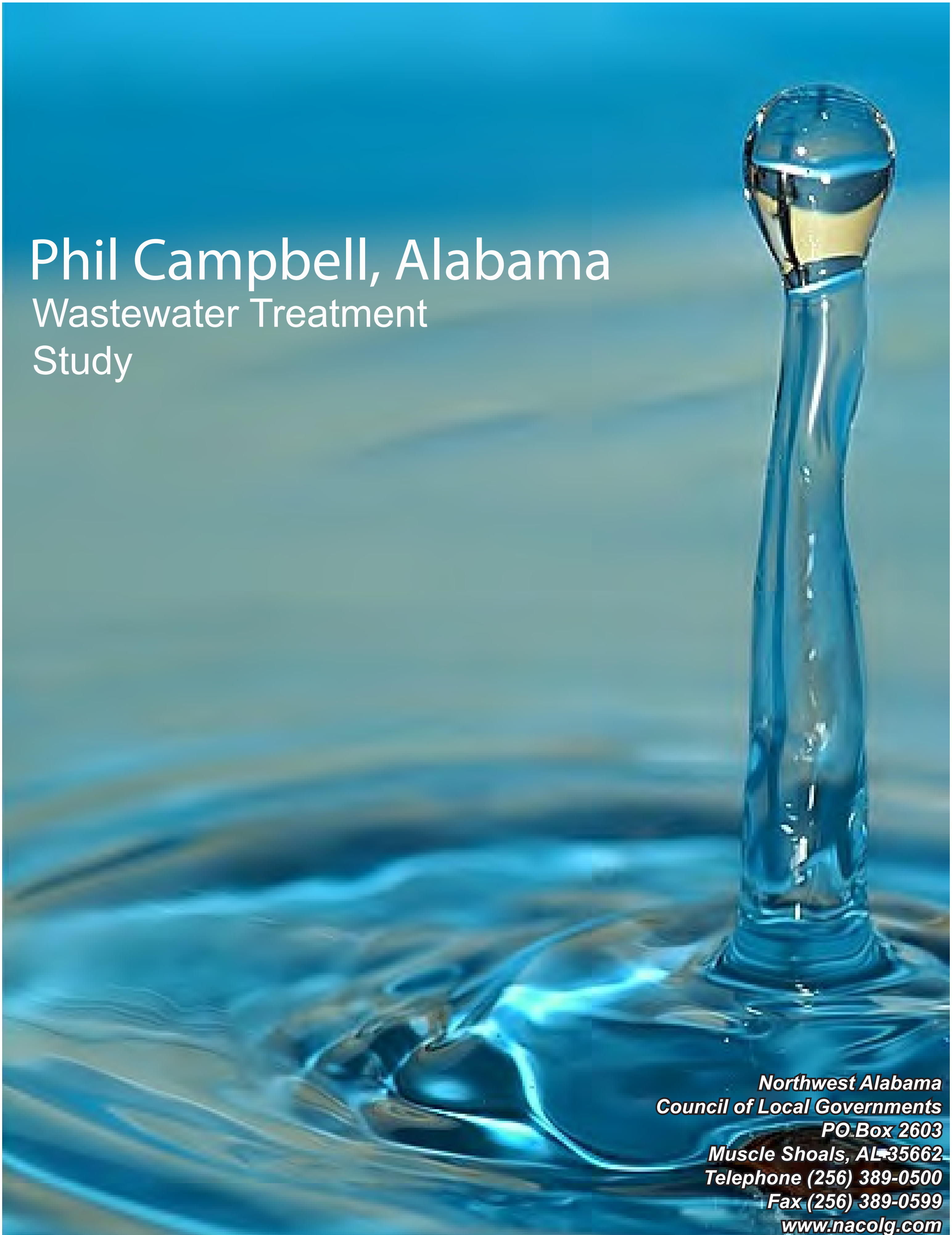

Phil Campbell, Alabama

Wastewater Treatment Study

**Northwest Alabama
Council of Local Governments
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Muscle Shoals, AL 35662
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TOWN OF PHIL CAMPBELL, ALABAMA

WASTEWATER TREATMENT STUDY

Prepared by:

Northwest Alabama Council of Local Governments
103 Student Drive
Muscle Shoals, Alabama 35661

with the assistance of

The Cassady Company, Inc.

September 2008

This Wastewater Facility Plan was funded by the Alabama Department Of Environmental Management through the Clean Water Act Sections (j)(1) and 604 Provisions

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1.0 EXECUTIVE SUMMARY

The Wastewater Facilities Plan for the Town of Phil Campbell analyzes the physical and demographic factors affecting land use, growth, development, and the need for centralized wastewater treatment capacity in Phil Campbell, Alabama. The first step was to review basic physical geography for Phil Campbell and Franklin County in order to assess the major limitations to development in the Town. Next, demographic, economic, housing, and land use data were reviewed to discern trends in development patterns for the town. Following that, wastewater flow rates were estimated for present and potential future capacity needs for the town. Finally, alternatives for the collection and treatment of additional wastewater flows were reviewed and analyzed. The major findings from each stage are as follows:

- Phil Campbell's geography and location nearby regional transportation routes position the town favorably for development.
- The major limitations to development in and around Phil Campbell are likely to be related to topography and slope and to the capacity of soils to sustain on-site treatment systems.
- Phil Campbell's demographics indicate that the town will continue to lose population without significant turnaround. Existing capacity will be sufficient for proposed development in the existing town limits and the town's industrial park.
- The Town's economic development policies center on the development of the Phil Campbell Industrial Park, located north of town. Two wastewater alternatives exist for the industrial park: on-site treatment and collection and treatment at the existing wastewater facility.
- On-site treatment sufficient for typical wastewater flows at the park is expected to cost approximately $300,000 and utilize significant space within the industrial park. Eventually, centralized sewer service will be required for the park in order to accommodate full development. On-site treatment is an acceptable short-term solution, which might allow industries to move into the park sooner.
- Off-site treatment is estimated to cost $553,323.00to accommodate typical wastewater flows associated with employment at the park. This alternative is preferred in order to more effectively market the Phil Campbell Industrial Park.

2.0 GENERAL SCOPE OF WORK

This study analyzes land use, economic, and growth patterns of the Town of Phil Campbell and surrounding community areas of South Franklin County. These analyses were completed to assist in developing a long-range wastewater facilities plan for the Town of Phil Campbell. This study was prepared by the Northwest Alabama Council of Local Governments (NACOLG) in association with The Cassady Company, Inc.

NACOLG prepared the scope and summary, physical analysis, demographic evaluations, economic data, housing assessment, land use, and potential funding sections of the document. The Cassady Company provided estimates for wastewater flow rates, treatment alternatives, and recommendations concerning preferred alternatives.

The study area is located in southeastern Franklin County, Alabama and includes the incorporated area of the Town of Phil Campbell and the territory owned by the town and intended for industrial use (located approximately 1.3 miles north of the Town limits and 3 miles north of the approximate center of Phil Campbell). The town center is defined approximately at by the coordinates 34°21'7.53" North, 87°42'22.37" West. The projection period for the study is twenty years. The population and flow rate projections were extended to 20 years. The objectives of the sewer facilities study were as follows:

- Provide preliminary estimates for potential sewage flow rates from the study area.
- Provide preliminary sizes and locations for potential collection and treatment facilities.
- Evaluate alternative collection, treatment and disposal options.
- Provide preliminary recommendations and cost estimates for the most feasible alternatives.

3.0 CHARACTERISTICS OF STUDY AREA

3.1 General Information

The Town of Phil Campbell is located in the southeast portion of Franklin County along a high ridge in the Appalachian foothills. The town has developed in the lesser slopes adjacent to Alabama Highway 13 and the "Haleyville By-Pass" (currently under construction). Other major transportation routes include Alabama 16 and 237, which meet Alabama 13 in Phil Campbell. U.S. Highway 43 is located 2 miles to the west. A significant north-south rail route connecting Birmingham and Memphis passes through Phil Campbell. The City of Russellville is Phil Campbell's nearest neighbor and is located approximately 10 miles north. The Florence-Muscle Shoals metropolitan area is located 35 miles north. The Town of Phil Campbell Planning Study Area consists of the Town of Phil Campbell's incorporated area as well as property located north of Phil Campbell between Alabama 13 and the Norfolk-Southern Railroad that is municipally owned and designated as the Phil Campbell Industrial Park **(Map 3.1: Phil Campbell Location).**

The Planning Study Area (PSA) is rural with traditional characteristics of agricultural communities. A cluster of residential and commercial structures compose the core of the Phil Campbell community. Phil Campbell City Hall is located on Rail Road Street one block east of State Route 13, which serves as the traditional main street through Phil Campbell. In addition to commercial development along major highways, Phil Campbell has experienced dispersed, low density residential development. Two educational facilities, Phil Campbell High School and Northwest Shoals Community College, have campuses in Phil Campbell.

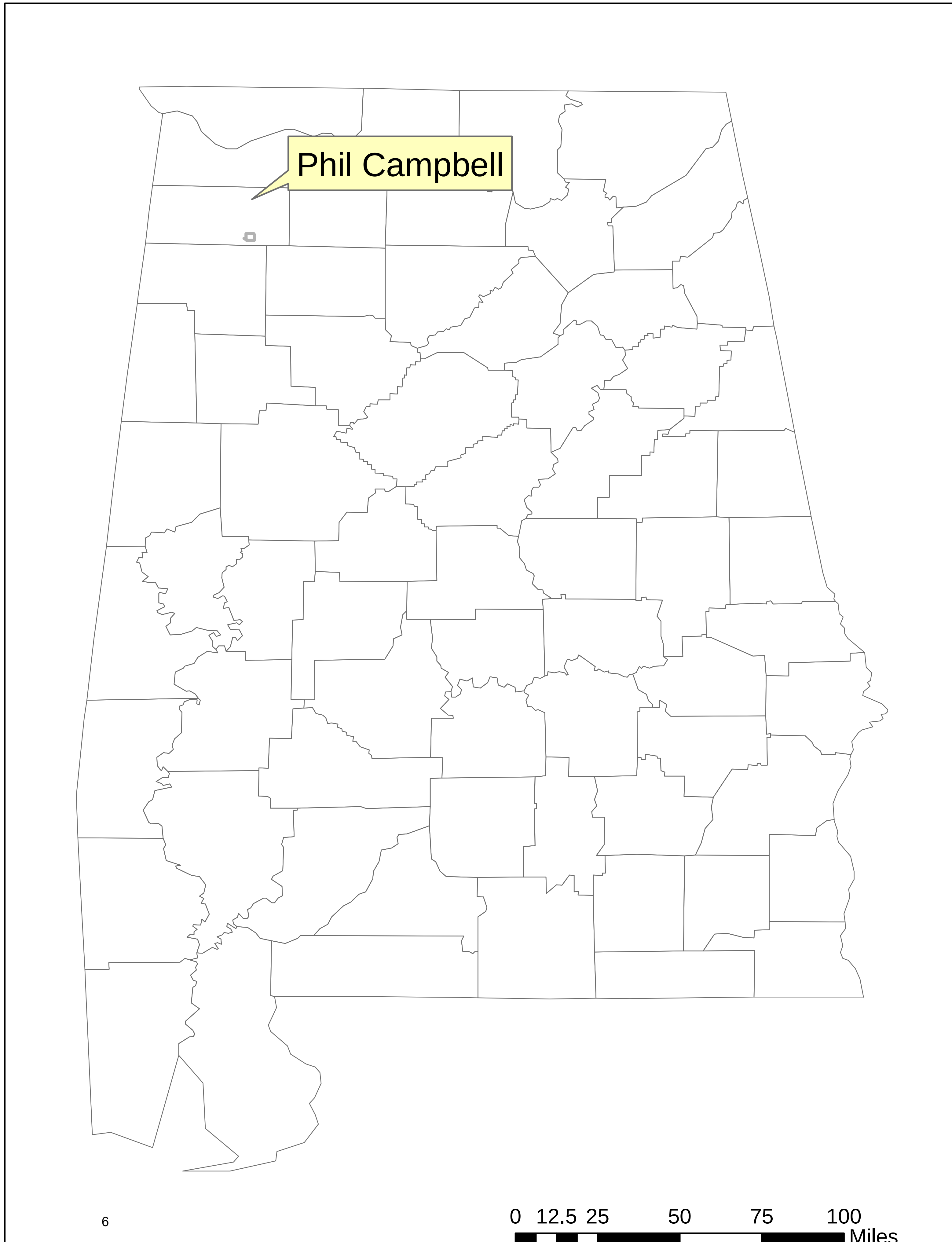
Phil Campbell's Water System serves the town's incorporated area and is supplied by the Bear Creek Water Authority. The City of Phil Campbell operates a residential and commercial sanitary sewer treatment facility that has NPDES permitted capacity of 250,000 gallons per day (GPD). During the years 2005, 2006, and 2007 the average annual discharge rate was 172,250, 109,333, and 101, 667 GPD. Over this three year time span, the plant averaged 135,000 GPD, which is approximately 54% of the plan's capacity. A review of the other NPDES discharge limitations reveals that the plant is operating at 50 to 60% of capacity.

