,784	535,032	569,891	9.01	46,042	48,227	51,370	11.60

Table 4-15. Population Estimates in Subwatershed 051302020103.

			NUMBER OF HOUSING UNITS			
Populated Place	County	Population	Total	Public Sewer	Septic Tank	Other
Berry Hill	Davidson	803	498	486	12	0
Forest Hills	Davidson	4,240	1,601	625	976	0
Nashville-Davidson	Davidson	488,518	219,521	203,640	15,576	305
Oak Hill	Davidson	4,301	1788	990	798	0
Total		**497,862**	**223,408**	**205,741**	**17,362**	**305**

Table 4-16. Housing and Sewage Disposal Practices of Select Communities in Subwatershed 051302020103.

4.2.C.ii. USGS Gaging Stations and STORET Sites.

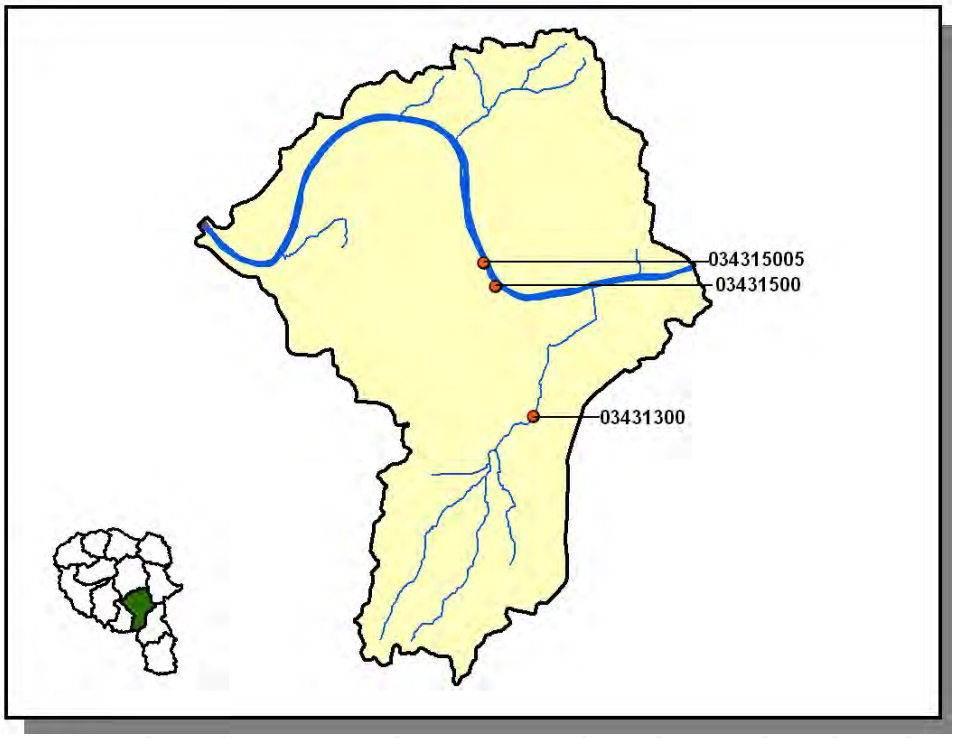


Figure 4-33. Location of USGS Continuous Record Gaging Stations in Subwatershed 051302020103. *More information is provided in Appendix IV.*

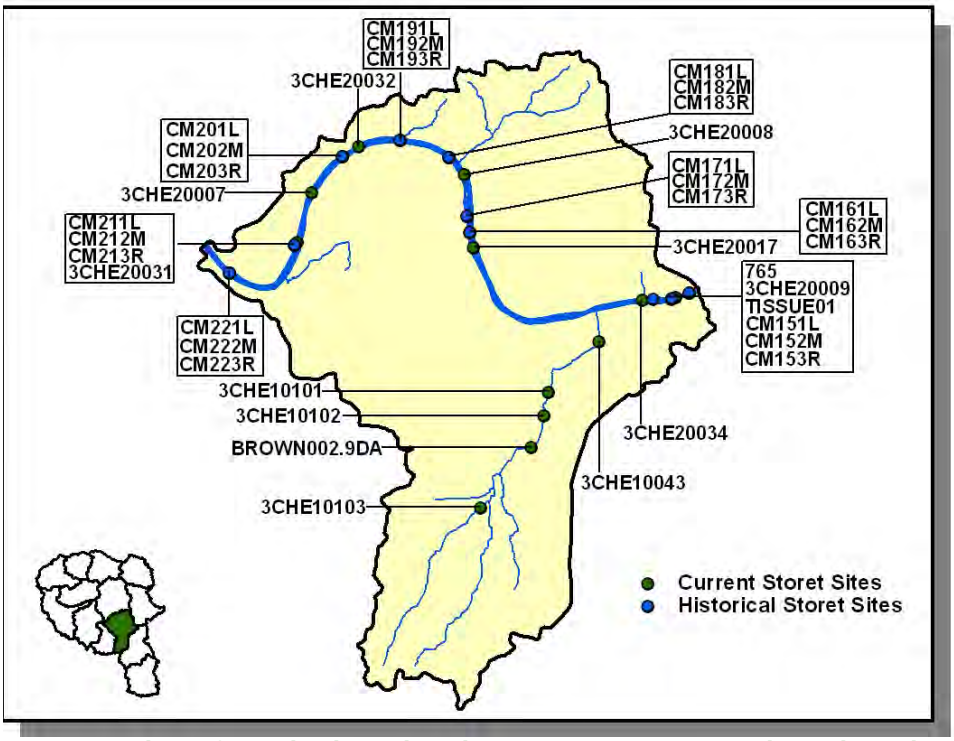


Figure 4-34. Location of Monitoring Sites in EPA's STORET Database in Subwatershed 051302020103. *More information, including site names and locations, is provided in Appendix IV.*

4.2.C.iii. Permitted Activities.

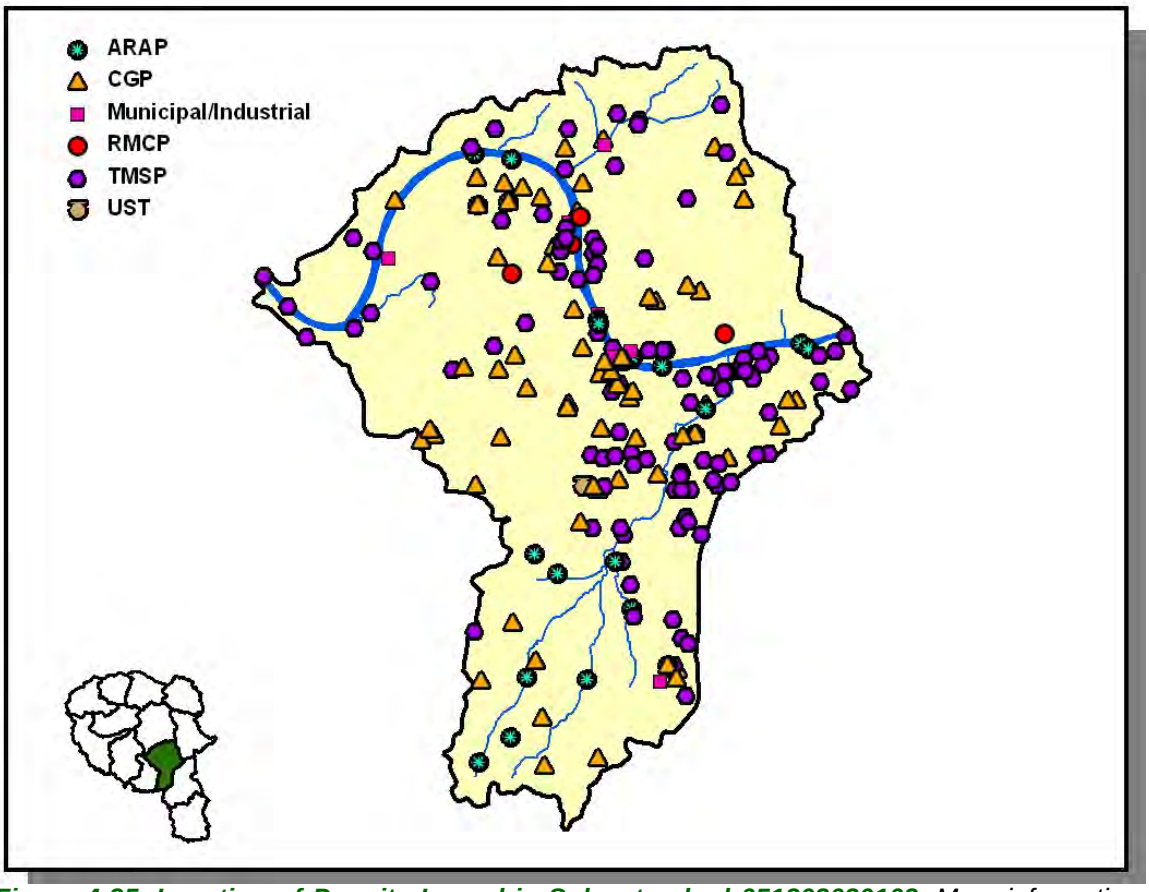


Figure 4-35. Location of Permits Issued in Subwatershed 051302020103. *More information, including the names of facilities, is provided in Appendix IV.*

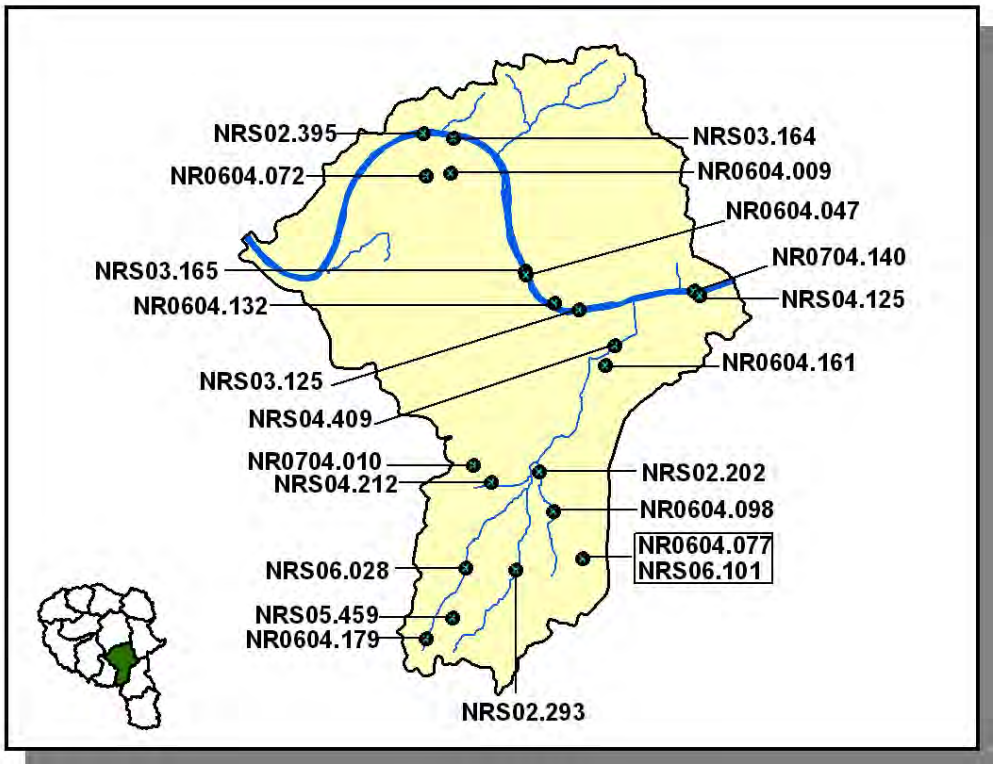


Figure 4-36. Location of ARAP (Aquatic Resource Alteration Permit) Sites in Subwatershed 051302020103. *More information is provided in Appendix IV.*

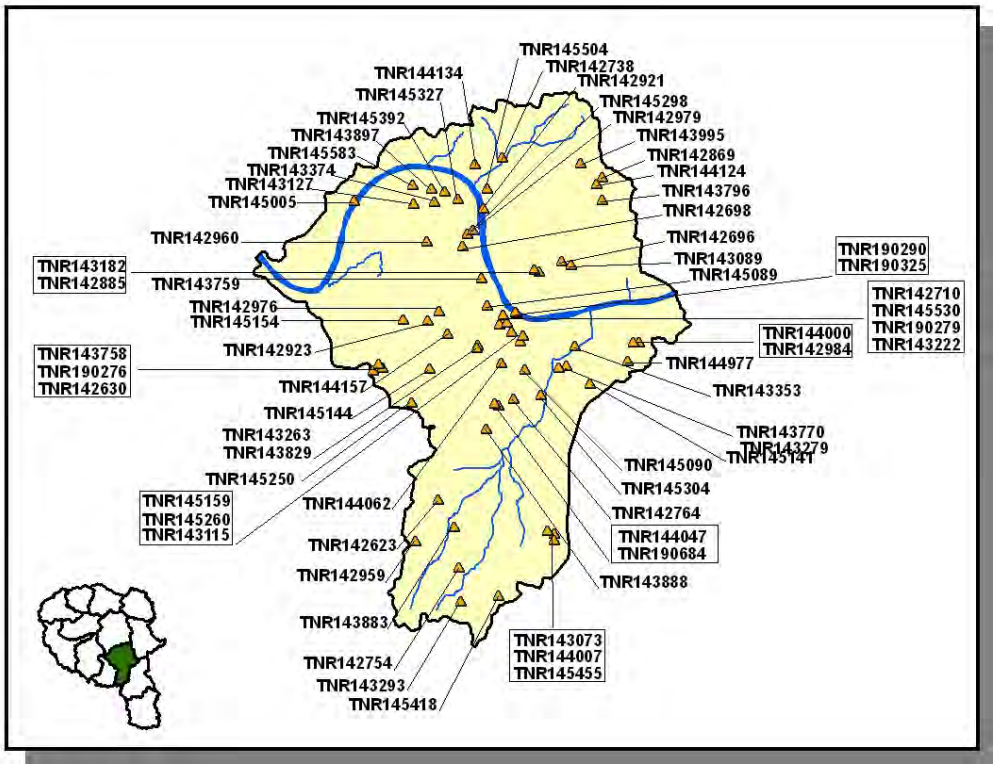


Figure 4-37. Location of CGP (Construction General Permit) Sites in Subwatershed 051302020103. *More information is provided in Appendix IV.*

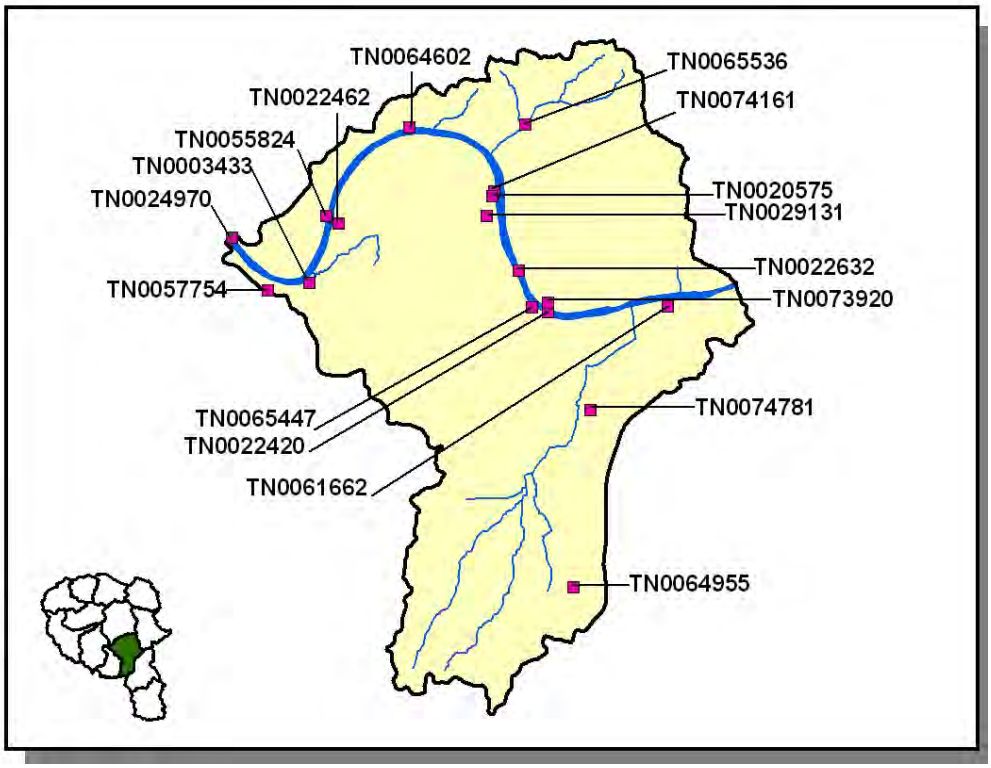


Figure 4-38. Location of Permitted Municipal and Industrial Facilities inSubwatershed 051302020103. *More information, including the name of the facility is provided in Appendix IV.*

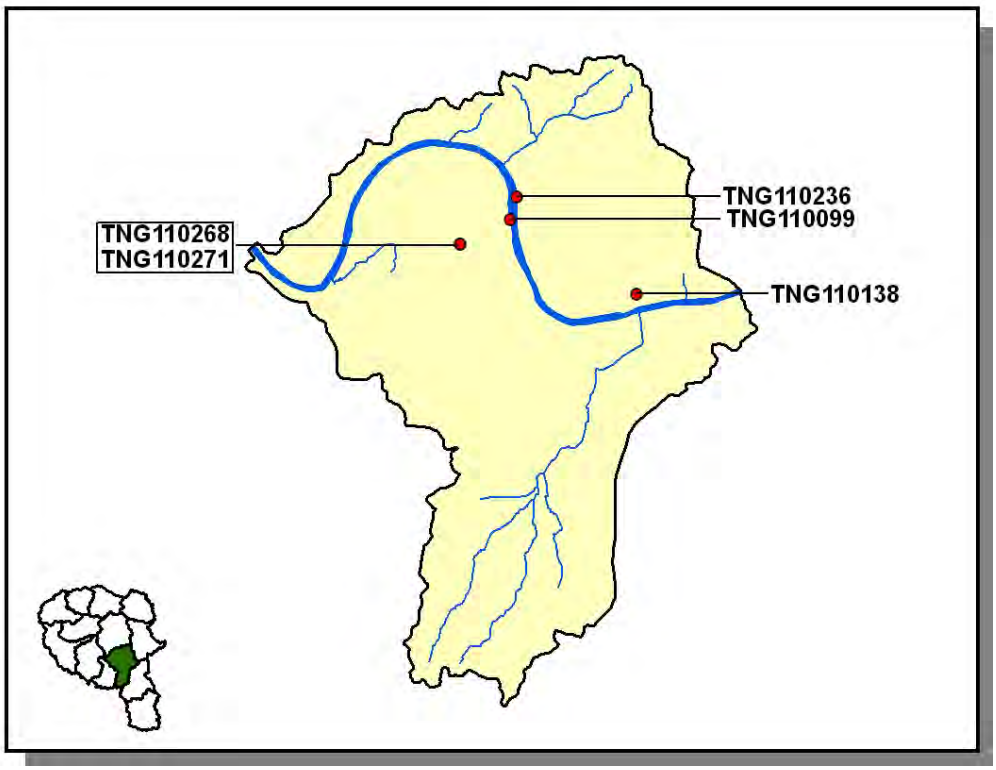


Figure 4-39. Location of RMCP (Ready Mix Concrete Plant) facilities in Subwatershed 051302020103. *More information, including the names of facilities, is provided in Appendix IV.*

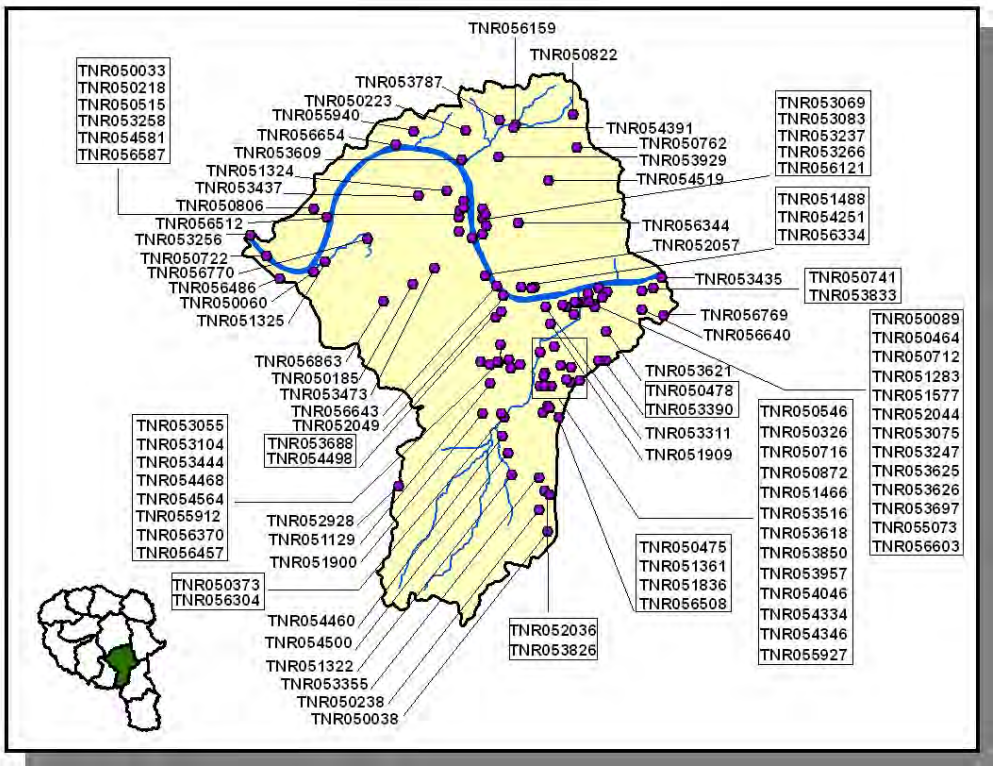


Figure 4-40. Location of TMSP (Tennessee Multi Sector Permit) Sites in Subwatershed 051302020103. *More information is provided in Appendix IV.*

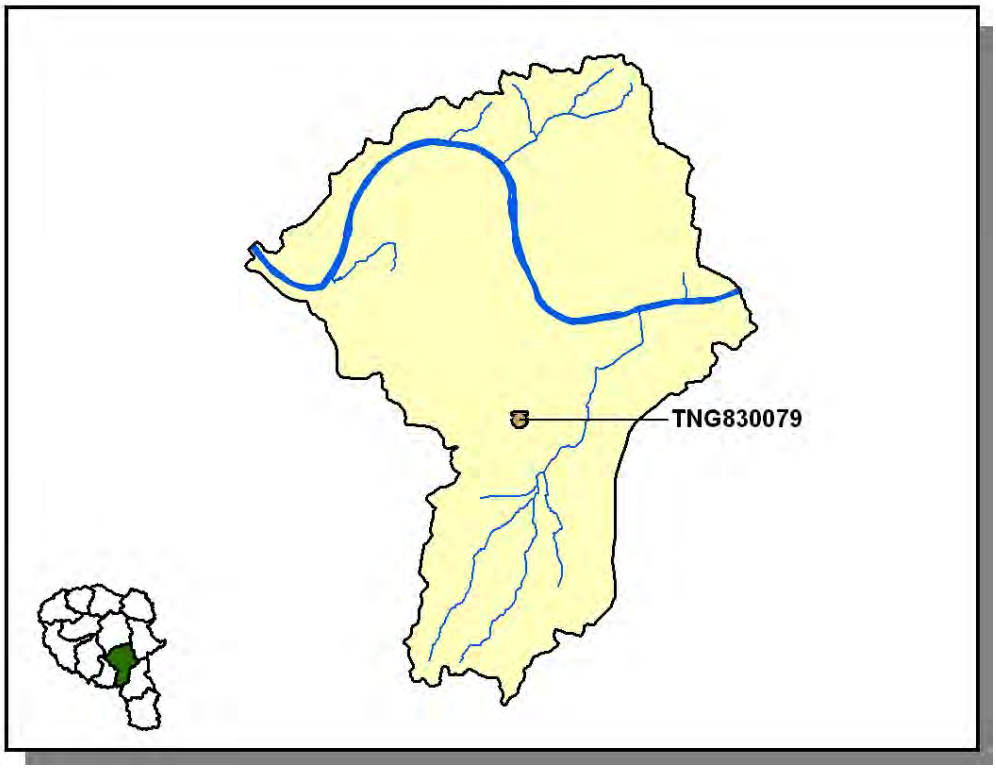


Figure 4-41. Location of Active UST (Underground Storage Tanks) Sites in Subwatershed 051302020103. *More information is provided in Appendix IV.*

4.2.C.iv. Nonpoint Source Contributions.

LIVESTOCK COUNTS						
County	Beef Cow	Cattle	Milk Cow	Chickens (Layers)	Hogs	Sheep
Davidson		9,207		1,275	73	

Table 4-17. Summary of Livestock Count Estimates by County. *According to the 1997 Census of Agriculture (http://www.agcensus.usda.gov/), "Cattle" includes heifers, heifer calves, steers, bulls and bull calves; "Chickens" are layers 20 weeks and older.*

	INVENTORY		REMOVAL RATE	
County	Forest Land (thousand acres)	Timber Land (thousand acres)	Growing Stock (million cubic feet)	Sawtimber (million board feet)
Davidson	108.7	108.1	2.3	9.7

Table 4-18. Forest Acreage and Annual Removal Rates (1987-1994) by County.

CROPS	TONS/ACRE/YEAR
Soybeans (Row Crops)	15.01
All Other Close Grown Cropland	2.26
Grass Forbs Legumes Mixed (Pastureland)	0.53
Grass (Pastureland)	0.44
Farmsteads and Ranch Headquarters	0.33
Grass (Hayland)	0.07

Table 4-19. Annual Estimated Total Soil Loss in Subwatershed 051302020103.

4.2.D. 051302020104 (Cumberland River).

4.2.D.i. General Description

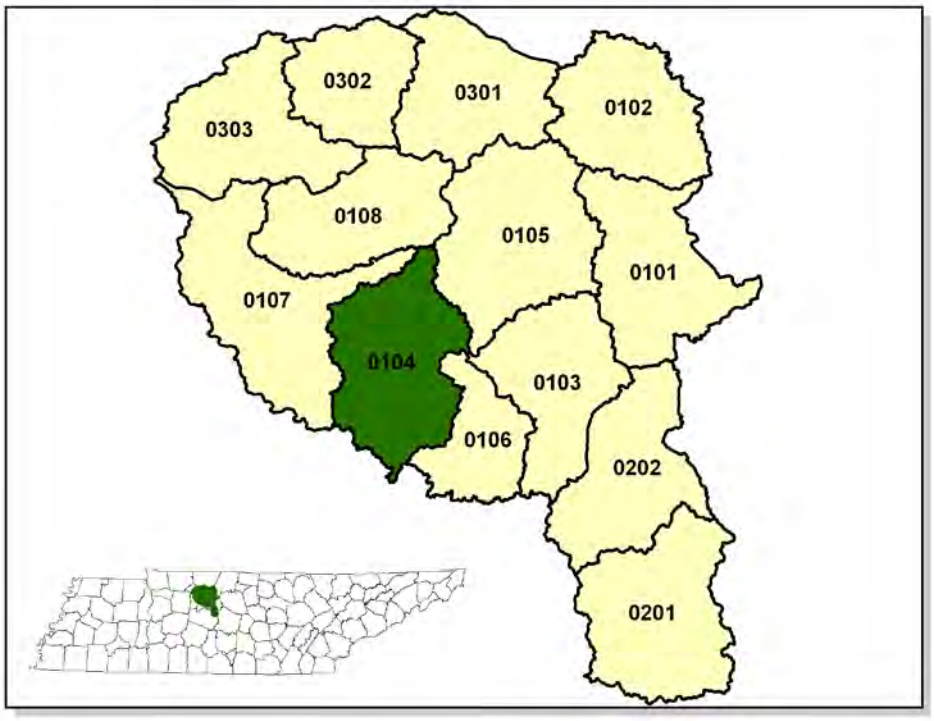


Figure 4-42. Location of Subwatershed 051302020104. *All Cheatham Lake HUC-12 subwatershed boundaries are shown for reference.*

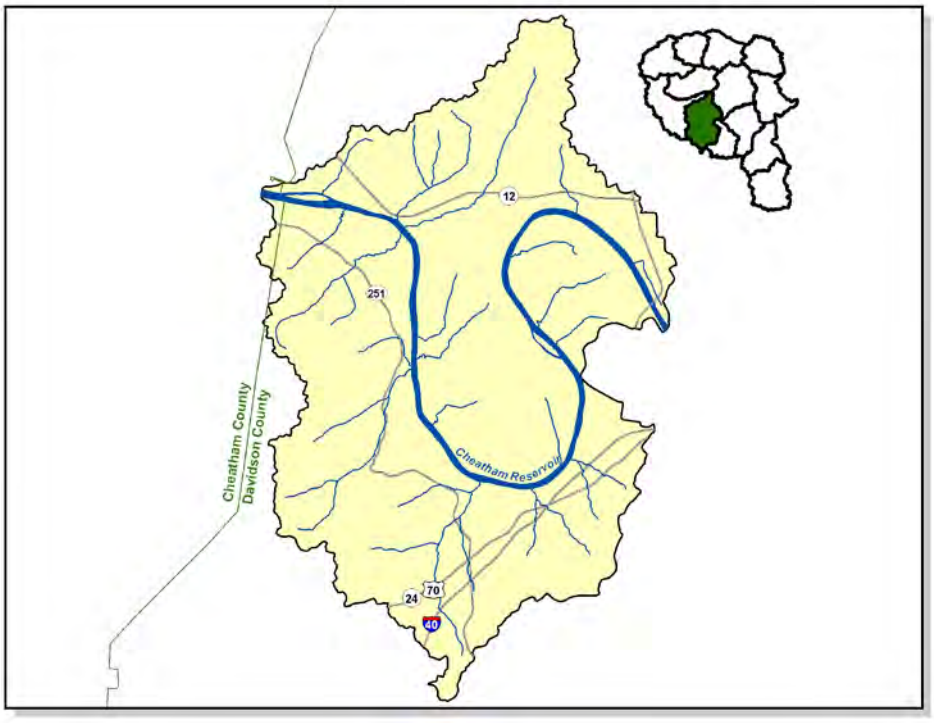


Figure 4-43. Locational Details of Subwatershed 051302020104.

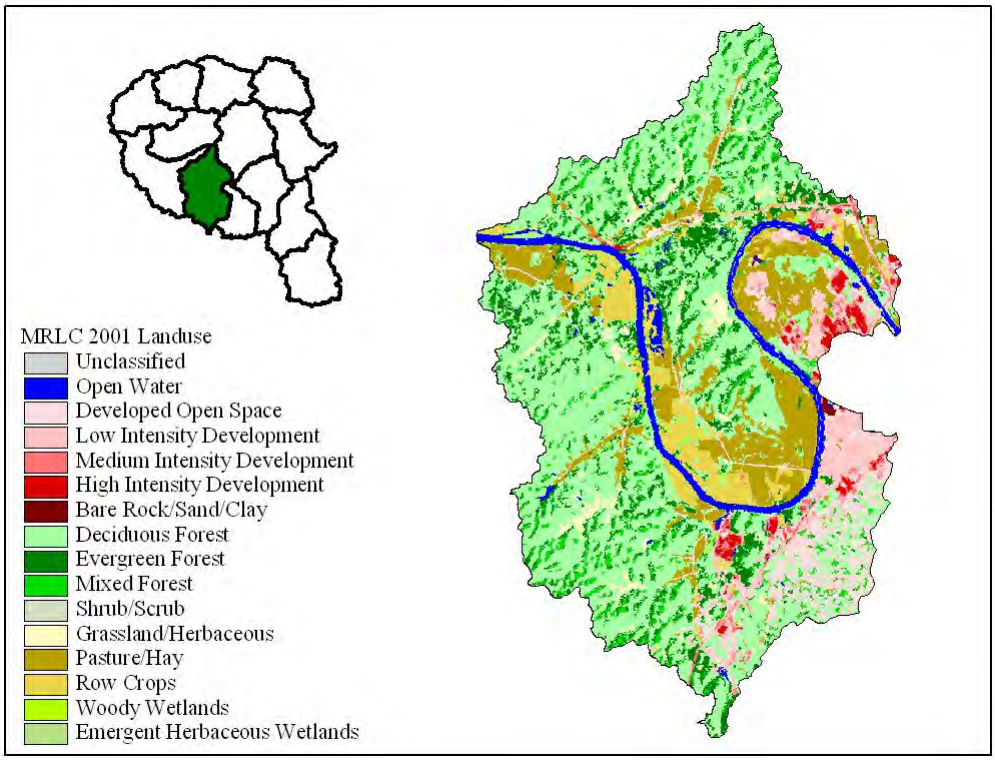


Figure 4-44. Illustration of Land Use Distribution in Subwatershed 051302020104.

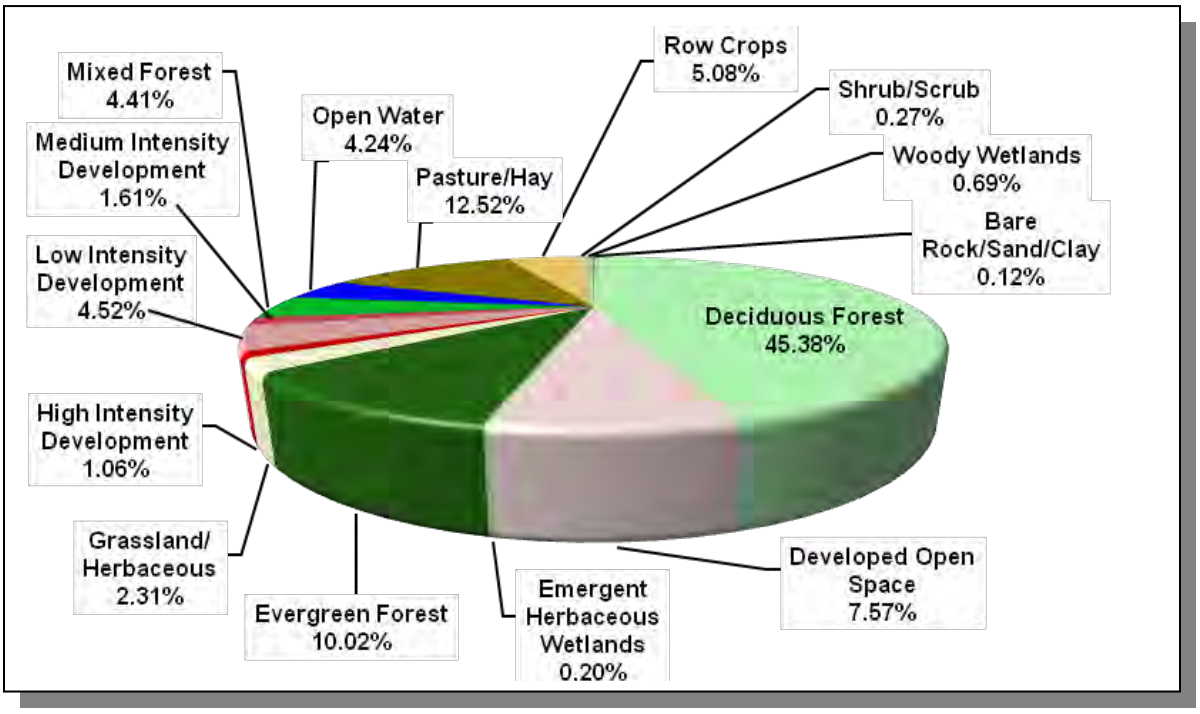


Figure 4-45. Land Use Distribution in Subwatershed 051302020104. *More information is provided in Appendix IV.*

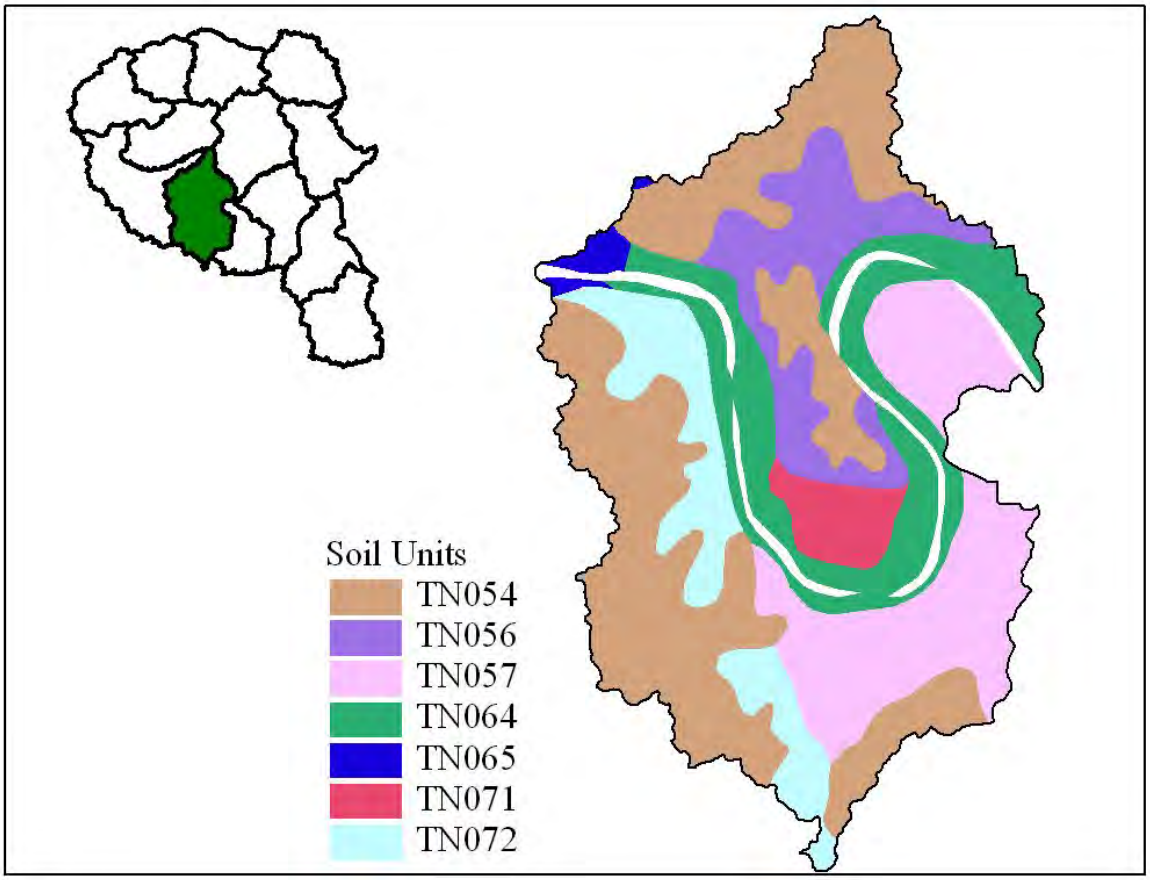


Figure 4-46. STATSGO (State Soil Geographic Database) Soil Map Units in Subwatershed 051302020104.

STATSGO MAP UNIT ID	PERCENT HYDRIC	HYDROLOGIC GROUP	PERMEABILITY (in/hour)	SOIL pH	ESTIMATED SOIL TEXTURE	SOIL ERODIBILITY
TN054	0.00	C	3.04	4.84	Loam	0.32
TN056	0.00	C	2.99	5.29	Sandy Clay Loam	0.25
TN057	0.00	C	1.14	5.01	Clay Loam	0.33
TN064	7.00	C	1.19	5.82	Silty Loam	0.37
TN065	0.00	C	1.15	5.52	Loam	0.32
TN071	0.00	C	2.37	5.70	Silty Loam	0.33
TN072	0.00	B	3.70	5.57	Loam	0.31

Table 4-20. Soil Characteristics by STATSGO (State Soil Geographic Database) Soil Map Units in Subwatershed 051302020104. *The definition of "Hydrologic Group" is provided in Appendix IV.*

	COUNTY POPULATION				ESTIMATED POPULATION IN WATERSHED			
County	1990	1997	2000	% of County in Watershed	1990	1997	2000	% Change (1990-2000)
Cheatham	27,140	34,402	35,912	0.39	107	136	142	32.70
Davidson	510,784	535,032	569,891	10.35	52,884	55,395	59,004	11.60
Totals	**537,924**	**569,434**	**605,803**		**52,991**	**55,531**	**59,146**	**11.60**

Table 4-21. Population Estimates in Subwatershed 051302020104.

			NUMBER OF HOUSING UNITS			
Populated Place	County	Population	Total	Public Sewer	Septic Tank	Other
Nashville-Davidson	Davidson	488,518	219,521	203,640	15,576	305

Table 4-22. Housing and Sewage Disposal Practices of Select Communities in Subwatershed 051302020104.

4.2.D.ii. USGS Gaging Stations and STORET Sites.

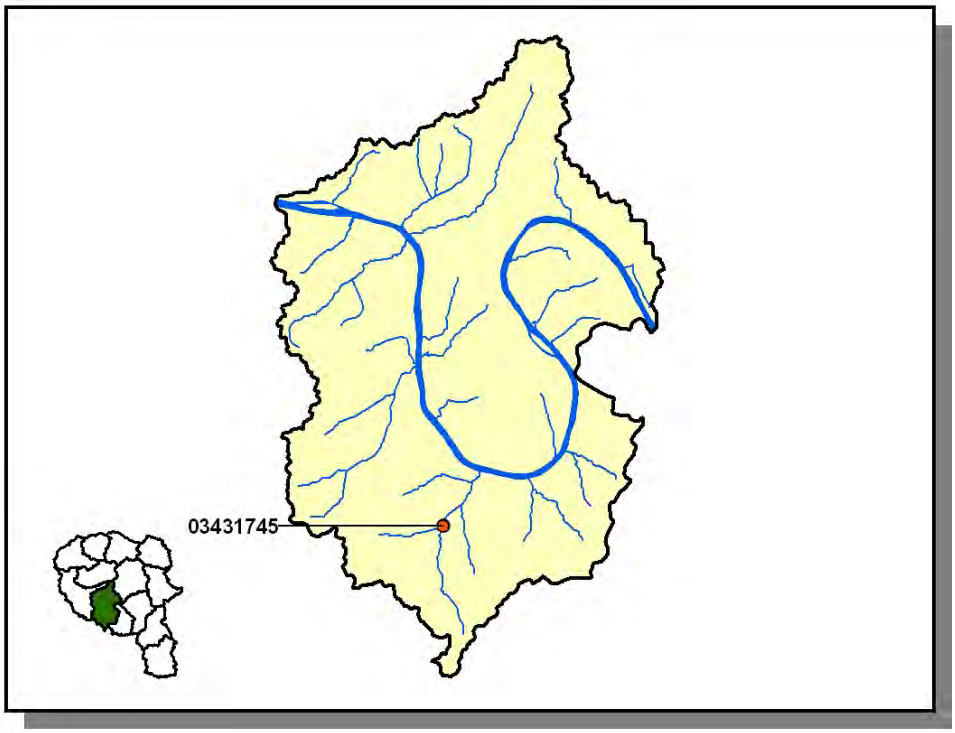


Figure 4-47. Location of USGS Continuous Record Gaging Stations in Subwatershed 051302020104. *More information is provided in Appendix IV.*

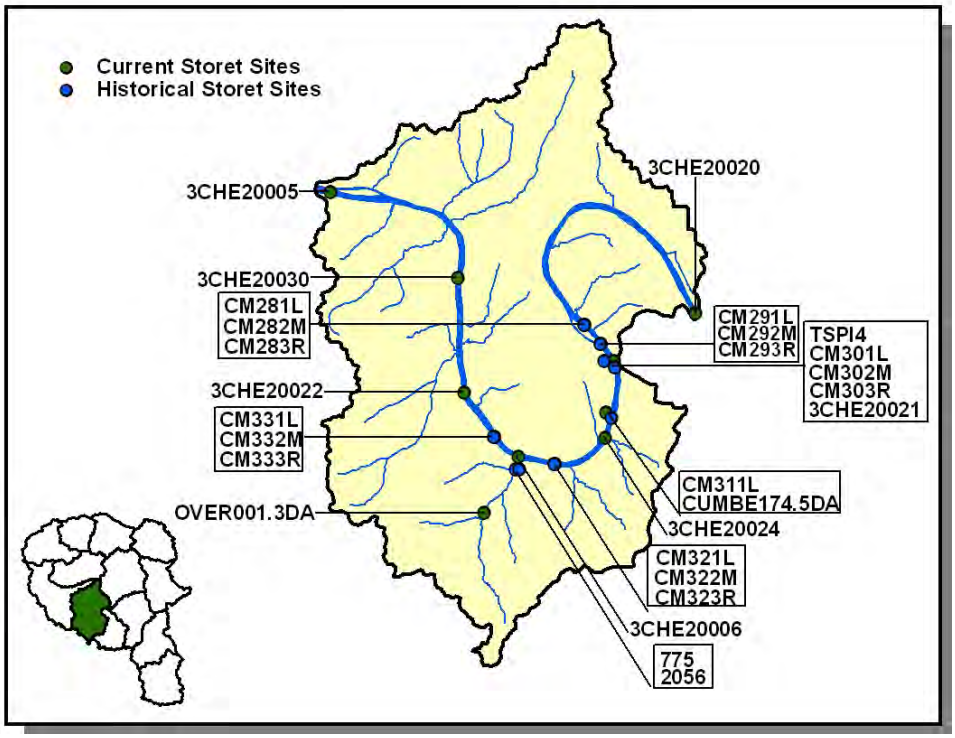


Figure 4-48. Location of Monitoring Sites in EPA's STORET Database in Subwatershed 051302020104. *More information, including site names and locations, is provided in Appendix IV.*

4.2.D.iii. Permitted Activities.

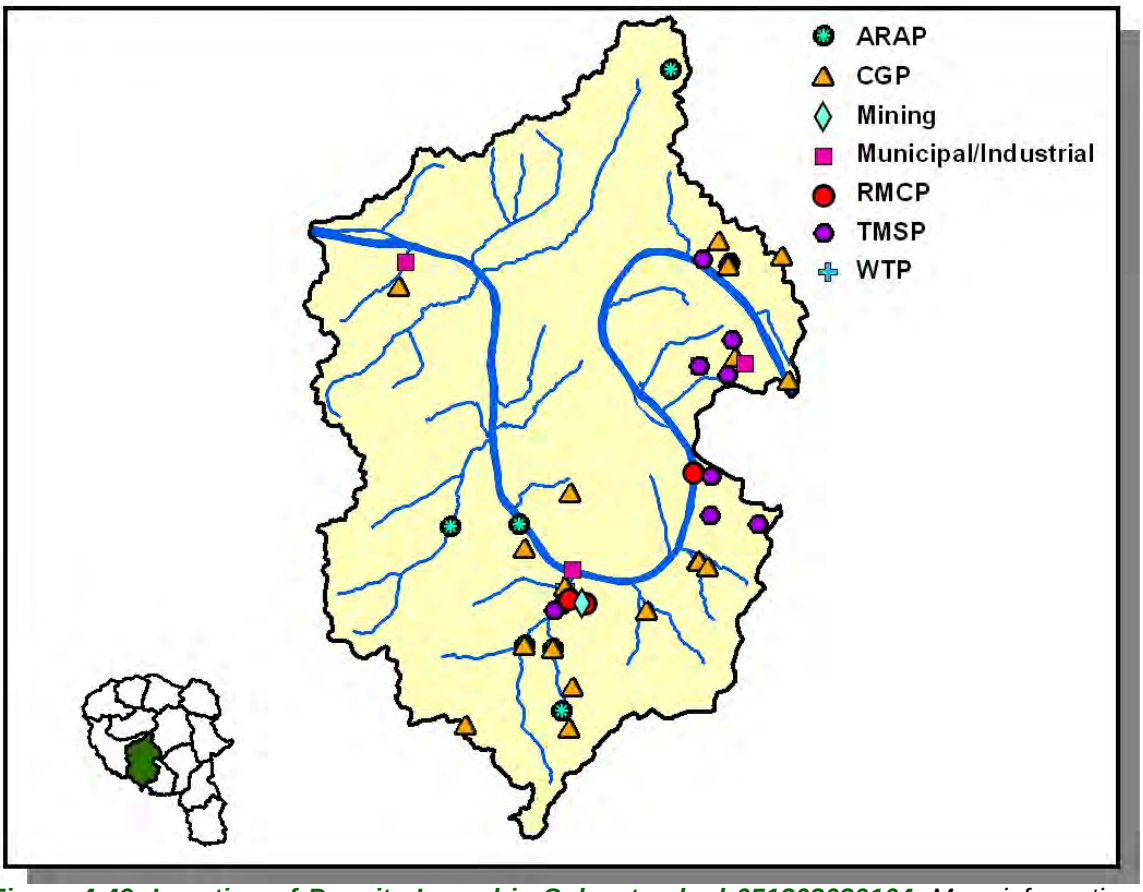


Figure 4-49. Location of Permits Issued in Subwatershed 051302020104. *More information, including the names of facilities, is provided in Appendix IV.*

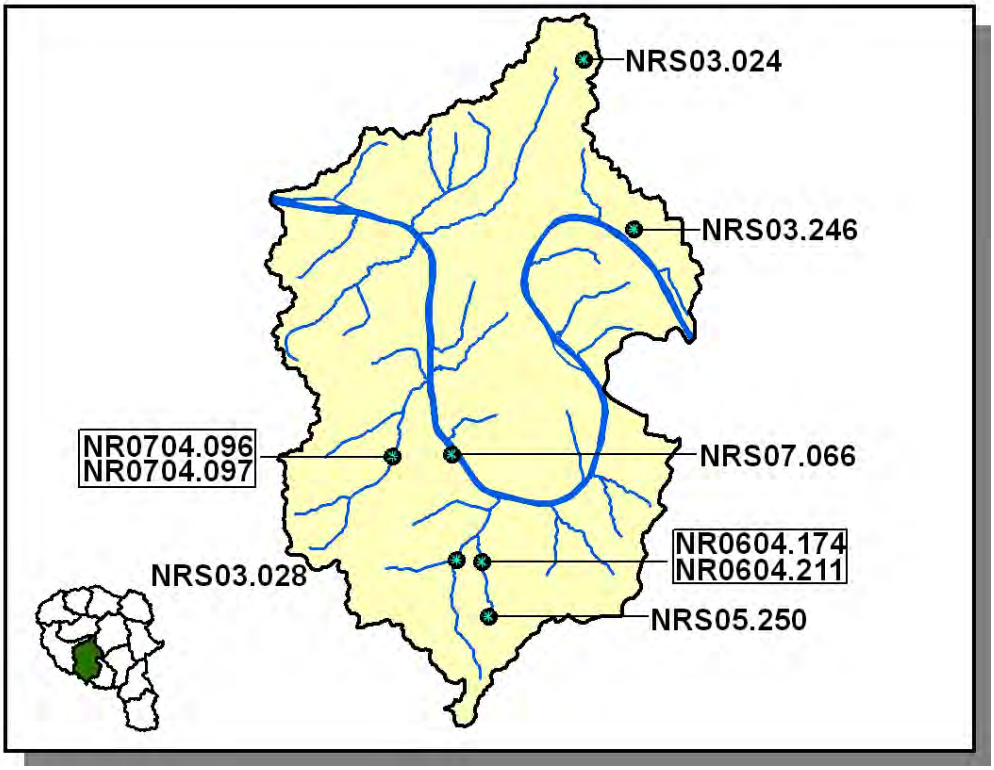


Figure 4-50. Location of ARAP (Aquatic Resource Alteration Permit) Sites in Subwatershed 051302020104. *More information is provided in Appendix IV.*

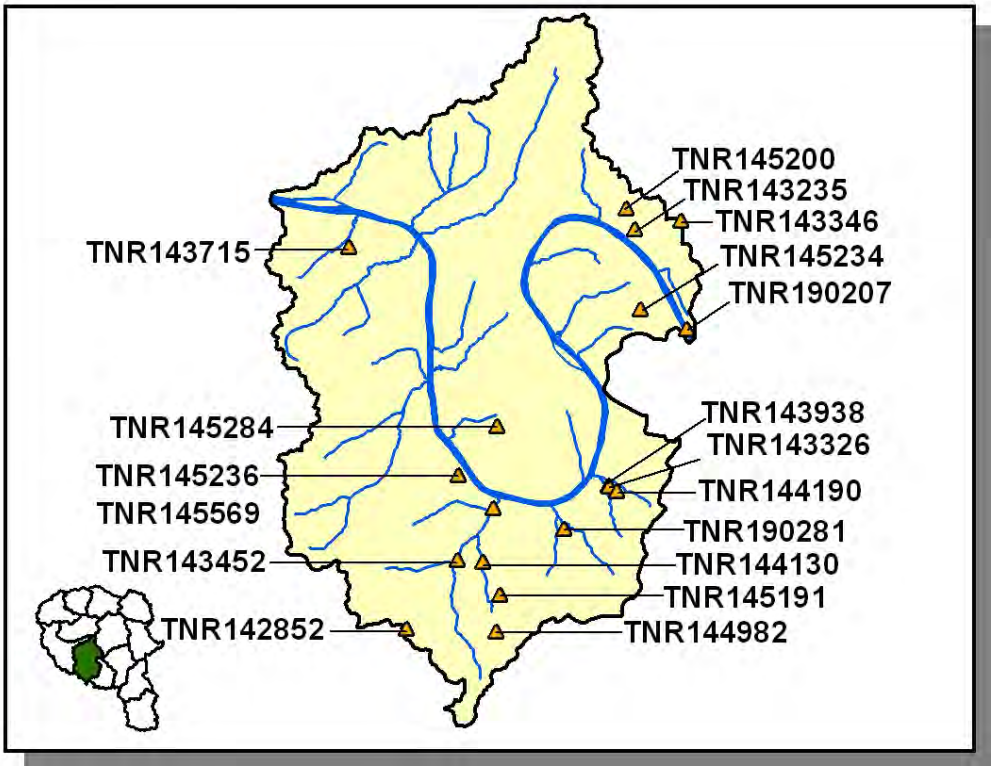


Figure 4-51. Location of CGP (Construction General Permit) Sites in Subwatershed 051302020104. *More information is provided in Appendix IV.*

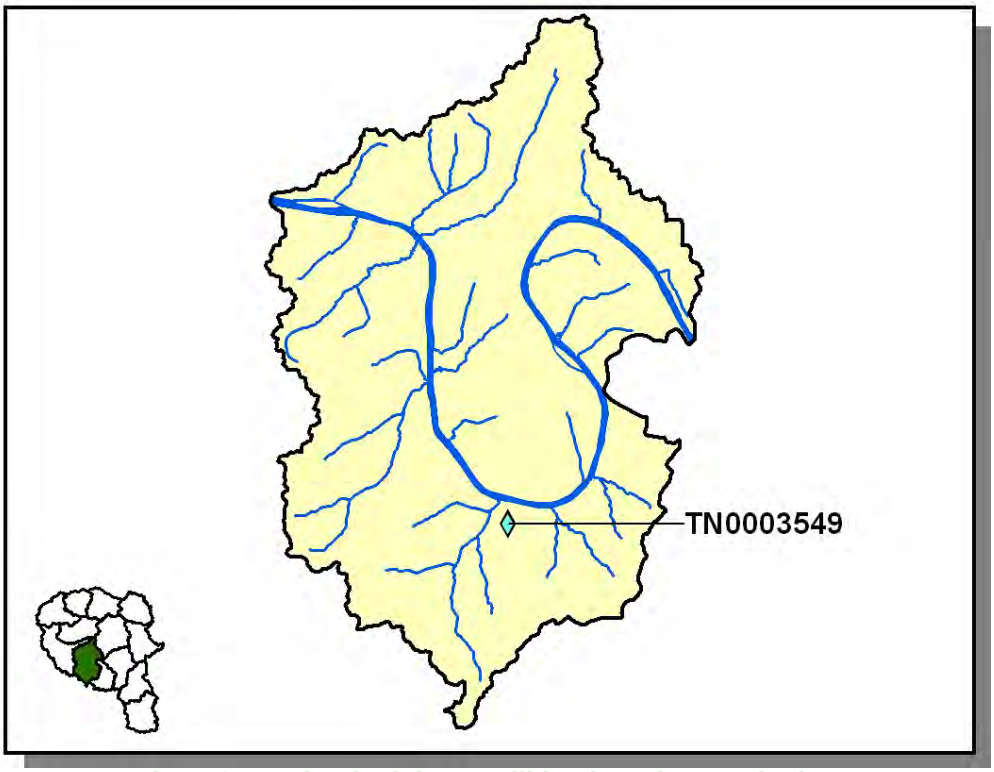


Figure 4-52. Location of Permitted Mining Facilities in Subwatershed 051302020104. *More information is provided in Appendix IV.*

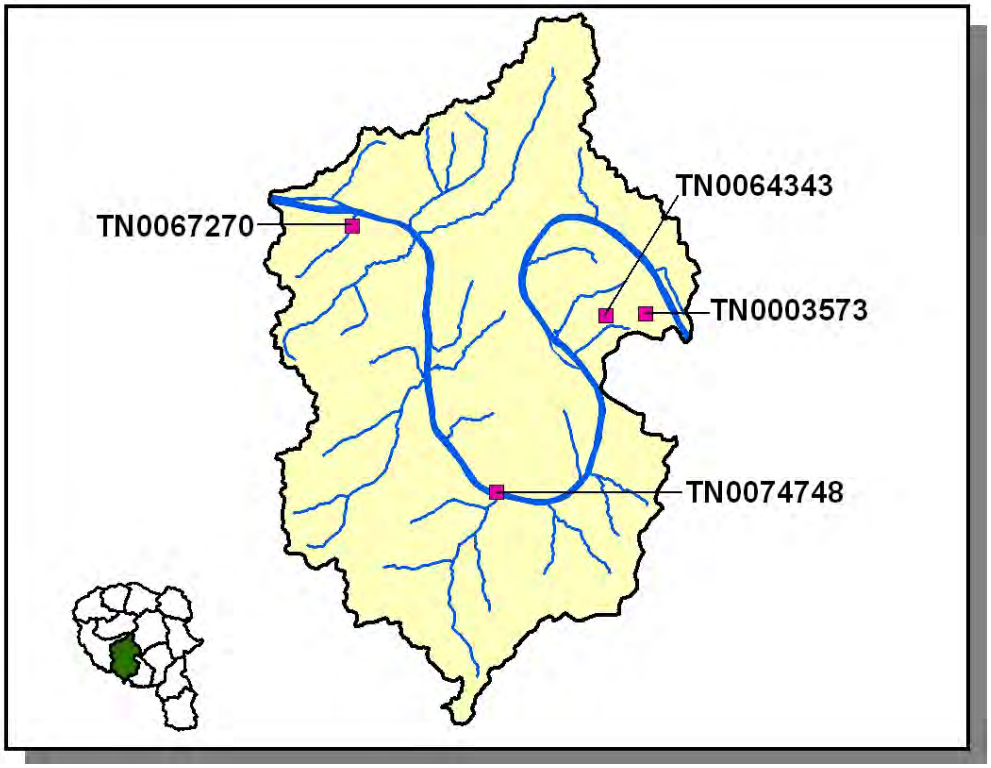


Figure 4-53. Location of Permitted Municipal and Industrial Facilities in Subwatershed 051302020104. *More information, including the name of the facility is provided in Appendix IV.*

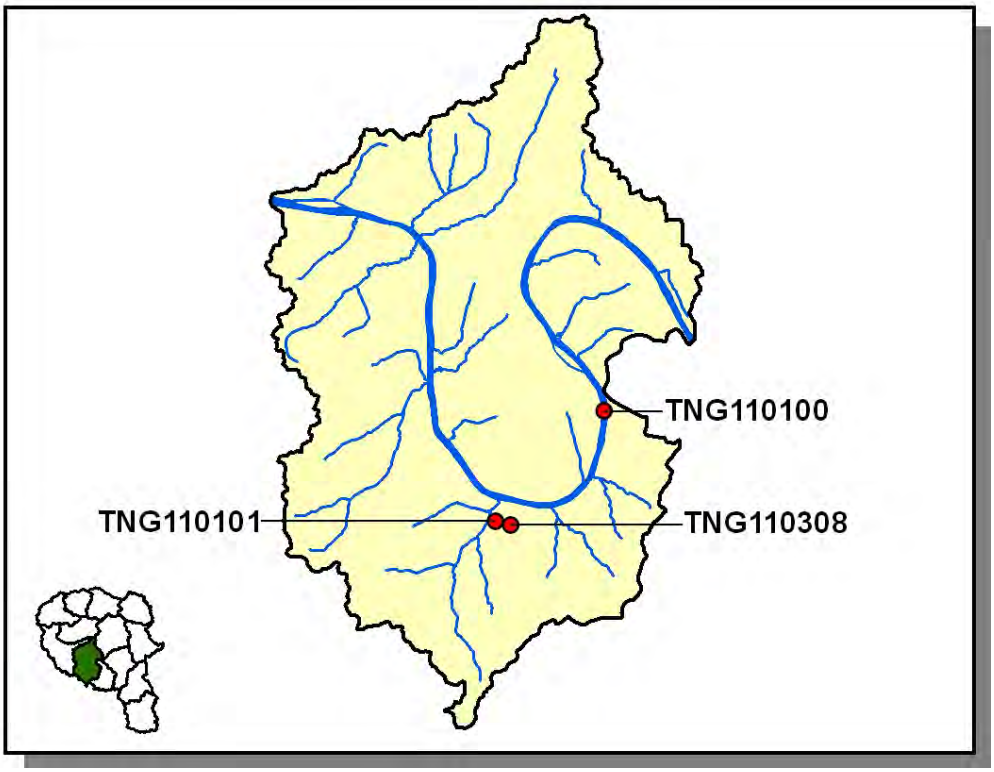


Figure 4-54. Location of RMCP (Ready Mix Concrete Plant) facilities in Subwatershed 051302020104. *More information, including the names of facilities, is provided in Appendix IV.*

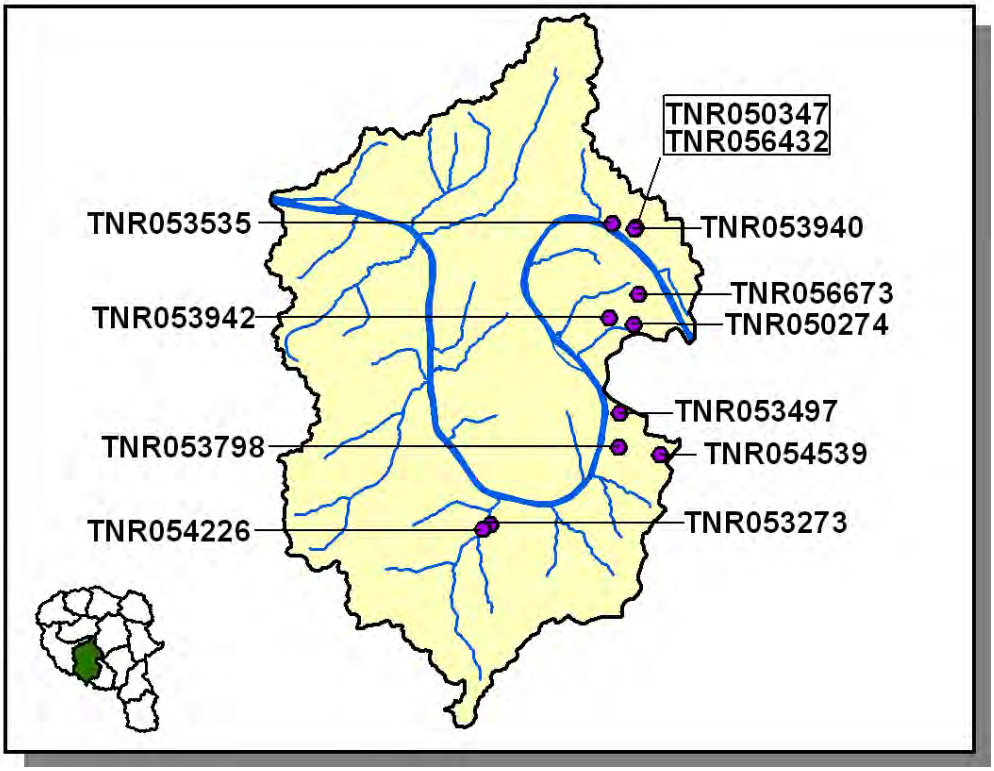


Figure 4-55. Location of TMSP (Tennessee Multi Sector Permit) Sites in Subwatershed 051302020104. *More information is provided in Appendix IV.*

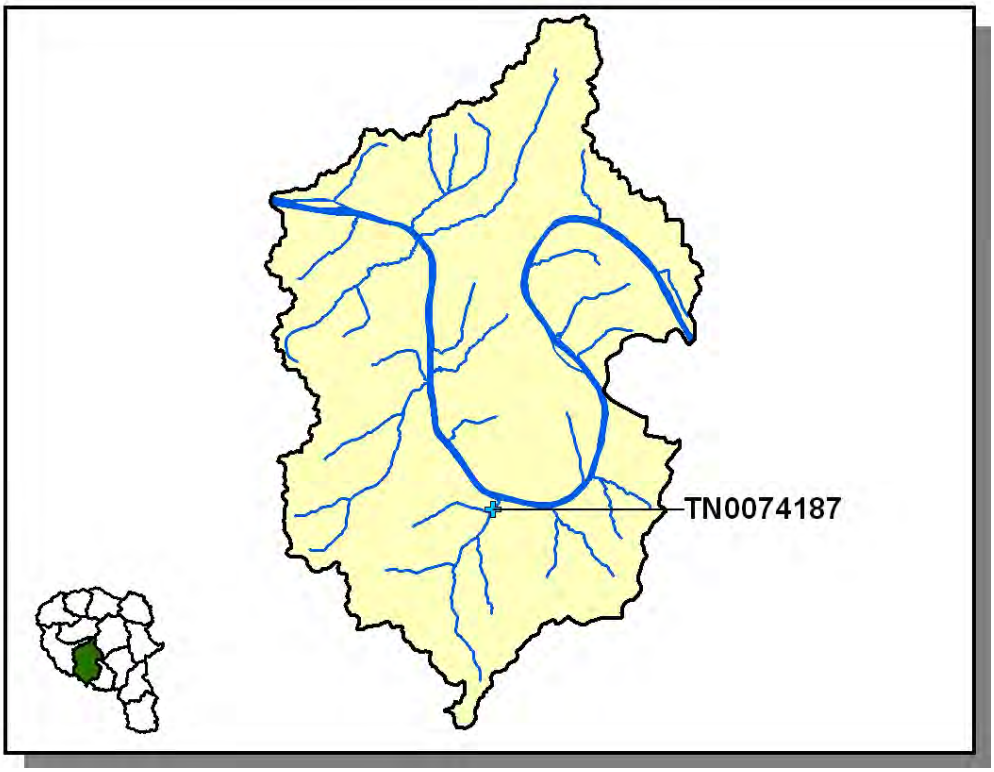


Figure 4-56. Location of Active WTP (Water Treatment Plant) Facilities in Subwatershed 051302020104. *More information, including the names of facilities, is provided in Appendix IV.*

4.2.D.iv. Nonpoint Source Contributions.

LIVESTOCK COUNTS						
County	Beef Cow	Cattle	Milk Cow	Chickens (Layers)	Hogs	Sheep
Cheatham		11,429		121	1,183	
Davidson		9,207		1,572	73	

Table 4-23. Summary of Livestock Count Estimates by County. *According to the 1997 Census of Agriculture (http://www.agcensus.usda.gov/), "Cattle" includes heifers, heifer calves, steers, bulls and bull calves; "Chickens" are layers 20 weeks and older.*

	INVENTORY		REMOVAL RATE	
County	Forest Land (thousand acres)	Timber Land (thousand acres)	Growing Stock (million cubic feet)	Sawtimber (million board feet)
Cheatham	118.2	118.2	2.3	8.4
Davidson	108.7	108.1	2.3	9.7

Table 4-24. Forest Acreage and Annual Removal Rates (1987-1994) by County.

CROPS	TONS/ACRE/YEAR
Soybeans (Row Crops)	14.89
Corn (Row Crops)	8.53
All Other Close Grown Cropland	2.26
Grass Forbs Legumes Mixed (Pastureland)	0.54
Other Cropland not Planted	0.52
Grass (Pastureland)	0.44
Legume (Hayland)	0.38
Farmsteads and Ranch Headquarters	0.33
Legume Grass (Hayland)	0.29
Grass (Hayland)	0.08

Table 4-25. Annual Estimated Total Soil Loss in Subwatershed 051302020104.

4.2.E. 051302020105 (Whites Creek).

4.2.E.i. General Description.

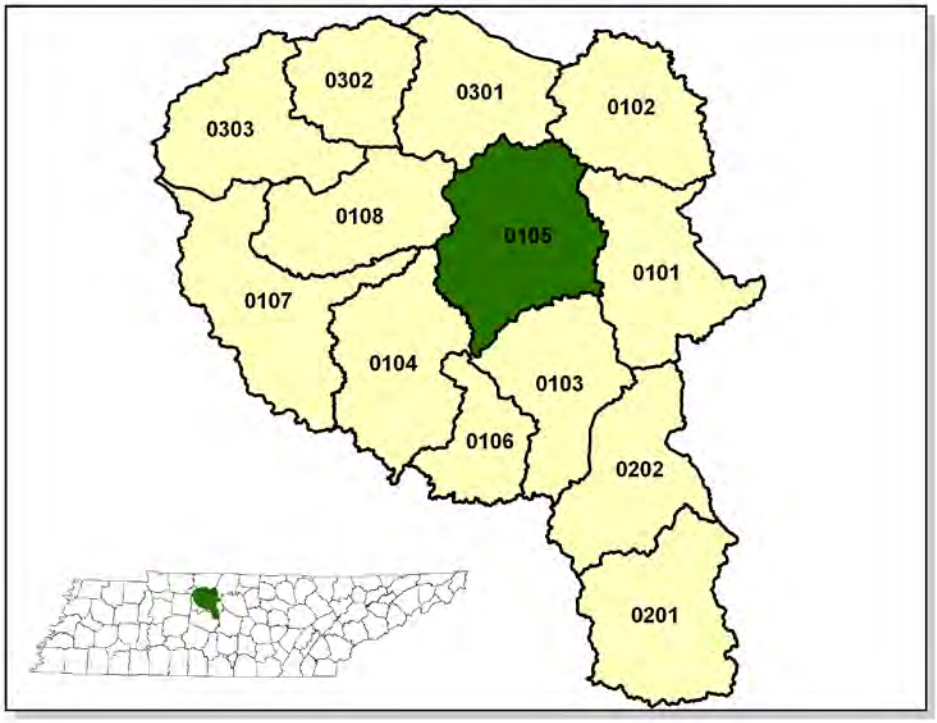


Figure 4-57. Location of Subwatershed 051302020105. *All Cheatham Lake HUC-12 subwatershed boundaries are shown for reference.*

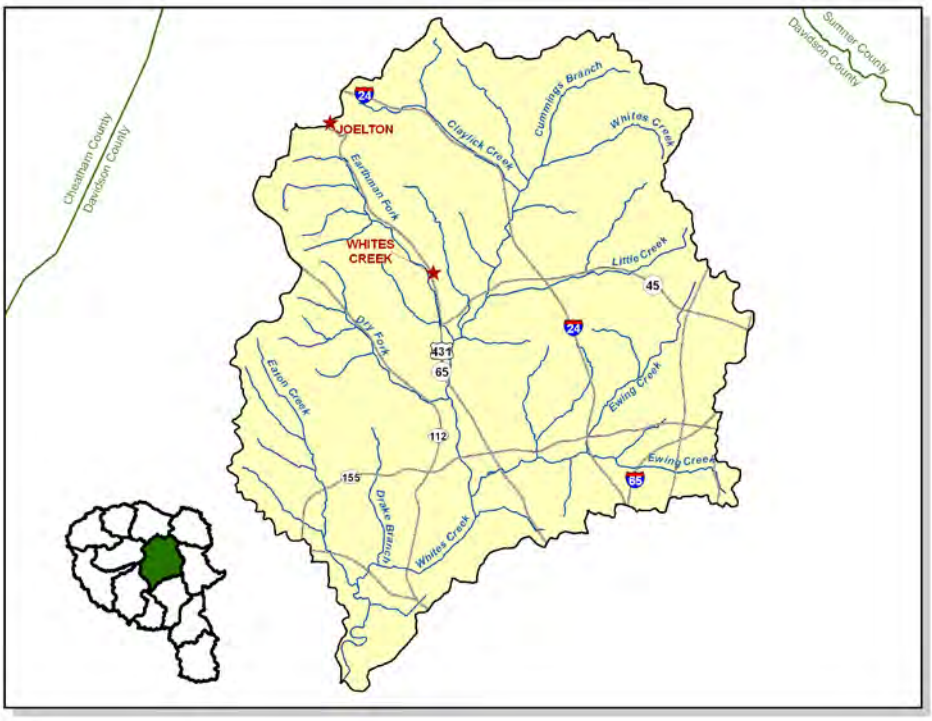


Figure 4-58. Locational Details of Subwatershed 051302020105.

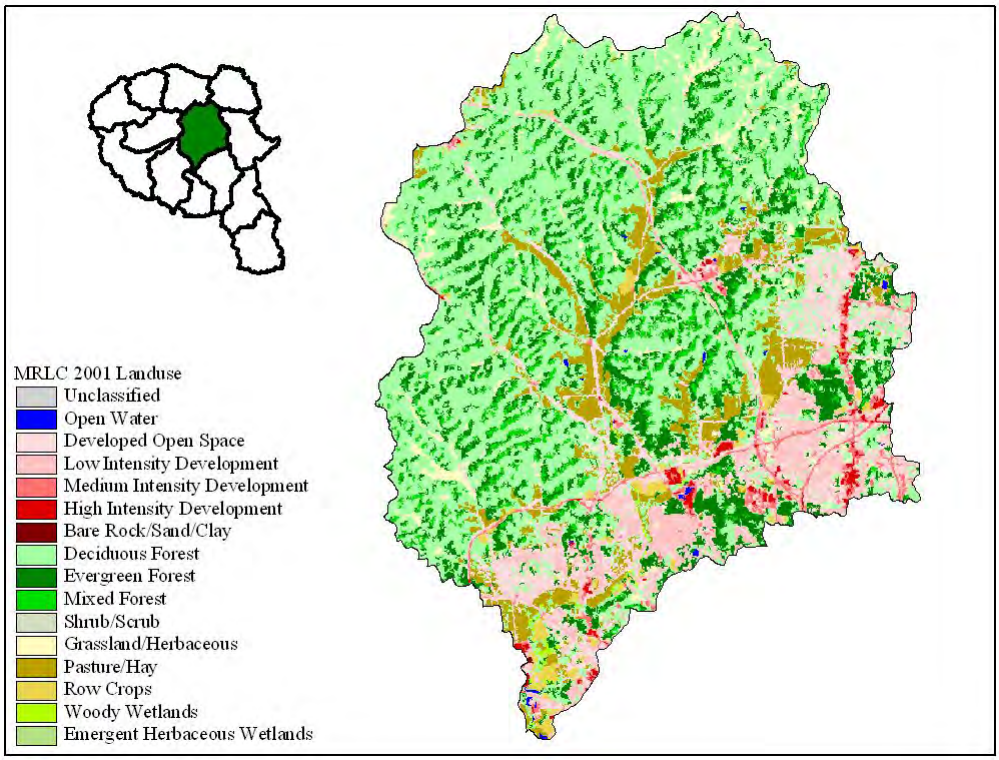


Figure 4-59. Illustration of Land Use Distribution in Subwatershed 051302020105.

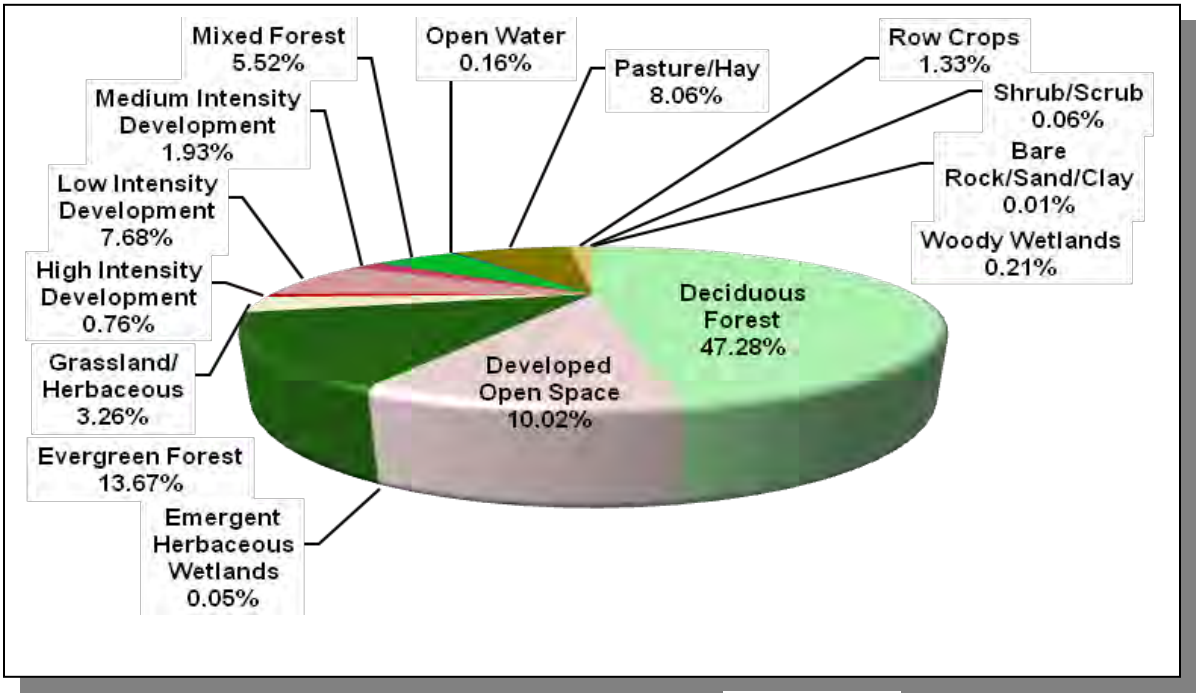


Figure 4-60. Land Use Distribution in Subwatershed 051302020105. *More information is provided in Appendix IV.*

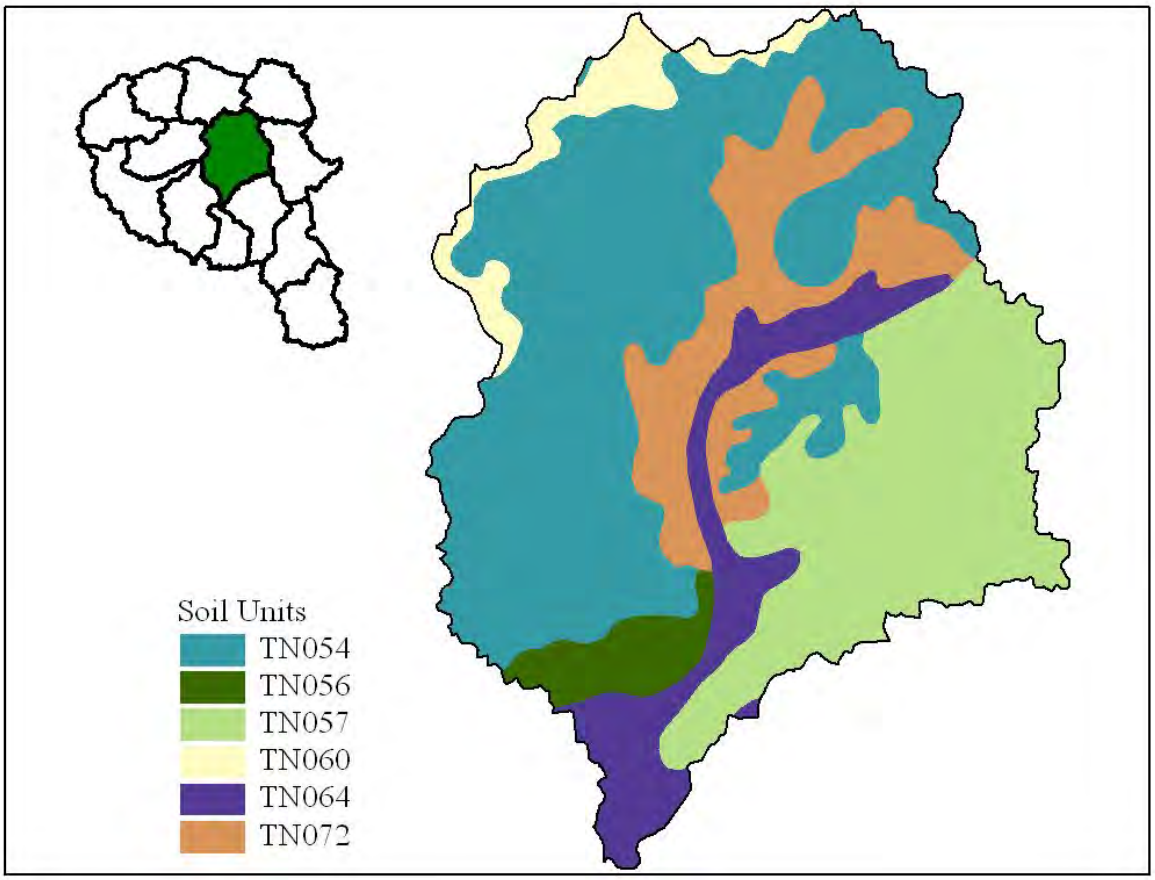


Figure 4-61. STATSGO (State Soil Geographic Database) Soil Map Units in Subwatershed 051302020105.

STATSGO MAP UNIT ID	PERCENT HYDRIC	HYDROLOGIC GROUP	PERMEABILITY (in/hour)	SOIL pH	ESTIMATED SOIL TEXTURE	SOIL ERODIBILITY
TN054	0.00	C	3.04	4.84	Loam	0.32
TN056	0.00	C	2.99	5.29	Sandy Clay Loam	0.25
TN057	0.00	C	1.14	5.01	Clay Loam	0.33
TN060	5.00	B	1.30	5.32	Silty Loam	0.39
TN064	7.00	C	1.19	5.82	Silty Loam	0.37
TN072	0.00	B	3.70	5.57	Loam	0.31

Table 4-26. Soil Characteristics by STATSGO (State Soil Geographic Database) Soil Map Units in Subwatershed 051302020105. *The definition of "Hydrologic Group" is provided in Appendix IV.*

	COUNTY POPULATION				ESTIMATED POPULATION IN WATERSHED			
County	1990	1997	2000	% of County in Watershed	1990	1997	2000	% Change (1990-2000)
Davidson	510,784	535,032	569,891	12.07	61,639	64,565	68771	11.60

Table 4-27. Population Estimates in Subwatershed 051302020105.

			NUMBER OF HOUSING UNITS			
Populated Place	County	Population	Total	Public Sewer	Septic Tank	Other
Nashville-Davidson	Davidson	488,518	219,521	203,640	15,576	305

Table 4-28. Housing and Sewage Disposal Practices of Select Communities in Subwatershed 051302020105.

4.2.E.ii. USGS Gaging Stations and STORET Sites.

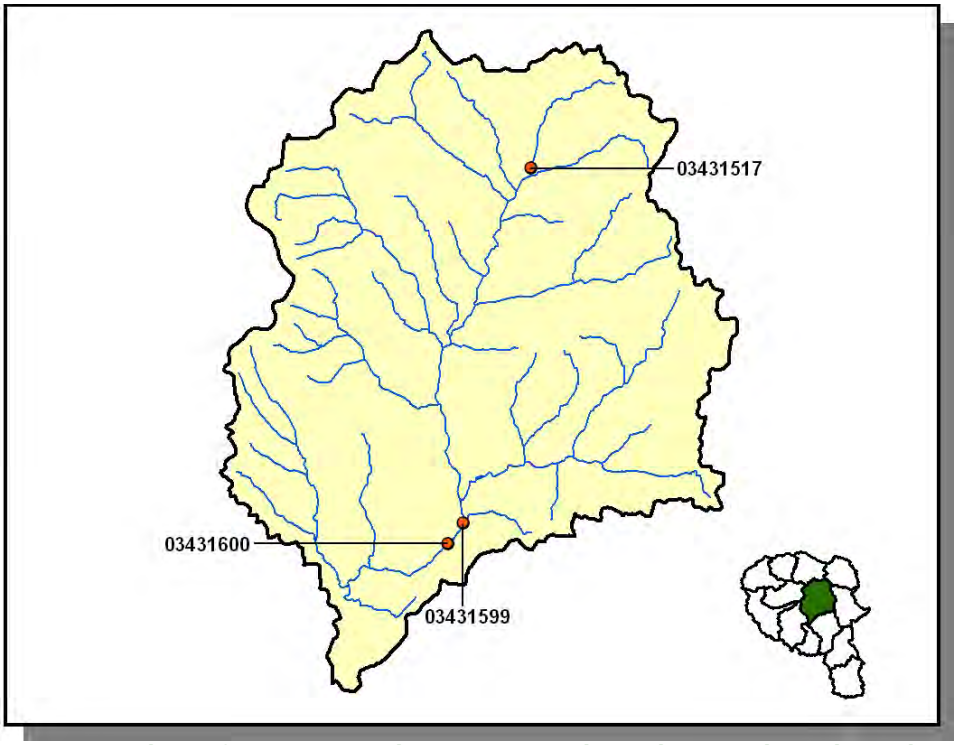


Figure 4-62. Location of USGS Continuous Record Gaging Stations in Subwatershed 051302020105. *More information is provided in Appendix IV.*

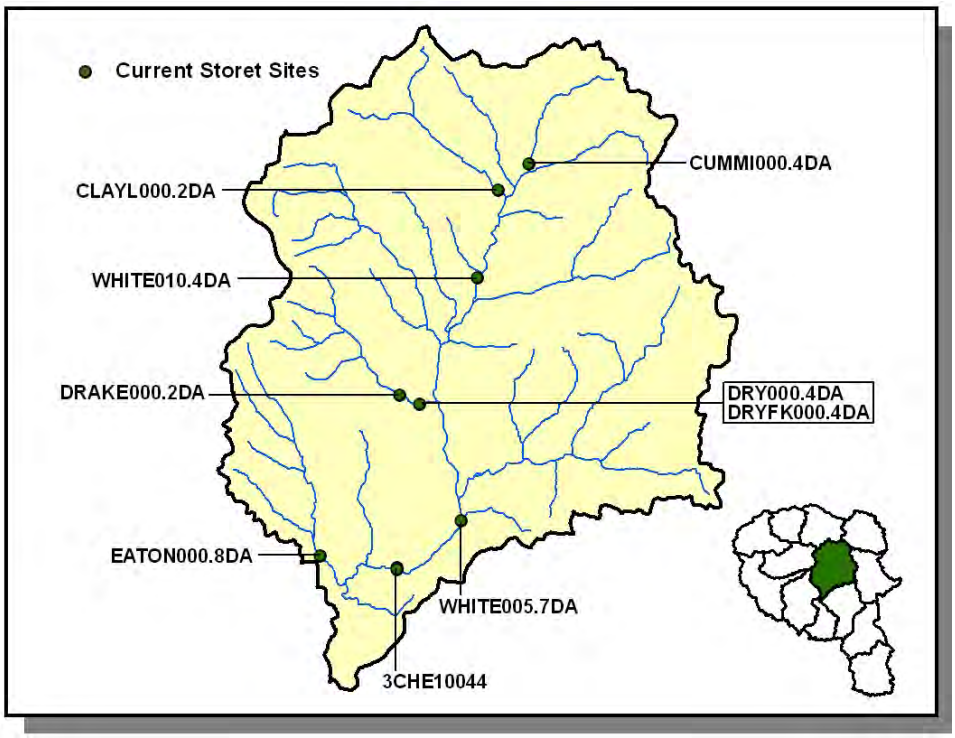


Figure 4-63. Location of Monitoring Sites in EPA's STORET Database in Subwatershed 051302020105. *More information, including site names and locations, is provided in Appendix IV.*

4.2.E.iii. Permitted Activities.