3.2 Climate

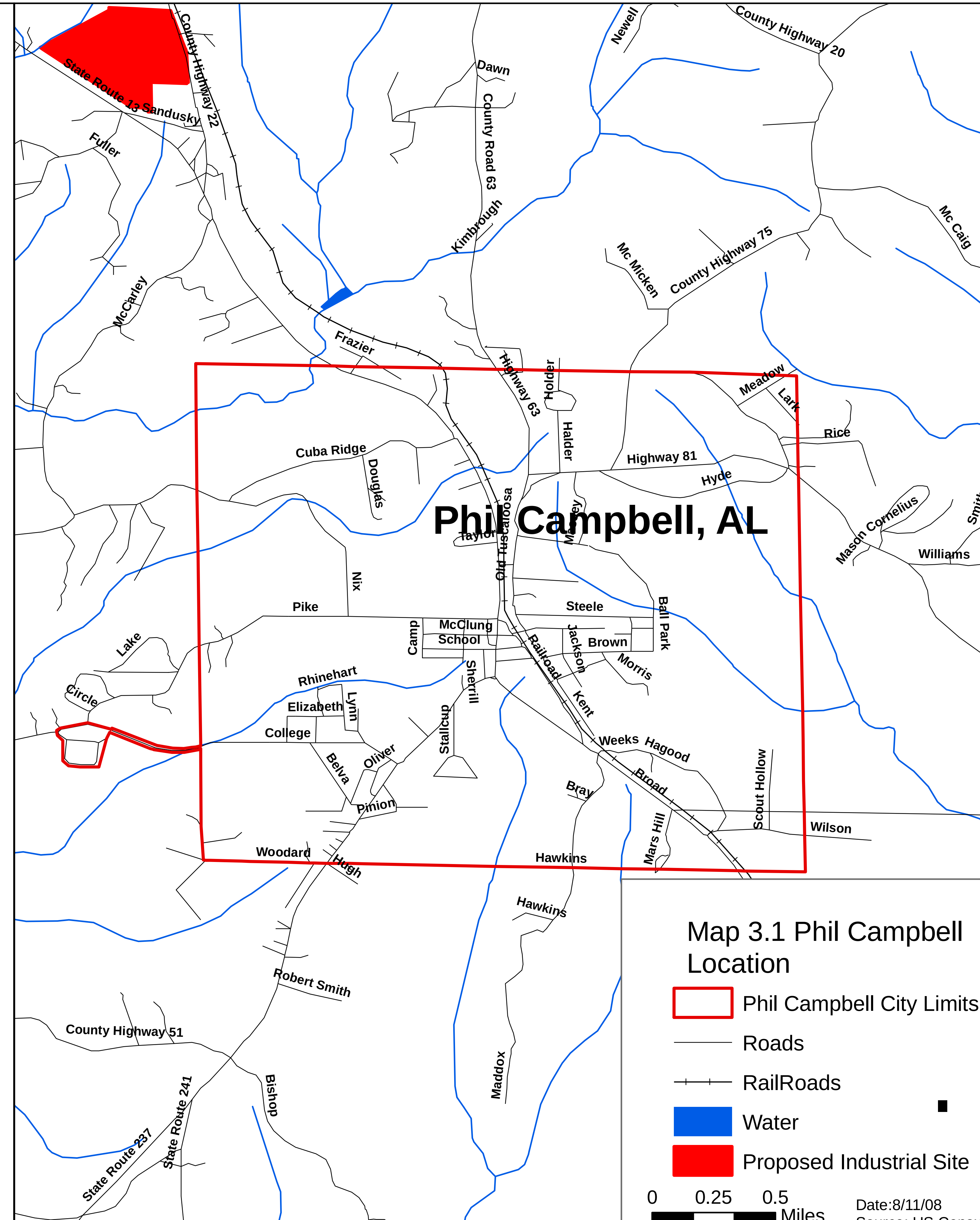
The Planning Study Area (PSA) has a moderate climate with long hot summers and mild winters. On average, there are 85.6 days with a low temperature of 32 degrees Fahrenheit (F°) or lower, but there are on average only 0.6 days with a low temperature below zero. By contrast, an average of 318.8 days per year will have temperatures of at least 50 F°. Of these, 44.8 days will reach 90 F° and 1 day will top 100 F°. During the hottest months, of June, July, August and September, high temperatures will be in the upper 80s and lows will be in the 70s. In the coldest months, temperature lows are in the upper 20s and low 30s, while highs are in the high 30s and low 40s. Average annual rainfall is approximately 57.27 inches per year with accumulations spread throughout the year. Average annual snowfall is 1.2 inches and is negligible for the Planning Study Area (see also http://cdo.ncdc.noaa.gov/climatenormals/clim20/al/017131.pdf). The PSA is subject to partial drought during periods without rainfall. These may only occur once or twice every 10 years. Severe droughts are less frequent; however the most recent drought on record occurred in 2007 and was among the most severe recorded.

3.3 Topography

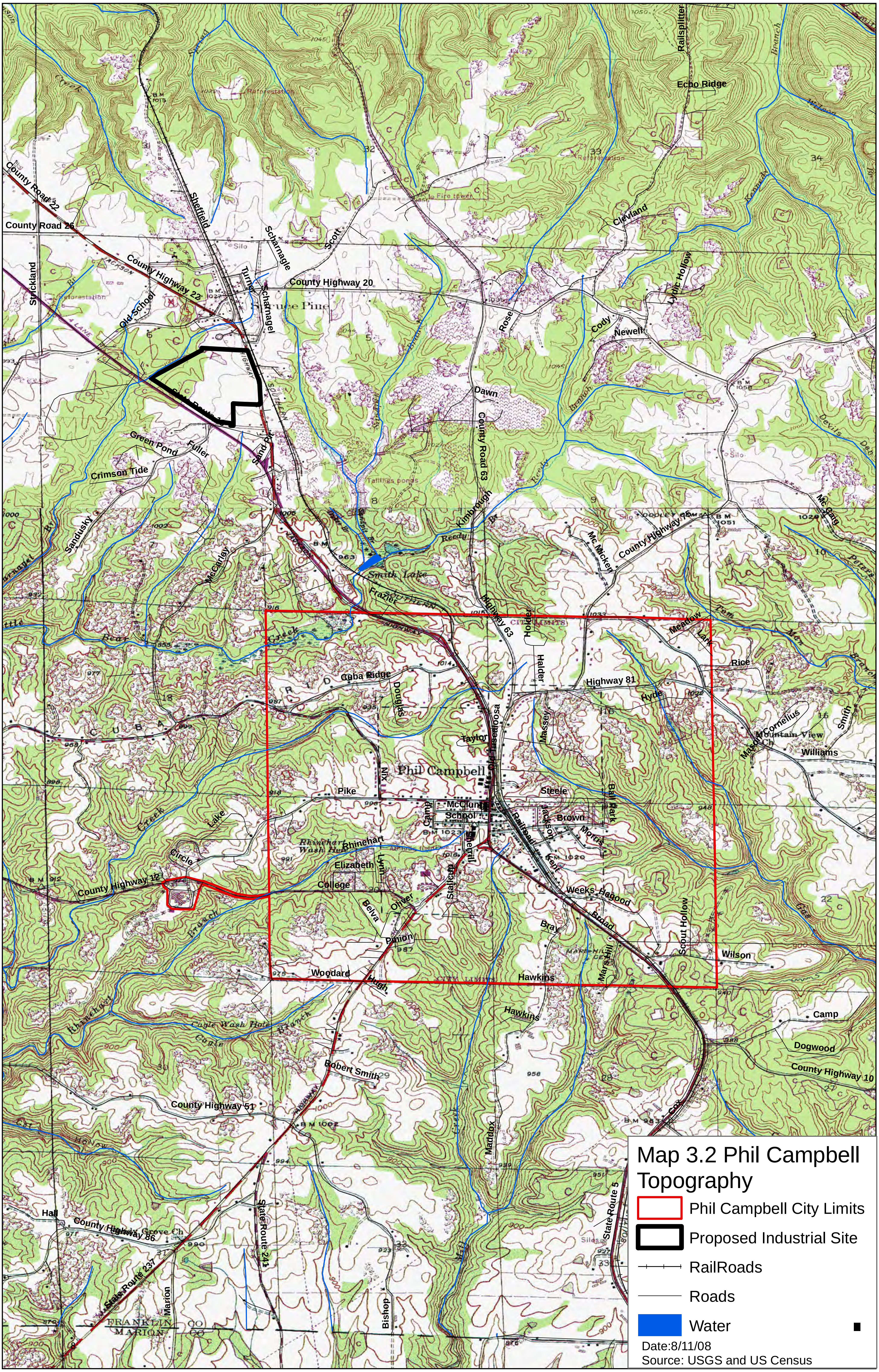
Franklin County resides in two physiographic regions, the Coastal Plains and limestone valleys. Most of the county is in the Coastal Plains, areas more hilly than typical Coastal Plains terrain. The northeastern one-fourth of the county is within the limestone valleys and are more nearly level, undulating or rolling than other parts of the county. The Planning Study Area is located in the southeast portion of the county among the most hilly terrain in Franklin County. Within the PSA, the terrain varies from narrow plateaus of nearly level land to moderately steep slopes. Elevations in the PSA range from around 950 to 1010 feet above mean sea elevation (MSE) **(Map 3.2: Phil Campbell Topography)**. The collection of buildings that forms the core of Phil Campbell occupies a relatively flat area found at the approximate high point of the planning study area. Slopes present a significant barrier to building development and the extension of some water and sewer alternatives.



Phil Campbell
0 12.5 25 50 75 100
Miles



Phil Campbell, AL
Map 3.1 Phil Campbell Location
Phil Campbell City Limits
Roads
RailRoads
Water
Proposed Industrial Site
0 0.25 0.5
Miles
Date:8/11/08
Source: US Census


Map 3.2 Phil Campbell Topography
Phil Campbell City Limits
Proposed Industrial Site
RailRoads
Roads
Water
Date:8/11/08
Source: USGS and US Census
Phil Campbell
County Highway 20
County Highway 22
County Road 25
County Road 22
County Road 63
Highway 81
County Highway 12
County Highway 10
County Highway 51
County Highway 86
State Route 5
State Route 237
State Route 241
Echo Ridge
Smith Lake
Cuba Ridge
Spruce Pine

3.4 Soils

The soil characteristics of an area play a crucial role in determining site suitability for a particular type of development. Soil characteristics such as slope, permeability, and depth determine the suitability for construction of roads, bridges, reservoirs, septic tank systems, foundations, landscaping, as well as potential necessary improvements to these sites. For the purpose of wastewater treatment, the most important features to consider are those affecting treatment alternatives, such as suitability for septic tanks, reservoirs, lagoons, and spray fields.

There are three primary soil associations prevalent in the Phil Campbell area. From greatest to least common, they are: Savannah-Ruston-Saffell association, Guin-Cuthbert-Ruston association, and Rock land, limestone-Rock land, sandstone association. According to the USDA Soil Conservation Service **(Appendix A: Soil Reports)**, all soils in the Planning Study Area are categorized as "Very Limited" in their capacity to support septic treatment systems, and each soil type suffers from one or more of a variety of limiting factors including depth to cemented pan, depth to saturated zone, bottom layer seepage, slow water movement, and slope. While such categories indicate dominant soil characteristics and do not eliminate the need for site-specific analysis, the prevalent features of soils within the Planning Study Area indicate the need for mitigating activities and/or alternatives to septic systems for wastewater treatment.

The State of Alabama and the Alabama Department of Public Health promulgates rules determining the location and construction of septic systems. In general, any development must be connected to an approved system for disposing of wastewater, which fall into two categories: conventional and engineered. Typically, a site with slight or moderate limitations, as determined by the Department of Public Health, is suitable for conventional systems, while those with greater limitations require engineered systems, where septic disposal is possible at all (see Rules of State Board of Health Bureau of Environmental Services, Division of Community Environmental Protection, Chapter 420-3-1, Onsite Sewage Treatment and Disposal, adopted March 19, 2006, effective November 23, 2006. Available http://www.adph.org/onsite/assets/rules11-23-06.pdf. 7-22-08).

(Map 3.3: Phil Campbell Soil Classifications)

(Map 3.4: Phil Campbell Soil Septic Limitations)

(Map 3.5: Phil Campbell Primary Septic Limitations)

(Map 3.6: Phil Campbell Soil Slopes)

3.5 Geology

Franklin County's major geologic formations are the Tuscaloosa formation, the Pottsville formation, and the Bangor limestone formation. The Tuscaloosa formation is the youngest of the three and is made up of irregular beds of sand, clay, gravel and some lignite. In Franklin county, this formation is most often found at or near the surface and is the source of the parent material of the Coastal Plains. The Pottsville formation is made up of similar beds of shale and sandstone and is found directly below the Tuscaloosa formation at depths of a few feet to about 1,000 feet. The Bangor limestone occupies most of the northeastern quadrant of the county. In southeastern Franklin County, near Phil Campbell and the Planning Study Area, typically the Tuscaloosa formation is found at the surface, except where wind or weather has exposed the Pottsville formation's shale and sandstone on narrow ridge tops or at the bottom of steep slopes.

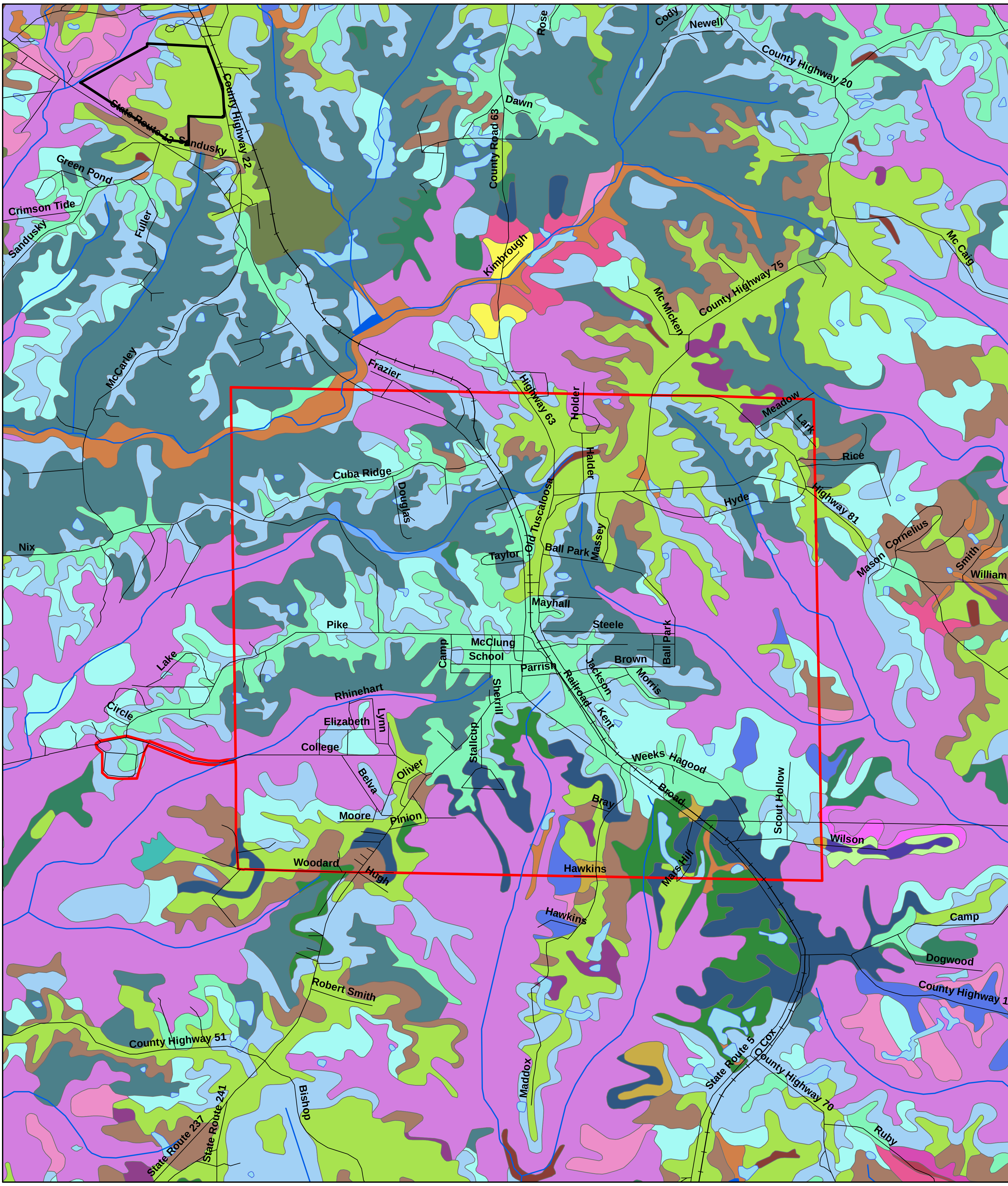
3.6 Natural Resources

Underlying geologic formations create the potential for numerous natural resources in the PSA. The underlying parent material (limestone and sandstone) allow for sand and gravel deposits in the vicinity, with a reduced overburden for ease of harvesting. The PSA is located within an area (Chattanooga Shale/Floyd Shale Paleozoic- Total Petroleum System) which is known to produce petroleum products, in particular natural gas and coal deposits. Additionally, the PSA contains large amounts of forested land with quality timber resources.

3.7 Critical Sites Within Planning Study Area

3.7.1 Historical Sites

A review of the National Register of Historic Places indicates that there are no registered sites located within the Planning Study Area. However, the Alabama Historical Commission, State Historic Preservation Officer (SHPO) requires detailed plans for the specific site to be utilized must be submitted prior