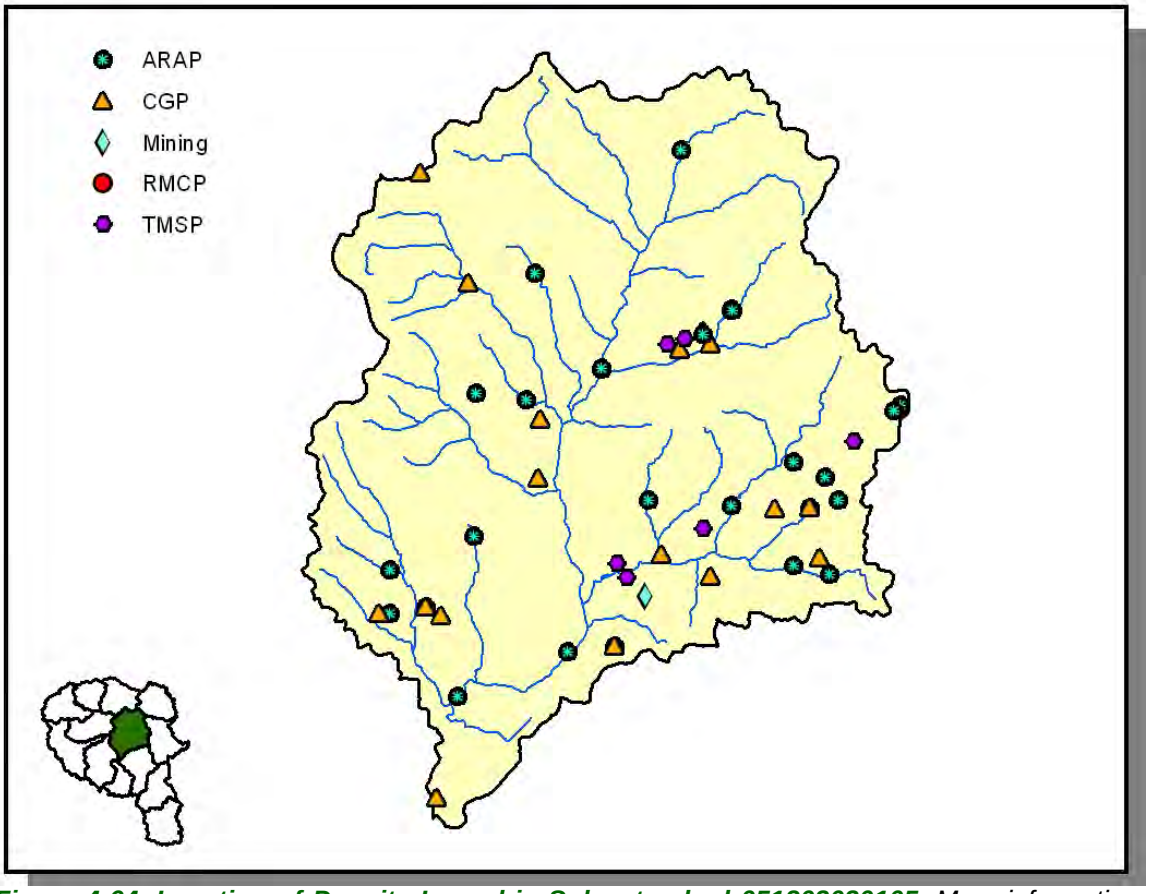


Figure 4-64. Location of Permits Issued in Subwatershed 051302020105. *More information, including the names of facilities, is provided in Appendix IV.*

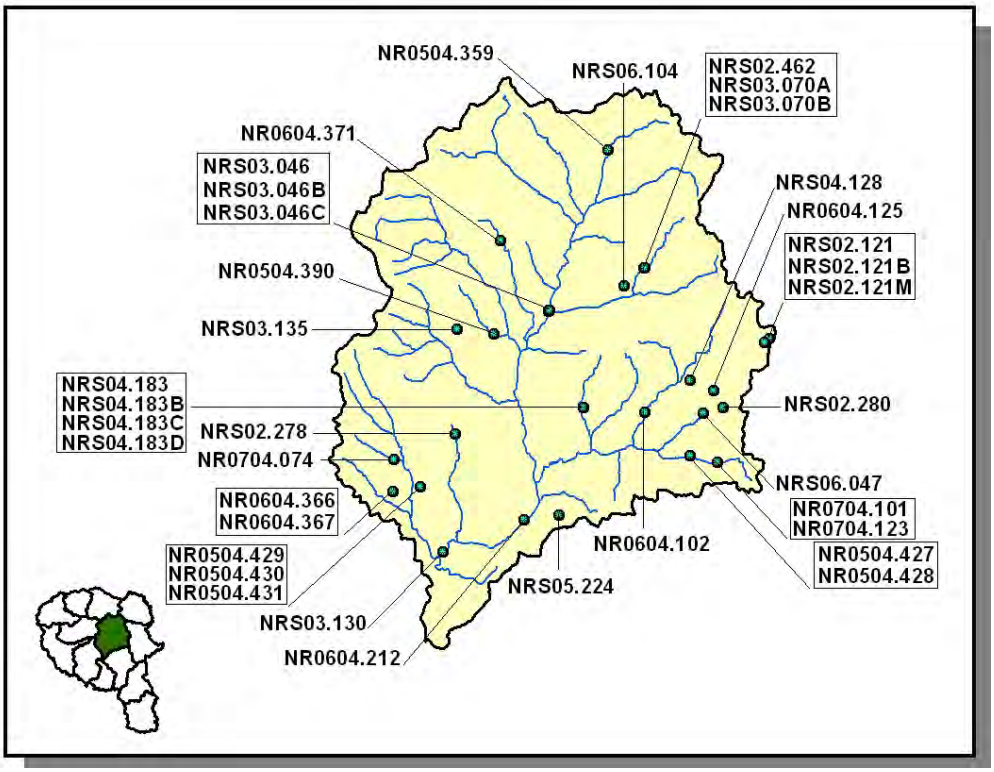


Figure 4-65. Location of ARAP (Aquatic Resource Alteration Permit) Sites in Subwatershed 051302020105. *More information is provided in Appendix IV.*

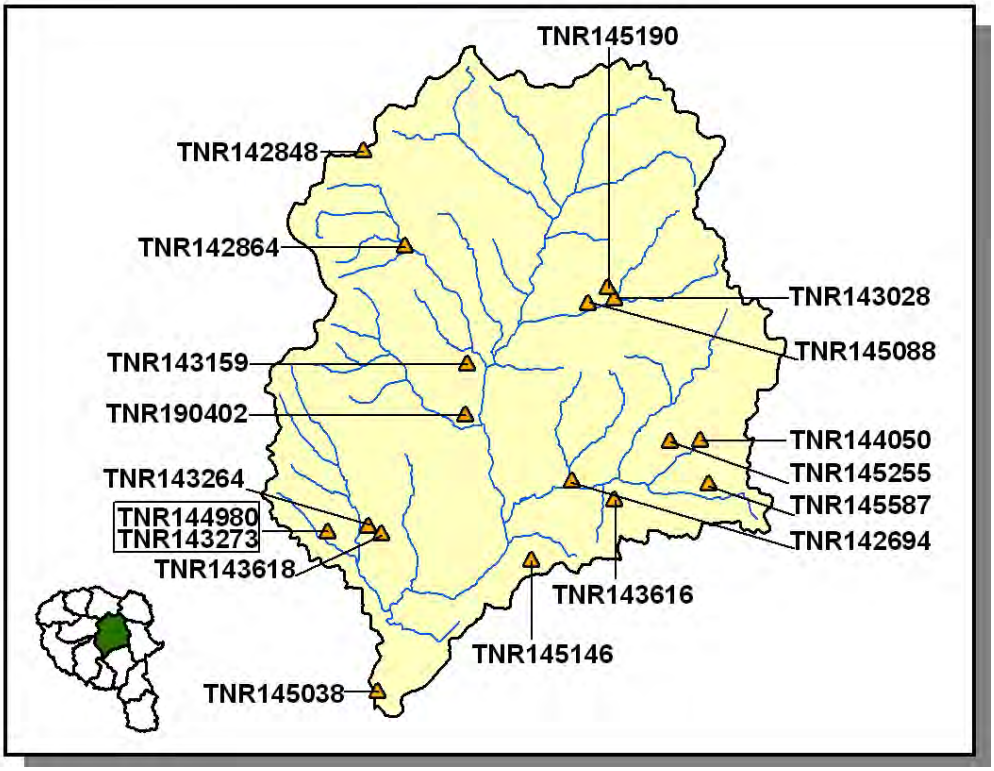


Figure 4-66. Location of CGP (Construction General Permit) Sites in Subwatershed 051302020105. *More information is provided in Appendix IV.*

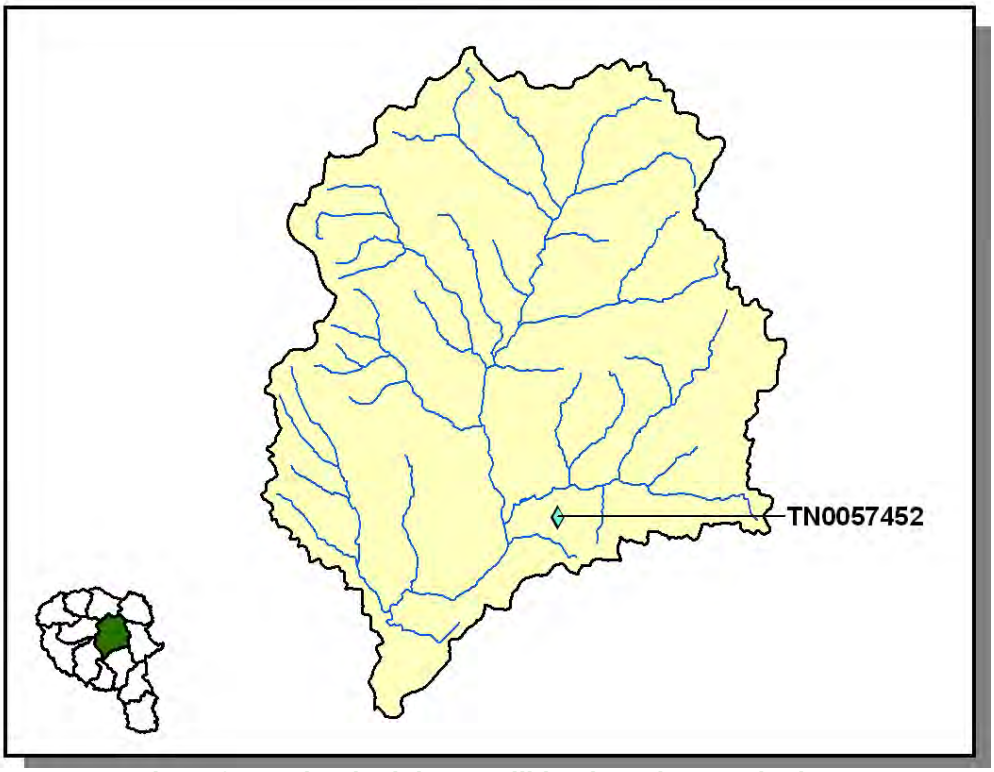


Figure 4-67. Location of Permitted Mining Facilities in Subwatershed 051302020105. *More information is provided in Appendix IV.*

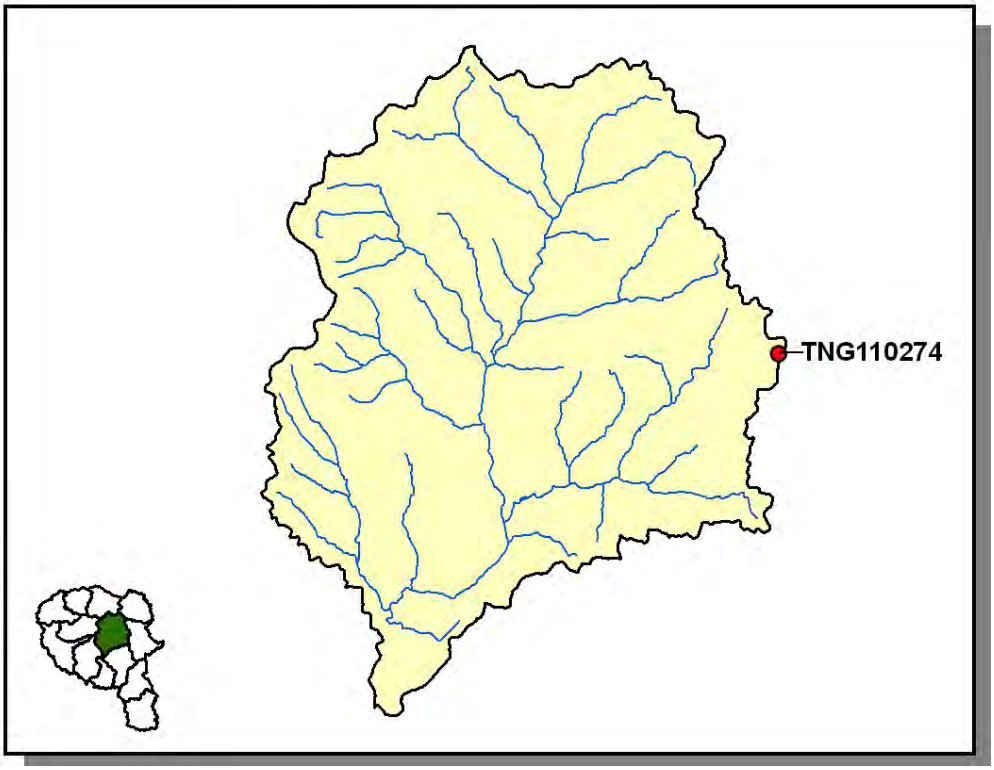


Figure 4-68. Location of RMCP (Ready Mix Concrete Plant) facilities in Subwatershed 051302020105. *More information, including the names of facilities, is provided in Appendix IV.*

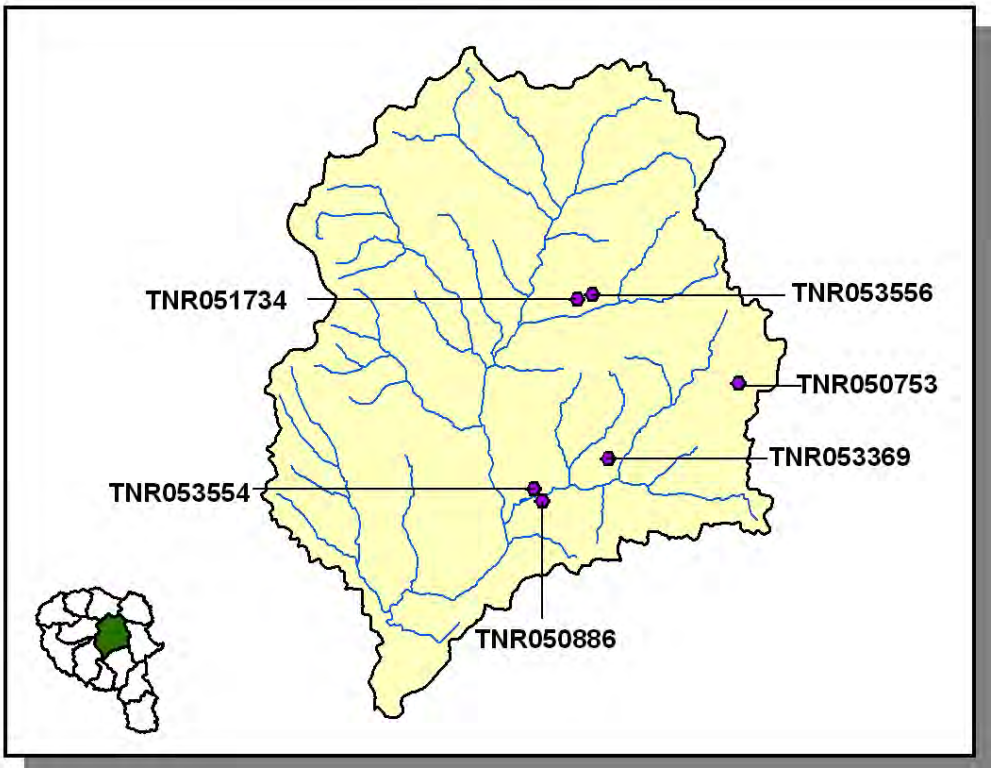


Figure 4-69. Location of TMSP (Tennessee Multi Sector Permit) Sites in Subwatershed 051302020105. *More information is provided in Appendix IV.*

4.2.E.iv. Nonpoint Source Contributions.

LIVESTOCK COUNTS						
County	Beef Cow	Cattle	Milk Cow	Chickens (Layers)	Hogs	Sheep
Davidson		9,207		1,572	73	

Table 4-29. Summary of Livestock Count Estimates by County. *According to the 1997 Census of Agriculture (http://www.agcensus.usda.gov/), "Cattle" includes heifers, heifer calves, steers, bulls and bull calves; "Chickens" are layers 20 weeks and older.*

	INVENTORY		REMOVAL RATE	
County	Forest Land (thousand acres)	Timber Land (thousand acres)	Growing Stock (million cubic feet)	Sawtimber (million board feet)
Davidson	108.7	108.1	2.3	9.7

Table 4-30. Forest Acreage and Annual Removal Rates (1987-1994) by County.

CROPS	TONS/ACRE/YEAR
Soybeans (Row Crops)	15.01
All Other Close Grown Cropland	2.26
Grass Forbs Legumes Mixed (Pastureland)	0.53
Grass (Pastureland)	0.44
Farmsteads and Ranch Headquarters	0.33
Grass (Hayland)	0.07

Table 4-31. Annual Estimated Total Soil Loss in Subwatershed 051302020105.

4.2.F. 051302020106 (Richland Creek).

4.2.F.i. General Description

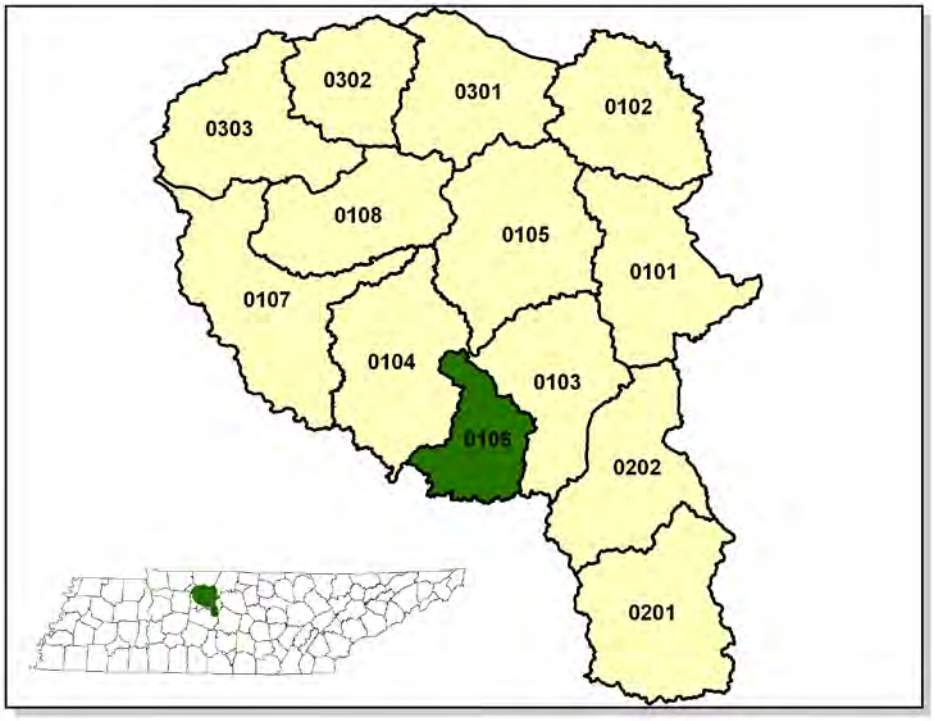


Figure 4-70. Location of Subwatershed 051302020106. *All Cheatham Lake HUC-12 subwatershed boundaries are shown for reference.*

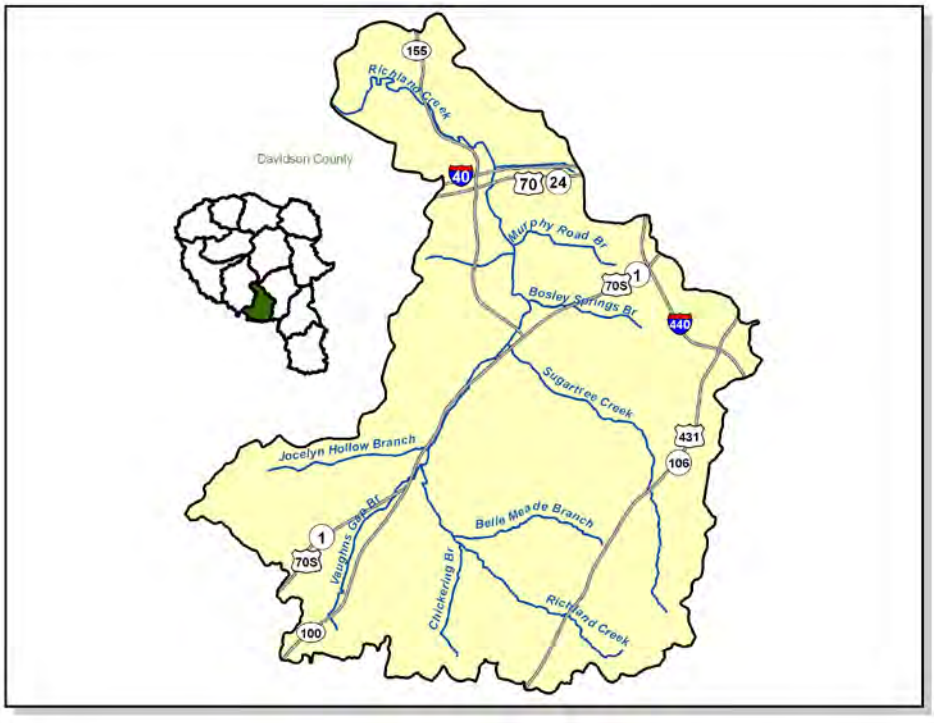


Figure 4-71. Locational Details of Subwatershed 051302020106.

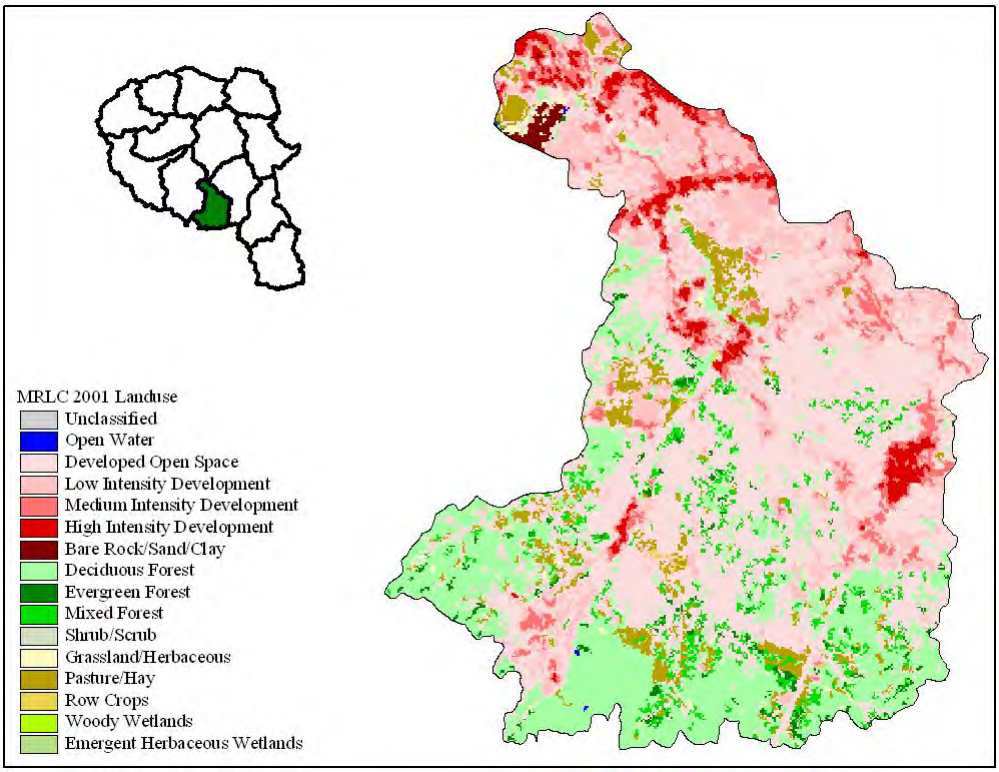


Figure 4-72. Illustration of Land Use Distribution in Subwatershed 051302020106.

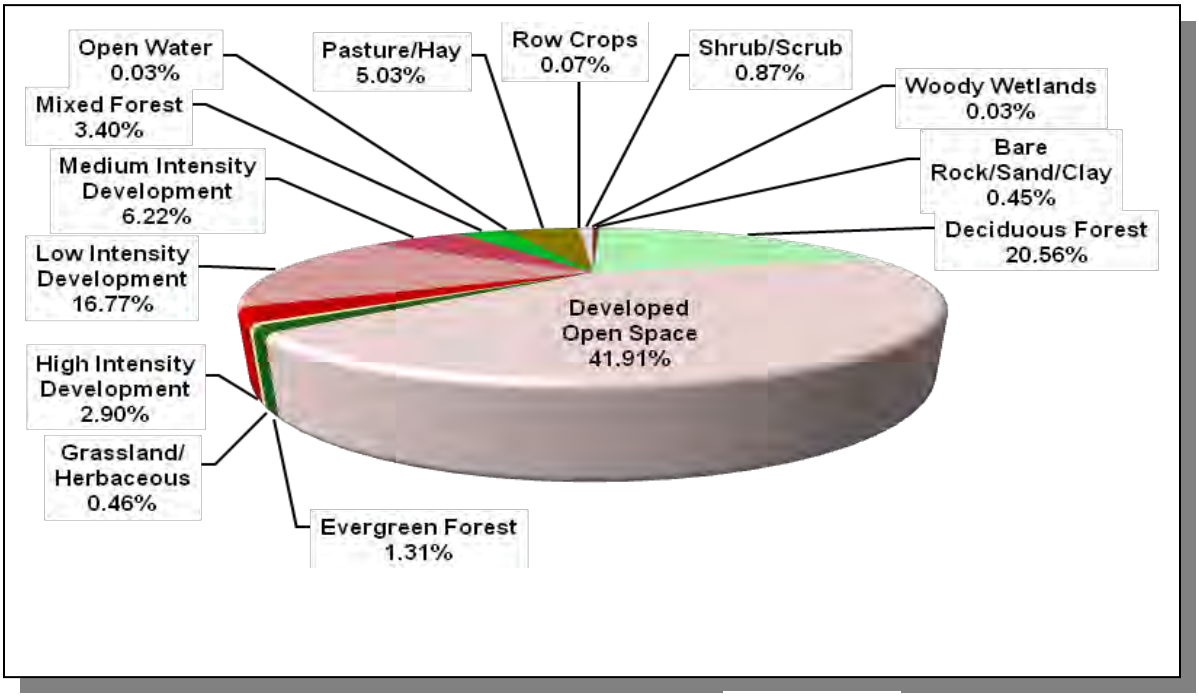


Figure 4-73. Land Use Distribution in Subwatershed 051302020106. *More information is provided in Appendix IV.*

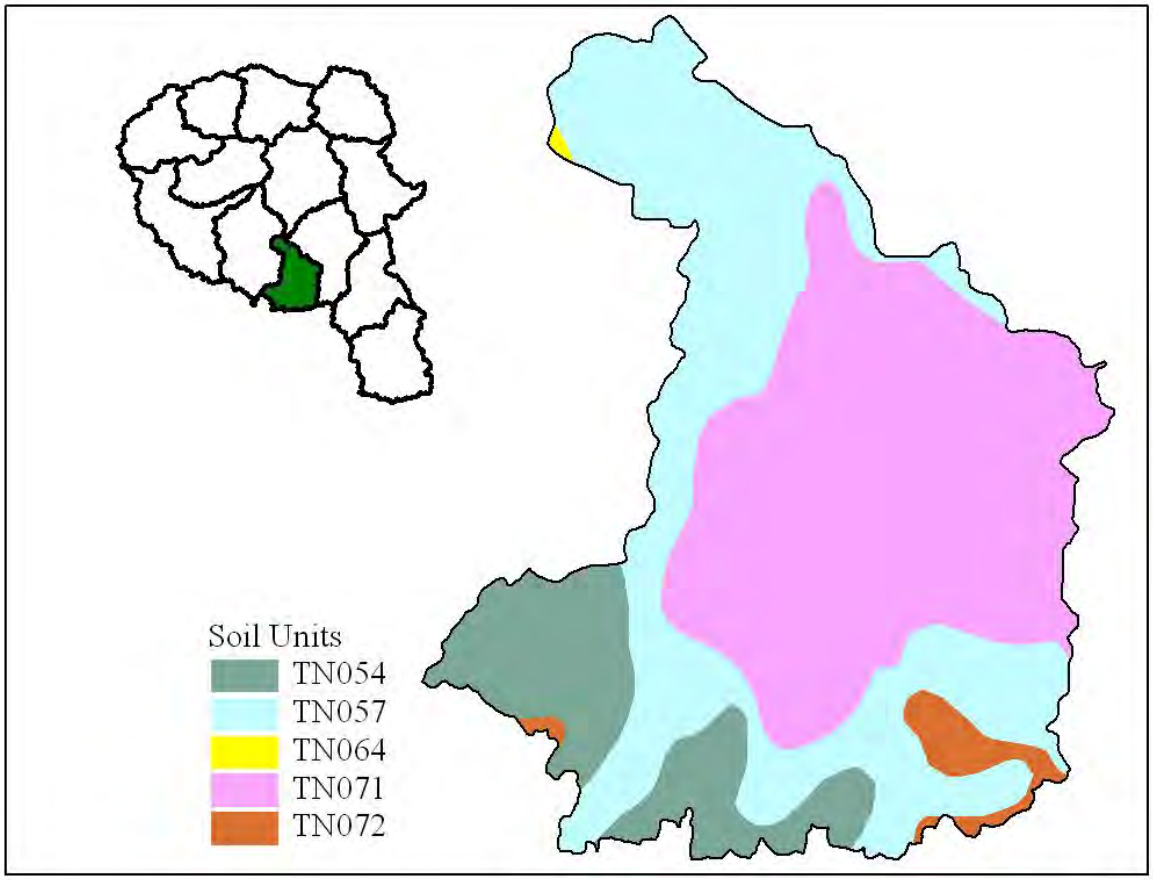


Figure 4-74. STATSGO (State Soil Geographic Database) Soil Map Units in Subwatershed 051302020106.

STATSGO MAP UNIT ID	PERCENT HYDRIC	HYDROLOGIC GROUP	PERMEABILITY (in/hour)	SOIL pH	ESTIMATED SOIL TEXTURE	SOIL ERODIBILITY
TN054	0.00	C	3.04	4.84	Loam	0.32
TN057	0.00	C	1.14	5.01	Clay Loam	0.33
TN064	7.00	C	1.19	5.82	Silty Loam	0.37
TN071	0.00	C	2.37	5.70	Silty Loam	0.33
TN072	0.00	B	3.70	5.57	Loam	0.31

Table 4-32. Soil Characteristics by STATSGO (State Soil Geographic Database) Soil Map Units in Subwatershed 051302020106. *The definition of "Hydrologic Group" is provided in Appendix IV.*

	COUNTY POPULATION				ESTIMATED POPULATION IN WATERSHED			
County	1990	1997	2000	% of County in Watershed	1990	1997	2000	% Change (1990-2000)
Davidson	510,784	535,032	569,891	5.26	26,884	28,160	29,995	11.60

Table 4-33. Population Estimates in Subwatershed 051302020106.

			NUMBER OF HOUSING UNITS			
Populated Place	County	Population	Total	Public Sewer	Septic Tank	Other
Belle Meade	Davidson	2,830	1,145	1093	52	0
Forest Hills	Davidson	4,240	1,601	625	976	0
Nashville-Davidson	Davidson	488,518	219,521	203,640	15,576	305
Total		**495,588**	**222,267**	**205,358**	**16,604**	**305**

Table 4-34. Housing and Sewage Disposal Practices of Select Communities in Subwatershed 051302020106.

4.2.F.ii. USGS Gaging Stations and STORET Sites.

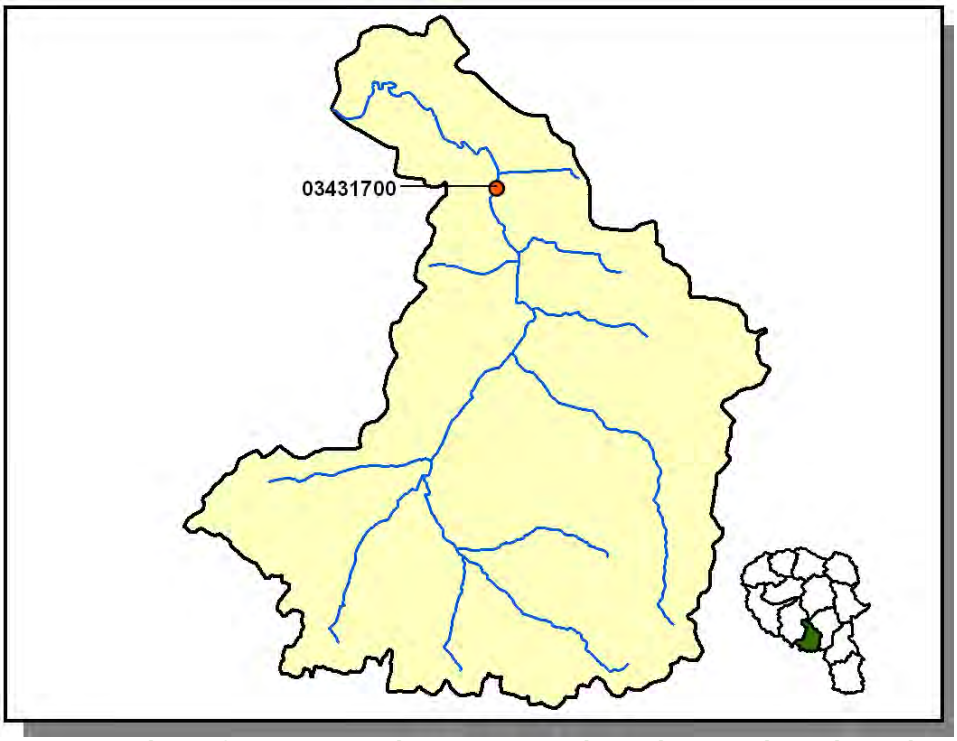


Figure 4-75. Location of USGS Continuous Record Gaging Stations in Subwatershed 051302020106. *More information is provided in Appendix IV.*

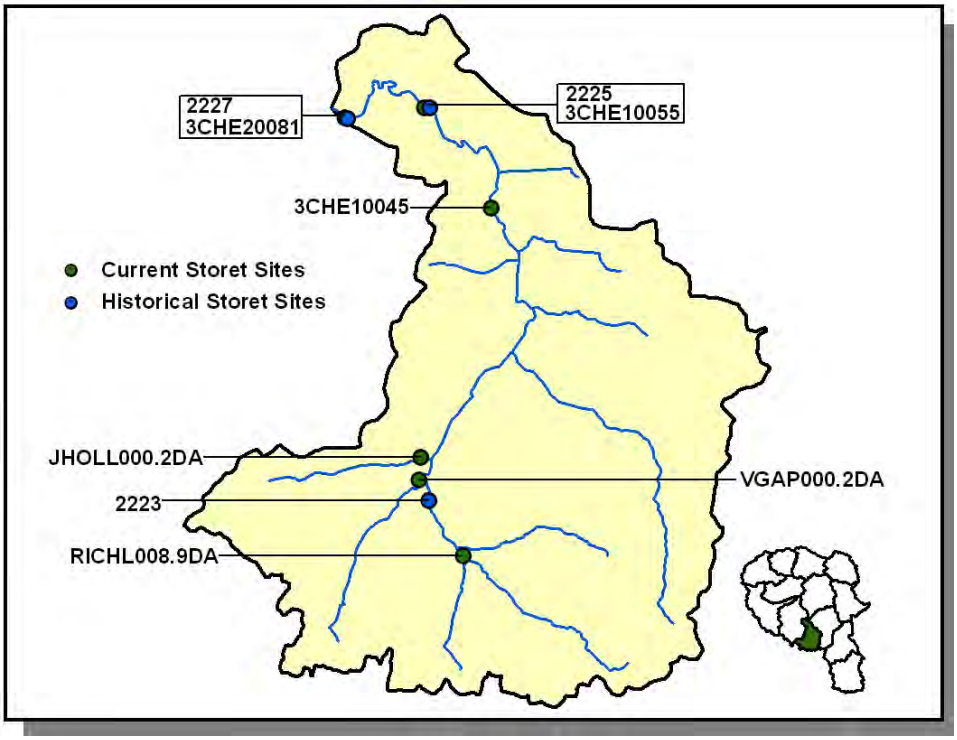


Figure 4-76. Location of Monitoring Sites in EPA's STORET Database in Subwatershed 051302020106. *More information, including site names and locations, is provided in Appendix IV.*

4.2.F.iii. Permitted Activities.

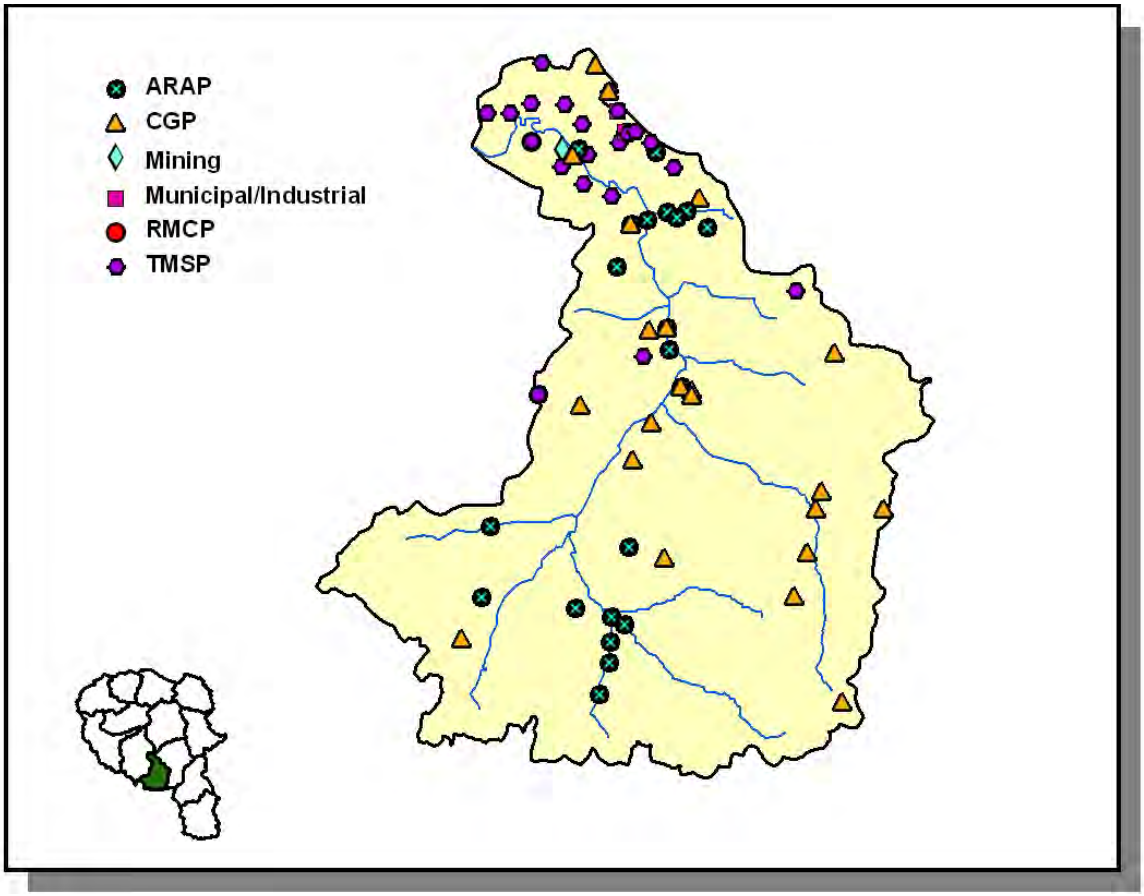


Figure 4-77. Location of Permits Issued in Subwatershed 051302020106. *More information, including the names of facilities, is provided in Appendix IV.*

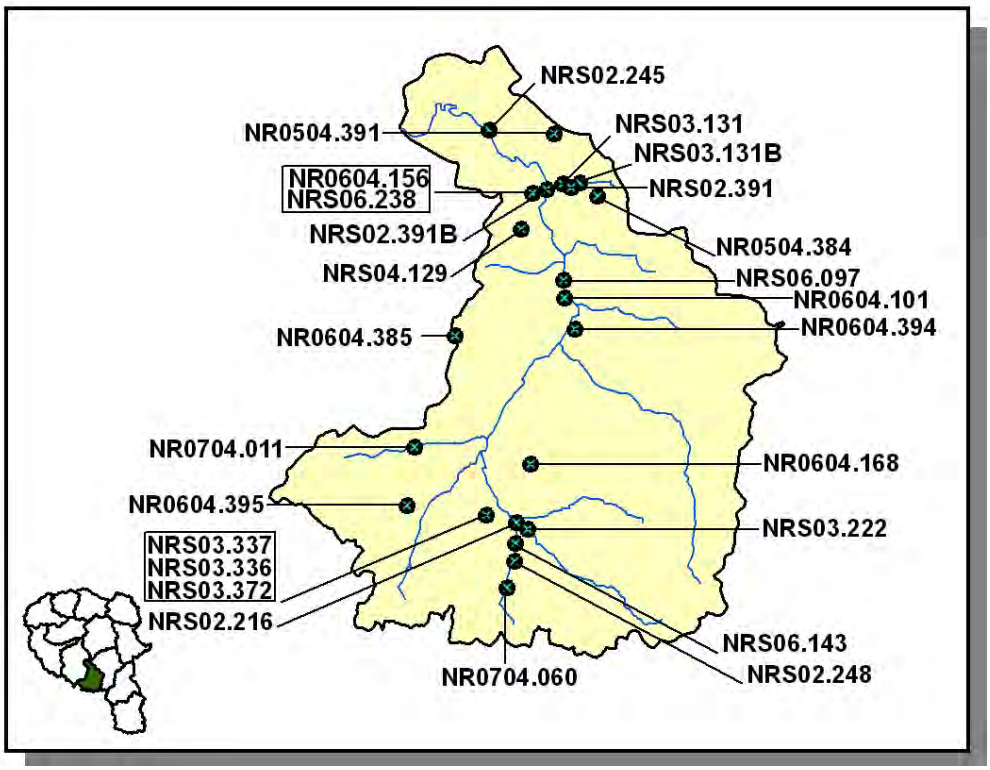


Figure 4-78. Location of ARAP (Aquatic Resource Alteration Permit) Sites in Subwatershed 051302020106. *More information is provided in Appendix IV.*

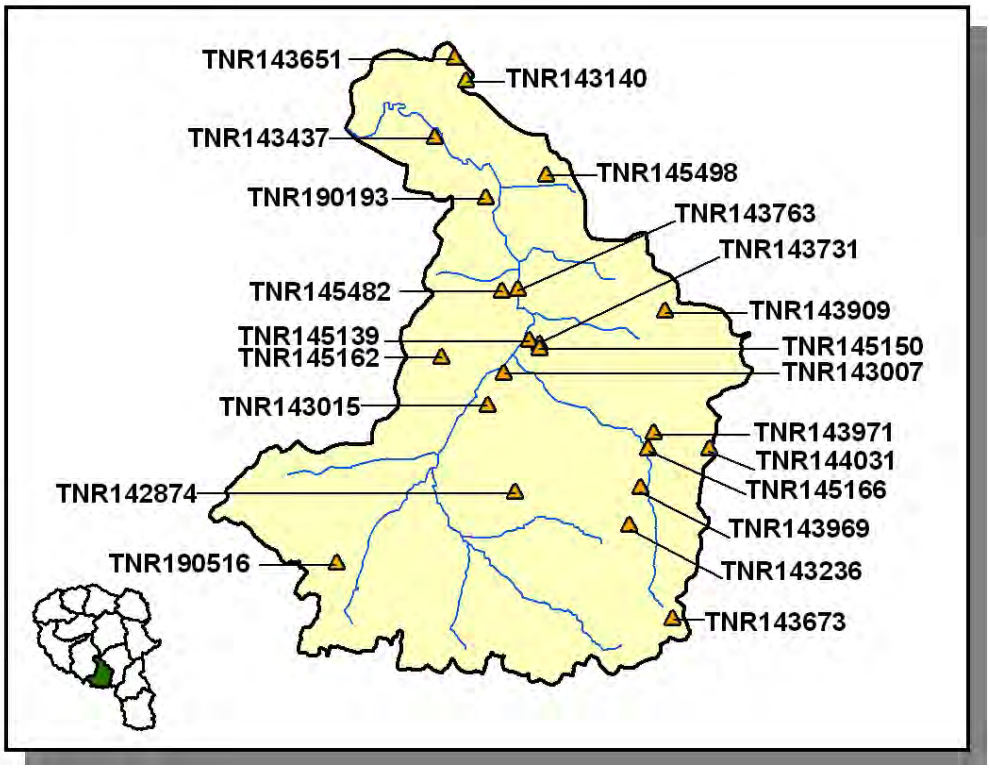


Figure 4-79. Location of CGP (Construction General Permit) Sites in Subwatershed 051302020106. *More information is provided in Appendix IV.*

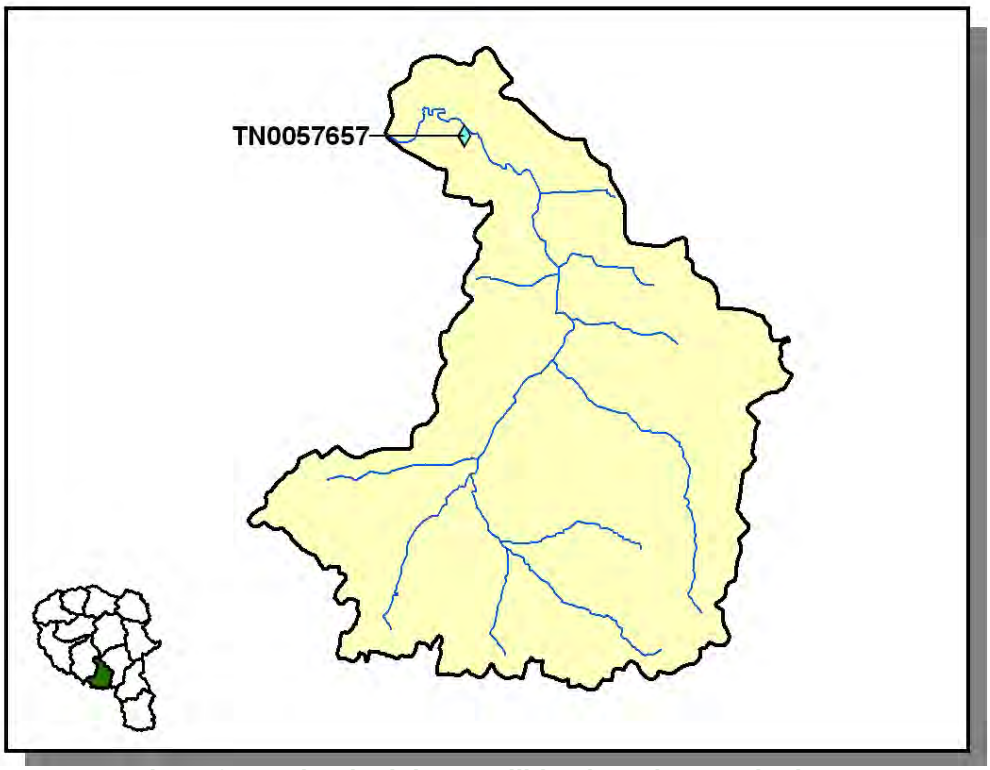


Figure 4-80. Location of Permitted Mining Facilities in Subwatershed 051302020106. *More information is provided in Appendix IV.*

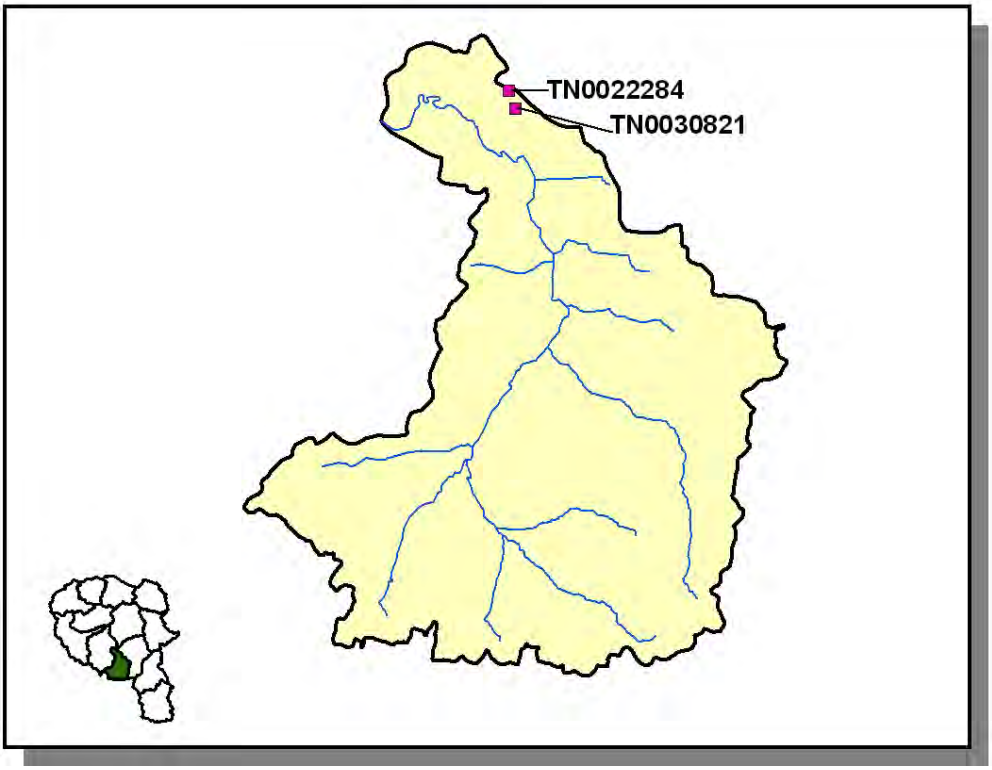


Figure 4-81. Location of Permitted Municipal and Industrial Facilities in Subwatershed 051302020106. *More information, including the name of the facility is provided in Appendix IV.*

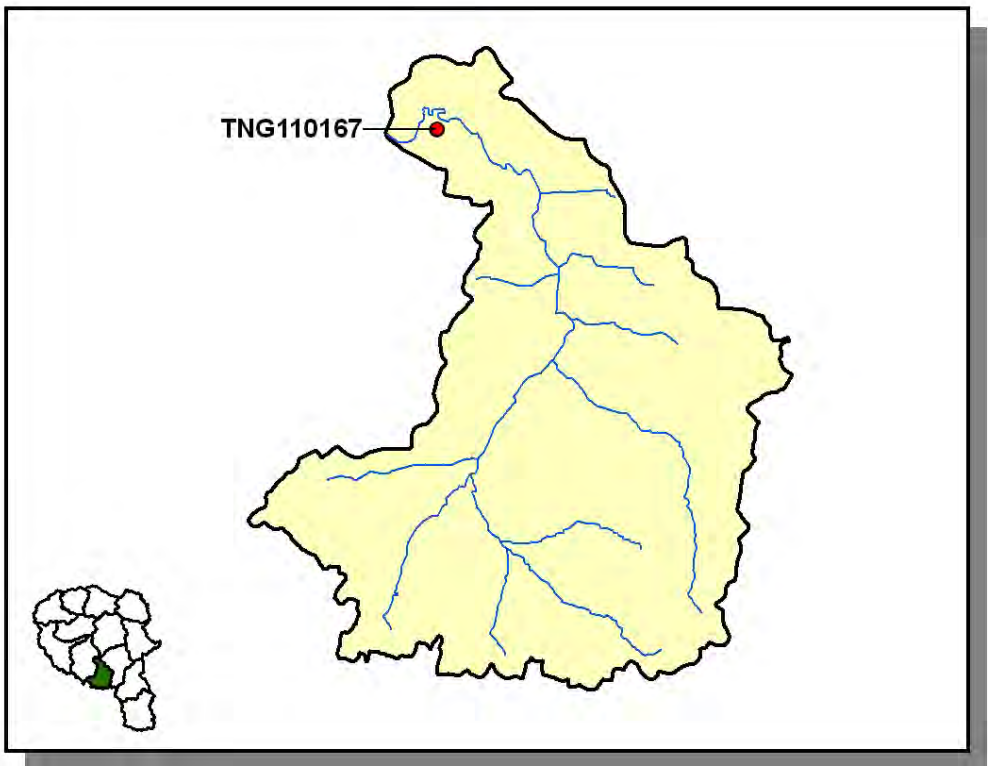


Figure 4-82. Location of RMCP (Ready Mix Concrete Plant) facilities in Subwatershed 051302020106. *More information, including the names of facilities, is provided in Appendix IV.*

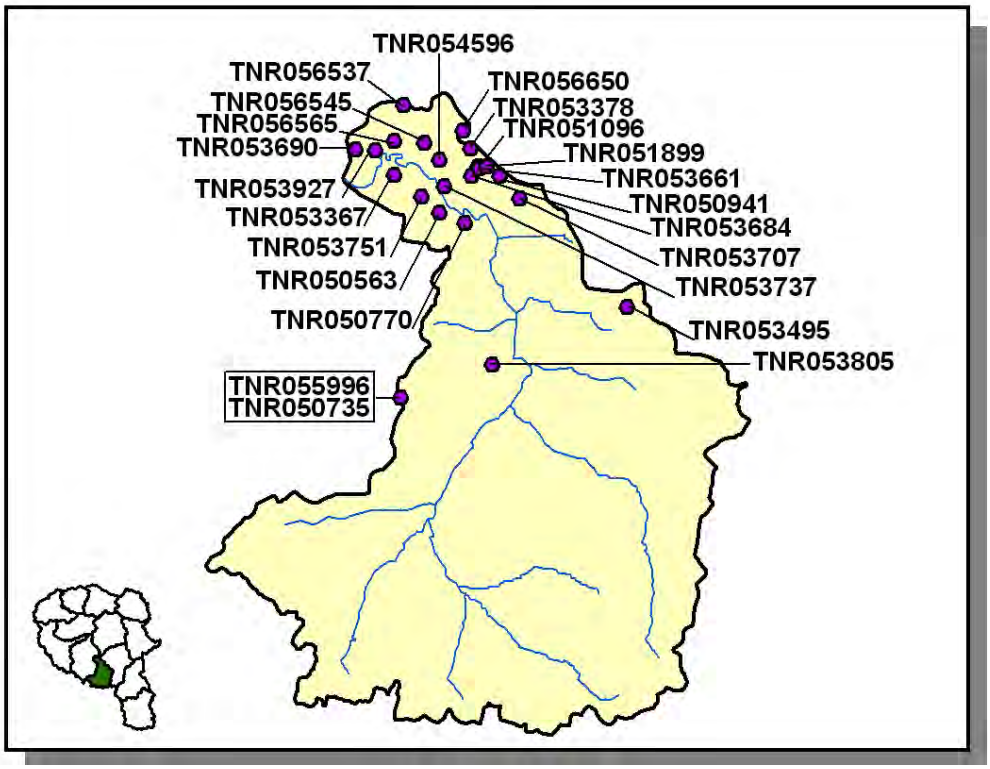


Figure 4-83. Location of TMSP (Tennessee Multi Sector Permit) Sites in Subwatershed 051302020106. *More information is provided in Appendix IV.*

4.2.F.iv. Nonpoint Source Contributions.

LIVESTOCK COUNTS						
County	Beef Cow	Cattle	Milk Cow	Chickens (Layers)	Hogs	Sheep
Davidson		9,207		1,572	73	

Table 4-35. Summary of Livestock Count Estimates by County. *According to the 1997 Census of Agriculture (http://www.agcensus.usda.gov/), "Cattle" includes heifers, heifer calves, steers, bulls and bull calves; "Chickens" are layers 20 weeks and older.*

	INVENTORY		REMOVAL RATE	
County	Forest Land (thousand acres)	Timber Land (thousand acres)	Growing Stock (million cubic feet)	Sawtimber (million board feet)
Davidson	108.7	108.1	2.3	9.7

Table 4-36. Forest Acreage and Annual Removal Rates (1987-1994) by County.

CROPS	TONS/ACRE/YEAR
Soybeans (Row Crops)	15.01
All Other Close Grown Cropland	2.26
Grass Forbs Legumes Mixed (Pastureland)	0.53
Grass (Pastureland)	0.44
Farmsteads and Ranch Headquarters	0.33
Grass (Hayland)	0.07

Table 4-37. Annual Estimated Total Soil Loss in Subwatershed 051302020106.

4.2.G 051302020107 (Cumberland River).

4.2.G.i. General Description.

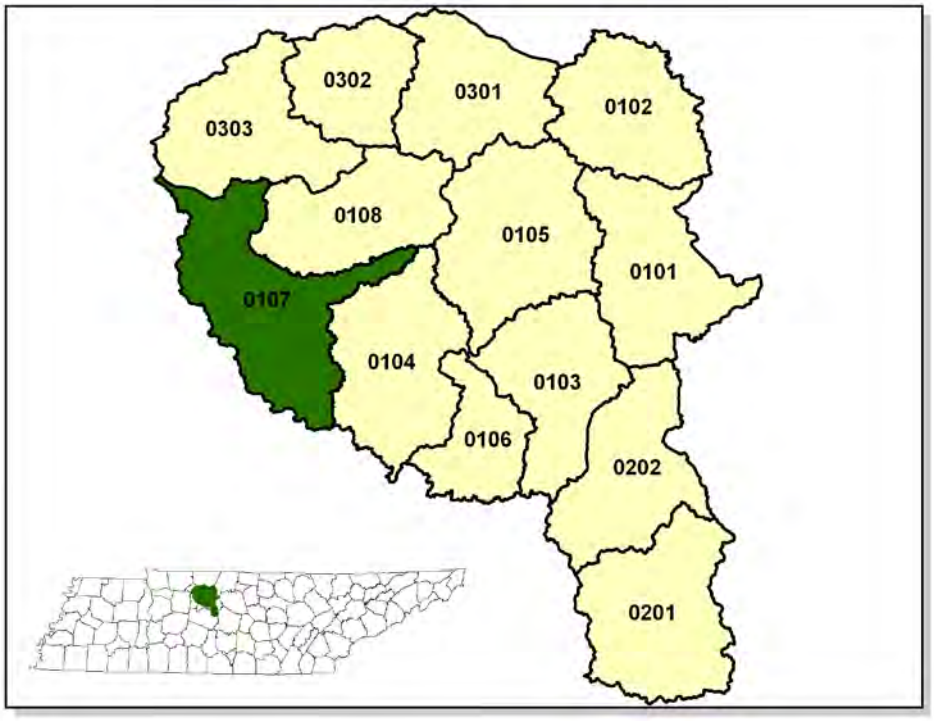


Figure 4-84. Location of Subwatershed 051302020107. *All Cheatham Lake HUC-12 subwatershed boundaries are shown for reference.*

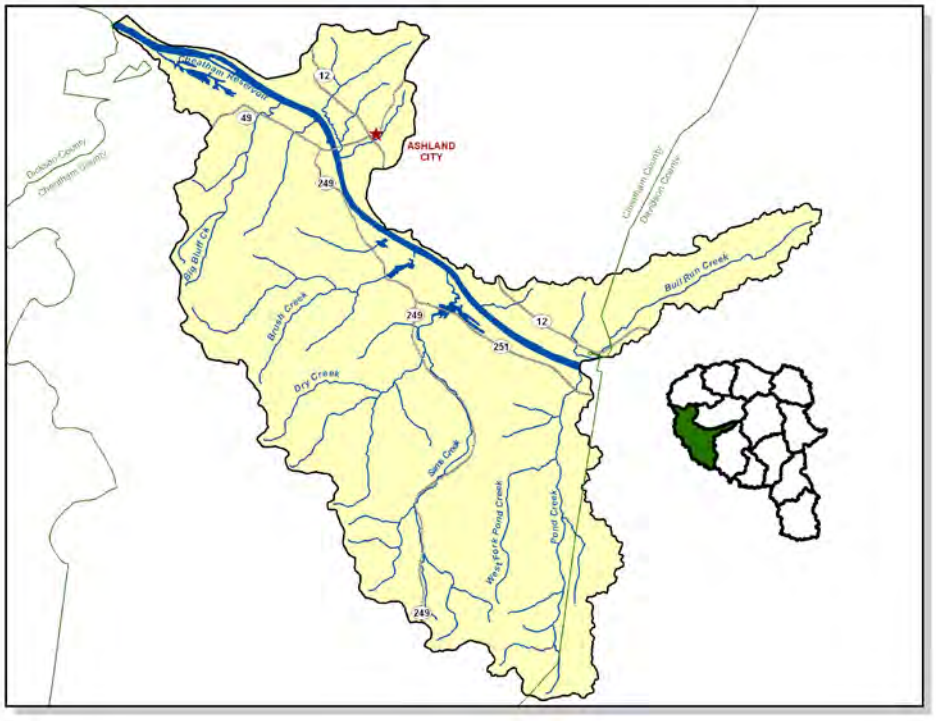


Figure 4-85. Locational Details of Subwatershed 051302020107.

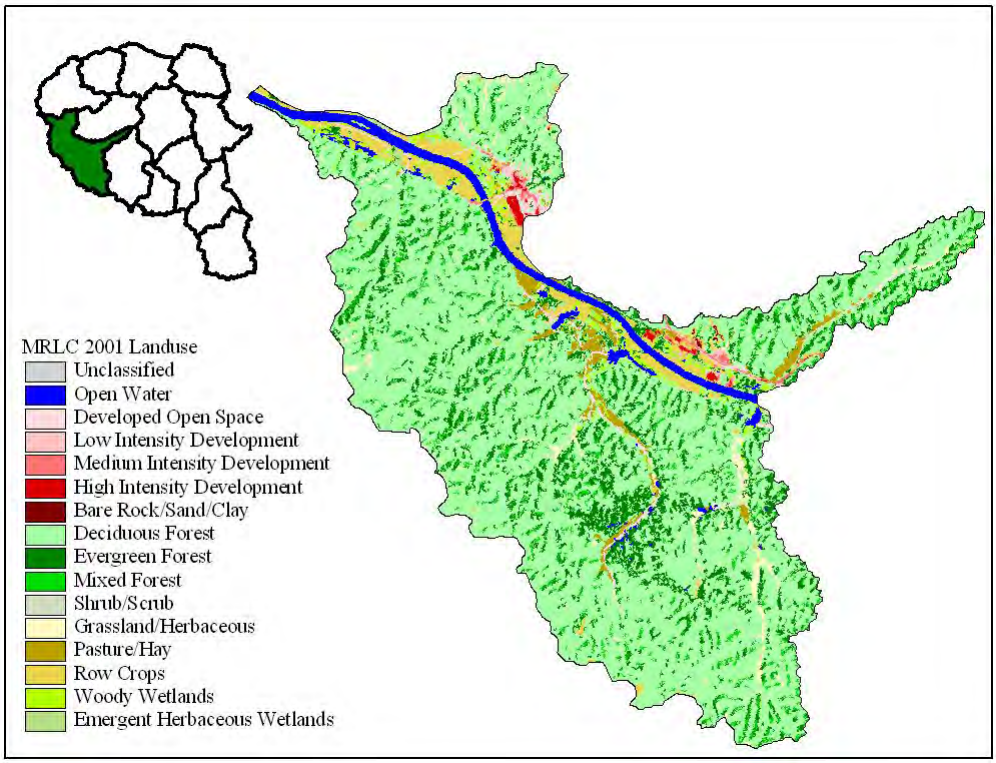


Figure 4-86. Illustration of Land Use Distribution in Subwatershed 051302020107.

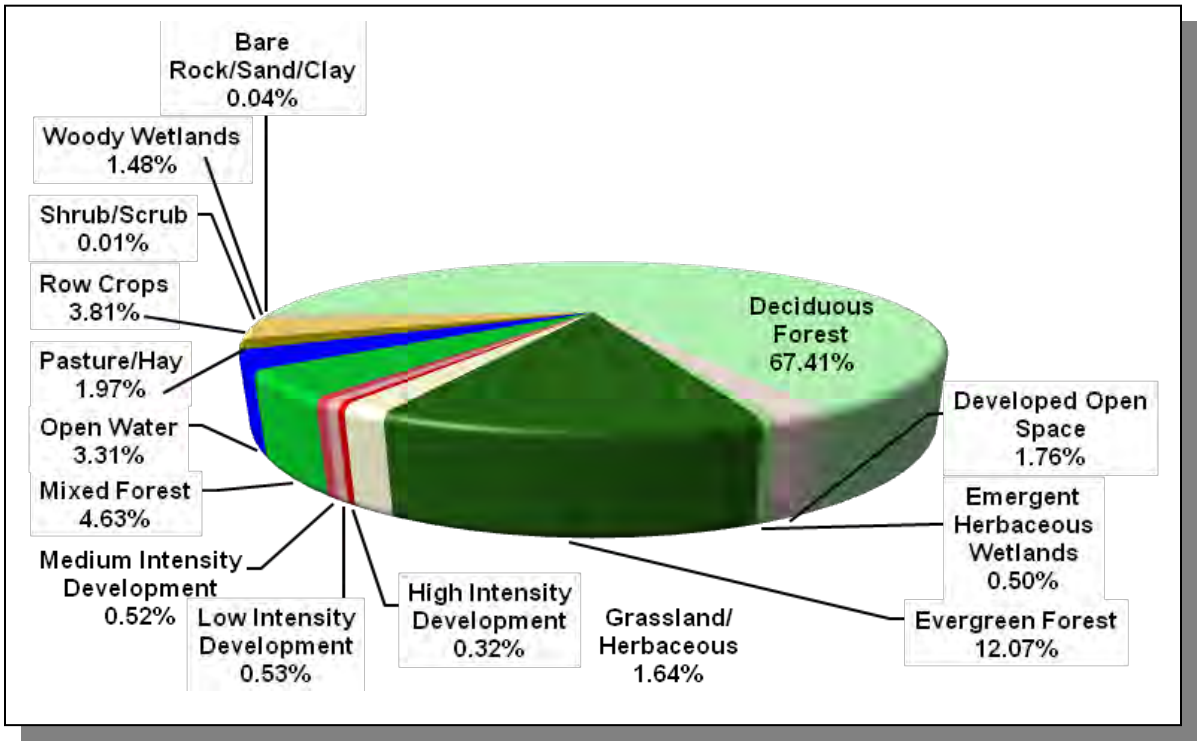


Figure 4-87. Land Use Distribution in Subwatershed 051302020107. *More information is provided in Appendix IV.*

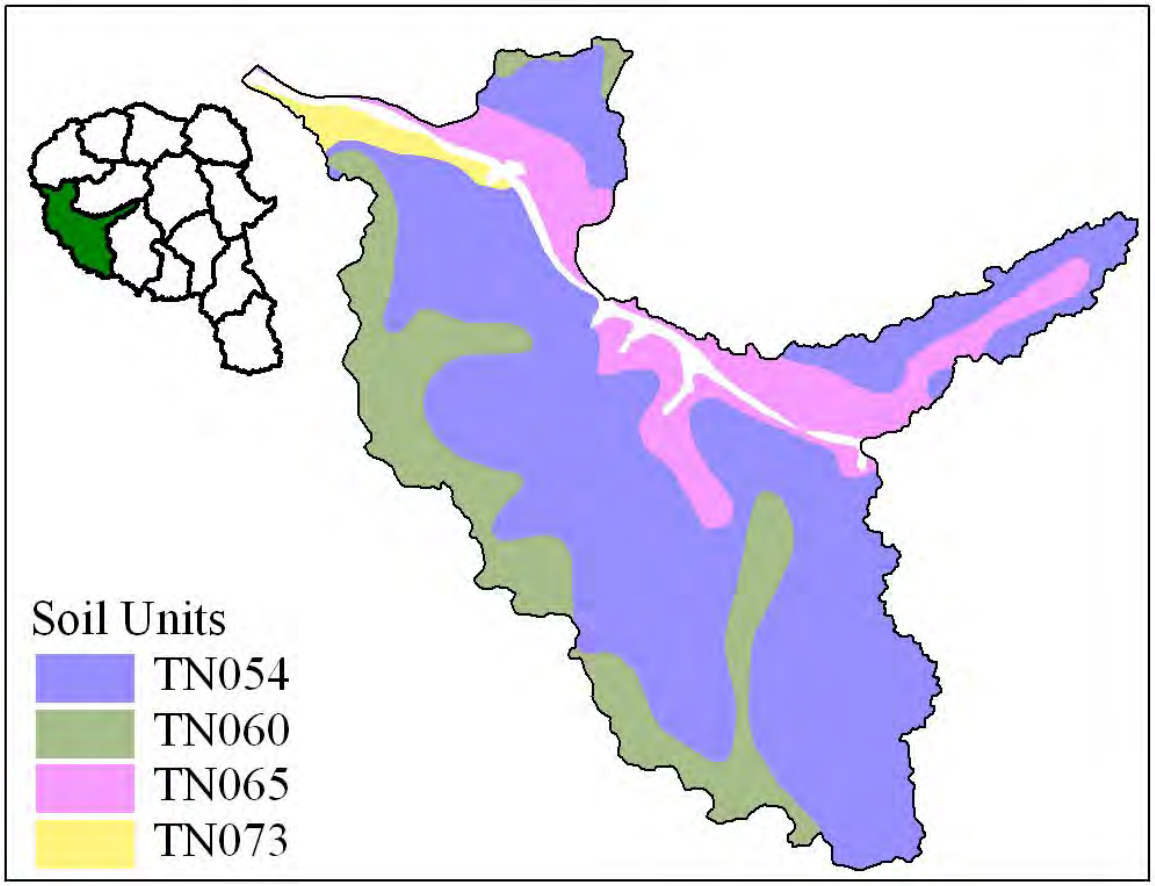


Figure 4-88. STATSGO (State Soil Geographic Database) Soil Map Units in Subwatershed 051302020107.

STATSGO MAP UNIT ID	PERCENT HYDRIC	HYDROLOGIC GROUP	PERMEABILITY (in/hour)	SOIL pH	ESTIMATED SOIL TEXTURE	SOIL ERODIBILITY
TN054	0.00	C	3.04	4.84	Loam	0.32
TN060	5.00	B	1.30	5.32	Silty Loam	0.39
TN065	0.00	C	1.15	5.52	Loam	0.32
TN073	0.00	B	2.97	5.21	Loam	0.34

Table 4-38. Soil Characteristics by STATSGO (State Soil Geographic Database) Soil Map Units in Subwatershed 051302020107. *The definition of "Hydrologic Group" is provided in Appendix IV.*

	COUNTY POPULATION				ESTIMATED POPULATION IN WATERSHED			
County	1990	1997	2000	% of County in Watershed	1990	1997	2000	% Change (1990-2000)
Cheatham	27,140	34,402	35,912	19.59	5,315	6,738	7,033	32.30
Davidson	510,784	535,032	569,891	1.14	5,808	6,084	6,480	11.60
Dickson	35,061	40,937	43156	0.05	17	20	21	23.50
Totals	**572,985**	**610,371**	**648,959**		**11,140**	**12,842**	**13,534**	**21.50**

Table 4-39. Population Estimates in Subwatershed 051302020107.

			NUMBER OF HOUSING UNITS			
Populated Place	County	Population	Total	Public Sewer	Septic Tank	Other
Nashville-Davidson	Davidson	488,518	219,521	203,640	15,576	305
Ashland City	Cheatham	2,552	1094	991	103	0
Total		**491,070**	**220,615**	**204,631**	**15,679**	**305**

Table 4-40. Housing and Sewage Disposal Practices of Select Communities in Subwatershed 051302020107.

4.2.G.ii. USGS Gaging Stations and STORET Sites.

There are no USGS continuous record gaging stations located in subwatershed 051302020107.

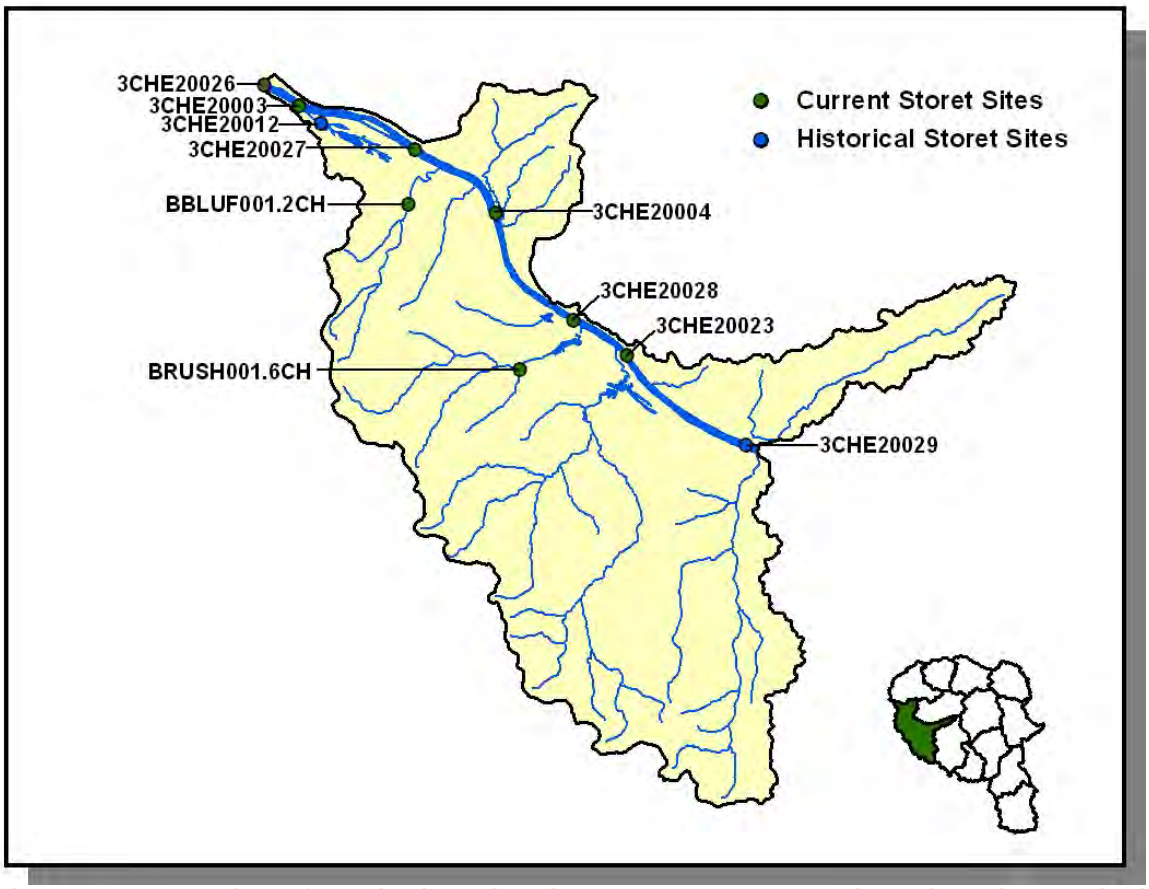


Figure 4-89. Location of Monitoring Sites in EPA's STORET Database in Subwatershed 051302020107. *More information, including site names and locations, is provided in Appendix IV.*

4.2.G.iii. Permitted Activities.

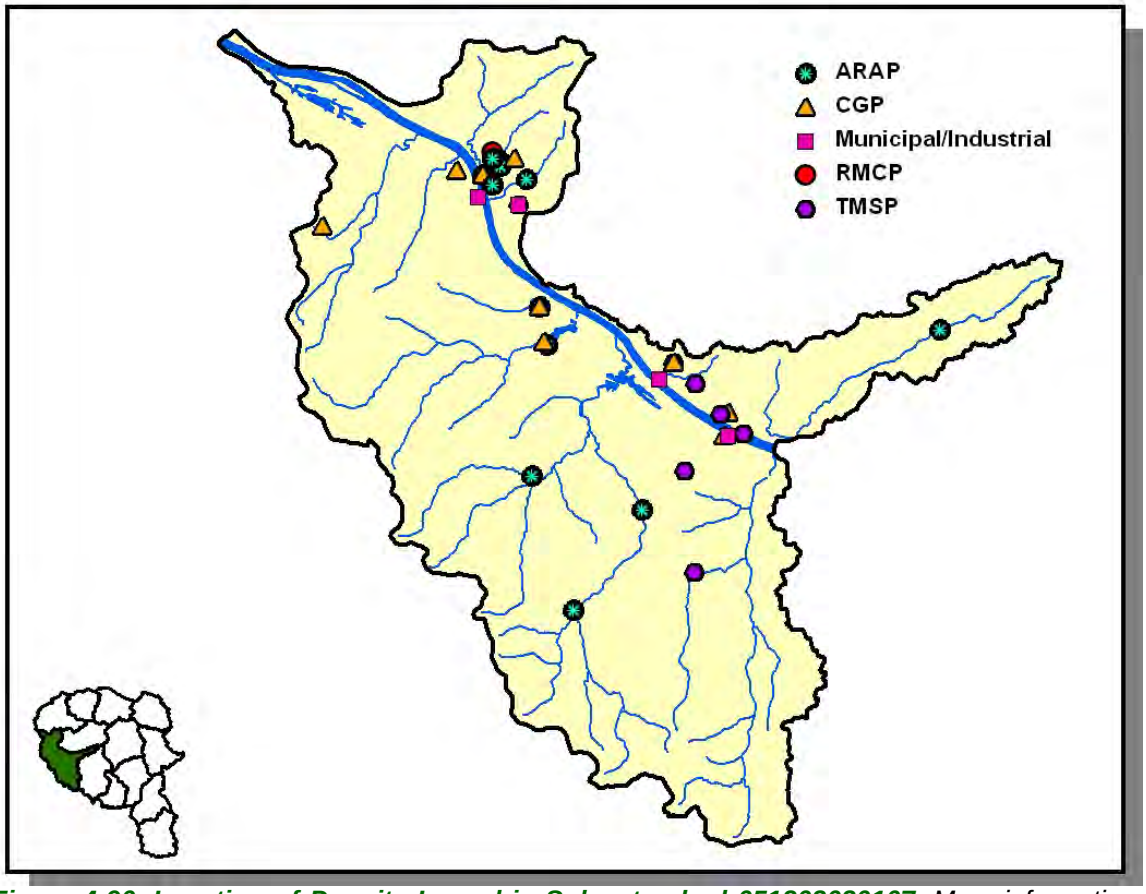


Figure 4-90. Location of Permits Issued in Subwatershed 051302020107. *More information, including the names of facilities, is provided in Appendix IV.*

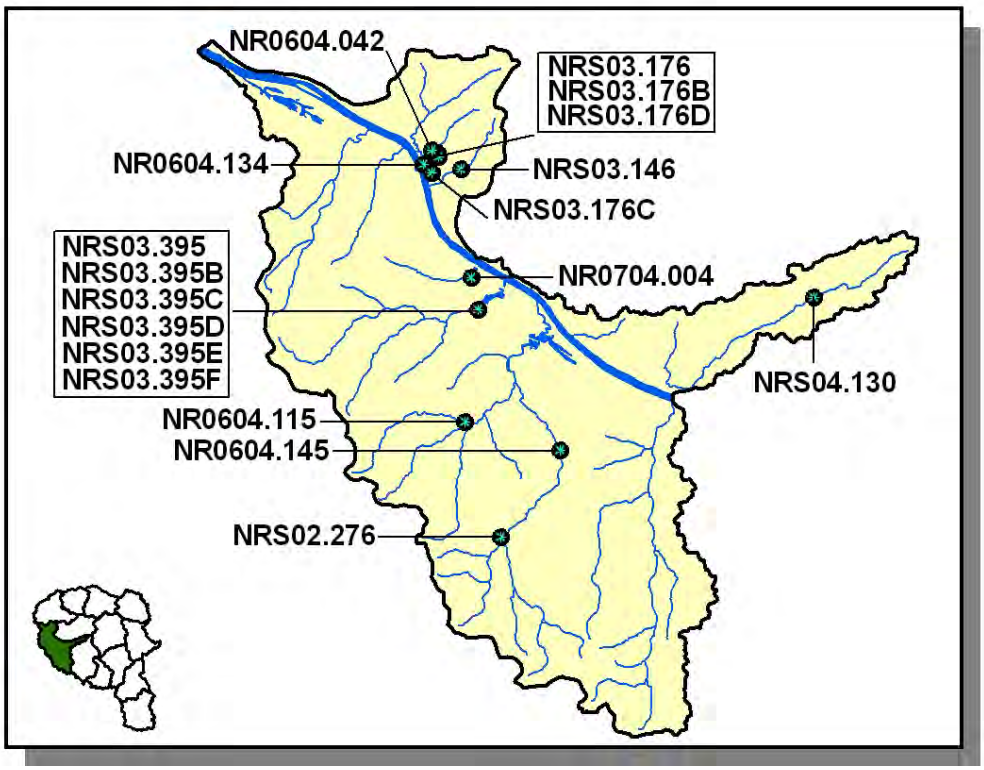


Figure 4-91. Location of ARAP (Aquatic Resource Alteration Permit) Sites in Subwatershed 051302020107. *More information is provided in Appendix IV.*

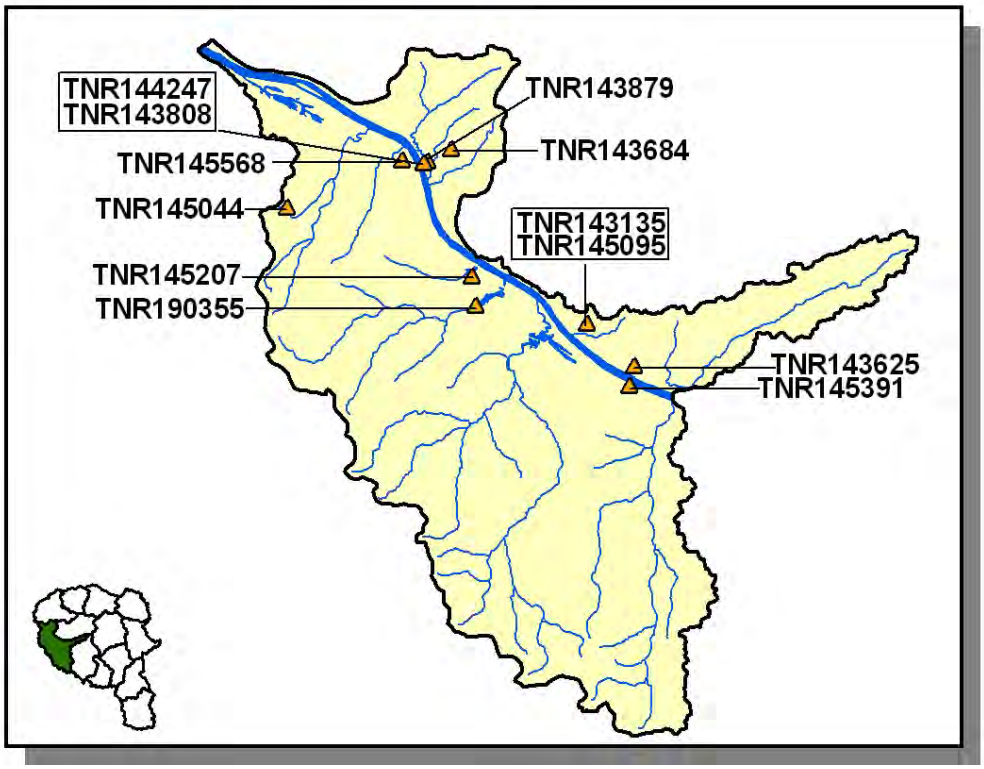


Figure 4-92. Location of CGP (Construction General Permit) Sites in Subwatershed 051302020107. *More information is provided in Appendix IV.*

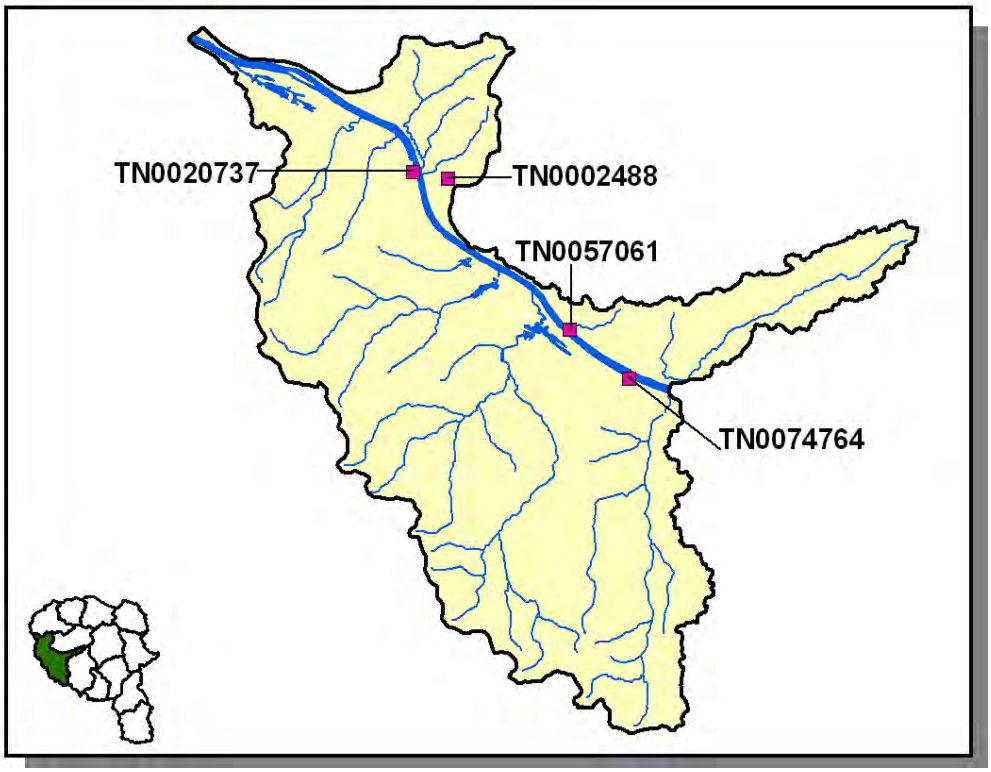


Figure 4-93. Location of Permitted Municipal and Industrial Facilities in subwatershed 051302020107. *More information, including the name of the facility is provided in Appendix IV.*

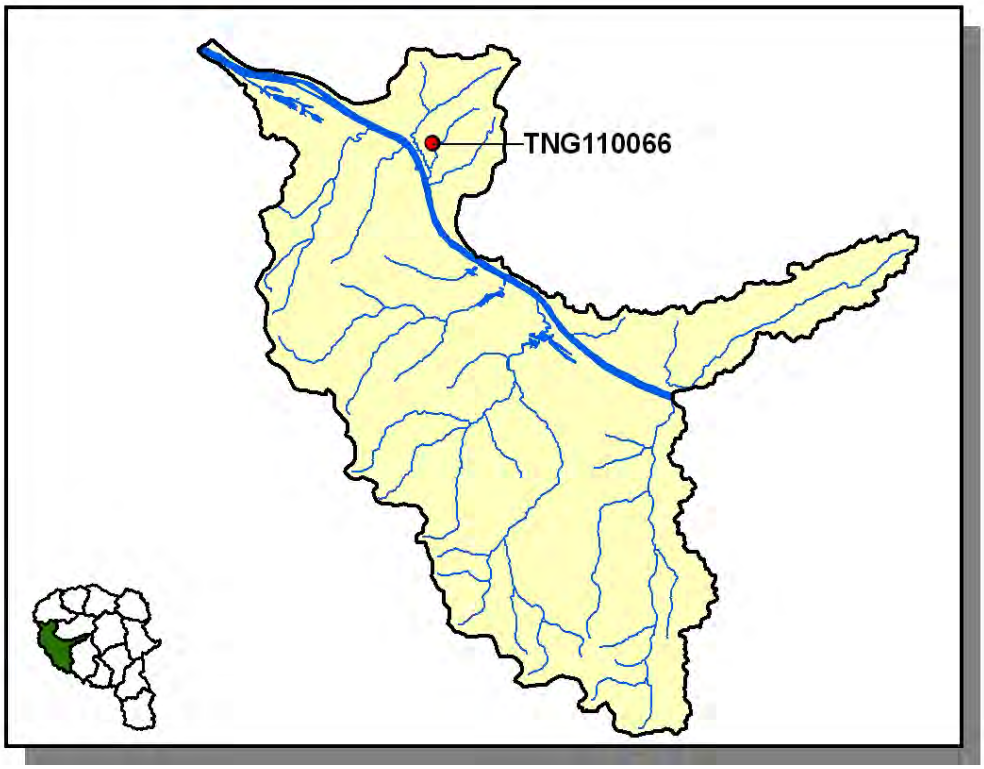


Figure 4-94. Location of RMCP (Ready Mix Concrete Plant) facilities in Subwatershed 051302020107. *More information, including the names of facilities, is provided in Appendix IV.*

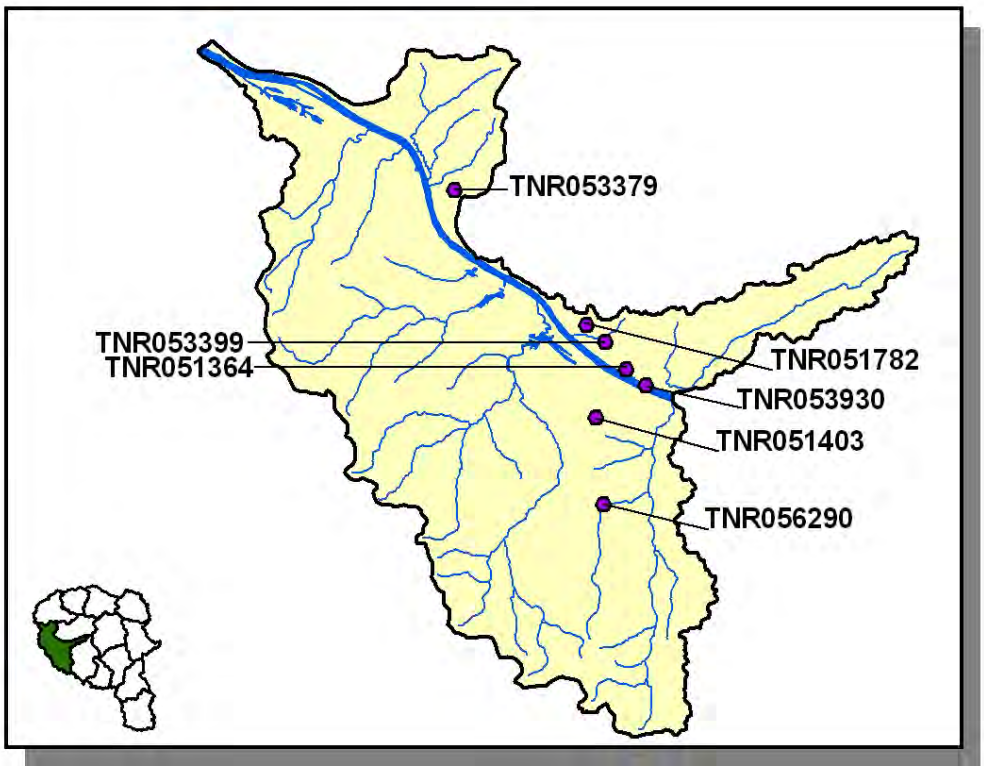


Figure 4-95. Location of TMSP (Tennessee Multi Sector Permit) Sites in Subwatershed 051302020107. *More information is provided in Appendix IV.*

4.2.G.iv. Nonpoint Source Contributions.

LIVESTOCK COUNTS						
County	Beef Cow	Cattle	Milk Cow	Chickens (Layers)	Hogs	Sheep
Cheatham		11,429		121	1,183	
Davidson		9,207		1,572	73	
Dickson		28,271		1,931	2,029	30

Table 4-41. Summary of Livestock Count Estimates by County. *According to the 1997 Census of Agriculture (http://www.agcensus.usda.gov/), "Cattle" includes heifers, heifer calves, steers, bulls and bull calves; "Chickens" are layers 20 weeks and older.*

	INVENTORY		REMOVAL RATE	
County	Forest Land (thousand acres)	Timber Land (thousand acres)	Growing Stock (million cubic feet)	Sawtimber (million board feet)
Cheatham	118.2	118.2	2.3	8.4
Davidson	108.7	108.1	2.3	9.7
Dickson	174.3	174.3	1.8	7.7

Table 4-42. Forest Acreage and Annual Removal Rates (1987-1994) by County.

CROPS	TONS/ACRE/YEAR
Soybeans (Row Crops)	10.01
Corn (Row Crops)	8.51
Other Vegetable and Truck Crop	7.71
All Other Close Grown Cropland	2.26
Vineyard (Horticultural)	1.05
Grass Forbs Legumes Mixed (Pastureland)	0.81
Grass (Pastureland)	0.67
Other Cropland not Planted	0.52
Grass (Hayland)	0.46
Legume (Hayland)	0.38
Legume Grass (Hayland)	0.29
Farmsteads and Ranch Headquarters	0.23
Conservation Reserve Program Land	0.07

Table 4-43. Annual Estimated Total Soil Loss in Subwatershed 051302020107.

4.2.H. 051302020108 (Marrowbone Creek).

4.2.H.i. General Description.

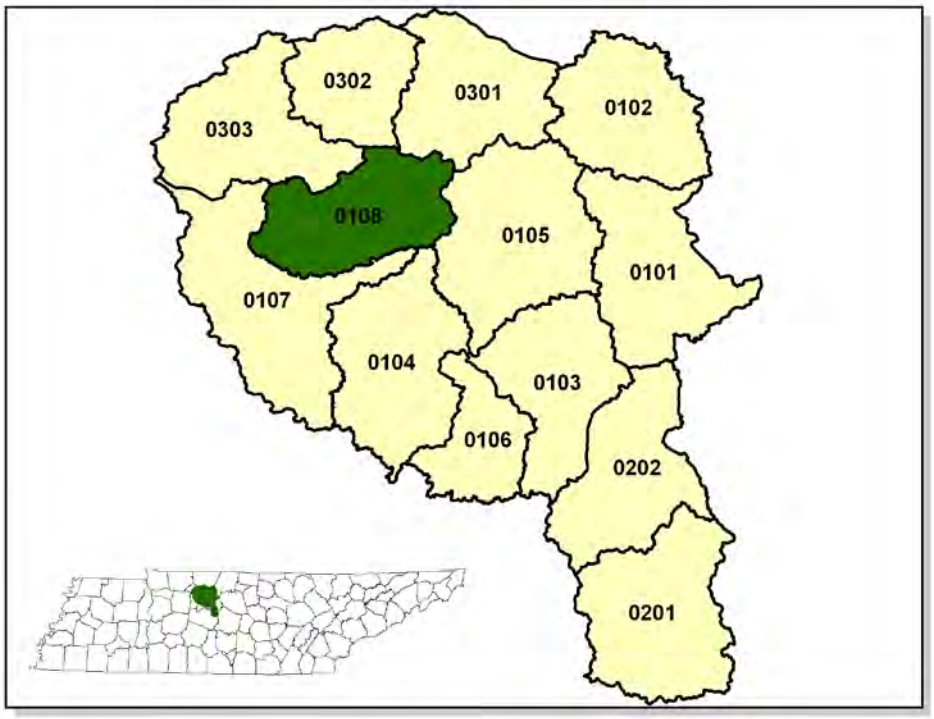


Figure 4-96. Location of Subwatershed 051302020108. *All Cheatham Lake HUC-12 subwatershed boundaries are shown for reference.*

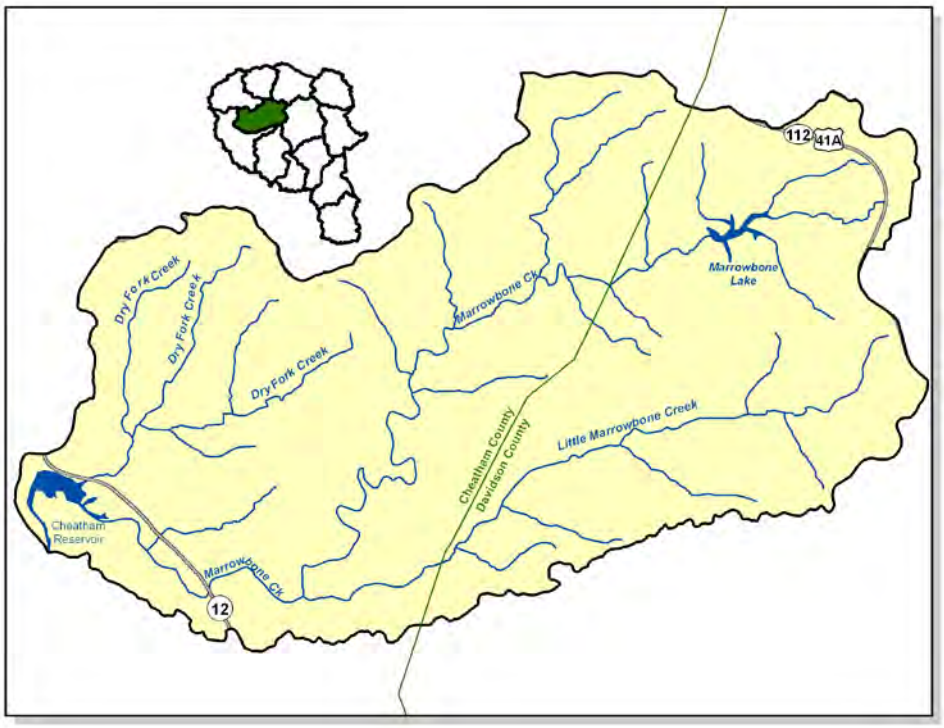


Figure 4-97. Locational Details of Subwatershed 051302020108.

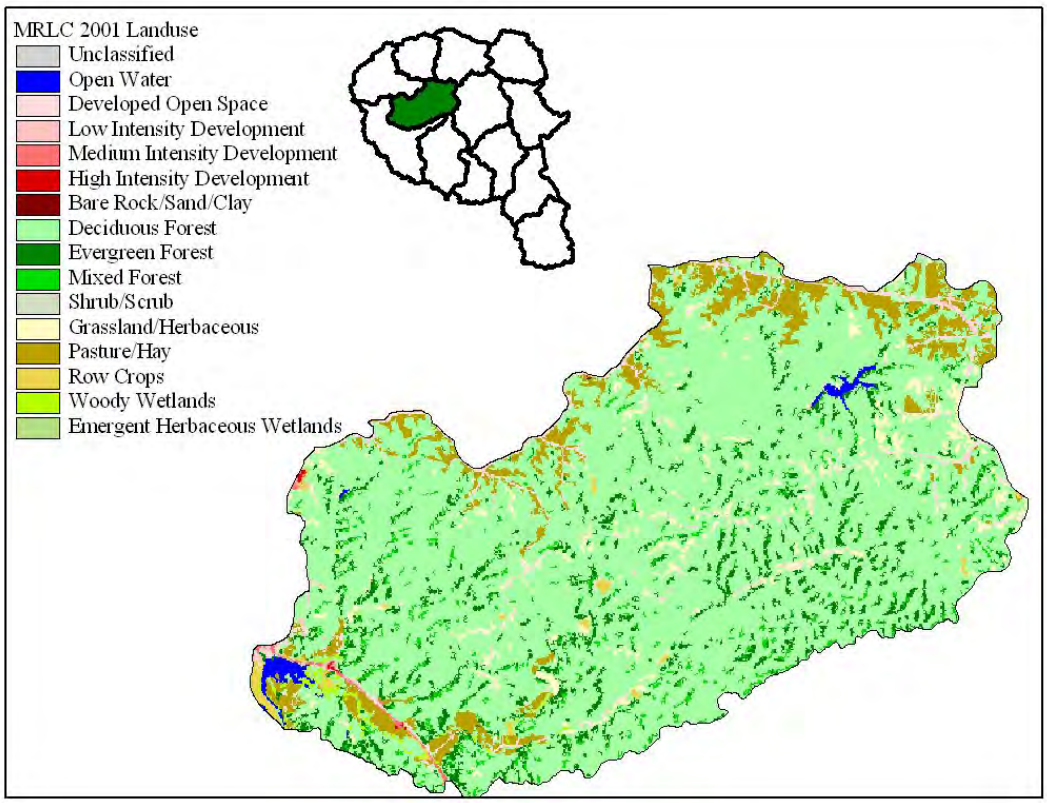


Figure 4-98. Illustration of Land Use Distribution in Subwatershed 051302020108.

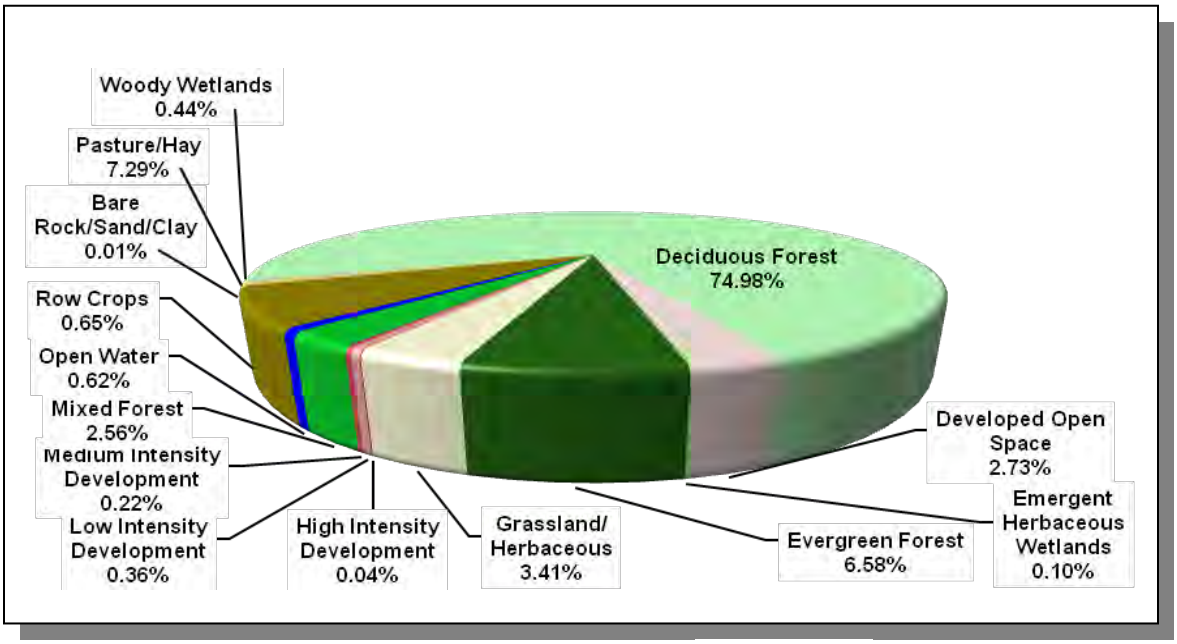


Figure 4-99. Land Use Distribution in Subwatershed 051302020108. *More information is provided in Appendix IV.*

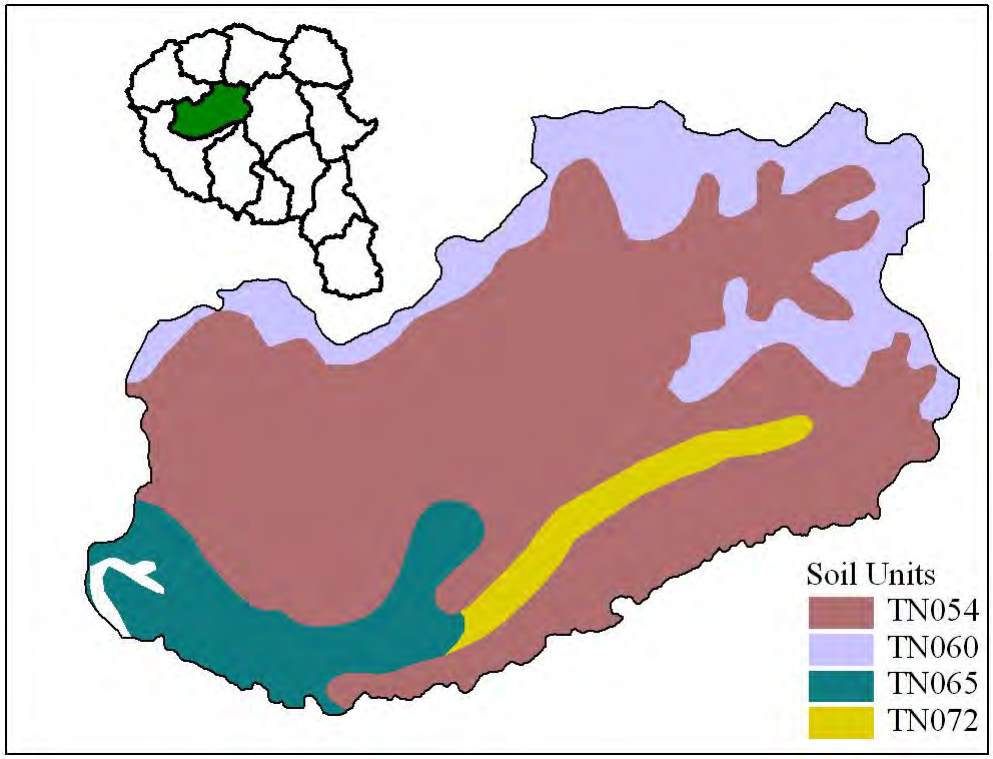


Figure 4-100. STATSGO (State Soil Geographic Database) Soil Map Units in Subwatershed 051302020108.

STATSGO MAP UNIT ID	PERCENT HYDRIC	HYDROLOGIC GROUP	PERMEABILITY (in/hour)	SOIL pH	ESTIMATED SOIL TEXTURE	SOIL ERODIBILITY
TN054	0.00	C	3.04	4.84	Loam	0.32
TN060	5.00	B	1.30	5.32	Silty Loam	0.39
TN065	0.00	C	1.15	5.52	Loam	0.32
TN072	0.00	B	3.70	5.57	Loam	0.31

Table 4-44. Soil Characteristics by STATSGO (State Soil Geographic Database) Soil Map Units in Subwatershed 051302020108. *The definition of "Hydrologic Group" is provided in Appendix IV.*

	COUNTY POPULATION				ESTIMATED POPULATION IN WATERSHED			
County	1990	1997	2000	% of County in Watershed	1990	1997	2000	% Change (1990-2000)
Cheatham	27,140	34,402	35,912	9.75	2,645	3,353	3,500	32.30
Davidson	510,784	535,032	569,891	3.20	16,344	17,120	18,235	11.60
Total	**537,924**	**569,434**	**605,803**		**18,989**	**20,473**	**21,735**	**14.50**

Table 4-45. Population Estimates in Subwatershed 051302020108.

			NUMBER OF HOUSING UNITS			
Populated Place	County	Population	Total	Public Sewer	Septic Tank	Other
Nashville-Davidson	Davidson	488,518	219,521	203,640	15,576	305
Ashland City	Cheatham	2,552	1,094	991	103	0
Total		**491,070**	**220,615**	**204,631**	**15,679**	**305**

Table 4-46. Housing and Sewage Disposal Practices of Select Communities in Subwatershed 051302020108.

4.2.H.ii. USGS Gaging Stations and STORET Sites.

There are no USGS continuous record gaging stations located in subwatershed 051302020108.

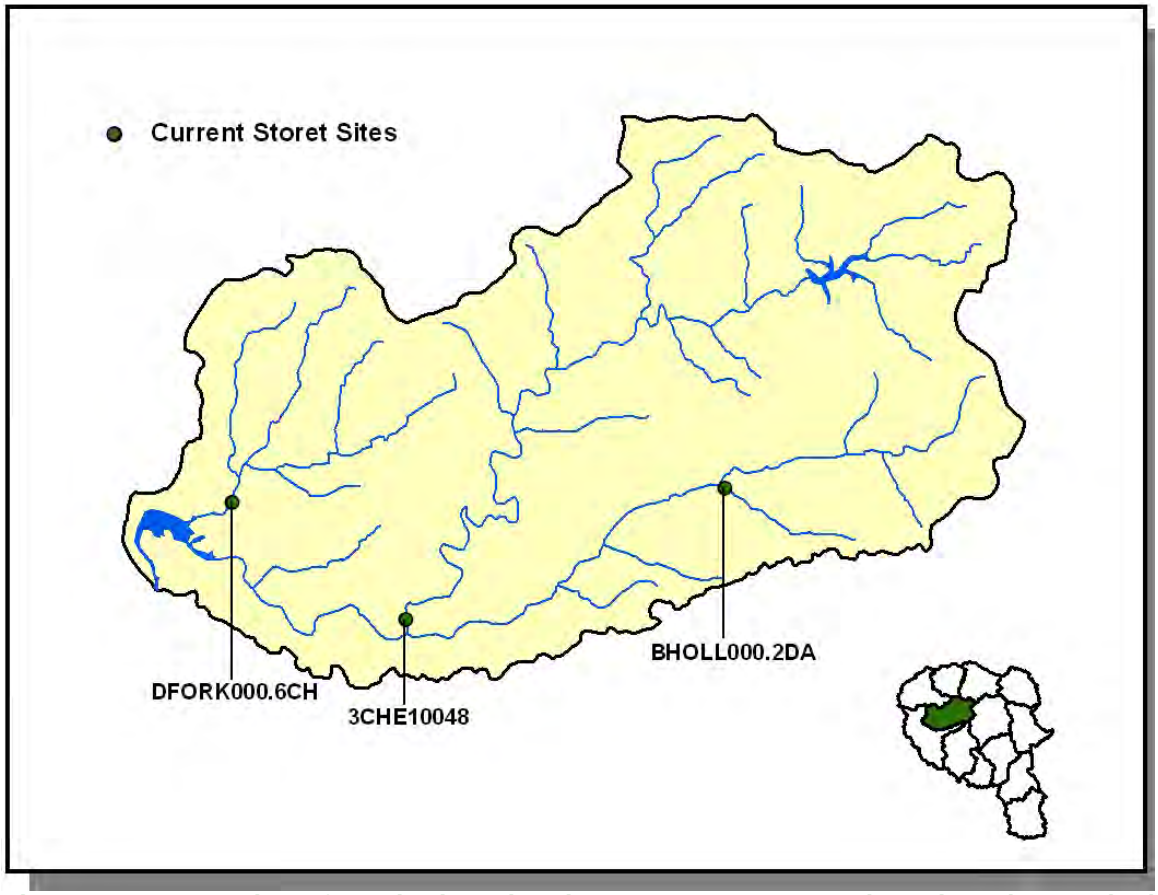


Figure 4-101. Location of Monitoring Sites in EPA's STORET Database in Subwatershed 051302020108. *More information, including site names and locations, is provided in Appendix IV.*

4.2.H.iii. Permitted Activities.

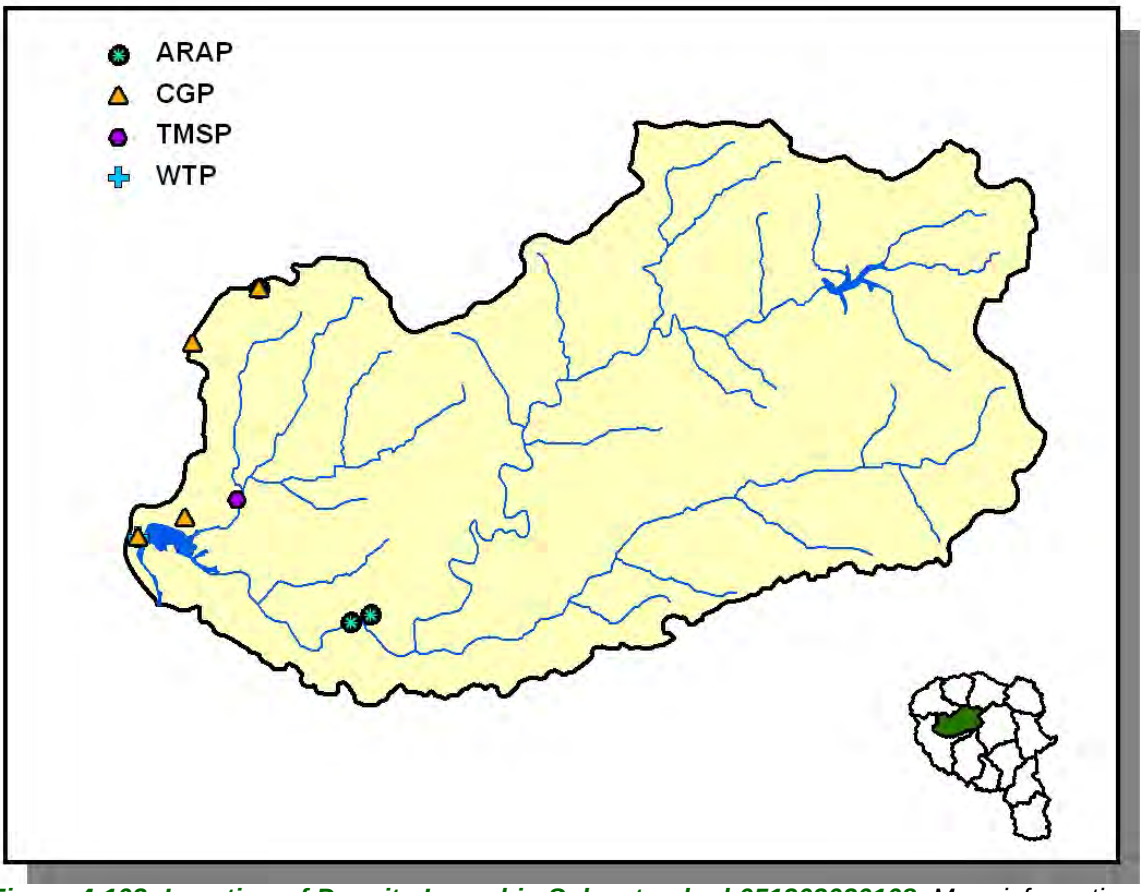


Figure 4-102. Location of Permits Issued in Subwatershed 051302020108. *More information, including the names of facilities, is provided in Appendix IV.*

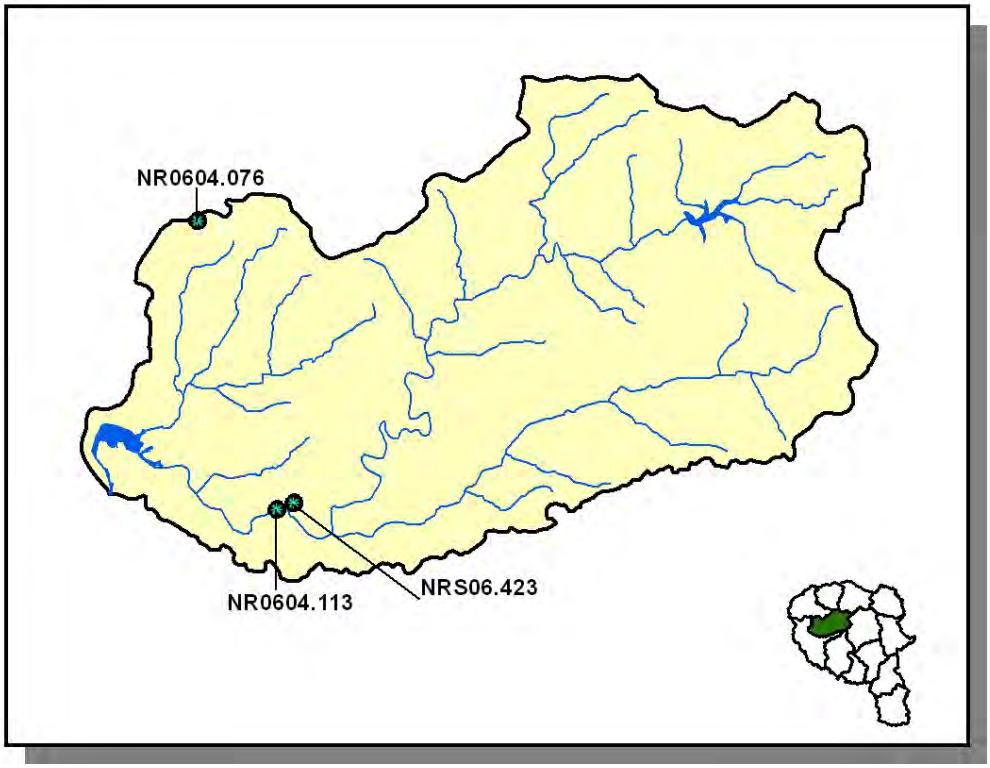


Figure 4-103. Location of ARAP (Aquatic Resource Alteration Permit) Sites in Subwatershed 051302020108. *More information is provided in Appendix IV.*

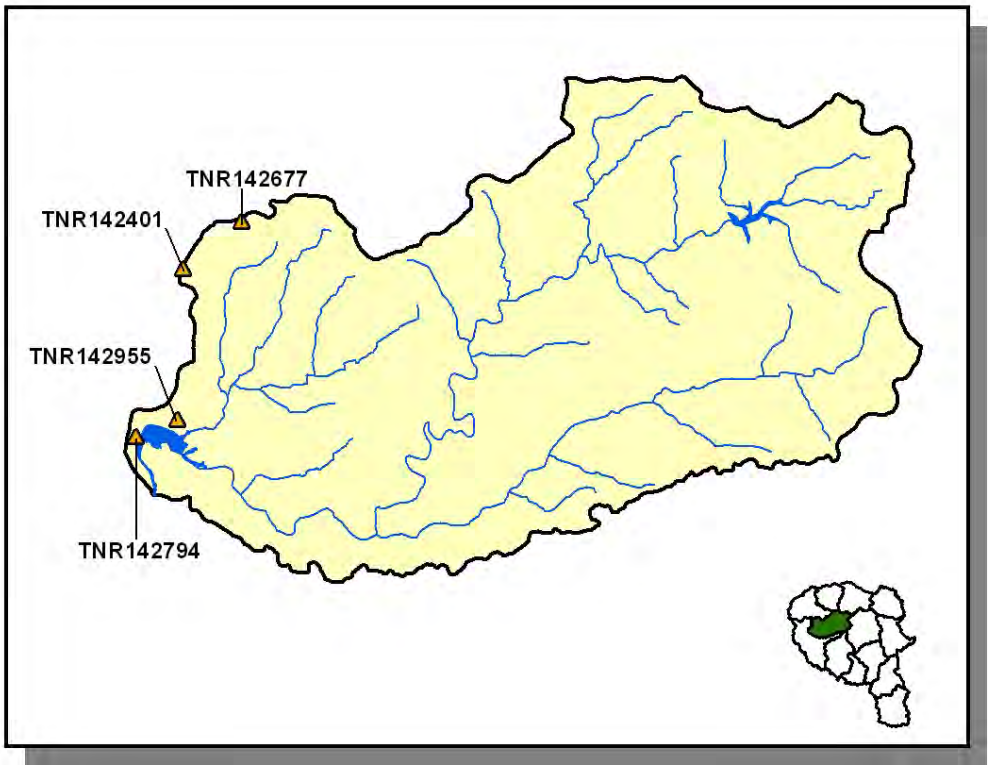


Figure 4-104. Location of CGP (Construction General Permit) Sites in Subwatershed 051302020108. *More information is provided in Appendix IV.*

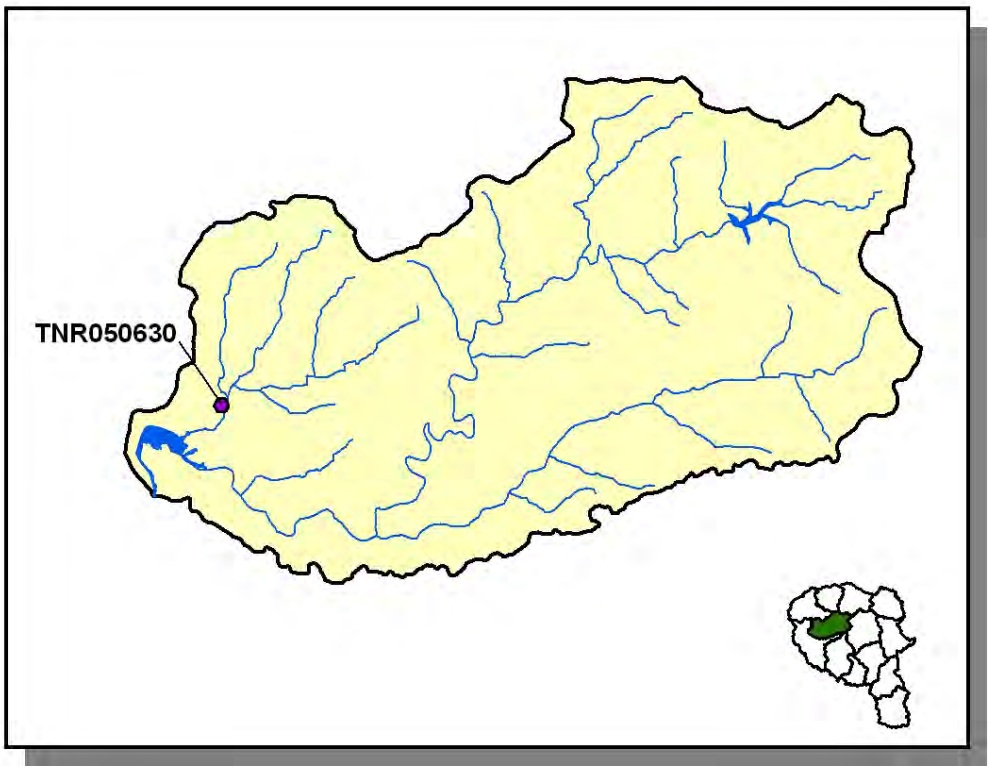


Figure 4-105. Location of TMSP (Tennessee Multi Sector Permits) Sites in Subwatershed 051302020108. *More information is provided in Appendix IV.*

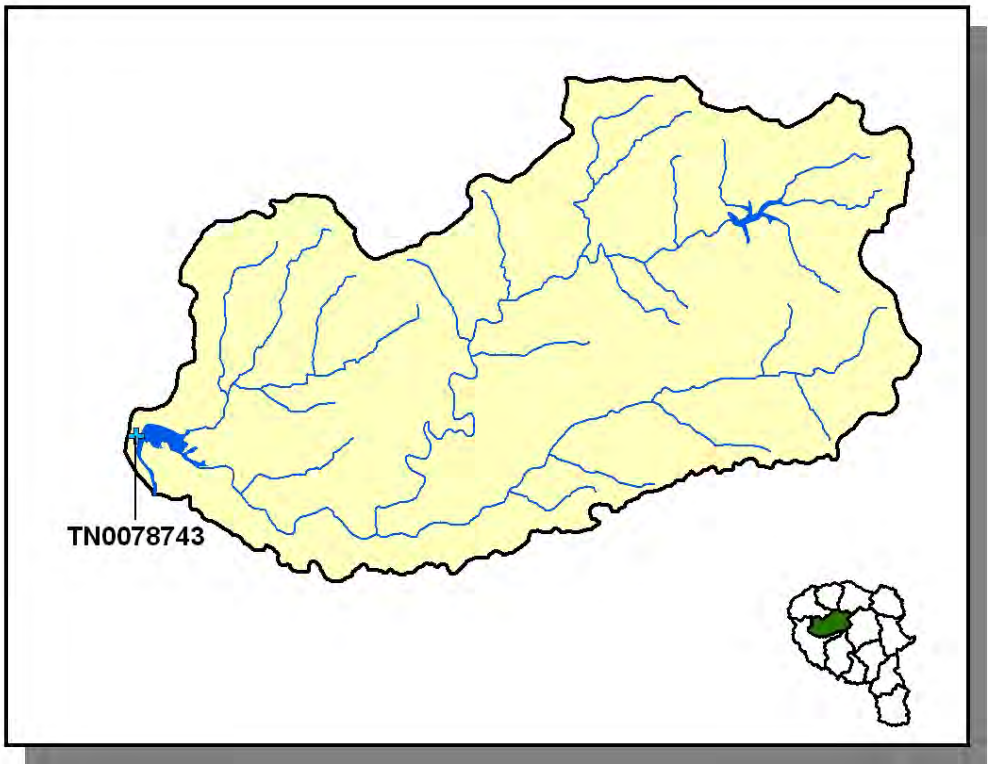


Figure 4-106. Location of Active WTP (Water Treatment Plant) Facilities in Subwatershed 051302020108. *More information, including the names of facilities, is provided in Appendix IV.*

4.2.H.iv. Nonpoint Source Contributions.

LIVESTOCK COUNTS						
County	Beef Cow	Cattle	Milk Cow	Chickens (Layers)	Hogs	Sheep
Cheatham		11,429		121	1,183	
Davidson		9,207		1,572	73	

Table 4-47. Summary of Livestock Count Estimates by County. *According to the 1997 Census of Agriculture (http://www.agcensus.usda.gov/), "Cattle" includes heifers, heifer calves, steers, bulls and bull calves; "Chickens" are layers 20 weeks and older.*

	INVENTORY		REMOVAL RATE	
County	Forest Land (thousand acres)	Timber Land (thousand acres)	Growing Stock (million cubic feet)	Sawtimber (million board feet)
Cheatham	118.2	118.2	2.3	8.4
Davidson	108.7	108.1	2.3	9.7

Table 4-48. Forest Acreage and Annual Removal Rates (1987-1994) by County.

CROPS	TONS/ACRE/YEAR
Soybeans (Row Crops)	11.49
Corn (Row Crops)	8.53
All Other Close Grown Cropland	2.26
Grass Forbs Legumes Mixed (Pastureland)	0.73
Grass (Pastureland)	0.60
Other Cropland not Planted	0.52
Legume (Hayland)	0.38
Grass (Hayland)	0.34
Legume Grass (Hayland)	0.29
Farmsteads and Ranch Headquarters	0.25

Table 4-49. Annual Estimated Total Soil Loss in Subwatershed 051302020108.

4.2.I. 051302020201 (Mill Creek, Upper).

4.2.I.i. General Description.

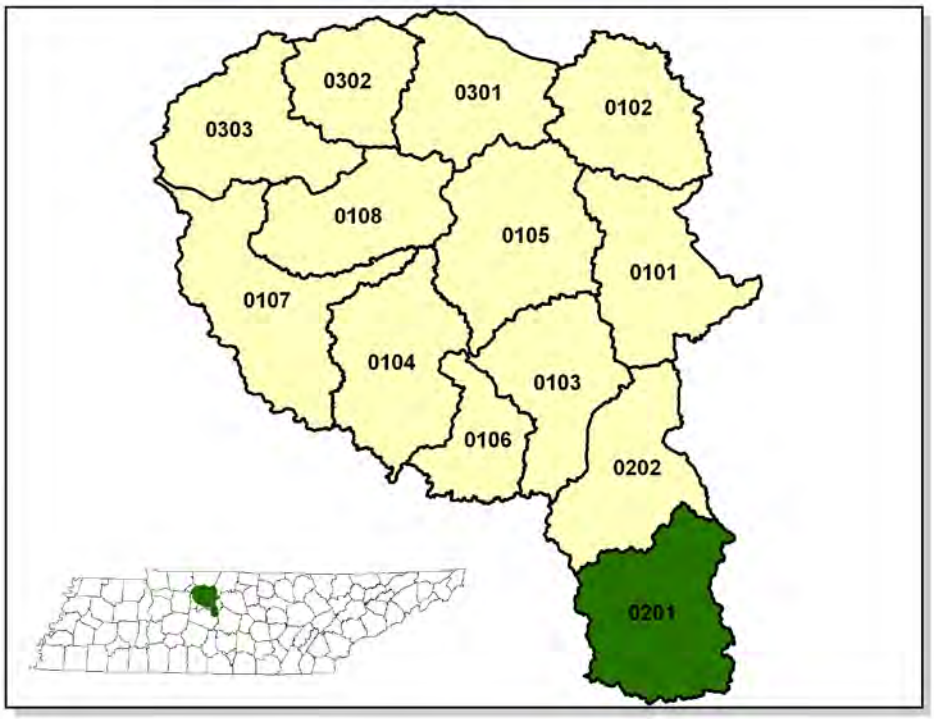


Figure 4-107. Location of Subwatershed 051302020201. *All Cheatham Lake HUC-12 subwatershed boundaries are shown for reference.*

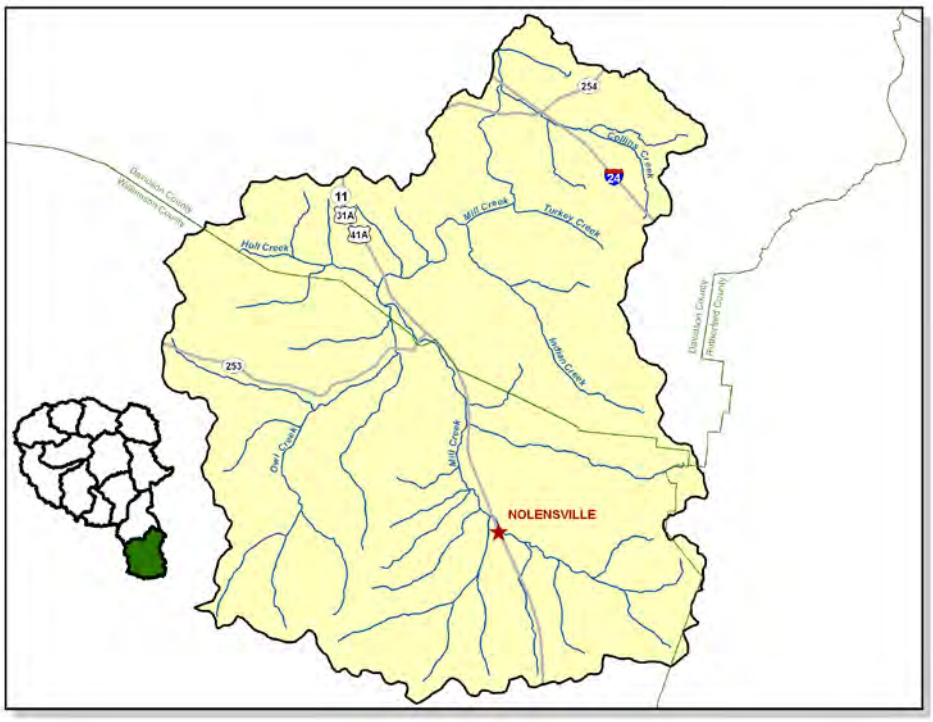


Figure 4-108. Locational Details of Subwatershed 051302020201.

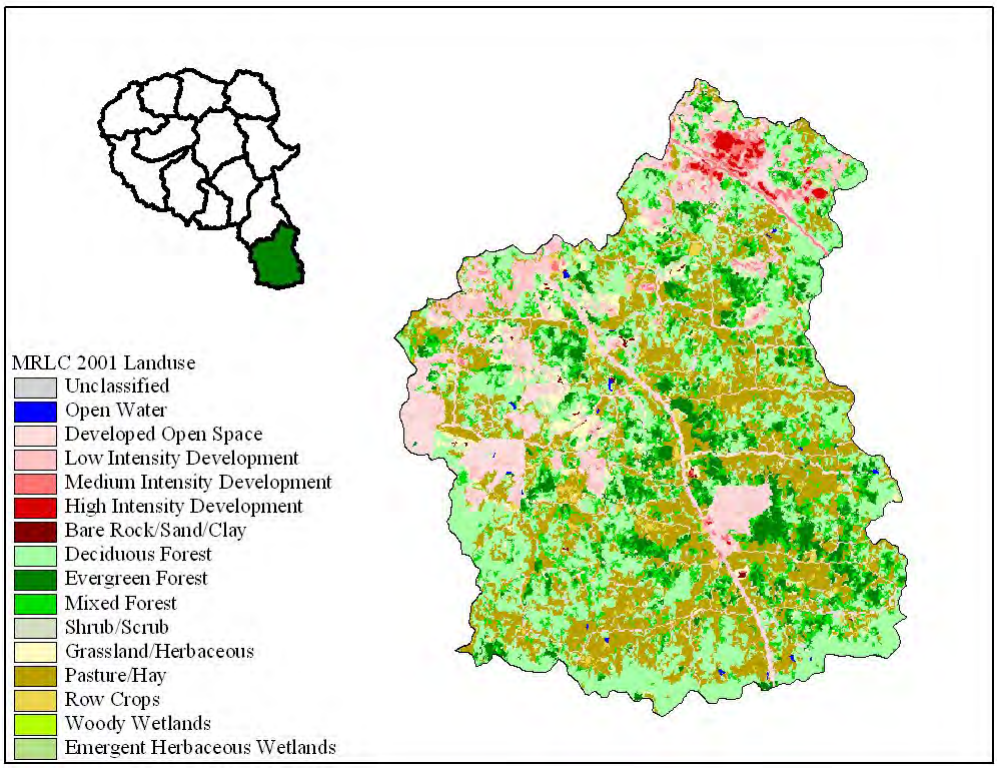


Figure 4-109. Illustration of Land Use Distribution in Subwatershed 051302020201.

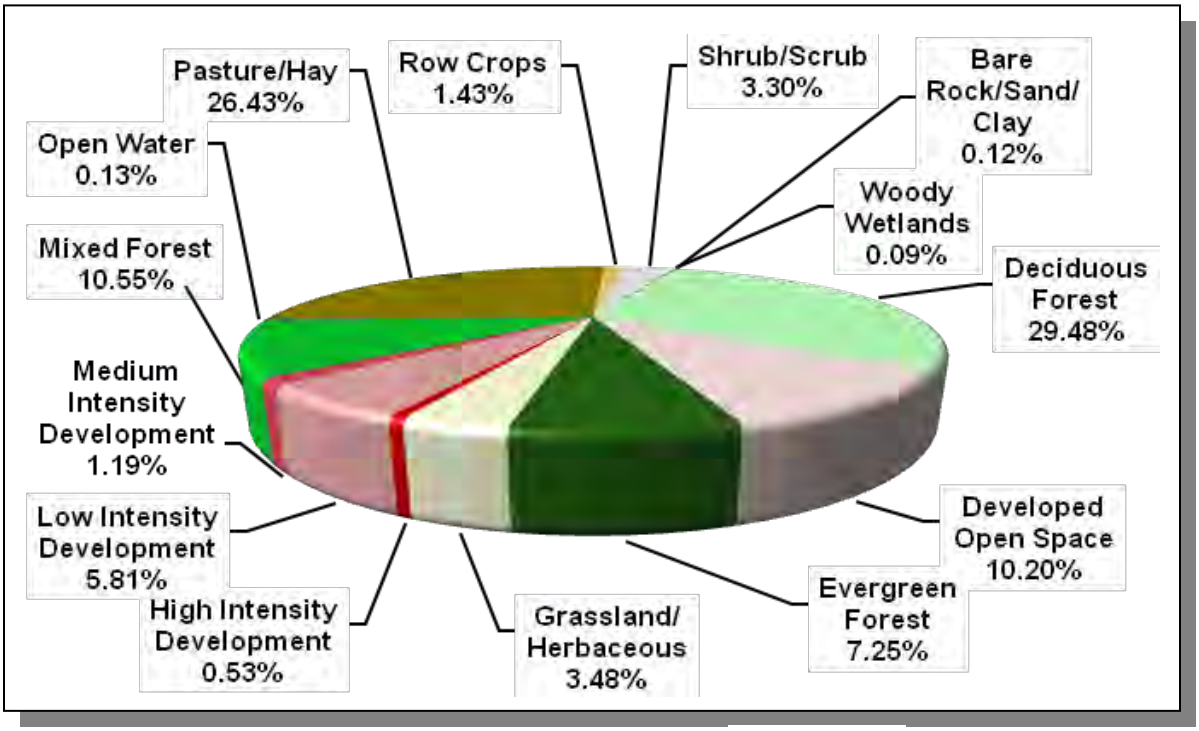


Figure 4-110. Land Use Distribution in Subwatershed 051302020201. *More information is provided in Appendix IV.*

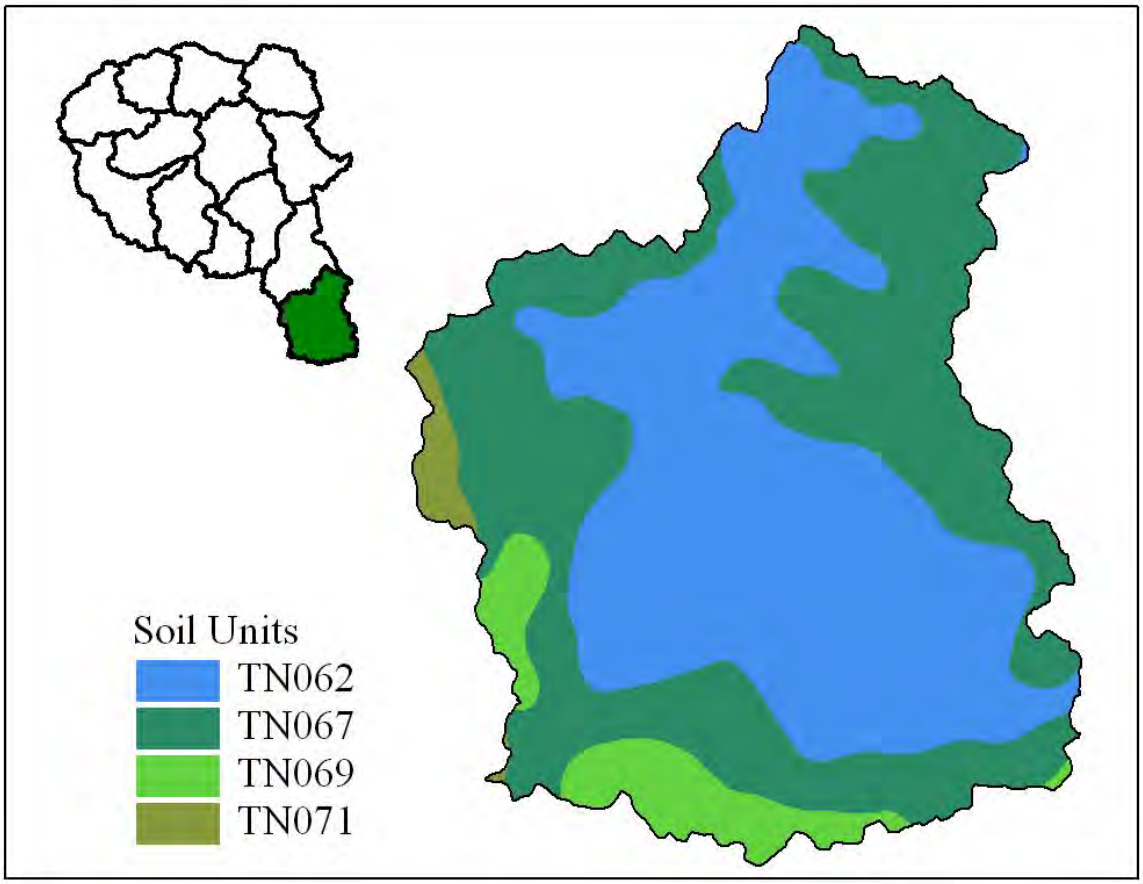


Figure 4-111. STATSGO (State Soil Geographic Database) Soil Map Units in Subwatershed 051302020201.

STATSGO MAP UNIT ID	PERCENT HYDRIC	HYDROLOGIC GROUP	PERMEABILITY (in/hour)	SOIL pH	ESTIMATED SOIL TEXTURE	SOIL ERODIBILITY
TN062	0.00	C	0.98	4.40	Clay Loam	0.26
TN067	2.00	C	2.69	5.51	Silty Loam	0.35
TN069	0.00	C	2.06	5.36	Loam	0.34
TN071	0.00	C	2.37	5.70	Silty Loam	0.33

Table 4-50. Soil Characteristics by STATSGO (State Soil Geographic Database) Soil Map Units in Subwatershed 051302020201. *The definition of "Hydrologic Group" is provided in Appendix IV.*

	COUNTY POPULATION				ESTIMATED POPULATION IN WATERSHED			
County	1990	1997	2000	% of County in Watershed	1990	1997	2000	% Change (1990-2000)
Davidson	510,784	535,032	569,891	3.86	19,720	20,656	22,001	11.60
Williamson	81,021	111,453	126,638	6.54	5,300	7,291	8,285	56.30
Totals	**591,805**	**646,485**	**696,529**		**25,020**	**27,947**	**30,286**	**21.00**

Table 4-51. Population Estimates in Subwatershed 051302020201.

			NUMBER OF HOUSING UNITS			
Populated Place	County	Population	Total	Public Sewer	Septic Tank	Other
Brentwood	Williamson	16,392	5,514	3,195	2,319	0
La Vergne	Williamson	7,499	2,810	2,299	451	60
Smyrna	Williamson	13,647	5,312	4,959	346	7
Nashville-Davidson	Davidson	488,518	219,521	203,640	15,576	305
Total		**526,056**	**233,157**	**214,093**	**18,692**	**372**

Table 4-52. Housing and Sewage Disposal Practices of Select Communities in Subwatershed 051302020201.

4.2.I.ii. USGS Gaging Stations and STORET Sites.

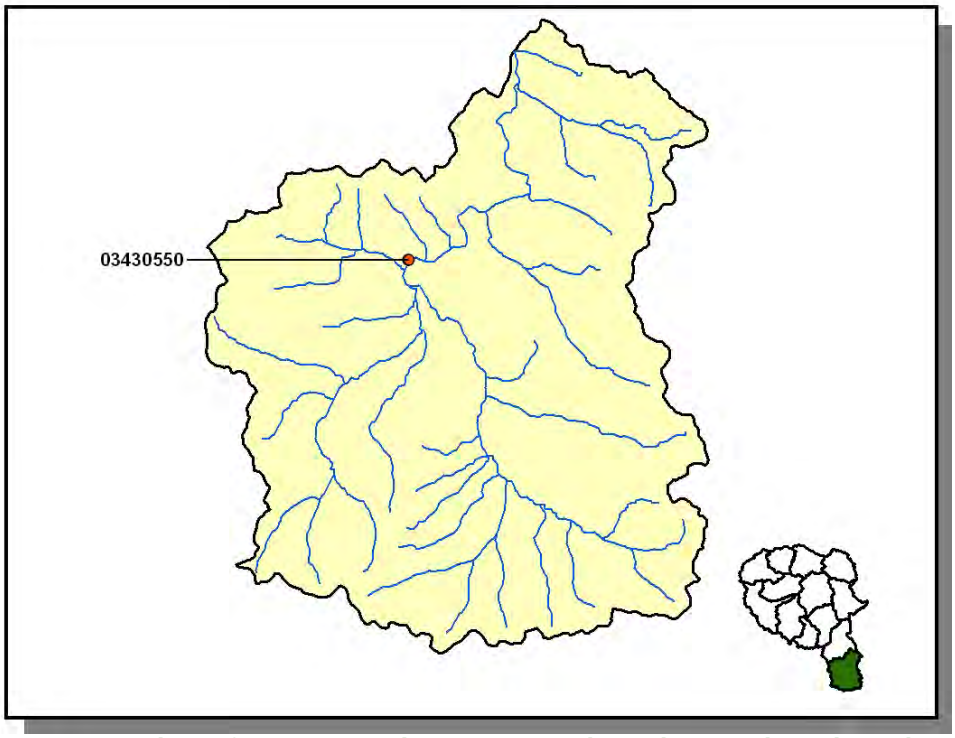


Figure 4-112. Location of USGS Continuous Record Gaging Stations in Subwatershed 051302020201. *More information is provided in Appendix IV.*

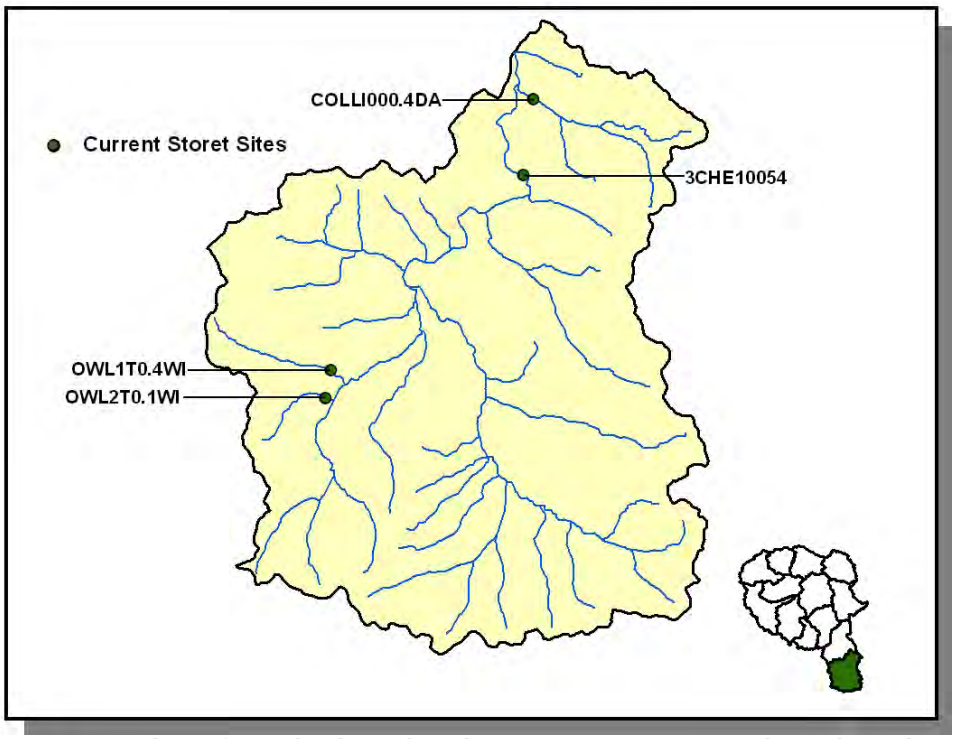


Figure 4-113. Location of Monitoring Sites in EPA's STORET Database in Subwatershed 051302020201. *More information, including site names and locations, is provided in Appendix IV.*

4.2.I.iii. Permitted Activities.

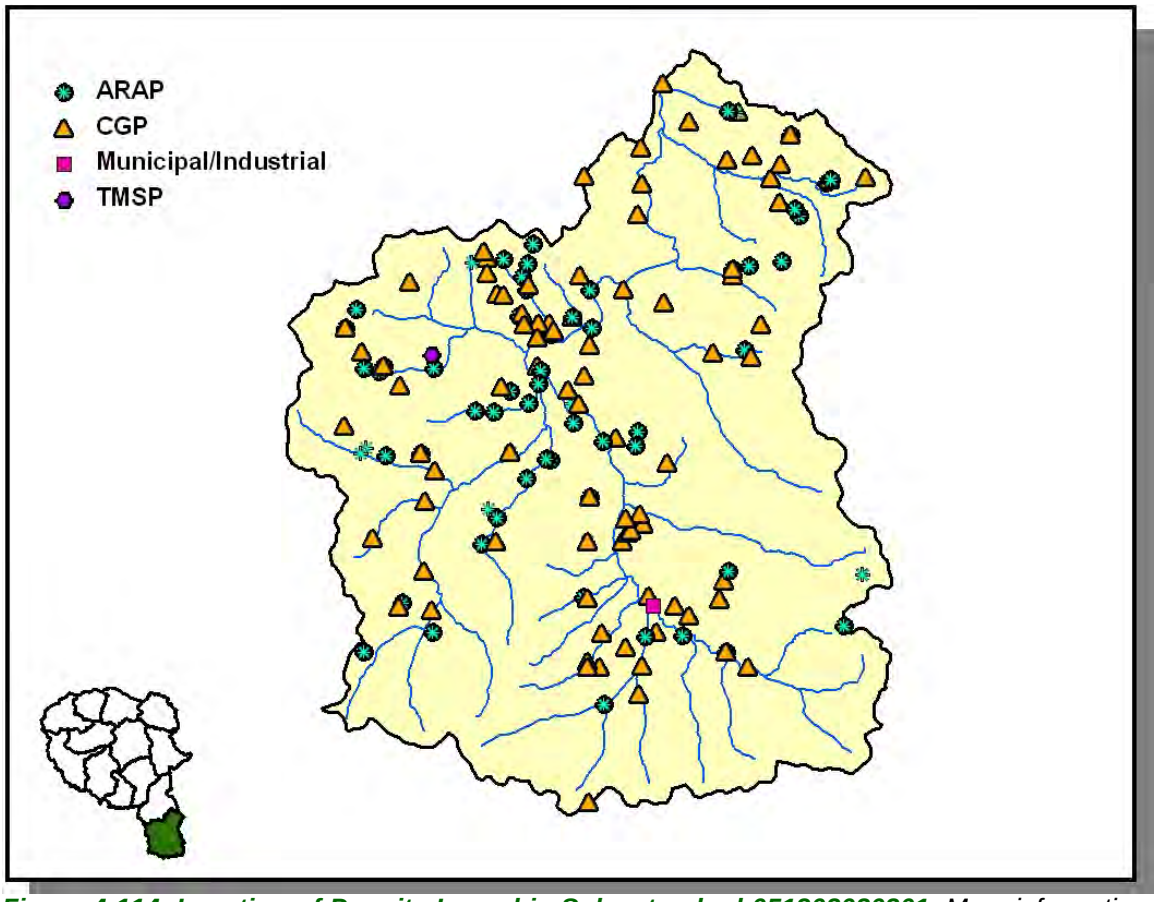


Figure 4-114. Location of Permits Issued in Subwatershed 051302020201. *More information, including the names of facilities, is provided in Appendix IV.*

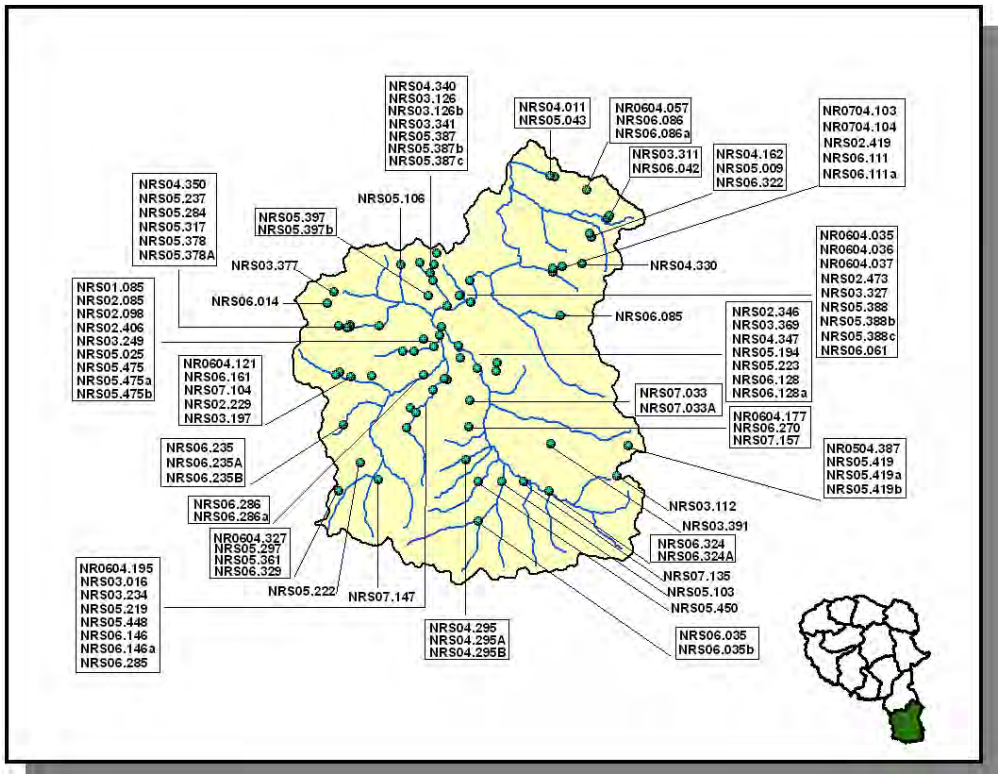


Figure 4-115. Location of ARAP (Aquatic Resource Alteration Permit) Sites in Subwatershed 051302020201. *More information is provided in Appendix IV.*

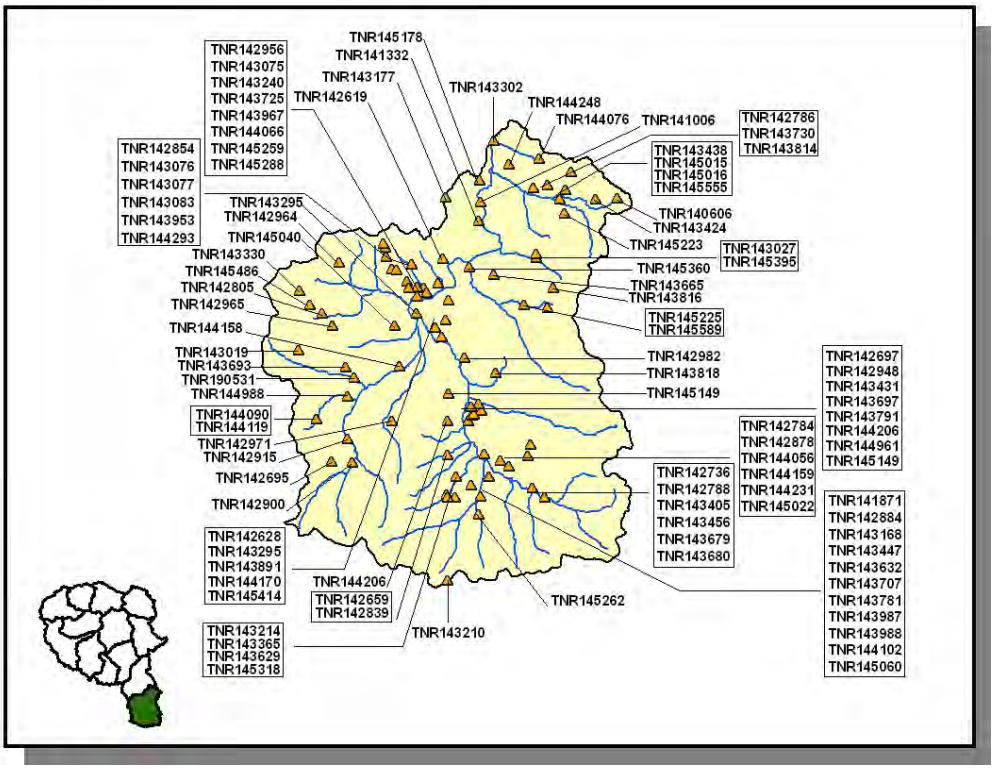


Figure 4-116. Location of CGP (Construction General Permit) Sites in Subwatershed 051302020201. *More information is provided in Appendix IV.*

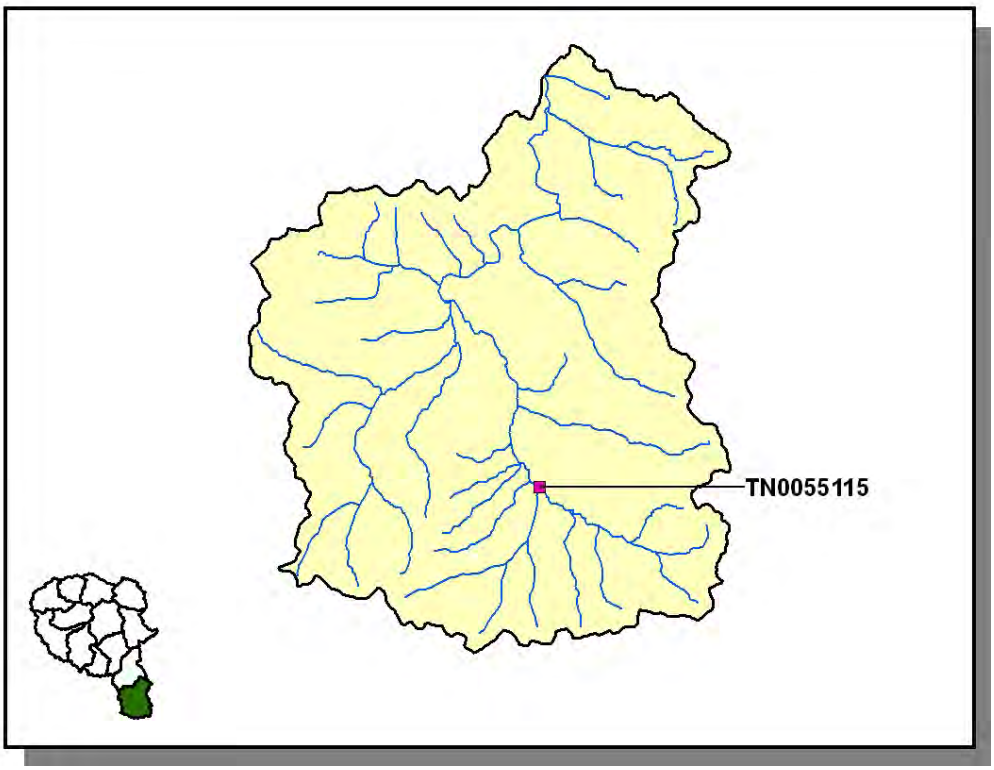


Figure 4-117. Location of Permitted Municipal and Industrial Facilities in Subwatershed 051302020201. *More information, including the name of the facility is provided in Appendix IV.*

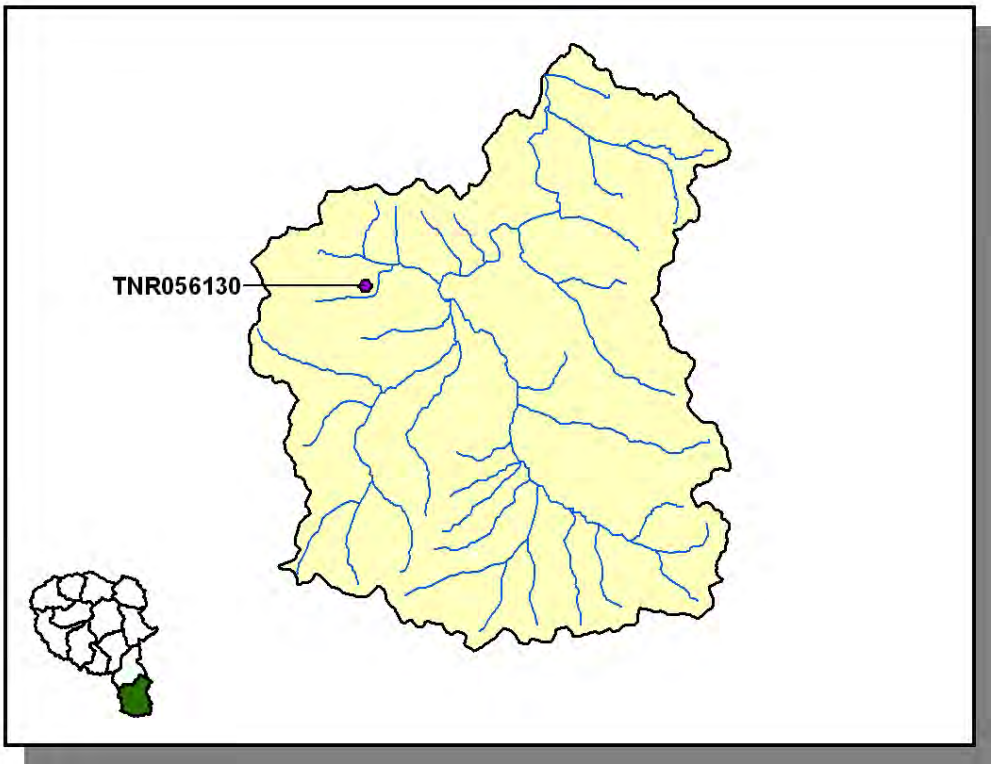


Figure 4-118. Location of TMSP (Tennessee Multi Sector Permit) Sites in Subwatershed 051302020201. *More information is provided in Appendix IV.*

4.2.I.iv. Nonpoint Source Contributions.

LIVESTOCK COUNTS						
County	Beef Cow	Cattle	Milk Cow	Chickens (Layers)	Hogs	Sheep
Davidson		9,207		1,572	73	
Rutherford	20,291	42,486	2,617	72,542	997	429
Williamson	24,771	47,826	2,078	746	2,728	695

Table 4-53. Summary of Livestock Count Estimates by County. *According to the 1997 Census of Agriculture (http://www.agcensus.usda.gov/), "Cattle" includes heifers, heifer calves, steers, bulls and bull calves; "Chickens" are layers 20 weeks and older.*

	INVENTORY		REMOVAL RATE	
County	Forest Land (thousand acres)	Timber Land (thousand acres)	Growing Stock (million cubic feet)	Sawtimber (million board feet)
Davidson	108.7	108.1	2.3	9.7

Table 4-54. Forest Acreage and Annual Removal Rates (1987-1994) by County.

CROPS	TONS/ACRE/YEAR
Soybeans (Row Crops)	7.41
Tobacco (Row Crops)	6.75
Other Cropland not Planted	6.46
Corn (Row Crops)	5.39
Cotton (Row Crops)	4.79
All Other Close Grown Cropland	2.26
Wheat (Close Grown Cropland)	1.27
Legume (Hayland)	0.98
Grass (Pastureland)	0.53
Berry (Horticultural)	0.47
Grass Forbs Legumes Mixed (Pastureland)	0.46
Legume (Pastureland)	0.33
Farmsteads and Ranch Headquarters	0.32
Legume Grass (Hayland)	0.14
Conservation Reserve Program Land	0.12
Other Land in Farms	0.12
Grass (Hayland)	0.10

Table 4-55. Annual Estimated Total Soil Loss in Subwatershed 051302020201.

4.2.J. 051302020202 (Mill Creek, Lower).

4.2.J.i. General Description.

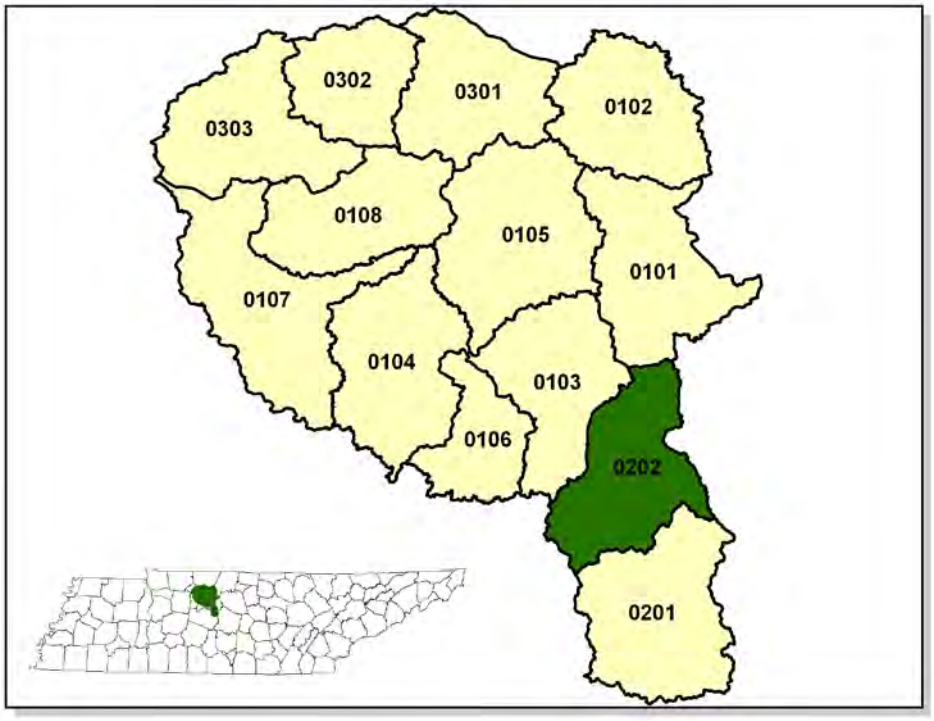


Figure 4-119. Location of Subwatershed 051302020202. *All Cheatham Lake HUC-12 subwatershed boundaries are shown for reference.*

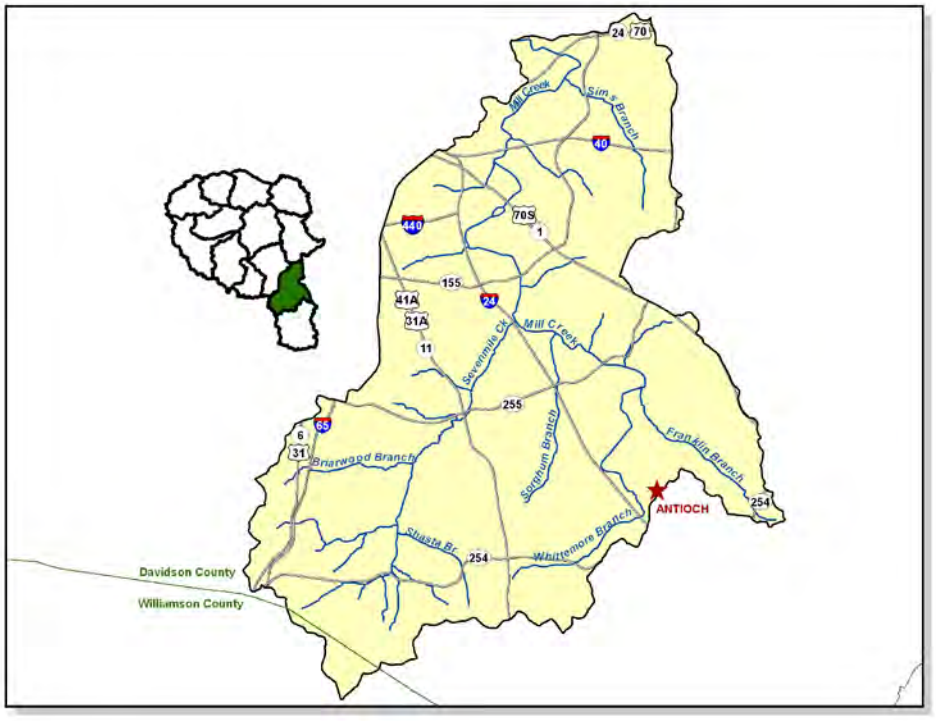


Figure 4-120. Locational Details of Subwatershed 051302020202.

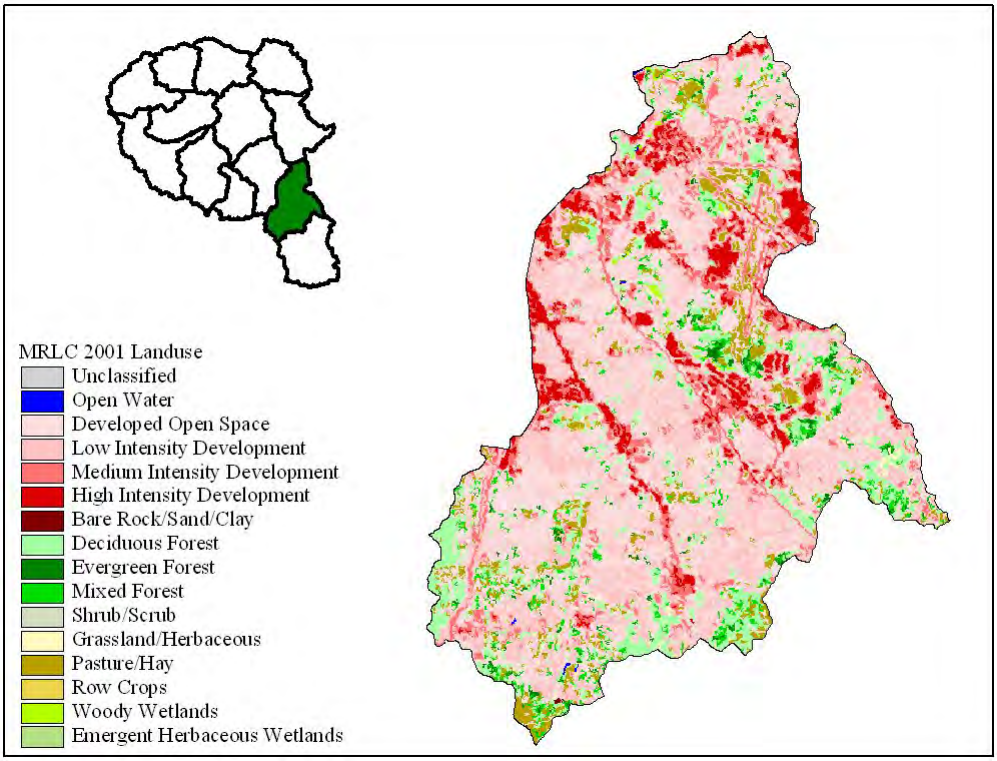


Figure 4-121. Illustration of Land Use Distribution in Subwatershed 051302020202.

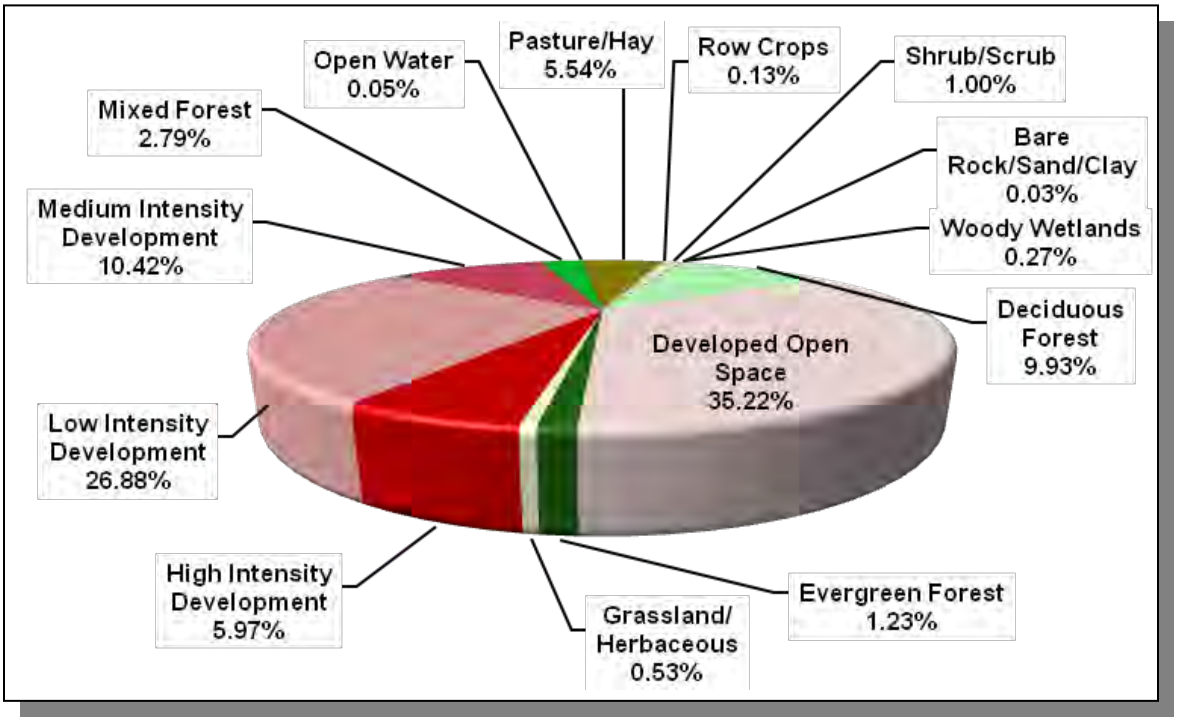


Figure 4-122. Land Use Distribution in Subwatershed 051302020202. *More information is provided in Appendix IV.*

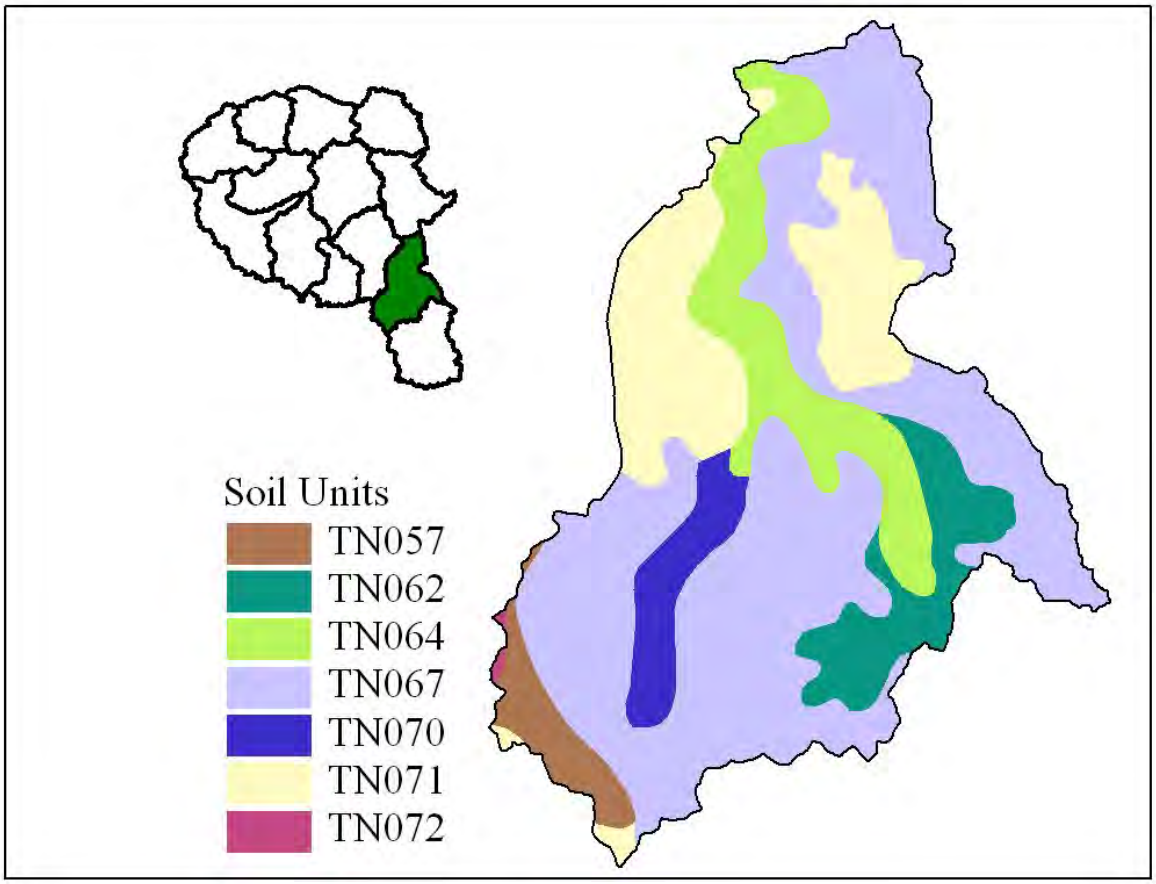


Figure 4-123. STATSGO (State Soil Geographic Database) Soil Map Units in Subwatershed 051302020202.

STATSGO MAP UNIT ID	PERCENT HYDRIC	HYDROLOGIC GROUP	PERMEABILITY (in/hour)	SOIL pH	ESTIMATED SOIL TEXTURE	SOIL ERODIBILITY
TN057	0.00	C	1.14	5.01	Clay Loam	0.33
TN062	0.00	C	0.98	4.40	Clay Loam	0.26
TN064	7.00	C	1.19	5.82	Silty Loam	0.37
TN067	2.00	C	2.69	5.51	Silty Loam	0.35
TN070	0.00	B	1.38	5.76	Loam	0.33
TN071	0.00	C	2.37	5.70	Silty Loam	0.33
TN072	0.00	B	3.70	5.57	Loam	0.31

Table 4-56. Soil Characteristics by STATSGO (State Soil Geographic Database) Soil Map Units in Subwatershed 051302020202. *The definition of "Hydrologic Group" is provided in Appendix IV.*

	COUNTY POPULATION				ESTIMATED POPULATION IN WATERSHED			
County	1990	1997	2000	% of County in Watershed	1990	1997	2000	% Change (1990-2000)
Davidson	510,784	535,032	569,891	9.17	46,859	49,084	52,282	11.60
Williamson	81,021	111,453	126,638	0.23	185	255	289	56.20
Total	**591,805**	**646,485**	**696,529**		**47,044**	**49,339**	**52,571**	**11.70**

Table 4-57. Population Estimates in Subwatershed 051302020202.

			NUMBER OF HOUSING UNITS			
Populated Place	County	Population	Total	Public Sewer	Septic Tank	Other
Brentwood	Williamson	16,392	5,514	3,195	2,319	0
Nashville-Davidson	Davidson	488,518	219,521	203,640	15,576	305
Oak Hill	Davidson	4,301	1,788	990	798	0
Total		**509,211**	**226,823**	**207,825**	**18,693**	**305**

Table 4-58. Housing and Sewage Disposal Practices of Select Communities in Subwatershed 051302020202.

4.2.J.ii. USGS Gaging Stations and STORET Sites.

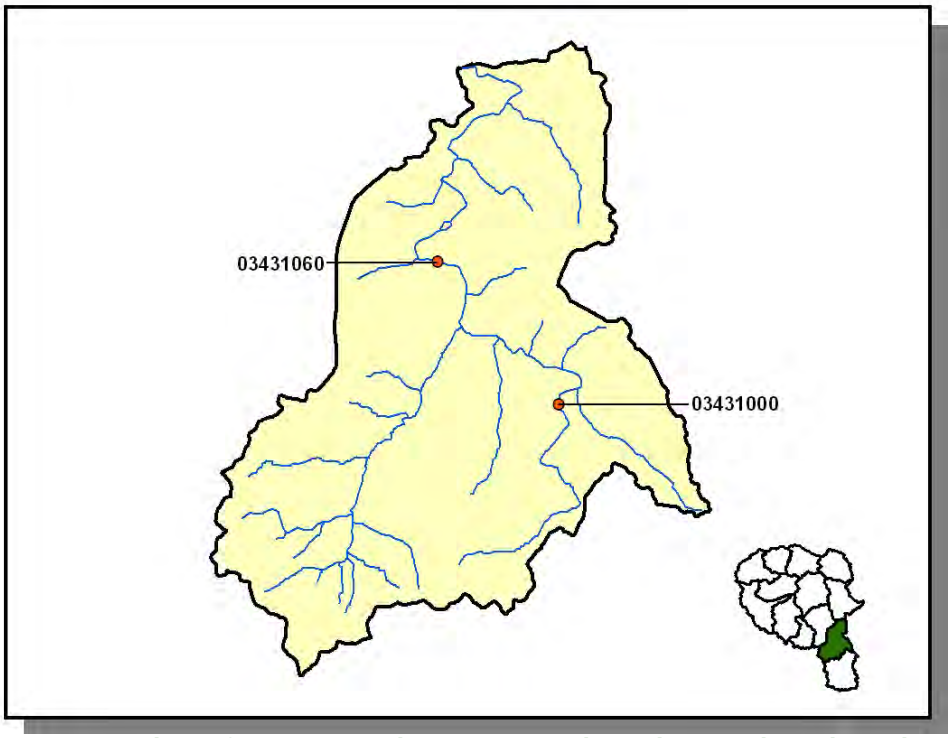


Figure 4-124. Location of USGS Continuous Record Gaging Stations in Subwatershed 051302020202. *More information is provided in Appendix IV.*

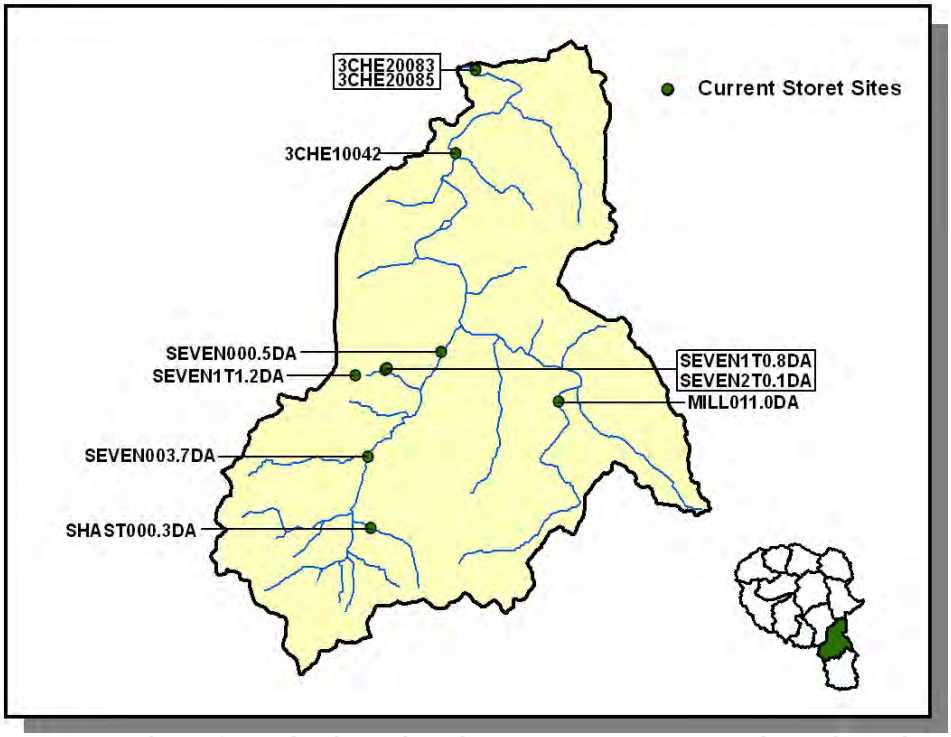


Figure 4-125. Location of Monitoring Sites in EPA's STORET Database in Subwatershed 051302020202. *More information, including site names and locations, is provided in Appendix IV.*

4.2.J.iii. Permitted Activities.