Soil Classification

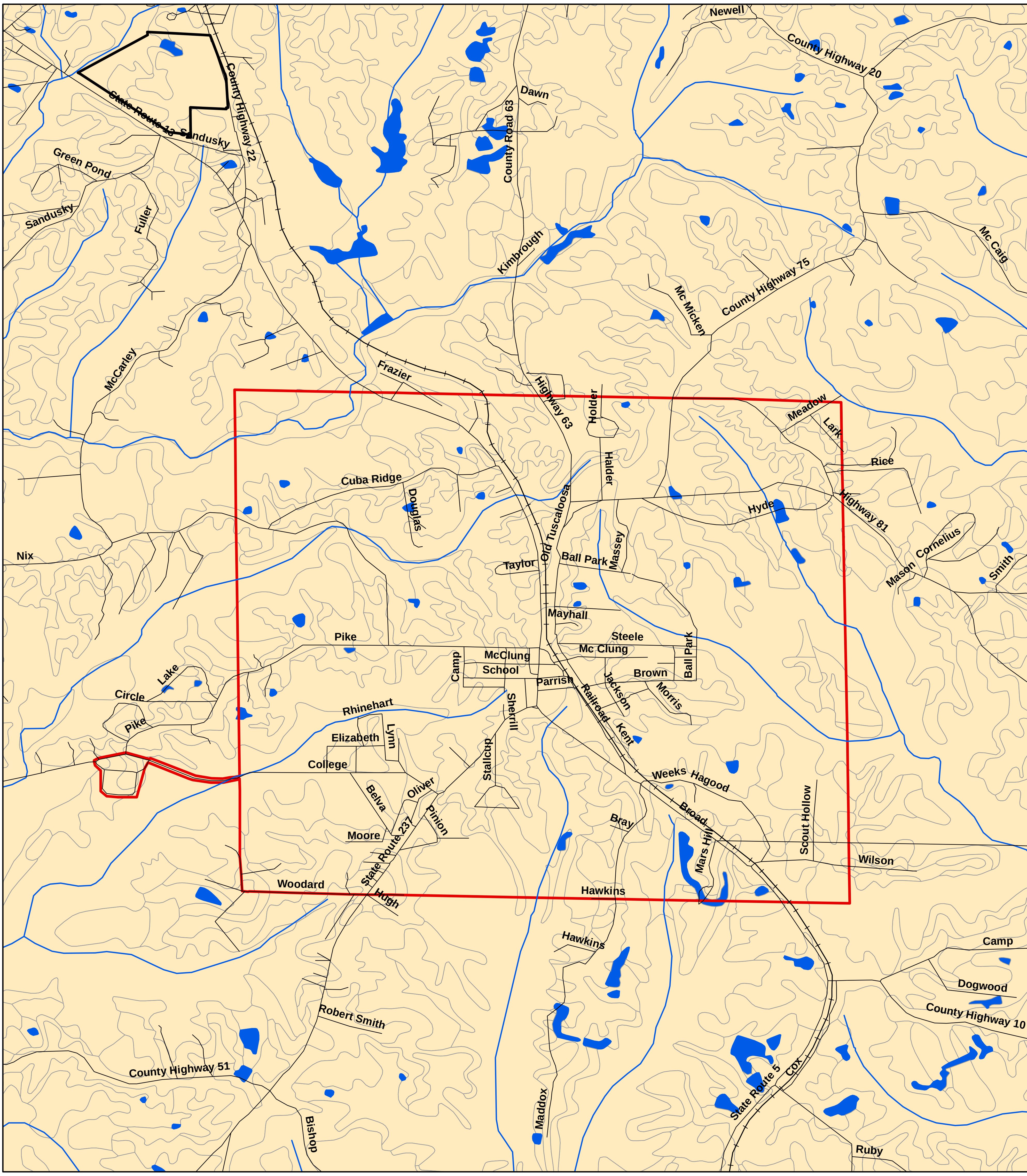
- Albertville 2 to 6% Slope
- Albertville 6 to 10% Slope
- Albertville 6 to 10% Slope, eroded
- Albertville 10 to 15% Slope
- Bibb
- Cuthbert 6 to 10% Slope
- Cuthbert 10 to 15% Slope
- Cuthbert
- Guin 10 to 15% Slope
- Guin 15 to 40% Slope
- Gullied Land
- Iuka
- Linker 2 to 6% Slope
- Linker 6 to 10% Slope
- Linker 6 to 10% Slope, eroded
- Linker 1- to 15% Slope
- Mine pits
- Ochlockonee
- Ora 2 to 6% Slope
- Ora 6 to 10% Slope
- Ora 6 to 10% Slope, eroded
- Ora 2 to 6% Slope, eroded
- Ramsey 10 to 15% Slope
- Rock Land, sandstone
- Ruston 6 to 10% Slope
- Ruston 6 to 10% Slope, severely eroded
- Ruston 10 to 15% Slope, eroded
- Ruston 10 to 15% Slope, severely eroded
- Saffell 2 to 6% Slope
- Saffell 6 to 10% Slope
- Saffell 6 to 10% Slope, eroded
- Savannah 6 to 10%, severely eroded
- Savannah 0 to 2% Slope
- Savannah 2 to 6% Slope
- Savannah 2 to 6% Slope, eroded
- Savannah 6 to 10% Slope
- Savannah 6 to 10% Slope, eroded
- Water

- Proposed Industrial Site
- Phil Campbell City Limits

Northwest Alabama
Council of Local Governments
8/6/2008
Source: USDA and US Census Bureau

0 0.25 0.5 1 Miles

Map 3.3: Phil Campbell Soil Classifications



Phil Campbell City Limits

Proposed Industrial Site

Water

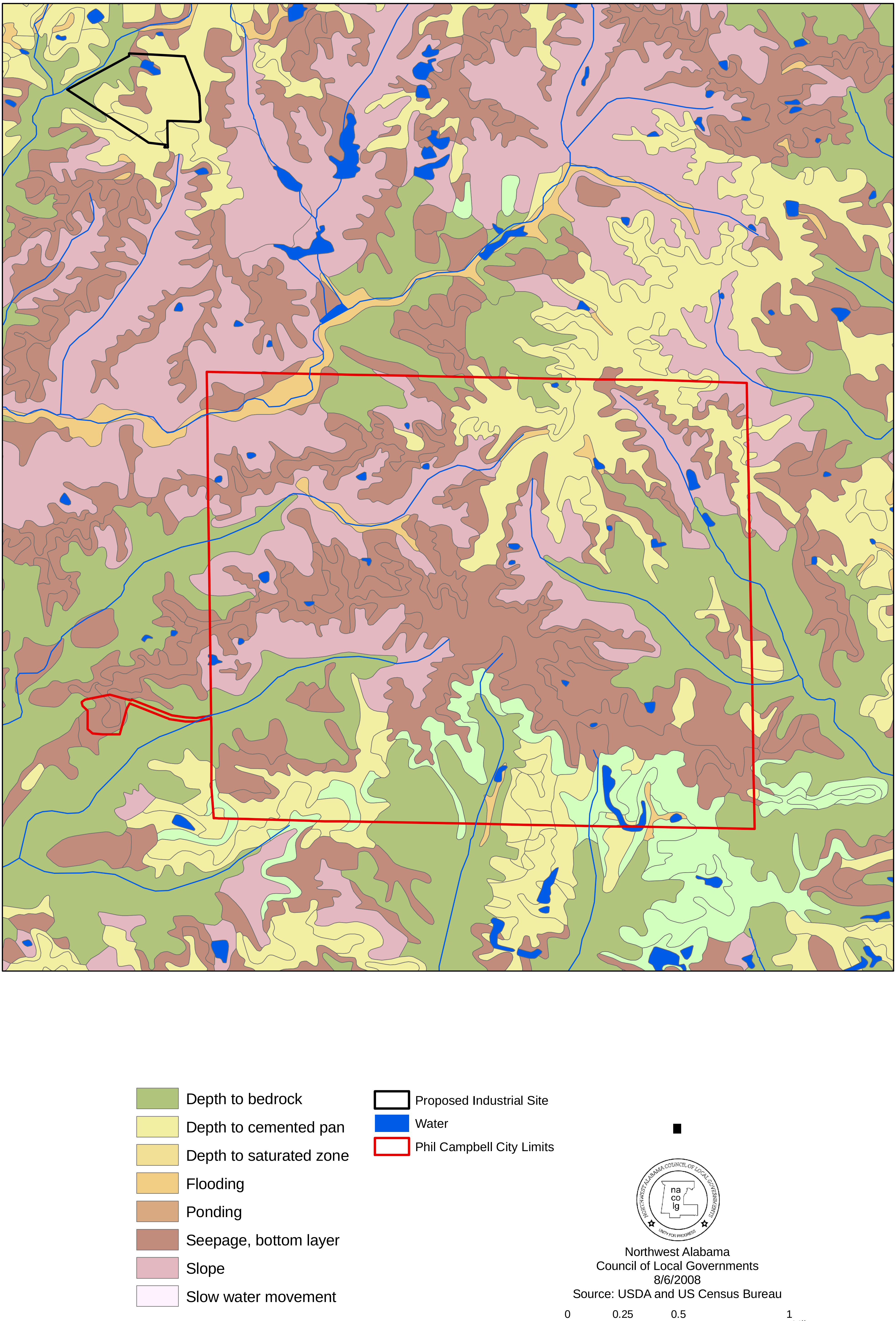
Somewhat Limited

Very Limited

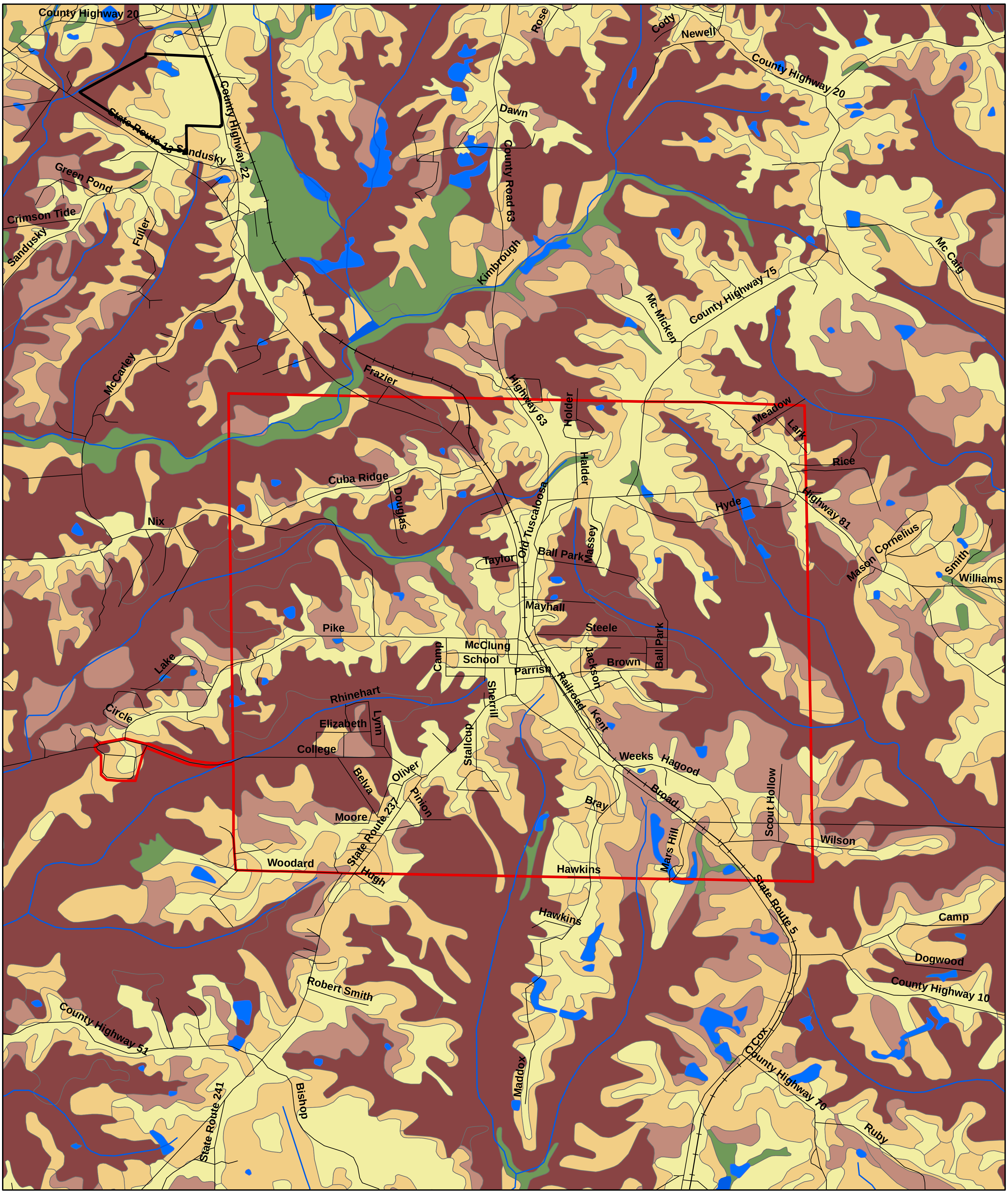
Northwest Alabama
Council of Local Governments
8/6/2008
Source: USDA and US Census Bureau

0 0.25 0.5 1 Miles

Map 3.4: Phil Campbell Combined Soil Septic Limitations



Map 3.5: Phil Campbell Primary Septic Limitations



RailRoads

Roads

Proposed Industrial Site

Phil Campbell City Limits

Slope Percent

Water

0 to 2

2 to 6

6 to 10

10 to 25

15 to 40

Northwest Alabama
Council of Local Governments
8/6/2008
Source: USDA and US Census Bureau

0 0.25 0.5 1 Miles

Map 3.6: Phil Campbell Soil Slopes

to the construction of any wastewater collection and/or treatment system on previously undisturbed land or right-of-way.

3.7.2 Landfill and Solid Waste Disposal(s)

No landfill operations are located within the study area. The Town of Phil Campbell operates a solid waste collection service that serves residential, commercial and industrial customers. Non-hazardous waste is transported to the Franklin County landfill.

3.8 Hydrology

3.8.1 Hydrologic Cycle

Basic atmospheric processes account for the hydrologic cycles of the planning area. The basic cycles consist of the evaporation of water from the Gulf of Mexico and lesser bodies of surface water in the region. This vapor moisture is then transported by regional air currents and eventually deposited as precipitation primarily as rainfall and the uncommon accumulation of snow. This precipitation then either collects as surface drainage in one of the numerous watercourses or bodies of water, or infiltrates into the groundwater system. Small quantities of rainfall are directly intercepted by vegetation. Surface waters either impound and evaporate to return as precipitation or traverse via discrete channels to the Gulf of Mexico where the evaporation process reoccurs thereby completing the hydrologic cycle.

3.8.2 Groundwater

Ground water is the result of the hydrologic cycle and the constant circulation of moisture between the earth and the atmosphere, which work together to deposit water in porous rock formations, or aquifers, beneath the earth's surface. The availability of water within the aquifer is dependent upon a number of factors, including the stored reservoir, the amount of water matriculating through the recharge zone, and the amount of water being withdrawn. "Availability" is based on the actual amount of water present in the aquifer system as well as various notions concerning permissible uses and withdrawal that affect water quality, land subsidence, and sustainable supply.

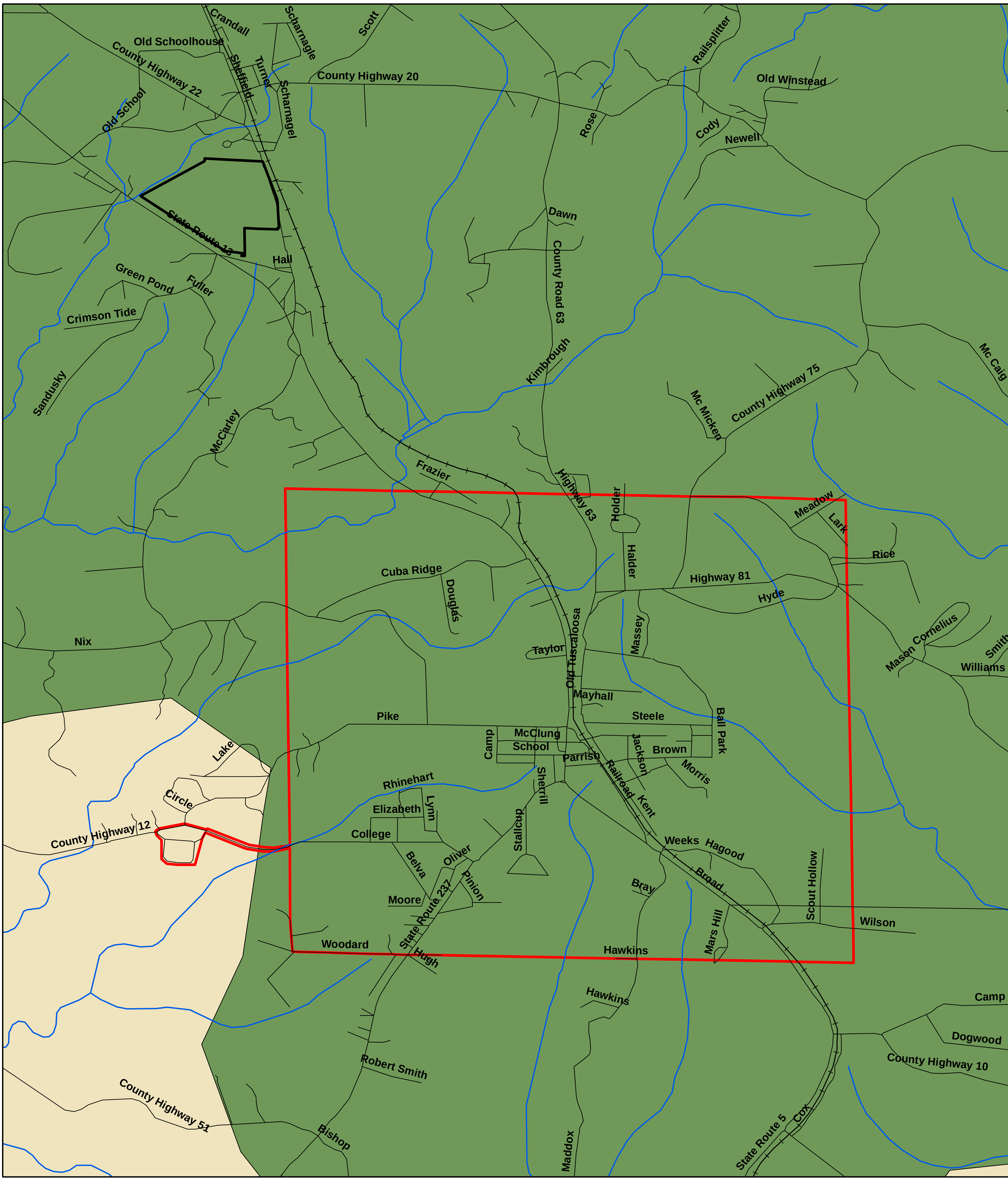
The Planning Study Area is located atop two perched aquifers, which are the shallowest principal aquifers of the area. Other aquifers may be located at greater depths and may have greater or lesser potential yields. The majority of the study area is above the Southeastern Coastal Plain system, which is made up of semi-consolidated sand formations (**Map 3.7: Phil Campbell Aquifers**). Semi-consolidated sand aquifers have moderate to high hydraulic conductivity due to a mixing of fine and course grain materials. Water flows more freely through these aquifers at the upper topographic points of the recharge area, sometimes affecting water quality in the lower aquifer (see http://capp.water.usgs.gov/aquiferBasics/uncon.html). A small portion of the study area is above Appalachian Plateau aquifers consisting of sandstone, which typically contains very tight pore spaces due to compaction and cementation, so that water is stored principally in cracks and fissures. Although they tend to have low to moderate hydraulic conductivity, where these aquifers extend over large areas they can produce large quantities of water (see http://capp.water.usgs.gov/aquiferBasics/sandstone.html).

Wells located within the PSA are generally shallow and are not known for the quality or quantity of drinking water that they produce. They contain high contents of naturally occurring minerals such as iron and manganese. Additionally, they tend to dry out quickly due to their shallow depth. Lately, a number of wells have tested positive for high levels of coliform.

Within the PSA, the public water system does not utilize ground water as the source waters for public water service. However, statewide approximately 800,000 people or 20% of the state's population depend on private wells for drinking water. Owners are responsible for testing wells to ensure the safety of water supplies. Wells can be threatened by a number of activities, including inappropriate wastewater disposal, failing septic systems, runoff and sedimentation, and pollution resulting from industrial or commercial activities, including runoff from developments and direct pollutants such as leaking storage tanks.

3.8.3 Surface Water

The Planning Study Area is located within the Bear Creek Watershed, which generally runs north toward the Tennessee River in Colbert County. The area has relatively good drainage characteristics due to the sloping topography



Proposed Industrial Site

RailRoads

Roads

Hydro

Phil Campbell City Limits

Principal Aquifer

Pennsylvanian aquifers

Southeastern Coastal Plain aquifer system

Northwest Alabama
Council of Local Governments
8/26/2008
Source: USGS and US Census

0 0.25 0.5 1 Miles

Map 3.7: Phil Campbell Aquifers

and system of intermittent streams that drain the area. The PSA rests atop a ridge that drains northwest to Little Bear Creek and southwest to Bear Creek. A number of perennial streams receive surface runoff waters before joining with these larger streams (**Map 3.8: Phil Campbell Wetlands**). Bear Creek is the drinking water source for Phil Campbell. The Environmental Protection Agency (EPA) lists impaired streams in the watershed as follows: Little Dice Branch due to sedimentation/siltation; Bear Creek from Mill Creek to Upper Bear Creek Dam due to aluminum; and Little Dice Creek (located in Mississippi) due to biological contaminants. A number of regulated discharges are found the vicinity of Phil Campbell, including several temporary road construction permits and more permanent discharges associated with industry and municipal services (Facility Registry System, U.S. EPA, Jul. 22, 2008).

3.8.4 Flooding

The several areas in the vicinity of the Planning Study Area are subject to localized flooding due to drainage patterns. The major areas subject to a one hundred year flood are along Gas Creek, Little Bear Creek, Ready Branch and Smith Lake. A copy of the flood hazard map as developed by FEMA accompanies this report. **(Appendix B: Flood Hazard Maps)** The enclosed map is derived from the Flood Insurance Rate Map and shows the flood hazard area around the Phil Campbell Planning Study Area.

3.9 Prime Farmland

Prime farmland is land designated by the United States Department of Agriculture as having the physical, chemical and climate characteristics needed to produce sustainably high agricultural yields when acceptable farming methods are utilized. Prime farmland is assessed in terms of a variety of characteristics and is summarized through listings of soil map units bearing these characteristics (see http://soils.usda.gov/technical/handbook/contents/part622.html#04). The conversion of prime farmland to other uses is occurring at rapid rates nationwide, since many of the characteristics that make land most suitable for farming are shared with suitability for development. From 1992 to 1997, the State of Alabama ranked tenth in the nation among states for the number of acres of prime farm land converted to another use (see http://www.nrcs.usda.gov/technical/NRI/maps/tables/t5839.html).

Franklin County, Alabama possesses approximately 62,467 acres of prime farmland map units, according to USDA soil mapping data, which represents approximately 15% of the total area of the county. Of these prime farmland units, parcel analysis indicates that approximately 54,315 acres of this land (86.95%) are located on parcels of 5 acres or greater, an indication of the degree of development or site disturbance (generally, larger parcels are less developed). Parcel analysis of Phil Campbell (**Map 3.9: Prime Farmland Soil Units**) indicates approximately 410 acres of prime farmland units (11.1% of the total land area), of which 293 acres (71.5%) is found on tracts larger than five acres. North of Phil Campbell in the industrial park, approximately 41.6 acres of the site are mapped as prime farmland units, representing 52% of the site. However, this acreage, which is planned for industrial use, is approximately 0.06% of the total prime farmland acreage of Franklin County and less than 0.08% of the mapped prime farmland units currently in tracts larger than 5 acres.