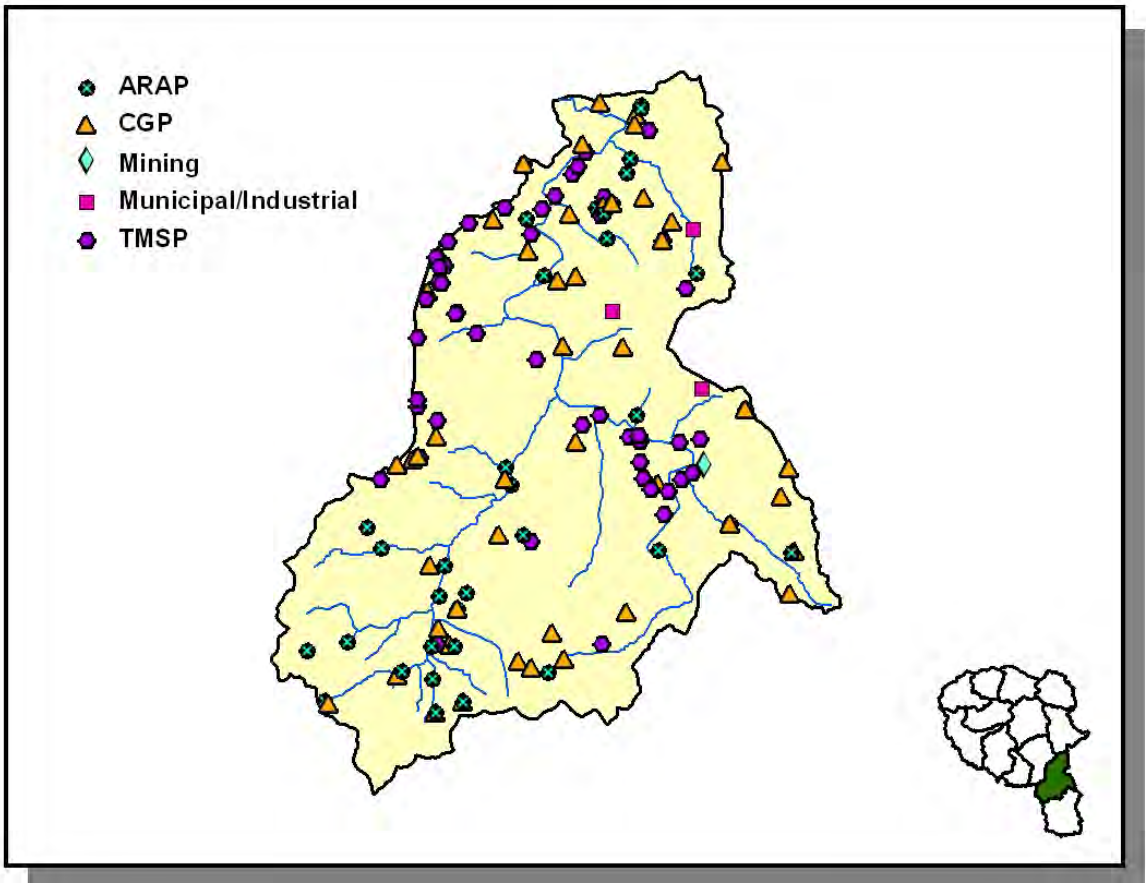


Figure 4-126. Location of Permits Issued in Subwatershed 051302020202. *More information, including the names of facilities, is provided in Appendix IV.*

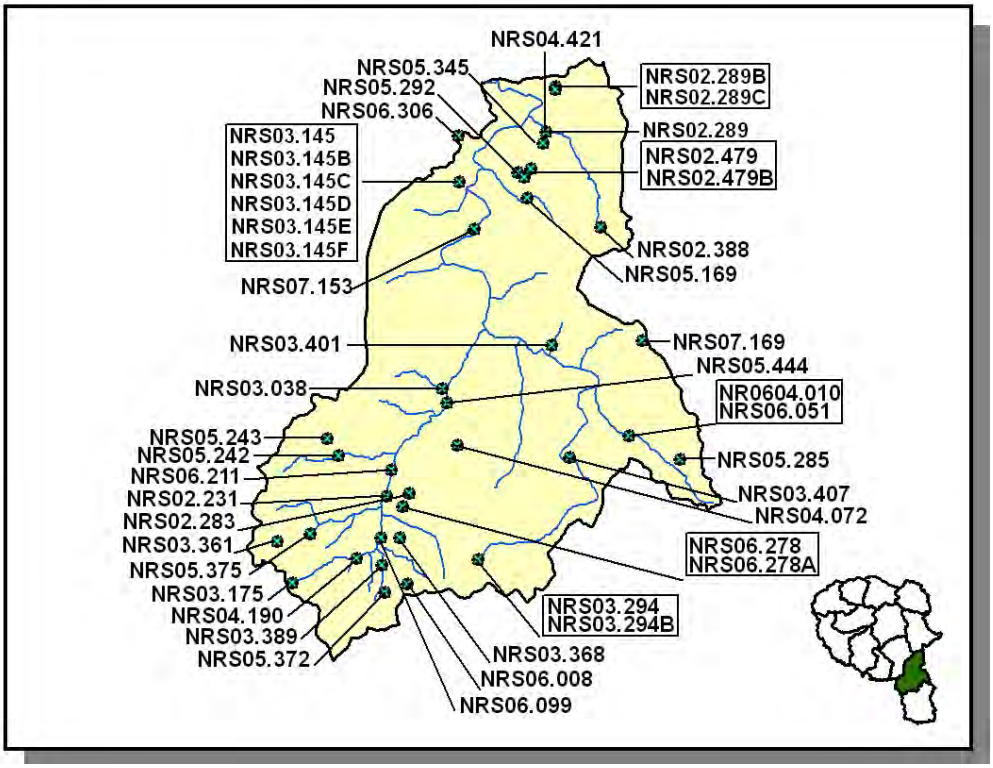


Figure 4-127. Location of ARAP (Aquatic Resource Alteration Permit) Sites in Subwatershed 051302020202. *More information is provided in Appendix IV.*

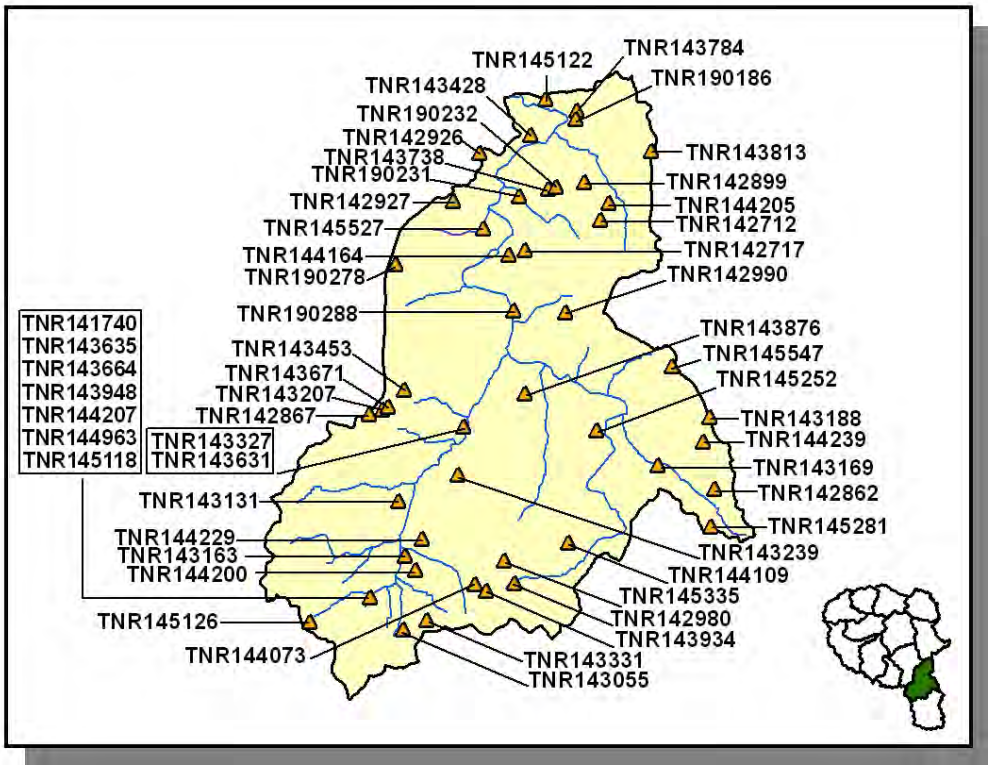


Figure 4-128. Location of CGP (Construction General Permit) Sites in Subwatershed 051302020202. *More information is provided in Appendix IV.*

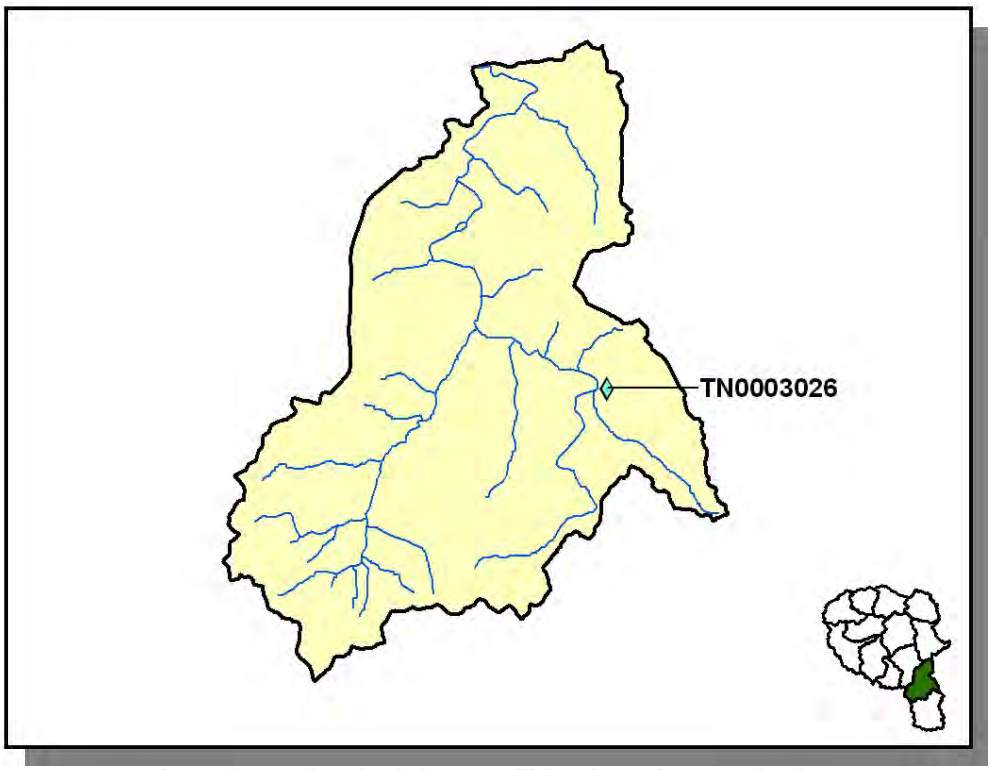


Figure 4-129. Location of Permitted Mining Facilities in Subwatershed 051302020202. *More information is provided in Appendix IV.*

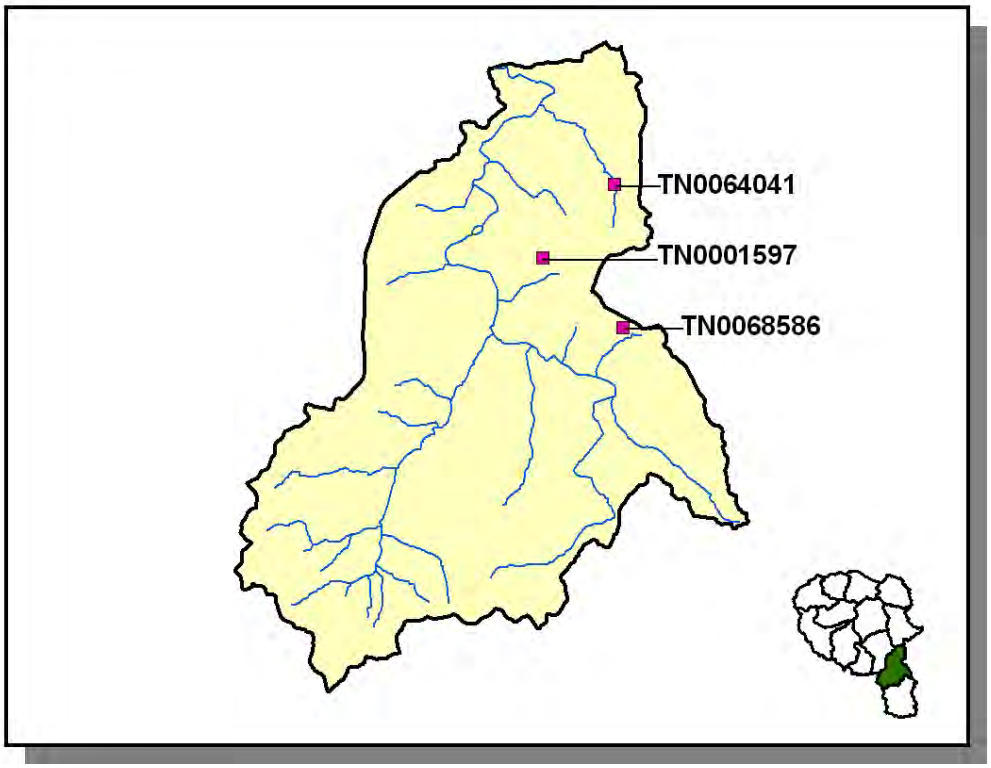


Figure 4-130. Location of Permitted Municipal and Industrial Facilities in Subwatershed 051302020202. *More information, including the name of the facility is provided in Appendix IV.*

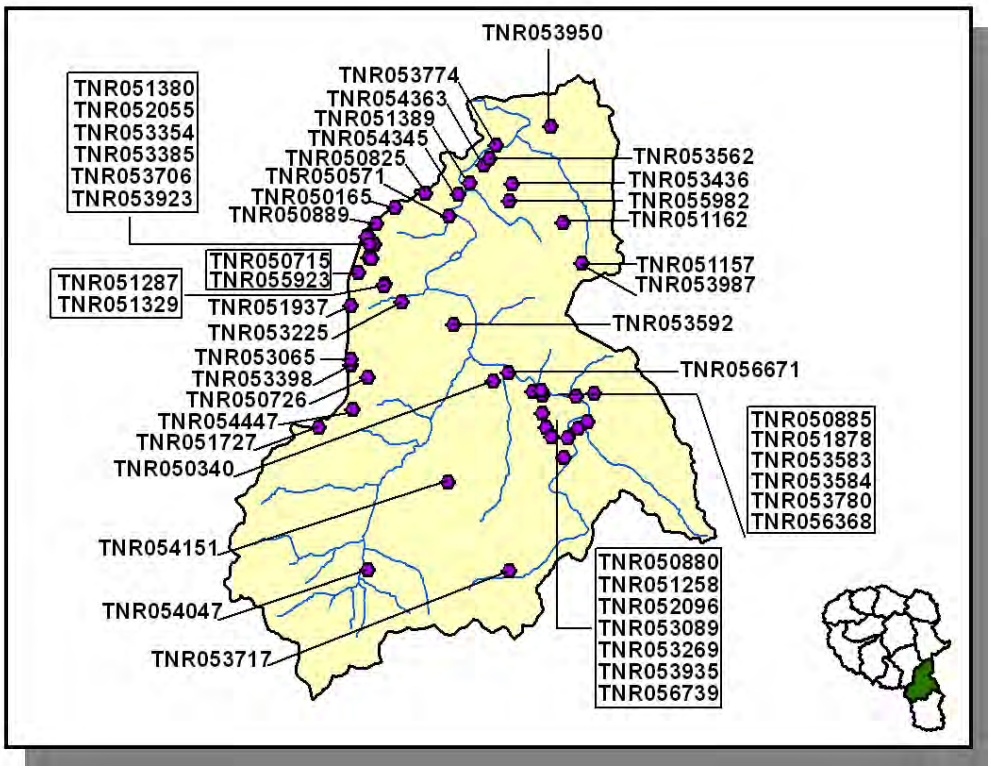


Figure 4-131. Location of TMSP (Tennessee Multi Sector Permit) Sites in Subwatershed 051302020202. *More information is provided in Appendix IV.*

4.2.J.iv. Nonpoint Source Contributions.

LIVESTOCK COUNTS						
County	Beef Cow	Cattle	Milk Cow	Chickens (Layers)	Hogs	Sheep
Davidson		9,207		1,572	73	
Williamson	24,771	47,826	2,078	746	2,728	695

Table 4-59. Summary of Livestock Count Estimates by County. *According to the 1997 Census of Agriculture (http://www.agcensus.usda.gov/), "Cattle" includes heifers, heifer calves, steers, bulls and bull calves; "Chickens" are layers 20 weeks and older.*

	INVENTORY		REMOVAL RATE	
County	Forest Land (thousand acres)	Timber Land (thousand acres)	Growing Stock (million cubic feet)	Sawtimber (million board feet)
Davidson	108.7	108.1	2.3	9.7

Table 4-60. Forest Acreage and Annual Removal Rates (1987-1994) by County.

CROPS	TONS/ACRE/YEAR
Soybeans (Row Crops)	14.7
Tobacco (Row Crops)	6.75
Other Cropland not Planted	6.46
Corn (Row Crops)	5.39
All Other Close Grown Cropland	2.26
Wheat (Close Grown Cropland)	1.27
Legume (Hayland)	0.98
Grass Forbs Legumes Mixed (Pastureland)	0.53
Grass (Pastureland)	0.44
Farmsteads and Ranch Headquarters	0.33
Legume (Pastureland)	0.33
Legume Grass (Hayland)	0.14
Other Land in Farms	0.12
Conservation Reserve Program Land	0.12
Grass (Hayland)	0.08

Table 4-61. Annual Estimated Total Soil Loss in Subwatershed 051302020202.

4.2.K. 051302020301 (Sycamore Creek, Upper).

4.2.K.i. General Description.

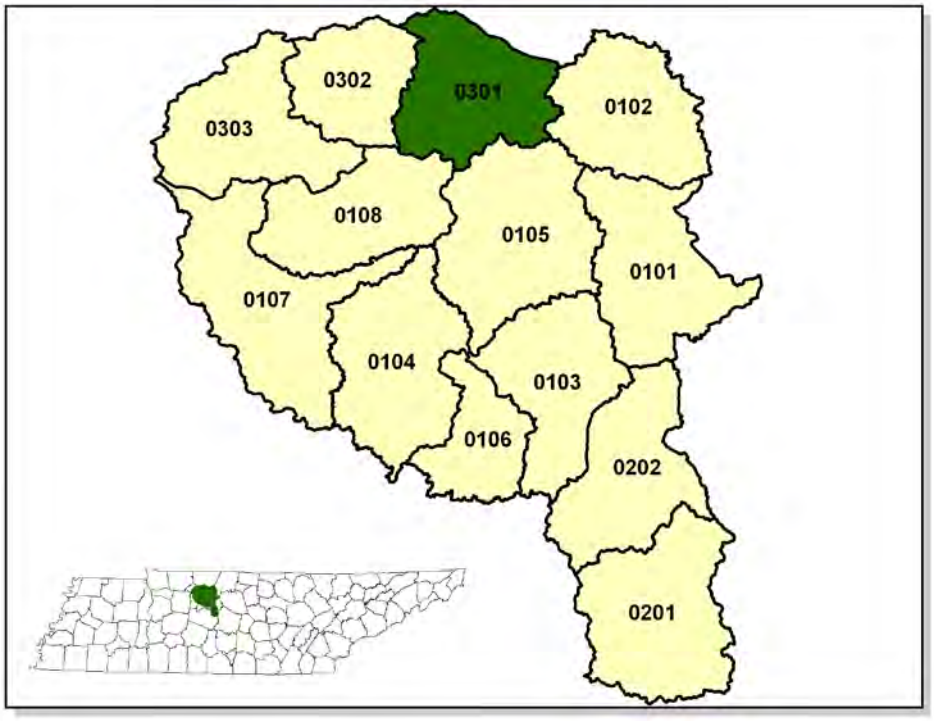


Figure 4-132. Location of Subwatershed 051302020301. *All Cheatham Lake HUC-12 subwatershed boundaries are shown for reference.*

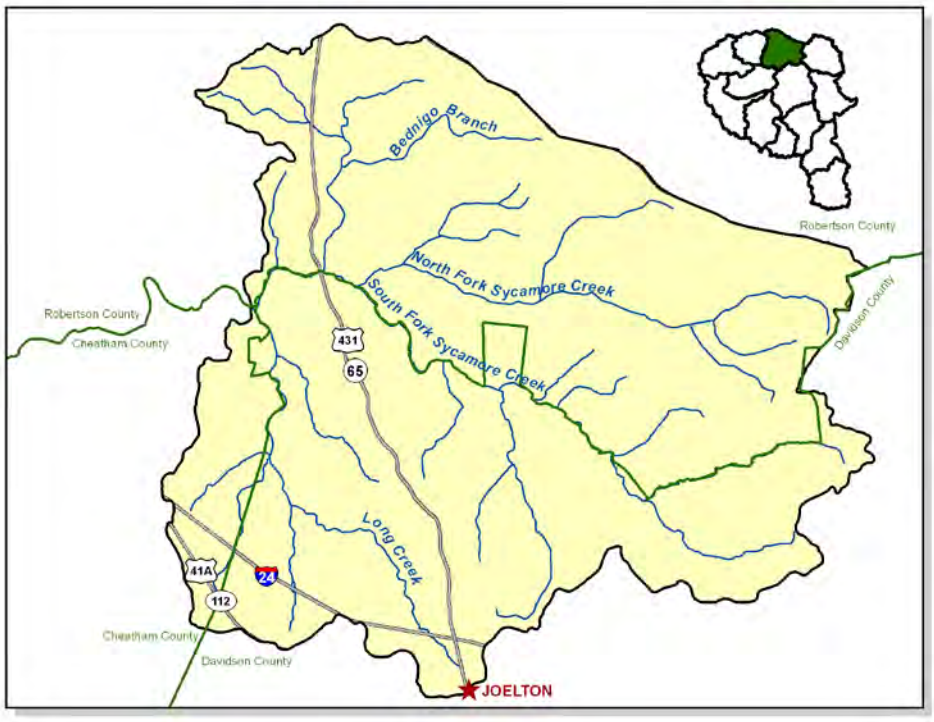


Figure 4-133. Locational Details of Subwatershed 051302020301.

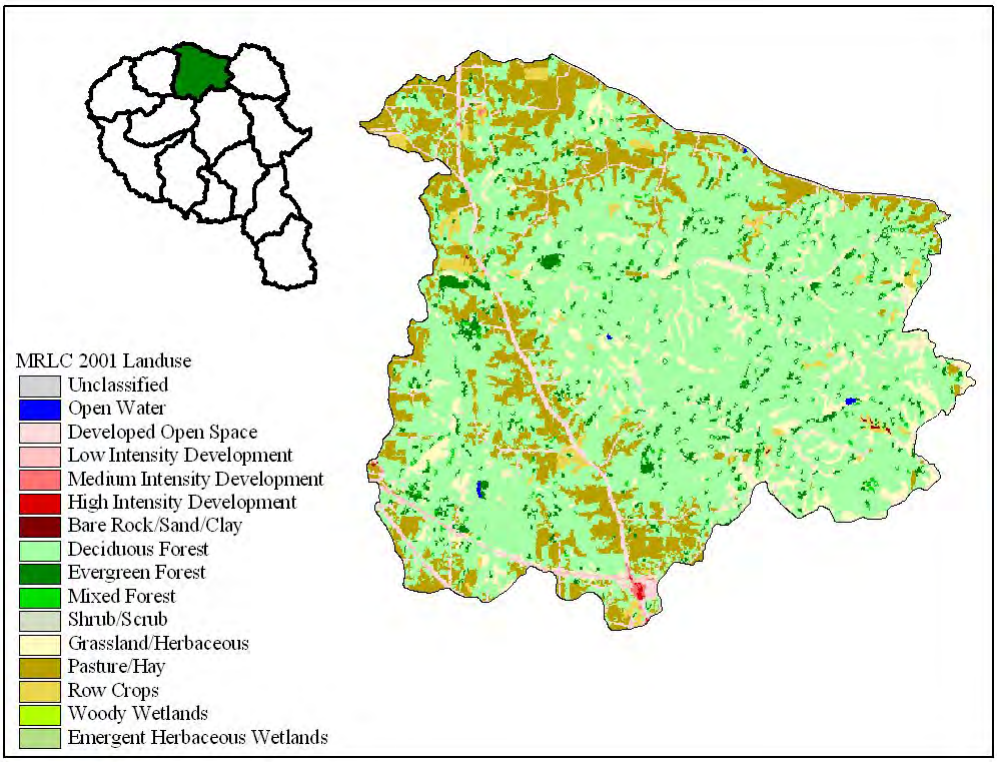


Figure 4-134. Illustration of Land Use Distribution in Subwatershed 051302020301.

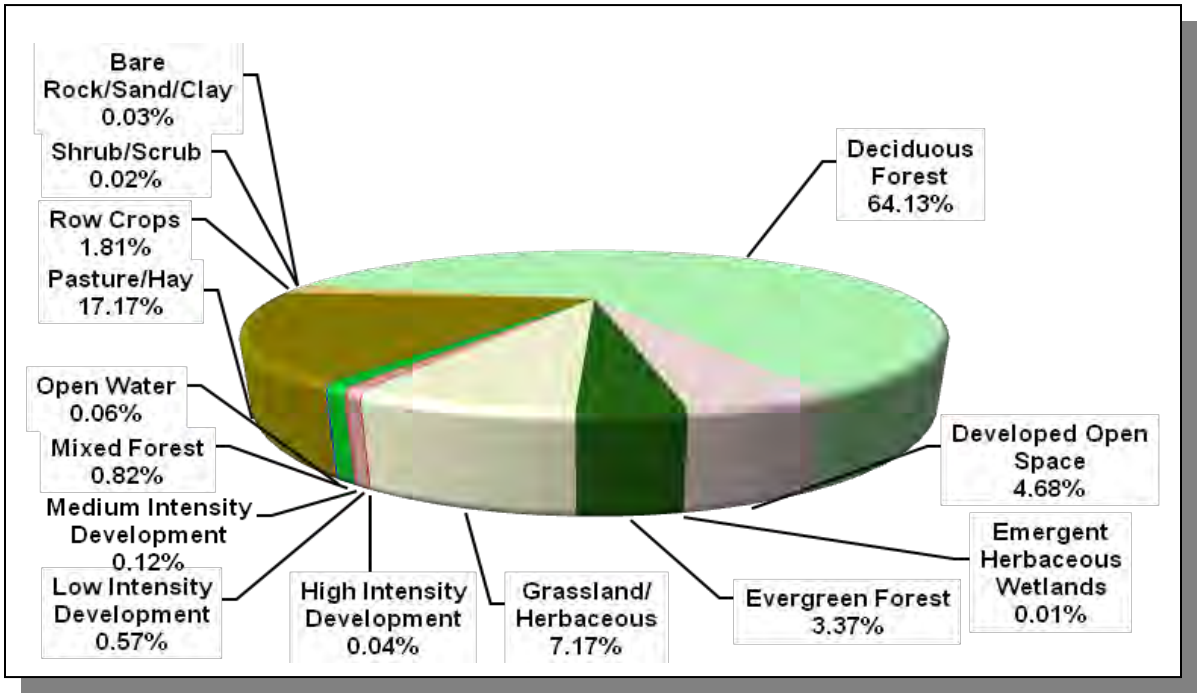


Figure 4-135. Land Use Distribution in Subwatershed 051302020301. *More information is provided in Appendix IV.*

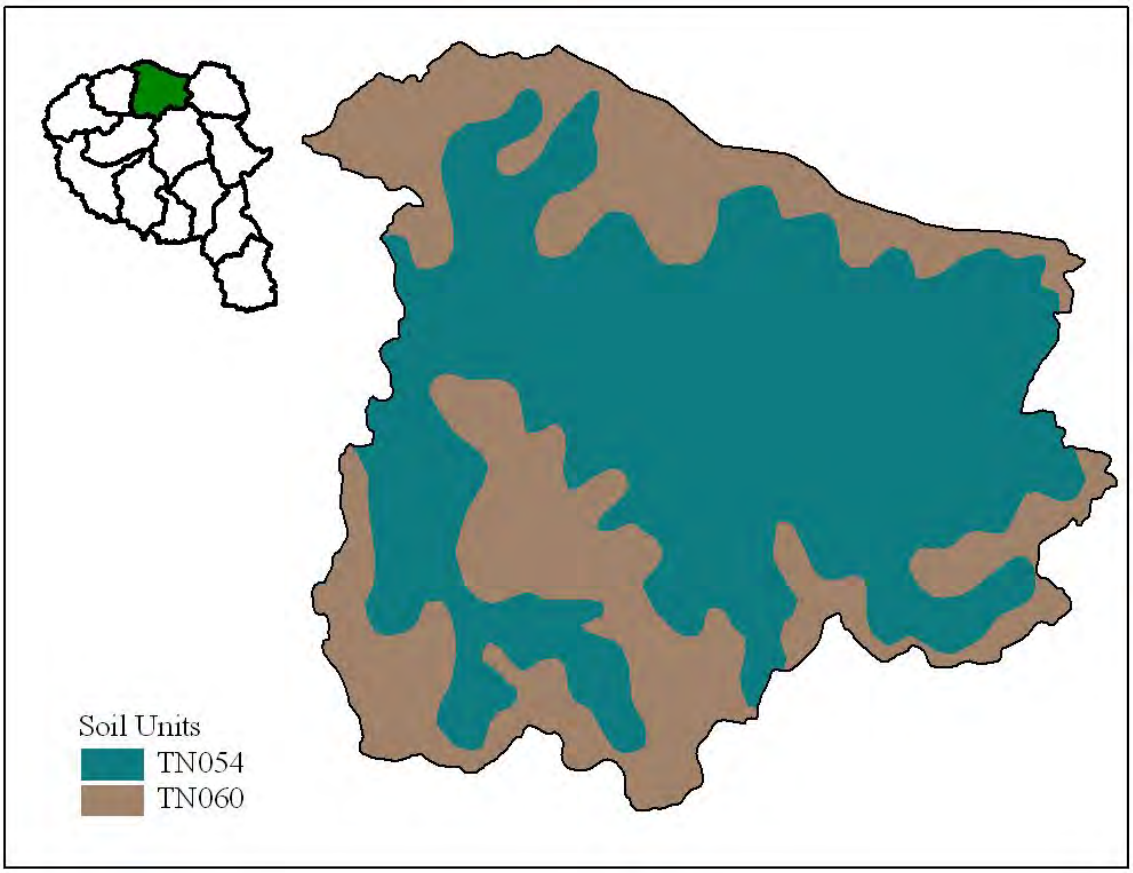


Figure 4-136. STATSGO (State Soil Geographic Database) Soil Map Units in Subwatershed 051302020301.

STATSGO MAP UNIT ID	PERCENT HYDRIC	HYDROLOGIC GROUP	PERMEABILITY (in/hour)	SOIL pH	ESTIMATED SOIL TEXTURE	SOIL ERODIBILITY
TN054	0.00	C	3.04	4.84	Loam	0.32
TN060	5.00	B	1.30	5.32	Silty Loam	0.39

Table 4-62. Soil Characteristics by STATSGO (State Soil Geographic Database) Soil Map Units in Subwatershed 051302020301. *The definition of "Hydrologic Group" is provided in Appendix IV.*

	COUNTY POPULATION				ESTIMATED POPULATION IN WATERSHED			
County	1990	1997	2000	% of County in Watershed	1990	1997	2000	% Change (1990-2000)
Cheatham	27,140	34,402	35,912	1.50	407	516	538	32.20
Davidson	510,784	535,032	569,891	3.20	16,360	17,136	18,253	11.60
Robertson	41,494	51,533	54,433	5.13	2,128	2,643	2,792	31.20
Total	**579,418**	**620,967**	**660,236**		**18,895**	**20,295**	**21,583**	**14.20**

Table 4-63. Population Estimates in Subwatershed 051302020301.

			NUMBER OF HOUSING UNITS			
Populated Place	County	Population	Total	Public Sewer	Septic Tank	Other
Ridgetop	Robertson	1,129	396	7	389	0
Nashville-Davidson	Davidson	488,518	219,521	203,640	15,576	305
Total		**489,647**	**219,917**	**203,647**	**15,965**	**305**

Table 4-64. Housing and Sewage Disposal Practices of Select Communities in Subwatershed 051302020301.

4.2.K.ii. USGS Gaging Stations and STORET Sites.

There are no USGS continuous record gaging stations located in subwatershed 051302020301.

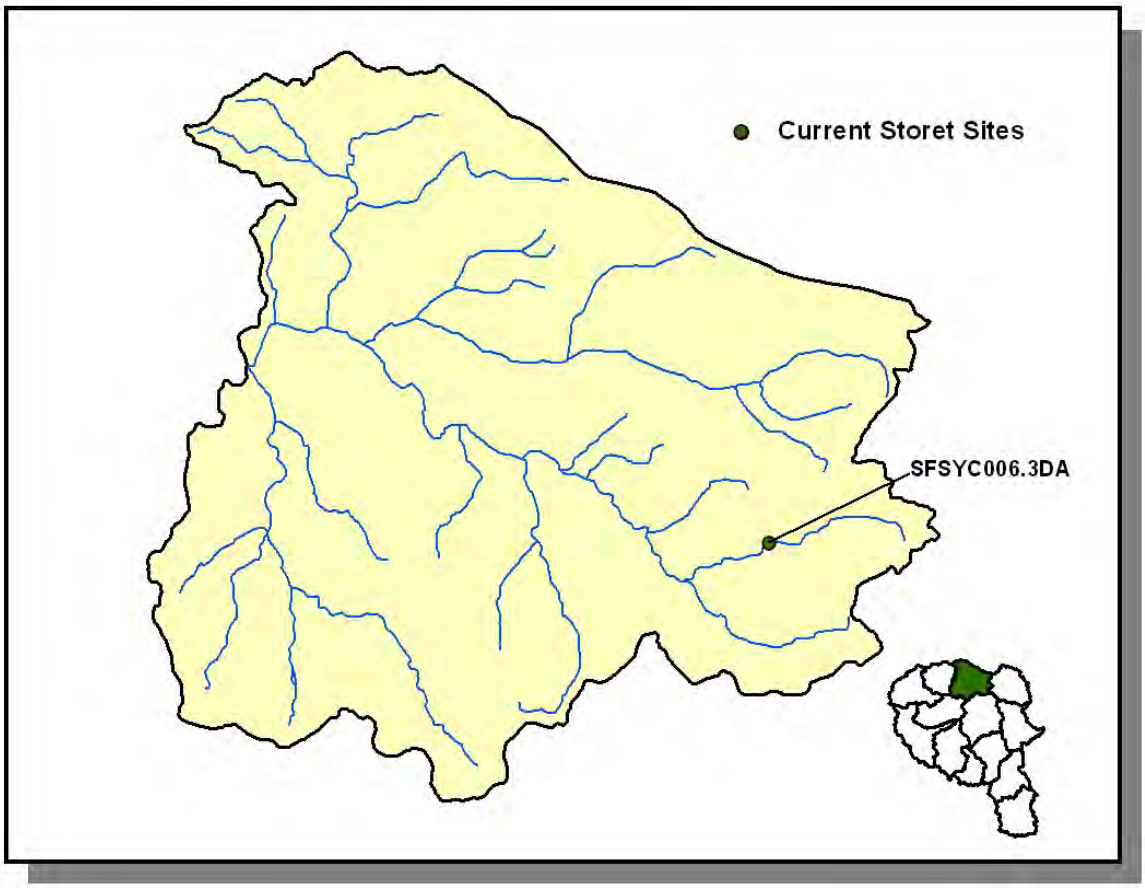


Figure 4-137. Location of Monitoring Sites in EPA's STORET Database in Subwatershed 051302020301. *More information, including site names and locations, is provided in Appendix IV.*

4.2.K.iii. Permitted Activities.

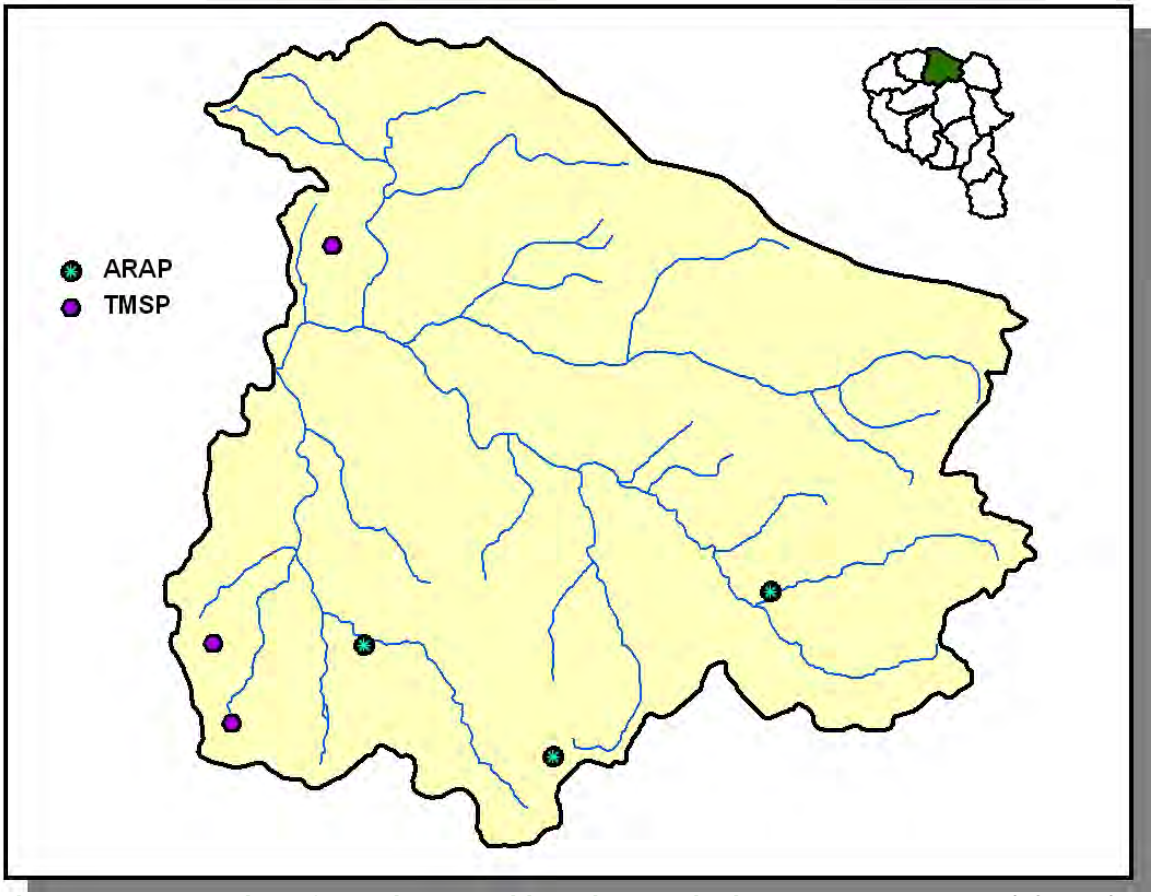


Figure 4-138. Location of Permits Issued in Subwatershed 051302020301. *More information, including the names of facilities, is provided in Appendix IV.*

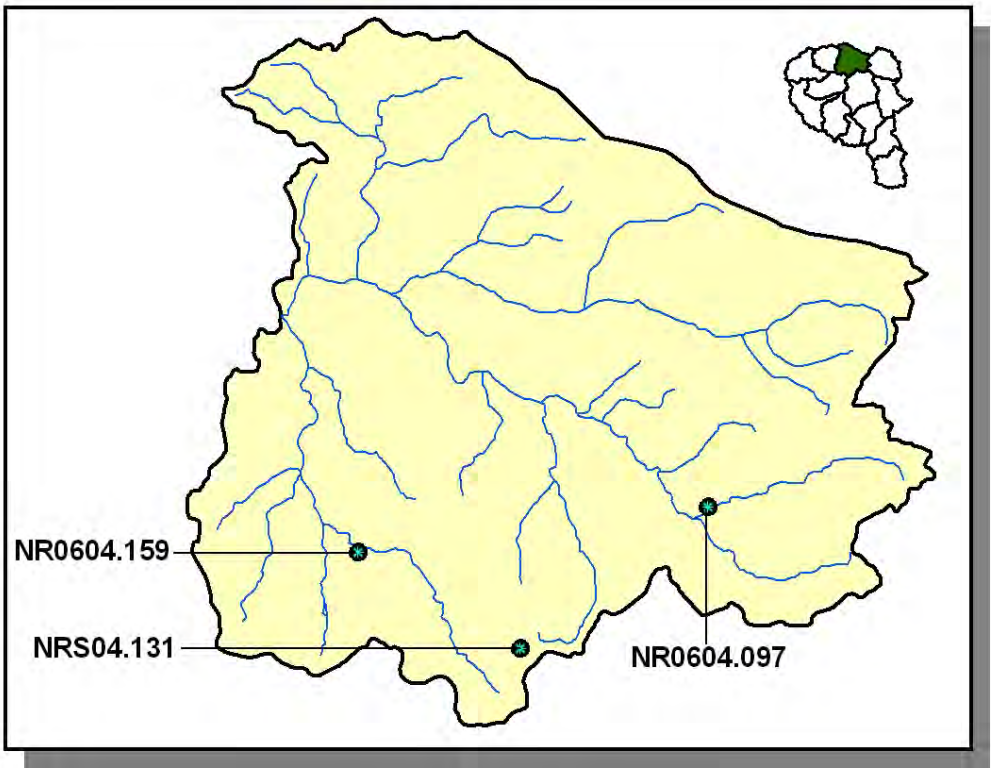


Figure 4-139. Location of ARAP (Aquatic Resource Alteration Permit) Sites in Subwatershed 051302020301. *More information is provided in Appendix IV.*

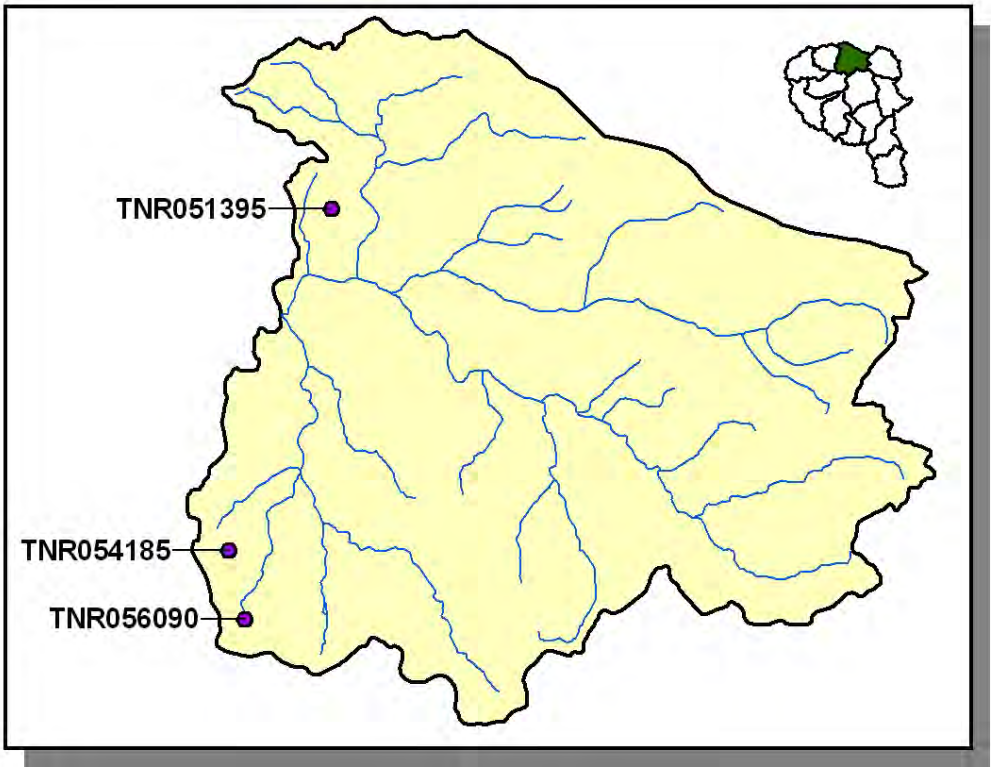


Figure 4-140. Location of TMSP (Tennessee Multi Sector Permit) Sites in Subwatershed 051302020301. *More information is provided in Appendix IV.*

4.2.K.iv. Nonpoint Source Contributions.

LIVESTOCK COUNTS						
County	Beef Cow	Cattle	Milk Cow	Chickens (Layers)	Hogs	Sheep
Cheatham		11,429		121	1,183	
Davidson		9,207		1,572	73	
Robertson	22,502	47,887	3,478	31	6,982	279

Table 4-65. Summary of Livestock Count Estimates by County. *According to the 1997 Census of Agriculture (http://www.agcensus.usda.gov/), "Cattle" includes heifers, heifer calves, steers, bulls and bull calves; "Chickens" are layers 20 weeks and older.*

	INVENTORY		REMOVAL RATE	
County	Forest Land (thousand acres)	Timber Land (thousand acres)	Growing Stock (million cubic feet)	Sawtimber (million board feet)
Cheatham	118.2	118.2	2.3	8.4
Davidson	108.7	108.1	2.3	9.7
Robertson	53	53	2.2	9.7

Table 4-66. Forest Acreage and Annual Removal Rates (1987-1994) by County.

CROPS	TONS/ACRE/YEAR
Tobacco (Row Crops)	11.87
Soybeans (Row Crops)	11.77
Other Cropland not Planted	8.20
Corn (Row Crops)	5.67
All Other Close Grown Cropland	2.26
Wheat (Close Grown Cropland)	1.68
Legume (Hayland)	0.68
Farmsteads and Ranch Headquarters	0.66
Grass (Pastureland)	0.59
Grass Forbs Legumes Mixed (Pastureland)	0.50
Legume Grass (Hayland)	0.49
Conservation Reserve Program Land	0.36
Grass (Hayland)	0.28
Other Land in Farms	0.27

Table 4-67. Annual Estimated Total Soil Loss in Subwatershed 051302020301.

4.2.L. 051302020302 (Sycamore Creek, Middle).

4.2.L.i. General Description.

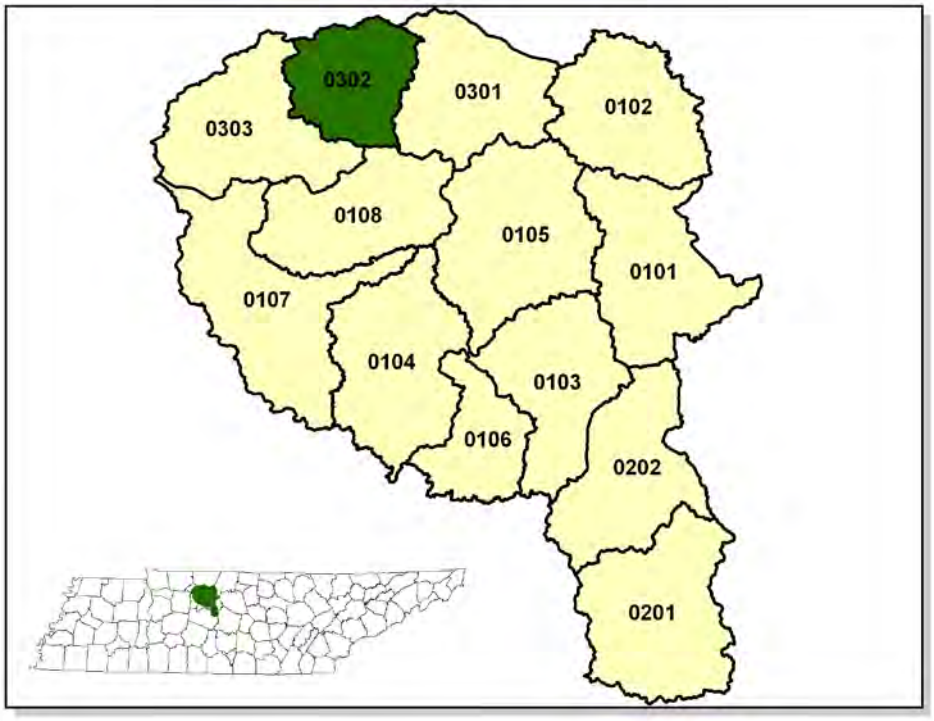


Figure 4-141. Location of Subwatershed 051302020302. *All Cheatham Lake HUC-12 subwatershed boundaries are shown for reference.*

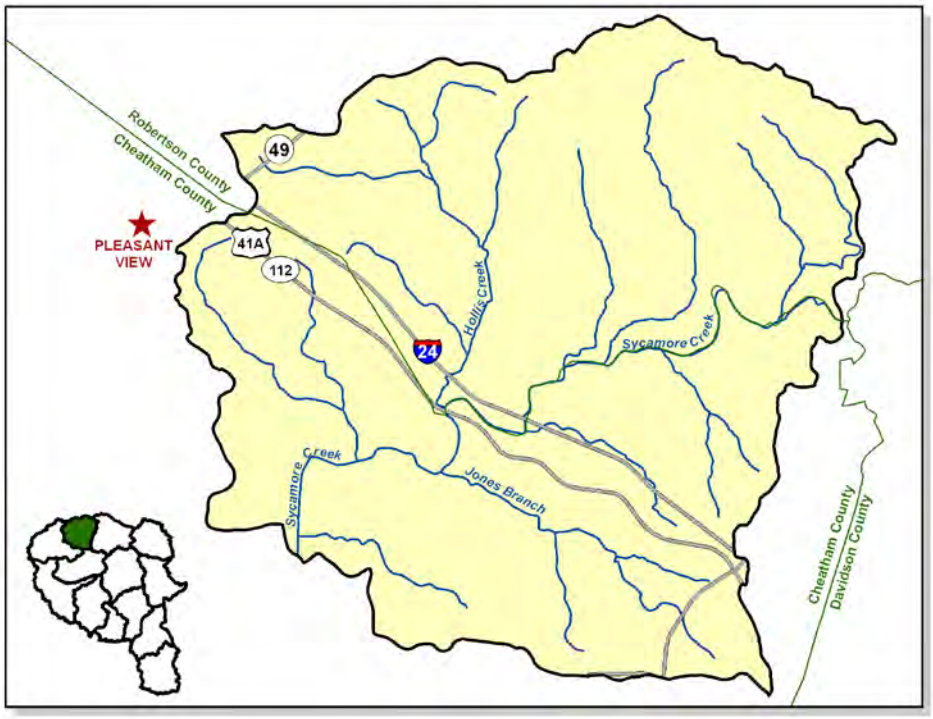


Figure 4-142. Locational Details of Subwatershed 051302020302.

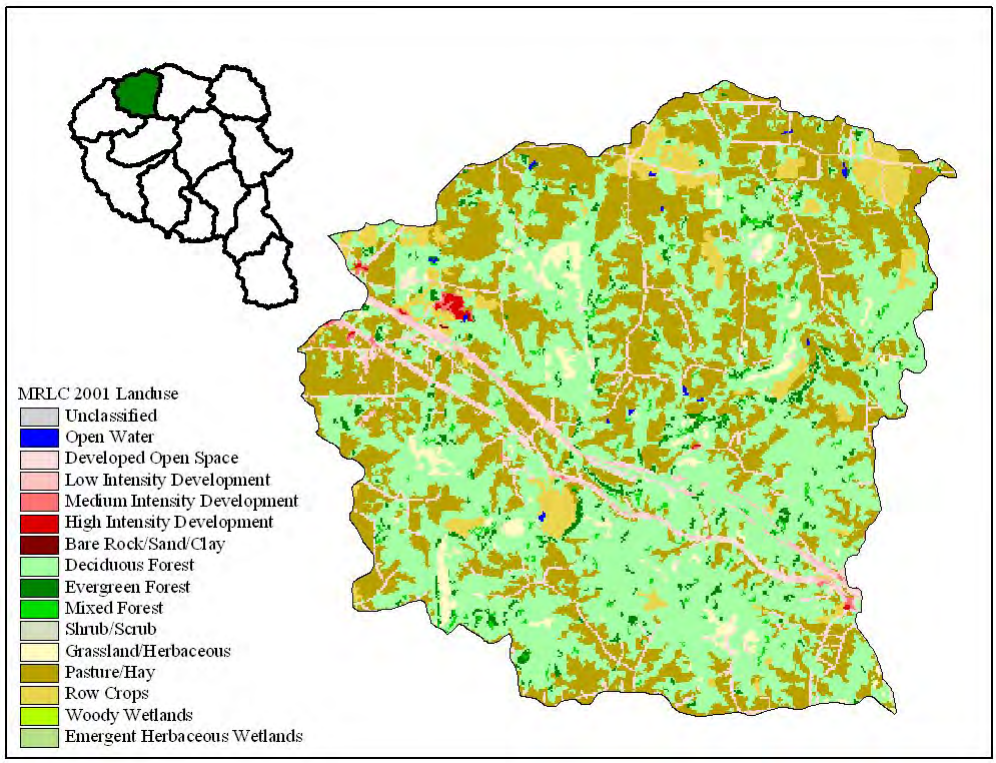


Figure 4-143. Illustration of Land Use Distribution in Subwatershed 051302020302.

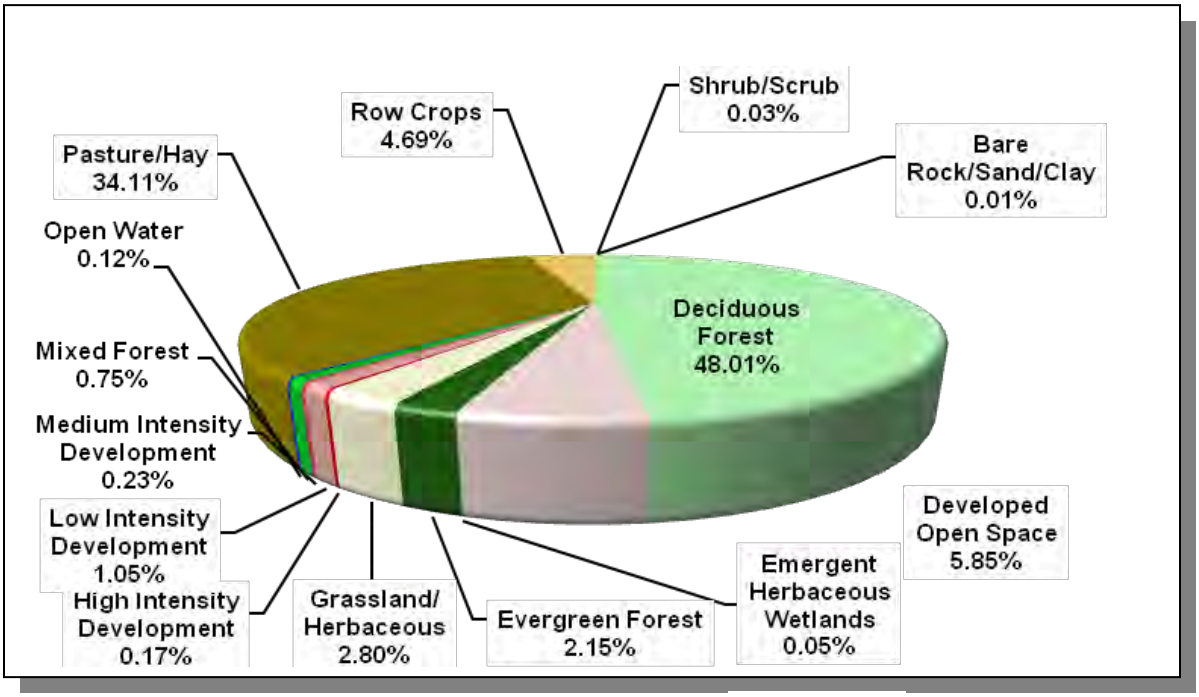


Figure 4-144. Land Use Distribution in Subwatershed 051302020302. *More information is provided in Appendix IV.*

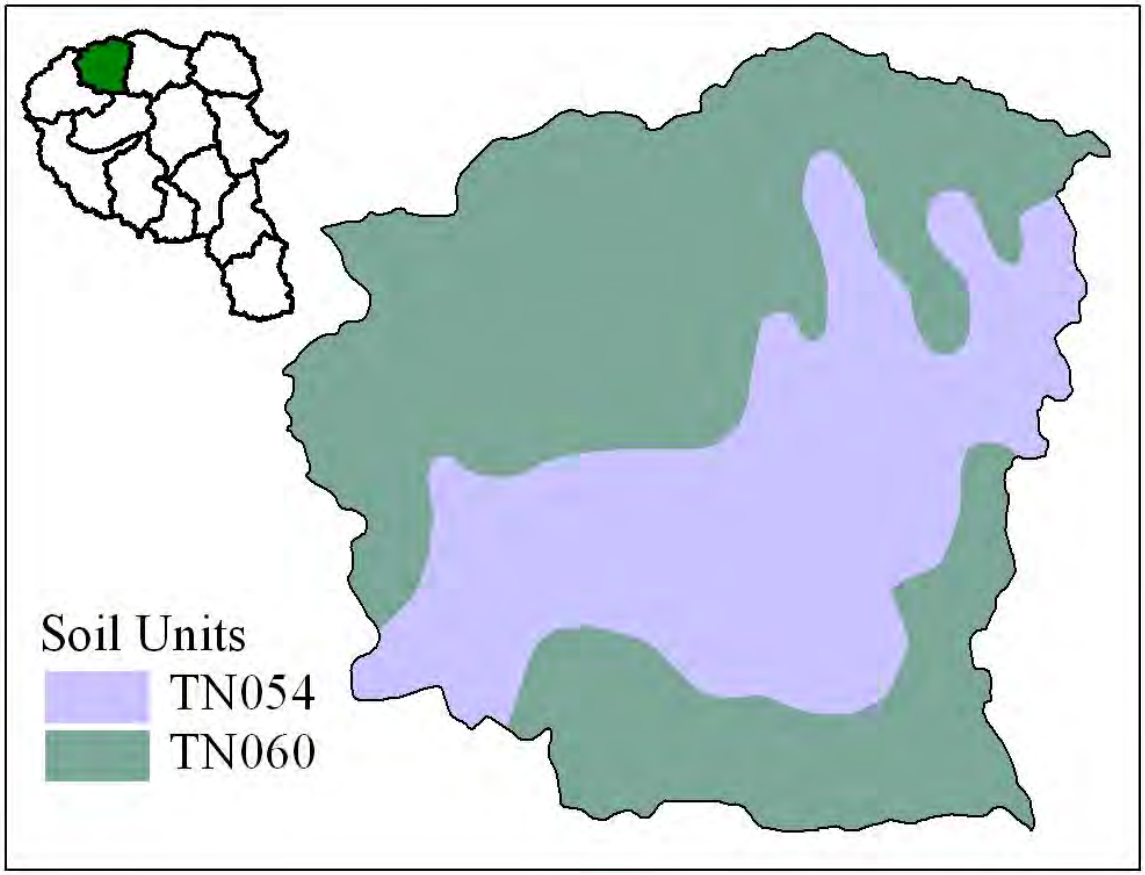


Figure 4-145. STATSGO (State Soil Geographic Database) Soil Map Units in Subwatershed 051302020302.

STATSGO MAP UNIT ID	PERCENT HYDRIC	HYDROLOGIC GROUP	PERMEABILITY (in/hour)	SOIL pH	ESTIMATED SOIL TEXTURE	SOIL ERODIBILITY
TN054	0.00	C	3.04	4.84	Loam	0.32
TN060	5.00	B	1.30	5.32	Silty Loam	0.39

Table 4-68. Soil Characteristics by STATSGO (State Soil Geographic Database) Soil Map Units in Subwatershed 051302020302. *The definition of "Hydrologic Group" is provided in Appendix IV.*

	COUNTY POPULATION				ESTIMATED POPULATION IN WATERSHED			
County	1990	1997	2000	% of County in Watershed	1990	1997	2000	% Change (1990-2000)
Cheatham	27,140	34,402	35,912	5.30	1,437	1,822	1,902	32.40
Robertson	41,494	51,533	54,433	3.57	1,483	1,841	1,945	31.20
Total	**68,634**	**85,935**	**90,345**		**2,920**	**3,663**	**3,847**	**31.70**

Table 4-69. Population Estimates in Subwatershed 051302020302.

4.2.L.ii. USGS Gaging Stations and STORET Sites.

There are no USGS continuous record gaging stations located in subwatershed 051302020302.

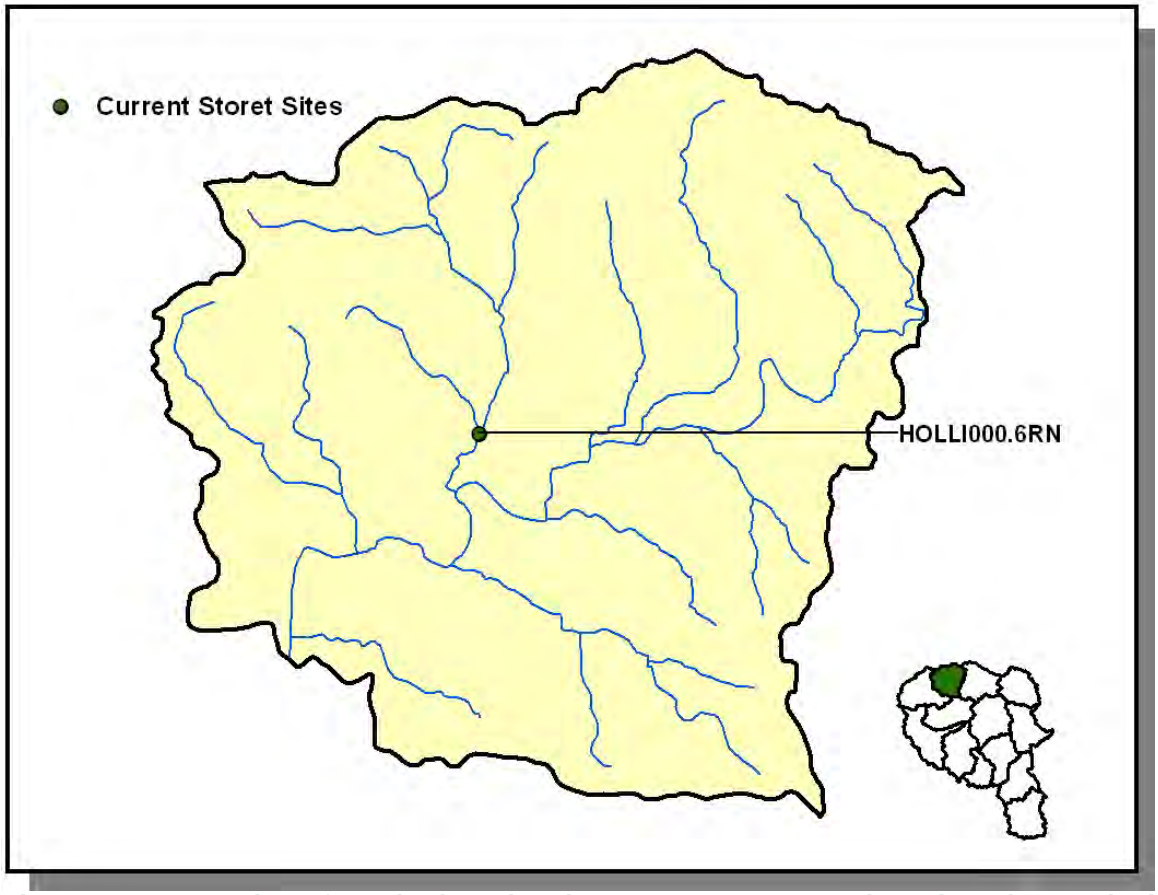


Figure 4-146. Location of Monitoring Sites in EPA's STORET Database in Subwatershed 051302020302. *More information, including site names and locations, is provided in Appendix IV.*

4.2.L.iii. Permitted Activities.

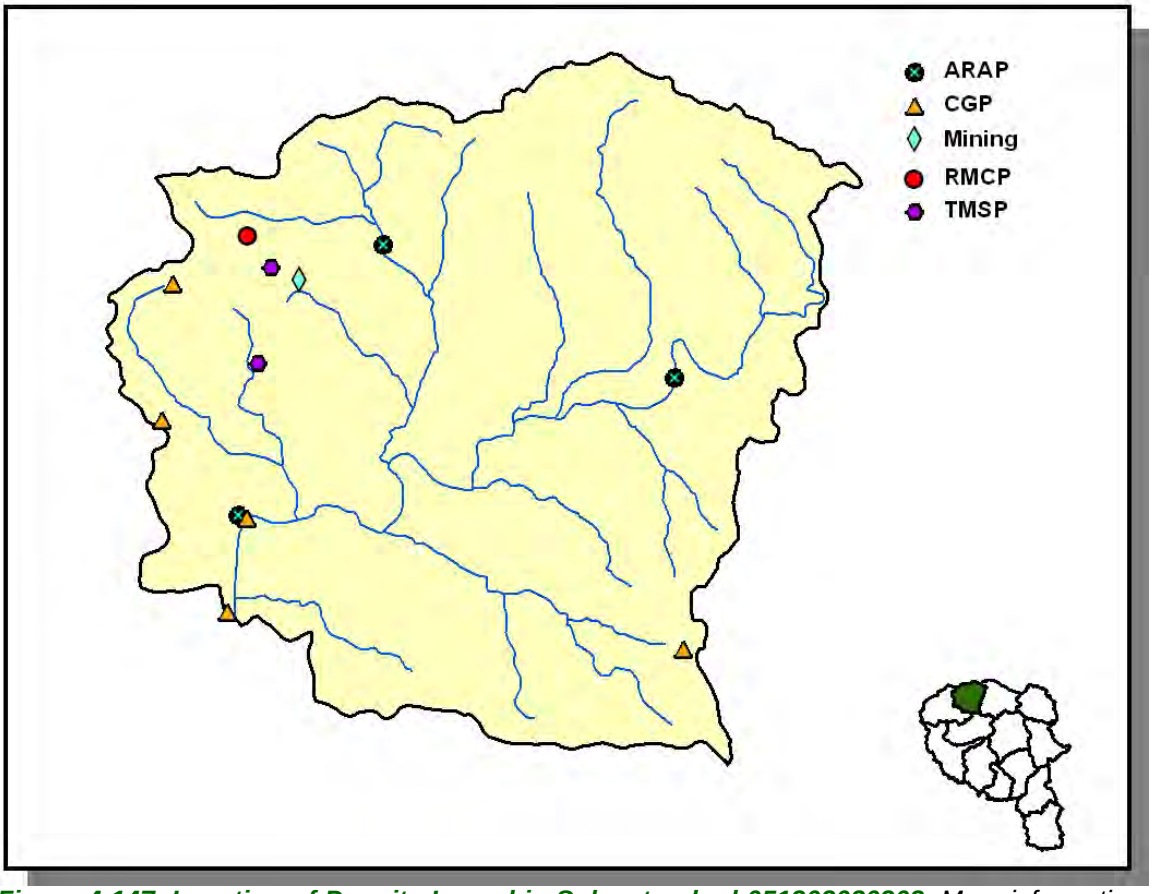


Figure 4-147. Location of Permits Issued in Subwatershed 051302020302. *More information, including the names of facilities, is provided in Appendix IV.*

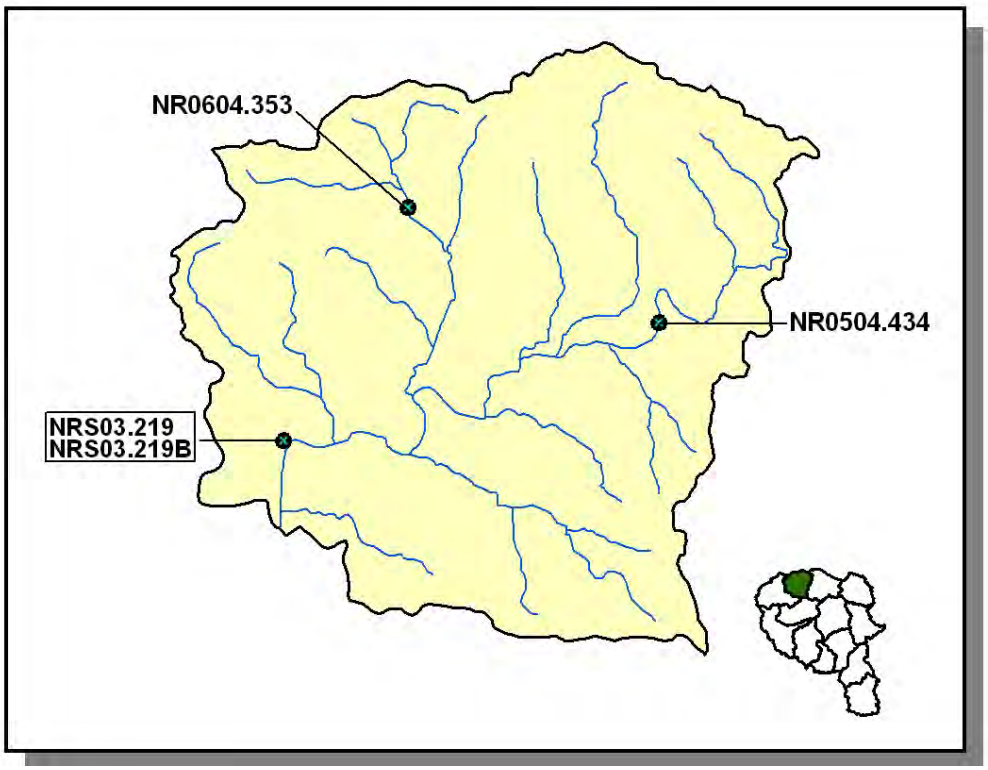


Figure 4-148. Location of ARAP (Aquatic Resource Alteration Permit) Sites in Subwatershed 051302020302. *More information is provided in Appendix IV.*

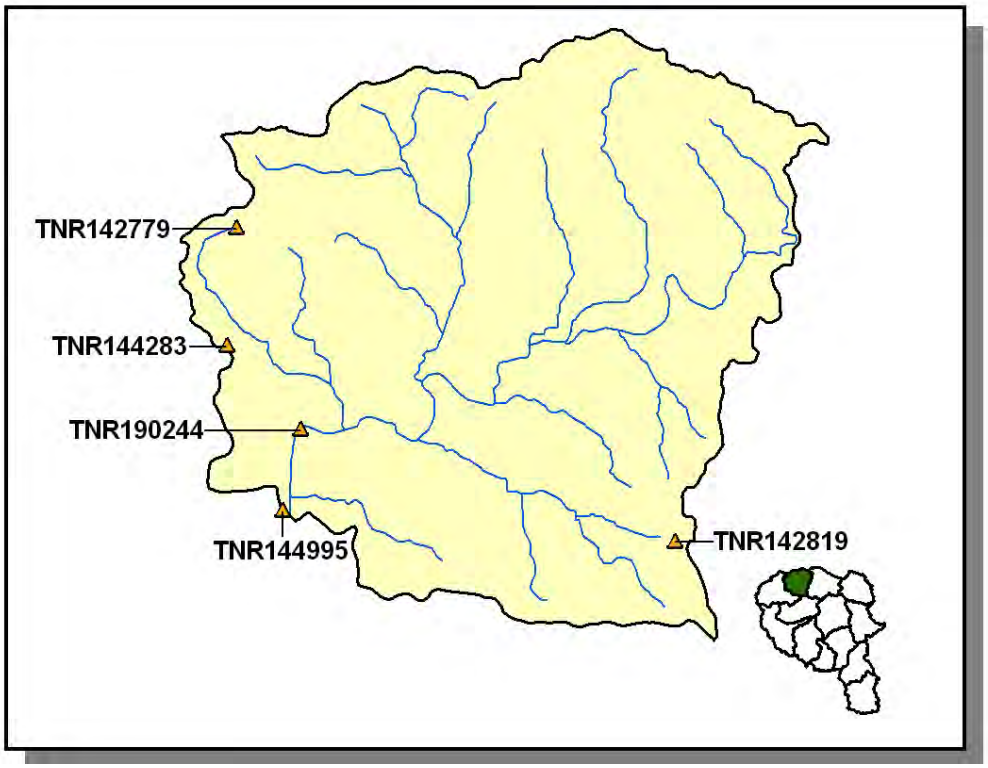


Figure 4-149. Location of CGP (Construction General Permit) Sites in Subwatershed 051302020302. *More information is provided in Appendix IV.*

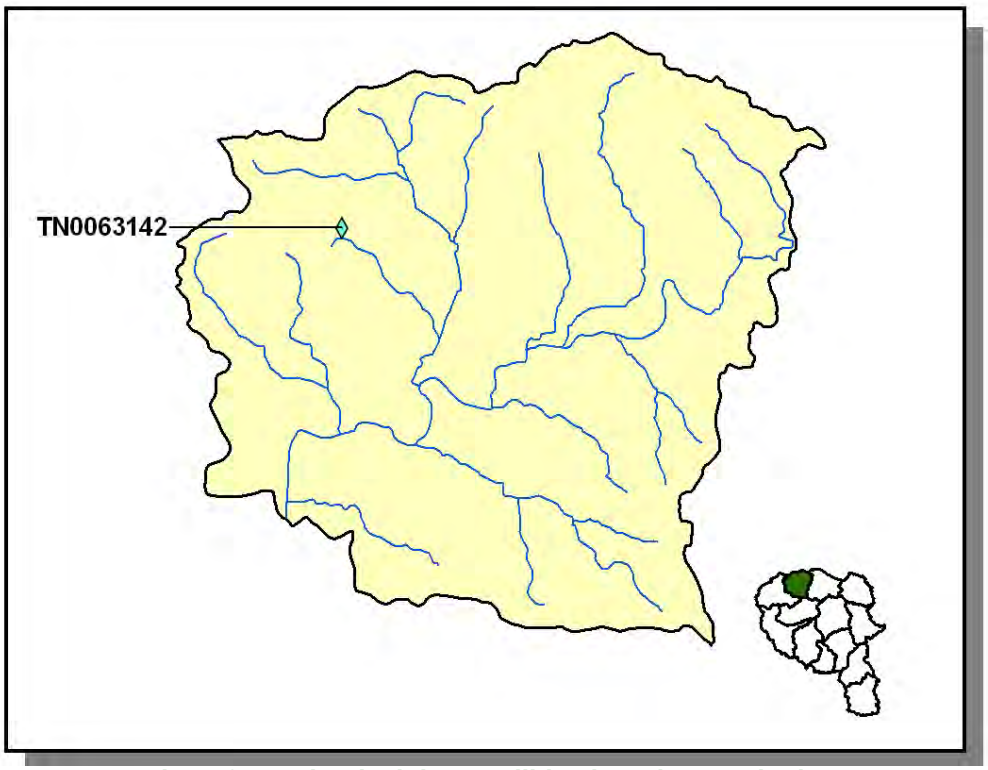


Figure 4-150. Location of Permitted Mining Facilities in Subwatershed 051302020302. *More information is provided in Appendix IV.*

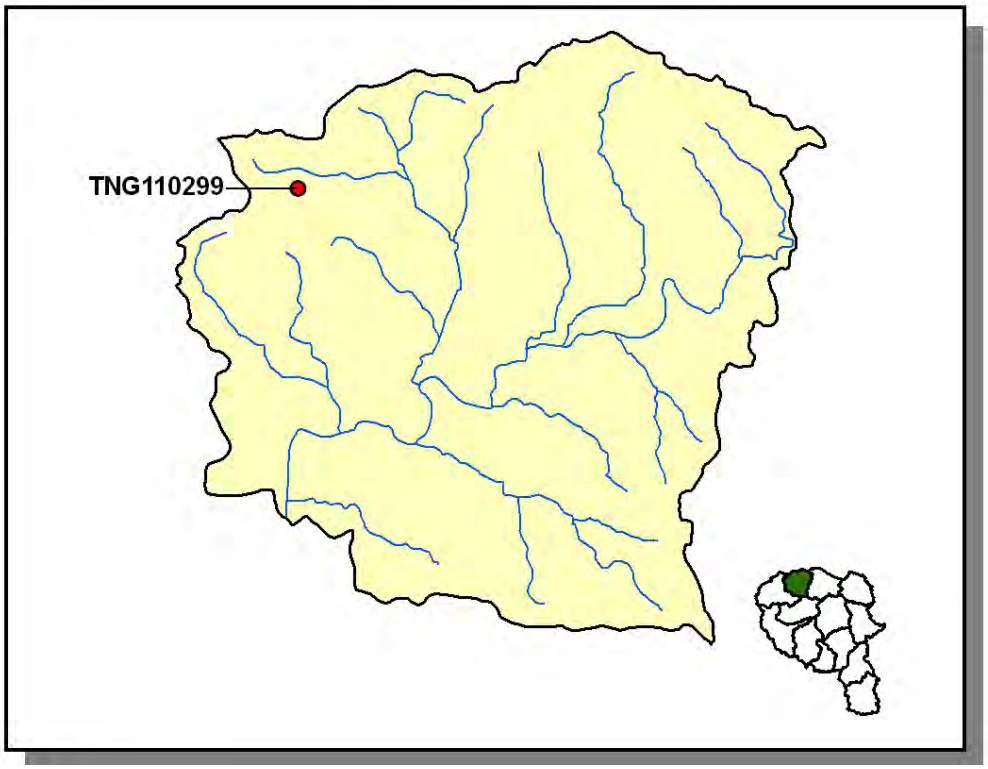


Figure 4-151. Location of RMCP (Ready Mix Concrete Plant) facilities in Subwatershed 051302020302. *More information, including the names of facilities, is provided in Appendix IV.*

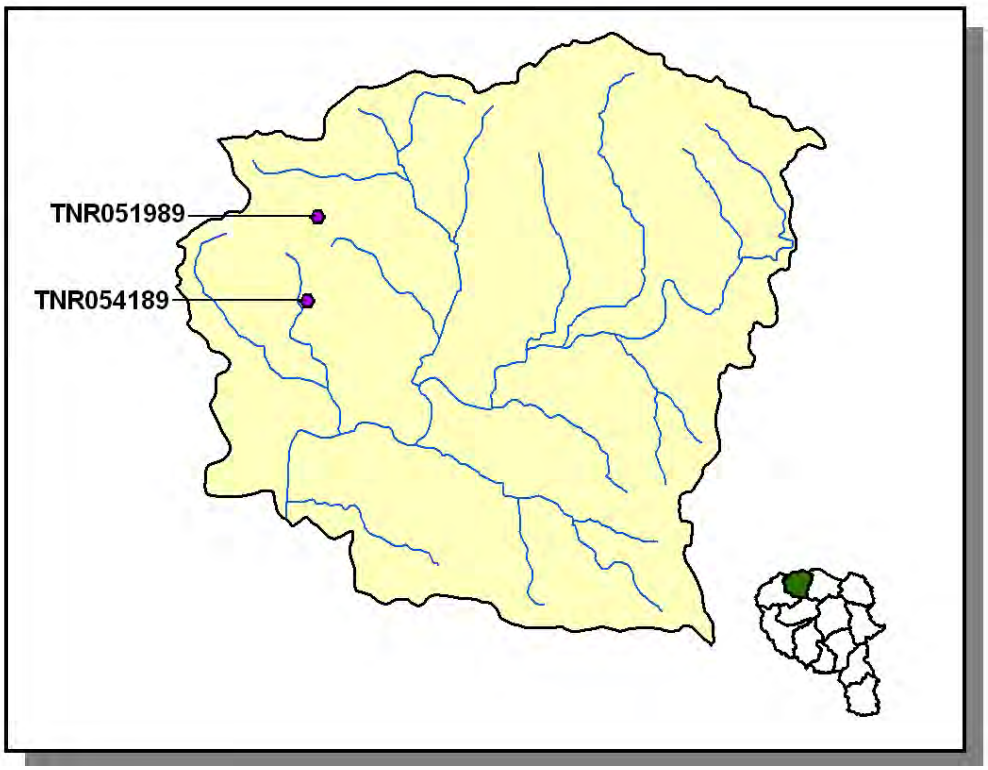


Figure 4-152. Location of TMSP (Tennessee Multi Sector Permit) Sites in Subwatershed 051302020302. *More information is provided in Appendix IV.*

4.2.L.iv. Nonpoint Source Contributions.

LIVESTOCK COUNTS						
County	Beef Cow	Cattle	Milk Cow	Chickens (Layers)	Hogs	Sheep
Cheatham		11,429		121	1,183	
Robertson	22,502	47,887	3,478	31	6,982	279

Table 4-70. Summary of Livestock Count Estimates by County. *According to the 1997 Census of Agriculture (http://www.agcensus.usda.gov/), "Cattle" includes heifers, heifer calves, steers, bulls and bull calves; "Chickens" are layers 20 weeks and older.*

	INVENTORY		REMOVAL RATE	
County	Forest Land (thousand acres)	Timber Land (thousand acres)	Growing Stock (million cubic feet)	Sawtimber (million board feet)
Cheatham	118.2	118.2	2.3	8.4
Robertson	53.0	53.0	2.2	9.7

Table 4-71. Forest Acreage and Annual Removal Rates (1987-1994) by County.

CROPS	TONS/ACRE/YEAR
Tobacco (Row Crops)	11.87
Soybeans (Row Crops)	9.78
Corn (Row Crops)	6.77
Other Cropland not Planted	5.25
Wheat (Close Grown Cropland)	1.68
Grass (Pastureland)	0.68
Grass Forbs Legumes Mixed (Pastureland)	0.62
Farmsteads and Ranch Headquarters	0.59
Legume (Hayland)	0.56
Grass (Hayland)	0.43
Legume Grass (Hayland)	0.42
Conservation Reserve Program Land	0.36
Other Land in Farms	0.27

Table 4-72. Annual Estimated Total Soil Loss in Subwatershed 051302020302.

4.2.M. 051302020303 (Sycamore Creek, Lower).

4.2.M.i. General Description.

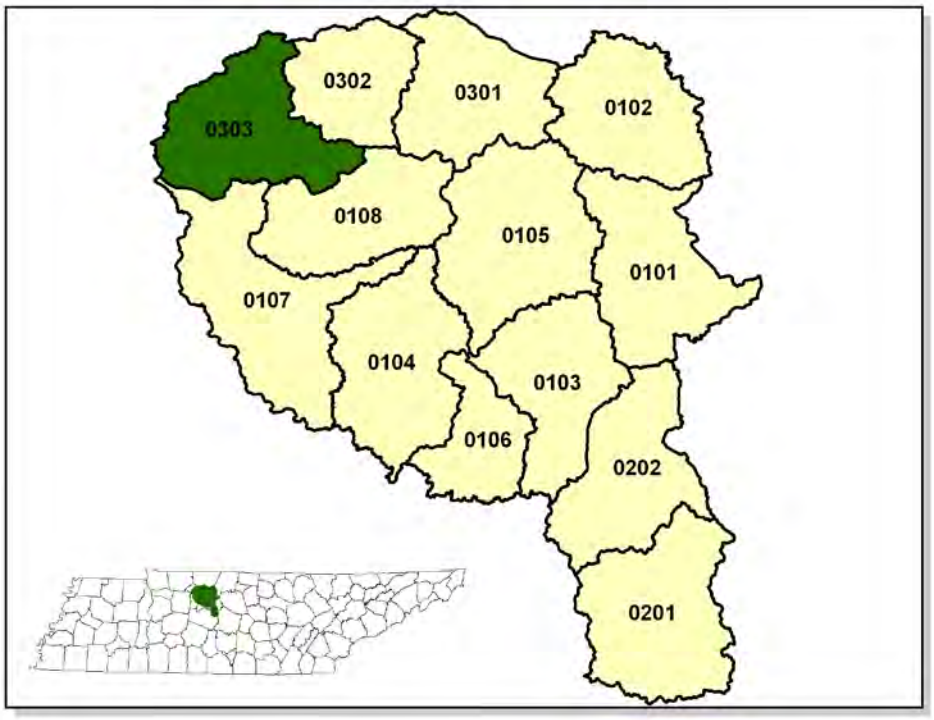


Figure 4-153. Location of Subwatershed 051302020303. *All Cheatham Lake HUC-12 subwatershed boundaries are shown for reference.*

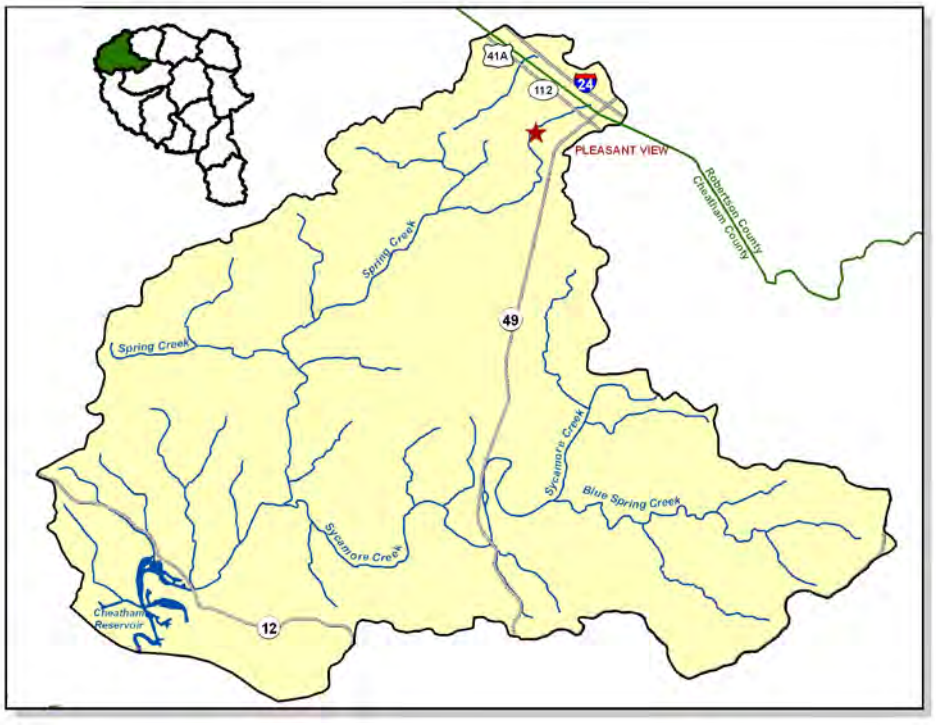


Figure 4-154. Locational Details of Subwatershed 051302020303.

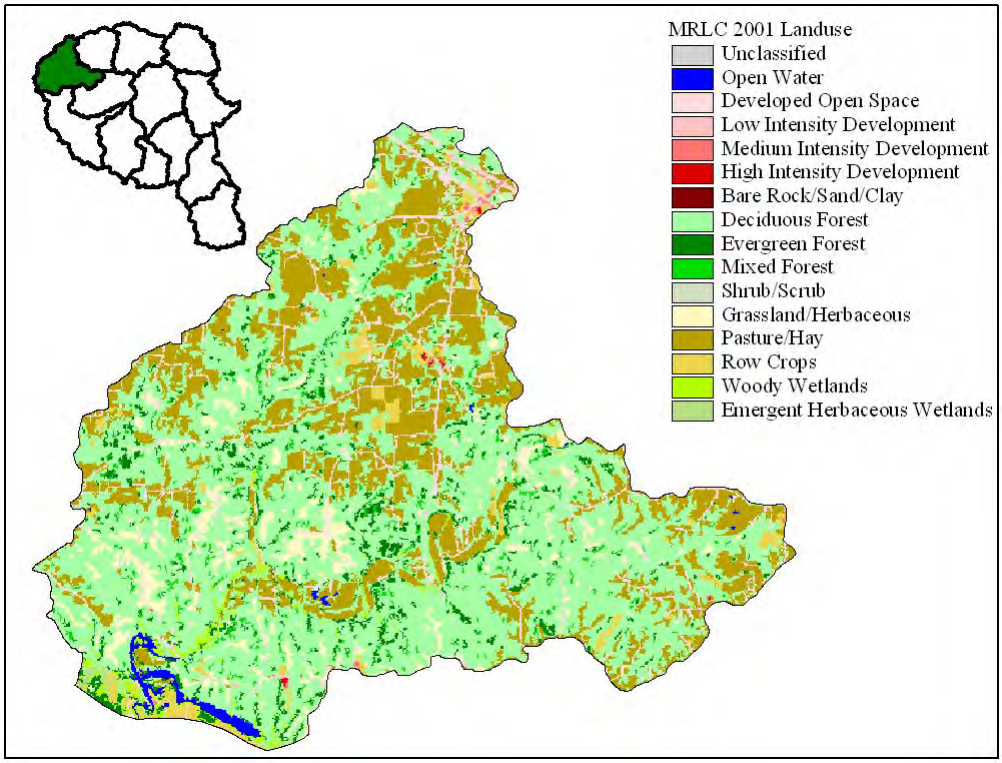


Figure 4-155. Illustration of Land Use Distribution in Subwatershed 051302020303.

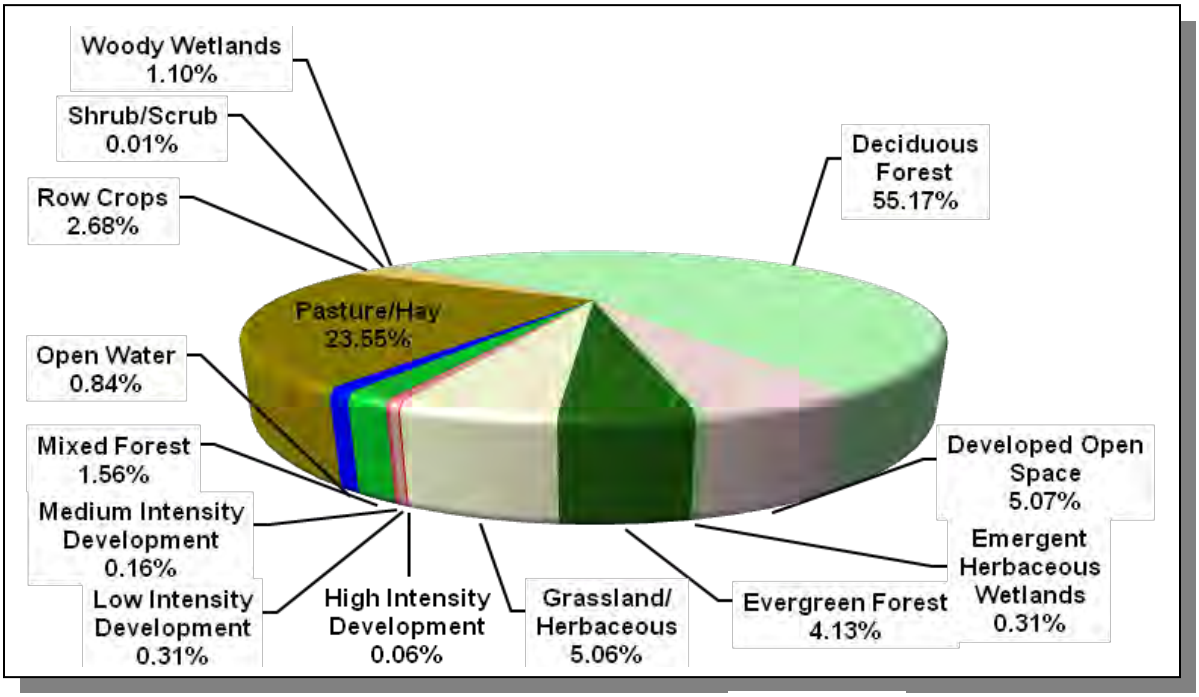


Figure 4-156. Land Use Distribution in Subwatershed 051302020303. *More information is provided in Appendix IV.*

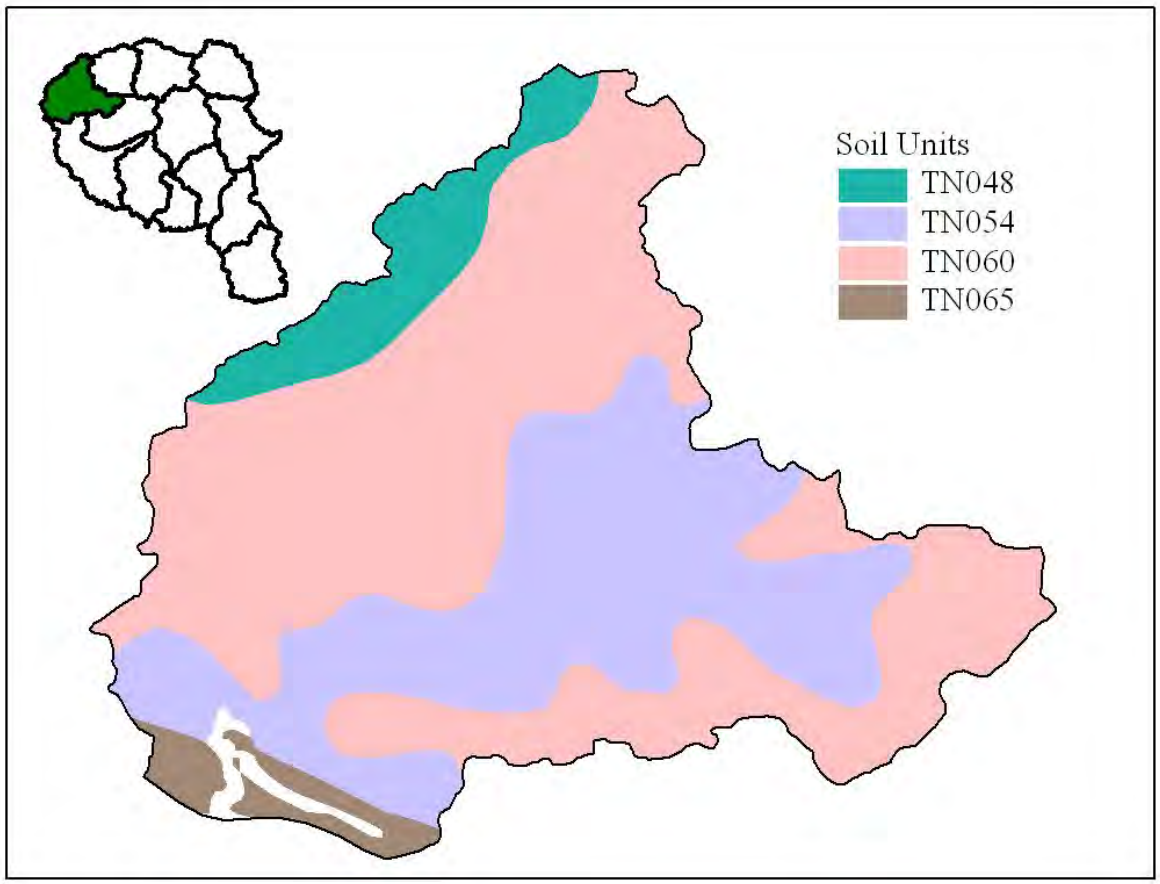


Figure 4-157. STATSGO (State Soil Geographic Database) Soil Map Units in Subwatershed 051302020303.

STATSGO MAP UNIT ID	PERCENT HYDRIC	HYDROLOGIC GROUP	PERMEABILITY (in/hour)	SOIL pH	ESTIMATED SOIL TEXTURE	SOIL ERODIBILITY
TN048	8.00	C	1.38	5.06	Silty Loam	0.42
TN054	0.00	C	3.04	4.84	Loam	0.32
TN060	5.00	B	1.30	5.32	Silty Loam	0.39
TN065	0.00	C	1.15	5.52	Loam	0.32

Table 4-73. Soil Characteristics by STATSGO (State Soil Geographic Database) Soil Map Units in Subwatershed 051302020303. *The definition of "Hydrologic Group" is provided in Appendix IV.*

	COUNTY POPULATION				ESTIMATED POPULATION IN WATERSHED			
County	1990	1997	2000	% of County in Watershed	1990	1997	2000	% Change (1990-2000)
Cheatham	27,140	34,402	35,912	16.26	4,412	5,592	5,838	32.30
Robertson	41,494	51,533	54,433	0.11	46	57	60	30.40
Total	**68,634**	**85,935**	**90,345**		**4,458**	**5,649**	**5,898**	**32.30**

Table 4-74. Population Estimates in Subwatershed 051302020303.

4.2.M.ii. USGS Gaging Stations and STORET Sites.

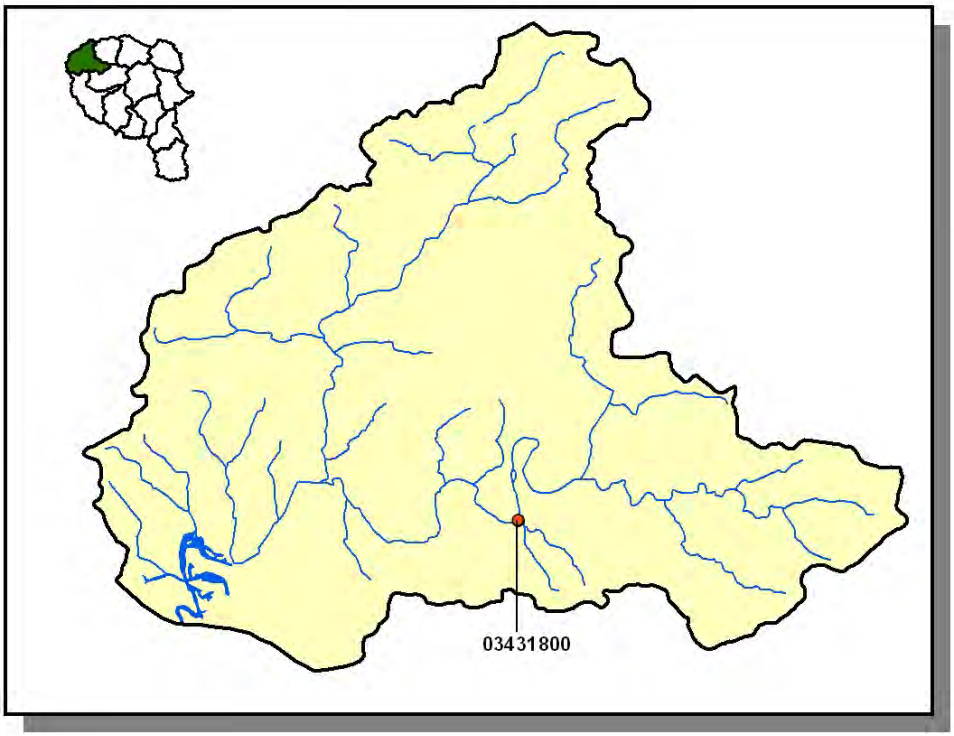


Figure 4-158. Location of USGS Continuous Record Gaging Stations in Subwatershed 051302020303. *More information is provided in Appendix IV.*

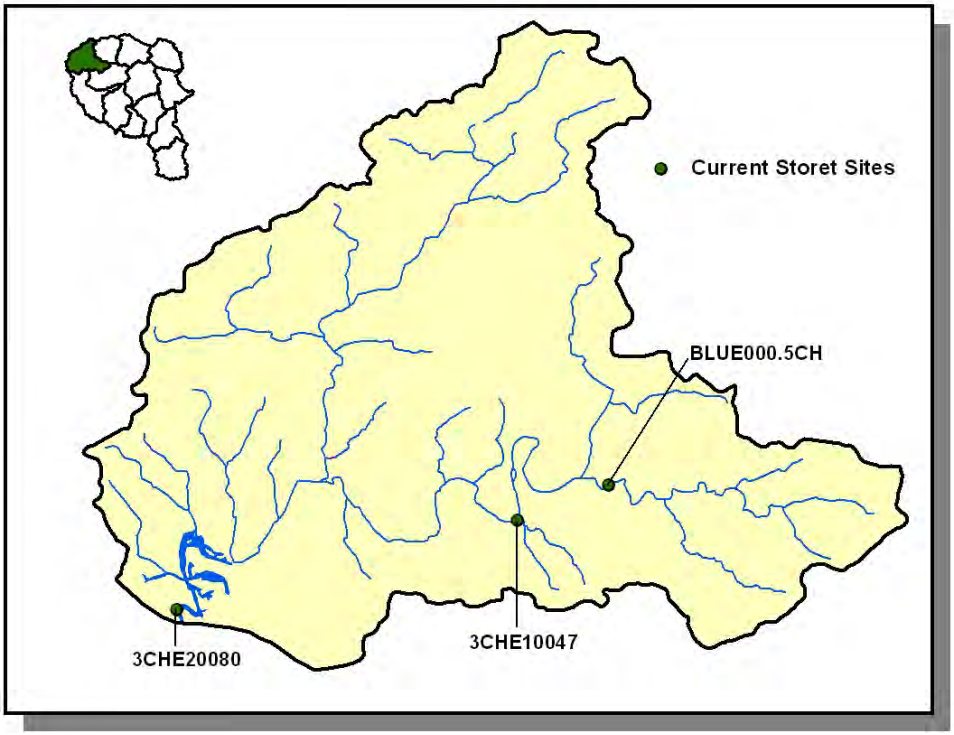


Figure 4-159. Location of Monitoring Sites in EPA's STORET Database in Subwatershed 051302020303. *More information, including site names and locations, is provided in Appendix IV.*

4.2.M.iii. Permitted Activities.

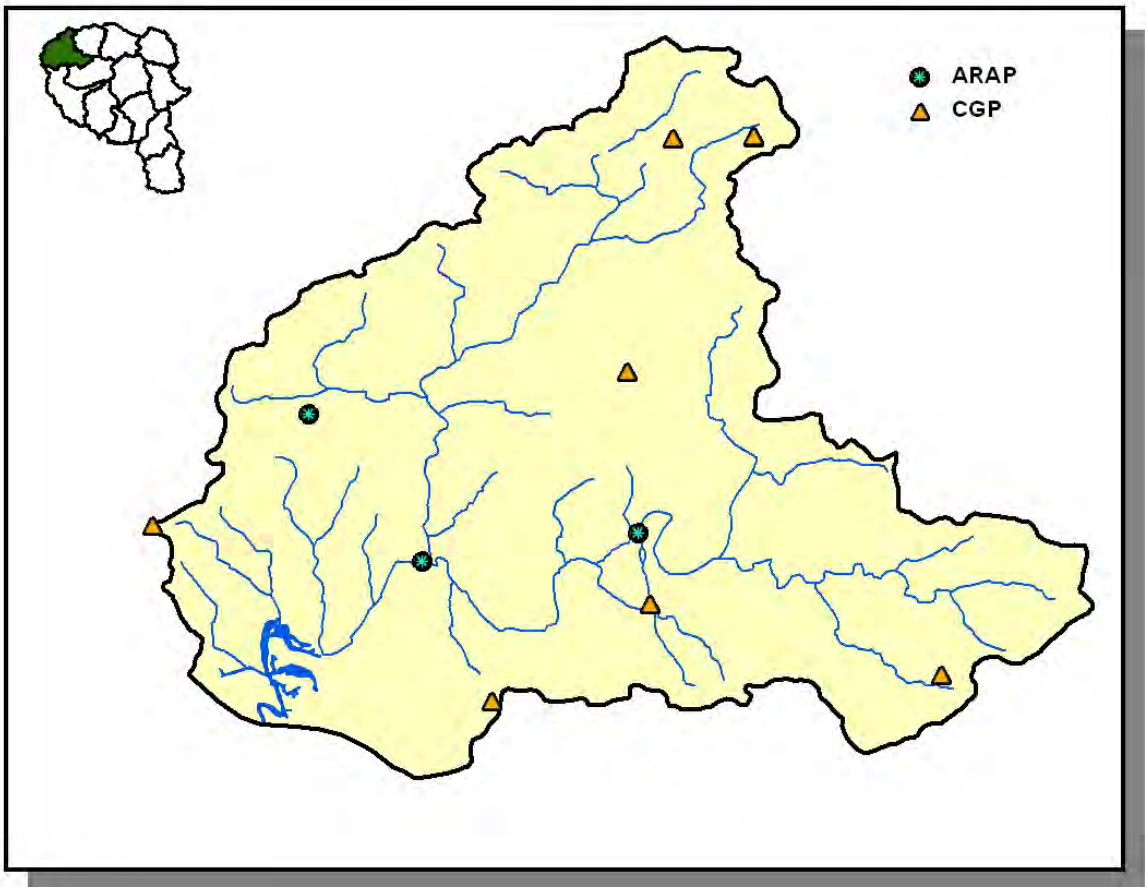


Figure 4-160. Location of Permits Issued in Subwatershed 051302020303. *More information, including the names of facilities, is provided in Appendix IV.*

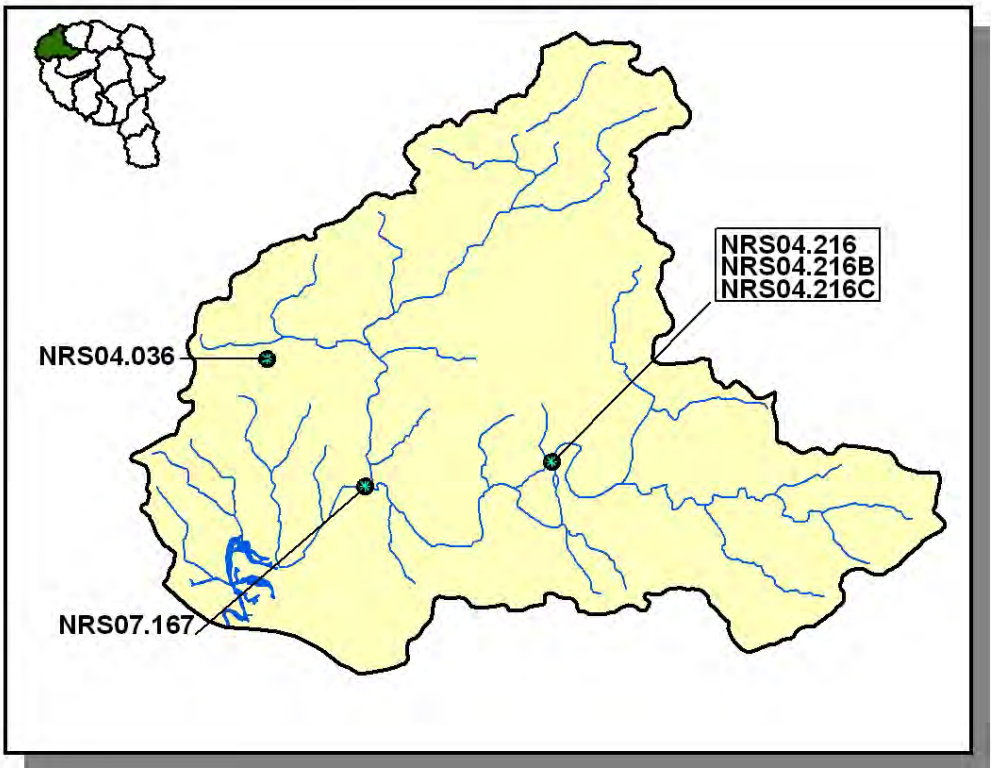


Figure 4-161. Location of ARAP (Aquatic Resource Alteration Permit) Sites in Subwatershed 051302020303. *More information is provided in Appendix IV.*

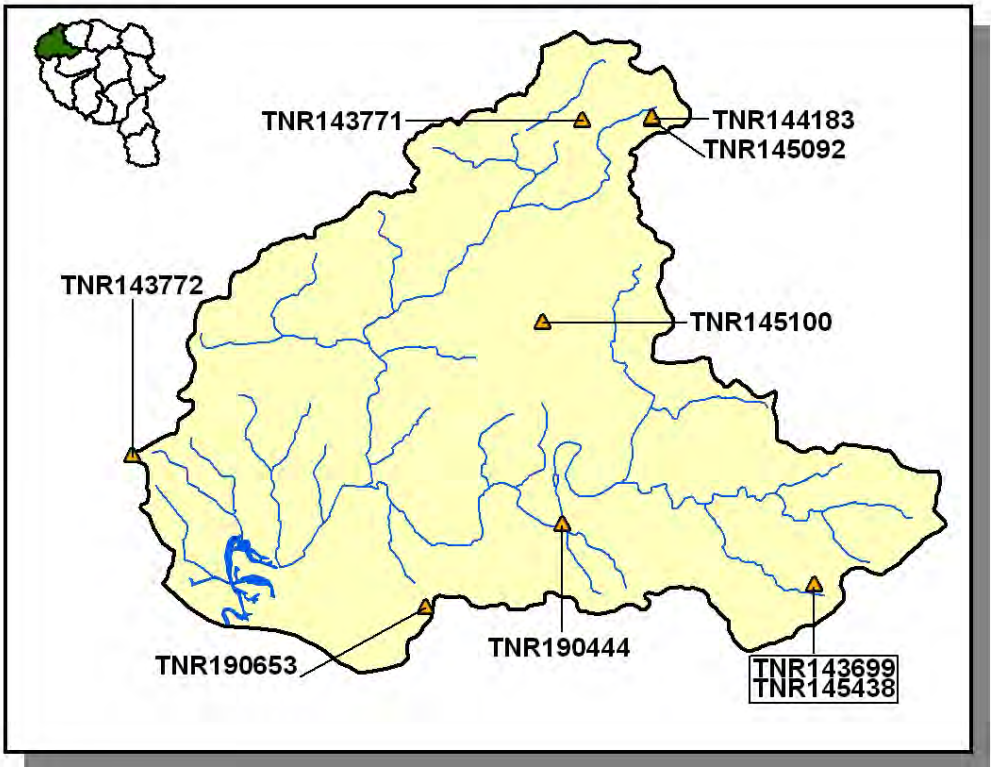


Figure 4-162. Location of CGP (Construction General Permit) Sites in Subwatershed 051302020303. *More information is provided in Appendix IV.*

4.2.M.iv. Nonpoint Source Contributions.

LIVESTOCK COUNTS						
County	Beef Cow	Cattle	Milk Cow	Chickens (Layers)	Hogs	Sheep
Cheatham		11,429		121	1,183	
Robertson	22,502	47,887	3,478	31	6,982	279

Table 4-75. Summary of Livestock Count Estimates by County. *According to the 1997 Census of Agriculture (http://www.agcensus.usda.gov/), "Cattle" includes heifers, heifer calves, steers, bulls and bull calves; "Chickens" are layers 20 weeks and older.*

	INVENTORY		REMOVAL RATE	
County	Forest Land (thousand acres)	Timber Land (thousand acres)	Growing Stock (million cubic feet)	Sawtimber (million board feet)
Cheatham	118.2	118.2	2.3	8.4
Robertson	53.0	53.0	2.2	9.7

Table 4-76. Forest Acreage and Annual Removal Rates (1987-1994) by County.

CROPS	TONS/ACRE/YEAR
Tobacco (Row Crops)	11.87
Soybeans (Row Crops)	9.52
Corn (Row Crops)	8.49
Wheat (Close Grown Cropland)	1.68
Grass Forbs Legumes Mixed (Pastureland)	0.84
Grass (Pastureland)	0.69
Other Cropland not Planted	0.62
Grass (Hayland)	0.50
Legume (Hayland)	0.38
Conservation Reserve Program Land	0.36
Legume Grass (Hayland)	0.29
Other Land in Farms	0.27
Farmsteads and Ranch Headquarters	0.21
Tobacco (Row Crops)	11.87
Soybeans (Row Crops)	9.52

Table 4-77. Annual Estimated Total Soil Loss in Subwatershed 051302020303.

CHAPTER 5

WATER QUALITY PARTNERSHIPS IN THE CHEATHAM LAKE WATERSHED

5.1. BACKGROUND. The Watershed Approach relies on participation at the federal, state, local and nongovernmental levels to be successful. Two types of partnerships are critical to ensure success:

- Partnerships between agencies
- Partnerships between agencies and landowners

This chapter describes both types of partnerships in the Cheatham Lake Watershed. The information presented is provided by the agencies and organizations described.

5.2. FEDERAL PARTNERSHIPS

5.2.A. Natural Resources Conservation Service. The Natural Resources Conservation Service (NRCS), an agency of the U.S. Department of Agriculture, provides technical assistance, information, and advice to citizens in their efforts to conserve soil, water, plant, animal, and air resources on private lands.

Performance Results System (PRS) is a Web-based database application providing USDA Natural Resources Conservation Service, conservation partners, and the public fast and easy access to accomplishments and progress toward strategies and performance. The PRS may be viewed at http://prms.nrcs.usda.gov/prs. From the opening menu, select "Reports" in the top tool bar. You will select the time period that you are interested in and the conservation treatment of interest on the page that comes up. Depending on the time period of interest, you will have various report options to choose from, such as location, reporting period and program involved in the reporting. You may be required to "refresh" the page in order to get the current report to come up.

The data can be used to determine broad distribution trends in service provided to customers by NRCS conservation partnerships. These data do not show sufficient detail to enable evaluation of site-specific conditions (e.g., privately-owned farms and ranches) and are intended to reflect general trends.

CONSERVATION PRACTICE	FEET	ACRES	NUMBER
Conservation Buffers	22,511	47	
Erosion Control		1345	
Nutrient Management		6508	
Pest Management		5187	
Grazing / Forages	37287	4256	
Tree and Shrub Practices		2203	
Tillage and Cropping		2498	
Wetlands		7	
Wildlife Habitat Management		2292	
Water Supply	12	3450	
Waste Management Systems			5

Table 5-1. Landowner Conservation Practices in Partnership with NRCS in the Cheatham Lake Watershed. *Data are from PRMS for October 1, 2002 through September 30, 2006, reporting period. More information is provided in Appendix V.*

5.2.B. United States Geological Survey – Tennessee Water Science Center Programs. The United States Geological Survey (USGS) provides relevant and objective scientific information and data for public use in evaluation of the quantity, quality, and use of the Nation's water resources. National USGS water resource assessments include the National Streamflow Information Program (http://water.usgs.gov/nsip/), National Atmospheric Deposition Network (http://bqs.usgs.gov/acidrain/), the National Stream Quality Accounting Network (http://water.usgs.gov/nasqan/), and the National Water Quality Assessment Program (http://water.usgs.gov/nawqa). For a national overview of USGS water resources programs, please visit http://water.usgs.gov.

In addition to national assessments, the USGS also conducts hydrologic investigations and data collection in cooperation with numerous federal, state, and local agencies to address issues of national, regional, and local concern. Hydrologic investigations conducted by the USGS Tennessee Water Science Center address scientific questions pertaining to five general thematic topics:

1. Water Use and Availability,
2. Landforms and Ecology,
3. Watersheds and Land Use,
4. Occurrence, Fate, and Transport of Contaminants,
5. Floods and Droughts.

In support of these investigations, the USGS Tennessee Water Science Center records streamflow continuously at more than 100 gaging stations, makes instantaneous measurements of streamflow at numerous other locations as needed or requested, monitors ground-water levels statewide, and analyzes the physical, chemical, and biologic characteristics of surface and ground waters. In addition, the Water Science Center compiles annual water-use records for the State of Tennessee and collects a variety of data in support of national USGS baseline and other networks. More information pertaining to USGS activities in Tennessee can be accessed at http://tn.water.usgs.gov.

USGS Water Resources Information on the Internet. Real-time and historical streamflow, water-level, and water-quality data at sites operated by the USGS Tennessee Water Science Center can be accessed on-line at http://waterdata.usgs.gov/tn/nwis/nwis. Data can be retrieved by county, hydrologic unit code, or major river basin using drop-down menus on the web page. For specific information or questions about USGS streamflow data, contact Donna Flohr at (615)837-4730 or dfflohr@usgs.gov. Recent USGS Tennessee Water Science Center publications can be accessed by visiting http://tn.water.usgs.gov/pubpg.html. A searchable bibliographic database is also provided for locating other USGS reports and products addressing specific scientific topics.

5.2.C. U.S. Fish and Wildlife Service.

The mission of the U.S. Fish and Wildlife Service is working with partners to conserve, protect, and enhance fish, wildlife, and plants and their habitats for the continuing benefit of the American people. Sustaining our nation's fish and wildlife resources is a task that can be accomplished only through the combined efforts of governments, businesses, and private citizens. The U.S. Fish and Wildlife Service (Service) works with state and federal agencies and tribal governments, helps corporate and private landowners conserve habitat, and cooperates with other nations to halt illegal wildlife trade. The Service also administers a Federal Aid program that distributes funds annually to states for fish and wildlife restoration, boating access, hunter education, and related projects across America. The funds come from federal excise taxes on fishing, hunting, and boating equipment.

Endangered Species Program

Through the Endangered Species Program, the Service consults with other federal agencies concerning their program activities and their effects on endangered and threatened species. Other Service activities under the Endangered Species Program include the listing of rare species under the Endangered Species Act (ESA) of 1973 (87 Stat. 884, as amended: 16 U.S.C. 1531 et seq.) and the recovery of listed species. Once listed, a species is afforded the full range of protections available under the ESA, including prohibitions on killing, harming, or otherwise taking a species. In some instances, species listing can be avoided by the development of Candidate Conservation Agreements, which may remove threats facing the candidate species, and funding efforts such as the Private Stewardship Grant Program.

Recovery is the process by which the decline of an endangered or threatened species is stopped and reversed, and threats to the species' survival are eliminated, so that long-term survival in nature can be ensured. The goal of the recovery process is to restore listed species to a point where they are secure and self-sustaining in the wild and can be removed from the endangered species list. Under the ESA, the Service and National Marine Fisheries Service were delegated the responsibility of carrying out the recovery program for all listed species.

In an effort to preclude the listing of a rare species, the Service engages in proactive conservation efforts for unlisted species. The program covers not only formal candidates but also other rare species that are under threat. Early intervention preserves management options and minimizes the cost of recovery.

In a partnership with The Nature Conservancy (TNC), Tennessee Wildlife Resources Agency (TWRA), and Tennessee Department of Environment and Conservation (TDEC) Division of Natural Areas, the Service developed a State Conservation Agreement for Cave Dependent Species in Tennessee (SCA). The SCA targets unlisted but rare species and protects these species through a suite of proactive conservation agreements. The goal is to preclude the need to list these species under the ESA. This agreement covers middle Tennessee and will benefit water quality in many watersheds within the State.

The following federally endangered (E), threatened (T), and candidate (C) species occur in the Lower Cumberland River (Cheatham Lake) Watershed: bald eagle (*Haliaeetus leucocephalus*) (T); insular cave beetle (*Pseudanophthalmus insularis*) (C); Nashville crayfish (*Orconectes shoupi*) (E); leafy prairie-clover (*Dalea foliosa*) (E); Price's potato-bean (*Apios priceana*) (T); Short's bladderpod (*Lesquerella globosa*) (C); and Cumberlandian combshell (*Epioblasma brevidens*) (E). Eggert's sunflower (*Helianthus eggertii*) (T) was formally removed from the list of federally endangered and threatened species in September, 2005. Populations will be monitored for five years. For a complete listing of endangered and threatened species in Tennessee, please visit the Service's website at *http://www.fws.gov/cookeville/*

Partners for Fish and Wildlife Program

The U.S. Fish and Wildlife Service established the Partners for Fish and Wildlife Program to restore historic habitat types that benefit native fishes and wildlife. The program adheres to the concept that restoring or enhancing habitats such as wetlands or other unique habitat types will substantially benefit federal trust species on private lands by providing food and cover or other essential needs. Federal trust species include threatened and endangered species, as well as migratory birds (e.g. waterfowl, wading birds, shorebirds, neotropical migratory songbirds).

Participation is voluntary and various types of projects are available. Projects include livestock exclusion fencing, alternate water supply construction, streambank stabilization, restoration of native vegetation, wetland restoration/enhancement, riparian zone reforestation, and restoration of in-stream aquatic habitats.

HOW TO PARTICIPATE...

- Interested landowners contact a Partners for Fish and Wildlife Biologist to discuss the proposed project and establish a site visit.
- A visit to the site is then used to determine which activities the landowner desires and how those activities will enhance habitat for trust resources. Technical advice on proposed activities is provided by the Service, as appropriate.
- Proposed cost estimates are discussed by the Service and landowner.
- A detailed proposal which describes the proposed activities is developed by the Service biologist and the landowner. Funds are competitive, therefore the proposal is submitted to the Service's Ecosystem team for ranking and then to the Regional Office for funding.
- After funding is approved, the landowner and the Service co-sign a Wildlife Extension Agreement (minimum 10-year duration).
- Project installation begins.

- When the project is completed, the Service reimburses the landowner after receipts and other documentation are submitted according to the Wildlife Extension Agreement.

For more information regarding the Endangered Species and Partners for Fish and Wildlife programs, please contact the Cookeville Ecological Services Field Office at 931/528-6481 or visit their website at *http://www.fws.gov/cookeville/*.

5.2.D. United States Army Corps of Engineers-Nashville District. The Nashville District, U.S. Army Corps of Engineers is one of seven districts in the Lakes and Rivers Division. The district's area is determined by the Cumberland River and the Tennessee River's watersheds and encompasses 59,000 square miles in portions of seven states. This geographic area is represented by 14 senators and 20 Congressional representatives. The Nashville District's missions include providing flood protection, recreation, hydropower, and navigation. The District also provides environmental stewardship through our Regulatory and Civil Works programs, conducts emergency response to disasters, and to performs other authorized Civil Works projects.

Within the 18,000 square mile Cumberland River Basin, overall responsibilities for the Nashville District include operation and maintenance of 10 reservoir projects. Each of these is operated for some or all of the following purposes: hydropower production, flood control, navigation, water supply, water quality, fish and wildlife, and recreation.

Regulatory Program

The U.S. Army Corps of Engineers has been involved in regulating certain activities in the nation's water since 1890. Prior to 1968, the primary thrust for the regulatory program was the protection of navigation. As a result of new laws and judicial decisions, the program has evolved to one that considers the full public interest by balancing the favorable impacts against detrimental impacts. The Nashville District annually handles more than 3,000 regulatory actions, 97% of which are evaluated in less than 60 days.

Section 10 of the Rivers and Harbors Act of 1899 **-** requires approval prior to the accomplishment of any work in or over navigable waters of the United States, or which affects the course, location, condition or capacity of such waters. Typical activities requiring Section 10 permits are:

- Construction of piers, wharves, bulkheads, dolphins, marinas, ramps, and cable/pipeline crossings.
- Dredging and excavation

Section 404 of the Clean Water Act **-** requires approval prior to discharging dredged or fill material into the waters of the United States. Typical activities requiring Section 404 permits are:

- Depositing of fill or dredged material in waters of the U.S. or adjacent wetlands.
- Site development fill for residential, commercial, or recreational developments.
- Construction of revetments, breakwaters, levees, dams, dikes, and weirs.
- Placement of riprap and road fills.

Civil Works Program

The Corps' ongoing Civil Works responsibilities date back to the early 1800's when Congress authorized the removal of navigation hazards and obstacles. Over the years, succeeding Administrations and Congresses have expanded the Corps' missions to include most all water-related planning, development, and construction areas where a Federal interest is involved. Funds for Congressionally Authorized Projects are provided through Energy and Water Appropriations Acts and through contributions from non-Federal entities for specific projects.

Civil Works projects may also be funded under the Continuing Authorities Program (CAP). Congress has provided the Corps with standing authorities to study and build specific water resources projects for specific purposes and with specified spending limits. CAP projects are usually implemented in a faster time frame, are limited in complexity, have Federal cost limits, are approved by the Division Commander, and do not need Congressional authorization.

Environmental Education

Environmental education opportunities are provided to area school age children by the Nashville District Corps of Engineers. Water Quality personnel have participated in environmental awareness programs for the past several years at the majority of Nashville District lakes. These programs are organized by the local lake Resource Management staff and involve various area schools. The programs provided allow students to have a "hands on" experience in water quality surveillance techniques. Typically the programs include an interactive discussion of overall water quality issues. This is supplemented with demonstrations of sophisticated water quality instrumentation, collection and analysis of biological specimens from local aquatic environments, and viewing of reference materials and preserved specimens. The value of such environmental education is enormous, because it reaches young people early in their lives and exposes them to a scientific learning experience that is impossible to duplicate in a formal classroom. This experience hopefully contributes to a greater lifelong awareness by the individual of the importance of conserving and improving water quality and wise use of water resources.

Nashville District Corps of Engineers Water Quality Program

The Nashville District Corps of Engineers collects a significant volume of physical, chemical, and biological water quality data every year. These data are collected at representative points both within all ten Nashville District lakes, on various major and/or representative inflow streams, and in the tailwaters. Where there are known water quality problems, such as seasonal low DO in certain turbine releases, monitoring is significantly intensified to track and quantify a particular problem. This information is used to make informed decisions about how a project's powerplant should operate. Baseline, continuous recording, multiparameter water quality monitors keep track of conditions at critical points on the main stem of the Cumberland River from the mouth of the Obey River near Celina, Tennessee to the tailwater of Lake Barkley in western Kentucky. The monitor at the Old Hickory Dam tailwater, in particular, provides key information, since water discharged from Old Hickory must be able to absorb inputs from Nashville, which is just downstream.

The data collected by the Nashville District are used to help determine watershed water quality trends and to provide for better management of the comprehensive reservoir system. The data are essential for running predictive water quality models, a growing trend in Corps' water management practice.

Additional information concerning projects, programs, and activities of the Nashville District Corps of Engineers can be obtained on the World Wide Web at http://www.lrn.usace.army.mil/

WATER QUALITY ISSUES AND HIGHLIGHTS OF ACTIONS AND INITIATIVES IN THE CUMBERLAND RIVER WATERSHED

Dam Safety Issues and Water Management/Quality Consequences

Besides environmental concerns in the immediate reservoir and tailwater environments of two projects, Wolf Creek and Center Hill Lake Dam restorations. Downstream needs may be even more critical within two downstream Group Five Watersheds, Cheatham Lake and Lake Barkley. In one of these, the Cumberland River or Cheatham Lake below Old Hickory Dam (CRM 216.2), the consequences of reduced flows in the Cumberland River above Old Hickory Dam may cause lower than normal DO levels in the Old Hickory Dam outflow. In order to maintain at least the warm water standard for DO of 5.0 mg/l, hydropower production may be foregone or reduced at times in favor of spilling water over the dam in order to provide additional aeration. By meeting the DO target at the Old Hickory Dam tailwater, it is likely downstream wastewater assimilative needs will be satisfied and the river environment protected.

Below, Cheatham Dam (CRM 148.7) further water management challenges continue. Here, water management will focus on keeping the critically important TVA coal fired, Cumberland City generating plant functioning by providing adequate cooling water.

Information about reservoir and river conditions is key to long-term system management. Additional and more intensive water quality monitoring by the Nashville District has already gotten underway at several of the Nashville District's storage reservoirs in order to better define conditions prior to the critical low flow season. This monitoring data is vital for the day-to-day and long-term operation of the river system while the dam repairs proceed.

In summary, challenges to maintaining the water quality of the Cumberland River System are significantly more complicated than normal due to the vast reduction of water normally held in storage, the uncertainty of antecedent meteorological events, and multiyear time scale for repairs to the dams. Each year will represent a new set of circumstances until the compromised reservoir projects can return to normal operations.

Mill Creek Watershed (Davidson County)

The Nashville District is conducting a study of the lower 2/3 of the Mill Creek Watershed within the jurisdiction of the study sponsor, Metropolitan Government of Nashville and Davidson County. The study evaluates both water quantity and water quality issues as

defined by flood damage and aquatic ecosystem problems. A major goal of the study has been to evaluate the impacts of urbanization on water quantity and quality and to develop GIS-based management tools that Metro Nashville can use to manage growth. Ecosystem restoration alternatives include riparian plantings, wetland creation, rain gardens, stream bank protection and in stream habitat structures; greenways/parks will also be included along with both ecosystem restoration and flood damage reduction purposes. A standard suite of flood damage reduction alternatives is being considered, with floodplain evacuation, bridge and channel modifications and a dry dam surviving the initial screening.

Nashville Riverfront, Nashville, TN

The Nashville District completed a master plan presenting a comprehensive redevelopment plan for the Cumberland Riverfront in downtown Nashville in Feb 07 under the Planning Assistance to States (PAS) program. The Nashville Riverfront Redevelopment Plan calls for expanded parks, trails, water recreation and environmental restoration with both residential and commercial opportunities in the heart of Nashville. The benefits of reinventing the riverfront include economic development with private investment over $1.4 billion, environmental clean up of over 190 acres of degraded land with new “green” development, and providing a culturally significant place to celebrate, recreate and learn. The Mayor of Metropolitan Nashville and Davidson County included $8 million in the city’s upcoming budget and is hiring a full time riverfront redevelopment director.

Additional Information

To obtain additional information about the District, please refer to the home page at: http://www.lrn.usace.army.mil/, or contact the following offices:
Public Affairs Office (General Information): (615) 736-7161
Regulatory Branch: (615) 369-7500

5.3. STATE PARTNERSHIPS

5.3.A. TDEC Division of Water Supply. The Source Water Protection Program, authorized by the 1996 Amendments to the Safe Drinking Water Act, outline a comprehensive plan to achieve maximum public health protection. According to the plan, it is essential that every community take these six steps:

1) Delineate the drinking water source protection area
2) Inventory known and potential sources of contamination within these areas
3) Determine the susceptibility of the water supply system to these contaminants
4) Notify and involve the public about threats identified in the contaminant source inventory and what they mean to their public water system
5) Implement management measures to prevent, reduce or eliminate threats
6) Develop contingency planning strategies to deal with water supply contamination or service interruption emergencies (including natural disaster or terrorist activities).

Source water protection has a simple objective: to prevent the pollution of the lakes, rivers, streams, and ground water (wells and springs) that serve as sources of drinking water before they become contaminated. This objective requires locating and addressing potential sources of contamination to these water supplies. There is a growing recognition that effective drinking water system management includes addressing the quality and protection of the water sources.

Source Water Protection has a significant link with the Watershed Management Program goals, objectives and management strategies. Watershed Management looks at the health of the watershed as a whole in areas of discharge permitting, monitoring and protection. That same protection is important to protecting drinking water as well. Communication and coordination with a multitude of agencies is the most critical factor in the success of both Watershed Management and Source Water Protection.

Watershed management plays a role in the protection of both ground water and surface water systems. Watershed Management is particularly important in areas with karst (limestone characterized by solution features such as caves and sinkholes as well as disappearing streams and springs), since the differentiation between ground water and surface water is sometimes nearly impossible. What is surface water can become ground water in the distance of a few feet and vice versa.

Source water protection is not a new concept, but an expansion of existing wellhead protection measures for public water systems relying on ground water to now include surface water. This approach became a national priority, backed by federal funding, when the Safe Drinking Water Act amendments (SDWA) of 1996 were enacted. Under this Act, every public drinking water system in the country is scheduled to receive an assessment of both the sources of potential contamination to its water source of the threat these sources may pose by the year 2003 (extensions were available until 2004). The assessments are intended to enhance the protection of drinking water supplies within existing programs at the federal, state and local levels. Source water

assessments were mandated and funded by Congress. Source water protection will be left up to the individual states and local governments without additional authority from Congress for that progression.

Tennessee's Wellhead Protection Rules were revised as of October 29, 2005 to include requirements for similar protection for public water systems using surface water sources under the heading of Drinking Water Source Protection Rule (1200-5-1-.34) in addition to the previous requirements for wellhead protection for public water systems using ground water sources. The rule addresses surface or ground water withdrawals in the vicinity of public water sources as well as potential contaminant sources threatening public water sources to reflect the amended prohibitions in the 2002 Amendments to the Tennessee Safe Drinking Water Act, TCA 68-221-771. There are additional reporting requirements of potential contaminant source inventories and emergency response for the public water systems as well. The Division of Water Supply will be able to use the Drinking Water Source Protection Rule to work in complimentary fashion with the Division of Water Pollution Control and other Departmental agencies in activities to protect public water sources.

As a part of the Source Water Assessment Program, public water systems are evaluated for their susceptibility to contamination. These individual source water assessments with susceptibility analyses are available to the public at: http://www.state.tn.us/environment/dws as well as other information regarding the Source Water Assessment Program and public water systems.

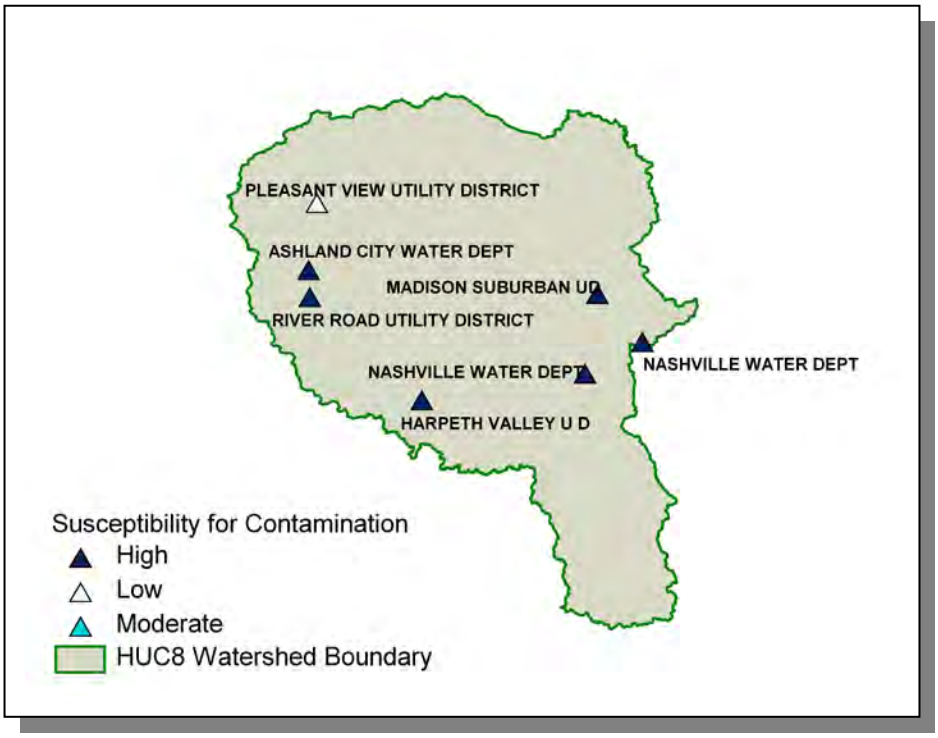


Figure 5-1. Public Water Systems Susceptible Public Water Systems Susceptible to Contamination in the Cheatham Lake Watershed.

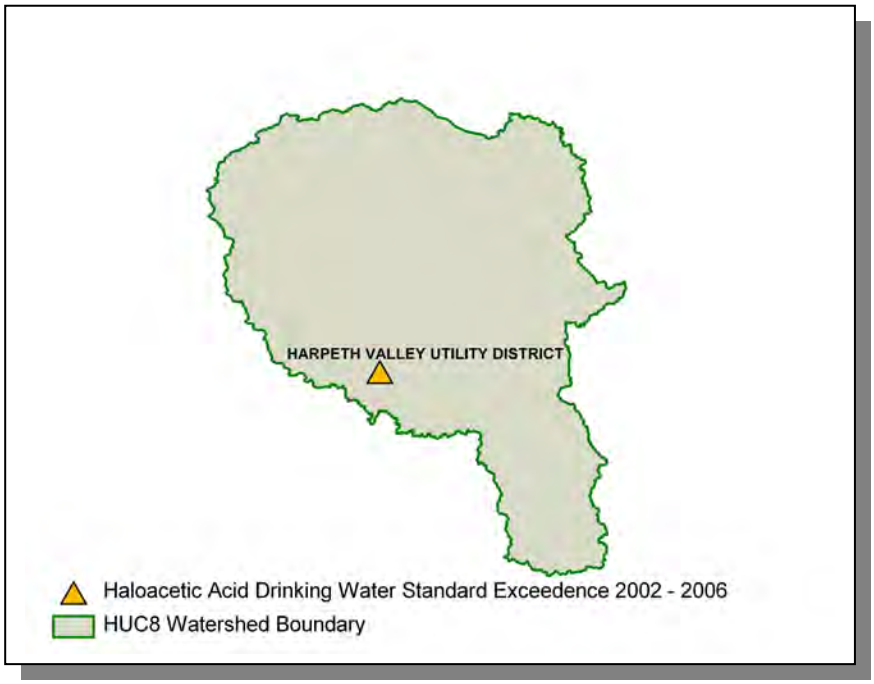


Figure 5-2. Exceedences of the Haloacetic Acid Drinking Water Standard in the Cheatham Lake Watershed.

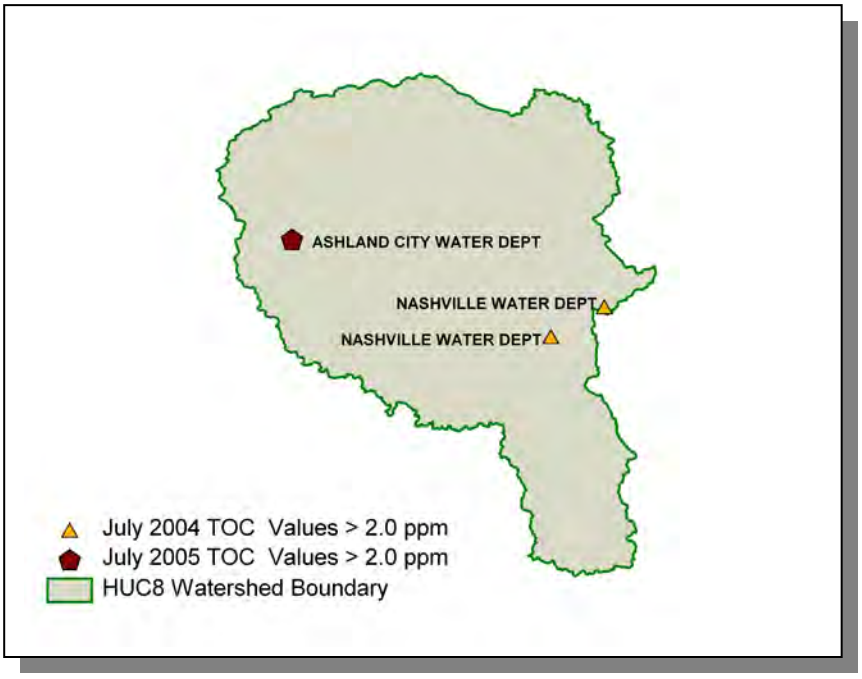


Figure 5-3. July 2004 and 2005 Raw Water Total Organic Carbon (TOC) Analysis in the Cheatham Lake Watershed.

For further discussion on ground water issues in Tennessee, the reader is referred to the Ground Water Section of the 305(b) Water Quality Report at:

http://state.tn.us/environment/dws/pdf/2006gw305b.pdf

5.3.B. TDEC State Revolving Fund Program. The Division of Water Pollution Control and the Division of Water Supply jointly administer the state's Clean Water State Revolving Fund Program. Amendment of the Federal Clean Water Act in 1987 created the Clean Water State Revolving Fund (SRF) Program to provide low-interest loans to cities, counties, and utility districts for the planning, design, and construction of wastewater facilities. The U.S. Environmental Protection Agency awards annual capitalization grants to fund the program and the State of Tennessee provides a twenty-percent funding match. TDEC has awarded loans totaling over $675 million since the creation of the SRF Program. SRF loan repayments are returned to the program and used to fund future SRF loans.

SRF loans are available for planning, design, and construction of wastewater facilities, or any combination thereof. Eligible projects include new construction or upgrading/expansion of existing facilities, including wastewater treatment plants, pump stations, force mains, collector sewers, interceptors, elimination of combined sewer overflows, and nonpoint source pollution remedies.

SRF loan applicants must pledge security for loan repayment, agree to adjust user rates as needed to cover debt service and fund depreciation, and maintain financial records that follow governmental accounting standards. SRF loan interest rates range from zero percent to market rate, depending on the community's per-capita income, taxable sales, and taxable property values. Most SRF loan recipients qualify for interest rates between 2 and 4 percent. Interest rates are fixed for the life of the term of the loan. The maximum loan term is 20 years or the design life of the proposed wastewater facility - whichever is shorter.

The SRF Program maintains a Priority Ranking System and Priority List for funding the planning, design, and construction of wastewater facilities. The Priority Ranking List forms the basis for funding eligibility determinations and allocation of Clean Water SRF loans. Each project's priority rank is generated from specific priority ranking criteria and the proposed project is then placed on the Project Priority List. Only projects identified on the Project Priority List may be eligible for SRF loans. The process of being placed on the Project Priority List must be initiated by a written request from the potential SRF loan recipient or their engineering consultant. SRF loans are awarded to the highest priority projects that have met SRF technical, financial, and administrative requirements and are ready to proceed.

Since SRF loans include federal funds, each project requires development of a Facilities Plan, an environmental review, opportunities for minority and women business participation, a State-approved sewer use ordinance and Plan of Operation, and interim construction inspections.

Communities in the Tennessee Portion of the Pigeon River Watershed that have received Clean Water State Revolving Fund Grants or Loans since the inception of the program are listed in Appendix V. For further information about Tennessee's Clean Water SRF Loan Program, contact the Clean Water SRF Loan Program by telephone at (615) 532-0445 or visit their Web site at http://tennessee.gov/environment/srf.

5.3.C. Tennessee Department of Agriculture. The Tennessee Department of Agriculture's Water Resources Section administers the federal Section 319 Nonpoint Source Program and the Agricultural Resources Conservation Fund Program. Both of these are grant programs which award funds to various agencies, non-profit organizations, and universities that undertake projects to improve the quality of Tennessee's waters and/or educate citizens about the many problems and solutions to water pollution. Both programs fund projects associated with what is commonly known as "nonpoint source pollution."

The Tennessee Department of Agriculture's Nonpoint Source Program (TDA-NPS) has the responsibility for management of the federal Nonpoint Source Program, funded by the US Environmental Protection Agency through the authority of Section 319 of the Clean Water Act. This program was created in 1987 as part of the reauthorization of the Clean Water Act, and it established funding for states, territories and Indian tribes to address NPS pollution. Nonpoint source funding is used for installing Best Management Practices (BMPs) to stop known sources of NPS pollution, training, education, demonstrations and water quality monitoring. The TDA-NPS Program is a non-regulatory program, promoting voluntary, incentive-based solutions to NPS problems. The TDA-NPS Program basically funds three types of programs:

- BMP Implementation Projects. These projects aid in the improvement of an impaired waterbody, or prevent a non-impaired water from becoming listed on the 303(d) List.

- Monitoring Projects. Up to 20% of the available grant funds are used to assist the water quality monitoring efforts in Tennessee streams, both in the state's 5-year watershed monitoring program, and also in performing before-and-after BMP installation, so that water quality improvements can be verified. Some monitoring in the Cheatham Lake Watershed was funded under an agreement with the Tennessee Department of Agriculture, Nonpoint Source Program (U.S. Environmental Protection Agency Assistance Agreement C99944674-04-0 and C99944674-05-0).

- Educational Projects. The intent of educational projects funded through TDA-NPS is to raise the awareness of landowners and other citizens about practical actions that can be taken to eliminate nonpoint sources of pollution to the waters of Tennessee.

The Tennessee Department of Agriculture Agricultural Resources Conservation Fund Program (TDA-ARCF) provides cost-share assistance to landowners across Tennessee to install BMPs that eliminate agricultural nonpoint source pollution. This assistance is provided through Soil Conservation Districts, Resource Conservation and Development Districts, Watershed Districts, universities, and other groups. Additionally, a portion of the TDA-ARCF is used to implement information and education projects statewide, with the focus on landowners, producers, and managers of Tennessee farms and forests.

Participating contractors in the program are encouraged to develop a watershed emphasis for their individual areas of responsibility, focusing on waters listed on the Tennessee 303(d) List as being impaired by agriculture. Current guidelines for the

TDA-ARCF are available. Landowners can receive up to 75% of the cost of the BMP as a reimbursement.

Since January of 1999, the Department of Agriculture and the Department of Environment and Conservation have had a Memorandum of Agreement whereby complaints received by TDEC concerning agriculture or silviculture projects would be forwarded to TDA for investigation and possible correction. Should TDA be unable to obtain correction, they would assist TDEC in the enforcement against the violator. More information forestry BMPs is available at:

http://www.state.tn.us/agriculture/forestry/bmpmanual.html

The complaint form is available at:

http://www.state.tn.us/environment/wpc/forms/wqlogging_cn1274.doc

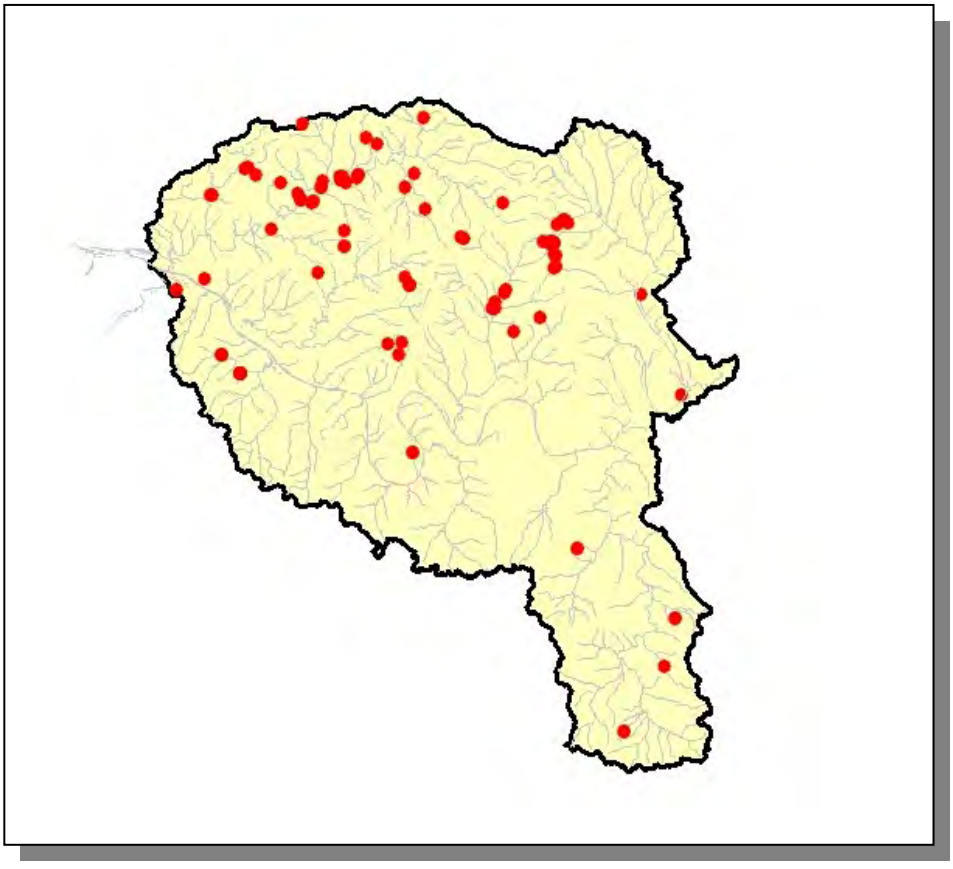


Figure 5-4. Location of BMPs installed from 2002 through 2006 in the Cheatham Lake Watershed with Financial Assistance from the Tennessee Department of Agriculture's Nonpoint Source and Agricultural Resources Conservation Fund Grant Programs. *More information is provided in Appendix V.*

5.3.D. Tennessee Wildlife Resources Agency. The Tennessee Wildlife Resources Agency (TWRA) conducts a variety of activities related to watershed conservation and management. Fish management activities include documentation of fish and aquatic life through stream sampling and stocking of both warm water and cold-water sport fish. Fish data are managed in the Geographic Information System (GIS) project called Tennessee Aquatic Database System (TADS). TWRA nongame and endangered species projects include restoration of special status fish, aquatic life, and riparian wildlife. The Agency conducts a variety of freshwater mussel management, conservation, and restoration projects including the propagation and reintroduction of species once common in Tennessee streams. TWRA has been involved in riparian conservation projects since 1991 in partnership with state and federal agencies and conservation groups.

The Tennessee Aquatic Database System (TADS)

The Tennessee Aquatic Database System (TADS) originated in the mid-1980's as a geographically referenced fisheries database maintained with ESRI's GIS Arc/Info software. It consists of mapping coverages of streams, rivers and reservoirs along with relatable fisheries data files. These database files include stream and river fish distributions, sample site data, and Index of Biotic Integrity (IBI) data. The fish inventory data file contains over 15,000 records of fish occurrences from over 3,600 sample sites across the state. Fish data is referenced by river reach and a point coverage generated by latitude and longitude. Physical and chemical data and habitat evaluations from most of the sample sites have been entered into a database.

TWRA Fisheries stream survey data were consolidated, updated and entered into a Microsoft Access database to create the Tennessee Aquatic Database System 07 (TADS07), an updated version of the TADS. TADS07 contains fisheries stream survey data from 1987 to 2005.

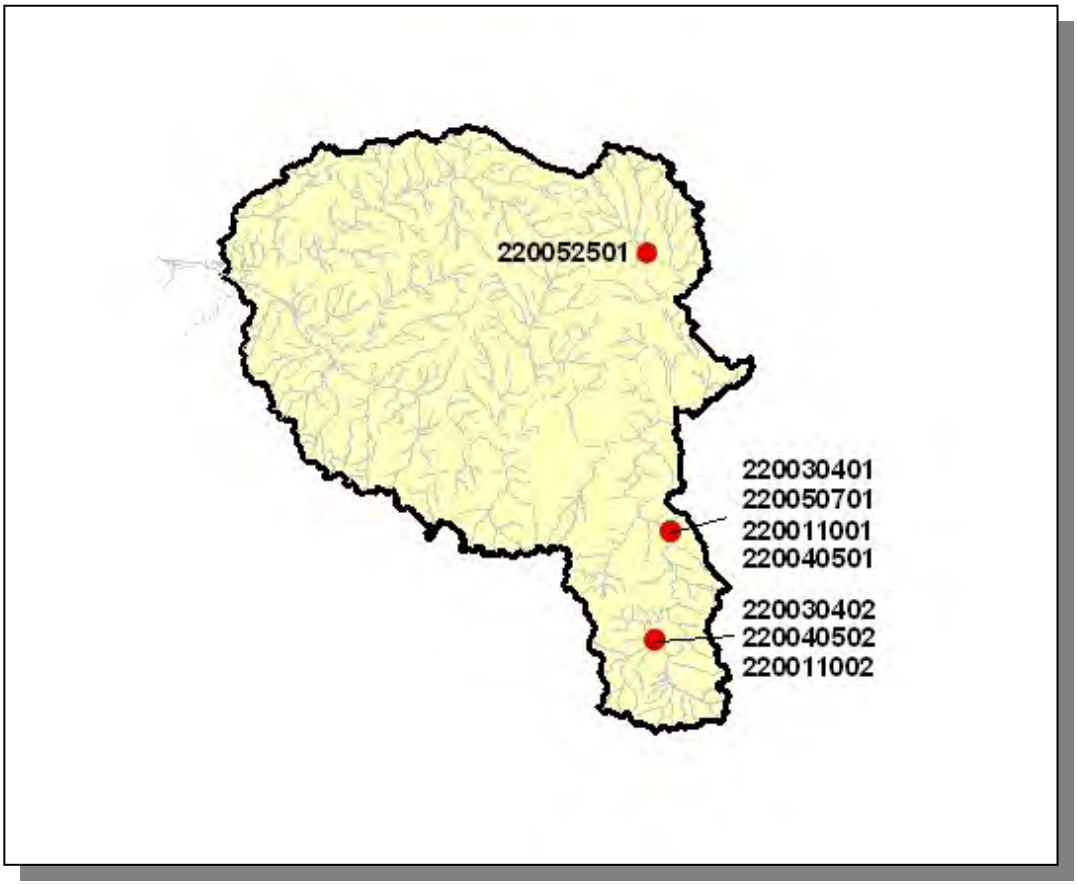


Figure 5-5. Location of TWRA TADS Sampling Sites in the Cheatham Lake Watershed from 1987-2005. *More information is provided in Appendix V.*

Tennessee State Wildlife Action Plan (SWAP)

The Tennessee State Wildlife Action Plan (SWAP), formerly known as the Comprehensive Wildlife Conservation Strategy (CWCS), was developed by the Tennessee Wildlife Resources Agency with assistance from The Nature Conservancy in 2005. Congress mandated that each state and territory in the United States develop a SWAP as a requirement for continued receipt of federal State Wildlife Grant funding. These plans require the completion of 8 key elements of wildlife planning: 1) a list of animal species of greatest conservation need, 2) information about the distribution and abundance of species targets, 3) locations and relative conditions of key habitats, 4) descriptions of problems affecting target species and their habitats, 5) descriptions of conservation actions and priorities for conserving target species and habitats, 6) details for monitoring target species, conservation actions, and adaptive management, 7) discussion of plans to review the SWAP at specific intervals, and 8) information about coordination and implementation of the SWAP with major stakeholders. In Tennessee, the SWAP was integrated into a spatial model using Geographic Information Systems (GIS) and other database technology. Priority aquatic, terrestrial, and subterranean areas for conservation were identified across the state. Priorities were determined in the GIS model based upon relative differences in species rarity, population viability, and potential mobility of species across habitat units.

Priority problems affecting species and needed conservation actions are detailed across each region of the state. For complete information about the Tennessee SWAP, please visit: http://www.state.tn.us/twra/cwcs/cwcsindex.html to read or download the full report.

For information on these and other water resources related activities, please contact your Regional TWRA office at the following phone numbers:

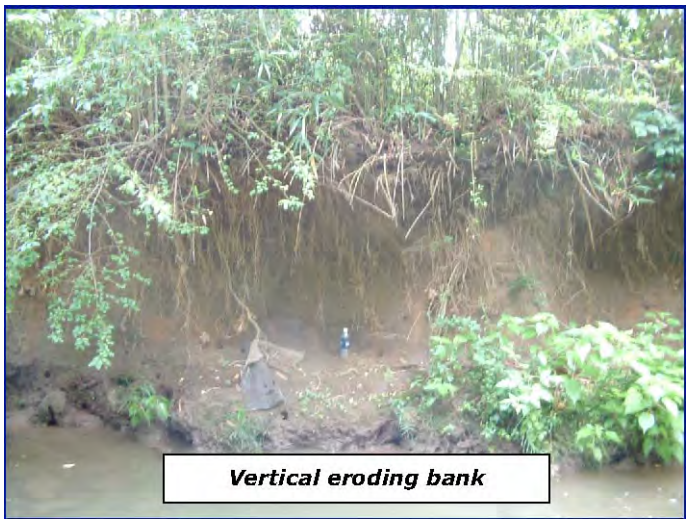
West Tennessee (Region I)	1-800-372-3928
Middle Tennessee (Region II)	1-800-624-7406
Cumberland Plateau (Region III)	1-800-262-6704
East Tennessee (Region IV)	1-800-332-0900

TDD services are available at 615-781-6691.
TWRA's website is http://www.state.tn.us/twra.

5.3.E. Tennessee Stream Mitigation Program The Tennessee Stream Mitigation Program (TSMP) was established as Tennessee's first in-lieu-fee program under the Tennessee Wildlife Resources Foundation in 2003. Since its inception the program has made great strides to provide compensatory mitigation to offset stream impacts associated with §404/401 water quality permits. The TSMP is committed to providing meaningful mitigation on degraded streams to improve in-stream and riparian habitat and overall water quality. Employing principles of natural channel design and process-based methodologies, the TSMP continues to identify and develop restoration and enhancement projects across the state. In accordance with the *Tennessee Stream Mitigation Guidelines* and the TWRF MOA, the TSMP develops large-scale projects based on a watershed approach, giving priority to streams listed on the 303(d) list for physical habitat impairments.

Strategic partnerships with state and federal agencies, municipalities, and nonprofit environmental organizations, allows the TSMP to provide funding for on-going watershed initiatives through stream restoration. The TSMP can fund 100% of the costs associated with the design and implementation of restoration projects on private or public lands. For more information on the program visit the TSMP website at http://tsmp.us/TSMP/Home.html

Tennessee Stream Mitigation Program Restoration Project #1
Sevenmile Creek Stream Enhancement Project, Davidson County, Tennessee



Watershed: Cheatham Lake
Ecoregion: Interior Plateau
Project Length: 3,900 linear feet
Mitigation Treatment: Restoration, Enhancement II
Est. Credits Produced: 1,467
Est. Completion Date: January 2007

Project Description:
The primary objectives of the project will be to stabilize channel banks; enhance the riparian zone through invasive species management and native re-vegetation; and create floodplain basins to filter flood flows and storm water from adjoining properties. Sevenmile Creek in the project area has increased runoff due to urban development, causing the stream to incise where possible and to widen. In-channel habitat in the project area is limited to localized irregularities in the limestone bed and exposed rock plates. Sevenmile Creek has been listed on the 303(d) list due to impacts from storm water discharges and hydro-modification. In addition, it provides habitat for the federally-listed Nashville Crayfish (*Orconectes shoupi*). Re-grading and planting of unstable banks will reduce erosion and improve water quality. The restored riparian buffer will decrease stream temperatures and provide habitat for terrestrial animals. The floodplain basins will help improve water quality, decrease peak flows in Sevenmile Creek, and provide valuable floodplain habitat.

Key Elements of Project:
- Stream Restoration
- Stream Enhancement
- Bankfull bench, flood-prone area excavation
- In-stream habitat enhancement
- Native riparian buffer establishment
- Permanent Land Preservation Agreement
- Invasive plant species control

Tennessee Stream Mitigation Program Restoration Project #2
Pavillion Branch Stream Restoration Project, Davidson County, Tennessee

Watershed: Cheatham Lake
Ecoregion: Interior Plateau
Project Length: 5,510 linear feet
Mitigation Treatment: Restoration
Est. Credits Produced: 4,006
Est. Completion Date: March 2007

Project Description:
The project is located at the Tennessee Preparatory School Complex owned by the State of Tennessee in Nashville and contains the headwaters of Pavillion Branch. The primary objectives of the project are to re-establish in-stream habitat by restoring bedform diversity in the form of pools and riffles, enhancing the ability of the site to filter municipal stormwater by utilizing constructed best management practices, and establishing a protected riparian corridor planted with native vegetation adjacent to each of the project streams. Pavillion Branch has been listed as impaired due to pathogens from MS4 discharge sources. This project provides a rare opportunity to complete larger scale stream restoration in an urban landscape, especially in the Mill Creek watershed. The majority of the system was channelized and armored with slab rock in the mid 1900's. The existing riparian community at Pavilion Branch is sparse and consists mostly of non-native woody vegetation. The potential also exists to provide suitable Nashville crayfish habitat through enhanced habitat structure.

Key Elements of Project:
- Priority 2 & 3 stream channel restoration
- In-stream habitat enhancement
- New channel construction
- Native riparian buffer establishment
- Improve water quality
- Perpetual Conservation Easement

5.4. LOCAL INITIATIVES.

5.4.A. The Cumberland River Compact. The mission of the Cumberland River Compact is to enhance the water quality of the Cumberland River and its tributaries through education and by promoting cooperation among citizens, businesses, and agencies in Kentucky and Tennessee.

We are a unique non-profit group that believes we can have both a strong economy and a healthy environment. The Compact is made up of businesses, individuals, community organizations and agencies working in the Cumberland River Watershed. Over 2 million people share this watershed. Compact members work with all interested organizations and individuals to help ensure that our rivers and streams continue to provide us with clean water, bountiful crops, healthy fisheries and abundant recreational opportunities.

Since 1997, the Compact has set out to create a Watershed Outreach Program in each of the 14 watersheds that make up the Cumberland Basin. Members and staff of the Compact work with local communities to develop watershed forums where citizens can come together to learn more about their watershed and participate in developing a shared vision for the future. We welcome your interest and participation in this challenging project.

In the Lower Cumberland River (Cheatham Lake) watershed, the Compact is beginning Project Blue Stream (PBS) in 2007, which will focus on the restoration of streams within the Nashville and Lower Cumberland River region. Project Blue Stream aims to enhance the overall quality of the streams within the Lower Cumberland River watershed by increasing awareness of individual actions/behaviors and their effect on local streams. Through a watershed-based plan, PBS will work to enhance the health of Nashville's Mid-Cumberland Watershed with a model neighborhood stream restoration and protection program that combines public education, low impact development interventions, and local officials educational outreach.

Mid-Cumberland Watershed Coalition The MCWC started in August of 2003 with the help of a grant from Cumberland River Compact. A little over a year ago instead of forming a non-profit organization, MCWC decided to change their name to Mid-Cumberland Watershed Committee and become part of the Compact in order to use their already established non-profit status. The MCWC covers the area within the Lower Cumberland that includes many of the streams and rivers within Davidson and Cheatham Counties between the Old Hickory Dam and the Cheatham Dam. MCWC conducts stream cleanups, operates a booth at the Earth Day Festival, participates in the Catfish Rodeo, and hopes to provide volunteers for the Compact's Project Blue Streams stream restoration projects. MCWC also conducts quarterly educational programs. In collaboration with the Compact's Water Quality Advisory Committee, MCWC developed the Mid-Cumberland Watershed Map that depicts water quality concerns based on the 2004 303(d) report from TDEC.

For more information on the Mid Cumberland Watershed Committee, please contact the MCWC Chairman, Art Newby, at 615-642-1406 or art.newby@cte.aecom.com

For more information about the Cumberland River Compact and to learn more about your local watershed, contact the Compact at info@cumberlandrivercompact.org; 615-837-1151 or join us on the web at http://www.cumberlandrivercompact.org.

5.4.B. Central Basin RC&D Council. The Mission of the Central Basin Resource Conservation & Development Council is to promote the wise utilization of natural, cultural and other resources creating managed and sustainable growth that will improve the overall quality of life.

The Central Basin RC&D area covers six counties in Middle Tennessee: Davidson, Rutherford, Sumner, Trousdale, Williamson and Wilson. The name is derived from the geologic formation known as the Central or Nashville Basin that encompasses the majority of the area.

The RC&D program is administered by the USDA Natural Resources Conservation Service and directed at the local level by the RC&D Council, which is a 501(c)(3) organization. Secretary of Agriculture Ann Veneman designated the Central Basin RC&D Area in January 2002.

The Central Basin RC&D is currently looking for opportunities for habitat enhancement and protection within the Mill Creek watershed, a tributary to Cheatham reservoir. To date, Central Basin has completed two projects within this watershed consisting of a livestock operation and an urban demonstration site. The livestock project included riparian exclusional fencing, grade stabilization structures and constructed stream crossings. The urban project consisted of riparian vegetation establishment and informational media. Financial assistance for these projects has been provided by a grant from the U.S. Fish and Wildlife Service and is targeted at the enhancement and protection of habitat for the Nashville Crayfish (*Orconectes shoupii*). Additional funding is still available for projects that have a positive impact on water quality within the Mill Creek watershed.

For more information on the Central Basin RC&D Council and its programs, contact Allen Persinger, RC&D Coordinator at (615) 444-1890 ext. 110 or allen.persinger@tn.usda.gov.

5.4.C. Five Rivers RC&D Council The mission of the Five Rivers RC&D Council is to promote activities that will enhance the quality of life, conserve natural resources, and promote economic development in the council area.

The Five Rivers RC&D Council covers seven (7) counties in Middle Tennessee. Named for the 5 major rivers following through the area, the Council serves Cheatham, Dickson, Houston, Humphreys, Montgomery, Robertson and Stewart Counties. With the natural resources and community activities being diverse in geography, the Council responds to the needs of their local communities, both for conservation issues and for economic and rural development. The collaboration of its numerous partners makes the Five Rivers RC&D Council area distinctive.

The Five Rivers RC&D Council assists in administering the USDA Resource Conservation and Development Program, which is a unique combination of private enterprise and federal assistance that encourages economic growth through development, conservation, and planned utilization of natural resources across the council area and Tennessee. Just a few services the RC&D Program is providing in our community are Conservation Education, Farmland Protection, providing Technical Assistance, ensuring Community Services, establishing Sustainable Development, encouraging Natural Resource Protection, and Communicating Local Issues.

The Five Rivers RC&D Council is worked with landowners in the Cheatham Lake watershed in Cheatham and Robertson Counties to demonstrate solutions to sedimentation and non-point source pollution loading by installing Best Management Practices along sensitive stream segments. Assisting the Natural Resources Conservation Service local Soil Conservation Districts in developing conservation plans to include new techniques for stream crossing and watering the livestock animals, has proven to be critical to influencing adjacent landowners.

The environmental problems addressed within the watershed were caused by severe streambank erosion from changes in the stream channels, livestock accessibility to these streams, a lack of buffer and riparian zones, and some improper farming techniques that have impaired the stream systems.

Some of the management practices include solar ram pumps for watering troughs to provide fresh clean water supplies for cattle and fences to exclude livestock from access to ponds or adjacent stream. The landowners used geo-textile fabrics and bioengineering to restore streambanks and to provide protection against future river swells. The stabilization of the slopes allowed the landowners to establish a stream crossing for farm and heavy equipment to gain access to secluded portions of their property. Landowners reduced sedimentation by improving their pasture lands and providing intensive rotational grazing systems to adequately feed forages and maintain healthy open lands. The improved varieties of grass were better suited for Middle Tennessee's drier conditions. The opportunity to establish some native warm season grass plots for wildlife habitat was made possible through some USDA farm programs.

The use of farm implements such as no till drills, have improved over 2,300 acres in Cheatham and Robertson counties - more than 60 landowners in 2006 are now using these. The numerous projects installed total over $107,000 in addition to improving the water quality along the Lower Cumberland-Cheatham Lake Watershed, the aquatic habitat remains intact and the rare native plants have a better environment to flourish. The knowledge carried on by these landowners speaks volumes to their neighbors, ensuring the rest of the farming community grasped these conservation concepts for their own benefit and for the benefit of generations to come.

For more information on the Five Rivers RC&D Council and its programs, contact Chandra B. Owens, NRCS-RC&D Coordinator at (931) 368-0252 ext. 5 or visit the web site http://www.FiveRiversRCD.org.

CHAPTER 6

RESTORATION STRATEGIES IN THE CHEATHAM LAKE WATERSHED

6.1. BACKGROUND.

The Watershed Water Quality Management Plan serves as a comprehensive inventory of resources and stressors in the watershed, a recommendation for control measures, and a guide for planning activities in the next five-year watershed cycle and beyond. Water quality improvement will be a result of implementing both regulatory and nonregulatory programs.

In addition to the NPDES program, some state and federal regulations, such as the TMDL and ARAP programs, address point and nonpoint issues. Construction and MS4 storm water rules (implemented under the NPDES program) have transitioned from Phase 1 to Phase 2. More information on storm water rules may be found at: http://www.state.tn.us/environment/wpc/stormh2o/.

This Chapter addresses point and nonpoint source approaches to water quality problems in the Cheatham Lake Watershed as well as specific NPDES permittee information.

6.2. COMMENTS FROM PUBLIC MEETINGS. Watershed meetings are open to the public, and most meetings were represented by citizens who live in the watershed, NPDES permitees, business people, farmers, and local river conservation interests. Locations for meetings were chosen after consulting with people who live and work in the watershed. Everyone with an interest in clean water is encouraged to be a part of the public meeting process. The times and locations of watershed meetings are posted at: http://www.state.tn.us/environment/wpc/watershed/public.shtml.

6.2.A. Year 1 Public Meeting. The first Cheatham Lake Watershed public meeting was held on November 14, 2000, at the Howard School (Nashville). The goals of the meeting were to: (1) present, and review the objectives of, the Watershed Approach, (2) introduce local, state, and federal agency and nongovernmental organization partners, (3) review water quality monitoring strategies, and (4) solicit input from the public.

Major Concerns/Comments Voiced at Public Meeting

- Destruction of small streams
- Flash floods increase as development (impervious surface) increases
- Water withdrawal
- Increased bank erosion
- Flooding due to development in floodplain
- Lack of public education about the value of greenways
- Litter in creeks
- Sediment and construction runoff
- Sewer crossings
- Trend toward recreational use of waters is not accompanied by increased access
- Loss of wetlands and floodplains due to development
- Lack of incentives and enforcement as a tool to encourage local control of floodplains and construction sites
- Riverbank erosion on Cumberland River as a result of unnatural releases from the dam

6.2.B. Year 3 Public Meeting. The second Cheatham Lake Watershed public meeting was held on October 1, 2002, at West End Community Church Ministry Center in Nashville. The goals of the meeting were to: (1) provide an overview of the watershed approach, (2) review the monitoring strategy, (3) summarize the most recent water quality assessment, (4) discuss the TMDL schedule and citizens' role in commenting on draft TMDLs, and (5) discuss BMPs and other nonpoint source tools available through the Tennessee Department of Agriculture 319 Program and NRCS conservation assistance programs.

6.2.C. Year 5 Public Meeting. The third scheduled Cheatham Lake Watershed public meeting was held October 13, 2008 at the Shelby Bottoms Nature Center in Nashville. The meeting featured ten educational components:

- Overview of watershed approach flash video
- Benthic macroinvertebrate specimens and interpretation
- "Is Your Stream Healthy" self-guided slide show
- "Why We Do Biological Sampling" self-guided slide show
- GIS (Geographic Information Systems) inventory of the watershed
- Water supply and ground water protection educational display
- Water quality and land use maps
- Whites Creek Watershed Association educational display
- Whites Creek Preservation Society educational display
- Cumberland River Compact educational display

In addition, citizens had the opportunity to make formal comments on the draft Watershed Water Quality Management Plan.

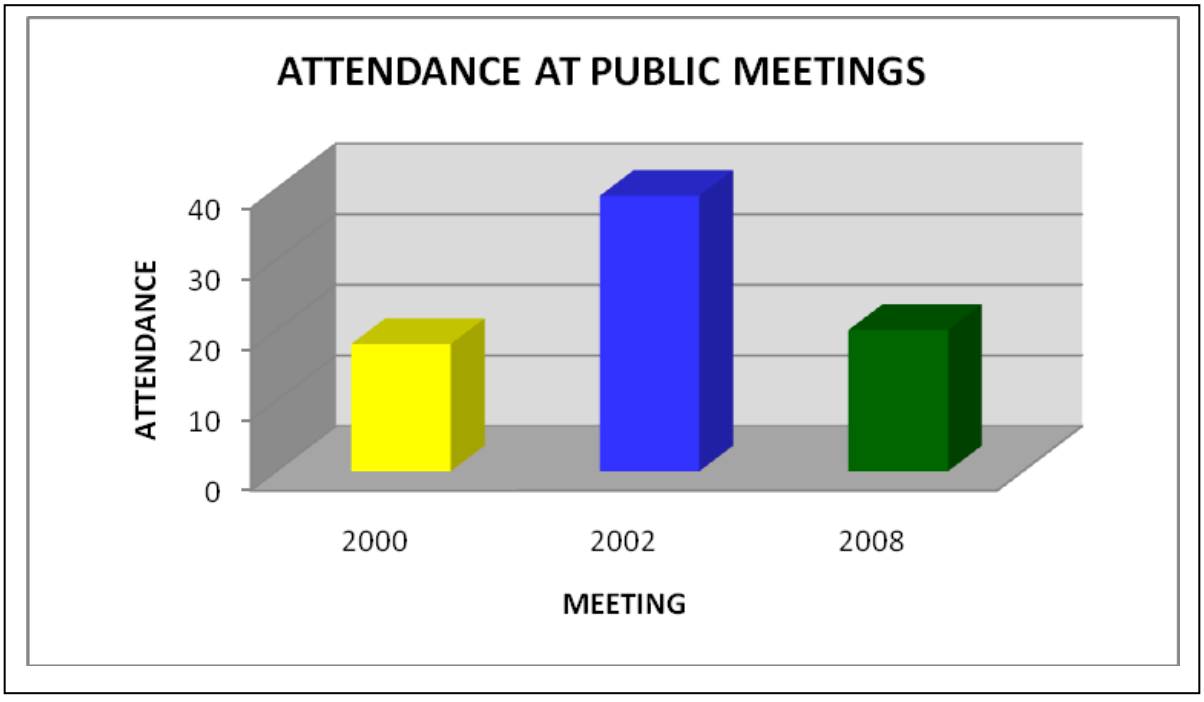


Figure 6-1. Attendance at the Cheatham Lake Watershed Public Meetings. *Attendance numbers do not include TDEC personnel.*

Figure 6-2. Local Groups, Like the Mid-Cumberland Watershed Association, Have an Opportunity to Talk About Their Work with Citizens at the Watershed Meeting.

Figure 6-3. The Cumberland River Compact Discusses Project Blue Streams with Citizens of the Cheatham Lake Watershed.

Figure 6-4. Maps are an Effective Way to Illustrate Water Quality Improvements in the Watershed.

Figure 6-5. At Watershed Meetings, Citizens Learn About Benthic Macroinvertebrates (Small Invertebrates that Live on the Bottom of the Streams) in Their Watershed.

Figure 6-6. Scotty Sorrells (Division of Water Supply) Explains the Complicated Issues Involved with Groundwater as a Source of Drinking Water.

Figure 6-7. Displays by Local Groups, Like The Whites Creek Preservation Society and The Whites Creek Watershed Alliance, Attract Interest at the Watershed Meeting.

6.3. APPROACHES USED.

6.3.A. Point Sources. Point source contributions to stream impairment are primarily addressed by NPDES and ARAP permit requirements and compliance with the terms of the permits. Notices of NPDES and ARAP draft permits available for public comment can be viewed at http://www.state.tn.us/environment/wpc/wpcppo/. Discharge monitoring data submitted by NPDES-permitted facilities may be viewed at http://www.epa.gov/enviro/html/pcs/pcs_query_java.html.

The purpose of the TMDL program is to identify remaining sources of pollution and allocate pollution control needs in places where water quality goals are still not being achieved. TMDL studies are tools that allow for a better understanding of load reductions necessary for impaired streams to return to compliance with water quality standards. More information about Tennessee's TMDL program may be found at: http://www.state.tn.us/environment/wpc/tmdl/.

Approved TMDL:

Cheatham Lake - Total Maximum Daily Load for E. Coli in Cheatham Lake in the Lower Cumberland Watershed in Davidson, Sumner and Williamson Counties. Approved 04/17/2008.

http://state.tn.us/environment/wpc/tmdl/approvedtmdl/CheathamEcoli.pdf

TMDLs are prioritized for development based on many factors.

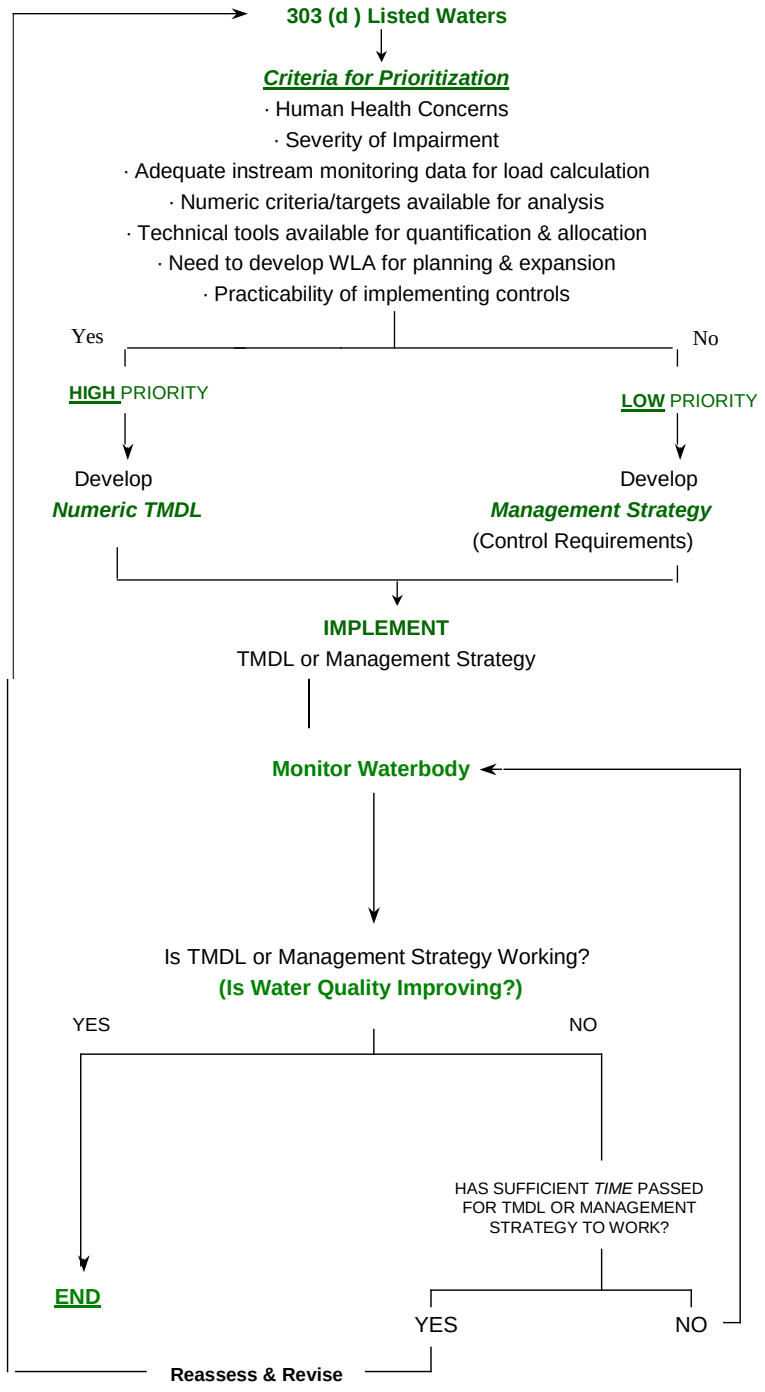


Figure 6-2. Prioritization Scheme for TMDL Development.

Several permitted discharges within the Cheatham Watershed discharge suspended solids under the conditions of an NPDES permit and are reviewed during the watershed cycle for reissuance. Many of these facilities fall under Industrial Storm Water permit coverage. Common types of industries that may discharge solids include rock quarries, concrete plants, water treatment facilities, ore processing, and automotive washing operations.

6.3.B. Nonpoint Sources

Common nonpoint sources of pollution in the Cheatham Watershed include urban storm water runoff, riparian vegetation removal and other habitat alterations, and inappropriate land development, road construction, and agricultural practices. Since nonpoint pollution exists essentially everywhere rain falls, existing point source regulations can have only a limited effect. Other measures are, therefore, necessary.

There are several state and federal regulations that address contaminants impacting waters in the Cheatham Watershed. Many of these are limited to point sources: pollution coming from a pipe or ditch. Often, controls of point sources are not sufficient to protect waters, so other measures are necessary. Some measures include efforts by landowners and volunteer groups, and the possible implementation of new regulations. Many agencies, such as the Tennessee Department of Agriculture (TDA) and the Natural Resources Conservation Service (NRCS), offer financial assistance to landowners for corrective actions (like Best Management Practices) that may be sufficient for recovery of impacted streams. Many nonpoint problems will require an active civic involvement at the local level geared towards establishment of improved zoning guidelines, building codes, streamside buffer zones and greenways, and general landowner education.

The following text describes types of impairments, possible causes, and suggested improvement measures. Restoration efforts should not be limited to only those streams and measures suggested below.

6.3.B.i. Sedimentation.

6.3.B.i.a. From Construction Sites. Construction activities have historically been considered “nonpoint sources.” In the late 1980’s, EPA designated them as being subject to NPDES regulation if more than 5 acres were being disturbed. In the spring of 2003, that threshold became 1 acre or less than 1 acre if it’s part of a larger development. The general permit issued for such construction sites establishes conditions for maintenance of the sites to minimize pollution from storm water runoff, including requirements for installation and inspection of erosion prevention and sediment controls. Also, the general permit imposes more stringent inspection, design criteria and sediment control measures on sites in the watershed of streams that are already impaired due to siltation or are considered high quality. Regardless of the size, no construction site is allowed to cause a condition of pollution.

Beginning in 2003, the state began requiring some municipalities to obtain coverage under a permit designed to address nonpoint runoff issues: the General NPDES Municipal Separate Storm Sewer System Permit, commonly known as MS4 (see section 6.3.B.viii). Among other requirements, this permit directs the holder to develop a comprehensive storm water management program, including the adoption of local regulatory ordinances governing land disturbance near streams, and regular inspection of construction sites and other discharges into their storm sewers.

Given the highly urbanized nature of the area, most of the Cheatham Watershed is covered by an active local MS4 program, including the large Metro Davidson County Phase 1 Storm water Program.

Due to the continuing rapid rise in population densities and construction activities in the greater Nashville area, land development is one of the most pervasive and serious sources of impact to area streams. Affected streams include Collins Creek, Turkey Creek, Owl Creek, Mill Creek, Holt Creek, Little Creek, Madison Creek, and Manskers Creek.

Construction sites within a sediment-impaired watershed may also have higher priority for inspections by WPC and MS4 personnel, and are likely to have enforcement actions for failure to control erosion.

6.3.B.i.b. From Channel and/or Bank Erosion. Many streams within the Cheatham Watershed suffer from varying degrees of stream bank erosion. When stream channels are altered, banks can become unstable and highly erodable. Heavy livestock traffic can also severely disturb banks. When large tracts of land are cleared of vegetation (especially trees) and replaced with impermeable surfaces like asphalt and rooftops, the large increases in the velocities and volumes of storm water runoff can also overwhelm channel and bank integrity because destabilized banks contribute to sediment loadings and to the loss of beneficial riparian vegetation.

Some improper agricultural practices, overzealous land development, and failure to properly manage storm water runoff have impacted the hydrology and morphology of many stream channels in the Cheatham watershed. Once destablized, bank erosion and stream widening can progress rapidly, and is often difficult to repair.

Although uncommon in the urbanized regions of the watersehd, unpermitted gravel dredging can also severely disturb stream banks. Destabilized banks contribute to sediment load and to the loss of beneficial riparian vegetation to the stream. The historical removal of cobble and rock from stream channels has resulted in destabilization of stream channels and aggressive erosion of stream banks.

Several agencies such as the NRCS, USCOE, and TDA, as well as citizen watershed groups, are working to stabilize portions of stream banks using bioengineering and other techniques. In addition, Metro Nashville and the Tennessee Stream Mitigation Program (TSMP) are also working on projects to restore stream bank integrity and riparian zones. Projects along Sevenmile Creek and Pavillion Branch have been successfully implemented. Many other affected streams would benefit from these types of projects.

Some methods or controls that might be necessary to address common problems are:

Voluntary Activities

- Re-establish bank vegetation, and stabilize banks through bioengineering techniques. (Just about every stream in the watershed could benefit, including Mill Creek, Sorghum Branch, Madison Creek, Manskers Creek).
- Establish off-channel watering areas for livestock by moving watering troughs and feeders back from stream banks, or at least limit cattle access to restricted areas with armored banks entry (Upper Mill Creek and its tributaires, Cummins Branch).

Regulatory Strategies

- Increase efforts in the Master Logger program to recognize impaired streams and require more effective management practices within streamside management zones.)
- Require post-construction run-off rates to be no greater than pre-construction rates in order to avoid in-channel erosion. (Ewing Creek, Indian Creek, Mill Creek, Browns Creek)
- Limit road and utility crossings of streams through better site design. (Efforts at better site design are under way through volunteer efforts such as the Cumberland River Compact's "Building Outside the Box" program, and Metro MS4's "pre-con" site plan reviews)
- Restrict the use of off-highway vehicles on stream banks and in stream channels. (More rural areas such as Sycamore & Marrowbone Creek watersheds.)
- Limit clearing of stream and roadside ditch banks or other alterations (Watershed-wide issue, including smaller tributaries to Richland, Whites, and Manskers Creek). *Note: Permits may be required for any work along streams.*
- Encourage or require strong local buffer ordinances, especially dealing with post-construction, no-disturb easements
- Restrict rock harvesting to permitted sites.

Additional Strategies

- Better community planning and MS4 oversight for the impacts of development on small streams, especially development in growing areas such as Nolensville, Brentwood, Goodlettsville, the western edge of Davdison County, and the I-24 corridor through Cheatham and Robertson Counties.

6.3.B.i.c. From Agriculture and Silviculture. The Water Quality Control Act exempts normal agricultural and silvicultural practices that do not result in a point source discharge. Nevertheless, efforts are being made to address impacts due to these exempted practices.

The Master Logger Program has been in place for several years to train loggers how to install Best Management Practices that lessen the impact of logging activities on streams. Recently, laws and regulations established the authority for the Commissioners of the Departments of Environment and Conservation and of Agriculture to stop the logging operation that, upon failing to install these BMPs, is causing impacts to streams.

Since the Dust Bowl era, the agriculture community has strived to protect the soil from wind and water erosion. Agencies such as the Natural resources Conservation Service (NRCS), the University of Tennessee Agricultural Extension Service, and the Tennessee Department of Agriculture are striving to identify better ways of farming, to educate the farmers, and to install the methods that address the sources of some of the impacts due to agriculture. Cost sharing is available for many of these measures.

Many sediment problems traceable to agricultural practices also involve riparian loss due to close row cropping or pasture clearing for grazing. Lack of vegetated buffers along stream corridors due to agricultural land uses is a problem in some areas of the Cheatham Watershed. Many streams within the Sycamore, Marrowbone, and upper

Whites Creek watersheds could benefit from the establishment of more extensive riparian buffer zones on farmland.

6.3.B.ii. Pathogen Contamination.

Possible sources of pathogens are inadequate or failing septic tank systems, overflows or breaks in public sewer collection systems, poorly disinfected discharges from sewage treatment plants, and fecal matter from pets, livestock and wildlife washed into streams and storm drains. When fecal bacterial levels are shown to be consistently elevated to dangerously high levels, especially in streams with high potential for recreational uses, the division must post signage along the creek, warning the public to avoid contact. Once pathogen sources have been identified and corrected, and pathogen level reductions are documented, the posting is lifted.

Permits issued by the Division of Water Pollution Control regulate discharges from point sources and require adequate control for these sources. Individual homes are required to have subsurface, on-site treatment (i.e., septic tank and field lines) if public sewers are not available. The Division of Ground Water Protection within the Nashville Environmental Field Offices and delegated county health departments regulate septic tanks and field lines. In addition to discharges to surface waters, businesses may employ subsurface treatment for domestic wastewater or surface discharge of treated process wastewater. The Division of Water Pollution Control regulates surface water discharges and near-surface land application of treated wastewater.

Currently, many streams within the Cheatham Watershed are known to have excessive pathogen contamination. A partial list includes: Lumsley Fork, Walkers Creek, Slaters Creek, Manskers Creek, Richland Creek and most of its tributaries, Gibson Creek, Neelys Branch, Cooper Creek, Pages Branch, Dry Creek, Browns Creek, Whites Creek and many of its tributaries, Ewing Creek, Drakes Creek, Mill Creek Pavilion Branch, Shasta Branch, Sevenmile Creek, and a section of the Cumberland River itself. Most of these streams are impacted by urban areas, with contributions of bacterial contamination coming from storm water runoff, sewage collection system leaks, or treatment plant operation failures. The Cumberland River is still impacted by direct sewage discharges during Combined Sewer Overflow events, although this problem has been reduced considerably in the last decade. A smaller number of streams in the remaining agricultural watersheds also show elevated bacterial levels.

Some measures that may be necessary to control pathogens are:

Voluntary Activities

- Clean up pet waste. This has been found to be a surprisingly important source of fecal contamination in highly urbanized watersheds.
- Repair failed septic systems.
- Limit livestock access to streams and restrict stream crossings (upper Mill Creek & tributaries, upper Whites Creek & tributaries)

Regulatory Strategies

- Strengthen enforcement of regulations governing on-site wastewater treatment.

- Determine timely and appropriate enforcement for non-complying sewage treatment plants, large and small, and their collection systems.
- Require comprehensive pathogen source identification and elimination procedures to be implemented by municipal MS4 storm water programs
- Identify Concentrated Animal Feeding Operations not currently permitted.

Additional Strategies

- Develop intensive planning in areas where sewer is not available and treatment by subsurface disposal is not an option due to poor soils, floodplains, or high water tables.
- Develop and enforce leash laws and controls on pet fecal material.
- Greater efforts by sewer utilities to identify leaking lines or overflowing manholes
- Review the pathogen limits in discharge permits to determine the need for further restriction.

6.3.B.iii. Excessive Nutrients and/or Dissolved Oxygen Depletion.

These two impacts are usually listed together because high nutrients often contribute to low dissolved oxygen within a stream. Since nutrients often have the same source as pathogens, the measures previously listed can also address many of these problems. Elevated nutrient loadings are also often associated with urban runoff from impervious surfaces, from fertilized lawns and croplands, and faulty sewage disposal processes. Nutrients are often transported with sediment, so many of the measures designed to reduce sediment runoff will also aid in preventing organic enrichment of streams and lakes.

Dissolved oxygen depletion can also be due to the direct discharge of nutrients or other biodegradable materials by point sources. Limits in NPDES permits placed on parameters such as nitrates, ammonia, phosphorous, Biological Oxygen Demand (BOD) and Chemical Oxygen Demand (COD), are designed to restrict the amounts of these pollutants to assimilative levels

Some sources of nutrients can be addressed by:

Voluntary Activities

- Educate homeowners and lawn care companies in the proper application of fertilizers.
- Encourage landowners, developers, and builders to leave stream buffer zones. Streamside vegetation can filter out many nutrients and other pollutants before they reach the stream. These riparian buffers are also vital along livestock pastures. Many streams in the Cheatham Watershed within agricultural areas would benefit from additional riparian buffers.
- Use grassed drainage ways that can remove fertilizer and sediment before it enters streams.
- Use native plants for landscaping since they don't require as much fertilizer and water.
- Develop better overall storm water management in urban and residential areas, including retrofitting existing commercial lots, homes, and roadways with storm water quality and quantity BMPs. This would especially improve the urban streams and lakes currently polluted by excessive nutrient and sediment inputs, such as (Indian Creek, Mill Creek, Sevenmile Creek, lower Whites Creek, Richland Creek and its various tributaries).

Physical changes to streams can prevent them from providing enough oxygen to biodegrade the materials that are naturally present. A few additional actions can address this problem:

- Maintain shade over a stream. Cooler water can hold more oxygen and retard the growth of algae. As a general rule, all stream channels will suffer from canopy removal. An intact riparian zone also acts as a buffer to filter out nutrient loads before they enter the water.
- Discourage impoundments and instead encourage filtration basins/ constructed wetlands. Ponds and lakes do not aerate water, and cause many water quality problems downstream. *Note: Permits may be required for any work on a stream, including impoundments.*

Regulatory Strategies

- Strengthen enforcement of regulations governing on-site wastewater treatment.
- Impose more stringent permit limits for nutrients discharged from sewage treatment plants
- Impose timely and appropriate enforcement for noncomplying sewage treatment plants, large and small, and their collection systems.
- Identify Concentrated Animal Feeding Operations (CAFO) not currently permitted, or any Animal Feeding Operations (AFO) that contribute to stream impacts and declare them as a CAFO requiring a permit.
- Support and train local MS4 programs within municipalities to deal with storm water pollution issues and require additional storm runoff quality control measures. (Sims Branch, Stoners Creek, Slaters Creek, and the Nolensville and Brentwood areas)
- Require nutrient management plans for all golf courses. (Owl Creek, Richland Creek, Madison Creek)

Additional Strategies

- Encourage TDA- and NRCS-sponsored educational programs targeted to agricultural landowners and aimed at better nutrient management, as well as information on technology-based application tools.