3.10 Threatened and Endangered Species

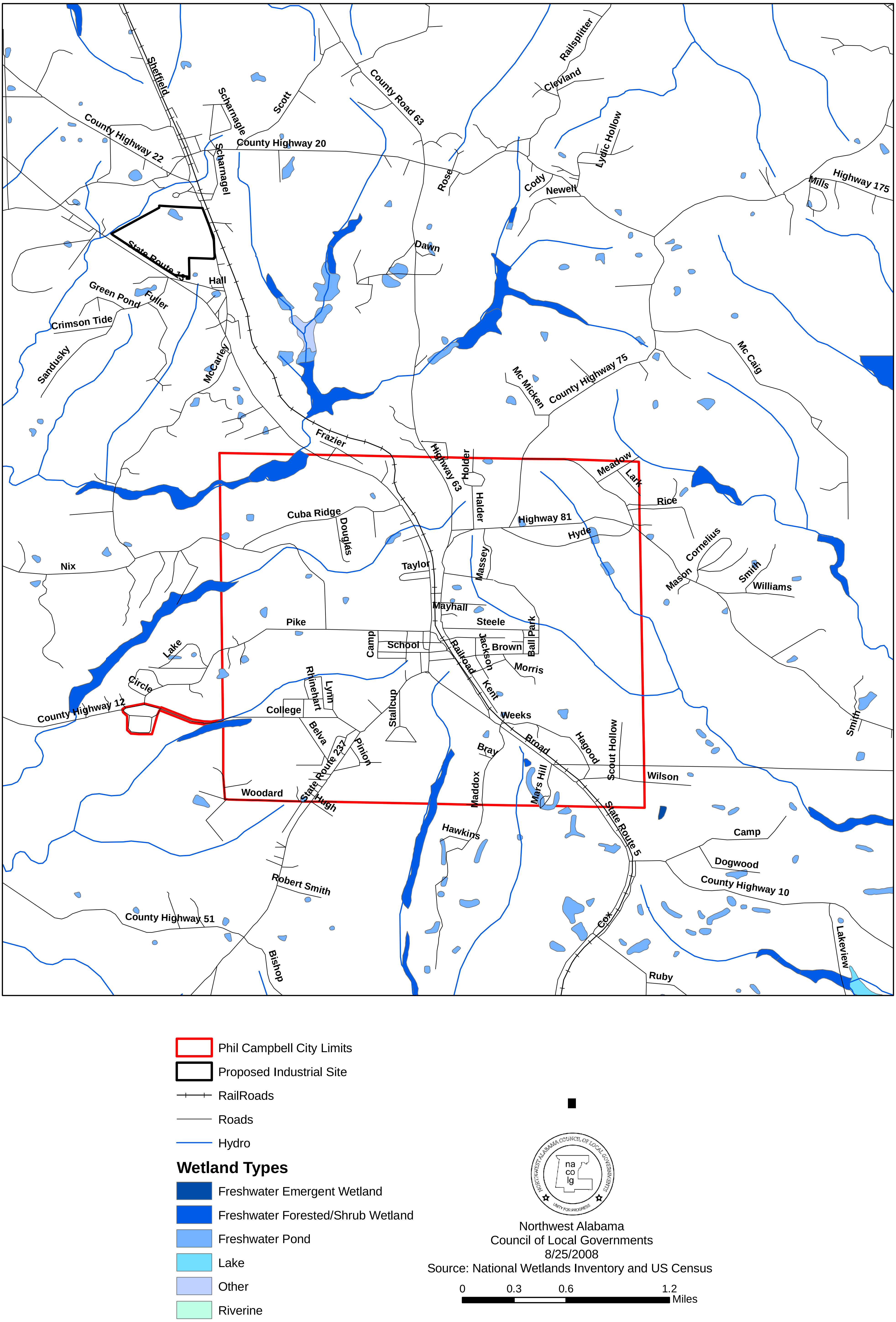
Prior review of projects by the U.S. Department of Fish and Wildlife indicates the following threatened or endangered species may occur within the PSA:

Lyrate bladderpod (*Lesquerella lyrata*)- threatened- a small herbaceous annual plant found in shallow soils next to limestone outcroppings; found only in two Alabama counties (Colbert and Franklin); best surveyed February to May.

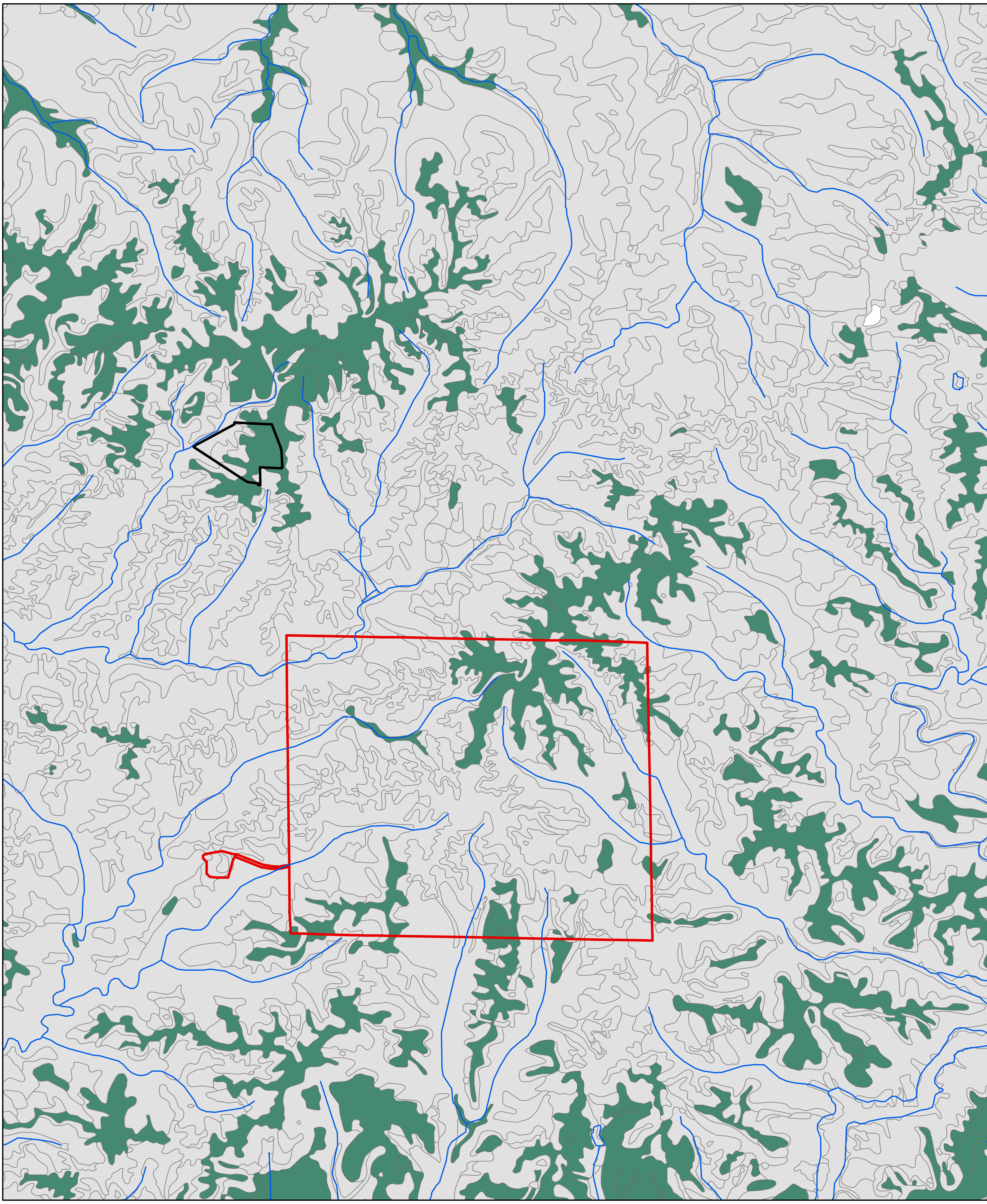
Leafy prarie-clover (*Dalea foliosa*)- endangered- somewhat cryptic, short-lived, stout perennial herb with one to several stems 8 to 31 inches high arising from a hardened root crown that has no capacity for vegetative spread; occurs in thin soils mesic and wet-mesic dolomite prairie, limestone cedar glades, and limestone barrens; best surveyed June to September.

Eggert's sunflower (*Helianthus eggertii*)- threatened- perennial member of the aster family known only from Kentucky, Tennessee, and Alabama; it is a tall (to 2.5 m) plant arising from fleshy rhizomes that can form an extensive network; found in rolling to flat uplands and full sunlight to partial shade; best surveyed August through October.

Tennessee yellow-eyed grass (*Xyris tennesseensis*)- threatened- perennial grass growing 2.3- 3.3 ft high, typically occurring in clumps around a bulbous



Map 3.8: Phil Campbell Wetlands



Hydro
Proposed Industrial Site
Phil Campbell City Limits

Soil Classification

Prime farmland soil units
Not prime farmland soil units

Northwest Alabama
Council of Local Governments
8/25/2008
Source: USDA and US Census

0 0.4 0.8 1.6 Miles

Map 3.9: Phil Campbell Prime Farmland

base; found on steep slopes, springy meadows and the slopes of small streams; best surveyed August through September.

3.11 Air Quality

Air quality data within the Planning Study Area is very limited. The most recent readily available data (see EPA Air Quality Index) includes only 48 days of the year 1998; however, during this period all days were rated as "good". Air quality data available in adjacent counties with greater development densities is generally good. There are no air registered facilities emitting air pollutants located within the PSA, and only 4 countywide. Given the available data and the density of development within the Planning Study Area, air quality is presumed to be good.

3.12 Transportation

Surface transportation in the planning study area is good and is improving with progress made toward completing the series of four lane highway projects collectively known as the "Haleyville bypass", which will provide better connectivity with U.S. Highway 78 or Future I-22 located 30 miles south. This new interstate is expected to expand development opportunities just North of Phil Campbell. Locally, the community is served by a series of roads and streets generally following the topographic relief of the terrain. Major access to the region from the North is by way of U.S. Highway 43, which runs just west of the Planning Study Area. Alabama Highway 13, which leaves U.S. 43 just north of Phil Campbell, continues south through the town. Alabama Highway 243 runs west to east from U.S. 43 and intersects Alabama 13 just south of downtown Phil Campbell. A major Norfolk Southern route is located east of Phil Campbell and is part of a major shipping route between Birmingham, which transmits goods from ports at New Orleans (via Meridian, Mississippi) and Mobile, and Memphis, which is the major point of crossing for goods entering the Eastern U.S. from points west of the Mississippi River.

The Phil Campbell industrial site is located just north of Phil Campbell along Alabama Highway 13. The park is just south of U.S. 43 between Highway 13 and the railroad. The site is the only industrial park in the county with direct access to rail. It is also convenient to the future route of the "Haleyville bypass", which will lead to Interstate 22 only 30 miles away.

3.13 Recreation

The Town of Phil Campbell operates and maintains an active recreation department under the supervision of the Phil Campbell Parks and Recreation Board and a full-time director. The town operates three main recreational facilities: Massey Fields, Roger Bedford Park, and the Phil Campbell Municipal Swimming Pool. Recent renovation and construction have expanded the ballfields at Roger Bedford Park and renovated the municipal swimming pool. Altogether, the Town provides approximately 29.2 acres of recreational property, including ball fields, swimming pool, picnic pavilion and tables, and a ½ mile recreational trail.

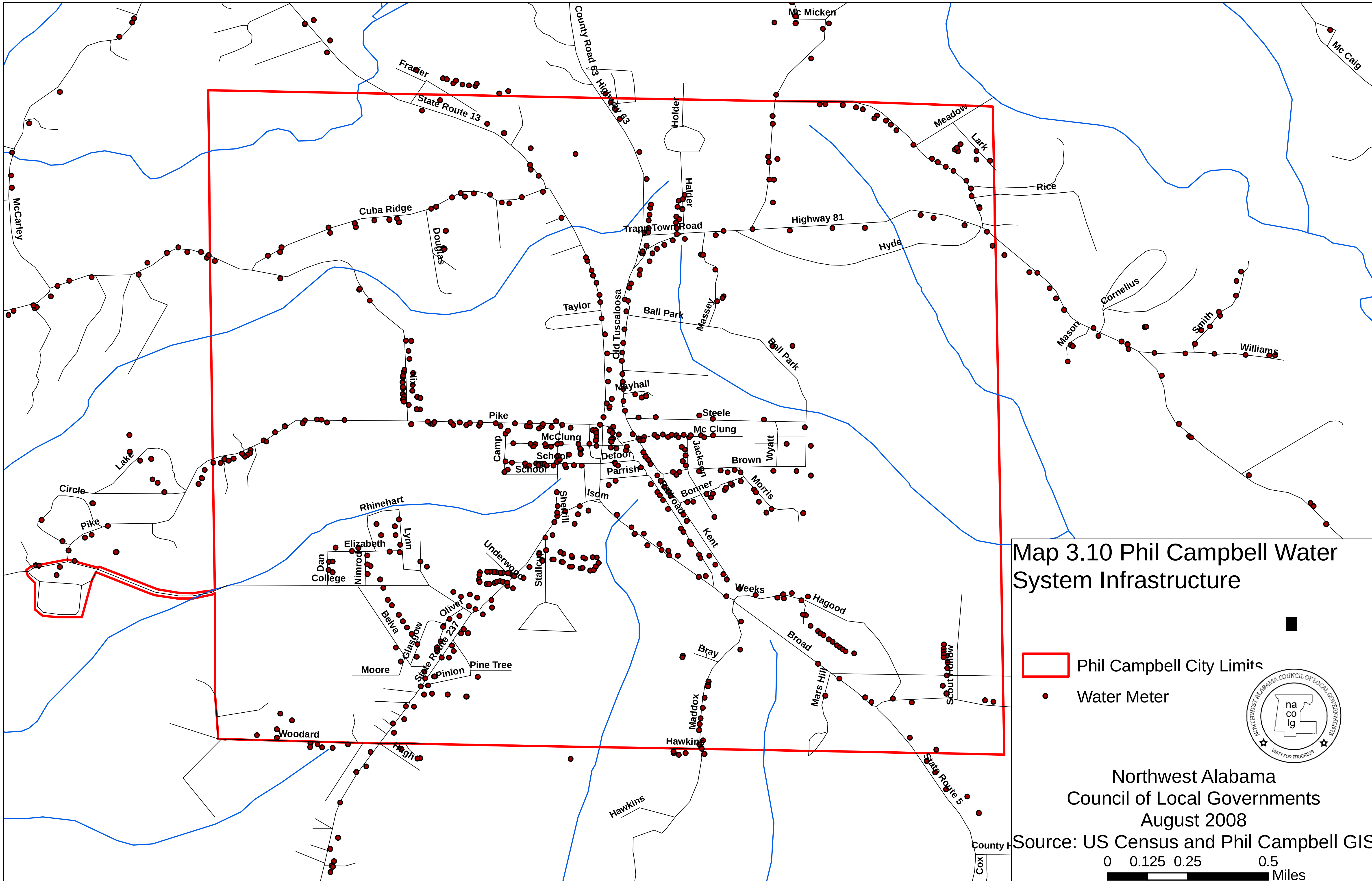
3.14 Water System

Public water in the planning study area is provided by the Town of Phil Campbell, which operates the distribution center for this part of the county. The City of Phil Campbell provides clean water to the local citizens and industry through purchase and sale of 800,000 gallons of water per day from the Bear Creek Water Authority (**Map 3.10: Phil Campbell Water System Infrastructure**).

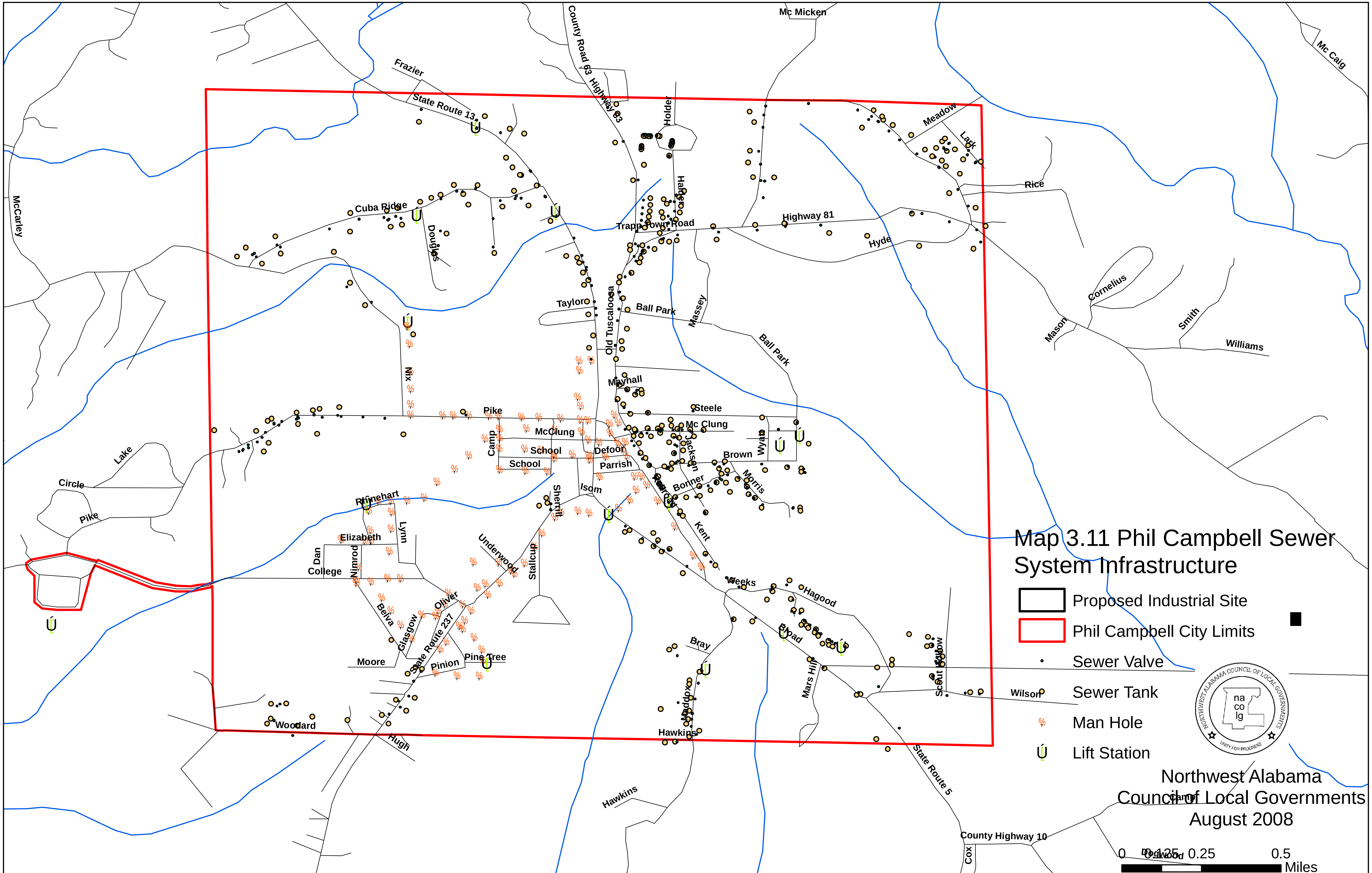
3.15 Wastewater Facilities Existing System Analysis

The Phil Campbell Wastewater Treatment Plant has an NPDES permitted capacity of 250,000 gallons per day (GPD). During the years 2005, 2006, and 2007, the average discharge rate was 172,250, 109,333, and 101,667 GPD, respectively. Over this three year span, the plant averaged 135,000 GPD, which is approximately 54% of the plant's capacity. A review of the other NPDES discharge limitations reveals that the plant is operating at 50% to 60% of capacity.

The existing plant utilizes an oxidation ditch with a boat clarifier and a chlorination/dechlorination disinfection system with a head works static screen. The existing plant can handle any normal residential or commercial waste. Any toxic waste would be detrimental to the operation of the plant. This plant is considered to be an activated sludge treatment facility. In addition to normal maintenance and the changing out of pumps and bearings on the aerators, this plant is in need of a new



Map 3.10 Phil Campbell Water System Infrastructure
Phil Campbell City Limits
Water Meter
Northwest Alabama
Council of Local Governments
August 2008
Source: US Census and Phil Campbell GIS
0 0.125 0.25 0.5
Miles
na
co
lg
NORTHWEST ALABAMA COUNCIL OF LOCAL GOVERNMENTS
UNITY FOR PROGRESS
Mc Micken
Mc Caig
County Road 63
Highway 63
Frazier
State Route 13
Holder
Halder
Meadow
Lark
Rice
Cuba Ridge
Douglas
Trapp Town Road
Highway 81
Hyde
McCarley
Taylor
Old Tuscaloosa
Ball Park
Massey
Cornelius
Smith
Mason
Williams
Mayhall
Pike
Steele
Mc Clung
McClung
Camp
School
Defoor
Parrish
Jackson
Wyatt
Brown
Morris
Bonner
Isom
Railroad
Kent
Lake
Circle
Rhinehart
Sherrill
Lynn
Elizabeth
Dan
College
Nimrod
Underwood
Stallion
Weeks
Hagood
Broad
Bray
Oliver
Belva
Glasgow
State Route 237
Moore
Pinion
Pine Tree
Scout Hollow
Mars Hill
Maddox
Hawkins
Woodard
Haigh
State Route 5
County H
Cox


Map 3.11 Phil Campbell Sewer System Infrastructure
Proposed Industrial Site
Phil Campbell City Limits
Sewer Valve
Sewer Tank
Man Hole
Lift Station
Northwest Alabama Council of Local Governments
August 2008
0 0.125 0.25 0.5
Miles

head works screen. The replacement of the head works screen will bring this plant in good condition for operation of the next 10 to 15 years.

The overall Phil Campbell sewer system appears to be in good condition and is not experiencing an inflow/infiltration problem like other systems. This is largely due to the fact that most of the Phil Campbell sewer system consists of small diameter PVC lines. Another advantage is that this system was constructed in the late 1980s and is less than 20 years old. The majority of the sewage is pumped from homeowner's septic tanks into a sewer collector system before spilling into a gravity sewer system. The problem with this system is that it is pumping septic sewage waste and the age of the sewage combined with the aeration of the pumps and the spilling into manholes causes hydrogen sulfide that eats away at the existing gravity collector system. The small capacity pumps at the residences are also causing problems because these pumps are unable to pump the solids that are being placed into the residential sewer, mainly plastics. Phil Campbell has a good maintenance staff in place to maintain the overall sewer system, which is in good condition. However, a lot of time is being expended to provide maintenance that should not be necessary in a standard gravity collector system (**Map 3.11: Phil Campbell Sewer System Infrastructure**).