6.3.B.iv. Toxins and Other Materials.

Although some toxic substances are discharged in small quantities directly into waters of the state from a point source, much of these materials are washed in during rainfalls from an upland location, or via improper waste disposal that contaminates groundwater. In the Cheatham Watershed, a relatively small number of streams are damaged by toxins in storm water runoff from industrial facilities or urban areas. More stringent inspection and regulation of permitted industrial facilities, and local storm water quality initiatives and regulations, could help reduce the amount of contaminated runoff reaching state waters. Examples of streams that would benefit from these measures are East Fork Browns Creek and Sims Branch.

Individuals may also cause contaminants to enter streams by activities that may be attributed to apathy or the lack of knowledge or civility. Litter in roadside ditches, garbage bags tossed over bridge railings, paint brushes washed off over storm drains, and oil drained into ditches are all blatant examples of pollution in streams. Misapplication of chemicals, on agricultural and suburban areas, is another source of toxins.

Some of these problems can be addressed by:

Voluntary Activities

- Provide public education.
- Paint warnings on storm drains that connect to a stream.
- Sponsor community clean-up days.
- Landscape public areas.
- Encourage public surveillance of their streams and reporting of dumping activities to their local authorities.
- Encourage local municipalities to provide more convenient public disposal sites, especially for hazardous wastes.

Regulatory Strategies

- Continue to prohibit illicit discharges to storm drains and to search them out.
- Strengthen litter law enforcement at the local level.
- Increase the restrictions on storm water runoff from industrial facilities.

6.3.B.v. Habitat Alteration.

The alteration of the habitat within a stream can have severe consequences. Whether it is the removal of the vegetation, providing a root system network for holding soil particles together, the release of sediment, which increases the bed load and covers benthic life and fish eggs, the removal of gravel bars, “cleaning out” creeks with heavy

equipment, or the impounding of the water in ponds and lakes, many alterations impair the use of the stream for designated uses. Habitat alteration also includes the draining or filling of wetlands.

Many streams within the Cheatham Watershed suffer from some degree of habitat alteration, especially riparian loss and bank disturbances from suburban and urban land development. As described in earlier sections, besides the direct loss of habitat, these types of disturbances also affect sediment and nutrient loadings, water temperatures, oxygen levels, storm water filtration, and nuisance algae growths.

Although large-scale public projects such as highway construction can alter significant portions of streams, individual landowners and developers are responsible for the vast majority of stream alterations. Some measures that can help address these problems are:

Voluntary Activities:

- Organize stream cleanups removing trash, limbs and debris before they cause blockage (Mill Creek, Manskers Creek, and Whites Creek all have benefited from volunteer clean-up days)
- Avoid use of heavy equipment to "clean out" streams ((North Fork Sycamore). *Instream work other than debris removal will require an Aquatic Resource Alteration Permit (ARAP).*
- Plant native vegetation along historically altered streams to stabilize banks and provide habitat (Whittemore branch, Sorghum Branch, Ewing Creek, Browns Creek, Dry Creek, Loves Branch, Gibson Creek, Richland Creek & tributaries [esp. Sugartree Creek & Vaughn's Gap Branch])
- Encourage developers to use better site design and avoid extensive use of culverts or channel relocations in streams.

Regulatory Strategies:

- Restrict modification of streams by means such as culverting, lining, or impounding.
- Require mitigation for impacts to streams and wetlands when modifications are allowed.
- Require permitting of all rock harvesting operations.
- Increased enforcement may be needed when violations of current regulations occur, especially for illicit gravel dredging.

6.3.B.viii. Local Storm Water Management.

MS4 discharges are regulated through the Phase I or II NPDES-MS4 permits. These permits require the development and implementation of a Storm Water Management Program (SWMP) that will reduce the discharge of pollutants to the maximum extent practicable and not cause or contribute to violations of state water quality standards. The NPDES General Permit for Discharges from Phase I and II MSF facilities can be found at:

http://www.state.tn.us/environment/wpc/stormh2o/.

The Cheatham Watershed is covered by a number of local MS4 programs, the largest being the Metro-Davidson County Phase I MS4 Program. They are involved in a number of innovative initiatives including a variety of educational programs and public service announcements, encouraging the development of local watershed groups, extensive monitoring of impaired waterways, aerial thermal reconnaissance for illicit discharges, and oversight of construction activities.

Smaller municipalities with active Phase II Storm water programs in the watershed include the Cities of Belle Meade, Berry Hill, Brentwood, Forest Hills, Goodlettesville, Lakewood, Nolensville, Oak Hill, and Sumner County.

For discharges into impaired waters, the MS4 General Permit requires that SWMPs include a section describing how discharges of pollutants of concern will be controlled to ensure that they do not cause or contribute to instream exceedances of water quality standards. Specific measurements and BMPs to control pollutants of concern must also be identified. In addition, MS4s must implement the proposed waste load allocation provisions of an applicable TMDL (i.e., siltation/habitat alteration, pathogens) and describe methods to evaluate whether storm water controls are adequate to meet the waste load allocation. In order to evaluate SWMP effectiveness and demonstrate compliance with specified waste load allocations, MS4s are encouraged to develop and implement appropriate monitoring programs by the designated date.

Some storm sewer discharges are not regulated through the NPDES MS4 program. Strategies to address runoff in these urban areas include adapting Tennessee Growth Readiness Program (TGRP) educational materials to the watershed. TGRP is a statewide program built on existing best management practices from the Nonpoint Education for Municipal Officials program and the Center for Watershed Protection. TGRP developed the program to provide communities and counties with tools to design economically viable and watershed friendly developments. The program assists community leaders in reviewing current land use practices, determining impacts of imperviousness on watershed functions, and allowing them to understand the economics of good watershed management and site design.

6.4. PERMIT REISSUANCE PLANNING

Under the *Tennessee Water Quality Control Act*, municipal, industrial and other dischargers of wastewater must obtain a permit from the Division. Approximately 1,700 permits have been issued in Tennessee under the federally delegated National Pollutant Discharge Elimination System (NPDES). These permits establish pollution control and monitoring requirements based on protection of designated uses through implementation of water quality standards and other applicable state and federal rules.

The following three sections provide specific information on municipal, industrial, and water treatment plant active permit holders in the Cheatham Lake Watershed. Compliance information was obtained from EPA's Permit Compliance System (PCS). All data was queried for a five-year period between January 1, 2001 and December 31, 2006. PCS can be accessed publicly through EPA's Envirofacts website. This website provides access to several EPA databases to provide the public with information about environmental activities that may affect air, water, and land anywhere in the United States:

http://www.epa.gov/enviro/html/ef_overview.html

Stream Segment information, including designated uses and impairments, are described in detail in Chapter 3, *Water Quality Assessment of the Cheatham Lake Watershed.*

6.4.A. Municipal Permits

TN0020737 Ashland City STP

Discharger rating: Minor
City: Ashland City
County: Cheatham
EFO Name: Nashville
Issuance Date: 1/1/06
Expiration Date: 10/30/10
Receiving Stream(s): Cumberland River Mile 158.2
HUC-12: 051302020107
Effluent Summary: Treated municipal wastewater from Outfall 001
Treatment system: Oxidation ditch activated sludge with chlorination

PARAMETER	SEASON	LIMIT	UNITS	SAMPLE DESIGNATOR	MONITORING FREQUENCY	SAMPLE TYPE	MONITORING LOCATION
BOD % removal	All Year	40	Percent	DMin % Removal	3/Week	Calculated	% Removal
BOD % removal	All Year	85	Percent	MAvg % Removal	3/Week	Calculated	% Removal
BOD5	All Year	45	mg/L	DMax Conc	3/Week	Composite	Effluent
BOD5	All Year	267	lb/day	WAvg Load	3/Week	Composite	Effluent
BOD5	All Year	30	mg/L	MAvg Conc	3/Week	Composite	Effluent
BOD5	All Year	200	lb/day	MAvg Load	3/Week	Composite	Effluent
BOD5	All Year	40	mg/L	WAvg Conc	3/Week	Composite	Effluent
Bypass of Treatment (occurrences)	All Year		Occurences/ Month	MAvg Load	Continuous	Visual	Wet Weather
D.O.	All Year	1	mg/L	DMin Conc	Weekdays	Grab	Effluent
E. coli	All Year	487	#/100mL	DMax Conc	3/Week	Grab	Effluent
E. coli	All Year	126	#/100mL	MAvg Geo Mean	3/Week	Grab	Effluent
Flow	All Year		MGD	DMax Load	Daily	Continuous	Influent (Raw Sewage)
Flow	All Year		MGD	MAvg Load	Daily	Continuous	Effluent
Flow	All Year		MGD	MAvg Load	Continuous	Measured	Influent (Raw Sewage)
Flow	Winter		MGD	DMax Load	Continuous	Continuous	Effluent
Overflow Use Occurences	All Year		Occurences/ Month	MAvg Load	Continuous	Visual	Non Wet Weather
Overflow Use Occurences	All Year		Occurences/ Month	MAvg Load	Continuous	Visual	Wet Weather
Settleable Solids	All Year	1	mL/L	DMax Conc	Weekdays	Composite	Effluent

Table 6-1a.

PARAMETER	SEASON	LIMIT	UNITS	SAMPLE DESIGNATOR	MONITORING FREQUENCY	SAMPLE TYPE	MONITORING LOCATION
TRC	All Year	2	mg/L	DMax Conc	Weekdays	Grab	Effluent
TSS	All Year	45	mg/L	DMax Conc	3/Week	Composite	Effluent
TSS	All Year	200	lb/day	MAvg Load	3/Week	Composite	Effluent
TSS	All Year	267	lb/day	WAvg Load	3/Week	Composite	Effluent
TSS	All Year	30	mg/L	MAvg Conc	3/Week	Composite	Effluent
TSS	All Year	40	mg/L	WAvg Conc	3/Week	Composite	Effluent
TSS % Removal	All Year	40	Percent	DMin % Removal	3/Week	Calculated	% Removal
TSS % Removal	All Year	85	Percent	MAvg % Removal	3/Week	Calculated	% Removal
pH	All Year	9	SU	DMax Conc	Weekdays	Grab	Effluent
pH	All Year	6	SU	DMin Conc	Weekdays	Grab	Effluent

Table 6-1b.

Table 6-1a-b. Permit Limits for Ashland City STP.

Compliance History:
The following numbers of exceedences were noted in PCS:

- 28 Settleable Solids
- 36 Total Suspended Solids (TSS)
- 27 Suspended Solids % Removal
- 11 Biological Oxygen Demand (BOD)
- 6 Escherichia coli
- 13 Overflows
- 48 Bypasses

Enforcement:
3/13/06 Performance Audit resulted in a Notice of Violation

Comments:
None

TN0057061 Cheatham County Industrial Park STP

Discharger rating: Minor
City: Ashland City
County: Cheatham
EFO Name: Nashville
Issuance Date: 1/1/06
Expiration Date: 11/30/10
Receiving Stream(s): Cumberland River at mile 162.5
HUC-12: 051302020107
Effluent Summary: Treated domestic wastewater from Outfall 001
Treatment system: Activated sludge

PARAMETER	SEASON	LIMIT	UNITS	SAMPLE DESIGNATOR	MONITORING FREQUENCY	SAMPLE TYPE	MONITORING LOCATION
BOD5	All Year	45	mg/L	DMax Conc	2/Month	Grab	Effluent
BOD5	All Year	30	mg/L	MAvg Conc	2/Month	Grab	Effluent
D.O.	All Year	1	mg/L	DMin Conc	Weekdays	Grab	Effluent
E. coli	All Year	487	#/100mL	DMax Conc	2/Month	Grab	Effluent
E. coli	All Year	126	#/100mL	MAvg Geo Mean	2/Month	Grab	Effluent
Flow	All Year		MGD	MAvg Load	Weekdays	Instantaneous	Effluent
Flow	All Year		MGD	DMax Load	Weekdays	Instantaneous	Effluent
Settleable Solids	All Year	1	mL/L	DMax Conc	2/Week	Grab	Effluent
TRC	All Year	2	mg/L	DMax Conc	Weekdays	Grab	Effluent
TSS	All Year	45	mg/L	DMax Conc	2/Month	Grab	Effluent
TSS	All Year	30	mg/L	MAvg Conc	2/Month	Grab	Effluent
pH	All Year	9	SU	DMax Conc	2/Week	Grab	Effluent
pH	All Year	6	SU	DMin Conc	2/Week	Grab	Effluent

Table 6-2. Permit Limits for Cheatham County Industrial Park STP.

Enforcement:
NOV for expired permit on 8/30/05

Comments:
None

TN0074764 Tennessee Wastewater Systems, Inc. - River Road STP-Lost Hollow Subdivision

Discharger rating: Minor
City: Ashland City
County: Cheatham
EFO Name: Nashville
Issuance Date: 3/1/06
Expiration Date: 9/30/10
Receiving Stream(s): Cumberland River at mile 163.9
HUC-12: 051302020107
Effluent Summary: Treated domestic wastewater from Outfall 001
Treatment system: Lagoon

PARAMETER	SEASON	LIMIT	UNITS	SAMPLE DESIGNATOR	MONITORING FREQUENCY	SAMPLE TYPE	MONITORING LOCATION
BOD5	All Year						Effluent
BOD5	All Year	40	mg/L	MAvg Conc	Weekly	Grab	Effluent
BOD5	All Year	50	mg/L	WAvg Conc	Weekly	Grab	Effluent
BOD5	All Year	60	mg/L	DMax Conc	Weekly	Grab	Effluent
D.O.	All Year	1	mg/L	DMin Conc	Weekdays	Grab	Effluent
E. coli	All Year	126	#/100mL	MAvg Geo Mean	Weekly	Grab	Effluent
E. coli	All Year	487	#/100mL	MAvg Ari Mean	Weekly	Grab	Effluent
Flow	All Year		MGD	MAvg Load	Weekdays	Instantaneous	Effluent
Flow	All Year		MGD	DMax Load	Weekdays	Instantaneous	Effluent
Settleable Solids	All Year						Effluent
TRC	All Year	2	mg/L	DMax Conc	Weekdays	Grab	Effluent
TSS	All Year						Effluent
TSS	All Year	100	mg/L	MAvg Conc	Weekly	Grab	Effluent
TSS	All Year	120	mg/L	DMax Conc	Weekly	Grab	Effluent
TSS	All Year	110	mg/L	WAvg Conc	Weekly	Grab	Effluent
pH	All Year	6	SU	DMin Conc	Weekdays	Grab	Effluent
pH	All Year	9	SU	DMax Conc	Weekdays	Grab	Effluent

Table 6-3. Permit Limits for Lost Hollow Subdivision.

Comments:
7/16/04 Comprehensive Evaluation Inspection: In Compliance

TN0020648 Nashville Dry Creek STP

Discharger rating: Major
City: Nashville
County: Davidson
EFO Name: Nashville
Issuance Date: 1/1/06
Expiration Date: 9/30/10
Receiving Stream(s): Cumberland River at mile 213.9
HUC-12: 051302020101
Effluent Summary: Treated municipal wastewater from Outfall 001
Treatment system: Waste Activated Sludge to dissolved air flotation to thickener to press to Central WWTP to landfill

Segment	TN05130202001_5000
Name	Cheatham Reservoir
Size	740
Unit	Acres
First Year on 303(d) List	-
Designated Uses	Recreation (Supporting), Irrigation (Supporting), Livestock Watering and Wildlife (Supporting), Industrial Water Supply (Supporting), Domestic Water Supply (Supporting), Fish and Aquatic Life (Supporting)
Causes	N/A
Sources	N/A

Table 6-4. Stream Segment Information for Nashville Dry Creek STP.

PARAMETER	SEASON	LIMIT	UNITS	SAMPLE DESIGNATOR	MONITORING FREQUENCY	SAMPLE TYPE	MONITORING LOCATION
Ammonia as N (Total)	All Year	20	mg/L	DMax Conc	Daily	Composite	Effluent
Ammonia as N (Total)	All Year	3002	lb/day	WAvg Load	Daily	Composite	Effluent
Ammonia as N (Total)	All Year	15	mg/L	WAvg Conc	Daily	Composite	Effluent
Ammonia as N (Total)	All Year	10	mg/L	MAvg Conc	Daily	Composite	Effluent
Ammonia as N (Total)	All Year	2002	lb/day	MAvg Load	Daily	Composite	Effluent
Bypass of Treatment (occurrences)	All Year		Occurences/Month	MAvg Load	Continuous	Visual	Wet Weather
CBOD % Removal	All Year	40	Percent	DMin % Removal	Daily	Calculated	%t Removal
CBOD % Removal	All Year	85	Percent	MAvg % Removal	Daily	Calculated	% Removal
CBOD5	All Year	40	mg/L	DMax Conc	Daily	Composite	Effluent
CBOD5	All Year	25	mg/L	MAvg Conc	Daily	Composite	Effluent
CBOD5	All Year		mg/L	MAvg Conc	Daily	Composite	Influent (Raw Sewage)
CBOD5	All Year	5004	lb/day	MAvg Load	Daily	Composite	Effluent
CBOD5	All Year	35	mg/L	WAvg Conc	Daily	Composite	Effluent
CBOD5	All Year	7006	lb/day	WAvg Load	Daily	Composite	Effluent
CBOD5	All Year		mg/L	DMax Conc	Daily	Composite	Influent (Raw Sewage)
D.O.	All Year	5	mg/L	DMin Conc	Daily	Grab	Effluent
E. coli	All Year	487	#/100mL	DMax Conc	Daily	Grab	Effluent
E. coli	All Year	126	#/100mL	MAvg Geo Mean	Daily	Grab	Effluent
Flow	All Year		MGD	DMax Load	Daily	Continuous	Effluent
Flow	All Year		MGD	DMax Load	Daily	Continuous	Influent (Raw Sewage)
Flow	All Year		MGD	MAvg Load	Daily	Continuous	Effluent
Flow	All Year		MGD	MAvg Load	Daily	Continuous	Influent (Raw Sewage)
IC25 7day Ceriodaphnia Dubia	All Year	1.4	Percent	DMin Conc	Semi-annually	Composite	Effluent
IC25 7day Fathead Minnows	All Year	1.4	Percent	DMin Conc	Semi-annually	Composite	Effluent
Overflow Use Occurences	All Year		Occurences/Month	MAvg Load	Continuous	Visual	Wet Weather
Overflow Use Occurences	All Year		Occurences/Month	MAvg Load	Continuous	Visual	Non Wet Weather
Settleable Solids	All Year	1	mL/L	DMax Conc	Daily	Composite	Effluent
TRC	All Year	1.04	mg/L	DMax Conc	Daily	Grab	Effluent
TSS	All Year	45	mg/L	DMax Conc	Daily	Composite	Effluent
TSS	All Year		mg/L	DMax Conc	Daily	Composite	Influent (Raw Sewage)
TSS	All Year	8006	lb/day	WAvg Load	Daily	Composite	Effluent
TSS	All Year	40	mg/L	WAvg Conc	Daily	Composite	Effluent
TSS	All Year	6005	lb/day	MAvg Load	Daily	Composite	Effluent
TSS	All Year		mg/L	MAvg Conc	Daily	Composite	Influent (Raw Sewage)
TSS	All Year	30	mg/L	MAvg Conc	Daily	Composite	Effluent

Table 6-5a.

PARAMETER	SEASON	LIMIT	UNITS	SAMPLE DESIGNATOR	MONITORING FREQUENCY	SAMPLE TYPE	MONITORING LOCATION
TSS % Removal	All Year	40	Percent	DMin % Removal	Daily	Calculated	% Removal
TSS % Removal	All Year	85	Percent	MAvg % Removal	Daily	Calculated	% Removal
pH	All Year	9	SU	DMax Conc	Daily	Grab	Effluent
pH	All Year	6	SU	DMin Conc	Daily	Grab	Effluent

Table 6-5b.

Table 6-5a-b. Permit Limits for Nashville Dry Creek STP.

Compliance History:
The following numbers of exceedences were noted in PCS:

- 3 Fecal coliform
- 2 Suspended Solids % Removal
- 2 Carbonaceous Oxygen Demand (COD)
- 1 Escherichia coli
- 1 Ammonia
- 191 Overflows
- 12 Bypasses

Comments:
4/6/06 Compliance Evaluation Inspection: Major construction project has been underway for 8 months, consisting of 4 components: (1). Auxiliary wet weather pump station; (2). Conversion of aeration basins from coarse to fine bubble diffusion system to increase capacity; (3). Rehab Filter Blds and adding two primary digesters; (4). New odor control system. Project scheduled to be completed by November 2007.

TN0020575 Nashville Central STP

Discharger rating: Major
City: Nashville
County: Davidson
EFO Name: Nashville
Issuance Date: 5/1/06
Expiration Date: 9/28/10
Receiving Stream(s): Cheatham Reservoir at Cumberland River mile 189.2
HUC-12: 051302020103
Effluent Summary: Treated municipal wastewater and treated combined wastewater (storm water plus municipal) from Outfall 001, partially treated combined wastewater from Outfall 001A only after treatment capacity is maximized, and combined sewer overflow from Outfalls 018, 019, 023, 024, 033, 035, 047, 020, 034, and 044.
Treatment system: Waste Activated Sludge to press to holding to landfill

SEGMENT	TN05130202001_3000
Name	Cheatham Reservoir
Size	994
Unit	Acres
First Year on 303(d) List	2004
Designated Uses	Fish and Aquatic Life (Supporting), Livestock Watering and Wildlife (Supporting), Recreation (Non-Supporting), Irrigation (Supporting)
Causes	217
Sources	Combined Sewer Overflows, Discharges from Municipal Separate Storm Sewer Systems (MS4)

Table 6-6. Stream Segment Information for Nashville Central STP.

PARAMETER	SEASON	LIMIT	UNITS	SAMPLE DESIGNATOR	MONITORING FREQUENCY	SAMPLE TYPE	MONITORING LOCATION
Ammonia as N (Total)	All Year	20	mg/L	DMax Conc	Daily	Composite	Effluent
Ammonia as N (Total)	All Year	36696	lb/day	DMax Load	Daily	Composite	Effluent
Ammonia as N (Total)	All Year	15	mg/L	WAvg Conc	Daily	Composite	Effluent
Ammonia as N (Total)	All Year	27522	lb/day	WAvg Load	Daily	Composite	Effluent
Ammonia as N (Total)	Summer	10	mg/L	DMax Conc	Daily	Composite	Effluent
Ammonia as N (Total)	Summer	8340	lb/day	DMax Load	Daily	Composite	
Ammonia as N (Total)	Summer	7.5	mg/L	WAvg Conc	Daily	Composite	Effluent
Ammonia as N (Total)	Summer	4170	lb/day	MAvg Load	Daily	Composite	Effluent
Ammonia as N (Total)	Summer	5	mg/L	MAvg Conc	Daily	Composite	Effluent
Ammonia as N (Total)	Summer	6225	lb/day	WAvg Load	Daily	Composite	Effluent
Ammonia as N (Total)	Winter	15	mg/L	WAvg Conc	Daily	Composite	Effluent
Ammonia as N (Total)	Winter	20	mg/L	DMax Conc	Daily	Composite	Effluent
Ammonia as N (Total)	Winter	16680	lb/day	DMax Load	Daily	Composite	Effluent
Ammonia as N (Total)	Winter	12510	lb/day	WAvg Load	Daily	Composite	
Ammonia as N (Total)	Winter	10	mg/L	MAvg Conc	Daily	Composite	Effluent
Ammonia as N (Total)	Winter	8340	lb/day	MAvg Load	Daily	Composite	Effluent
Bypass of Treatment (occurrences)	All Year		Occurences/ Month	WAvg Load	Continuous	Visual	Effluent
CBOD % Removal	All Year	85	Percent	MAvg % Removal	Daily	Calculated	% Removal
CBOD5	All Year		mg/L	WAvg Load	Daily	Composite	Effluent
CBOD5	All Year		mg/L	MAvg Load	Daily	Composite	Effluent
CBOD5	All Year		mg/L	DMax Conc	Daily	Composite	Effluent
CBOD5	All Year		mg/L	MAvg Conc	Daily	Composite	Influent (Raw Sewage)
CBOD5	All Year		mg/L	DMax Conc	Daily	Composite	Influent (Raw Sewage)
CBOD5	All Year		mg/L	DMax Conc	Daily	Composite	Influent (Raw Sewage)
CBOD5	All Year	40	mg/L	DMax Conc	Daily	Composite	Effluent
CBOD5	All Year		mg/L	DMax Load	Daily	Composite	Effluent
CBOD5	All Year		mg/L	MAvg Conc	Daily	Composite	Effluent
CBOD5	All Year	64218	lb/day	WAvg Load	Daily	Composite	Effluent
CBOD5	All Year	73392	lb/day	DMax Load	Daily	Composite	Effluent
CBOD5	All Year	35	mg/L	WAvg Conc	Daily	Composite	Effluent
CBOD5	All Year		mg/L	WAvg Conc	Daily	Composite	Effluent
CBOD5	Summer	15	mg/L	WAvg Conc	Daily	Composite	Effluent
CBOD5	Summer	20850	lb/day	DMax Load	Daily	Composite	Effluent
CBOD5	Summer	12510	lb/day	WAvg Load	Daily	Composite	Effluent
CBOD5	Summer	10	mg/L	MAvg Conc	Daily	Composite	Effluent
CBOD5	Summer	25	mg/L	DMax Conc	Daily	Composite	Effluent
CBOD5	Summer	8340	lb/day	MAvg Load	Daily	Composite	Effluent
CBOD5	Winter	40	mg/L	DMax Conc	Daily	Composite	Effluent
CBOD5	Winter	20	mg/L	MAvg Conc	Daily	Composite	Effluent
CBOD5	Winter	33360	lb/day	DMax Load	Daily	Composite	
CBOD5	Winter	30	mg/L	WAvg Conc	Daily	Composite	Effluent
CBOD5	Winter	25020	lb/day	WAvg Load	Daily	Composite	Effluent
CBOD5	Winter	16680	lb/day	MAvg Load	Daily	Composite	Effluent
D.O.	All Year	5	mg/L	DMin Conc	Daily	Grab	Effluent

Table 6-7a.

PARAMETER	SEASON	LIMIT	UNITS	SAMPLE DESIGNATOR	MONITORING FREQUENCY	SAMPLE TYPE	MONITORING LOCATION
D.O.	All Year		mg/L	DMin Conc	Daily	Grab	Effluent
Discharge Event Observation	All Year		Inches	MAvg Load	Continuous	Grab or Composite	Effluent
Duration of Discharge	All Year		Days/Month	MAvg Load	Continuous	Grab or Composite	Effluent
E. coli	All Year	487	#/100mL	DMax Conc	Daily	Grab	Effluent
E. coli	All Year	126	#/100mL	MAvg Geo Mean	Daily	Grab	Effluent
E. coli	All Year	126	#/100mL	MAvg Geo Mean	Daily	Grab	Effluent
E. coli	All Year	487	#/100mL	DMax Conc	Daily	Grab	Effluent
Flow	All Year		MGD	DMax Load	Daily	Continuous	Effluent
Flow	All Year		MGD	MAvg Load	Daily	Continuous	Effluent
Flow	All Year		MGD	DMax Load	Daily	Continuous	Influent (Raw Sewage)
Flow	All Year		MGD	MAvg Load	Daily	Continuous	Influent (Raw Sewage)
Flow	All Year		MGD	MAvg Load	Daily	Continuous	Effluent
Flow	All Year		MGD	DMax Load	Daily	Continuous	Effluent
IC25 7day Ceriodaphnia Dubia	All Year	5.3	Percent	DMin Conc	Quarterly	Composite	Effluent
IC25 7day Fathead Minnows	All Year	5.3	Percent	DMin Conc	Quarterly	Composite	Effluent
IC25 7day Fathead Minnows	All Year	5.3	Percent	DMin Conc	Quarterly	Composite	Effluent
Overflow Use Occurences	All Year		Occurences/ Month	WAvg Load	Continuous	Visual	Effluent
Overflow Use Occurences	All Year		Occurences/ Month	MAvg Load	Continuous	Visual	Effluent
Rainfall Duration	All Year		Hours	MAvg Load	Continuous	Grab or Composite	Effluent
Settleable Solids	All Year	1	mL/L	DMax Conc	Daily	Composite	Effluent
TRC	All Year	0.26	mg/L	DMax Conc	Daily	Grab	Effluent
TRC	All Year	2	mg/L	DMax Conc	Daily	Grab	Effluent
TSS	All Year		mg/L	DMax Conc	Daily	Composite	Influent (Raw Sewage)
TSS	All Year	45	mg/L	DMax Conc	Daily	Composite	Effluent
TSS	All Year	45	mg/L	DMax Conc	Daily	Composite	Effluent
TSS	All Year	37530	lb/day	DMax Load	Daily	Composite	Effluent
TSS	All Year	30	mg/L	MAvg Conc	Daily	Composite	Effluent
TSS	All Year	40	mg/L	WAvg Conc	Daily	Composite	Effluent
TSS	All Year		mg/L	MAvg Conc	Daily	Composite	Effluent
TSS	All Year		mg/L	WAvg Conc	Daily	Composite	Effluent
TSS	All Year		lb/day	DMax Load	Daily	Composite	Effluent
TSS	All Year		mg/L	DMax Conc	Daily	Composite	Influent (Raw Sewage)

Table 6-7b.

PARAMETER	SEASON	LIMIT	UNITS	SAMPLE DESIGNATOR	MONITORING FREQUENCY	SAMPLE TYPE	MONITORING LOCATION
TSS	All Year		mg/L	DMax Conc	Daily	Composite	Effluent
TSS	All Year		mg/L	WAvg Load	Daily	Composite	Effluent
TSS	All Year	33360	lb/day	WAvg Load	Daily	Composite	
TSS	All Year	82566	lb/day	DMax Load	Daily	Composite	Effluent
TSS % Removal	All Year	85	Percent	MAvg % Removal	Daily	Calculated	% Removal
pH	All Year	9	SU	DMax Conc	Daily	Grab	Effluent
pH	All Year	6	SU	DMin Conc	Daily	Grab	Effluent
pH	All Year	9	SU	DMax Conc	Daily	Grab	Effluent
pH	All Year	6	SU	DMin Conc	Daily	Grab	Effluent

Table 6-7c.

Tables 6-7a-c. Permit Limits for Outfall 001 at Nashville Central STP.

PARAMETER	SEASON	LIMIT	UNITS	SAMPLE DESIGNATOR	MONITORING FREQUENCY	SAMPLE TYPE	MONITORING LOCATION
Discharge Event Observation	All Year		Occurences/Month	DMax Load	Daily	Calculated	Effluent
Flow	All Year		MGD	DMax Load	Daily	Calculated	Effluent
Flow	All Year		MGD	MAvg Load	Daily	Calculated	Effluent
Rainfall	All Year		Inches	DMax Load	Daily	Calculated	Effluent
Rainfall Duration	All Year		Hours	DMax Load	Daily	Calculated	Effluent
Rainfall Events	All Year		Occurences/Month	DMax Load	Daily	Calculated	Effluent

Table 6-8. Permit Limits for the remainder of the outfalls at Nashville Central STP.

Compliance History:
The following numbers of exceedences were noted in PCS:

- 2 Total Suspended Solids (TSS)
- 2 Settleable Solids
- 2 Fecal coliform
- 1 Escherichia coli
- 1 Carbonaceous Biological Oxygen Demand (CBOD)
- 302 Overflows

Enforcement:
Remains under Order # 99-0390

Comments:
6/13/06 Pretreatment Inspection: All in good order. Currently 28 noncategorical + 41 categorical = 69 Significant Industrial Users (SIUs)

TN0024970 Nashville Whites Creek STP

Discharger rating: Major
City: Nashville
County: Davidson
EFO Name: Nashville
Issuance Date: 1/1/06
Expiration Date: 9/28/10
Receiving Stream(s): Cumberland River at mile 182.6
HUC-12: 051302020105
Effluent Summary: Treated municipal wastewater from Outfall 001
Treatment system: Waste Activated Sludge to dissolved air flotation to Central WWTP to bypass to landfill

SEGMENT	TN05130202001_4000
Name	Cheatham Reservoir
Size	1000
Unit	Acres
First Year on 303(d) List	-
Designated Uses	Fish and Aquatic Life (Supporting), Recreation (Supporting), Irrigation (Supporting), Livestock Watering and Wildlife (Supporting)
Causes	N/A
Sources	N/A

Table 6-9. Stream Segment Information for Nashville Whites Creek STP.

PARAMETER	SEASON	LIMIT	UNITS	SAMPLE DESIGNATOR	MONITORING FREQUENCY	SAMPLE TYPE	MONITORING LOCATION
Ammonia as N (Total)	Summer	10	mg/L	DMax Conc	Daily	Composite	Effluent
Ammonia as N (Total)	Summer	2346	lb/day	WAvg Load	Daily	Composite	Effluent
Ammonia as N (Total)	Summer	7.5	mg/L	WAvg Conc	Daily	Composite	Effluent
Ammonia as N (Total)	Summer	5	mg/L	MAvg Conc	Daily	Composite	Effluent
Ammonia as N (Total)	Summer	1565	lb/day	MAvg Load	Daily	Composite	Effluent
Ammonia as N (Total)	Winter	20	mg/L	DMax Conc	Daily	Composite	Effluent
Ammonia as N (Total)	Winter	15	mg/L	WAvg Conc	Daily	Composite	Effluent
Ammonia as N (Total)	Winter	3128	lb/day	MAvg Load	Daily	Composite	Effluent
Ammonia as N (Total)	Winter	10	mg/L	MAvg Conc	Daily	Composite	Effluent
Ammonia as N (Total)	Winter	4691	lb/day	WAvg Load	Daily	Composite	Effluent
Bypass of Treatment (occurrences)	All Year		Occurences /Month	MAvg Load	Continuous	Visual	Wet Weather
CBOD % Removal	All Year	40	Percent	DMin % Removal	Daily	Calculated	% Removal
CBOD % Removal	All Year	85	Percent	MAvg % Removal	Daily	Calculated	% Removal
CBOD5	All Year		mg/L	DMax Conc	Daily	Composite	Influent (Raw Sewage)
CBOD5	All Year		mg/L	MAvg Conc	Daily	Composite	Influent (Raw Sewage)
CBOD5	Summer	20	mg/L	DMax Conc	Daily	Composite	Effluent
CBOD5	Summer	4691	lb/day	WAvg Load	Daily	Composite	Effluent
CBOD5	Summer	10	mg/L	MAvg Conc	Daily	Composite	Effluent
CBOD5	Summer	3128	lb/day	MAvg Load	Daily	Composite	Effluent
CBOD5	Summer	15	mg/L	WAvg Conc	Daily	Composite	Effluent
CBOD5	Winter	30	mg/L	DMax Conc	Daily	Composite	Effluent
CBOD5	Winter	7193	lb/day	WAvg Load	Daily	Composite	Effluent
CBOD5	Winter	4691	lb/day	MAvg Load	Daily	Composite	Effluent
CBOD5	Winter	23	mg/L	WAvg Conc	Daily	Composite	Effluent
CBOD5	Winter	15	mg/L	MAvg Conc	Daily	Composite	Effluent
D.O.	All Year	5	mg/L	DMin Conc	Daily	Grab	Effluent
E. coli	All Year	487	#/100mL	DMax Conc	Daily	Grab	Effluent
E. coli	All Year	126	#/100mL	MAvg Geo Mean	Daily	Grab	Effluent
Flow	All Year		MGD	DMax Load	Daily	Continuous	Effluent
Flow	All Year		MGD	MAvg Load	Daily	Continuous	Influent (Raw Sewage)
Flow	All Year		MGD	DMax Load	Daily	Continuous	Influent (Raw Sewage)
Flow	All Year		MGD	MAvg Load	Daily	Continuous	Effluent
Hg (T)	All Year	2E-04	mg/L	MAvg Conc	Semi-annually	Grab	Effluent
IC25 7day Ceriodaphnia Dubia	All Year	2	Percent	DMin Conc	Continuous	Composite	Effluent
IC25 7day Fathead Minnows	All Year	2	Percent	DMin Conc	Continuous	Composite	Effluent
Overflow Use Occurences	All Year		Occurences /Month	MAvg Load	Continuous	Visual	Wet Weather
Overflow Use Occurences	All Year		Occurences /Month	MAvg Load	Continuous	Visual	Non Wet Weather
Settleable Solids	All Year	1	mL/L	DMax Conc	Daily	Composite	Effluent
TRC	All Year	0.9	mg/L	DMax Conc	Daily	Grab	Effluent
TSS	All Year	45	mg/L	DMax Conc	Daily	Composite	Effluent

Table 6-10a.

PARAMETER	SEASON	LIMIT	UNITS	SAMPLE DESIGNATOR	MONITORING FREQUENCY	SAMPLE TYPE	MONITORING LOCATION
TSS	All Year		mg/L	DMax Conc	Daily	Composite	Influent (Raw Sewage)
TSS	All Year	12510	lb/day	WAvg Load	Daily	Composite	Effluent
TSS	All Year	40	mg/L	WAvg Conc	Daily	Composite	Effluent
TSS	All Year	9383	lb/day	MAvg Load	Daily	Composite	Effluent
TSS	All Year		mg/L	MAvg Conc	Daily	Composite	Influent (Raw Sewage)
TSS	All Year	30	mg/L	MAvg Conc	Daily	Composite	Effluent
TSS % Removal	All Year	40	Percent	DMin % Removal	Daily	Calculated	% Removal
TSS % Removal	All Year	85	Percent	MAvg % Removal	Daily	Calculated	% Removal
pH	All Year	9	SU	DMax Conc	Daily	Grab	Effluent
pH	All Year	6	SU	DMin Conc	Daily	Grab	Effluent

Table 6-10b.

Tables 6-10a-b. Permit Limits for Nashville Whites Creek STP.

Compliance History:

The following numbers of exceedences were noted in PCS:

TN0074748 Harpeth Valley Utility District STP

Discharger rating: Major
City: Nashville
County: Davidson
EFO Name: Nashville
Issuance Date: 1/1/06
Expiration Date: 9/28/10
Receiving Stream(s): Cumberland River Mile 172.4
HUC-12: 051302020104
Effluent Summary: Treated municipal wastewater from Outfall 001
Treatment system: Waste Activated Sludge to aerobic digester to terra-gator to land application

PARAMETER	SEASON	LIMIT	UNITS	SAMPLE DESIGNATOR	MONITORING FREQUENCY	SAMPLE TYPE	MONITORING LOCATION
48hr LC50: Ceriodaphnia Dubia	All Year	2.6	Percent	DMin Conc	Annually	Grab	Effluent
48hr LC50: Fathead Minnows	All Year	2.6	Percent	DMin Conc	Annually	Grab	Effluent
BOD % removal	All Year	40	Percent	DMin % Removal	Weekdays	Calculated	% Removal
BOD % removal	All Year	85	Percent	MAvg % Removal	Weekdays	Calculated	% Removal
BOD5	All Year	45	mg/L	DMax Conc	Weekdays	Composite	Effluent
BOD5	All Year		mg/L	DMax Conc	Weekdays	Composite	Influent (Raw Sewage)
BOD5	All Year	3336	lb/day	WAvg Load	Weekdays	Composite	Effluent
BOD5	All Year	40	mg/L	WAvg Conc	Weekdays	Composite	Effluent
BOD5	All Year	2502	lb/day	MAvg Load	Weekdays	Composite	Effluent
BOD5	All Year		mg/L	MAvg Conc	Weekdays	Composite	Influent (Raw Sewage)
BOD5	All Year	30	mg/L	MAvg Conc	Weekdays	Composite	Effluent
Bypass of Treatment (occurrences)	All Year		Occurences/Month	MAvg Load	Continuous	Visual	Wet Weather
D.O.	All Year	1	mg/L	DMin Conc	Weekdays	Grab	Effluent
E. coli	All Year	487	#/100mL	DMax Conc	Weekdays	Grab	Effluent
E. coli	All Year	126	#/100mL	MAvg Geo Mean	Weekdays	Grab	Effluent
Flow	All Year		MGD	DMax Load	Daily	Continuous	Effluent
Flow	All Year		MGD	MAvg Load	Daily	Continuous	Effluent
Flow	All Year		MGD	MAvg Load	Daily	Continuous	Influent (Raw Sewage)
Flow	All Year		MGD	DMax Load	Daily	Continuous	Influent (Raw Sewage)
Overflow Use Occurences	All Year		Occurences/Month	MAvg Load	Continuous	Visual	Wet Weather
Overflow Use Occurences	All Year		Occurences/Month	MAvg Load	Continuous	Visual	Non Wet Weather
Settleable Solids	All Year	1	mL/L	DMax Conc	Weekdays	Grab	Effluent
TSS	All Year	45	mg/L	DMax Conc	Weekdays	Composite	Effluent

Table 6-11a.

PARAMETER	SEASON	LIMIT	UNITS	SAMPLE DESIGNATOR	MONITORING FREQUENCY	SAMPLE TYPE	MONITORING LOCATION
TSS	All Year	2502	lb/day	MAvg Load	Weekdays	Composite	Effluent
TSS	All Year		mg/L	DMax Conc	Weekdays	Composite	Influent (Raw Sewage)
TSS	All Year	3336	lb/day	WAvg Load	Weekdays	Composite	Effluent
TSS	All Year	30	mg/L	MAvg Conc	Weekdays	Composite	Effluent
TSS	All Year		mg/L	MAvg Conc	Weekdays	Composite	Influent (Raw Sewage)
TSS	All Year	40	mg/L	WAvg Conc	Weekdays	Composite	Effluent
TSS % Removal	All Year	40	Percent	DMin % Removal	Weekdays	Calculated	% Removal
TSS % Removal	All Year	85	Percent	MAvg % Removal	Weekdays	Calculated	% Removal
pH	All Year	9	SU	DMax Conc	Weekdays	Grab	Effluent
pH	All Year	6	SU	DMin Conc	Weekdays	Grab	Effluent

Table 6-11b.

Table 6-11a-b. Permit Limits for Harpeth Valley Utility District STP.

Compliance History:
The following numbers of exceedences were noted in PCS:

- 4 Fecal coliform
- Total Chlorine
- Suspended Solids % Removal
- 76 Overflows

Comments:
6/26/06 Compliance Biomonitoring Inspection: In compliance

TN0067270 Cumberland Heights Rehabilitation Center

Discharger rating: Minor
City: Ashland City
County: Cheatham
EFO Name: Nashville
Issuance Date: 6/1/06
Expiration Date: 9/30/10
Receiving Stream(s): Cumberland River at mile 166.2
HUC-12: 051302020104
Effluent Summary: Treated domestic wastewater from Outfall 001
Treatment system: Aerated Lagoon

SEGMENT	TN05130202001T_0999
Name	Cheatham Reservoir Misc Tribs
Size	99
Unit	Miles
First Year on 303(d) List	-
Designated Uses	Fish and Aquatic Life (Not Assessed), Livestock Watering and Wildlife (Not Assessed), Recreation (Not Assessed), Irrigation (Not Assessed)
Causes	N/A
Sources	N/A

Table 6-12. Stream Segment Information for Cumberland Heights Rehabilitation Center.

PARAMETER	SEASON	LIMIT	UNITS	SAMPLE DESIGNATOR	MONITORING FREQUENCY	SAMPLE TYPE	MONITORING LOCATION
BOD5	All Year	60	mg/L	DMax Conc	2/Month	Grab	Effluent
BOD5	All Year	40	mg/L	MAvg Conc	2/Month	Grab	Effluent
D.O.	All Year	1	mg/L	DMin Conc	Weekdays	Grab	Effluent
E. coli	All Year	126	#/100mL	MAvg Geo Mean	2/Month	Grab	Effluent
E. coli	All Year	487	#/100mL	MAvg Ari Mean	2/Month	Grab	Effluent
Flow	All Year		MGD	MAvg Load	Weekdays	Instantaneous	Effluent
Flow	All Year		MGD	DMax Load	Weekdays	Instantaneous	Effluent
Settleable Solids	All Year	1	mL/L	DMax Conc	2/Week	Grab	Effluent
TRC	All Year	2	mg/L	DMax Conc	Weekdays	Grab	Effluent
TSS	All Year	100	mg/L	MAvg Conc	2/Month	Grab	Effluent
TSS	All Year	120	mg/L	DMax Conc	2/Month	Grab	Effluent
pH	All Year	6	SU	DMin Conc	2/Week	Grab	Effluent
pH	All Year	9	SU	DMax Conc	2/Week	Grab	Effluent

Table 6-13. Permit Limits for Cumberland Heights Rehabilitation Center.

Enforcement:
NOV on 2/21/06 for late permit application

Comments:
3/26/07 Compliance Evaluation Inspection: On March 26, 2007, Nashville EFO-WPC met with Cumberland Heights Rehabilitation Center to conduct a final inspection of the Cumberland Heights Sewer Modifications. The two STEP tanks with duplex pumps appeared to be constructed per the approved plans and specifications.

TN0058106 Hendersonville Shopping Center, Inc.

Discharger rating: Minor
City: Hendersonville
County: Davidson
EFO Name: Nashville
Issuance Date: 4/1/05
Expiration Date: 12/31/10
Receiving Stream(s): Unnamed tributary at mile 0.6 to the Cumberland River Mi. 215.9
HUC-12: 051302020101
Effluent Summary: Treated domestic wastewater from Outfall 001
Treatment system: Biological Towers

PARAMETER	SEASON	LIMIT	UNITS	SAMPLE DESIGNATOR	MONITORING FREQUENCY	SAMPLE TYPE	MONITORING LOCATION
Ammonia as N (Total)	All Year	5	mg/L	MAvg Conc	Monthly	Grab	Effluent
Ammonia as N (Total)	All Year	10	mg/L	DMax Conc	Monthly	Grab	Effluent
CBOD5	All Year	25	mg/L	MAvg Conc	Monthly	Grab	Effluent
CBOD5	All Year	40	mg/L	DMax Conc	Monthly	Grab	Effluent
D.O.	All Year	1	mg/L	DMin Conc	Weekdays	Grab	Effluent
E. coli	All Year	126	#/100mL	MAvg Geo Mean	Monthly	Grab	Effluent
E. coli	All Year	487	#/100mL	MAvg Ari Mean	Monthly	Grab	Effluent
Flow	All Year		MGD	DMax Load	Weekdays	Instantaneous	Effluent
Flow	All Year		MGD	MAvg Load	Weekdays	Instantaneous	Effluent
Settleable Solids	All Year	1	mL/L	DMax Conc	2/Week	Grab	Effluent
TRC	All Year	0.02	mg/L	DMax Conc	Weekdays	Grab	Effluent
TSS	All Year	30	mg/L	MAvg Conc	Monthly	Grab	Effluent
TSS	All Year	45	mg/L	DMax Conc	Monthly	Grab	Effluent
pH	All Year	9	SU	DMax Conc	2/Week	Grab	Effluent
pH	All Year	6.5	SU	DMin Conc	2/Week	Grab	Effluent

Table 6-14. Permit Limits for Hendersonville Shopping Center, Inc.

Comments:
Last inspection – CEI March 9, 2007, NOV to be sent

- Biological tower w/recirculation, serves 27 businesses.
- Receiving stream is unnamed tributary running through US COE Rockland Recreation Area and Archery Range, permit limits modeled for Cumberland River (DO 1.0 mg/L, ammonia 5 mg/L mo. ave. / 10 mg/L da. max. BOD 25 mg/L mo. ave / 40 mg/L da. max.) Not protective of stream. Current system could not likely meet more stringent limits.
- April 1, 2007 change to 0.02 mg/L total chlorine residual limit, will require addition of de-chlorination equipment, not currently meeting chlorine limit.
- Aging system in poor condition, inadequate Operation and Maintenance, gas chlorination but not scales or chlorinator, just direct gas feed into treatment unit, media in biological tower collapsed last year, one recirculation line to tower is inoperable can use only one recirculation pump.
- Monthly Operating Reports (MORs) show only occasional permit violations, two recent WPC sampling events show extremely high e. coli violations, flow measurement on MORs is inaccurate.
- Not collecting effluent samples during periods of plant upset or mechanical failures.
- Replacement of system not likely due to very limited area available, most practical solution is to construct pump station and connect to local utility district collection system but there is currently no access and logistics of force main location are difficult. Nashville EFO plans meeting with owner and utility district to review options. Compliance schedule needed.

6.4.B. Industrial Permits

TN0002488 State Industries - Ashland City

Discharger rating: Major
City: Ashland City
County: Cheatham
EFO Name: Nashville
Issuance Date: 12/1/05
Expiration Date: 10/30/09
Receiving Stream(s): Ashland City STP outfall line to Cheatham Reservoir (Cumberland River at mile 158.2)
HUC-12: 051302020107
Effluent Summary: Treated process and non-process wastewater through Outfall 001
Treatment system: Neutralization, chemical precipitation, and pressure filtration

SEGMENT	TN05130202001T_0100
Name	Unnamed Trib to Cheatham Reservoir
Size	2
Unit	Miles
First Year on 303(d) List	2004
Designated Uses	Recreation (Not Assessed), Irrigation (Supporting), Livestock Watering and Wildlife (Supporting), Fish and Aquatic Life (Non-Supporting)
Causes	Sedimentation/Siltation, Other anthropogenic substrate alterations
Sources	Mine Tailings

Table 6-15. Stream Segment Information for State Industries - Ashland City.

PARAMETER	SEASON	LIMIT	UNITS	SAMPLE DESIGNATOR	MONITORING FREQUENCY	SAMPLE TYPE	MONITORING LOCATION
Al (T)	All Year	29	lb/day	DMax Load	Quarterly	Composite	Effluent
Al (T)	All Year	11.87	lb/day	MAvg Load	Quarterly	Composite	Effluent
Cr (T)	All Year	2.68	lb/day	DMax Load	Quarterly	Composite	Effluent
Cr (T)	All Year	1.09	lb/day	MAvg Load	Quarterly	Composite	Effluent
Fe (T)	All Year	17.86	lb/day	DMax Load	2/Month	Composite	Effluent
Fe (T)	All Year	8.93	lb/day	MAvg Load	2/Month	Composite	Effluent
Flow	All Year		MGD	MAvg Load	Weekdays	Continuous	Effluent
Flow	All Year		MGD	DMax Load	Weekdays	Continuous	Effluent
Ni (T)	All Year	9	lb/day	DMax Load	Monthly	Composite	Effluent
Ni (T)	All Year	6.38	lb/day	MAvg Load	Monthly	Composite	Effluent
Oil and Grease (Freon EM)	All Year	139	lb/day	DMax Load	2/Month	Grab	Effluent
Oil and Grease (Freon EM)	All Year	83.45	lb/day	MAvg Load	2/Month	Grab	Effluent
Pb (T)	All Year	0.95	lb/day	DMax Load	Monthly	Composite	Effluent
Pb (T)	All Year	0.83	lb/day	MAvg Load	Monthly	Composite	Effluent
TSS	All Year	285	lb/day	DMax Load	2/Month	Composite	Effluent
TSS	All Year	139	lb/day	MAvg Load	2/Month	Composite	Effluent
Zn (T)	All Year	8.49	lb/day	DMax Load	Monthly	Composite	Effluent
Zn (T)	All Year	3.58	lb/day	MAvg Load	Monthly	Composite	Effluent
pH	All Year	10	SU	DMax Conc	Weekly	Grab	Effluent
pH	All Year	7.5	SU	DMin Conc	Weekly	Grab	Effluent

Table 6-16. Permit Limits for State Industries - Ashland City.

Compliance History:
The following numbers of exceedences were noted in PCS:

- 1 Oil & Grease

Enforcement:
NOV June 15, 2005, Failure to provide representative sampling for total suspended solids and metals - sample container not cleaned between uses - sample not refrigerated during composting period. Failure to follow procedures for EPA approved laboratory methods of analyses for pH - incomplete calibration records - incomplete records on continuous recording meter.

Comments:
Manufacture electric and gas water heaters for the residential and commercial market.

TN0022632 Marathon Petroleum Company LLC - Nashville Terminal

Discharger rating: Minor
City: Nashville
County: Davidson
EFO Name: Nashville
Issuance Date: 5/1/05
Expiration Date: 3/31/10
Receiving Stream(s): Barkley Reservoir at Cumberland River mile 88.9
HUC-12: 051302020103
Effluent Summary: Storm water runoff, loadrack washdown and hydrostatic test water from Outfall 001
Treatment system: Alum, polymer, chlorine

SEGMENT	TN05130202001_3000
Name	Cheatham Reservoir
Size	994
Unit	Acres
First Year on 303(d) List	2004
Designated Uses	Fish and Aquatic Life (Supporting), Livestock Watering and Wildlife (Supporting), Recreation (Non-Supporting), Irrigation (Supporting)
Causes	217
Sources	Combined Sewer Overflows, Discharges from Municipal Separate Storm Sewer Systems (MS4)

Table 6-17. Stream Segment Information for Marathon Petroleum Company LLC.

PARAMETER	SEASON	LIMIT	UNITS	SAMPLE DESIGNATOR	MONITORING FREQUENCY	SAMPLE TYPE	MONITORING LOCATION
Benzene	All Year	0.5	mg/L	DMax Conc	Monthly	Grab	Effluent
Ethylbenzene	All Year	0.2	mg/L	DMax Conc	Monthly	Grab	Effluent
Flow	All Year		MGD	DMax Load	Monthly	Instantaneous	Effluent
Flow	All Year		MGD	MAvg Load	Monthly	Instantaneous	Effluent
Oil and Grease (Freon EM)	All Year	15	mg/L	DMax Conc	Monthly	Grab	Effluent
Pb (T)	All Year	0.1	mg/L	DMax Conc	Monthly	Grab	Effluent
Settleable Solids	All Year	0.5	mL/L	DMax Conc	Monthly	Grab	Effluent
TSS	All Year	40	mg/L	DMax Conc	Monthly	Composite	Effluent
Toluene	All Year	1	mg/L	DMax Conc	Monthly	Grab	Effluent
Xylene	All Year	0.5	mg/L	DMax Conc	Monthly	Grab	Effluent
pH	All Year	9	SU	DMax Conc	Monthly	Grab	Effluent
pH	All Year	6	SU	DMin Conc	Monthly	Grab	Effluent

Table 6-18. Permit Limits for Outfall 001 at Marathon Petroleum Company LLC.

PARAMETER	SEASON	LIMIT	UNITS	SAMPLE DESIGNATOR	MONITORING FREQUENCY	SAMPLE TYPE	MONITORING LOCATION
Flow	All Year		MGD	DMax Load	Quarterly	Estimate	Effluent
Flow	All Year		MGD	MAvg Load	Quarterly	Estimate	Effluent
Oil and Grease (Freon EM)	All Year		mg/L	DMax Conc	Quarterly	Grab	Effluent
Settleable Solids	All Year		mL/L	DMax Conc	Quarterly	Grab	Effluent
TSS	All Year		mg/L	DMax Conc	Quarterly	Grab	Effluent
pH	All Year		SU	DMax Conc	Quarterly	Grab	Effluent
pH	All Year		SU	DMin Conc	Quarterly	Grab	Effluent

Table 6-19. Permit Limits for Outfall SW1 at Marathon Petroleum Company LLC.

Comments:
Petroleum Bulk Stations and Terminals
6/20/05 Compliance Evaluation Inspection: In compliance

TN0022462 ExxonMobil Pipeline Company - Nashville Terminal

Discharger rating: Minor
City: Nashville
County: Davidson
EFO Name: Nashville
Issuance Date: 7/1/05
Expiration Date: 5/31/10
Receiving Stream(s): Cumberland River at mile 185.1
HUC-12: 051302020103
Effluent Summary: Storm water runoff, tank field; rack, pump and dock storm water runoff; rack and pump equipment washdown, monitoring well purge and hydrostatic test water
Treatment system: Oil/water separator for rack & washdown area with retention basin for storm water.

SEGMENT	TN05130202001_3000
Name	Cheatham Reservoir
Size	994
Unit	Acres
First Year on 303(d) List	2004
Designated Uses	Fish and Aquatic Life (Supporting), Livestock Watering and Wildlife (Supporting), Recreation (Non-Supporting), Irrigation (Supporting)
Causes	217
Sources	Combined Sewer Overflows, Discharges from Municipal Separate Storm Sewer Systems (MS4)

Table 6-20. Stream Segment Information for ExxonMobil Pipeline Company.

PARAMETER	SEASON	LIMIT	UNITS	SAMPLE DESIGNATOR	MONITORING FREQUENCY	SAMPLE TYPE	MONITORING LOCATION
Benzene	All Year	0.5	mg/L	DMax Conc	Semi-annually	Grab	Effluent
Ethylbenzene	All Year	0.2	mg/L	DMax Conc	Semi-annually	Grab	Effluent
Flow	All Year		MGD	DMax Load	Quarterly	Totalizer	Effluent
Flow	All Year		MGD	MAvg Load	Quarterly	Totalizer	Effluent
Oil and Grease (Freon EM)	All Year	15	mg/L	DMax Conc	Quarterly	Grab	Effluent
Settleable Solids	All Year	0.5	mL/L	DMax Conc	Semi-annually	Grab	Effluent
TSS	All Year	40	mg/L	DMax Conc	Semi-annually	Grab	Effluent
Toluene	All Year	1	mg/L	DMax Conc	Semi-annually	Grab	Effluent
Xylene	All Year	0.5	mg/L	DMax Conc	Semi-annually	Grab	Effluent
pH	All Year	9	SU	DMax Conc	Quarterly	Grab	Effluent
pH	All Year	6	SU	DMin Conc	Quarterly	Grab	Effluent

Table 6-21. Permit Limits for Outfall 001 at ExxonMobil Pipeline Company.

PARAMETER	SEASON	LIMIT	UNITS	SAMPLE DESIGNATOR	MONITORING FREQUENCY	SAMPLE TYPE	MONITORING LOCATION
Flow	All Year		MGD	DMax Load	Quarterly		Effluent

Table 6-22. Permit Limits for Outfall SW1 at ExxonMobil Pipeline Company.

Comments:
Petroleum Bulk Stations and Terminals
2/24/05 Compliance Evaluation Inspection: In compliance

TN0022420 Citgo Petroleum Corporation

Discharger rating: Minor
City: Nashville
County: Davidson
EFO Name: Nashville
Issuance Date: 9/01/05
Expiration Date: 7/28/10
Receiving Stream(s): Cumberland River at mile 191.4
HUC-12: 051302020103
Effluent Summary: Hydrostatic test water, tank bottoms water and storm water runoff through Outfall 001
Treatment system:

SEGMENT	TN05130202001_4000
Name	Cheatham Reservoir
Size	1000
Unit	Acres
First Year on 303(d) List	-
Designated Uses	Fish and Aquatic Life (Supporting), Recreation (Supporting), Irrigation (Supporting), Livestock Watering and Wildlife (Supporting)
Causes	N/A
Sources	N/A

Table 6-23. Stream Segment Information for CITGO Petroleum Corporation.

PARAMETER	SEASON	LIMIT	UNITS	SAMPLE DESIGNATOR	MONITORING FREQUENCY	SAMPLE TYPE	MONITORING LOCATION
Benzene	All Year	0.5	mg/L	DMax Conc	Monthly	Grab	Effluent
Ethylbenzene	All Year	0.2	mg/L	DMax Conc	Monthly	Grab	Effluent
Flow	All Year		MGD	MAvg Load	Weekly	Instantaneous	Effluent
Flow	All Year		MGD	DMax Load	Weekly	Instantaneous	Effluent
Oil and Grease (Freon EM)	All Year	15	mg/L	DMax Conc	Monthly	Grab	Effluent
Oil and Grease (Freon EM)	All Year	10	mg/L	MAvg Conc	Monthly	Grab	Effluent
Settleable Solids	All Year	0.5	mL/L	DMax Conc	Monthly	Grab	Effluent
TRC	All Year		mg/L	DMax Conc	1/Permit Cycle	Grab	Effluent
TSS	All Year	40	mg/L	DMax Conc	Monthly	Grab	Effluent
Toluene	All Year	1	mg/L	DMax Conc	Monthly	Grab	Effluent
Xylene	All Year	0.5	mg/L	DMax Conc	Monthly	Grab	Effluent
pH	All Year	9	SU	DMax Conc	Weekly	Grab	Effluent
pH	All Year	6	SU	DMin Conc	Weekly	Grab	Effluent

Table 6-24. Permit Limits for CITGO Petroleum Corporation.

Comments:
Bulk petroleum product storage and transfer to tanker trucks.
6/16/05 Compliance Evaluation Inspection: In compliance

TN0003573 Automotive Components Holdings, LLC

Discharger rating: Minor
City: Nashville
County: Davidson
EFO Name: Nashville
Issuance Date: 1/1/01
Expiration Date: 11/30/05
Receiving Stream(s): Discharges to Cumberland River at mile 181.5 for Outfall 001, mile 181.8 for Outfall 002, mile 176.4 via named tributary for Outfall 003, and at mile 181.2 for wastewater (leachate/storm water/river water clarifier water/solids land application)
HUC-12: 051302020104
Effluent Summary: Process wastewater/cooling water and storm water runoff through Outfall 001, non-contact cooling water and storm water runoff through Outfalls 002 and 003, landfill wastewater (leachate/storm water/river water clarifier water/solids land application) discharge via Outfall 004 only during Cumberland River inundation of sump/pump station
Treatment system: Alum, polymer, chlorine

SEGMENT	TN05130202001_2000
Name	Cheatham Reservoir
Size	2449
Unit	Acres
First Year on 303(d) List	-
Designated Uses	Domestic Water Supply (Supporting), Industrial Water Supply (Supporting), Fish and Aquatic Life (Supporting), Recreation (Supporting), Irrigation (Supporting), Livestock Watering and Wildlife (Supporting)
Causes	N/A
Sources	N/A

Table 6-25. Stream Segment Information for Outfalls 001, 002, and 004 for Automotive Components Holdings, LLC.

SEGMENT	TN05130202001T_0999
Name	Cheatham Reservoir Misc Tribs
Size	99
Unit	Miles
First Year on 303(d) List	-
Designated Uses	Fish and Aquatic Life (Not Assessed), Livestock Watering and Wildlife (Not Assessed), Recreation (Not Assessed), Irrigation (Not Assessed)
Causes	N/A
Sources	N/A

Table 6-26. Stream Segment Information for Outfall 003 from Automotive Components Holdings, LLC

PARAMETER	SEASON	LIMIT	UNITS	SAMPLE DESIGNATOR	MONITORING FREQUENCY	SAMPLE TYPE	MONITORING LOCATION
pH	All Year	9	SU	DMax Conc	Weekly	Grab	Effluent
pH	All Year	6	SU	DMin Conc	Weekly	Grab	Effluent

Table 6-27. Permit Limits for Outfall 002 at Automotive Components Holdings, LLC.

PARAMETER	SEASON	LIMIT	UNITS	SAMPLE DESIGNATOR	MONITORING FREQUENCY	SAMPLE TYPE	MONITORING LOCATION
Phosphorus, Total	All Year	4.6	lb/day	DMax Load	Weekly	Composite	Effluent
Phosphorus, Total	All Year	4.6	lb/day	MAvg Load	Weekly	Composite	Effluent
pH	All Year	9	SU	DMax Conc	Weekly	Grab	Effluent
pH	All Year	6	SU	DMin Conc	Weekly	Grab	Effluent

Table 6-28. Permit Limits for Outfall 003 at Automotive Components Holdings, LLC.

Comments:
Raw batch is melted to produce flat glass, which is formed into automotive parts in subsequent operations at the facility.

TN0001597 Vought Aircraft Industries, Inc.

Discharger rating: Minor
City: Nashville
County: Davidson
EFO Name: Nashville
Issuance Date: 4/1/06
Expiration Date: 10/30/10
Receiving Stream(s): Unnamed tributary at mile 1.5 to Mill Creek at mile 4.6 for Outfall 001 and SW1, and Finley Branch at mile 1.3 to Mill Creek at mile 7.2 for Outfall 002 and SW2
HUC-12: 051302020202
Effluent Summary: Non-contact cooling and condensate water, and storm water runoff from Outfalls 001, 002, SW1, and SW2
Treatment system: Dechlorination,and preaeration

SEGMENT	TN05130202007_1000
Name	Mill Creek
Size	3.5
Unit	Miles
First Year on 303(d) List	1998
Designated Uses	Irrigation (Supporting), Livestock Watering and Wildlife (Supporting), Recreation (Supporting), Fish and Aquatic Life (Non-Supporting)
Causes	Oxygen, Dissolved, Sedimentation/Siltation, Phosphate
Sources	Discharges from Municipal Separate Storm Sewer Systems (MS4), Sanitary Sewer Overflows (Collection System Failures)

Table 6-29. Stream Segment Information for Vought Aircraft Industries, Inc.

PARAMETER	SEASON	LIMIT	UNITS	SAMPLE DESIGNATOR	MONITORING FREQUENCY	SAMPLE TYPE	MONITORING LOCATION
Cr (T)	All Year	0.016	mg/L	DMax Conc	Quarterly	Composite	Effluent
Cr (T)	All Year	0.011	mg/L	MAvg Conc	Quarterly	Composite	Effluent
Cu (T)	All Year	0.101	mg/L	DMax Conc	2/Month	Composite	Effluent
Cu (T)	All Year	0.063	mg/L	MAvg Conc	2/Month	Composite	Effluent
Fe (T)	All Year	5	mg/L	DMax Conc	Monthly	Composite	Effluent
Floating Solids Or Visible Foam-Visual	All Year		Visual	DMax Conc	Bi-monthly	Visual	Effluent
Flow	All Year		MGD	DMax Load	Continuous	Recorder	Effluent
Flow	All Year		MGD	MAvg Load	Continuous	Recorder	Effluent
IC25 7day Ceriodaphnia Dubia	All Year	100	Percent	DMin Conc	Semi-annually	Composite	Effluent
IC25 7day Fathead Minnows	All Year	100	Percent	DMin Conc	Semi-annually	Composite	Effluent
Oil and Grease (Freon EM)	All Year	30	mg/L	DMax Conc	Monthly	Grab	Effluent
TRC	All Year	0.019	mg/L	DMax Conc	Weekly	Grab	Effluent
TSS	All Year	40	mg/L	DMax Conc	2/Month	Composite	Effluent
TSS	All Year	40	mg/L	DMax Conc	2/Month	Composite	Effluent
TSS	All Year	30	mg/L	MAvg Conc	2/Month	Composite	Effluent
Temperature (°C)	All Year		Deg. C	DMax Conc	Weekly	Grab	Effluent
pH	All Year	9	SU	DMax Conc	Continuous	Recorder	Effluent
pH	All Year	6	SU	DMin Conc	Continuous	Recorder	Effluent

Table 6-30. Permit Limits for Outfall 001at Vought Aircraft Industries, Inc.

PARAMETER	SEASON	LIMIT	UNITS	SAMPLE DESIGNATOR	MONITORING FREQUENCY	SAMPLE TYPE	MONITORING LOCATION
Cr (T)	All Year	0.016	mg/L	DMax Conc	Quarterly	Composite	Effluent
Cr (T)	All Year	0.011	mg/L	MAvg Conc	Quarterly	Composite	Effluent
Cu (T)	All Year	0.101	mg/L	DMax Conc	2/Month	Composite	Effluent
Cu (T)	All Year	0.063	mg/L	MAvg Conc	2/Month	Composite	Effluent
Fe (T)	All Year	5	mg/L	DMax Conc	Monthly	Composite	Effluent
Flow	All Year		MGD	DMax Load	Continuous	Recorder	Effluent
Flow	All Year		MGD	MAvg Load	Continuous	Recorder	Effluent
IC25 7day Ceriodaphnia Dubia	All Year	100	Percent	DMin Conc	Semi-annually	Composite	Effluent
IC25 7day Fathead Minnows	All Year	100	Percent	DMin Conc	Semi-annually	Composite	Effluent
Oil and Grease (Freon EM)	All Year	30	mg/L	DMax Conc	Monthly	Grab	Effluent
TRC	All Year	0.019	mg/L	DMax Conc	Weekly	Grab	Effluent
TSS	All Year	40	mg/L	DMax Conc	2/Month	Composite	Effluent
TSS	All Year	30	mg/L	MAvg Conc	2/Month	Composite	Effluent
Temperature (°C)	All Year		Deg. C	DMax Conc	Weekly	Grab	Effluent
pH	All Year	9	SU	DMax Conc	Continuous	Recorder	Effluent
pH	All Year	6	SU	DMin Conc	Continuous	Recorder	Effluent

Table 6-31. Permit Limits for Outfall 002 at Vought Aircraft Industries, Inc.

PARAMETER	SEASON	LIMIT	UNITS	SAMPLE DESIGNATOR	MONITORING FREQUENCY	SAMPLE TYPE	MONITORING LOCATION
Al (T)	All Year		mg/L	DMax Conc	Semi-annually	Grab	Effluent
BOD5	All Year		mg/L	DMax Conc	Semi-annually	Grab	Effluent
Flow	All Year		MGD	DMax Load	Semi-annually	Estimate	Effluent
Oil and Grease (Freon EM)	All Year		mg/L	DMax Conc	Semi-annually	Grab	Effluent
TSS	All Year		mg/L	DMax Conc	Semi-annually	Grab	Effluent
pH	All Year		SU	DMax Conc	Semi-annually	Grab	Effluent

Table 6-32. Permit Limits for Outfall SW1 and SW2 at Vought Aircraft Industries, Inc.

Comments:
Aircraft parts and auxiliary equipment, guided missile and space vehicle parts.
11/16/06 Compliance Evaluation Inspection: In Compliance.

Notes:
1. At the time of the inspection both outfall 001 and 002 were clear. No problems where reported.

2. Records of calibration are maintained for the various monitoring instruments. However, the records for the continuous recording pH meter were incomplete.

TN0002259 E. I. DuPont De Nemours - Old Hickory

Discharger rating: Major
City: Old Hickory
County: Davidson
EFO Name: Nashville
Issuance Date: 1/1/06
Expiration Date: 9/30/10
Receiving Stream(s): Cumberland River (Old Hickory Reservoir) at mile 218.4 for Outfall 001
HUC-12: 051302020101
Effluent Summary: Treated process wastewater (via internal monitoring points 01A and 01B), treated groundwater, miscellaneous cooling and non-process wastewaters and storm water runoff from Outfall 001
Treatment system: Process wastewater treatment: equalization and sedimentation, activated sludge, chemical conditioning, floatation thickening, and aerobic digestion, sludge to POTW

SEGMENT	TN05130202001T_0999
Name	Cheatham Reservoir Misc Tribs
Size	99
Unit	Miles
First Year on 303(d) List	-
Designated Uses	Fish and Aquatic Life (Not Assessed), Livestock Watering and Wildlife (Not Assessed), Recreation (Not Assessed), Irrigation (Not Assessed)
Causes	N/A
Sources	N/A

Table 6-33. Stream Segment Information for E. I. DuPont De Nemours - Old Hickory.

PARAMETER	SEASON	LIMIT	UNITS	SAMPLE DESIGNATOR	MONITORING FREQUENCY	SAMPLE TYPE	MONITORING LOCATION
Acrylonitrile	All Year	0.074	mg/L	MAvg Conc	Quarterly	Grab	Effluent
Acrylonitrile	All Year	0.149	mg/L	DMax Conc	Quarterly	Grab	Effluent
Flow	All Year		MGD	DMax Load	Continuous	Recorder	Effluent
Flow	All Year		MGD	MAvg Load	Continuous	Recorder	Effluent
Hexachlorobenzene	All Year	0.001	mg/L	MAvg Conc	Quarterly	Grab	Effluent
Hexachlorobenzene	All Year	0.002	mg/L	DMax Conc	Quarterly	Grab	Effluent
IC25 7day Ceriodaphnia Dubia	All Year	4	Percent	DMin Conc	Annually	Composite	Effluent
IC25 7day Fathead Minnows	All Year	4	Percent	DMin Conc	Annually	Composite	Effluent
TOC	All Year		mg/L	DMax Conc	Weekly	Composite	Effluent
TOC	All Year		mg/L	MAvg Conc	Weekly	Composite	Effluent
TSS	All Year		lb/day	DMax Load	Weekly	Composite	Effluent
TSS	All Year		lb/day	MAvg Load	Weekly	Composite	Effluent
pH	All Year	9	SU	DMax Conc	Weekdays	Grab	Effluent
pH	All Year	6	SU	DMin Conc	Weekdays	Grab	Effluent

Table 6-34. Permit Limits for Outfall 001 at E. I. DuPont De Nemours - Old Hickory.

PARAMETER	SEASON	LIMIT	UNITS	SAMPLE DESIGNATOR	MONITORING FREQUENCY	SAMPLE TYPE	MONITORING LOCATION
BOD5	All Year	2116	lb/day	DMax Load	Weekly	Composite	Effluent
BOD5	All Year	1165	lb/day	MAvg Load	Weekly	Composite	Effluent
Flow	All Year		MGD	DMax Load	Weekly	Instantaneous	Effluent
Flow	All Year		MGD	MAvg Load	Weekly	Instantaneous	Effluent
TSS	All Year	1902	lb/day	DMax Load	Weekly	Composite	Effluent
TSS	All Year	930	lb/day	MAvg Load	Weekly	Composite	Effluent
pH	All Year	9	SU	DMax Conc	Weekdays	Grab	Effluent
pH	All Year	5	SU	DMin Conc	Weekdays	Grab	Effluent

Table 6-35. Permit Limits for Outfall 01B at E. I. DuPont De Nemours - Old Hickory.

Comments:
Manufacture of polyester resin, spunbounded polypropylene fabrics, and spunlaced fabrics.

10/26/06 Compliance Evaluation Inspection: In compliance.

Notes:

1. Once in the last three years the pH limit has been reported below the permitted limit at the 001 outfall. The cause was identified and corrective action taken to prevent ~~a~~ recurrence.

2. Discharges, in excess of the permitted limit, from both internal discharge locations are infrequent but persistent. No discharge, in excess of the solids permitted limits, has been reported at the 001 outfall.

3. The ability of the site retention basin to accumulate solids from the permitted outfalls and other site runoff is diminishing with time. Staff requests that you submit your plan to operate the site retention basin and maintain permit compliance to the Nashville Central Office. This submittal will assist him in determining an appropriate regulatory response.

TN0003433 Innophos, Inc.

Discharger rating: Minor
City: Nashville
County: Davidson
EFO Name: Nashville
Issuance Date: 5/31/05
Expiration Date: 4/30/10
Receiving Stream(s): Cumberland River at mile 184.0
HUC-12: 051302020103
Effluent Summary: Treated industrial wastewater, treated purge water from groundwater monitoring wells, water from a groundwater interception ditch, boiler blowdown, and storm water runoff from Outfall 001
Treatment system: Neutralization

SEGMENT	TN05130202001_4000
Name	Cheatham Reservoir
Size	1000
Unit	Acres
First Year on 303(d) List	-
Designated Uses	Fish and Aquatic Life (Supporting), Recreation (Supporting), Irrigation (Supporting), Livestock Watering and Wildlife (Supporting)
Causes	N/A
Sources	N/A

Table 6-36. Stream Segment Information for Innophos, Inc.

PARAMETER	SEASON	LIMIT	UNITS	SAMPLE DESIGNATOR	MONITORING FREQUENCY	SAMPLE TYPE	MONITORING LOCATION
Flow	All Year		MGD	MAvg Load	Continuous	Recorder	Effluent
Flow	All Year		MGD	DMax Load	Continuous	Recorder	Effluent
Phosphorus, Total	All Year	405	lb/day	DMax Load	Weekly	Composite	Effluent
Phosphorus, Total	All Year	270	lb/day	MAvg Load	Weekly	Composite	Effluent
pH	All Year	9	SU	DMax Conc	Continuous	Recorder	Effluent
pH	All Year	6	SU	DMin Conc	Continuous	Recorder	Effluent
pH Range Excursions > 60 Minutes	All Year	0	Occurences/Month	MAvg Load	Continuous	Not Applicable	Effluent
pH Range Excursions Monthly Total Accum	All Year	446	Minutes	DMax Load	Continuous	Not Applicable	Effluent

Table 6-37. Permit Limits for Innophos, Inc.

Comments:
Industrial Inorganic Chemicals, NEC

TN0074781 Vietti Foods Company, Inc.

Discharger rating: Minor
City: Nashville
County: Davidson
EFO Name: Nashville
Issuance Date: 8/01/07
Expiration Date: 3/31/10
Receiving Stream(s): Discharges to Cumberland River at mile 181.5 for Outfall 001, mile 181.8 for Outfall 002, mile 176.4 via named tributary for Outfall 003, and at mile 181.2 for wastewater (leachate/storm water/river water clarifier water/solids land application)
HUC-12: 051302020103
Effluent Summary: Process wastewater/cooling water and storm water runoff through Outfall 001, non-contact cooling water and storm water runoff through Outfalls 002 and 003, landfill wastewater (leachate/storm water/river water clarifier water/solids land application) discharge via Outfall 004 only during Cumberland River inundation of sump/pump station
Treatment system: Alum, polymer, chlorine

SEGMENT	TN05130202001_2000
Name	Cheatham Reservoir
Size	2449
Unit	Acres
First Year on 303(d) List	-
Designated Uses	Domestic Water Supply (Supporting), Industrial Water Supply (Supporting), Fish and Aquatic Life (Supporting), Recreation (Supporting), Irrigation (Supporting), Livestock Watering and Wildlife (Supporting)
Causes	N/A
Sources	N/A

Table 6-38. Stream Segment Information for Outfalls 001, 002, and 004 for Automotive Components Holdings, LLC.

PARAMETER	SEASON	LIMIT	UNITS	SAMPLE DESIGNATOR	MONITORING FREQUENCY	SAMPLE TYPE	MONITORING LOCATION
Phosphorus, Total	All Year	4.6	lb/day	DMax Load	Weekly	Composite	Effluent
Phosphorus, Total	All Year	4.6	lb/day	MAvg Load	Weekly	Composite	Effluent
pH	All Year	9	SU	DMax Conc	Weekly	Grab	Effluent
pH	All Year	6	SU	DMin Conc	Weekly	Grab	Effluent

Table 6-39. Permit Limits for Outfall 003 at Automotive Components Holdings, LLC.

Comments:
5/06/06 Compliance Evaluation Inspection: In compliance

TN0064955 CSX Transportation, Inc.

Discharger rating: Minor
City: Nashville
County: Davidson
EFO Name: Nashville
Issuance Date: 5/1/05
Expiration Date: 3/31/10
Receiving Stream(s): East Fork of Browns Creek at mile 2.1
HUC-12: 051302020103
Effluent Summary: Storm water runoff and ground water inflow from Outfall 001
Treatment system: Alum, polymer, chlorine

SEGMENT	TN05130202023_0100
Name	East Fork Browns Creek
Size	2.2
Unit	Miles
First Year on 303(d) List	2004
Designated Uses	Fish and Aquatic Life (Non-Supporting), Recreation (Non-Supporting), Irrigation (Supporting), Livestock Watering and Wildlife (Supporting)
Causes	Nitrates, Escherichia coli, Other anthropogenic substrate alterations, Oil and Grease
Sources	Discharges from Municipal Separate Storm Sewer Systems (MS4), Industrial Point Source Discharge, Municipal (Urbanized High Density Area)

Table 6-40. Stream Segment Information for CSX Transportation, Inc.

PARAMETER	SEASON	LIMIT	UNITS	SAMPLE DESIGNATOR	MONITORING FREQUENCY	SAMPLE TYPE	MONITORING LOCATION
Alkalinity Total (as CaCO3)	All Year		mg/L	DMax Conc	Annually	Grab	Effluent
BOD5	All Year		mg/L	DMax Conc	Quarterly	Grab	Effluent
Chloride (as Cl)	All Year		mg/L	DMax Conc	Annually	Grab	Effluent
Dissolved Solids, Total (TDS)	All Year		mg/L	DMax Conc	Quarterly	Grab	Effluent
Flow	All Year		MGD	DMax Load	Quarterly	Instantaneous	Effluent
Flow	All Year		MGD	MAvg Load	Quarterly	Instantaneous	Effluent
Nitrite + Nitrate Total (as N)	All Year		mg/L	DMax Conc	Annually	Grab	Effluent
Oil and Grease (Freon EM)	All Year		mg/L	DMax Conc	Quarterly	Grab	Effluent
Sulfate (T)	All Year		mg/L	DMax Conc	Annually	Grab	Effluent
TSS	All Year		mg/L	DMax Conc	Quarterly	Grab	Effluent
pH	All Year		SU	DMax Conc	Quarterly	Grab	Effluent

Table 6-41. Permit Limits for CSX Transportation, Inc.

PARAMETER	SEASON	LIMIT	UNITS	SAMPLE DESIGNATOR	MONITORING FREQUENCY	SAMPLE TYPE	MONITORING LOCATION
Flow	All Year		MGD	DMax Load	Quarterly	Instantaneous	Effluent
Flow	All Year		MGD	MAvg Load	Quarterly	Instantaneous	Effluent
Oil and Grease (Freon EM)	All Year	15	mg/L	DMax Conc	Quarterly	Grab	Effluent
pH	All Year	9	SU	DMax Conc	Quarterly	Grab	Effluent
pH	All Year	6	SU	DMin Conc	Quarterly	Grab	Effluent

Table 6-42. Permit Limits for Outfall 01A at CSX Transportation, Inc.

Comments:
Railroads, Line-haul Operating

TN0064041 Metro Nashville Airport Authority

Discharger rating: Minor
City: Nashville
County: Davidson
EFO Name: Nashville
Issuance Date: 1/1/06
Expiration Date: 11/30/10
Receiving Stream(s): Sims Branch at mile 1.8 to Mill Creek at mile 1.6 to the Cumberland River at mile 194.5 (Outfalls 002 and SW2); Sims Branch at miles 1.9 and 2.0 (Outfalls 003 and 004), McCrory Creek at mile 3.5 to Stones River at mile 5.8 (Outfall SW1), unnamed tributary to Sims Branch (Outfalls SW3, SW4), Elissa Branch to Mill Creek (Outfalls SW5, SW6, SW7), Finley Branch to Mill Creek (Outfalls SW8, SW9), unnamed tributary to Mill Creek (Outfalls S10, S11)
HUC-12: 051302020202
Effluent Summary: Treated aircraft deicing fluid and storm water runoff from Outfall 002, overflow from South and North Ponds from Outfalls 003 and 004, and storm water runoff from outfalls SW1-S11
Treatment system: Oil/water separator, equalization, aerated lagoon biological treatment

SEGMENT	TN05130202007_0150
Name	Sims Branch
Size	1.4
Unit	Miles
First Year on 303(d) List	2004
Designated Uses	Fish and Aquatic Life (Non-Supporting), Recreation (Not Assessed), Irrigation (Supporting), Livestock Watering and Wildlife (Supporting)
Causes	Oxygen, Dissolved, Other anthropogenic substrate alterations
Sources	Discharges from Municipal Separate Storm Sewer Systems (MS4), Industrial/Commercial Site Storm water Discharge (Permittted)

Table 6-43. Stream Segment Information for Sims Branch on the Metro Nashville Airport Authority property.

SEGMENT	TN05130202007_3000
Name	Mill Creek
Size	5.9
Unit	Miles
First Year on 303(d) List	2004
Designated Uses	Fish and Aquatic Life (Non-Supporting), Recreation (Non-Supporting), Irrigation (Supporting), Livestock Watering and Wildlife (Supporting)
Causes	Oxygen, Dissolved, Escherichia coli, Nutrient/Eutrophication Biological Indicators, Sedimentation/Siltation
Sources	Discharges from Municipal Separate Storm Sewer Systems (MS4), Sanitary Sewer Overflows (Collection System Failures)

Table 6-44. Stream Segment Information for Mill Creek on the Metro Nashville Airport Authority property.

SEGMENT	TN05130202007_0200
Name	Elissa Branch
Size	1.9
Unit	Miles
First Year on 303(d) List	-
Designated Uses	Fish and Aquatic Life (Not Assessed), Recreation (Supporting), Irrigation (Supporting), Livestock Watering and Wildlife (Supporting)
Causes	N/A
Sources	N/A

Table 6-45. Stream Segment Information for Elissa Branch on the Metro Nashville Airport Authority property.

PARAMETER	SEASON	LIMIT	UNITS	SAMPLE DESIGNATOR	MONITORING FREQUENCY	SAMPLE TYPE	MONITORING LOCATION
48hr LC50: Ceriodaphnia Dubia	All Year	100	Percent	DMin Conc	Quarterly	Composite	Effluent
48hr LC50: Fathead Minnows	All Year	100	Percent	DMin Conc	Quarterly	Composite	Effluent
Ammonia as N (Total)	All Year	1	mg/L	MAvg Conc	Weekly	Grab	Effluent
Ammonia as N (Total)	All Year	2	mg/L	DMax Conc	Weekly	Grab	Effluent
CBOD5	Summer	3	mg/L	MAvg Conc	Monthly	Grab	Effluent
CBOD5	Summer	6	mg/L	MAvg Conc	Monthly	Grab	Effluent
CBOD5	Summer	4.5	mg/L	DMax Conc	Monthly	Grab	Effluent
CBOD5	Summer	9	mg/L	DMax Conc	Monthly	Grab	Effluent
CBOD5	Summer	18	mg/L	DMax Conc	Monthly	Grab	Effluent
CBOD5	Summer		mg/L	DMax Conc	Monthly	Grab	Effluent
CBOD5	Summer		mg/L	MAvg Conc	Monthly	Grab	Effluent
CBOD5	Summer	12	mg/L	MAvg Conc	Monthly	Grab	Effluent
CBOD5	Winter	25	mg/L	MAvg Conc	Monthly	Grab	Effluent
CBOD5	Winter	45	mg/L	MAvg Conc	Monthly	Grab	Effluent
CBOD5	Winter	37.5	mg/L	DMax Conc	Monthly	Grab	Effluent
CBOD5	Winter	67.5	mg/L	DMax Conc	Monthly	Grab	Effluent
CBOD5	Winter	97.5	mg/L	DMax Conc	Monthly	Grab	Effluent
CBOD5	Winter		mg/L	DMax Conc	Monthly	Grab	Effluent
CBOD5	Winter	65	mg/L	MAvg Conc	Monthly	Grab	Effluent
CBOD5	Winter	65	mg/L	MAvg Conc	Monthly	Grab	Effluent
COD	All Year		mg/L	DMax Conc	Weekly	Grab	Effluent
D.O.	All Year	6	mg/L	DMin Conc	Weekly	Grab	Effluent
Flow	All Year		MGD	DMax Load	Weekly	Instantaneous	Effluent
Flow	All Year		MGD	MAvg Load	Weekly	Instantaneous	Effluent
Oil and Grease (Freon EM)	All Year	15	mg/L	DMax Conc	Monthly	Grab	Effluent
Oil and Grease (Freon EM)	All Year	10	mg/L	MAvg Conc	Monthly	Grab	Effluent
Stream Flow Estimated	All Year		MGD	DMax Load	Weekly	Grab	Instream Monitoring
TSS	All Year		mg/L	DMax Conc	Monthly	Grab	Effluent
TSS	All Year	30	mg/L	MAvg Conc	Monthly	Grab	Effluent
Temperature (°C)	All Year		°C	DMax Conc	Weekly	Grab	Effluent
pH	All Year	9	SU	DMax Conc	Weekly	Grab	Effluent
pH	All Year	6	SU	DMin Conc	Weekly	Grab	Effluent

Table 6-46. Permit Limits for Outfall 002 at Metro Nashville Airport Authority.

PARAMETER	SEASON	LIMIT	UNITS	SAMPLE DESIGNATOR	MONITORING FREQUENCY	SAMPLE TYPE	MONITORING LOCATION
CBOD5	All Year		mg/L	DMax Conc	Monthly	Grab	Effluent
COD	All Year		mg/L	DMax Conc	Monthly	Grab	Effluent
Flow	All Year		MGD	MAvg Load	Monthly	Estimate	Effluent
Flow	All Year		MGD	DMax Load	Monthly	Estimate	Effluent
Oil and Grease (Freon EM)	All Year		mg/L	DMax Conc	Monthly	Grab	Effluent
TSS	All Year		mg/L	DMax Conc	Monthly	Grab	Effluent
pH	All Year		SU	DMax Conc	Monthly	Grab	Effluent
pH	All Year		SU	DMin Conc	Monthly	Grab	Effluent

Table 6-47. Permit Limits for Outfall 004, SW1and SW2 at Metro Nashville Airport Authority.

Compliance History:

The following numbers of exceedences were noted in PCS:

- 1 pH
- 1 Total Suspended Solids

Comments:
Airport facility serving the Middle Tennessee area
5/15/07 Compliance Evaluation Inspection: In compliance.

Notes:
1. The treatment facility was well maintained and operating properly. At the time of the inspection there was no flow from the lagoon.

2. During the inspection, Mr. Klahn turned on the sludge return pump. A break in the sludge return line on the west side of the lagoon was observed. Mr. Klahn immediately turned in a work order for the repair of this line.

3. The discharge monitoring reports (DMRs) for January 2006 through March 2007 were reviewed. There were no permit limit violations noted. Under the column labeled 'Frequency of Analysis', the data reported was the number of analyses run per month rather than the actual frequency at which the analyses were run. Also for some of the CBOD flow ranges, only a daily maximum was reported. If only one sample is collected in a given flow range during the month, then the results of that analysis will be both the monthly average and daily maximum.

TN0074161 Lone Star Industries, Inc. d/b/a Buzzi Unicem USA

Discharger rating: Minor
City: Nashville
County: Davidson
EFO Name: Nashville
Issuance Date: 7/1/01
Expiration Date: 4/30/05
Receiving Stream(s): Cumberland River at mile 189.2
HUC-12: 051302020103
Effluent Summary: Non-contact cooling water from Outfall 001
Treatment system: Alum, polymer, chlorine

SEGMENT	TN05130202001_3000
Name	Cheatham Reservoir
Size	994
Unit	Acres
First Year on 303(d) List	2004
Designated Uses	Fish and Aquatic Life (Supporting), Livestock Watering and Wildlife (Supporting), Recreation (Non-Supporting), Irrigation (Supporting)
Causes	217
Sources	Combined Sewer Overflows, Discharges from Municipal Separate Storm Sewer Systems (MS4)

Table 6-48. Stream Segment Information for Lone Star Industries, Inc. d/b/a Buzzi Unicem USA

No Permit Limits

Comments:
Receiving and unloading barges of Portland cement, storing cement, blending and selling cement in bags or truckloads.

11/9/07 Compliance Evaluation Inspection: In compliance.

Notes:
- The discharge is properly monitored and appropriate records are maintained.
- The outfall sign, required by the permit, was attached to the captive barge.

TN0065536 Pilot Travel Center #292

Discharger rating: Minor
City: Nashville
County: Davidson
EFO Name: Nashville
Issuance Date: 4/1/05
Expiration Date: 2/28/10
Receiving Stream(s): Pages Branch at mile 1.0 to Cumberland River at mile 188.5
HUC-12: 051302020103
Effluent Summary: Treated storm water runoff and treated diesel island wash water through Outfall 001
Treatment system: Alum, polymer, chlorine

SEGMENT	TN05130202202_1000
Name	Pages Branch
Size	.6
Unit	Miles
First Year on 303(d) List	2002
Designated Uses	Fish and Aquatic Life (Not Assessed), Recreation (Non-Supporting), Irrigation (Supporting), Livestock Watering and Wildlife (Supporting)
Causes	Escherichia coli
Sources	Discharges from Municipal Separate Storm Sewer Systems (MS4), Sanitary Sewer Overflows (Collection System Failures)

Table 6-49. Stream Segment Information for Pilot Travel Center #292.

PARAMETER	SEASON	LIMIT	UNITS	SAMPLE DESIGNATOR	MONITORING FREQUENCY	SAMPLE TYPE	MONITORING LOCATION
Benzene	All Year	0.5	mg/L	DMax Conc	2/Month	Grab	Effluent
Flow	All Year		MGD		2/Month	Instantaneous	Effluent
Flow	All Year		MGD	DMax Load	2/Month	Instantaneous	Effluent
Oil and Grease (Freon EM)	All Year	15	mg/L	DMax Conc	2/Month	Grab	Effluent
Oil and Grease (Freon EM)	All Year	10	mg/L	MAvg Conc	2/Month	Grab	Effluent
Oil and Grease Visual	All Year		Occurences/Month	DMax Load	2/Month	Visual	Effluent
Settleable Solids	All Year	0.5	mL/L	DMax Conc	2/Month	Grab	Effluent
TSS	All Year	40	mg/L	DMax Conc	2/Month	Grab	Effluent
TSS	All Year	30	mg/L	MAvg Conc	2/Month	Grab	Effluent
Zn (T)	All Year	0.199	mg/L	DMax Conc	2/Month	Grab	Effluent
pH	All Year	9	SU	DMax Conc	2/Month	Grab	Effluent
pH	All Year	6	SU	DMin Conc	2/Month	Grab	Effluent

Table 6-50. Permit Limits for Pilot Travel Center #292.

Compliance History:
The following numbers of exceedences were noted in PCS:

- 15 Total Suspended Solids (TSS)
- 7 Zinc
- 7 Benzene
- 4 Oil & Grease
- 1 Settleable Solids

Comments:
Gasoline service station and convenience store

TN0068713 Gaylord Opryland Resort & Convention Center

Discharger rating: Minor
City: Nashville
County: Davidson
EFO Name: Nashville
Issuance Date: 2/1/06
Expiration Date: 12/31/10
Receiving Stream(s): Mile 198.07 of the Cumberland River (Outfalls 001), mile 197.54 (Outfall 002) and mile 198.147 of the Cumberland River (Outfall 003)
HUC-12: 051302020101
Effluent Summary: Filter backwash and non-contact cooling water through Outfall 001; recycled noncontact cooling water and storm water through Outfall 002 and noncontact cooling through Outfall 003
Treatment system: Alum, polymer, chlorine

SEGMENT	TN05130202001_4000
Name	Cheatham Reservoir
Size	1000
Unit	Acres
First Year on 303(d) List	-
Designated Uses	Fish and Aquatic Life (Supporting), Recreation (Supporting), Irrigation (Supporting), Livestock Watering and Wildlife (Supporting)
Causes	N/A
Sources	N/A

Table 6-51. Stream Segment Information for Gaylord Opryland Resort & Convention Center.

PARAMETER	SEASON	LIMIT	UNITS	SAMPLE DESIGNATOR	MONITORING FREQUENCY	SAMPLE TYPE	MONITORING LOCATION
Flow	All Year		MGD	MAvg Load	Monthly	Instantaneous	Effluent
Flow	All Year		MGD	DMax Load	Monthly	Instantaneous	Effluent
Settleable Solids	All Year	0.5	mL/L	DMax Conc	Monthly	Grab	Effluent
TSS	All Year	40	mg/L	DMax Conc	Monthly	Grab	Effluent
pH	All Year	9	SU	DMax Conc	Monthly	Grab	Effluent
pH	All Year	6	SU	DMin Conc	Monthly	Grab	Effluent

Table 6-52. Permit Limits for Outfall 001 at Gaylord Opryland Resort & Convention Center.

PARAMETER	SEASON	LIMIT	UNITS	SAMPLE DESIGNATOR	MONITORING FREQUENCY	SAMPLE TYPE	MONITORING LOCATION
Flow	All Year		MGD	DMax Load	Monthly	Instantaneous	Effluent
Flow	All Year		MGD	MAvg Load	Monthly	Instantaneous	Effluent
TSS	All Year	40	mg/L	DMax Conc	Monthly	Grab	Effluent
pH	All Year	9	SU	DMax Conc	Monthly	Grab	Effluent
pH	All Year	6	SU	DMin Conc	Monthly	Grab	Effluent

Table 6-53. Permit Limits for Outfall 002 at Gaylord Opryland Resort & Convention Center.

PARAMETER	SEASON	LIMIT	UNITS	SAMPLE DESIGNATOR	MONITORING FREQUENCY	SAMPLE TYPE	MONITORING LOCATION
Flow	All Year		MGD	DMax Load	Monthly	Instantaneous	Effluent
Flow	All Year		MGD	MAvg Load	Monthly	Instantaneous	Effluent
Temperature (°C)	All Year		°C	DMax Load	Monthly	Grab	Effluent
pH	All Year	9	SU	DMax Conc	Monthly	Grab	Effluent
pH	All Year	6	SU	DMin Conc	Monthly	Grab	Effluent

Table 6-54. Permit Limits for Outfall 003 at Gaylord Opryland Resort & Convention Center.

Comments:
Gaylord Opryland Resort & Convention Center complex provides accommodations, restaurants, entertainment and shopping.

6/22/07 Compliance Evaluation Inspection: In compliance

TN0068136 Old Hickory Hydro Power Plant

Discharger rating: Minor
City: Hendersonville
County: Davidson
EFO Name: Nashville
Issuance Date: 10/1/05
Expiration Date: 8/31/10
Receiving Stream(s): Cumberland River at river mile 216.2
HUC-12: 051302020101
Effluent Summary: Noncontact cooling waters, station sump wastewater (which includes waters such as cooling water, river water that has leaked into plant at various points; river water from unwatering of penstock, scroll case, and draft tube; air compressor blowdown.
Treatment system: Alum, polymer, chlorine

SEGMENT	TN05130201001_1000
Name	Old Hickory Reservoir
Size	27439
Unit	Acres
First Year on 303(d) List	-
Designated Uses	Fish and Aquatic Life (Supporting), Livestock Watering and Wildlife (Supporting), Recreation (Supporting), Industrial Water Supply (Supporting), Domestic Water Supply (Supporting), Irrigation (Supporting)
Causes	N/A
Sources	N/A

Table 6-55. Stream Segment Information for Old Hickory Hydro Power Plant.

PARAMETER	SEASON	LIMIT	UNITS	SAMPLE DESIGNATOR	MONITORING FREQUENCY	SAMPLE TYPE	MONITORING LOCATION
Flow	All Year		MGD	MAvg Load	Daily	Estimate	Effluent
Flow	All Year		MGD	DMax Load	Daily	Estimate	Effluent
PCB Total Scan Effluent	All Year	0.01	mg/L	DMax Conc	Annually	Grab	Effluent
PCB Total Scan Effluent	All Year	0.01	mg/L	DMin Conc	Annually	Estimate	Effluent
Settleable Solids	All Year	0.5	mL/L	DMax Load	Daily	Estimate	Effluent

Table 6-56. Permit Limits for Outfall 001 at Old Hickory Hydro Power Plant.

PARAMETER	SEASON	LIMIT	UNITS	SAMPLE DESIGNATOR	MONITORING FREQUENCY	SAMPLE TYPE	MONITORING LOCATION
PCB Total Scan Effluent	All Year	0.01	mg/L	DMax Conc	Annually	Grab	Effluent

Table 6-57. Permit Limits for Outfall 001 at Old Hickory Hydro Power Plant.

Comments:
Generating electric power that is distributed to the TVA power system.
3/18/07 Compliance Evaluation Inspection: In compliance

6.4.C. Water Treatment Permits

TN0078743 Ashland City Water Plant

Discharger rating: Minor
City: Ashland City
County: Cheatham
EFO Name: Nashville
Issuance Date: 7/14/05
Expiration Date: 9/27/09
Receiving Stream(s): Marrowbone Creek at mile 0.8 to Cumberland River at mile 160
HUC-12: 051302020108
Effluent Summary: Filter backwash and/or sedimentation basin washdown from Outfall 001
Treatment system: Conventional treatment consisting of floculation, sedimentation and filtration. Chemicals used include: ultron, caustic, fluoride, aquamag and sodium hypochlorite

SEGMENT	TN05130202001_1000
Name	Cheatham Reservoir
Size	2264
Unit	Acres
First Year on 303(d) List	-
Designated Uses	Recreation (Supporting), Irrigation (Supporting), Livestock Watering and Wildlife (Supporting), Domestic Water Supply (Supporting), Industrial Water Supply (Supporting), Fish and Aquatic Life (Supporting)
Causes	N/A
Sources	N/A

Table 6-58. Stream Segment Information for Ashland City Water Plant.

PARAMETER	SEASON	LIMIT	UNITS	SAMPLE DESIGNATOR	MONITORING FREQUENCY	SAMPLE TYPE	MONITORING LOCATION
Al (T)	All Year	0.75	mg/L	DMax Conc	Monthly	Grab	Effluent
Flow	All Year		MGD	MAvg Load	Monthly	Instantaneous	Effluent
Settleable Solids	All Year	0.5	mL/L	DMax Conc	Monthly	Grab	Effluent
TRC	All Year	0.019	mg/L	DMax Conc	Monthly	Grab	Effluent
TSS	All Year	40	mg/L	DMax Conc	Monthly	Grab	Effluent
pH	All Year	6.5	SU	DMin Conc	Monthly	Grab	Effluent
pH	All Year	9	SU	DMax Conc	Monthly	Grab	Effluent

Table 6-59. Permit Limits for Ashland City Water Plant.

Comments:
None

TN0004413 Madison Suburban U.D. WTP

Discharger rating: Minor
City: Madison
County: Davidson
EFO Name: Nashville
Issuance Date: 10/1/04
Expiration Date: 9/27/09
Receiving Stream(s): Cumberland River at river mile 200.3
HUC-12: 051302020101
Effluent Summary: Filter backwash and/or sedimentation basin washdown from Outfall 001
Treatment system: Alum polymer blend, caustic soda, copper sulfate, potassium permanganate, chlorine, fluoride, phosphate, PAC

SEGMENT	TN05130202001_4000
Name	Cheatham Reservoir
Size	1000
Unit	Acres
First Year on 303(d) List	-
Uses	Fish and Aquatic Life (Supporting), Recreation (Supporting), Irrigation (Supporting), Livestock Watering and Wildlife (Supporting)
Causes	N/A
Sources	N/A

Table 6-60. Stream Segment Information for Madison Suburban U.D. WTP.

PARAMETER	SEASON	LIMIT	UNITS	SAMPLE DESIGNATOR	MONITORING FREQUENCY	SAMPLE TYPE	MONITORING LOCATION
Al (T)	All Year	10	mg/L	DMax Conc	Monthly	Grab	Effluent
Flow	All Year		MGD	DMax Load	Monthly	Instantaneous	Effluent
Settleable Solids	All Year	0.5	mL/L	DMax Conc	Monthly	Grab	Effluent
TRC	All Year	1	mg/L	DMax Conc	Monthly	Grab	Effluent
TSS	All Year	40	mg/L	DMax Conc	Monthly	Grab	Effluent
pH	All Year	9	SU	DMax Conc	Monthly	Grab	Effluent
pH	All Year	6.5	SU	DMin Conc	Monthly	Grab	Effluent

Table 6-61. Permit Limits for Madison Suburban U.D. WTP.

Comments:
Turbidity removal WTP

TN0074187 Harpeth Valley Utilities District WTP

Discharger rating: Minor
City: Nashville
County: Davidson
EFO Name: Nashville
Issuance Date: 10/8/04
Expiration Date: 9/27/09
Receiving Stream(s): Overall Creek to Cheatham Reservoir (Cumberland River mile 172.5)
HUC-12: 051302020104
Effluent Summary: Filter backwash and/or sedimentation basin washdown from Outfall 001
Treatment system: Sedimentation, filtration (finished water storage) using liquid alum with 510P coagulant aid, NaOH 25%, Cl2, $KMnO_4$, hydrofluorosilicic acid, calciquest, activated carbon, sodium bisulfite

SEGMENT	TN05130202001T_0999
Name	Cheatham Reservoir Misc Tribs
Size	99
Unit	Miles
First Year on 303(d) List	-
Designated Uses	Fish and Aquatic Life (Not Assessed), Livestock Watering and Wildlife (Not Assessed), Recreation (Not Assessed), Irrigation (Not Assessed)
Causes	N/A
Sources	N/A

Table 6-62. Stream Segment Information for Harpeth Valley Utilities District WTP.

PARAMETER	SEASON	LIMIT	UNITS	SAMPLE DESIGNATOR	MONITORING FREQUENCY	SAMPLE TYPE	MONITORING LOCATION
Al (T)	All Year	10	mg/L	DMax Conc	Monthly	Grab	Effluent
Flow	All Year		MGD	DMax Load	Monthly	Instantaneous	Effluent
Settleable Solids	All Year	0.5	mL/L	DMax Conc	Monthly	Grab	Effluent
TRC	All Year	1	mg/L	DMax Conc	Monthly	Grab	Effluent
TSS	All Year	40	mg/L	DMax Conc	Monthly	Grab	Effluent
pH	All Year	9	SU	DMax Conc	Monthly	Grab	Effluent
pH	All Year	6.5	SU	DMin Conc	Monthly	Grab	Effluent

Table 6-63. Permit Limits for Harpeth Valley Utilities District WTP.

Compliance History:
The following numbers of exceedences were noted in PCS:

- 2 Settleable Solids
- 1 Aluminum

Comments:
Turbidity removal WTP

APPENDIX II

ID	NAME	Hazard	ID	NAME	Hazard
117007	INBODY	S	197016	CEDAR HILL PARK	0
197001	GEORGE DICKEL	H	197019	COLEMAN LAKE	L
197003	SHANGRI-LA	H	197023	CHIPPEWA LAKE	X
197004	COLLINS #1	H	197024	METRO RETENTION #2	N
197005	BROWNS	1	837015	BRADSHAW	H
197008	MARROWBONE	1	117003	CARROLLWOOD LAKE 'A-C	H
197010	RADNOR	1	197026	FRANKLIN WATER WORKS	H
197011	LAKEWOOD	H	197027	APPLE LAKE	0
197013	RANDOLPH	B	757008	THOMPSON LAKE	H
197017	RESHA	H	947042	LONGWOOD	S
197018	COLLINS #2	H	197030	WRIGHT	B
197022	COLLINS #3	X	947044	RICHMOND HILLS	S
837016	AKERS	0	947045	MOMAN #1	S
117002	CRAIG LAKE	0	197031	MADDOX #2	1
197006	LAKEWOOD PARK #2	B	117005	LLOYD LAKE	B
197007	CROCKER SPRINGS LAKE	S	197033	LAKE CHERRY POINT	H
197015	LESTER'S LAKE	1	197035	FOREST LAKE	N

Table A2-1. Inventoried Dams in the Lower Cumberland River (Cheatham Lake) Watershed. *Hazard Codes: (H, 1), High; (S, 2), Significant; (L, 3), Low. TDEC only regulates dams indicated by a numeric hazard score.*

LAND COVER/LAND USE	ACRES	% OF WATERSHED
Deciduous Forest	174358	42.10%
Pasture/Hay	52864	12.80%
Low Intensity Residential	52556	12.70%
High Intensity Residential	36028	8.70%
Evergreen Forest	29424	7.10%
High Intensity Commercial/Industrial/Transportatio	22877	5.50%
Mixed Forest	15401	3.70%
Grassland/Herbaceous	11912	2.90%
Row Crops	8220	2%
Open Water	5834	1.40%
Evergreen Shrubland	2113	0.50%
Wetlands	1751	0.40%
Emergent Herbaceous Wetlands	488	0.10%
Bare Rock/Sand/Clay	242	0.10%
Unclassified	157	0%
Total	**414225**	**100%**

Table A2-2. Land Use Distribution in Lower Cumberland River (Cheatham Lake) Watershed. *Data are from Multi-Resolution Land Characterization (MRLC) derived by applying a generalized Anderson level II system to mosaics of Landsat thematic mapper images collected every five years.*

ECOREGION	REFERENCE STREAM	WATERSHED (HUC)	
Western Pennyroyal Karst (71e)	Buzzard Creek (71E09)	Red River	05130206
	Passenger Creek (71E14)	Red River	05130206
Western Highland Rim (71f)	Brush Creek (71F19)	Buffalo River	06040004
	Little Swan Creek (71F28)	Lower Duck	06040003
	Hurricane Creek (71F29)	Lower Duck	06040003
	South Harpeth River (71F12)	Harpeth	05130204
	Swanegan Branch (71F27)	Pickwick Lake	06030005
	Wolf Creek (71F16)	Lower Duck	06040003
Outer Nashville Basin (71h)	Carson Fork (71H09)	Stones	05130203
	Clear Fork (71H06)	Caney Fork	05130108
	Flynn Creek (71H03)	Cordell Hull	05130106
Inner Nashville Basin (71i)	Flat Creek (71I03)	Upper Duck	06040002
	Little Flat Creek (71I14)	Upper Duck	06040002
	Cedar Creek (71I12)	Cumberland River (Old Hickory Lake)	05130201
	Fall Creek (71I13)	Stones River	05130203
	Stewart Creek (71I03)	Stones River	05130203
	Harpeth River (71I15)	Harpeth	05130204
	West Fork Stones River (71I09)	Stones River	05130203
	West Fork Stones River (71I16)	Stones River	05130203

Table A2-3. Ecoregion Monitoring Sites in Ecoregions 71e, 71f, 71h, and 71i.

CODE	NAME	AGENCY	AGENCY ID
147	TDEC/DNH MILL CREEK BOTTOMS SITE	TDEC/DNH	S.USTNHP 200
148	TDEC/DNH SHELBY BOTTOMS SITE	TDEC/DNH	
207	USACOE-NASHVILLE CLIENT SITE	USACOE-NASHVILLE	
216	USACOE-NASHVILLE CLIENT SITE	USACOE-NASHVILLE	
217	USACOE-NASHVILLE CLIENT SITE	USACOE-NASHVILLE	
221	USACOE-NASHVILLE CLIENT SITE	USACOE-NASHVILLE	
234	USACOE-NASHVILLE CLIENT SITE	USACOE-NASHVILLE	
235	USACOE-NASHVILLE CLIENT SITE	USACOE-NASHVILLE	
245	USACOE-NASHVILLE CLIENT SITE	USACOE-NASHVILLE	
253	USACOE-NASHVILLE CLIENT SITE	USACOE-NASHVILLE	
265	USACOE-NASHVILLE CLIENT SITE	USACOE-NASHVILLE	
288	TDOT BRILEY PARKWAY MITIGATION SITE	TDOT	
296	TDOT SR 12 MITIGATION SITE	TDOT	
362	TDOT S1A MITIGATION SITE	TDOT	
403	TDOT SR 155 PERMIT SITE	TDOT	
405	TDOT SR 12 PERMIT SITE	TDOT	
420	TDOT SR 12 PERMIT SITE	TDOT	
424	TDEC/WPC CUMBERLAND RIVER TRIB. MITIGATION SITE	TDEC/WPC	
432	TDEC/WPC MCGAVOCK PIKE WPC MITIGATION SITE	TDEC/WPC	
434	TDEC/WPC CUMBERLAND RIVER WPC MITIGATION SITE	TDEC/WPC	
447	TDEC/WPC LAKEWOOD (RIVER COURT) PERMIT/MITIGATION	TDEC/WPC	
454	TDEC/WPC CUMBERLAND RIVER WPC PERMIT SITE	TDEC/WPC	
455	TDEC/WPC CUMBERLAND RIVER WPC MITIGATION SITE	TDEC/WPC	
456	TDEC/WPC CUMBERLAND RIVER WPC PERMIT SITE	TDEC/WPC	
457	TDEC/WPC CUMBERLAND RIVER WPC MITIGATION SITE	TDEC/WPC	
497	TDEC/WPC MARROWBONE CREEK PERMIT/MITIGATION SITE	TDEC/WPC	
506	TDOT SR 12 MITIGATION SITE	TDOT	
507	TDOT SR 12 MITIGATION SITE	TDOT	
508	TDOT SR 12 MITIGATION SITE	TDOT	
1999	NEELYS BEND AT JOE PYRON DRIVE SITE (MADISON	TN)	PRIVATE
2000	PEELER PARK WETLAND #1 SITE (MADISON	TN)	METRO NASHVILLE
2001	PEELER PARK WETLAND #2 SITE (MADISON	TN)	METRO NASHVILLE
2002	PEELER PARK WETLAND #3 SITE (MADISON	TN)	METRO NASHVILLE
2611	TDOT SR 174 SITE	TDOT	
2617	TDOT SR 155	WHITES CREEK TO BUENA VISTA PIKE SITE	TDOT
2618	TDOT SR 12	BOARDEAUX TO ASHLAND CITY BYPASS SITE	TDOT

Table A2-4. Wetland Sites the Lower Cumberland River (Lake Barkley) Watershed in TDEC Database. *TDEC, Tennessee Department of Environment and Conservation; USACOE-Nashville, United States Army Corps of Engineers-Nashville District; TDOT, Tennessee Department of Transportation; TWRA, Tennessee Wildlife Resources Agency; DNH, Division of Natural Heritage.* ***This table represents an incomplete inventory and should not be considered a dependable indicator of the presence of wetlands in the watershed.***

APPENDIX III

SEGMENT NAME	WATERBODY SEGMENT ID	SEGMENT SIZE (MILES)
Baker Spring Run	TN05130202220_0211	0.2
Bakers Fork	TN05130202220_0210	7.5
Belle Meade Branch	TN05130202314_0500	2.0
Brentwood Branch	TN05130202007_1460	3.5
Briarwood Branch	TN05130202007_1470	2.4
Carbine Branch	TN05130202007_1430	1.1
Cathy Jo Branch	TN05130202007_1490	1.1
Claylick Creek	TN05130202010_0500	4.9
Collins Creek	TN05130202007_0600	6.7
Elissa Branch	TN05130202007_0200	1.9
Ezell Branch	TN05130202007_0400	1.2
Franklin Branch	TN05130202007_0500	3.4
Hilson Branch	TN05130202007_1420	1.0
Holt Creek	TN05130202007_1100	6.2
Indian Creek	TN05130202007_0800	5.7
Little Creek	TN05130202010_0750	5.1
Loves Branch	TN05130202211_1000	2.0
Madison Creek	TN05130202220_0400	14.4
Marrowbone Creek	TN05130202011_1000	29.9
Middle Fork Browns Creek	TN05130202023_0200	3.5
Mill Creek	TN05130202007_1000	3.5
Mill Creek	TN05130202007_2000	4.0
Mill Creek	TN05130202007_4000	6.7
Owl Creek	TN05130202007_0900	11.8
Paragon Branch	TN05130202007_1480	1.2
Sevenmile Creek	TN05130202007_1455	6.9
Sorghum Branch	TN05130202007_1300	3.1
Sycamore Creek	TN05130202014_1000	22.9
Whites Creek	TN05130202010_2000	3.1
Whites Creek	TN05130202010_3000	9.4
Whittemore Branch	TN05130202007_1200	2.9

Table A3-1. Streams Fully Supporting the Designated Use of Recreation in the Cheatham Lake Watershed.

SEGMENT NAME	WATERBODY SEGMENT ID	SEGMENT SIZE (MILES)
Bosley Springs Branch	TN05130202314_0300	1.5
Browns Creek	TN05130202023_1000	0.2
Browns Creek	TN05130202023_2000	4.1
Cooper Creek	TN05130202209_1000	3.9
Cummings Branch	TN05130202010_0600	2.6
Drake Branch	TN05130202010_0200	2.7
Dry Creek	TN05130202027_1000	0.5
Dry Fork	TN05130202010_0300	9.9
Earthman Fork	TN05130202010_0400	11.0
East Fork Browns Creek	TN05130202023_0100	2.2
Ewing Creek	TN05130202010_0800	17.6
Finley Branch	TN05130202007_0300	1.2
Gibson Creek	TN05130202212_1000	3.7
Jocelyn Hollow Branch	TN05130202314_0800	2.0
Little Creek	TN05130202010_0700	1.1
Lumsley Fork	TN05130202220_0100	4.7
Manskers Creek	TN05130202220_2000	7.6
Manskers Creek	TN05130202220_1000	7.9
Mill Creek	TN05130202007_3000	5.9
Mill Creek	TN05130202007_5000	8.1
Murphy Road Branch	TN05130202314_0200	1.5
Neeleys Branch	TN05130202212_0100	1.7
Pages Branch	TN05130202202_1000	0.6
Pages Branch	TN05130202202_2000	4.5
Pavillion Branch	TN05130202007_1500	1.3
Richland Creek	TN05130202314_1000	1.9
Richland Creek	TN05130202314_3000	4.0
Richland Creek	TN05130202314_2000	6.7
Sevenmile Creek	TN05130202007_1450	2.0
Sevenmile Creek	TN05130202007_1400	2.4
Shasta Branch	TN05130202007_1410	1.0
Sims Branch	TN05130202007_0100	1.5
Slaters Creek	TN05130202220_0300	11.3
Sugartree Creek	TN05130202314_0400	4.3
Unnamed trib to Richland Creek	TN05130202314_0100	1.1
Vaughns Gap Branch	TN05130202314_0700	0.6
Vaughns Gap Branch	TN05130202314_0750	1.9
Walkers Creek	TN05130202220_0200	7.8
West Fork Browns Creek	TN05130202023_0300	3.6
Whites Creek	TN05130202010_1000	2.9

Table A3-2. Streams Not Supporting the Designated Use of Recreation in the Cheatham Lake Watershed.

SEGMENT NAME	WATERBODY SEGMENT ID	SEGMENT SIZE (MILES)
Apple Branch	TN05130202007_1440	0.8
Bednigo Branch	TN05130202014_0300	9.7
Big Bluff Creek	TN05130202015_1000	7.4
Blue Spring Creek	TN05130202014_0800	9.8
Brush Creek	TN05130202024_1000	1.0
Bull Run Creek	TN05130202001T_0200	7.7
Center Point Branch	TN05130202220_0500	3.8
Cheatham Reservoir Misc Tribs.	TN05130202001T_0999	99.0
Chickering Branch	TN05130202314_0600	1.5
Dry Creek	TN05130202027_2000	5.9
Dry Creek	TN05130202003_0100	11.2
Dry Fork Creek	TN05130202137_1000	12.4
Eaton Creek	TN05130202010_0100	7.9
Edmonson Branch	TN05130202007_0910	3.6
Emerald Creek	TN05130202010_0900	1.2
Hollis Creek	TN05130202014_0200	10.7
Jones Branch	TN05130202014_0700	6.2
Little Marrowbone Creek	TN05130202011_0200	15.5
Long Creek	TN05130202014_0600	14.4
Misc Tribs to Mill Creek	TN05130202007_0999	30.2
Misc Tribs to Sycamore Creek	TN05130202014_0999	41.5
Misc tribs to Whites Creek	TN05130202010_0999	11.1
North Fork Marrowbone Creek	TN05130202011_0100	4.9
North Fork Sycamore Creek	TN05130202014_0400	15.4
Pond Creek	TN05130202041_1000	14.2
Sams Creek	TN05130202003_1000	16.8
Sims Branch	TN05130202007_0150	1.4
South Fork Sycamore Creek	TN05130202014_0500	21.6
Spring Creek	TN05130202014_0100	19.9
Turkey Creek	TN05130202007_0700	1.6
Unnamed trib to Baker Fork	TN05130202220_0212	4.9
Unnamed trib to Browns Creek	TN05130202023_0400	1.0
Unnamed Trib to Cheatham Reservoir	TN05130202001T_0100	2.0
Unnamed trib to Owl Creek	TN05130202007_0920	1.6
Unnamed Trib. to Owl Creek	TN05130202007_0930	2.6
West Fork Pond Creek	TN05130202041_0100	3.7

Table A3-3. Streams Not Assessed for the Designated Use of Recreation in the Cheatham Lake Watershed.

SEGMENT NAME	WATERBODY SEGMENT ID	SEGMENT SIZE (MILES)
Baker Spring Run	TN05130202220_0211	0.2
Bakers Fork	TN05130202220_0210	7.5
Big Bluff Creek	TN05130202015_1000	7.4
Blue Spring Creek	TN05130202014_0800	9.8
Brush Creek	TN05130202024_1000	10.0
Bull Run Creek	TN05130202001T_0200	7.7
Claylick Creek	TN05130202010_0500	4.9
Dry Fork	TN05130202010_0300	9.9
Dry Fork Creek	TN05130202137_1000	12.4
Earthman Fork	TN05130202010_0400	11.0
Eaton Creek	TN05130202010_0100	7.9
Hollis Creek	TN05130202014_0200	10.7
Little Marrowbone Creek	TN05130202011_0200	15.5
Long Creek	TN05130202014_0600	14.4
Lumsley Fork	TN05130202220_0100	4.7
Marrowbone Creek	TN05130202011_1000	29.9
Mill Creek	TN05130202007_4000	6.7
Owl Creek	TN05130202007_0900	11.8
Pond Creek	TN05130202041_1000	14.2
Sams Creek	TN05130202003_1000	16.8
Sevenmile Creek	TN05130202007_1455	6.9
Shasta Branch	TN05130202007_1410	1.0
South Fork Sycamore Creek	TN05130202014_0500	21.6
Spring Creek	TN05130202014_0100	19.9
Sycamore Creek	TN05130202014_1000	22.9
Unnamed Trib. to Owl Creek	TN05130202007_0930	2.6
Walkers Creek	TN05130202220_0200	7.8
Whites Creek	TN05130202010_2000	3.1
Whites Creek	TN05130202010_3000	9.4

Table A3-4. Streams Fully Supporting the Designated Use of Fish & Aquatic life in the Cheatham Lake Watershed.

SEGMENT NAME	WATERBODY SEGMENT ID	SEGMENT SIZE (MILES)
Bosley Springs Branch	TN05130202314_0300	1.5
Browns Creek	TN05130202023_1000	0.2
Browns Creek	TN05130202023_2000	4.1
Collins Creek	TN05130202007_0600	6.7
Cooper Creek	TN05130202209_1000	3.9
Dry Creek	TN05130202027_2000	5.9
East Fork Browns Creek	TN05130202023_0100	2.2
Ewing Creek	TN05130202010_0800	17.6
Finley Branch	TN05130202007_0300	1.2
Gibson Creek	TN05130202212_1000	3.7
Holt Creek	TN05130202007_1100	6.2
Indian Creek	TN05130202007_0800	5.7
Little Creek	TN05130202010_0700	1.1
Loves Branch	TN05130202211_1000	2.0
Madison Creek	TN05130202220_0400	14.4
Manskers Creek	TN05130202220_2000	7.6
Manskers Creek	TN05130202220_1000	7.9
Middle Fork Browns Creek	TN05130202023_0200	3.5
Mill Creek	TN05130202007_1000	3.5
Mill Creek	TN05130202007_2000	4.0
Mill Creek	TN05130202007_3000	5.9
Mill Creek	TN05130202007_5000	8.1
North Fork Sycamore Creek	TN05130202014_0400	15.4
Richland Creek	TN05130202314_1000	1.9
Richland Creek	TN05130202314_3000	4.0
Richland Creek	TN05130202314_2000	6.7
Sevenmile Creek	TN05130202007_1450	2.0
Sevenmile Creek	TN05130202007_1400	2.4
Sims Branch	TN05130202007_0150	1.4
Sims Branch	TN05130202007_0100	1.5
Slaters Creek	TN05130202220_0300	11.3
Sorghum Branch	TN05130202007_1300	3.1
Sugartree Creek	TN05130202314_0400	4.3
Turkey Creek	TN05130202007_0700	1.6
Unnamed Trib to Cheatham Reservoir	TN05130202001T_0100	2.0
Unnamed trib to Owl Creek	TN05130202007_0920	1.6
Vaughns Gap Branch	TN05130202314_0700	0.6
Vaughns Gap Branch	TN05130202314_0750	1.9
West Fork Browns Creek	TN05130202023_0300	3.6
Whites Creek	TN05130202010_1000	2.9
Whittemore Branch	TN05130202007_1200	2.9

Table A3-5. Streams Not Supporting the Designated Use of Fish & Aquatic life in the Cheatham Lake Watershed.

SEGMENT NAME	WATERBODY SEGMENT ID	SEGMENT SIZE (MILES)
Apple Branch	TN05130202007_1440	0.8
Bednigo Branch	TN05130202014_0300	9.7
Belle Meade Branch	TN05130202314_0500	2.0
Brentwood Branch	TN05130202007_1460	3.5
Briarwood Branch	TN05130202007_1470	2.4
Carbine Branch	TN05130202007_1430	1.1
Cathy Jo Branch	TN05130202007_1490	1.1
Center Point Branch	TN05130202220_0500	3.8
Cheatham Reservoir Misc Tribs.	TN05130202001T_0999	99.0
Chickering Branch	TN05130202314_0600	1.5
Cummings Branch	TN05130202010_0600	2.6
Drake Branch	TN05130202010_0200	2.7
Dry Creek	TN05130202027_1000	0.5
Dry Creek	TN05130202003_0100	11.2
Edmonson Branch	TN05130202007_0910	3.6
Elissa Branch	TN05130202007_0200	1.9
Emerald Creek	TN05130202010_0900	1.2
Ezell Branch	TN05130202007_0400	1.2
Franklin Branch	TN05130202007_0500	3.4
Hilson Branch	TN05130202007_1420	1.0
Jocelyn Hollow Branch	TN05130202314_0800	2.0
Jones Branch	TN05130202014_0700	6.2
Little Creek	TN05130202010_0750	5.1
Misc Tribs to Mill Creek	TN05130202007_0999	30.2
Misc Tribs to Sycamore Creek	TN05130202014_0999	41.5
Misc tribs to Whites Creek	TN05130202010_0999	11.1
Murphy Road Branch	TN05130202314_0200	1.5
Neeleys Branch	TN05130202212_0100	1.7
North Fork Marrowbone Creek	TN05130202011_0100	4.9
Pages Branch	TN05130202202_1000	0.6
Pages Branch	TN05130202202_2000	4.5
Paragon Branch	TN05130202007_1480	1.2
Pavillion Branch	TN05130202007_1500	1.3
Unnamed trib to Baker Fork	TN05130202220_0212	4.9
Unnamed trib to Browns Creek	TN05130202023_0400	1.0
Unnamed trib to Richland Creek	TN05130202314_0100	1.1
West Fork Pond Creek	TN05130202041_0100	3.7

Table A3-6. Streams Not Assessed for the Designated Use of Fish & Aquatic Life in the Cheatham Lake Watershed.

SEGMENT NAME	WATERBODY SEGMENT ID	SEGMENT SIZE (ACRES)
Cheatham Reservoir	TN05130202001_1000	2264
Cheatham Reservoir	TN05130202001_2000	2449
Cheatham Reservoir	TN05130202001_4000	1000
Cheatham Reservoir	TN05130202001_5000	740

Table A3-7. Lake Segments Supporting Recreational Use in the Cheatham Lake Watershed.

SEGMENT NAME	WATERBODY SEGMENT ID	SEGMENT SIZE (ACRES)
Cheatham Reservoir	TN05130202001_3000	994

Table A3-8. Lake Segment Not Supporting Recreational Use in the Cheatham Lake Watershed.

SEGMENT NAME	WATERBODY SEGMENT ID	SEGMENT SIZE (ACRES)
Marrowbone Lake	TN05130202MARROWBN_1000	60

Table A3-9. Lake Segment Not Assessed for Recreational Use in the Cheatham Lake Watershed.

SEGMENT NAME	WATERBODY SEGMENT ID	SEGMENT SIZE (ACRES)
Cheatham Reservoir	TN05130202001_1000	2264
Cheatham Reservoir	TN05130202001_2000	2449
Cheatham Reservoir	TN05130202001_3000	994
Cheatham Reservoir	TN05130202001_4000	1000
Cheatham Reservoir	TN05130202001_5000	740

Table A3-10. Lake Segments Supporting Designated Fish & Aquatic Use in the Cheatham Lake Watershed.

SEGMENT NAME	WATERBODY SEGMENT ID	SEGMENT SIZE (ACRES)
Marrowbone Lake	TN05130202MARROWBN_1000	60

Table A3-11. Lake Segment Not Assessed for Fish & Aquatic Life in the Cheatham Lake Watershed.

SEGMENT NAME	WATERBODY SEGMENT ID	SEGMENT SIZE (MILES)
Bosley Springs Branch	TN05130202314_0300	1.5
Browns Creek	TN05130202023_1000	0.2
Browns Creek	TN05130202023_2000	4.1
Cooper Creek	TN05130202209_1000	3.9
Cummings Branch	TN05130202010_0600	2.6
Drake Branch	TN05130202010_0200	2.7
Dry Creek	TN05130202027_1000	0.5
Dry Fork	TN05130202010_0300	9.9
Earthman Fork	TN05130202010_0400	11.0
East Fork Browns Creek	TN05130202023_0100	2.2
Ewing Creek	TN05130202010_0800	17.6
Finley Branch	TN05130202007_0300	1.2
Gibson Creek	TN05130202212_1000	3.7
Jocelyn Hollow Branch	TN05130202314_0800	2.0
Little Creek	TN05130202010_0700	1.1
Lumsley Fork	TN05130202220_0100	4.7
Manskers Creek	TN05130202220_2000	7.6
Manskers Creek	TN05130202220_1000	7.9
Mill Creek	TN05130202007_3000	5.9
Mill Creek	TN05130202007_5000	8.1
Murphy Road Branch	TN05130202314_0200	1.5
Neeleys Branch	TN05130202212_0100	1.7
Pages Branch	TN05130202202_1000	0.6
Pages Branch	TN05130202202_2000	4.5
Pavillion Branch	TN05130202007_1500	1.3
Richland Creek	TN05130202314_1000	1.9
Richland Creek	TN05130202314_3000	4.0
Richland Creek	TN05130202314_2000	6.7
Sevenmile Creek	TN05130202007_1450	2.0
Sevenmile Creek	TN05130202007_1400	2.4
Shasta Branch	TN05130202007_1410	1.0
Sims Branch	TN05130202007_0100	1.5
Slaters Creek	TN05130202220_0300	11.3
Sugartree Creek	TN05130202314_0400	4.3
Unnamed trib to Richland Creek	TN05130202314_0100	1.1
Vaughns Gap Branch	TN05130202314_0700	0.6
Vaughns Gap Branch	TN05130202314_0750	1.9
Walkers Creek	TN05130202220_0200	7.8
West Fork Browns Creek	TN05130202023_0300	3.6
Whites Creek	TN05130202010_1000	2.9

Table A3-12. Stream Segments Impaired Due to Escherichia coli in the Cheatham Lake Watershed.

SEGMENT NAME	WATERBODY SEGMENT ID	SEGMENT SIZE (ACRES)
Cheatham Reservoir	TN05130202001_3000	994

Table A3-13. Lake Segments Impaired Due to Escherichia coli in the Cheatham Lake Watershed.

SEGMENT NAME	WATERBODY SEGMENT ID	SEGMENT SIZE (MILES)
Browns Creek	TN05130202023_1000	0.2
Browns Creek	TN05130202023_2000	4.1
East Fork Browns Creek	TN05130202023_0100	2.2
Mill Creek	TN05130202007_1000	3.5
Mill Creek	TN05130202007_2000	4.0
Mill Creek	TN05130202007_3000	5.9
Mill Creek	TN05130202007_5000	8.1
Richland Creek	TN05130202314_3000	4.0
Sevenmile Creek	TN05130202007_1450	2.0
Sevenmile Creek	TN05130202007_1400	2.4
Sims Branch	TN05130202007_0100	1.5
Sugartree Creek	TN05130202314_0400	4.3
West Fork Browns Creek	TN05130202023_0300	3.6
Whites Creek	TN05130202010_1000	2.9

Table A3-14. Stream Segments Impaired Due to Nutrients in the Cheatham Lake Watershed.

SEGMENT NAME	WATERBODY SEGMENT ID	SEGMENT SIZE (MILES)
Bosley Springs Branch	TN05130202314_0300	1.5
Browns Creek	TN05130202023_1000	0.2
Browns Creek	TN05130202023_2000	4.1
Collins Creek	TN05130202007_0600	6.7
Cooper Creek	TN05130202209_1000	3.9
Dry Creek	TN05130202027_2000	5.9
East Fork Browns Creek	TN05130202023_0100	2.2
Ewing Creek	TN05130202010_0800	17.6
Gibson Creek	TN05130202212_1000	3.7
Holt Creek	TN05130202007_1100	6.2
Little Creek	TN05130202010_0700	1.1
Loves Branch	TN05130202211_1000	2.0
Madison Creek	TN05130202220_0400	14.4
Manskers Creek	TN05130202220_2000	7.6
Manskers Creek	TN05130202220_1000	7.9
Middle Fork Browns Creek	TN05130202023_0200	3.5
Mill Creek	TN05130202007_1000	3.5
Mill Creek	TN05130202007_2000	4.0
Mill Creek	TN05130202007_3000	5.9
Mill Creek	TN05130202007_5000	8.1

Table A3-15a.

SEGMENT NAME	WATERBODY SEGMENT ID	SEGMENT SIZE (MILES)
North Fork Sycamore Creek	TN05130202014_0400	15.4
North Fork Sycamore Creek	TN05130202014_0400	15.4
Richland Creek	TN05130202314_1000	1.9
Richland Creek	TN05130202314_3000	4.0
Richland Creek	TN05130202314_2000	6.7
Sevenmile Creek	TN05130202007_1400	2.4
Sims Branch	TN05130202007_0150	1.4
Sims Branch	TN05130202007_0100	1.5
Slaters Creek	TN05130202220_0300	11.3
Sorghum Branch	TN05130202007_1300	3.1
Sorghum Branch	TN05130202007_1300	3.1
Sugartree Creek	TN05130202314_0400	4.3
Turkey Creek	TN05130202007_0700	1.6
Unnamed Trib to Cheatham Reservoir	TN05130202001T_0100	2.0
Unnamed Trib to Cheatham Reservoir	TN05130202001T_0100	2.0
Unnamed trib to Owl Creek	TN05130202007_0920	1.6
Unnamed trib to Owl Creek	TN05130202007_0920	1.6
Vaughns Gap Branch	TN05130202314_0700	0.6
Vaughns Gap Branch	TN05130202314_0750	1.9
Whittemore Branch	TN05130202007_1200	2.9

Table A3-15b.

Table A3-15a-b. Stream Segments Impaired Due to Siltation in the Cheatham Lake Watershed.

WATERBODY ID	WATERBODY NAME	TOTAL SEGMENT MILES IMPAIRED	HUC-12
TN05130202007_0900	Owl Creek	11.80	051302020101
TN05130202007_0930	UT to Owl Creek	2.60	051302020101
TN05130202007_1490	Cathy Jo Branch	1.10	051302020102
TN05130202014_0900	Blue Spring Creek	9.80	051302020203
TN05130202010_0100	Eaton Creek	7.90	051302020303
TN05130202010_0700	Little Creek	6.20	051302020303
TN05130202001T_0700	Davidson Branch	2.83	051302020306

Table A3-16. Streams Added to the 2008 303(d) List in the Cheatham Lake Watershed. *For more information see Tennessee's 2008 303(d) List at:*
http://www.state.tn.us/environment/wpc/publications/2008_303d.pdf .

WATERBODY ID	WATERBODY NAME	TOTAL SEGMENT MILES/ACRES IMPAIRED	CAUSE/POLLUTANT	HUC-12
TN05130202007_5000	Mill Creek	8.1	*Escherichia coli*	051302020101
TN05130202007_0300	Finley Branch	1.2	Chlorine	051302020102
TN05130202007_3000	Mill Creek	5.9	*Escherichia coli*	051302020102
TN05130202014_0500	North Fork Sycamore Creek	15.4	Loss of Biological Integrity due to Siltation, Other Habitat Alterations	051302020201
TN05130202010_0300	Dry Fork	9.9	*Escherichia coli*	051302020303
TN05130202010_0400	Earthman Fork	11.0	*Escherichia coli*	051302020303
TN05130202010_0600	Cummings Branch	2.6	*Escherichia coli*	051302020303
TN05130202010_0700	Little Creek	6.2	*Escherichia coli*	051302020303
TN05130202010_0800	Ewing Creek	17.6	*Escherichia coli*	051302020303
TN05130202314_0100	UT to Richland Creek	1.1	*Escherichia coli*	051302020304
TN05130202314_3000	Richland Creek	4.0	*Escherichia coli*	051302020304

Table A3-17. Streams (or pollutants) Delisted Since the 2006 303(d) List in the Cheatham Lake Watershed. *UT, Unnamed Tributary. For more information see Tennessee's 2008 303(d) List at: http://www.state.tn.us/environment/wpc/publications/2008_303d.pdf.*

WATERBODY	DESCRIPTION	BASIS FOR	HUC-12
Indian Creek	From Mill Creek to UT just upstream of Pettus Rd	Federal endangered Nashville Crayfish and state threatened Water Stitchwort.	051302020101
Mill Creek and all Tributaries	From Cheatham Reservoir to origin.	Federal endangered Nashville Crayfish and state threatened Water Stitchwort.	051302020101
Mill Creek and all Tributaries	From Cheatham Reservoir to origin.	Federal endangered Nashville Crayfish and state threatened Water Stitchwort.	051302020102
Jocelyn Hollow Branch	Portion in Belle Meade Mansion State Historic Area.	Belle Meade Mansion State Historic Area	051302020304
Richland Creek	From just downstream “The temple" to upstream boundary of Belle Meade Mansion State Historic Area.	Belle Meade Mansion State Historic Area and state threatened Water Stitchwort.	051302020304
Richland Creek UT	Headwater tributary of Richland Creek from mouth to origin.	State threatened Water Stitchwort.	051302020304
Vaughns Gap Branch	Portion in Belle Meade Mansion State Historic Area.	Belle Meade State HIstoric area	051302020304
Cheatham Reservoir	From Marrowbone Creek to Bordeaux Bridge.	State threatened Blue Sucker.	051302020305
Cheatham Reservoir	From Marrowbone Creek to Bordeaux Bridge.	State threatened Blue Sucker.	051302020306
Cumberland River UT	UT in Bells Bend from Cumberland River to origin.	State threatened Water Stitchwort.	051302020306
North Fork Marrowbone Creek	From Marrowbone Creek to headwaters.	State threatened Canada Lily	051302020307
Cheatham Reservoir	From Marrowbone Creek to Bordeaux Bridge.	State threatened Blue Sucker.	051302020308

Table A3-18. Known High Quality Waters in the Cheatham Lake Watershed as of September 2008. *The most recently published list is available at: www.state.tn.us/environment/wpc/publications/hqwlist.mht . UT, Unnamed Tributary.*

APPENDIX V

LAND TREATMENT – CONSERVATION BUFFERS				
	Field Borders (feet)	Filter Strip (feet)	Streambank / Shoreline Protection (feet)	Riparian Forest Buffer (acres)
FY 2002	9615	2	815	4
FY 2003	12000	4		4
FY 2005				32
FY 2006			75	7

Table A5-1a. Land Treatment Conservation Practices (Conservation Buffers), in Partnership with NRCS in the Cheatham Lake Watershed. *Data are from Performance & Results Measurement System (PRMS) for each fiscal year reporting period (October 1 through September 30) from 2002 to 2006.*

EROSION CONTROL		
	Est. soil saved (tons/year)	Land Treated with erosion control measures (acres)
FY 2002	5118	655
FY 2003	3705	690

Table A5-1b. Erosion Control Conservation Practices, in Partnership with NRCS in the Cheatham Lake Watershed. *Data are from Performance & Results Measurement System (PRMS) for each fiscal year reporting period (October 1 through September 30) from 2002 to 2006.*

NUTRIENT MANAGEMENT			
	AFO Nutrient Mgmt Applied (acres)	Non-AFO Nutrient Mgmt. Applied (acres)	Total Applied (acres)
FY 2002		1050	1050
FY 2003		2181	2181
FY 2004	1158		1158
FY 2005	339		339
FY 2006	1780		1780

Table A5-1c. Nutrient Management Conservation Practices in Partnership with NRCS in the Cheatham Lake Watershed. *Data are from Performance & Results Measurement System (PRMS) for each fiscal year reporting period (October 1 through September 30) from 2002 to 2006.*

PEST MANAGEMENT	
	Pest Mgmt. Systems (acres)
FY 2002	515
FY 2003	1922
FY 2004	1158
FY 2005	544
FY 2006	1048

Table A5-1d. Pest Management Conservation Practices in Partnership with NRCS in the Cheatham Lake Watershed. *Data are from Performance & Results Measurement System (PRMS) for each fiscal year reporting period (October 1 through September 30) from 2002 to 2006.*

GRAZING/FORAGES				
	Prescribed Grazing (acres)	Fencing (feet)	Heavy Use Area Protection (acres)	Pasture and Hay Planting (acres)
FY 2002	1277			
FY 2003	1539			
FY 2004	549			171
FY 2005	596	837		
FY 2006	68	36450	2	54

Table A5-1e. Grazing/Forages Conservation Practices in Partnership with NRCS in the Cheatham Lake Watershed. *Data are from Performance & Results Measurement System (PRMS) for each fiscal year reporting period (October 1 through September 30) from 2002 to 2006.*

TREE AND SHRUB PRACTICES			
	Land Improved through Forest Stand improvement (acres)	Total Tree & Shrub Estab. (acres)	Forestland Re-established or improved (acres)
FY 2002	405	5	
FY 2003	355		
FY 2004	293		293
FY 2005	373		373
FY 2006	777		777

Table A5-1f. Tree and Shrub Conservation Practices in Partnership with NRCS in the Cheatham Lake Watershed. *Data are from Performance & Results Measurement System (PRMS) for each fiscal year reporting period (October 1 through September 30) from 2002 to 2006.*

LAND TREATMENT – TILLAGE AND CROPPING					
	Residue Mgmt, No-till, Strip till (acres)	Residue Mgmt - Mulch Till (acres)	Tillage & Residue Mgmt Systems (acres)	Conservation Crop Rotation (acres)	Cover Crop (acres)
FY 2002	184	64	248		
FY 2003	405		405		
FY 2004	12		12	434	14
FY 2006	27	110	137	110	
FY 2006	371	274	645	456	37

Table A5-1g. Land Treatment Conservation Practices (Tillage and Cropping), in Partnership with NRCS in the Cheatham Lake Watershed. *Data are from Performance & Results Measurement System (PRMS) for each fiscal year reporting period (October 1 through September 30) from 2002 to 2006.*

WETLANDS	
	Wetlands Created or Restored (acres)
FY 2002	2
FY 2003	5

Table A5-1h. Wetland Conservation Practices in Partnership with NRCS in the Cheatham Lake Watershed. *Data are from Performance & Results Measurement System (PRMS) for each fiscal year reporting period (October 1 through September 30) from 2002 to 2006.*

WILDLIFE HABITAT MANAGEMENT			
	Upland Habitat Mgmt (acres)	Wetland Habitat Mgmt (acres)	Total Wildlife Habitat Mgmt Applied (acres)
FY 2003	675		675
FY 2004	216		216
FY 2005	687	14	701
FY 2006	700		700

Table A5-1i. Wildlife Habitat Management Conservation Practices in Partnership with NRCS in the Cheatham Lake Watershed. *Data are from Performance & Results Measurement System (PRMS) for each fiscal year reporting period (October 1 through September 30) from 2002 to 2006.*

WATER SUPPLY		
	Pipeline (ft)	Watering Facility (number)
FY 2005		3
FY 2006	3450	9

Table A5-1j. Water Supply Conservation Practices in Partnership with NRCS in the Cheatham Lake Watershed. *Data are from Performance & Results Measurement System (PRMS) for each fiscal year reporting period (October 1 through September 30) from 2002 to 2006.*

WASTE MANAGEMENT FACILITIES			
	Waste Storage Facility (number)	Composting Facility (number)	Total Facilities (number)
FY 2002	3	2	5

Table A5-1k. Waste management Conservation Practices in Partnership with NRCS in the Cheatham Lake Watershed. *Data are from Performance & Results Measurement System (PRMS) for each fiscal year reporting period (October 1 through September 30) from 2002 to 2006.*

COMMUNITY	AWARD DATE	AWARD AMOUNT
Nashville	06/23/03	$ 50,000,000
Nashville	06/29/04	$ 50,000,000
Nashville	09/28/05	$ 20,000,000
Hendersonville Utility District	06/29/04	$ 2,040,000
Hendersonville Utility District	12/09/04	$ 2,048,366
Hendersonville Utility District	03/17/06	$ 109,694

Table A5-2. Communities in the Cheatham Lake Watershed that have received Clean Water State Revolving Fund Grants or Loans since the inception of the program.

PRACTICE	NRCS CODE	NUMBER OF BMPs
Critical Area Planting	342	2
Fence	382	11
Filter Strip	393	1
Grade Stabilization Structure	410	1
Use Exclusion	472	1
Pasture/Hay Planting	512	8
Prescribed Grazing	528	1
Heavy Use Area	561	1
Stream Crossing	576	1
Streambank/Shoreline Protection	580	2
Watering Facility	614	8
Total BMPs		37

Table A5-3. Best Management Practices Installed by Tennessee Department of Agriculture and Partners in the Cheatham Lake Watershed.

SITE ID	WATER BODY	YEAR
220040501	Mill Creek	2004
220040502	Mill Creek	2004
220011001	Mill Creek	2001
220011002	Mill Creek	2001
220030401	Mill Creek	2003
220030402	Mill Creek	2003
220050701	Mill Creek	2005
220052501	Mansker Creek	2005

Table A5-4. TWRA TADS Sampling Sites in Cheatham Lake Watershed.

APPENDIX IV

LAND USE/LAND COVER	AREAS IN HUC-12 SUBWATERSHEDS (ACRES)				
	0101	0102	0103	0104	0105
Bare Rock/Sand/Clay	13	7	9	41	6
Deciduous Forest	6,064	14,593	1,828	16,160	19,224
Developed Open Space	8,181	2,224	7,068	2,697	4,074
Emergent Herbaceous Wetlands	27	10	33	72	20
Evergreen Forest	2,760	3,747	543	3,568	5,557
Grassland/Herbaceous	941	921	235	824	1,325
High Intensity Development	956	239	4,034	379	311
Low Intensity Development	5,947	1,753	9,086	1,609	3,121
Medium Intensity Development	1,819	693	4,981	573	783
Mixed Forest	324	1,912	272	1,571	2,245
Open Water	1,383	24	871	1,510	67
Pasture/Hay	4,797	3,442	1,154	4,457	3,277
Row Crops	588	331	121	1,809	540
Shrub/Scrub	159	10	99	96	23
Woody Wetlands	121	30	27	247	86
Total	**34,081**	**29,936**	**30,331**	**35,613**	40,659

Table A4-1a.

LAND USE/LAND COVER	AREAS IN HUC-12 SUBWATERSHEDS (ACRES)				
	0106	0107	0108	0201	0202
Bare Rock/Sand/Clay	80	19	2	44	9
Deciduous Forest	3,646	28,665	22,465	11,005	3,154
Developed Open Space	7,433	747	818	3,806	11,187
Emergent Herbaceous Wetlands		214	29		
Evergreen Forest	232	5,134	1,972	2,707	391
Grassland/Herbaceous	81	696	1,023	1,300	169
High Intensity Development	514	137	13	198	1,895
Low Intensity Development	2,974	226	107	2,168	8,538
Medium Intensity Development	1,103	223	66	445	3,308
Mixed Forest	603	1,969	768	3,938	886
Open Water	5	1,406	186	50	17
Pasture/Hay	893	836	2,183	9,866	1,760
Row Crops	13	1,620	196	533	40
Shrub/Scrub	155	6	1	1,232	319
Woody Wetlands	5	628	131	33	86
Total	**17,737**	**42,526**	**29,960**	**37,325**	**31,759**

Table A4-1b.

LAND USE/LAND COVER	AREAS IN HUC-12 SUBWATERSHEDS (ACRES)		
	0301	0302	0303
Bare Rock/Sand/Clay	10	2	
Deciduous Forest	19,263	10,451	17,839
Developed Open Space	1,406	1,273	1,641
Emergent Herbaceous Wetlands	3	10	100
Evergreen Forest	1,011	467	1,334
Grassland/Herbaceous	2,153	609	1,636
High Intensity Development	13	38	18
Low Intensity Development	170	228	101
Medium Intensity Development	36	51	51
Mixed Forest	247	163	503
Open Water	18	26	271
Pasture/Hay	5,158	7,426	7,615
Row Crops	543	1,020	866
Shrub/Scrub	5	6	3
Woody Wetlands			357
Total	**30,036**	**21,770**	**32,335**

Table A4-1c.

Table A4-1a-c. Land Use Distribution in the Cheatham Lake Watershed by HUC-12. *Data are from 2001 Multi-Resolution Land Characterization (MRLC) derived by applying a generalized Anderson Level II system to mosaics of Landsat thematic mapper images collected every five years.*

HYDROLOGIC SOIL GROUPS
GROUP A SOILS have low runoff potential and high infiltration rates even when wet. They consist chiefly of sand and gravel and are well to excessively drained.
GROUP B SOILS have moderate infiltration rates when wet and consist chiefly of soils that are moderately deep to deep, moderately to well drained, and moderately coarse to coarse textures.
GROUP C SOILS have low infiltration rates when wet and consist chiefly of soils having a layer that impedes downward movement of water with moderately fine to fine texture.
GROUP D SOILS have high runoff potential, very low infiltration rates, and consist chiefly of clay soils.

Table A4-2. Hydrologic Soil Groups in Tennessee as Described in WCS. *Soils are grouped into four hydrologic soil groups that describe a soil's permeability and, therefore, its susceptibility to runoff.*

STATION	LOCATION	HUC 12	AREA (SQ MILES)	LOW FLOW (CFS)		
				1Q10	7Q10	3Q20
03426310	Cumberland River	051302020101				
03426470	Dry Creek	051302020101				
03426500	Cumberland River	051302020101	11,735.00			
03426385	Mansker Creek	051302020102				
03431300	Browns Creek	051302020103				
03431500	Cumberland River	051302020103	12,856.00		614.0000	429.0000
034315005	Cumberland River	051302020103				
03431745	Overall Creek	051302020104				
03431517	Cummings Branch	051302020105	2.40			
03431599	Whites Creek	051302020105				
03431600	Whites Creek	051302020105	51.60			
03431700	Richland Creek	051302020106	24.30	0.1000	0.2800	0.0900
03430550	Mill Creek	051302020201				
03431000	Mill Creek	051302020202	64.00			
03431060	Mill Creek	051302020202	93.40			
03431800	Sycamore Creek	051302020303	97.20	9.6960	10.3150	9.2760

Table A4-3. United States Geological Survey Continuous Record Gaging Stations in the Cheatham Lake Watershed. *Additional information may be found at:* http://water.usgs.gov/osw/streamstats/

AGENCY	STATION	LOCATION	HUC 12
USACOE	3CHE10041	Dry Creek @ RM 0.6	051302020101
USACOE	3CHE20010	Cumberland River @ RM 200.2	051302020101
USACOE	3CHE20011	Cumberland River @ RM 206.0	051302020101
USACOE	3CHE20013	Cumberland River @ RM 214.0	051302020101
USACOE	3CHE20014	Cumberland River @ RM 212.0	051302020101
USACOE	3CHE20015	Cumberland River @ RM 207.5	051302020101
USACOE	3CHE20016	Cumberland River @ RM 196.0	051302020101
USACOE	3CHE20018	Cumberland River @ RM 205.0	051302020101
USACOE	3CHE20035	Cumberland River @ RM 195.1	051302020101
USACOE	3CHE20036	Cumberland River @ RM 197.4	051302020101
USACOE	3CHE20037	Cumberland River @ RM 201.0	051302020101
USACOE	3CHE20038	Cumberland River @ RM 210.0	051302020101
USACOE	3CHE20039	Cumberland River @ RM 205.9	051302020101
USACOE	3OLD10001	Cumberland River @ RM 215.7	051302020101
TDEC	CM101L	Cumberland River @ RM 215.5	051302020101
TDEC	CM102M	Cumberland River @ RM 215.5	051302020101
TDEC	CM103R	Cumberland River @ RM 215.5	051302020101
TDEC	CM112M	Cumberland River @ RM 212.3	051302020101
TDEC	CM113R	Cumberland River @ RM 212.3	051302020101
TDEC	CM121L	Cumberland River @ RM 208.1	051302020101
TDEC	CM122M	Cumberland River @ RM 208.1	051302020101
TDEC	CM123R	Cumberland River @ RM 208.1	051302020101
TDEC	CM131L	Cumberland River @ RM 204.6	051302020101
TDEC	CM132M	Cumberland River @ RM 204.6	051302020101
TDEC	CM133R	Cumberland River @ RM 204.6	051302020101
TDEC	CM141L	Cumberland River @ RM 201.2	051302020101
TDEC	CM142M	Cumberland River @ RM 201.2	051302020101
TDEC	CM143R	Cumberland River @ RM 201.2	051302020101
TDEC	CUMBE215.7DA	Cumberland River	051302020101
USACOE	3CHE10040	Manskers Creek @ RM 0.8	051302020102
USACOE	3CHE20084	Manskers Creek @ RM 0.2	051302020102
TDEC	BAKER1T0.1DA	Bakers Spring	051302020102
TDEC	WALKE1T0.3DA	UT to Walkers Creek	051302020102
TDEC	765	Cumberland River @ RM 193.7	051302020103
USACOE	3CHE10043	Browns Creek @ RM 0.5	051302020103
USACOE	3CHE10101	Browns Creek @ RM 1.7	051302020103
USACOE	3CHE10102	Browns Creek @ RM 2.2	051302020103
USACOE	3CHE10103	West Fork Browns Creek @ RM 0.2	051302020103
USACOE	3CHE20007	Cumberland River @ RM 185.8	051302020103

Table A4-4a

AGENCY	STATION	LOCATION	HUC 12
USACOE	3CHE20008	Cumberland River @ RM 188.5	051302020103
USACOE	3CHE20009	Cumberland River @ RM 194.0	051302020103
USACOE	3CHE20017	Cumberland River @ RM 190.0	051302020103
USACOE	3CHE20031	Cumberland River @ RM 184.7	051302020103
USACOE	3CHE20032	Cumberland River @ RM 186.7	051302020103
USACOE	3CHE20034	Cumberland River @ RM 193.5	051302020103
TDEC	BROWN002.9DA	Browns Creek	051302020103
TDEC	CM151L	Cumberland River @ RM 194.2	051302020103
TDEC	CM152M	Cumberland River @ RM 194.2	051302020103
TDEC	CM153R	Cumberland River @ RM 194.2	051302020103
TDEC	CM161L	Cumberland River @ RM 189.7	051302020103
TDEC	CM162M	Cumberland River @ RM 189.7	051302020103
TDEC	CM163R	Cumberland River @ RM 189.7	051302020103
TDEC	CM171L	Cumberland River @ RM 189.4	051302020103
TDEC	CM172M	Cumberland River @ RM 189.4	051302020103
TDEC	CM173R	Cumberland River @ RM 189.4	051302020103
TDEC	CM181L	Cumberland River @ RM 188.4	051302020103
TDEC	CM182M	Cumberland River @ RM 188.4	051302020103
TDEC	CM183R	Cumberland River @ RM 188.4	051302020103
TDEC	CM191L	Cumberland River @ RM 187.5	051302020103
TDEC	CM192M	Cumberland River @ RM 187.5	051302020103
TDEC	CM193R	Cumberland River @ RM 187.5	051302020103
TDEC	CM201L	Cumberland River @ RM 186.5	051302020103
TDEC	CM202M	Cumberland River @ RM 186.5	051302020103
TDEC	CM203R	Cumberland River @ RM 186.5	051302020103
TDEC	CM211L	Cumberland River @ RM 184.7	051302020103
TDEC	CM212M	Cumberland River @ RM 184.7	051302020103
TDEC	CM213R	Cumberland River @ RM 184.7	051302020103
TDEC	CM221L	Cumberland River @ RM 183.2	051302020103
TDEC	CM222M	Cumberland River @ RM 183.2	051302020103
TDEC	CM223R	Cumberland River @ RM 183.2	051302020103
TDEC	TISSUE01	Cumberland River @ RM 194.0	051302020103
TDEC	775	Overall Creek @ RM 0.2	051302020104
TDEC	2056	Overall Creek @ RM 0.2	051302020104
USACOE	3CHE20005	Cumberland River @ RM 165.0	051302020104
USACOE	3CHE20006	Cumberland River @ RM 172.5	051302020104
USACOE	3CHE20020	Cumberland River @ RM 182.5	051302020104
USACOE	3CHE20021	Cumberland River @ RM 175.8	051302020104
USACOE	3CHE20022	Cumberland River @ RM 170.7	051302020104

Table A4-4b.

AGENCY	STATION	LOCATION	HUC 12
USACOE	3CHE20024	Cumberland River @ RM 174.2	051302020104
USACOE	3CHE20030	Cumberland River @ RM 168.5	051302020104
TDEC	CM281L	Cumberland River @ RM 176.6	051302020104
TDEC	CM282M	Cumberland River @ RM 176.6	051302020104
TDEC	CM283R	Cumberland River @ RM 176.6	051302020104
TDEC	CM291L	Cumberland River @ RM 176.1	051302020104
TDEC	CM292M	Cumberland River @ RM 176.1	051302020104
TDEC	CM293R	Cumberland River @ RM 176.1	051302020104
TDEC	CM301L	Cumberland River @ RM 175.6	051302020104
TDEC	CM302M	Cumberland River @ RM 175.6	051302020104
TDEC	CM303R	Cumberland River @ RM 175.6	051302020104
TDEC	CM311L	Cumberland River @ RM 174.6	051302020104
TDEC	CM321L	Cumberland River @ RM 173.1	051302020104
TDEC	CM322M	Cumberland River @ RM 173.1	051302020104
TDEC	CM323R	Cumberland River @ RM 173.1	051302020104
TDEC	CM331L	Cumberland River @ RM 171.1	051302020104
TDEC	CM332M	Cumberland River @ RM 171.1	051302020104
TDEC	CM333R	Cumberland River @ RM 171.1	051302020104
TDEC	CUMBE174.5DA	Cumberland River	051302020104
TDEC	OVER001.3DA	Overall Creek	051302020104
TDEC	TSPI4	Cumberland River	051302020104
TDEC	CLAYL000.2DA	Claylick Creek	051302020105
TDEC	CUMMI000.4DA	Cummings Branch	051302020105
TDEC	DRAKE000.2DA	Drakes Branch	051302020105
TDEC	DRY000.4DA	Dry Fork	051302020105
TDEC	DRYFK000.4DA	Dry Fork	051302020105
TDEC	EATON000.8DA	Eatons Creek	051302020105
TDEC	WHITE005.7DA	Whites Creek	051302020105
TDEC	WHITE010.4DA	Whites Creek	051302020105
TDEC	2223	Richland Creek @ RM 7.2	051302020106
TDEC	2225	Richland Creek @ RM 2.0	051302020106
TDEC	2227	Richland Creek @ RM 0.05	051302020106
USACOE	3CHE10045	Richland Creek @ RM 3.6	051302020106
USACOE	3CHE10055	Richland Creek @ RM 2.1	051302020106
USACOE	3CHE20081	Richland Creek @ RM 0.2	051302020106
TDEC	JHOLL000.2DA	Jocelyn Hollow Branch	051302020106
TDEC	RICHL008.9DA	Richland Creek	051302020106
TDEC	VGAP000.2DA	Vaughns Gap	051302020106
USACOE	3CHE20003	Cumberland River @ RM 153.5	051302020107

Table A4-4c.

AGENCY	STATION	LOCATION	HUC 12
USACOE	3CHE20004	Cumberland River @ RM 158.0	051302020107
USACOE	3CHE20012	Harpeth River @ RM 1.0	051302020107
USACOE	3CHE20023	Cumberland River @ RM 161.7	051302020107
USACOE	3CHE20026	Cumberland River @ RM 153.0	051302020107
USACOE	3CHE20027	Cumberland River @ RM 156.0	051302020107
USACOE	3CHE20028	Cumberland River @ RM 160.5	051302020107
USACOE	3CHE20029	Cumberland River @ RM 164.6	051302020107
TDEC	BBLUF001.2CH	Big Bluff Creek	051302020107
TDEC	BRUSH001.6CH	Brush Creek	051302020107
USACOE	3CHE10048	Marrowbone Creek @ RM 4.9	051302020108
TDEC	BHOLL000.2DA	Big Hollow	051302020108
TDEC	DFORK000.6CH	Dry Fork Creek	051302020108
USACOE	3CHE10054	Mill Creek @ RM 13.8	051302020201
TDEC	COLLI000.4DA	Collins Creek	051302020201
TDEC	OWL1T0.4WI	UT to Owl Creek	051302020201
TDEC	OWL2T0.1WI	UT to Owl Creek	051302020201
USACOE	3CHE10042	Mill Creek @ RM 3.3	051302020202
USACOE	3CHE20083	Mill Creek @ RM 0.3	051302020202
USACOE	3CHE20085	Mill Creek @ RM 1.0	051302020202
TDEC	MILL011.0DA	Mill Creek	051302020202
TDEC	SEVEN000.5DA	Sevenmile Creek @ RM 0.5	051302020202
TDEC	SEVEN003.7DA	Sevenmile Creek @ RM 3.7	051302020202
TDEC	SEVEN1T0.8DA	UT @ RM 0.8 to Sevenmile Creek	051302020202
TDEC	SEVEN1T1.2DA	UT @ RM 1.2 to Sevenmile Creek	051302020202
TDEC	SEVEN2T0.1DA	UT @ RM 0.1 to Sevenmile Creek	051302020202
TDEC	SHAST000.3DA	Shasta Branch @ RM 0.3	051302020202
TDEC	SFSYC006.3DA	South Fork Sycamore Creek	051302020301
TDEC	HOLLI000.6RN	Hollis Creek @ RM 0.6	051302020302
USACOE	3CHE10047	Sycamore Creek @ RM 8.6	051302020303
USACOE	3CHE20080	Sycamore Creek @ RM 0.2	051302020303
TDEC	BLUE000.5CH	Blue Spring @ RM 0.5	051302020303

Table A4-4d.

Table A4-4a-d. STORET Water Quality Monitoring Stations in the Cheatham Lake Watershed. *TDEC, Tennessee Department of Environment and Conservation; USCOE, United States Army Corps of Engineers; UT, Unnamed Tributary.*

PERMIT NUMBER	COUNTY	DESCRIPTION	WATERBODY	HUC-12
NR0504.363	Davidson	Construction and Removal of Minor Road Crossings	UT to Cumberland River	051302020101
NR0504.435	Davidson	Sediment Removal	UTs Ewing Creek, UT to Gibson Creek, and UTs to North Fork Ewing Creek	051302020101
NR0510.063	Davidson	Utility Line Crossings	Dry Creek	051302020101
NR0510.064	Davidson	Construction and Removal of Minor Road Crossings	Dry Creek	051302020101
NR0604.338	Davidson	Road Widening	UT to Gibson Creek	051302020101
NR0604.339	Davidson	Road Widening	UT to Cumberland River	051302020101
NR0604.349	Davidson	Utility Line Crossings	UT to Cumberland River	051302020101
NR0604.373	Davidson	Sanitary Sewer Line Installation	UT to Gibson Creek	051302020101
NR0704.001	Davidson	Construction and Removal of Minor Road Crossings	UT to Cumberland River	051302020101
NR0704.002	Davidson	Minor Alterations to Wetlands	UT to Cumberland River	051302020101
NR0704.012	Davidson	Culvert Installation	Dry Creek	051302020101
NR0704.027	Davidson	Utility Line Crossings	Dry Creek	051302020101
NR0704.032	Davidson	Bank Stabilization	Dry Creek	051302020101
NR0704.033	Davidson	Construction and Removal of Minor Road Crossings	Dry Creek	051302020101
NRS02.121C	Davidson	Road Widening	UT	051302020101
NRS02.121D	Davidson	Road Widening	UT	051302020101
NRS02.121E	Davidson	Road Widening	UT	051302020101
NRS02.121F	Davidson	Road Widening	UT	051302020101
NRS02.121G	Davidson	Road Widening	UT	051302020101
NRS02.121H	Davidson	Road Widening	UT	051302020101
NRS02.121I	Davidson	Road Widening	UT	051302020101
NRS02.121J	Davidson	Road Widening	UT	051302020101
NRS02.121K	Davidson	Road Widening	UT	051302020101
NRS02.121L	Davidson	Road Widening	Dry Creek	051302020101
NRS02.288	Davidson	SR 155 Road Widening	Windemere Branch	051302020101
NRS02.288B	Davidson	SR 155 Road Widening	UT to Cumberland River	051302020101
NRS03.144	Davidson	Stream Encapsulation	UT to Gibson Creek	051302020101
NRS04.116	Davidson	SR 155 Box Culvert Extension	Love Branch	051302020101
NRS04.132	Davidson	Bank Stabilization	Cumberland River	051302020101
NRS06.226	Davidson	Stream Relocation	UT to Cumberland River	051302020101
NR0504.354	Sumner	Construction and Removal of Minor Road Crossings	UT to Willis Branch	051302020102
NR0504.370	Sumner	Construction and Removal of Minor Road Crossings	Willis Branch	051302020102
NR0504.371	Sumner	Sewer Line Crossing	Willis Branch	051302020102

Table 4-5a.

PERMIT NUMBER	COUNTY	DESCRIPTION	WATERBODY	HUC-12
NR0604.146	Davidson	Sanitary Sewer Line and Storm Water Sewer Line Crossing	UT to Mansker Creek	051302020102
NR0604.166	Davidson	Culvert Extension	UT to Mansker Creek	051302020102
NR0604.196	Sumner	Construction and Removal of Minor Road Crossings	Madison Creek	051302020102
NR0704.035	Davidson	Sewer Line Crossing	Madison Creek	051302020102
NR0704.122	Sumner	Construction and Removal of Minor Road Crossings	UT to Madison Creek	051302020102
NRS04.193	Sumner	SR 386 Road Maintenance	Center Point Branch	051302020102
NRS04.255	Sumner	SR 386 Road Maintenance	Station Camp Creek	051302020102
NRS04.255B	Sumner	SR 386 Road Maintenance	Open Stream	051302020102
NRS04.255C	Sumner	SR 386 Road Maintenance	Cumberland River	051302020102
NRS04.255D	Sumner	SR 386 Road Maintenance	Rankin Branch	051302020102
NRS04.255E	Sumner	SR 386 Road Maintenance	Unnamed Intermittent Stream	051302020102
NRS04.362	Sumner	Stream Relocation and Impoundment	UT to East Slaters Creek	051302020102
NRS06.320	Sumner	Utility Line Crossings	Madison Creek	051302020102
NRS06.320A	Sumner	Gravity Sewer Line Crossing	Madison Creek	051302020102
NR0604.009	Davidson	Construction and Removal of Minor Road Crossings	UT to Cumberland River	051302020103
NR0604.047	Davidson	Maintenance	Cumberland River	051302020103
NR0604.072	Davidson	Outfall Structure	UT to Cumberland River	051302020103
NR0604.077	Davidson		UT to East Fork Browns Creek	051302020103
NR0604.098	Davidson	Sewer Line Installation	East Fork Browns Creek	051302020103
NR0604.132	Davidson	Bank Stabilization	Cumberland River	051302020103
NR0604.161	Davidson	Culvert Replacement	UT to Browns Creek	051302020103
NR0604.179	Davidson	Construction and Removal of Culverts	West Fork Browns Creek	051302020103
NR0704.010	Davidson	Bank Stabilization	UT to Browns Creek	051302020103
NR0704.140	Davidson	Water Main Repair	Cumberland River	051302020103
NRS02.202	Davidson		Browns Creek	051302020103
NRS02.293	Davidson	Channel Modifications	Middle Fork Browns Creek	051302020103
NRS02.395	Davidson	Dredging	Cumberland River	051302020103
NRS03.125	Davidson	Bridge and Approaches	Cumberland	051302020103
NRS03.164	Davidson	Canal Stabilization	Metro Center Canal System	051302020103
NRS03.165	Davidson	Bridge and Approaches	Cumberland River	051302020103
NRS04.125	Davidson	Erosion Control	Cumberland River	051302020103
NRS04.212	Davidson	Road Crossing and Maintenance	Browns Creek	051302020103
NRS04.409	Davidson	Bridge and Approaches	Browns Creek	051302020103
NRS05.459	Davidson	Culvert Installation	WWC to Mill Creek	051302020103
NRS06.028	Davidson	Sewer System Rehabilitation	West Fork Browns Creek	051302020103
NRS06.101	Davidson	Spring Diversion to Detention Pond	UT to East Fork of Browns Creek	051302020103

Table 4-5b.

PERMIT NUMBER	COUNTY	DESCRIPTION	WATERBODY	HUC-12
NR0604.174	Davidson	Bridge and Approaches and Utility Line Crossings	UT to Overall Creek	051302020104
NR0604.211	Davidson	Outfall Structure	UT to Overall Creek	051302020104
NR0704.096	Davidson	Bridges and Approaches	Indian Creek	051302020104
NR0704.097	Davidson	Sewer Line Crossing	Indian Creek	051302020104
NRS03.024	Williamson	Not Identified	UT to Harpeth River	051302020104
NRS03.028	Davidson	Gravity Sewer Line Replacement	Overall Creek	051302020104
NRS03.246	Davidson	Landfill Expansion	Existing Wetland Mitigation Area and UT to Cumberland River	051302020104
NRS05.250	Davidson	Culvert Installation	Overall Creek	051302020104
NRS07.066	Davidson	Bank Stabilization	Cumberland River	051302020104
NR0504.359	Davidson	Construction and Removal of Minor Road Crossings	Cummings Branch	051302020105
NR0504.390	Davidson	Construction and Removal of Minor Road Crossings	UT to Earthman Fork	051302020105
NR0504.427	Davidson	Culvert Replacement	UT to Ewing Creek	051302020105
NR0504.428	Davidson	Maintenance Activities	Eaton Creek	051302020105
NR0504.429	Davidson	Construction of Intake and Outfall Structures	Eaton Creek	051302020105
NR0504.430	Davidson	Construction and Removal of Minor Road Crossings	Eaton Creek	051302020105
NR0504.431	Davidson	Construction of Intake and Outfall Structures	Eaton Creek	051302020105
NR0604.102	Davidson	Water Main Replacement	North Fork Ewing Creek	051302020105
NR0604.125	Davidson	Construction and Removal of Minor Road Crossings	UT to North Fork Ewing Creek	051302020105
NR0604.212	Davidson	Pipeline Maintenance	Whites Creek	051302020105
NR0604.366	Davidson	Sewer and Utility Line Crossings	UT to Eaton Creek	051302020105
NR0604.367	Davidson	Construction and Removal of Minor Road Crossings	UT to Eaton Creek	051302020105
NR0604.371	Davidson	Construction and Removal of Minor Road Crossings	Tranham Creek	051302020105
NR0704.074	Davidson	Utility Line Crossings	Sulphur Creek	051302020105
NR0704.101	Davidson	Water Line Crossing	Ewing Creek	051302020105
NR0704.123	Davidson	Water Main Crossing	UT to Ewing Creek	051302020105
NRS02.121	Davidson	Road Widening	UT	051302020105
NRS02.121B	Davidson	Road Widening	UT	051302020105
NRS02.121M	Davidson	Road Widening	UT to Dry Creek	051302020105
NRS02.278	Davidson	Retaining Wall Removal and Replacement	Drake's Branch	051302020105
NRS02.280	Davidson	Maintenance Activities	Ewing Creek	051302020105
NRS02.462	Davidson	Bridge and Approaches	Little Creek	051302020105
NRS03.046	Davidson	Bridge and Approaches	Whites Creek	051302020105
NRS03.046B	Davidson	Bridge and Approaches	Whites Creek	051302020105
NRS03.046C	Davidson	Bridge and Approaches	Whites Creek	051302020105

Table 4-5c.

PERMIT NUMBER	COUNTY	DESCRIPTION	WATERBODY	HUC-12
NRS03.070A	Davidson	Bridge and Approaches	UT to Little Creek	051302020105
NRS03.070B	Davidson	Bridge and Approaches	UT to Little Creek	051302020105
NRS03.130	Davidson	Bank Stabilization	Cumberland River	051302020105
NRS03.135	Davidson	Water and Sewer Line Crossings, and Road Crossings	UT to White's Creek	051302020105
NRS04.128	Davidson	Outfall Structure	North Fork of Ewing Creek	051302020105
NRS04.183	Davidson	Bridge and Approaches	Earthman Fork Creek	051302020105
NRS04.183B	Davidson	Bridge and Approaches	Earthman Fork Creek	051302020105
NRS04.183C	Davidson	Bridge and Approaches	Whites Creek	051302020105
NRS04.183D	Davidson	Bridge and Approaches	Whites Creek	051302020105
NRS05.224	Davidson	Stream Restoration and Habitat Enhancement	Whites Creek	051302020105
NRS06.047	Davidson	Minor Alterations to Wetlands, Road and Utility Line Crossings, and Storm Water System	Ewing Creek	051302020105
NRS06.104	Davidson	Sewer Line Crossing, Water Line Crossing, and Bridge and Approaches	UT to Little Creek	051302020105
NR0504.384	Davidson	Outfall Structure	Richland Creek	051302020106
NR0504.391	Davidson	Construction and Removal of Minor Road Crossings	UT to Richland Creek	051302020106
NR0604.101	Davidson	Bridge and Approaches	Richland Creek	051302020106
NR0604.156	Davidson	Bank Stabilization	Richland Creek	051302020106
NR0604.168	Davidson	Culvert Maintenance	UT to Richland Creek	051302020106
NR0604.385	Davidson	Construction and Removal of Minor Road Crossings	Stoners Creek	051302020106
NR0604.394	Davidson	Outlet Structure Installation and Bank Stabilization	Richland Creek	051302020106
NR0604.395	Davidson	Water Main Installation	UT to Vaughns Gap Branch	051302020106
NR0704.011	Davidson	Construction and Removal of Minor Road Crossings	Jocelyn Hollow Branch	051302020106
NR0704.060	Davidson	Construction and Removal of Minor Road Crossings	UT to Richland Creek	051302020106
NRS02.216	Davidson		UT	051302020106
NRS02.245	Davidson	Bridge Repair	Richland Creek	051302020106
NRS02.248	Davidson	Construction and Removal of Minor Road Crossings	UT to Richland Creek	051302020106
NRS02.391	Davidson	I 40	Rocky Creek	051302020106
NRS02.391B	Davidson	I 40	Richland Creek	051302020106
NRS03.131	Davidson	Utility Line Crossing	Rocky Creek	051302020106
NRS03.131B	Davidson	Utility Line Crossing	Rocky Creek	051302020106
NRS03.222	Davidson	Bank Stabilization	Richard Creek	051302020106
NRS03.336	Davidson	Stream Encapsulation	Richland Creek	051302020106

Table 4-5d.

PERMIT NUMBER	COUNTY	DESCRIPTION	WATERBODY	HUC-12
NRS03.337	Davidson		Richland Creek	051302020106
NRS03.372	Davidson	Culvert Installation	UT	051302020106
NRS04.129	Davidson	Bridge Replacement and Sediment Removal	Richland Creek	051302020106
NRS06.097	Davidson	Sewer Line Crossing Replacement	Richland Creek	051302020106
NRS06.143	Davidson	Bank Stabilization	Chickering Branch	051302020106
NRS06.238	Davidson	Bank Stabilization	Richland Creek	051302020106
NR0604.042	Cheatham	Water and Sewer Line Crossings	Lenox Branch & UT	051302020107
NR0604.115	Cheatham	Dredging	Dry Creek	051302020107
NR0604.134	Cheatham	Bridge and Approaches	UT to Marks Creek	051302020107
NR0604.145	Cheatham	Construction and Removal of Minor Road Crossings	Sams Creek	051302020107
NR0704.004	Cheatham	Natural Gas Pipeline Installation	Cumberland River	051302020107
NRS02.276	Cheatham	Bank Stabilization	Sam's Creek	051302020107
NRS03.146	Cheatham	Culvert Installation	UT to Cumberland River	051302020107
NRS03.176	Cheatham	Construction and Removal of Minor Road Crossings	Wetland & Lenox Branch	051302020107
NRS03.176B	Cheatham	Construction and Removal of Minor Road Crossings	Wetland & UT to Lenox Branch	051302020107
NRS03.176C	Cheatham	Construction and Removal of Minor Road Crossings	Wetland & UT to Lenox Branch	051302020107
NRS03.176D	Cheatham	Construction and Removal of Minor Road Crossings	Wetland & UT to Lenox Branch	051302020107
NRS03.395	Cheatham	Bridge and Approaches	Contiguous Wetland	051302020107
NRS03.395B	Cheatham	Bridge and Approaches	Wetland	051302020107
NRS03.395C	Cheatham	Bridge and Approaches	Wetland	051302020107
NRS03.395D	Cheatham	Bridge and Approaches	Wetland	051302020107
NRS03.395E	Cheatham	Bridge and Approaches	Wetland	051302020107
NRS03.395F	Cheatham	Bridge and Approaches	Brush Creek	051302020107
NRS04.130	Davidson	Outfall Structure and Utility Line Crossings	Bull Run Creek	051302020107
NR0604.076	Cheatham	Construction and Removal of Minor Road Crossings	UT to Vick Branch	051302020108
NR0604.113	Cheatham	Dredging	Marrowbone Creek	051302020108
NRS06.423	Cheatham	Dredging	Marrowbone Creek	051302020108
NR0504.387	Rutherford	Construction and Removal of Minor Road Crossings	UT to Snake Creek to Mill Creek	051302020201
NR0604.035	Davidson	Utility Line Crossings	Mill Creek	051302020201
NR0604.036	Davidson	Construction and Removal of Minor Road Crossings	Mill Creek	051302020201
NR0604.037	Davidson	Construction of Intake and Outfall Structures	Mill Creek	051302020201
NR0604.057	Davidson	Construction and Removal of Minor Road Crossings	UT to Collins Creek	051302020201

Table 4-5e.

PERMIT NUMBER	COUNTY	DESCRIPTION	WATERBODY	HUC-12
NR0604.121	Williamson	Construction and Removal of Minor Road Crossings	UT to Owl Creek	051302020201
NR0604.177	Williamson	Utility Line Crossings	Mill Creek	051302020201
NR0604.195	Williamson	Construction and Removal of Minor Road Crossings	UT to Edmonson Branch	051302020201
NR0604.327	Williamson	Culvert Construction and Utility Line Crossings	UT to Owl Creek	051302020201
NR0704.103	Davidson	Utility Line Crossings	UT to Turkey Creek	051302020201
NR0704.104	Davidson	Construction and Removal of Minor Road Crossings	UT to Turkey Creek	051302020201
NRS01.085	Williamson	Sewer Line Crossing	Mill Creek & UTs	051302020201
NRS02.085	Williamson	Utility Line Crossings	Owl Creek & UT	051302020201
NRS02.098	Williamson	Utility Line Crossings	UT to Owl Creek	051302020201
NRS02.229	Williamson	Construction and Removal of Minor Road Crossings	UT to Owl Creek	051302020201
NRS02.406	Davidson	Stream Crossing	Owl Creek	051302020201
NRS02.419	Davidson		UT to Collins Creek	051302020201
NRS02.473	Davidson	Pipe replacement	Mill Creek	051302020201
NRS03.016	Williamson	Sanitary Sewer Line Crossing	Edmondson Branch	051302020201
NRS03.112	Williamson	Water Main Installation	Mill Creek & Owl Creek	051302020201
NRS03.126	Davidson	Construction and Removal of Minor Road Crossings	UT to Mill Creek	051302020201
NRS03.126B	Davidson	Utility Line Crossings	UTs to Mill Creek	051302020201
NRS03.197	Williamson	Sewer and Utility Line Crossings	Owl Creek	051302020201
NRS03.234	Williamson	Utility Line Crossings	Edmondson Branch	051302020201
NRS03.249	Williamson	Bridge and Approaches	UT to Owl Creek	051302020201
NRS03.311	Davidson	Road Crossing	Collins Creek	051302020201
NRS03.327	Davidson	Road and Utility Line Crossings	Mill Creek	051302020201
NRS03.341	Davidson	Utility Line Crossings	Mill Creek	051302020201
NRS03.369	Williamson	Bridge and Approaches	Mill Creek	051302020201
NRS03.377	Williamson	Bridge and Approaches	Holt Creek	051302020201
NRS03.391	Williamson	Detention Pond Repair	Mill Creek	051302020201
NRS04.011	Davidson	Construction Crossing	WWC to Mill Creek	051302020201
NRS04.162	Davidson	Stream Relocation	Collins Creek	051302020201
NRS04.295	Williamson	Bridge and Approaches	Mill Creek	051302020201
NRS04.295A	Williamson	Construction and Removal of Minor Road Crossings and Utility Line Crossings	Mill Creek	051302020201

Table 4-5f.

PERMIT NUMBER	COUNTY	DESCRIPTION	WATERBODY	HUC-12
NRS04.295B	Williamson	Construction and Removal of Minor Road Crossings and Utility Line Crossings	Mill Creek	051302020201
NRS04.330	Davidson	Construction and Removal of Minor Road Crossings and Utility Line Crossings	Collins Creek	051302020201
NRS04.340	Davidson	Stream Bank Disruption	Mill Creek	051302020201
NRS04.347	Davidson	Storm Sewer Outfall Installation	Mill Creek	051302020201
NRS04.350	Williamson	Sanitary Sewer and Water Line Crossing and Span Structure Construction	Holt Creek	051302020201
NRS05.009	Davidson	Culvert Installation	Collins Creek and UT to Collins Creek	051302020201
NRS05.025	Williamson	Road and Utility Line Crossings	Owl Creek	051302020201
NRS05.043	Davidson	Stream Relocation	UT to Mill Creek	051302020201
NRS05.103	Williamson	Stream Bank Excavation	Mill Creek	051302020201
NRS05.106	Davidson	Detention Pond Construction	Mill Creek	051302020201
NRS05.194	Davidson	Culvert Extension, Outfall Structure, and Sewer Line Crossing	Mill Creek	051302020201
NRS05.219	Williamson	Sewer Line Crossing	Edmondson Branch	051302020201
NRS05.222	Williamson	Gravity Sewer Line Crossing, Construction and Removal of Minor Road Crossings, Storm Water Outfalls, and Filling Activities	UT to Owl Creek	051302020201
NRS05.223	Davidson	Sanitary Sewer Crossing, Road Crossing Extensions, and Storm Drain Improvements.	Mill Creek	051302020201
NRS05.237	Williamson	Stream Relocation and Encapsulation	UT to Holt Creek	051302020201
NRS05.284	Williamson	Bridge and Approaches and Water and Sewer Line Installation	Holt Creek	051302020201
NRS05.297	Williamson	Sanitary Sewer Line Crossing	Owl Creek	051302020201
NRS05.317	Williamson	Road Improvements	Holt Creek	051302020201
NRS05.361	Williamson	Sanitary Sewer Line Crossing	UT to Owl Creek	051302020201
NRS05.378	Williamson	Construction and Removal of Minor Road Crossings	UT to Holt Creek	051302020201
NRS05.378A	Williamson	Water Line Crossing	UT to Holt Creek	051302020201
NRS05.387	Davidson	Culvert Installation	UT to Mill Creek	051302020201
NRS05.387b	Davidson	Utility Line Crossings	UT to Mill Creek	051302020201

Table 4-5g.

PERMIT NUMBER	COUNTY	DESCRIPTION	WATERBODY	HUC-12
NRS05.387c	Davidson	Outfall Structure	UT to Mill Creek	051302020201
NRS05.388	Davidson	Culvert Installation	UT to Mill Creek	051302020201
NRS05.388b	Davidson	Culvert Installation	UT to Mill Creek	051302020201
NRS05.388c	Davidson	Water and Gravity Sewer Line Crossing	UT to Mill Creek	051302020201
NRS05.397	Davidson	Culvert Installation	UT to Mill Creek	051302020201
NRS05.397b	Davidson	Outfall Structure	UT to Mill Creek	051302020201
NRS05.419	Rutherford	Culvert Installation	UT to Mill Creek	051302020201
NRS05.419a	Rutherford	Water Line Crossing	UT to Mill Creek	051302020201
NRS05.419b	Rutherford	Stream Restoration	UT to Mill Creek	051302020201
NRS05.448	Williamson	Bridges and Approaches	Edmonson Branch	051302020201
NRS05.450	Williamson	Sewer and Water Line Crossing	UT to Mill Creek	051302020201
NRS05.475	Williamson	Construction and Removal of Minor Road Crossings	UT to Owl Creek	051302020201
NRS05.475a	Williamson	Utility Line Crossings	UT to Owl Creek	051302020201
NRS05.475b	Williamson	Storm Water Outfall Structure	UT to Owl Creek	051302020201
NRS06.014	Williamson	Stream Encapsulation	UT to Holt Creek	051302020201
NRS06.035	Williamson	Construction and Removal of Minor Road Crossings	UT to Mill Creek	051302020201
NRS06.035b	Williamson	Sewer and Water Line Crossing	UT to Mill Creek	051302020201
NRS06.042	Davidson	Construction and Removal of Minor Road Crossings	UT to Collins Creek	051302020201
NRS06.061	Davidson	Utility Line Crossings, Storm Water Outfall and Roadway Crossings	UT to Mill Creek	051302020201
NRS06.085	Davidson	Sanitary Sewer Line Crossing	Indian Creek	051302020201
NRS06.086	Davidson	Culvert Installation	UT to Collins Creek	051302020201
NRS06.086a	Davidson	Sanitary Sewer and Water Line Crossing	UT to Collins Creek	051302020201
NRS06.111	Davidson	Culvert Installation	UT to Turkey Creek	051302020201

Table 4-5h.

PERMIT NUMBER	COUNTY	DESCRIPTION	WATERBODY	HUC-12
NRS06.270	Williamson	Sanitary Sewer Line Crossing	Mill Creek	051302020201
NRS06.285	Williamson	Culvert Installation	UT to Edmonson Branch	051302020201
NRS06.286	Williamson	Bridges and Approaches	Owl Creek	051302020201
NRS06.286a	Williamson	Outfall Structure	Owl Creek	051302020201
NRS06.322	Davidson	Stream Restoration and Habitat Enhancement	Collins Creek and UT to Collins Creek	051302020201
NRS06.324	Williamson	Bridges and Approaches	UT to Mill Creek	051302020201
NRS06.324A	Williamson	Gravity Sewer and Water Line Crossing	UT to Mill Creek	051302020201
NRS06.329	Williamson	Construction and Removal of Minor Road Crossings	UT to Owl Creek	051302020201
NRS06.111a	Davidson	Water Line Crossing	UT to Turkey Creek	051302020201
NRS06.128	Davidson	Construction and Removal of Minor Road Crossings	UTs to Mill Creek	051302020201
NRS06.128a	Davidson	Gravity Sewer and Water Line Crossing	UTs to Mill Creek	051302020201
NRS06.146	Williamson	Road Crossing and Culvert Extension	Edmondson Branch	051302020201
NRS06.146a	Williamson	Water Line Crossing	Edmondson Branch	051302020201
NRS06.161	Williamson	Construction and Removal of Minor Road Crossings	UT to Owl Creek	051302020201
NRS06.235	Williamson	Construction and Removal of Minor Road Crossings	UT to Owl Creek	051302020201
NRS06.235A	Williamson	Utility Line Crossings	UT to Owl Creek	051302020201
NRS06.235B	Williamson	Storm Water Outfall Structure	UT to Owl Creek	051302020201
NRS07.033	Williamson	Construction and Removal of Minor Road Crossings	UT to Mill Creek	051302020201
NRS07.033A	Williamson	Utility Line Crossing	UT to Mill Creek	051302020201
NRS07.104	Williamson	Bridge and Approaches and Utility Line Crossings	UT to Owl Creek	051302020201
NRS07.135	Williamson	Road Crossing	Mill Creek	051302020201
NRS07.147	Williamson	Utility Line Crossings	West Fork Owl Creek	051302020201
NRS07.157	Williamson	Sewer Line Crossing	UT to Mill Creek	051302020201
NR0604.010	Davidson	Sewer Line Crossing	UT to Mill Creek	051302020202

Table 4-5i.

PERMIT NUMBER	COUNTY	DESCRIPTION	WATERBODY	HUC-12
NRS02.231	Davidson	Bank Stabilization	UTs to Seven Mile Creek & Seven Mile Creek	051302020202
NRS02.283	Davidson	Maintenance Activities	UT to Seven Mile Creek	051302020202
NRS02.289	Davidson	Maintenance Activities	Simms Branch	051302020202
NRS02.289B	Davidson	Maintenance Activities	UT to Mill Creek	051302020202
NRS02.289C	Davidson	Maintenance Activities	UT to Mill Creek	051302020202
NRS02.388	Davidson	Culvert Extension	Unnamed Sinking Stream	051302020202
NRS02.479	Davidson		Mill Creek	051302020202
NRS02.479B	Davidson		Mill Creek	051302020202
NRS03.038	Davidson	Bank Stabilization	UT to Seven Mile Creek	051302020202
NRS03.145	Davidson	Bridge and Approaches	UT to Mill Creek	051302020202
NRS03.145B	Davidson	Bridge and Approaches	Spring Fed Wetland	051302020202
NRS03.145C	Davidson	Bridge and Approaches	UT to Mill Creek	051302020202
NRS03.145D	Davidson	Bridge and Approaches	UT to Mill Creek	051302020202
NRS03.145E	Davidson	Bridge and Approaches	UT to Mill Creek	051302020202
NRS03.145F	Davidson	Bridge and Approaches	Mill Creek	051302020202
NRS03.175	Williamson	Stream Alteration	Seven Mile Creek	051302020202
NRS03.294	Davidson	Access Road Construction and Sanitary Sewer Line Crossing	Whittemore Branch	051302020202
NRS03.294B	Davidson	Access Road Construction and Sanitary Sewer Line Crossing	Whittemore Branch	051302020202
NRS03.361	Davidson	Stream Relocation	Brentwood Branch	051302020202
NRS03.368	Davidson	Temporary Construction Crossing	Seven Mile Creek	051302020202
NRS03.389	Davidson	Bridge and Approaches	Seven Mile Creek	051302020202
NRS03.401	Davidson	Stream Crossings	Sims Branch & Mill Creek	051302020202
NRS03.407	Davidson	Pedestrian Bridge Construction	Mill Creek	051302020202
NRS04.072	Davidson	Construction and Removal of Minor Road Crossings	Unnamed Stream	051302020202
NRS04.190	Davidson	Road and Utility Line Crossings	Seven Mile Creek	051302020202
NRS04.421	Davidson	Maintenance Activities	Simms Branch	051302020202
NRS05.169	Davidson	Water Main Installation	Mill Creek	051302020202
NRS05.242	Davidson	Construction and Removal of Minor Road Crossings	UT to Briarwood Branch	051302020202
NRS05.243	Davidson	Construction and Removal of Minor Road Crossings	UT to Briarwood Branch	051302020202
NRS05.285	Davidson	Utility Line Crossings, Storm Water Outfall, and Roadway Crossings	Franklin Branch	051302020202
NRS05.292	Davidson	Culvert Installation	UT to Mill Creek	051302020202
NRS05.345	Davidson	Culvert Installation	Simms Branch	051302020202
NRS05.372	Davidson	Culvert Enlargement and Extension	Seven Mile Creek	051302020202
NRS05.375	Davidson	Emergency Repair	Brentwood Branch	051302020202
NRS05.444	Davidson	Construction of Outfall Structure	Seven Mile Creek	051302020202
NRS06.008	Davidson	Culvert Installation	UT to Seven Mile Creek	051302020202

Table 4-5j.

PERMIT NUMBER	COUNTY	DESCRIPTION	WATERBODY	HUC-12
NRS06.051	Davidson	Sanitary Sewer Line Crossing	UT to Mill Creek	051302020202
NRS06.099	Davidson	Bridge and Approaches	Seven Mile Creek	051302020202
NRS06.211	Davidson	Stream Restoration and Habitat Enhancement	Seven Mile Creek	051302020202
NRS06.278	Davidson	Construction and Removal of Minor Road Crossings	UT to Seven Mile Creek	051302020202
NRS06.278A	Davidson	Gravity Sewer and Water Line Crossing	UT to Seven Mile Creek	051302020202
NRS06.306	Davidson	Culvert Installation	UT to Mill Creek	051302020202
NRS07.153	Davidson	Construction and Removal of Minor Road Crossings	Mill Creek	051302020202
NRS07.169	Davidson	Culvert Extension and Stream Relocation	UT to Mill Creek	051302020202
NR0604.097	Davidson	Dredging	Sycamore Creek	051302020301
NR0604.159	Davidson	Bank Stabilization	Long Creek	051302020301
NRS04.131	Davidson	Road Crossing and Channel Stabilization	Long Creek	051302020301
NR0504.434	Cheatham	Bank Stabilization	Sycamore Creek	051302020302
NR0604.353	Robertson	Construction and Removal of Minor Road Crossings	Hollis Creek	051302020302
NRS03.219	Cheatham	Bridge and Approaches	Sycamore Creek	051302020302
NRS03.219B	Cheatham	Bridge and Approaches	Sycamore Creek	051302020302
NRS04.036	Cheatham	Sewer Lagoon Construction and Stream Encapsulation	Spring Creek	051302020303
NRS04.216	Cheatham	Bridge and Approaches	Sycamore Creek	051302020303
NRS04.216B	Cheatham	Bridge and Approaches	Wetland	051302020303
NRS04.216C	Cheatham	Bridge and Approaches	Sycamore Creek	051302020303
NRS07.167	Cheatham	Culvert and Utility Line Replacements and Extensions	Spring Creek	051302020303

Table 4-5k.

Table 4-5a-k. ARAPs (Aquatic Resource Alteration Permit) Issued June 2002 Through June 2007 in the Cheatham Lake Watershed. *WWC, Wet Weather Conveyance; UT, Unnamed Tributary.*

PERMIT NUMBER	PERMITTEE: DESCRIPTION	COUNTY	WATERBODY	AREA	HUC-12
TNR142769	Edward Jackson: Hercules Bolt Company	Davidson	Cumberland River	2.95	051302020101
TNR142780	Lyman Davis & Judith Gayle: Burr Estates	Davidson	UT to Dry Creek	9.15	051302020101
TNR142785	James Chamlin: Opryland Complex	Davidson	Cumberland River	1.20	051302020101
TNR142812	Metropolitan Government-Metro Water Services: Dry Creek Wastewater Treatment Plant	Davidson	Dry Creek	4.00	051302020101
TNR142829	Latting Road Partners, LLC: The Parks of Riverwood	Davidson	Cooper Creek & UT	32.62	051302020101
TNR142868	Dry Creek Taragon, LLC: Dry Creek Apartments	Davidson	UT to Dry Creek	20.00	051302020101
TNR143088	R. C. White: Subdivision	Davidson	UT to Cumberland River	4.00	051302020101
TNR143102	Doug Durr: Twin Hill Subdivision	Davidson	Cumberland River	17.00	051302020101
TNR143137	P3 Enterprises, LLC: Crestview Townhomes	Davidson	UT to Dry Creek	2.70	051302020101
TNR143208	Arthur E. Harris, Jr.: Abundant Life Living Word Church	Davidson	UT to Cumberland River	1.90	051302020101
TNR143275	Porter Jennings: Fatherland Church	Davidson	UT to Dry Creek	1.20	051302020101
TNR143317	First Cumberland Properties: Madison Townhomes	Davidson	UT to Cumberland River	13.60	051302020101
TNR143354	Lakewood Partners, LLC: Lakewood Downs	Davidson	Cumberland River	35.00	051302020101
TNR143382	BK Parners: Pennington Towers	Davidson	Cumberland River	5.14	051302020101
TNR143426	Metro Nashville Public Works: Anderson Lane Recycling Convenience Center	Davidson	UT to Cumberland River	3.40	051302020101
TNR143446	Metro Real Property Services: Metro Fire Hall #38	Davidson	Cumberland River	2.80	051302020101
TNR143598	Centdev Properties: Northern Tool & Equipment	Davidson	UT to Dry Creek	2.40	051302020101
TNR143614	Tyree General Contractors, LLC: Cumberland Bend	Davidson	UT to Dry Creek	4.50	051302020101
TNR143778	M. R. Stokes: Woods of Neely's Bend	Davidson	Cumberland River	7.20	051302020101
TNR143812	Randall Homes: Cumberland Station Subdivision	Davidson	UT to Cumberland River	7.63	051302020101
TNR143821	Brenda Corn: Cole Brothers	Davidson	Cumberland River	1.30	051302020101
TNR143881	General Construction Company, Inc.: Rosebank Cove Subdivision	Davidson	UT to Cumberland River	3.00	051302020101
TNR144026	Stewart Building Group, LLC: Solon Court	Davidson	UT to Cumberland River	4.00	051302020101

Table 4-6a.

PERMIT NUMBER	PERMITTEE: DESCRIPTION	COUNTY	WATERBODY	AREA	HUC-12
TNR144120	The Metro Board of Public Education: Neely's Bend Elementary School	Davidson	Cumberland River	2.00	051302020101
TNR144150	Cleveland Hall, LLC: Cleveland Hall Subdivision	Davidson	UT to Cumberland River	16.20	051302020101
TNR144152	Cleveland Hall, LLC: Cleveland Hall Subdivision	Davidson	UT to Cumberland River	9.80	051302020101
TNR145108	Affordable Housing Resources: Lanier Park	Davidson	Gibson Creek	4.00	051302020101
TNR145124	Gordon Food Service Marketplace: Building and Parking Area Improvements	Davidson	UT to Cumberland River	1.79	051302020101
TNR145147	Olympian Construction Company: Rayrex Office Building	Davidson	Dry Creek	2.00	051302020101
TNR145163	Diamond Hill Plywood: Warehouse	Davidson	Dry Creek	2.50	051302020101
TNR145174	Hermosa Holdings, Inc.: Coventry Woods Subdivision	Davidson	Gibson Creek	3.80	051302020101
TNR145203	Paradise Properties, LLC: Pierce Road Subdivision	Davidson	UT to Dry Creek	5.50	051302020101
TNR145205	Jeremia Development, LLC: Hiddgen Springs Addition	Davidson	UT to Dry Creek	7.00	051302020101
TNR145208	Triple S Homes, Inc.: Cobblestone Condominiums	Davidson	UT to Cumberland River	14.00	051302020101
TNR145229	SysTech International, LLC: Emissions Testing Facility	Davidson	UT to Cumberland River	1.00	051302020101
TNR145293	First Baptist Church South Inglewood: Building and Parking Area Extensions	Davidson	UT to Cooper Creek	4.59	051302020101
TNR145553	Advanced Building Contractors, LLC: Warehouse Building and Parking Area	Davidson	Cumberland River	1.49	051302020101
TNR142735	Coldwell, Banker, Barnes: Barnes Office Building	Davidson	UT to Manskers Creek	1.10	051302020102
TNR142992	Villa Property, LLC: Villas at Twelve Stones	Sumner	UT to Madison Creek	28.50	051302020102
TNR143058	R.H. Ledbetter Properties, Inc.: Publix	Sumner	Manskers Creek	10.00	051302020102
TNR143125	C.J. Ringlieb: Mapco Express	Sumner	Manskers Creek	1.64	051302020102
TNR143241	H.G. Hill Realty Co: Walgreens	Sumner	UT to Manskers Creek	2.80	051302020102
TNR143599	CSX Transportation, Inc.: Goodlettsville CSXT Railroad Passing Siding	Davidson	UT to Manskers Creek	6.60	051302020102
TNR143905	Berhert Land Company, LLC: Copper Creek Subdivision	Sumner	Madison Creek	24.09	051302020102
TNR144218	Phillips Commercial: Northcreek Business Park	Sumner	Manskers Creek	2.42	051302020102

Table 4-6b.

PERMIT NUMBER	PERMITTEE: DESCRIPTION	COUNTY	WATERBODY	AREA	HUC-12
TNR144243	Writon Properties, Jack Nixon: Liberty Downs Subdivision	Davidson	UT to Manskers Creek	15.00	051302020102
TNR144276	Duke's Towing and Recovery: Building	Sumner	Slaters Creek	2.30	051302020102
TNR144974	Southerly Homes: Copper Creek Subdivision	Sumner	Madison Creek	16.95	051302020102
TNR145047	Nursing Visioned Medical Services: Commercial Office Building	Sumner	Manskers Creek	1.40	051302020102
TNR145277	Phillips Builders: The Estates at Twelve Stones	Sumner	Madison Creek	3.01	051302020102
TNR145330	Wal-Mart Stores East, LP: Expansion	Davidson	UT to Manskers Creek	16.58	051302020102
TNR145381	Harpeth Valley Properties, LLC: Monthaven Business Center	Sumner	Manskers Creek	3.40	051302020102
TNR145437	Volunteer State Bank: Office Building	Sumner	Manskers Creek	1.96	051302020102
TNR145512	Rob Horton: Happy Hollow Estates	Sumner	UT to Madison Creek	5.00	051302020102
TNR190334	TDOT: Conference Dr	Davidson	UT to Manskers Creek	17.63	051302020102
TNR190436	TDOT: SR 386	Sumner	Center Point Branch	13.50	051302020102
TNR190517	TDOT: Forest Retreat Road and Vietnam Veterans Boulevard	Sumner	UT to Drakes Branch	4.00	051302020102
TNR142623	Lipscomb University: North Parking Area	Davidson	West Fork Browns Creek & UT	2.00	051302020103
TNR142630	Coda Development Company: Midtown Lofts	Davidson	Cumberland River	1.14	051302020103
TNR142696	Williams Properties of Tennessee: East End Lofts	Davidson	Cumberland River	1.01	051302020103
TNR142698	Lawrence Brothers, LLC: Morgan Park Place	Davidson	Cumberland River	2.25	051302020103
TNR142710	MR Hotels, LLC: Hampton Inn Gateway	Davidson	Cumberland River	1.10	051302020103
TNR142738	Friends Group, LLC: Building, Parking Area, and Associated Grading	Davidson	Pages Branch	1.91	051302020103
TNR142754	Peachtree Development Partners: Loring Court	Davidson	Middle Fork Browns Creek	4.75	051302020103
TNR142764	MFG Holdings: Southgate Avenue Office Facility	Davidson	Cumberland River	1.25	051302020103
TNR142869	AutoZone, Inc.: Building and Parking Area	Davidson	Cumberland River & UT	1.26	051302020103
TNR142885	Metropolitan Board Parks & Recreation: McFerrin Park Community Center	Davidson	Cumberland River	2.05	051302020103
TNR142921	U.S. Army Corps of Engineers: Cowan Street Emergency Streamband Protection	Davidson	Cumberland River	1.50	051302020103

Table 4-6c.

PERMIT NUMBER	PERMITTEE: DESCRIPTION	COUNTY	WATERBODY	AREA	HUC-12
TNR142923	Summit Commercial Properties, Inc.: Walgreens	Davidson	Cumberland River	1.84	051302020103
TNR142959	Metropolitan Board of Parks & Recreation: Green Hills Park	Davidson	UT to West Fork Browns Creek	13.90	051302020103
TNR142960	Metropolitan Government Board of Education: Jones Paideia School	Davidson	UT to Cumberland River	1.40	051302020103
TNR142976	Metropolitan Development & Housing Agency: John Henry Hale Homes	Davidson	Cumberland River	30.00	051302020103
TNR142979	Metro Water Services: Biosolids Management Facility	Davidson	Cumberland River	8.00	051302020103
TNR142984	W.L. Hailey & Company: Lebanon Road Fill Area	Davidson	UT to Cumberland River	3.00	051302020103
TNR143073	State of TN Military Dept: Nashville Readiness Center	Davidson	UT to East Fork Browns Creek	20.00	051302020103
TNR143089	Martin Corner GP: 37206 Retail Space and Apartments	Davidson	Cumberland River	1.10	051302020103
TNR143115	Metropolitan Government of Nashville & Davidson County: DRC Parking Area	Davidson	Cumberland River	1.90	051302020103
TNR143127	First Cumberland Properties: The Preserve Apartments	Davidson	UT to Cumberland River	2.96	051302020103
TNR143182	Metro Parks: East Park Community Center	Davidson	Cumberland River	2.80	051302020103
TNR143222	Anthony D. Giarratana: Encore	Davidson	Cumberland River	1.16	051302020103
TNR143263	Bristol Development Group: ICON at the Gulch	Davidson	Cumberland River	2.70	051302020103
TNR143279	Purity Dairies	Davidson	Browns Creek	4.50	051302020103
TNR143293	Kelvin Pennington: Kelvin Pennington Subdivision	Davidson	UT to Middle Fork Browns Creek	1.30	051302020103
TNR143353	W.L. Hailey & Company, Inc.: Road Fill Area	Davidson	Browns Creek	3.50	051302020103
TNR143374	Southeast Venture, Inc.: Tennessee Department of Labor	Davidson	UT to Cumberland River	16.30	051302020103
TNR143758	Melrose Properties Partners: The Meridian at West End Park	Davidson	Cumberland River	1.60	051302020103
TNR143759	Hostettler, Nuehoff, and Davis: 3rd Avenue Townhomes	Davidson	Cumberland River	1.30	051302020103
TNR143770	Trevecca Nazarene University: Business School and Parking Area	Davidson	Browns Creek	1.70	051302020103
TNR143796	Metro Board of Parks and Recreation: Eastland Park	Davidson	Cumberland River	2.40	051302020103
TNR143829	12th & Division Properties, LLC: Terrazzo	Davidson	Cumberland River	1.30	051302020103

Table 4-6d.

PERMIT NUMBER	PERMITTEE: DESCRIPTION	COUNTY	WATERBODY	AREA	HUC-12
TNR143883	Nashville Property Managers, LLP: Lealand Hall Subdivision	Davidson	West Fork Browns Creek	3.50	051302020103
TNR143888	Craighead Development, LLC: The Park at Melrose	Davidson	UT to Browns Creek	8.90	051302020103
TNR143897	Tennessee Bankers Association: Office Building	Davidson	Amulet Lake to Cumberland River	1.00	051302020103
TNR143995	Metro Real Property Services: East Police Precinct	Davidson	Cumberland River	2.60	051302020103
TNR144000	Fessler's Park Joint Venture: Victory Fellowship Church Fill Site	Davidson	Browns Creek	6.80	051302020103
TNR144007	Susuma Masaki: Advance Composites	Davidson	East Fork Browns Creek	1.30	051302020103
TNR144047	New Urban Village Development, LLC: Wedgewood Park	Davidson	UT to Browns Creek	1.40	051302020103
TNR144062	Adventure Science Center: Space and Sky Addition	Davidson	UT to Cumberland River	4.30	051302020103
TNR144124	YMCA, Jim Pauley: Margaret Maddox	Davidson	Cumberland River	1.80	051302020103
TNR144134	Monday & Company: Fill Area	Davidson	UT to Pages Branch	1.20	051302020103
TNR144157	West End Summit, LLC: West End Summit	Davidson	Cumberland River	3.90	051302020103
TNR144977	Todd Carson: Building Removal and Grading	Davidson	UT to Mill Creek	6.60	051302020103
TNR145005	Beech Creek Missionary Baptist Church: Building	Davidson	UT to Cumberland River	1.20	051302020103
TNR145089	Signature Holdings, LLC: Signature Tower	Davidson	Cumberland River	1.23	051302020103
TNR145090	Metro Real Property Services: Dudley Head Start Facility	Davidson	UT to Browns Creek	1.00	051302020103
TNR145141	Chris Remke: Commercial Site	Davidson	Cumberland River	3.60	051302020103
TNR145144	2100 West End Associates: West End Retail	Davidson	Cumberland River.	1.03	051302020103
TNR145154	Retail Property Management, Inc.: Dunkin' Donuts	Davidson	Cumberland River	2.56	051302020103
TNR145159	Metropolitan Government of Nashville & Davidson County: Richard H. Fulton Complex	Davidson	Cumberland River	5.00	051302020103
TNR145250	Metropolitan Nashville Public School: Eakin School Renovation	Davidson	Cumberland River	2.30	051302020103
TNR145260	Metropolitan Government of Nashville and Davidson County: Metro Fire Station	Davidson	Cumberland River.	1.74	051302020103
TNR145298	Metropolitan Nashville Board of Parks and Recreation: Cumberland River Greenway	Davidson	Cumberland River	9.90	051302020103

Table 4-6e.

PERMIT NUMBER	PERMITTEE: DESCRIPTION	COUNTY	WATERBODY	AREA	HUC-12
TNR145304	Sam Sidhom: Ensley Corner	Davidson	Cumberland River	1.41	051302020103
TNR145327	Southeast Venture, LLC: Accredo Medical	Davidson	Cumberland River	4.96	051302020103
TNR145392	CMI Moulding	Davidson	Cumberland River	1.60	051302020103
TNR145418	First Presbyterian Church: Additions and Renovations	Davidson	Middle Fork Browns Creek	20.00	051302020103
TNR145455	PS Buildings, LTD: Prosource Addition	Davidson	East Fork Browns Creek	1.20	051302020103
TNR145504	Metropolitan Nashville Airport Authority: Discrete Access Road Valet Parking Lot	Davidson	Sims Branch	10.60	051302020103
TNR145530	Barry Real Estate: The Crown	Davidson	Cumberland River	1.80	051302020103
TNR145583	South East Venture, LLC: Grading	Davidson	Cumberland River	4.20	051302020103
TNR190276	TDOT: Elm Hill Pike	Davidson	Mill Creek	2.61	051302020103
TNR190279	TDOT: Gateway Blvd	Davidson	Cumberland River	4.10	051302020103
TNR190290	TDOT: Gateway Blvd	Davidson	Cumberland River	14.64	051302020103
TNR190325	TDOT: Gateway Blvd	Davidson	Cumberland River	14.64	051302020103
TNR190684	TDOT: I 65 Southbound Noise Barriers	Davidson	Browns Creek	3.00	051302020103
TNR142852	TNR142852	Davidson	UT to Overall Creek	12.90	051302020104
TNR143235	Waste Management: Southern Services Landfill	Davidson	Cumberland River	4.90	051302020104
TNR143326	Gary Parkes: Hillwood Plaza	Davidson	UT to Cumberland River	20.10	051302020104
TNR143346	J & S Construction Company: AMI Pizza Wholesale	Davidson	UT to Eaton Creek	2.00	051302020104
TNR143452	Harpeth Valley Utilities District: Overall Creek Interceptor Sewer	Davidson	Overall Creek	6.00	051302020104
TNR143715	Cumberland Heights Foundation, Inc.: Rehabilitation Center	Davidson	UT to Cumberland River	5.50	051302020104
TNR143938	Costco Wholesale Corporation: Costco Nashville West	Davidson	UT to Cumberland River	15.00	051302020104
TNR144130	Beazer Homes Corp.: Traemoor Village	Davidson	UT to Overall Creek	18.80	051302020104
TNR144190	Over the Hill Partners, LLC: Hillwood Plaza Shopping Center	Davidson	UT to Cumberland River	5.80	051302020104
TNR144982	W. L. Hailey & Company, Inc.: Old Hickory Blvd Fill Site	Davidson	UT to Overall Creek	3.70	051302020104
TNR145191	Gospel Chapel: Expansion	Davidson	UT to Overall Creek	1.27	051302020104
TNR145200	Ponddigger Properties, LLC: Maintenance Facility	Davidson	UT to Cumberland River.	5.10	051302020104
TNR145234	Airgas Mid-America, Inc.: Airgas Nashville Facility	Davidson	UT to Cumberland River	4.50	051302020104
TNR145236	Albert F. Ganier, III: Farm Access Road	Davidson	Cumberland River	14.00	051302020104
TNR145284	Metro Parks: Bell Bend Park Nature Center	Davidson	UT to Cumberland River	2.63	051302020104
TNR145569	Harpeth Valley Utilities District: Water Treatment Plant Extension	Davidson	Overall Creek & Cumberland River	2.26	051302020104

Table 4-6f.

PERMIT NUMBER	PERMITTEE: DESCRIPTION	COUNTY	WATERBODY	AREA	HUC-12
TNR190207	TDOT: Briley Parkway	Davidson	Windemere Branch & UT to Cumberland River	55.00	051302020104
TNR190281	TDOT: SR 24 and US 70	Davidson	Davidson Branch	0.00	051302020104
TNR142694	Centex Homes-Nashville Division: Brookview Subdivision	Davidson	Ewing Creek	44.69	051302020105
TNR142848	First Baptist Church: Building and Parking Area	Davidson	Earthman Creek	2.20	051302020105
TNR142864	Nashville Gas Company: Gas Main Installation	Davidson	Earthman Fork	14.90	051302020105
TNR143028	M. R. Stokes: Cobblestone Creek Subdivision	Davidson	Little Creek	9.38	051302020105
TNR143159	Richard Binkley: Whites Creek Manor Subdivision	Davidson	Earthman Fork	9.00	051302020105
TNR143264	The Craig Co: Carrington Place	Davidson	Eatons Creek	29.00	051302020105
TNR143273	Tennessee Contractors, Inc.: Creekside Trails Subdivision	Davidson	UT to Eatons Creek	8.20	051302020105
TNR143616	Meridian Construction Company: Ridgeview Preserve Subdivision	Davidson	UT to Ewing Creek	4.00	051302020105
TNR143618	Lisa Beard Baldwin: Enchanted Hills	Davidson	UT to Eaton Creek	2.40	051302020105
TNR144050	Zamias Services, Inc.: Nashville Commons	Davidson	UT to Ewing Creek	88.50	051302020105
TNR144980	Tennessee Contractors, Inc.: Creekside Trails Subdivision	Davidson	UT to Sulphur Creek	26.89	051302020105
TNR145038	Vince Durnan: University School of Nashville Athletic and Outdoor Educational Facility	Davidson	Whites Creek	3.40	051302020105
TNR145088	Ridgeview Heights, LLC: CRT Custom Products Building Expansion .	Davidson	Little Creek	3.50	051302020105
TNR145146	Chateau Valley: Chateau Valley Subdivision	Davidson	UT to Whites Creek	10.50	051302020105
TNR145190	M.R. Stokes: Cobbletsone Creek Subdivision	Davidson	Little Creek	16.53	051302020105
TNR145255	Nashville Area Habitat for Humanity: Timberwood	Davidson	Cumberland River	6.79	051302020105
TNR145587	Red River Investments: Walgreens	Davidson	UT to Ewing Creek to Cumberland River	1.54	051302020105
TNR190402	TDOT: Knight Drive	Davidson	Whites Creek and Earthman Fork Creek	4.80	051302020105
TNR142874	Keith Pitts: Single Residence	Davidson	UT to Richland Creek	1.80	051302020106
TNR143007	City of Belle Meade: Belle Meade City Hall	Davidson	Richland Creek	1.40	051302020106
TNR143015	Webb and Donna Campbell: Single Residence	Davidson	Richland Creek	1.50	051302020106

Table 4-6g.

PERMIT NUMBER	PERMITTEE: DESCRIPTION	COUNTY	WATERBODY	AREA	HUC-12
TNR143140	Metal Management Nashville, LLC:	Davidson	UT to Richland Creek	14.40	051302020106
TNR143236	Covenant Presbyterian Church	Davidson	Sugar Tree Creek	3.20	051302020106
TNR143437	Craighead Development, LLC: Vernon Avenue Townhomes	Davidson	Richland Creek	2.90	051302020106
TNR143651	Howard Symons: Former Tennessee State Prison Demolition	Davidson	Cumberland River	2.90	051302020106
TNR143673	Douglas Martin: Tyne Estates	Davidson	Sugar Tree Creek	34.30	051302020106
TNR143731	BMT Associates, LLC: Belle Meade Town Center	Davidson	UT to Richland Creek	4.00	051302020106
TNR143763	Gregory Ballard: Sewer Line Replacement	Davidson	Richland Creek	2.00	051302020106
TNR143909	Place Properties: The Chesterfield	Davidson	UT of Richland Creek	2.90	051302020106
TNR143969	Haury & Smith Contractors, Inc.: Stammer Parke	Davidson	Sugar Tree Creek	2.03	051302020106
TNR143971	Wood Caldwell: Roadway and Drainage Improvements	Davidson	Sugar Tree Creek	1.30	051302020106
TNR144031	Bob Haley: Glen Echo Development	Davidson	UT to West Fork Browns Creek	3.10	051302020106
TNR145139	H. G. Hill Realty: Hill Center	Davidson	Richland Creek	7.60	051302020106
TNR145150	Newport Development, LLC: Kenner Avenue Condominiums	Davidson	Richland Creek	1.36	051302020106
TNR145162	Hillwood Country Club: Maintenance Building Renovations	Davidson	Richland Creek	1.61	051302020106
TNR145166	FWB Bedford, LLC: Freeman Webb Office Building	Davidson	Sugar Tree Creek	1.20	051302020106
TNR145482	Tennessee Board of Regents: Parking Area Expansion	Davidson	Richland Creek	6.96	051302020106
TNR145498	Nashville BioEnergy Partners, LLC: Ethanol Transfer Site	Davidson	Richland Creek	1.20	051302020106
TNR190193	TDOT: Briley Parkway	Davidson	Richland Creek	76.00	051302020106
TNR190516	TDOT: SR 1	Davidson	UT to Vaughns Gap Branch	5.69	051302020106
TNR143135	Gate Precast: Gantry Extension	Cheatham	UT to Cumberland River	3.00	051302020107
TNR143625	Trinity Industries, Inc.: Trinity Marine Products, Inc.	Cheatham	UT to Cumberland River	1.00	051302020107
TNR143684	Ashland Construction, LLC: Utilities Improvements	Cheatham	Lenox Branch to Marks Creek to Cumberland River	3.50	051302020107
TNR143808	Harpeth Shoals Marina, LLC: Marina Access Channel	Cheatham	Cumberland River	3.00	051302020107
TNR143879	Harpeth Shoals Marina, LLC: Braxton Condominiums	Cheatham	Marks Creek	9.00	051302020107
TNR144247	Shoals Landing: Harpeth Shoals Marina	Cheatham	Cumberland River	15.00	051302020107

Table 4-6h.

PERMIT NUMBER	PERMITTEE: DESCRIPTION	COUNTY	WATERBODY	AREA	HUC-12
TNR145044	Homes By Design: Whitland Crossings Townhomes	Davidson	UT to Sims Branch	6.00	051302020107
TNR145095	Gate Precast, Inc.: Removal of Fill Site and Grading	Cheatham	UT to Cumberland River	8.00	051302020107
TNR145207	Tennessee Gas Pipeline Company: Natural Gas Pipeline Installation	Cheatham	Unnamed Slough to Cumberland River & Cumberland River	9.28	051302020107
TNR145391	Donnie Sanders: Sanders Boat Storage	Cheatham	Cumberland River	5.00	051302020107
TNR145568	Harpeth Shoals Marina, LLC: Shoals Landing	Cheatham	Cumberland River	1.30	051302020107
TNR190355	TDOT: SR 249	Cheatham	Brush Creek and Cheatham Lake	5.41	051302020107
TNR142401	Regal Homes, Inc.: Commercial Buildings and Parking Area	Cheatham	UT to Vick Branch	6.00	051302020108
TNR142677	Hidden Lake Resorts LLC: Hidden Lake Resorts	Cheatham	Vick Branch	9.00	051302020108
TNR142794	Town of Ashland City: Ashland City Water Plant	Cheatham	Marrowbone Creek	7.01	051302020108
TNR142955	Lee Batson: Derby Crossing Subdivision	Cheatham	Brinkley Branch	20.00	051302020108
TNR140606	Park Trust Development: Summerfield-Treehaven	Davidson	UT to Collins Creek	11.80	051302020201
TNR141006	Rivendell Woods, Phase 1: Rivendell Woods Subdivision	Davidson	Mill Creek	28.00	051302020201
TNR141332	General Construction Company: Blue Hole Point	Davidson	UT to Mill Creek	3.50	051302020201
TNR141871	Newmark Homes: Bent Creek Subdivision	Williamson	Mill Creek	42.00	051302020201
TNR142619	Delvin Downs, LLC: Delvin Downs	Davidson	UT to Mill Creek	43.00	051302020201
TNR142628	HDJW Properties, LLP: Walgreens	Davidson	Mill Creek	4.40	051302020201
TNR142659	Cates-Kottas Development, LLC: Newmark Homes, Bennington Section	Williamson	Mill Creek	1.40	051302020201
TNR142695	Rusty Hyneman: Tuscany Hills	Williamson	UT to Owl Creek	97.70	051302020201
TNR142697	Sang Won & In K. Hyun: Haley Industrial Park Texaco Lot #3	Williamson	Mill Creek	1.31	051302020201
TNR142736	Spring Hollow Development, LLC: Silver Stream Farms	Williamson	UT to Mill Creek	20.00	051302020201
TNR142784	Beazer Homes: Ballenger Farms Subdivision	Williamson	Mill Creek & UT to Mill Creek	30.00	051302020201
TNR142786	Crews Investment Properties: Crossings At Hickory Hollow	Davidson	UT to Collins Creek	14.00	051302020201
TNR142788	Spring Hollow Development, LLC : Silver Stream Farms Off site sewer	Williamson	Mill Creek	2.40	051302020201
TNR142805	John Wieland Homes: Wetherbrooke	Williamson	Holt Creek & UT to Holt Creek	62.21	051302020201

Table 4-6i.

PERMIT NUMBER	PERMITTEE: DESCRIPTION	COUNTY	WATERBODY	AREA	HUC-12
TNR142839	Newmark Homes, L.P.: Benington Section	Williamson	Mill Creek & UT to Mill Creek	0.00	051302020201
TNR142854	Lenox Village, LLC: Lenox Village North	Davidson	UT to Mill Creek	2.40	051302020201
TNR142878	McFarlin Woods, LLC: McFarlin Woods Subdivision	Williamson	Mill Creek	17.95	051302020201
TNR142884	Newmark Homes: Bent Creek Subdivision	Williamson	Mill Creek & UT to Mill Creek	36.00	051302020201
TNR142900	John Wieland Homes: Taramore Off-site Sewer	Williamson	Owl Creek & UT to Owl Creek	8.40	051302020201
TNR142915	Latting Road Partners, LLC: Tuscany Hills Off-Site Sewer	Williamson	Owl Creek & UT to Owl Creek	1.60	051302020201
TNR142948	Yazdian Construction, Inc.: Brittain Plaza	Williamson	Mill Creek	5.30	051302020201
TNR142956	Monday & Company: Mallory Station Storage	Davidson	UT to Mill Creek	3.64	051302020201
TNR142964	Dean Baxter: Brentwood Knoll Subdivision	Davidson	UT to Holt Creek	5.00	051302020201
TNR142965	Courtside Development: Courtside at Southern Woods	Williamson	Owl Creek & UT to Owl Creek	18.30	051302020201
TNR142971	Copperstone Development: The Woodlands at Copperstone	Williamson	Edmondson Branch Creek	16.63	051302020201
TNR142982	Burkitt Development: Burkitt Place Subdivision	Davidson	UT to Mill Creek	18.00	051302020201
TNR143019	The Preserve at Concord, LLC: The Preserve at Concord Road Subdivision	Williamson	UT to Owl Creek	17.46	051302020201
TNR143027	Cane Ridge Farms, Phase 3: Cane Ridge Farms Subdivision	Davidson	Turkey Creek	25.00	051302020201
TNR143075	Regent Development, LLC: Lenox Creekside Subdivision	Davidson	Mill Creek	13.00	051302020201
TNR143076	Yazdian Construction, Inc.: Gillespie Meadows Commercial Development	Davidson	UT to Mill Creek	3.80	051302020201
TNR143077	Lenox Village I, LLC: Lenox Village Phase 8	Davidson	UT to Mill Creek	38.27	051302020201
TNR143083	Drees Homes: Brookview Forest Subdivision	Davidson	UT to Mill Creek	12.01	051302020201
TNR143168	CK Development, LLC: Bent Creek Subdivision	Williamson	UT to Mill Creek	10.40	051302020201
TNR143177	Charles Leach: Subdivision	Davidson	UT to Mill Creek	1.00	051302020201
TNR143210	Bruce Wesnofski: Little Folks Farms	Williamson	UT to Mill Creek	16.64	051302020201
TNR143214	CK Development LLC: The Reserve at Bent Creek	Williamson	UT to Mill Creek	23.00	051302020201
TNR143240	Carter/Kelly Properties: Sugar Valley Commercial Site	Davidson	UT to Mill Creek	1.22	051302020201

Table 4-6j.

PERMIT NUMBER	PERMITTEE: DESCRIPTION	COUNTY	WATERBODY	AREA	HUC-12
TNR143295	GSH Development, LLC: Jackson Valley Subdivision	Davidson	Mill Creek	7.00	051302020201
TNR143302	Dial Properties, LLC: Carrolton Station	Davidson	UT to Mill Creek	20.50	051302020201
TNR143330	Jim Cross: Whetstone Subdivision	Williamson	UT to Holt Creek	29.50	051302020201
TNR143365	CK Development, LLC: Bent Creek Subdivision	Williamson	UT to Mill Creek	28.00	051302020201
TNR143405	NVR, Inc. - Kevin Martin: Silver Stream Farms	Williamson	UT to Mill Creek	1.43	051302020201
TNR143424	J2K Builders, LLC: Matlock	Davidson	UT to Collins Creek	9.22	051302020201
TNR143431	Marcel VanEldik: Nolensville Collision Center	Williamson	Mill Creek	1.13	051302020201
TNR143438	Crews Crossings, LLC: Crossings at Hickory Hollow	Davidson	Collins Creek	9.90	051302020201
TNR143447	Newmark Homes: Bent Creek Subdivision	Williamson	UT to Mill Creek	3.85	051302020201
TNR143456	NVR, Inc. - Kevin Martin: Silver Stream Farms	Williamson	Mill Creek	0.00	051302020201
TNR143629	CK Development, LLC: Bent Creek Subdivision	Williamson	UT to Mill Creek	23.30	051302020201
TNR143632	Newmark Homes: Bent Creek Subdivision	Williamson	UT to Mill Creek	1.00	051302020201
TNR143665	Saf Properties: Sunset Hills	Davidson	UT to Mill Creek	22.90	051302020201
TNR143679	Spring Hollow Development, LLC: Silver Stream Farms	Williamson	Mill Creek	13.40	051302020201
TNR143680	Spring Hollow Development, LLC: Silver Stream Farms	Williamson	Mill Creek	8.20	051302020201
TNR143693	Liberty Properties, LLC: Edenbrook Subdivision	Williamson	UT to Owl Creek	17.20	051302020201
TNR143697	Peoples State Bank of Commerce: Building, Parking Area, and Utilities	Williamson	Mill Creek	1.89	051302020201
TNR143707	Newmark Homes: Bent Creek Subdivision	Williamson	Mill Creek & UT to Mill Creek	1.00	051302020201
TNR143725	Sugar Valley Second Addition Phase 3: Site Development	Davidson	UT to Mill Creek	17.90	051302020201
TNR143730	Ridgeview Heights, LLC: Ridgeview Subdivision	Davidson	UT to Collins Creek	50.00	051302020201
TNR143781	Newmark Homes: Bent Creek Subdivision	Williamson	UT to Mill Creek	1.00	051302020201
TNR143791	BCI: BCI Building	Williamson	UT to Mill Creek	1.14	051302020201
TNR143814	First Tennessee Bank: Building and Parking Area	Davidson	Collins Creek	1.08	051302020201
TNR143816	Steven Dotson: Old Hickory Hills Subdivision	Davidson	Indian Creek	32.20	051302020201

Table 4-6k.

PERMIT NUMBER	PERMITTEE: DESCRIPTION	COUNTY	WATERBODY	AREA	HUC-12
TNR143818	CPS Land, LLC: Burkitt Place Subdivision	Davidson	UTs Mill Creek	52.00	051302020201
TNR143891	SAF Properties: Indian Creek Subdivision	Davidson	Unnamed Drain to Mill Creek	11.67	051302020201
TNR143953	Fox Oil & Gas: AM Express	Davidson	UT to Mill Creek	1.00	051302020201
TNR143967	Lenox Creekside, LLC: Lennox Creekside Subdivision	Davidson	Mill Creek	8.98	051302020201
TNR143987	Newmark Homes: Bent Creek Subdivision	Williamson	UT to Mill Creek	0.00	051302020201
TNR143988	Newmark Homes: Bent Creek Subdivision	Williamson	Mill Creek	0.00	051302020201
TNR144056	Nolensville Utility District: Pipe Installation	Williamson	Mill Creek	2.37	051302020201
TNR144066	IKON Construction: The Shoppes of Holt Crossing	Davidson	UT to Mill Creek	1.50	051302020201
TNR144076	Newmark Homes, LP: Autumn Ridge Townhomes	Davidson	UT to Mill Creek	1.00	051302020201
TNR144090	Gerald Anderson: Raintree Forest Subdivision	Williamson	UT to Owl Creek	9.50	051302020201
TNR144102	Newmark Homes: Bent Creek Subdivision	Williamson	Mill Creek	1.00	051302020201
TNR144119	Gerald Anderson: Raintree Forest Subdivision	Williamson	UT to Owl Creek	10.00	051302020201
TNR144158	City of Brentwood: Owl Creek Park	Williamson	Owl Creek	9.00	051302020201
TNR144159	National Business Products: Office Building and Parking Area	Williamson	Mill Creek	3.30	051302020201
TNR144170	Starbucks Coffee House: Building and Parking Area	Davidson	UT to Mill Creek	0.70	051302020201
TNR144206	Fred Yazdian: Britain Downs	Williamson	UTs to Mill Creek and Mill Creek	63.70	051302020201
TNR144231	Williamson County Schools: Nolensville Elementary	Williamson	Mill Creek	17.00	051302020201
TNR144248	Vastland Eatherly McClung Development, LLC: Mill Park	Davidson	UT to Mill Creek	19.30	051302020201
TNR144293	Regent Development, LLC: Shane Point	Davidson	Unnamed Drain to Mill Creek	2.94	051302020201
TNR144961	Herbert Real Estate: Fill Operations	Williamson	UT to Mill Creek	10.00	051302020201
TNR144988	The Governors Club Property Owners Association: Club Restoration	Williamson	UT to Owl Creek	5.50	051302020201
TNR145015	Crews Crossings, LLC: Crossings at Hickory Hollow	Davidson	Collins Creek	4.40	051302020201
TNR145016	Crews Crossings, LLC: Crossings at Hickory Hollow	Davidson	Collins Creek	4.40	051302020201

Table 4-6l.

PERMIT NUMBER	PERMITTEE: DESCRIPTION	COUNTY	WATERBODY	AREA	HUC-12
TNR145022	Beazer Homes: Ballenger Farms Subdivision	Williamson	Mill Creek	33.72	051302020201
TNR145060	Newmark Homes: Bent Creek Subdivision	Williamson	UT to Mill Creek	2.00	051302020201
TNR145149	Turnberry Homes: Catalina Residential Development	Williamson	Mill Creek	13.69	051302020201
TNR145178	Blue Dog Investments, c/o The Hamilton-Ryker Group: Mill Creek Commercial Retail	Davidson	Mill Creek	4.93	051302020201
TNR145223	Corporate Investors Partnership: Bobcat of Nashville	Davidson	UT to Collins Creek	3.60	051302020201
TNR145225	Olive Branch Missionary Baptist Church: Off Site Parking Area	Davidson	Cumberland River	1.15	051302020201
TNR145259	Hurley - Y: Sugar Valley Subdivision	Davidson	UT to Mill Creek	3.48	051302020201
TNR145262	Middle Tennessee Electric Membership Corporation: Clovercroft Substation	Williamson	UT to Mill Creek	2.20	051302020201
TNR145288	Yazdian Construction: Sugar Valley Place	Davidson	UT to Mill Creek	5.70	051302020201
TNR145318	CK Development: Bent Creek Subdivision	Williamson	UT to Mill Creek	29.53	051302020201
TNR145360	MPI Hermitage, LLC: Huffman Community Driving Range	Davidson	Indian Creek	2.75	051302020201
TNR145395	R. J. Rentals: Cane Ridge Estates	Davidson	UT to Turkey Creek	7.50	051302020201
TNR145414	Centex Homes: Carter Property Subdivision	Davidson	UT to Mill Creek.	27.00	051302020201
TNR145486	KCB Construction: Halcyon Estates	Williamson	Holt Creek	9.90	051302020201
TNR145555	Hanover Ridge, LLC: Apartments Buildings, Clubhouse, and Parking Area	Davidson	Collins Creek	6.00	051302020201
TNR145589	Evergreen Hills, LP: Grading	Davidson	UT to Indian Creek.	26.00	051302020201
TNR190531	TDOT: SR 253 (Concord Road)	Williamson	UT to Owl Creek	1.89	051302020201
TNR141740	Newmark Homes:	Davidson	UT to Seven Mile Creek	16.00	051302020202
TNR142712	Embraer Aircraft	Davidson	Elissa Branch	4.38	051302020202
TNR142717	Glenview Elementary School:	Davidson	Mill Creek	6.49	051302020202
TNR142862	Danco Development:	Davidson	UT to Mill Creek	9.00	051302020202
TNR142867	Talcott III Grassmere LTD Partnership: Talcott Office Building	Davidson	UT to East Fork Browns Creek	1.70	051302020202
TNR142899	S.F. Chase Incorporated Construction: Fraternal Order of Police Headquarters	Davidson	Sims Branch	1.00	051302020202

Table 4-6m.

PERMIT NUMBER	PERMITTEE: DESCRIPTION	COUNTY	WATERBODY	AREA	HUC-12
TNR142926	Asgard Group: Spence Lane Condominiums	Davidson	Mill Creek	14.00	051302020202
TNR142927	Rollins Associates, LP: Elm Warehouse	Davidson	UT to Mill Creek	5.50	051302020202
TNR142980	Wal-Mart Stores, Inc.: Wal-Mart Super Center	Davidson	Whittemore Branch	33.38	051302020202
TNR142990	Ken Maynard: Metro S.E. Multipurpose Facility	Davidson	Mill Creek	5.90	051302020202
TNR143055	Metro Nashville Davidson County Public Works: Edmondson Pike and Cloverland Drive Intersection Improvements	Davidson	Seven Mile Creek	10.22	051302020202
TNR143131	State of Tennessee-Dept. of General Services: Ellington Agricultural Center	Davidson	Seven Mile Creek	4.00	051302020202
TNR143163	Carden Company: Carden Office Building	Davidson	Seven Mile Creek	1.20	051302020202
TNR143169	General Construction: Chinquapin Subdivision	Davidson	UT to Mill Creek	1.00	051302020202
TNR143188	Professional Design Group: Fifth Third Bank	Davidson	UT to West Fork Hamilton Creek	1.10	051302020202
TNR143207	ARI-Commercial Properties: Grassmere Parking Area Expansion	Davidson	UT to Seven Mile Creek	1.00	051302020202
TNR143239	Metor Real Property Services: Metro Action Commission Head Start Facility	Davidson	UT to Mill Creek	6.00	051302020202
TNR143327	Harding Place, LLC: Wal Mart Supercenter	Davidson	Seven Mile Creek	16.90	051302020202
TNR143331	John B Blanks II	Davidson	UT to Seven Mile Creek	3.00	051302020202
TNR143428	Loseph James: Lebanon Pike Development	Davidson	Mill Creek	1.33	051302020202
TNR143453	Modern Granite	Davidson	UT to Seven Mile Creek	1.80	051302020202
TNR143631	Wal-Mart Supercenter	Davidson	Seven Mile Creek	16.94	051302020202
TNR143635	Newmark Homes: Barrington Place	Davidson	UT to Seven Mile Creek	0.56	051302020202
TNR143664	Newmark Homes: Barrington Place	Davidson	UT to Seven Mile Creek	0.00	051302020202
TNR143671	Talcott Three Grassmere Place: Talcott Office Building	Davidson	UT to Seven Mile Creek	4.60	051302020202
TNR143738	Aspen Nashland, LLC: Kaplan School	Davidson	Mill Creek	2.80	051302020202
TNR143784	Boyle Craigmead, L.P.: Briley Corners	Davidson	UT to Mill Creek	4.00	051302020202
TNR143813	Pinnacle Financial Partners: Pinnacle Bank Building and Parking Area	Davidson	UT to Mill Creek	1.57	051302020202
TNR143876	Nashville Area Habitat for Humanity: Providence Park	Davidson	Mill Creek	7.15	051302020202

Table 4-6n.

PERMIT NUMBER	PERMITTEE: DESCRIPTION	COUNTY	WATERBODY	AREA	HUC-12
TNR143934	Murphy Development: Swiss Ridge Apartments	Davidson	UT to Whittemore Branch	4.80	051302020202
TNR143948	Newmark Homes: Barrington Place	Davidson	UT to Seven Mile Creek	1.00	051302020202
TNR144073	J2K Builders, LLC & AHR, Inc.: Rose Monte	Davidson	UT to Seven Mile Creek	8.90	051302020202
TNR144164	Mid-Atlantic Commercial Properties: Walgreens	Davidson	Mill Creek	1.50	051302020202
TNR144200	Regent Development, LLC: Brighton Village	Davidson	UT to Seven Mile Creek	14.00	051302020202
TNR144205	Metropolitan Nashville Airport Authority: Runaway Safety Area	Davidson	Sims Branch Creek	18.68	051302020202
TNR144207	Newmark Homes: Barrington Place	Davidson	UT to Seven Mile Creek	1.00	051302020202
TNR144229	Centex Homes: Oak Hill Townhomes	Davidson	UT to Seven Mile Creek	19.00	051302020202
TNR144239	Fischer & Ford Group: Vale Ridge Townhomes	Davidson	UT to Mill Creek	4.60	051302020202
TNR144963	Newmark Homes: Barrington Place	Davidson	Seven Mile Creek	1.10	051302020202
TNR145118	Barrington Place: Units 27/28	Davidson	UT to Seven Mile Creek	1.00	051302020202
TNR145122	T.F. Homes: Cottage Grove Subdivision	Davidson	UT to Mill Creek	7.50	051302020202
TNR145126	Regent Development, LLC: Valley View Village	Davidson	UT to Brentwood Branch	2.02	051302020202
TNR145252	SysTech International, LLC: Emissions Testing Facility	Davidson	Mill Creek & Sorghum Branch	1.00	051302020202
TNR145281	Alliance Development: Rural Hills Townhomes	Davidson	UT to Mill Creek	6.00	051302020202
TNR145335	Lowe's Companies, Inc: Building, Garden Center, and Parking Area	Davidson	UT to Whittemore Branch	13.30	051302020202
TNR145527	Don Hagan: Buildings and Parking Area	Davidson	Mill Creek	2.50	051302020202
TNR145547	Swetts Investments, LLC: Swett's II Restaurant	Davidson	UT to Mill Creek	2.20	051302020202
TNR190186	TDOT: Briley Parkway	Davidson	Sims Branch & Unnamed Ditch to Mill Creek	76.00	051302020202
TNR190231	TDOT: I 40 Reconstruction	Davidson	Mill Creek	38.00	051302020202
TNR190232	TDOT: Briley Parkway	Davidson	Mill Creek	72.00	051302020202
TNR190278	TDOT: I 440	Davidson	Mill Creek	3.40	051302020202
TNR190288	TDOT: Briley Parkway	Davidson	Mill Creek	3.36	051302020202
TNR142779	Flexible Whips of Tennessee: Warehouse Addition	Cheatham	UT to Sycamore Creek	1.50	051302020302
TNR142819	Creative Industries: Jackson Felts Flex Building	Cheatham	Culvert to Jones Branch	4.00	051302020302
TNR144283	General Construction Company: Triangle Point Subdivision	Cheatham	UT to Sycamore Creek	1.84	051302020302

Table 4-6o.

PERMIT NUMBER	PERMITTEE: DESCRIPTION	COUNTY	WATERBODY	AREA	HUC-12
TNR144995	Bomar Construction Company, Inc. Commercial and Industrial Buildings	Davidson	UT to Ewing Creek	6.18	051302020302
TNR190244	TDOT: Mt Zion Road	Cheatham	Sycamore Creek	5.00	051302020302
TNR143699	Tennessee Gas Pipeline Company: Gas Pipeline Replacement	Cheatham	UTs to Jones Branch, North Fork Marrow Bone Creek, & Blue Spring Creek	24.52	051302020303
TNR143771	Kerry McCarver: Pleasant View Park	Cheatham	UT to Spring Creek	36.00	051302020303
TNR143772	Cheap Hill Church of Christ: Building and Parking Area	Cheatham	UT to Sycamore Creek	2.00	051302020303
TNR144183	Tri-State Contractors: Horizon Travel Center	Cheatham	Spring Creek	1.50	051302020303
TNR145092	Hollingsworth Oil Company: Sudden Service Shell Station	Cheatham	Spring Creek	0.99	051302020303
TNR145100	Bill Hall: Maple Hills Subdivision	Cheatham	UT to Sycamore Creek	26.50	051302020303
TNR145438	Tennessee Gas Pipeline Company: Gas Pipeline Replacement	Cheatham	UTs to Blue Spring Creek	6.81	051302020303
TNR190444	TDOT: SR 49	Cheatham	Sycamore Creek	10.82	051302020303
TNR190653	TDOT: SR 12 (Clarksville Hwy)	Cheatham	UTs to Sycamore Creek & UT to Marks Creek	8.69	051302020303

Table 4-6p.

Table 4-6a-p. CGPs (Construction General Permit) issued June 2002 through June 2007 in the Cheatham Lake Watershed. *Area, acres of property associated with construction activity; UT, Unnamed Tributary.*

PERMIT NUMBER	PERMITTEE	SIC	SIC NAME	WATERBODY	HUC-12
TN0003549	Vulcan Construction Materials, LP	1422	Crushed and Broken Limestone	Overall Creek	051302020104
TN0057452	Rogers Group, Inc.	1422	Crushed and Broken Limestone	Ewing Creek	051302020105
TN0057657	Rogers Group, Inc.	1422	Crushed and Broken Limestone	Richland Creek	051302020106
TN0003026	Vulcan Construction Materials, LP	1422	Crushed and Broken Limestone	Mill Creek	051302020202
TN0063142	Rinker Materials South Central	1422	Crushed and Broken Limestone	UT to Hollis Creek	051302020302

Table 4-7. Permitted Mining Facilities in the Cheatham Lake Watershed. *SIC, Standard Industrial Code; UT, Unnamed Tributary*

PERMIT NUMBER	PERMITTEE	SIC	SIC NAME	MADI	WATEBODY	HUC-12
TN0002259	E. I. DuPont De Nemours	2869, 2821, 2297	Industrial Organic Chemicals, NEC; Plastic Materials, Synthetic Resins, and Nonvulcanizable Elastomers; Nonwoven Fabrics	Major	Cumberland River (Old Hickory Reservoir) @ RM 218.4	051302020101
TN0020648	Dry Creek STP	4952	Sewerage Systems	Major	Cumberland River @ RM 213.9	051302020101
TN0058106	Hendersonville Shopping Center, Inc.	4952	Sewerage Systems	Minor	UT @ RM 0.6 to Cumberland River @ RM 215.9	051302020101
TN0068713	Gaylord Opryland Resort & Convention Center	7011	Hotels and Motels	Minor	Cumberland River @ RM 198.07,197.54, & 198.147	051302020101
TN0003433	Innophos, Inc.	2819	Industrial Inorganic Chemicals, NEC	Minor	Cumberland River @ RM 184.0	051302020103
TN0020575	Nashville Central STP	4952	Sewerage Systems	Major	Cumberland River (Cheatham Reservoir) @ RM 189.2	051302020103
TN0022420	CITGO Petroleum Corporation	5171	Petroleum Bulk Stations and Storage	Minor	Cumberland River @ RM 191.4	051302020103
TN0022462	ExxonMobil Pipeline Company	5171	Petroleum Bulk Stations and Storage	Minor	Cumberland River @ RM 185.1	051302020103
TN0022632	Marathon Petroleum Company LLC	5171	Petroleum Bulk Stations and Storage	Minor	Cumberland River @ RM 190.5	051302020103
TN0024970	Whites Creek STP	4952	Sewerage Systems	Major	Cumberland River @ RM 182.6	051302020103
TN0064955	CSX Transportation, Inc.	4011	Railroads, Line-Haul Operating	Minor	East Fork of Browns Creek @ RM 2.1	051302020103
TN0065536	Pilot Travel Center #292	5541	Gasoline Service Stations	Minor	Pages Branch @ RM 1.0 to Cumberland River @ RM 188.5	051302020103
TN0074161	Lone Star Industries, Inc. d/b/a Buzzi Unicem USA	5039	Construction Materials	Minor	Cumberland River @ RM 189.2	051302020103

Table 4-8a.

PERMIT NUMBER	PERMITTEE	SIC	SIC NAME	MADI	WATEBODY	HUC-12
TN0074781	Vietti Foods Company, Inc.	2032	Canned Specialties	Minor	Metro Nashville Storm Sewer to Browns Creek	051302020103
TN0003573	Automotive Components Holdings, LLC	3211	Flat Glass	Minor	UT to Cumberland River @ RM 176.4 & Cumberland River @ RM 181.2, 181.5, & 181.8.	051302020104
TN0067270	Cumberland Heights Rehabilitation Center	4952	Sewerage Systems	Minor	Cumberland River @ RM 166.2	051302020104
TN0074748	Harpeth Valley Utility District STP	4952	Sewerage Systems	Major	Cumberland River @ RM 172.4	051302020104
TN0002488	State Industries	3639	Household Appliances, NEC	Major	Cumberland River (Cheatham Reservoir) @ RM 158.2)	051302020107
TN0020737	Ashland City STP	4952	Sewerage Systems	Minor	Cumberland River @ RM 158.2	051302020107
TN0057061	Cheatham County Industrial Park STP	4952	Sewerage Systems	Minor	Cumberland River @ RM 162.5	051302020107
TN0074764	River Road STP	4952	Sewerage Systems	Minor	Cumberland River @ RM 163.9	051302020107
TN0001597	Vought Aircraft Industries, Inc.	3728, 3769	Aircraft Parts and Auxiliary Equipment, NEC and Guided Missile Space Vehicle Parts and Auxiliary Equipment ,NEC	Minor	UT @ RM 1.5 to Mill Creek @ RM 4.6, Finley Branch @ RM 1.3 to Mill Creek @ RM 7.2	051302020202
TN0064041	Metro Nashville Airport Authority	4581	Airports, Flying Fields, and Airport Terminal Service	Minor	Sims Branch @ RM 1.8, 1.9, 2.0 to Mill Creek @ RM 1.6 to Cumberland River @ RM 194.5, & McCrory Creek @ RM 3.5 to Stones River @ RM 5.8, UT	051302020202

Table 4-8b.

Table 4-8a-b. Municipal and Industrial Permittees in the Cheatham Lake Watershed. SIC, Standard Industrial Classification; MADI, Major Discharge Indicator; UT, Unnamed Tributary.

PERMIT NUMBER	PERMITTEE	WATERBODY	HUC-12
TNG110167	Metro Ready Mix Concrete, Inc.	Richland Creek @ RM 0.5	051302020106
TNG110229	IMI-Goodlettsville Concrete Plant	WWC to Slaters Creek	051302020102
TNG110308	Nashville Ready Mix of West Nashville	Cheatham Reservoir (No Discharge System)	051302020104
TNG110100	I.M.I. Tennessee, Inc. Nashville	Richland Creek to Cumberland River (Cheatham Lake)	051302020104
TNG110040	Metro Ready Mix Concrete, Inc. Hendersonville Plant	Mansker Creek	051302020102
TNG110066	I.M.I. Tennessee, Inc. Ashland City	UT to Marks Creek @ RM 0.6 to Cumberland River (Cheatham Lake)	051302020107
TNG110099	I.M.I. Tennessee, Inc. Nashville	Cumberland River	051302020103
TNG110101	Lawson Redi-Mix, Inc.	Overall Creek to Cumberland River	051302020104
TNG110138	Metro Ready Mix Concrete, Inc. Visco Drive Plant	Cumberland River @ RM 193.0	051302020103
TNG110172	Hoover Concrete Plant # 607	Dry Creek @ RM 0.5	051302020101
TNG110236	Nashville Ready Mix, Inc. Cowan	Cumberland River @ RM 189.2	051302020103
TNG110268	Metro Ready Mix Concrete, Inc. Second Avenue Plant	Cumberland River @ RM 189.9	051302020103
TNG110271	Metro Ready Mix Concrete, Inc.	Cumberland River @ RM 189.9	051302020103
TNG110274	APAC Tennessee, Inc. Old Hickory Blvd.	Not Identified	051302020105
TNG110299	Metro Ready Mix Concrete, Inc. Joe Dowlen Road	UT to Hollis Creek	051302020302

Table 4-9. RMCP (Ready Mix Concrete Plant) Permittees in the Cheatham Lake Watershed.
WWC, Wet Weather Conveyance; UT, Unnamed Tributary.

PERMIT NUMBER	PERMITTEE	SECTOR	RECEIVING STREAM	AREA	HUC-12
TNR050298	Besway Systems, Inc.	C	UT to Gibson Creek to Cumberland River	0.25	051302020101
TNR050562	Peterbilt Motors Company	AB	UT to Dry Creek to Cumberland River	23.00	051302020101
TNR050773	Dallas & Mavis Forwarding Company	P	Cumberland River	3.50	051302020101
TNR050823	American Appliance Products	AA	Cumberland River	1.20	051302020101
TNR050854	Hoover Concrete Plant #607	E	Dry Creek	2.34	051302020101
TNR051133	OMC Fishing Boat Group, Inc.	R	Cumberland River	9.70	051302020101
TNR051976	Neely's Bend, Inc.	M	Cumberland River	5.13	051302020101
TNR053255	Dry Creek Wastewater Treatment Plant	T	Cumberland River, Dry Creek, & Gizzard Branch	29.85	051302020101
TNR053632	Odom's Tennessee Pride	U	Cumberland River	27.63	051302020101
TNR053808	Active USA, Inc.	P	Dry Creek & Cumberland River	10.00	051302020101
TNR053956	Cumberland Corners	L	WWC to Cumberland River (Cheatham Reservoir) @ RM 215.5	1.39	051302020101
TNR053980	E. I. DuPont De Nemours & Company, Inc.	C	Cumberland River @ RMs 214 & 218	4.96	051302020101
TNR053997	Cumberland Valley Mixing Company	Y	Dry Creek	20.00	051302020101
TNR054170	Rogers Group, Inc. Madison Asphalt	D	UT to Cumberland River	6.50	051302020101
TNR054221	Genesee A & B, Inc.	F	Cumberland River	1.50	051302020101
TNR056026	All State Auto Parts, Inc.	M	Metro Nashville Storm Sewer to UT to Cumberland River	6.00	051302020101
TNR056268	Rivergate Auto Parts, Inc.	M	Not Identified	8.50	051302020101
TNR056369	Heritage Hills Nashville	W	Unnamed Ditch to Cumberland River	3.50	051302020101
TNR056591	First Response, Inc.	AD	WWC to UT @ RM 1.8 to Dry Creek	0.05	051302020101
TNR056700	Griffin Industries, Inc.	U	Dry Creek	1.00	051302020101
TNR051309	Space Park North Industrial Park	P	Manskers Creek	39.00	051302020102
TNR051457	Perfection Moulders	F	Manskers Creek	2.00	051302020102
TNR051536	Old Stone Bridge Industrial Park	P	Manskers Creek	19.00	051302020102
TNR051596	Bay Metal, Inc.	N	Slaters Creek	5.00	051302020102
TNR051991	Gibson Fiberglass Products, Inc.	R	Manskers Creek	4.00	051302020102
TNR053328	Associated Wholesale Grocers, Inc.	P	UT to Manskers Creek	35.00	051302020102
TNR053644	The G. F. Puhl Company	AA	Manskers Creek	3.00	051302020102
TNR054382	Tyson Fresh Meats	U	Manskers Creek	10.00	051302020102
TNR055969	Middle Tenn Auto Salvage, Inc.	M	Slaters Creek	3.00	051302020102
TNR056092	Ace Auto Salvage, Inc.		Slaters Creek	0.00	051302020102

Table 4-10a.

PERMIT NUMBER	PERMITTEE	SECTOR	RECEIVING STREAM	AREA	HUC-12
TNR056220	Metro Salvage, Inc.	M	Not Identified	2.50	051302020102
TNR056869	J&H Detail	P	North Slaters Creek	0.25	051302020102
TNR050033	Cherokee Marine Terminal	Q	Cumberland River	27.80	051302020103
TNR050038	Greer Stop Nut	AA	UT to West Fork of Mill Creek to Cumberland River	1.00	051302020103
TNR050060	Innophos, Inc.	C	UT to Cumberland River & Richland Creek to Cumberland River	66.53	051302020103
TNR050089	Wikoff Color Corporation	C	Browns Creek	0.45	051302020103
TNR050185	John Bouchard & Sons Company	F	Cumberland River	3.50	051302020103
TNR050218	Lone Star Industries, Inc. d/b/a Buzzi Unicem USA	AD	Cumberland River	11.50	051302020103
TNR050223	Four Lane Auto Salvage Inc.	M	UTs to Cumberland River	9.00	051302020103
TNR050238	Advanced Composites	C	Not Identified	3.30	051302020103
TNR050326	Sadler Bros Trucking & Leasing Company, Inc.	P	UT to Browns Creek	3.00	051302020103
TNR050373	CCBCC Operations, LLC	U	Browns Creek	15.50	051302020103
TNR050464	IKG Industries	AA	Cumberland River	8.20	051302020103
TNR050475	Admiral Binder Corporation	X	Not Identified	3.12	051302020103
TNR050478	Rogers Manufacturing Company	AB	Cumberland River	7.00	051302020103
TNR050515	Nashville Recycling Company	U	Cumberland River	3.10	051302020103
TNR050546	Akzo Nobel Coatings Inc.	C	Browns Creek	5.00	051302020103
TNR050712	Mid-South Wire	F	Cumberland River	18.00	051302020103
TNR050716	N & S, Inc.	M	Browns Creek	4.09	051302020103
TNR050722	Southern Ionics Incorporated	C	Cumberland River	6.50	051302020103
TNR050741	River Hills Thermal Ash Landfill	L	Cumberland River	12.00	051302020103
TNR050762	Paulo Products Company	F	Gray Creek to Cumberland River	1.16	051302020103
TNR050806	Nashville Wire Products	AA	Cumberland River	21.00	051302020103
TNR050822	American Appliance Products of Delaware	AA	UT to Cooper Creek to Cumberland River	9.65	051302020103
TNR050872	GAF Materials Corporation	E	Browns Creek	16.00	051302020103
TNR051129	Warren Paint & Color Company	C	Browns Creek	2.00	051302020103
TNR051283	AAA Cooper Transportation	P	Cumberland River	6.90	051302020103
TNR051322	Quebecor World	X	Browns Creek	8.10	051302020103
TNR051324	Thermal Ash Landfill Phase 1&2	L	Cumberland River	25.00	051302020103
TNR051325	Bordeaux Sanitary Landfill	L	Cumberland River	3.41	051302020103
TNR051361	Portland Express, Inc.	P	Cumberland River	0.88	051302020103
TNR051466	Con-Way Freight - NHB	P	Browns Creek	20.00	051302020103
TNR051488	Philip Services Corporation/Philip Metals	N	Cumberland River	49.40	051302020103
TNR051577	ABF Freight System, Inc.	P	Cumberland River	21.00	051302020103
TNR051836	Waste Management	P	Not Identified	6.50	051302020103

Table 4-10b.

PERMIT NUMBER	PERMITTEE	SECTOR	RECEIVING STREAM	AREA	HUC-12
TNR051900	The Earthgrains Baking Company, Inc.	U	Browns Creek to Cumberland River	6.50	051302020103
TNR051909	Cummings Signs Arch. and Banking Division	Y	Browns Creek	7.00	051302020103
TNR052036	Flint Ink Corporation	C	Mill Creek to Cumberland River	1.00	051302020103
TNR052044	Anr Advance Transportation Company, Inc.	P	Cumberland River	5.29	051302020103
TNR052049	Overnite Transportation Company	P	Sims Branch	10.00	051302020103
TNR052057	Ruan Leasing Company	AD	Cumberland River	3.00	051302020103
TNR052928	Thoroughbred Village	AD	Spencer Creek	26.00	051302020103
TNR053055	Tennessee Mat Company, Inc.	Y	Browns Creek	6.00	051302020103
TNR053069	Smurfit Stone	B	Cumberland River	1.50	051302020103
TNR053075	Firstexpress, Inc.	P	Not Identified	8.98	051302020103
TNR053083	Sequatchie Concrete Service, Inc.	E	Cumberland River	14.50	051302020103
TNR053104	Nashville VMF	P	Cumberland River	3.40	051302020103
TNR053237	Cargill Steel And Wire	N	Cumberland River	14.40	051302020103
TNR053247	Milan Express Company, Inc.	P	UT to Cumberland River	6.00	051302020103
TNR053256	Nashville Whites Creek STP	T	Cumberland River & Whites Creek	72.98	051302020103
TNR053258	Nashville Central STP	T	Cumberland River	56.96	051302020103
TNR053266	Lojac Downtown Plant	D	Cumberland River	10.00	051302020103
TNR053311	USF Dugan	P	Cumberland River	7.44	051302020103
TNR053355	Hayward Pool Products	V	Metro Nashville Storm Sewer	1.13	051302020103
TNR053390	BFI of Nashville	P	Cumberland River	8.00	051302020103
TNR053435	Federal Express - BNART	S	Cumberland River	4.50	051302020103
TNR053437	Federal Express - MQYA	S	Cumberland River	1.00	051302020103
TNR053444	TRANSFLO Terminal Services, Inc.	P	Cumberland River	4.50	051302020103
TNR053473	IKG Industries	Y	Cumberland River	5.50	051302020103
TNR053516	Purity Dairies	U	Metro Nashville Storm Sewer to Cumberland River	14.50	051302020103
TNR053609	Green Tree Processing Plant	AD	Pages Branch	6.28	051302020103
TNR053618	Nashville Wilbert Burial Vault Company	E	Browns Creek to Cumberland River	1.70	051302020103
TNR053621	Intermodal Cartage Company	P	Cumberland River	7.00	051302020103
TNR053625	TVA Heavy Equipment Division	P	Not Identified	10.30	051302020103
TNR053626	Tennessee Commercial Warehouse	P	Cumberland River @ RMs 192.21 & 192.35	28.00	051302020103
TNR053688	Kerr-Mcgee Refining Corporation	P	Cumberland River	4.00	051302020103
TNR053697	Ingram Materials Sand Yard	J	Cumberland River	13.70	051302020103
TNR053787	McCann Steel Company, Inc.	AA	Page Branch	1.20	051302020103

Table 4-10c.

PERMIT NUMBER	PERMITTEE	SECTOR	RECEIVING STREAM	AREA	HUC-12
TNR053826	Rich Products	U	Nashville Metro Water Services Storm Drain	5.06	051302020103
TNR053833	Nashville Bolt, LLC	AA	Not Identified	2.40	051302020103
TNR053850	Vietti Foods Company, Inc.	U	Metro Nashville Storm Sewer to Browns Creek	2.00	051302020103
TNR053929	Mrs. Grissom's Salads	U	Browns Creek	2.90	051302020103
TNR053957	Star Transportation	P	Not Identified	12.31	051302020103
TNR054046	Con-Way Southern Express - NNZ	P	Browns Creek	1.50	051302020103
TNR054251	D & R Motors & Recycling	M	Tennessee River	0.27	051302020103
TNR054334	Hamilton Machine Company, Inc.	AB	Metro Nashville Storm Sewer	0.70	051302020103
TNR054346	Laager Investment	AB	Mill Creek	9.23	051302020103
TNR054391	Lakeside Machine LLC	AB	Cumberland River	5.60	051302020103
TNR054460	Jones Stone Company, Inc.	E	East Fork of Brown Creek	1.59	051302020103
TNR054468	Cliff's Cabinet Company	W	Metro Storm Sewer System	1.10	051302020103
TNR054498	Grooms Engines	AB	Cumberland River	3.15	051302020103
TNR054500	United Cabinet Corporation	W	Metro Nashville Storm Sewer	3.70	051302020103
TNR054519	Vaughn Manufacturing Company	AB	Cumberland River	2.88	051302020103
TNR054564	Vintage Millworks, Inc.	A	Browns Creek	0.31	051302020103
TNR054581	Signal Mountain Cement Company	E	Cumberland River	6.00	051302020103
TNR055073	Essex Plastics Midwest, LLC D.B.A. Flexol Packaging Corporation	B	Cumberland River	6.66	051302020103
TNR055912	B & A Truck Sales & Service, Inc.	M	Browns Creek	2.50	051302020103
TNR055927	Nashville Machine Elevator, Inc.	AB	Metro Nashville Storm Sewer to Cumberland River	3.50	051302020103
TNR055940	Abernathy Truck Salvage, Inc.	M	Cumberland River	9.70	051302020103
TNR056121	Frank's Auto Parts & Salvage	M	Cumberland River	1.00	051302020103
TNR056159	Hilltop Auto Salvage	M	Pages Branch	9.00	051302020103
TNR056304	Truck Salvage, Inc.	M	City Storm Sewer to Browns Creek	0.75	051302020103
TNR056334	Alternative Energy, LLC	AD	Cumberland River	3.00	051302020103
TNR056344	Bryant Machinery Moving & Salvage	M	City Storm Sewer to Cumberland River	2.10	051302020103
TNR056370	Quality Plating	AA	Browns Creek	4.00	051302020103
TNR056457	Truck Center, Inc.	M	Metro Nashville Storm Sewer to Browns Creek	1.70	051302020103
TNR056486	Williams Nashville Terminal II	P	Cumberland River @ RM 183.4	4.00	051302020103
TNR056508	Truck Shine	P	Browns Creek	4.00	051302020103
TNR056512	Marathon Petroleum Company, LLC		Cumberland River @ RM 185.1 & Cumberland River @ RM 185.2	0.00	051302020103

Table 4-10d.

PERMIT NUMBER	PERMITTEE	SECTOR	RECEIVING STREAM	AREA	HUC-12
TNR056587	Lion Oil Company	P	Cumberland River	4.20	051302020103
TNR056603	Ergon Terminaling, Inc.	P	Cumberland River	3.40	051302020103
TNR056640	Rolling Frito-Lay Sales, LP	P	Cumberland River @ RM 193.5	4.00	051302020103
TNR056643	Metro Nashville District Energy System	AE	Drainage Conveyance to Cumberland River @ RM 191	2.00	051302020103
TNR056654	Marathon Petroleum Company LLC	P	Cumberland River @ RM 187.2	4.50	051302020103
TNR056769	Fontaine Truck Equipment Company	AB	Mill Creek	1.00	051302020103
TNR056770	Chemrock Corporation	E	UT to Cumberland River	5.30	051302020103
TNR056863	Ashland Distribution	AD	UT to Metro Storm Sewer System to Cumberland River (Cheatham Reservoir)	23.89	051302020103
TNR050274	Clean Harbors Environmental Services, Inc.	P	UT to Cumberland River	5.75	051302020104
TNR050347	John W. McDougall Company, Inc.	AA	Cumberland River (Cheatham Reservoir)	1.70	051302020104
TNR053273	APAC River Road Plant	D	Overall Creek	3.00	051302020104
TNR053497	Quikrete	E	Mason Branch	2.27	051302020104
TNR053535	Hailey's Harbor, Inc.	Q	Cumberland River	55.00	051302020104
TNR053798	LoJac Enterprises, Inc.	D	Not Identified	8.00	051302020104
TNR053940	Southern Services	L	Cumberland River	12.00	051302020104
TNR053942	John C. Tune Airport	S	UT to Cumberland River @ RM 176.8	15.00	051302020104
TNR054226	Lawson Redi-Mix, Inc.	P	Overall Creek	1.20	051302020104
TNR054539	Larry Maxwell, Inc.	W	Cumberland River	0.10	051302020104
TNR056432	John W. McDougall Company, Inc.	AA	Cumberland River (Cheatham Reservoir)	1.70	051302020104
TNR056673	Cumberland Terminals, Inc.	P	UT to Cumberland River (Cheatham Reservoir) @ RM 176.4	15.00	051302020104
TNR050753	AAA Industries, Inc.	AA	Storm Water to UT to Pages Branch to Cumberland River @ RM 188.6	1.50	051302020105
TNR050886	Rogers Group, Inc.	D	Roadway Culvert to Ditch to UT @ RM 0.57 to Whites Creek @ RM 5.71	4.00	051302020105
TNR051734	VF Imagewear, Inc.	P	Little Creek & Whites Creek	26.55	051302020105
TNR053369	Fed Ex Ground	P	Ewing Creek	96.00	051302020105
TNR053554	United Parcel Service	P	Ewing Creek	28.48	051302020105
TNR053556	United Parcel Service - Nashville Trailer Repair	P	Little Creek	1.34	051302020105
TNR050563	Imperial Adhesives, Inc.	C	UT to Richard Creek	3.20	051302020106

Table 4-10e.

PERMIT NUMBER	PERMITTEE	SECTOR	RECEIVING STREAM	AREA	HUC-12
TNR050735	LoJac Nashville River Road Plant	D	Not Identified	2.00	051302020106
TNR050770	Bellar Auto Parts, Inc.	M	Richland Creek to Cumberland River	4.00	051302020106
TNR050941	Armstrong Hardwood Flooring Company	A	Cumberland River (Cheatham Reservoir) & Richland Creek	47.55	051302020106
TNR051096	Reichhold, Inc. (Swift Adhesive)	C	Cumberland River	2.80	051302020106
TNR051899	West Nashvlle Auto Recycling, Inc.	M	Ditch to Richland Creek	1.75	051302020106
TNR053367	Hoover Concrete Plant	E	Richland Creek	4.96	051302020106
TNR053378	Motiva Enterprises, LLC	P	Metro Nashville Storm Sewer to Richland Creek @ RM 2.1	7.80	051302020106
TNR053495	North American Galvanizing Company	AA	Cumberland River	7.10	051302020106
TNR053661	BP Oil Company	P	Cumberland River	17.00	051302020106
TNR053684	AFL Wire Products	F	Richland Creek	2.40	051302020106
TNR053690	Springs Global US	V	Cumberland River (Cheatham Reservoir) @ RM 176	43.60	051302020106
TNR053707	U.S. Trucking	P	Metro Nashville Storm Sewer	1.70	051302020106
TNR053737	AFL Wire Products	F	Richland Creek	1.00	051302020106
TNR053751	The Mulch Company	A	UT to Richland Creek	10.00	051302020106
TNR053805	Amsa 153	P	Richland Creek to Cumberland River	13.25	051302020106
TNR053927	Nashville Chemical & Equipment Company, Inc.	C	Metro Nashville Storm Sewer to Cumberland River	1.30	051302020106
TNR054596	Techno-Aide, Inc.	AC	Cumberland River	1.25	051302020106
TNR055996	LoJac Hermitage Plant	D	Stoners Creek	4.00	051302020106
TNR056537	Pull-A-Part, LLC	M	Cumberland River	27.39	051302020106
TNR056545	Magellan Nashville I Terminal	P	WWC @ RM 0.4 to Richland Creek to Cumberland River	5.00	051302020106
TNR056565	Pepsi Bottling Group	P	Richland Creek to Cumberland River	5.00	051302020106
TNR056650	Southern Recycling Secondary Fibers, Inc.	N	Cumberland River (Cheatham Reservoir) @ RM 183	3.00	051302020106
TNR051364	Trinity Marine Products, Inc.	R	Cumberland River	74.00	051302020107
TNR051403	BIX Manufacturing Company, Inc.	C	UT to Cumberland River	5.00	051302020107
TNR051782	Gate Precast Company	E	UT to Cumberland River (Cheatham Reservoir)	16.00	051302020107
TNR053379	State Industries	AC	Puzzle Fool Creek & Cumberland River	42.00	051302020107
TNR053399	Triton Boat Company	R	Cumberland River	17.75	051302020107
TNR053930	Southern Environmental Contractors, Inc.	AD	UT to Cumberland River	0.75	051302020107

Table 4-10f.

PERMIT NUMBER	PERMITTEE	SECTOR	RECEIVING STREAM	AREA	HUC-12
TNR056290	Stephens Auto Repair & Salvage	M	Not Identified	10.00	051302020107
TNR050630	Evans Auto Salvage	M	Dry Fork Creek	4.00	051302020108
TNR056130	Goodlettsville Auto Salvage, Inc.	M	Slaters Creek	8.00	051302020201
TNR050165	Aladdin Industries, LLC	Y	Mill Creek & Browns Creek	23.00	051302020202
TNR050340	American Fabricators, Inc.		Mill Creek	2.00	051302020202
TNR050571	Inx International Ink Company	C	Nonconnah Creek	1.38	051302020202
TNR050715	N & S Used Foreign Car Parts	M	Mill Creek	1.00	051302020202
TNR050726	A. Schulman	Y	Seven Mile Creek	6.70	051302020202
TNR050825	Nashville Display	AA	Mill Creek	5.89	051302020202
TNR050880	Mechanical Industries Inc	AA	Mill Creek	0.30	051302020202
TNR050885	HMA Contractors Asphalt Plant #1	D	UT to Mill Creek	6.90	051302020202
TNR050889	Nashville Machine Company, Inc.	AA	Metro Nashville Storm Sewer Cumberland River	2.50	051302020202
TNR051157	Pepsi Bottling Group	U	Not Identified	12.30	051302020202
TNR051162	Embraer Aircraft Maintenance Services, Inc.	S	Mill Creek	14.50	051302020202
TNR051258	Waste Management of Tennessee	P	Mill Creek	10.50	051302020202
TNR051287	Leggett & Plat, Inc. Nova Fill Facility	N	Cumberland River	5.90	051302020202
TNR051329	Leggett & Platt, Inc. Nova Bond Facility	V	Cumberland River	3.40	051302020202
TNR051380	Proline Carriers, Inc.	P	Browns Creek to Cumberland River	3.00	051302020202
TNR051389	Southeastern Freight Lines, Inc.	P	Mill Creek	6.60	051302020202
TNR051727	Allied Systems Ltd	P	Browns Creek	2.86	051302020202
TNR051878	Titan Trucking, LLC	P	UT to Mill Creek	1.30	051302020202
TNR051937	Commercial Carriers, Inc.	P	East Fork Browns Creek	0.54	051302020202
TNR052055	Tennessee Building Products	A	UT to Mill Creek	7.26	051302020202
TNR052096	Roadway Express Inc.	P	Mill Creek	3.40	051302020202
TNR053065	Nashville Total Distribution Service	P	Browns Creek	15.00	051302020202
TNR053089	Southland Brick and Block	E	Franklin Branch to Mill Creek	11.00	051302020202
TNR053225	Safety-Kleen Systems, Inc.	K	Mill Creek	2.00	051302020202
TNR053269	Lojac Danley Plant	D	Mill Creek	4.00	051302020202
TNR053354	Circle Delivery Service, Inc.	P	Mill Creek	3.49	051302020202
TNR053385	Howard Baer, Inc.	P	Cumberland River	4.71	051302020202
TNR053398	Land O Lakes Purina Feed, LLC	U	East Fork of Browns Creek	0.50	051302020202
TNR053436	Federal Express - BNAA	S	Mill Creek	1.00	051302020202
TNR053562	United Parcel Service	P	Mill Creek	10.22	051302020202
TNR053583	Kohl & Madden Plant #1	C	Mill Creek	0.50	051302020202
TNR053584	Kohl & Madden Plant #2	C	Mill Creek	0.90	051302020202

Table 4-10g.

PERMIT NUMBER	PERMITTEE	SECTOR	RECEIVING STREAM	AREA	HUC-12
TNR053592	Averitt Express	P	Mill Creek	30.60	051302020202
TNR053706	M & W Transportation Company, Inc.	P	Not Identified	3.00	051302020202
TNR053717	Masoud John-Baluch	M	Metro Nashville Storm Sewer	2.00	051302020202
TNR053774	Choice Food of America	U	WWC to Cumberland River	5.00	051302020202
TNR053780	Clopay Plastic Products Company	Y	Mill Creek	1.40	051302020202
TNR053923	Tennessee Building Products	A	Browns Creek to Cumberland River	7.42	051302020202
TNR053935	Clean Harbors Antioch, LLC	K	Mill Creek	2.99	051302020202
TNR053950	J.M. Fry Company	C	UT	0.75	051302020202
TNR053987	TREW Industrial Wheels, Inc.	Y	Mill Creek	3.02	051302020202
TNR054047	Estes Express Lines	P	Storm Water From Facility to Browns Creek to Cumberland River	5.64	051302020202
TNR054151	Art Pancake's Rent-All, Inc.	X	Seven Mile Creek	3.00	051302020202
TNR054345	Wright Industries, Inc.	AB	Mill Creek	10.70	051302020202
TNR054363	Collins & Aikman	AB	Mill Creek	8.00	051302020202
TNR054447	Dixie Graphics	AB	Not Identified	1.40	051302020202
TNR055923	Tennessee Imports Auto Salvage	M	Mill Creek	1.00	051302020202
TNR055982	Southwest Airlines at Nashville International Airport	S	McCrory Creek, Sims Branch, & Mill Creek	4.00	051302020202
TNR056368	Clopay Plastics Products	Y	Mill Creek	4.50	051302020202
TNR056671	Clopay Advanced Printing	X	Sorgham Branch to Mill Creek	3.00	051302020202
TNR056739	Meguiar's Inc.	C	Sorghum Branch & Mill Creek	1.00	051302020202
TNR051395	Tennessee Auto Salvage, Inc.	M	Sycamore Creek	20.00	051302020301
TNR054185	C & W Pools, Inc.	Y	Jones Branch to Sycamore Creek	10.00	051302020301
TNR056090	County Line Auto Recycling, Inc.	M	UT	3.00	051302020301
TNR051989	Jones Brothers Asphalt Plant #2	D	UT to Hollis Creek	4.20	051302020302
TNR054189	Pleasant View Manufacturing Company, Inc.	AA	Hollis Creek	0.50	051302020302

Table 4-10h.

Table 4-10a-h. TMSPs (Tennessee Multi Sector Permit) issued in the Cheatham Lake Watershed. *Area, acres of property associated with Industrial Activity; UT Unnamed Tributary, WWC, Wet Weather Conveyance. See Table 4-13 for Sector Details.*

PERMIT NUMBER	PERMITTEE	WATERBODY	HUC-12
TNG830079	MAPCO Express #3420	Metropolitan Storm Sewer to Browns Creek	051302020103

Table 4-11. UST (Underground Storage Tank) Permittees in the Cheatham Lake Watershed.

PERMIT NUMBER	PERMITTEE	WATERBODY	HUC-12
TN0004413	Madison Suburban Utilities District WTP	Cumberland River @ RM 200.3	051302020101
TN0074187	Harpeth Valley Utilities District WTP	Overall Creek to Cumberland River (Cheatham Reservoir) @ RM 172.5	051302020104
TN0078743	Ashland City Water Plant	Marrowbone Creek @ RM 0.8 to Cumberland River @ RM 160	051302020108
TN0060861	J.M. Cranor WTP	UT to Cumberland River @ RM 215.7	051302020101

Table 4-12. WTP (Water Treatment Plant) Permittees in the Cheatham Lake Watershed. UT, Unnamed Tributary

SECTOR	TMSP SECTOR NAME
A	Timber Products Facilities
AA	Facilities That Manufacture Metal Products including Jewelry, Silverware and Plated Ware
AB	Facilities That Manufacture Transportation Equipment, Industrial or Commercial Machinery
AC	Facilities That Manufacture Electronic and Electrical Equipment and Components, Photographic and Optical Goods
AD	Facilities That Are Not Covered Under Sectors A Thru AC (Monitoring Required)
AE	Facilities That Are Not Covered Under Sectors A Thru AC (Monitoring Not Required)
B	Paper and Allied Products Manufacturing Facilities
C	Chemical and Allied Products Manufacturing Facilities
D	Asphalt Paving, Roofing Materials, and Lubricant Manufacturing Facilities
E	Glass, Clay, Cement, Concrete, and Gypsum Product Manufacturing Facilities
F	Primary Metals Facilities
G	Metal Mines (Ore Mining and Dressing) (RESERVED)
H	Inactive Coal Mines and Inactive Coal Mining-Related Facilities
I	Oil or Gas Extraction Facilities
J	Construction Sand and Gravel Mining and Processing and Dimension Stone Mining and Quarrying Facilities
K	Hazardous Waste Treatment Storage or Disposal Facilities
L	Landfills and Land Application Sites
M	Automobile Salvage Yards
N	Scrap Recycling and Waste and Recycling Facilities
O	Steam Electric Power Generating Facilities
P	Vehicle Maintenance or Equipment Cleaning areas at Motor Freight Transportation Facilities, Passenger Transportation Facilities, Petroleum Bulk Oil Stations and Terminals, the United States Postal Service, or Railroad Transportation Facilities
Q	Vehicle Maintenance Areas and Equipment Cleaning Areas of Water Transportation Facilities
R	Ship or Boat Building and Repair Yards
S	Vehicle Maintenance Areas, Equipment Cleaning Areas or From Airport Deicing Operations located at Air Transportation Facilities
T	Wastewater Treatment Works
U	Food and Kindred Products Facilities
V	Textile Mills, Apparel and other Fabric Product Manufacturing Facilities
W	Furniture and Fixture Manufacturing Facilities
X	Printing and Platemaking Facilities
Y	Rubber and Miscellaneous Plastic Product Manufacturing Facilities
Z	Leather Tanning and Finishing Facilities

Table A4-13. TMSP Sectors and Descriptions.