4.0 DEMOGRAPHIC TRENDS

4.1 Current Population Profile and Trends

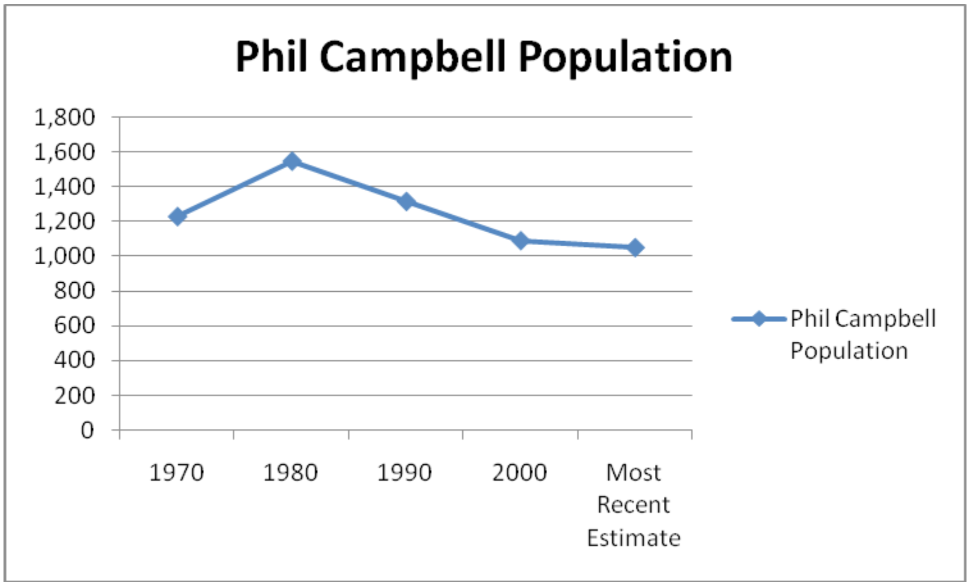
4.1.1 General Population Description and Trend

The Town of Phil Campbell has experienced sizeable population decline over the past decade. In the 1970 Census, the town had a population of 1,230. By the 1980 Census, this had increased to 1,549. However, in 1990 Census the town's population had fallen to 1,317. Ten years later, the 2000 census reported 1,091 individuals residing in Phil Campbell. The most recent Census estimates indicate a continuance of this trend, with an estimated population of 1,061.

Table 4.1: Population Profile and Trends

		1970	1980	1990	2000	Most Recent Estimate
Phil Campbell		1,230	1,549	1,317	1,091	1,051
	Percent change over prior decade	25.90%	-15.00%	-17.20%		
	Numeric change over prior decade	319	-232	-226		
Franklin County		23,933	28,350	27,814	31,223	30,479
	Percent change over prior decade	18.50%	-1.90%	12.30%		
	Numeric change over prior decade	4,417	-536	3,409		

Comparatively, Franklin County's population has grown from 23,933 in the 1970 Census to 28,350 in 1980. Population dipped slightly to 27,814 in 1990, but rebounded strongly in 2000 to 31,223. Today's population estimates place Franklin County's population at approximately 30,479 individuals.



4.1.2 Population by Age Group and Age Cohort

Age cohort analysis provides some perspective into the dynamics of population change. Phil Campbell experienced an almost universal loss of population across age groups from 1990 to 2000. The most significant declines were in the cohorts age 10-24 and those age 60-79 in 1990. The following tables show the population distribution by age cohorts in Phil Campbell in 1990 and 2000.

4.2 Population Forecasts for Phil Campbell

Several projection methodologies are used to estimate the population of the Planning Study Area out to 2025, which is approximately a 20 year planning horizon. First, a traditional arithmetic is used to predict the population based on historical trends. Then, an exponential model based on the historical rate of change is constructed. Finally, through a “step-down” calculation, the population of the study area is predicted based on the change in concentration of study area population to county-wide population from 1990 to 2000. This sliding ratio is then applied to county-wide population predictions through the year 2025. Although each method provides different outcomes, based on the assumptions and limitations inherent in each, comparisons across methods provide significant insight into the composition and potential future distribution of population in the study area.

Table 4.2: Phil Campbell Population by Age Cohort				
Age Cohort	Membership in 1990	Membership in 2000	Numeric Change	Percentage Change
Under 5	84	64	-20	-31.25%
5 to 9	84	63	-21	-33.33%
10 to 14	87	94	7	7.45%
15 to 19	117	77	-40	-51.95%
20 to 24	114	59	-55	-93.22%
25 to 29	86	70	-16	-22.86%
30 to 34	85	77	-8	-10.39%
35 to 39	78	75	-3	-4.00%
40 to 44	72	69	-3	-4.35%
45 to 49	84	74	-10	-13.51%
50 to 54	70	62	-8	-12.90%
55 to 59	62	64	2	3.13%
60 to 64	74	53	-21	-39.62%
65 to 69	71	64	-7	-10.94%
70 to 74	46	48	2	4.17%
75 to 79	47	38	-9	-23.68%
80 to 84	30	22	-8	-36.36%
85+	26	18	-8	-44.44%

4.2.1 General Assumptions and Limitations

The accuracy of individual population projections is related to the underlying assumption that historical growth rates will reflect the changes to come. Each projection method attempts to describe and model an important element of growth; however, it is difficult to accurately predict changes in any population based on historical trends. Such predictions assume first that population trends do not have outside influences and second that conditions affecting population trends will remain the same in coming years. In the case of Phil Campbell the negative rate of change has been caused in part by external economic trends- changes in employment opportunities- and in part by other factors. A positive influence on population will likely occur with the location of an industrial prospect in the town's industrial park. The growth projection methodology as commonly applied cannot take into account possible population expansion based upon the opening of a significant new industry or the completion of a major new transportation corridor in the region.

To accommodate likely changes in the underlying assumptions that limit growth prediction, a population *forecast* is utilized, which makes judgments about the likelihood of population trends based on an evaluation of the underlying assumptions. Contrasted with a projection, which is dependent upon the assumptions inherent in the projection technique, a forecast is an estimate of population that takes into account historical, quantitative, and qualitative information to provide some insight as to the preferred, likely change in population. The result is an analysis that includes a range of projections and a final forecast, which represents a realistic account of future population given an assessment of existing conditions, assumptions, and trends.

4.2.2 Arithmetic Projections

The simplest of the various methods of population forecasting first calculates the numeric increase in population across a time period, from 1990 to 2000, and then assumes a similar increase will occur in the future. In this method of forecasting, population increases by a static amount over each time interval (5-year period in the present analysis). The major limitation of this method is that it does not incorporate any considerations regarding the *rate* of change in population, instead producing a straight-line result that does not accurately reflect the potential long-run impact of population growth. Each time period adds a set number of new individuals to the population and, as population grows from this accumulation, each interval adds a smaller and smaller proportion of the *total* population. The result is a potentially inaccurate forecast in situations where population is increasing at a steady rate proportionate to total population (i.e. where the concentration of population living in an area leads to more people wanting to live in that area). Nonetheless, under conditions where data is limited, which is the case with respect to Phil Campbell, this type of forecast is useful to illuminate the general trend in population dynamics. The results of this forecasting method (see Table 4.4) indicate significant population loss within the PSA. The cumulative effect of the arithmetic projection is a forecasted 50% loss in the total population of the PSA, from the 2006 estimate of 1,051 down to a population of 526 by 2025.

Table 4.4: Arithmetic Population Projections						
1990	2000	2005	2010	2015	2020	2025
1317	1091	978	865	752	639	526

4.2.3 Exponential Projections

The next forecasting method is calculated based on the proportionate rate of change in population from 1990 to 2000. In this method, population increases in each five-year interval based on a constant rate. The primary assumption (and primary deficit) of this method of forecasting is that the 1990-2000 rate of population growth will hold constant in the future. A number of important changes (including the location of a major new industry) might affect changes in growth rates. However, as before, data availability is low for the PSA. Table 4.5 shows the results of this method of forecasting. Under these assumptions, population loss is not as rapid or severe, but still falls significantly and is predicated to fall by 35.2% from the 2006 estimate of 1,051 to 681 by 2025.

Table 4.5: Exponential Population Projections						
1990	2000	2005	2010	2015	2020	2025
1317	1091	993	903	822	748	681

4.2.4 "Step-Down" Forecast for Study Area

Finally, a step-down forecasting method was modeled, which represents the proportion of study area population to the population of the total county for the planning period. First, the population of Franklin County is forecast based on more complicated (and arguably more accurate because of data availability) methods. Then, the proportion of the study area's population to that of Franklin County is calculated for the years 1990 and 2000. Then the annualized change in population distribution in the county from 1990 to 2000 is calculated. Finally, the proportion of study area population to county population is calculated in five-year intervals from 2000 forward, allowing the trend toward lower concentrations of population in the study area to continue over the course of the population forecast. This advantage of this method is that it allows for conditions wherein the population of the PSA is either a) declining while other parts of the county are growing or b) people are migrating from out of the PSA and to other parts of the county. Either of these assumptions would result in a lower concentration of population in and around Phil Campbell and a higher county population, which is evident in the trend from 1990 to 2000. The limitation of this assumption is that it is based on the premise that population will continue to leave the study area, and that the rate of departure will remain constant.   As shown in Table 4.6, this forecasting method produces the most severe of all outcomes because it assumes that the proportion of residents in Franklin County that choose to live in Phil Campbell will continue to decline. As this concentration falls off, population is predicted to fall by 62.2% from the 2006 estimate of 1,051 to 397 by 2025.

Table 4.6: Step-Down Population Projections

	1990	2000	2005	2010	2015	2020	2025
Franklin County	27814	31223	32895	34513	36019	37357	38469
Phil Campbell	1317 (4.74%)	1091 (3.49%)	987 (3.0%)	866 (2.51%)	727 (2.02%)	570 (1.52%)	397 (1.03%)

4.2.5 Wastewater Study Area Population Trends

Each of the preceding projection methods encompasses a set of assumptions regarding the nature of growth in the Planning Study Area. Although all trends point to falling population in the PSA, the degree of loss varies based upon the assumptions of the projection technique. Taken together, these predictions produce a reliable indication of negative growth rates in the PSA. These predictions provide the foundation for the land use analysis and wastewater flow projections that follow. As shown, the population of the Town of Phil Campbell, exclusive of any annexation or dramatic external changes, is forecast to decline by significant margins by 2025.   At the same time, population growth is expected to continue in Franklin County, fueling the demand for additional property for economic and industrial development. By supplying this need, the Town of Phil Campbell positions itself to capture some of the growth potential in Franklin County and to revitalize itself and arrest the present decline. The effects of projected population change on land use and, in turn, wastewater facilities, is explored in the following sections. First, however, the assessment turns to local economic and employment features in an attempt to describe existing conditions and the likely effects of the location of a new industry in the Phil Campbell industrial site.

5.0 ECONOMIC TRENDS

5.1 Labor Force and Employment

5.1.1 Labor Force

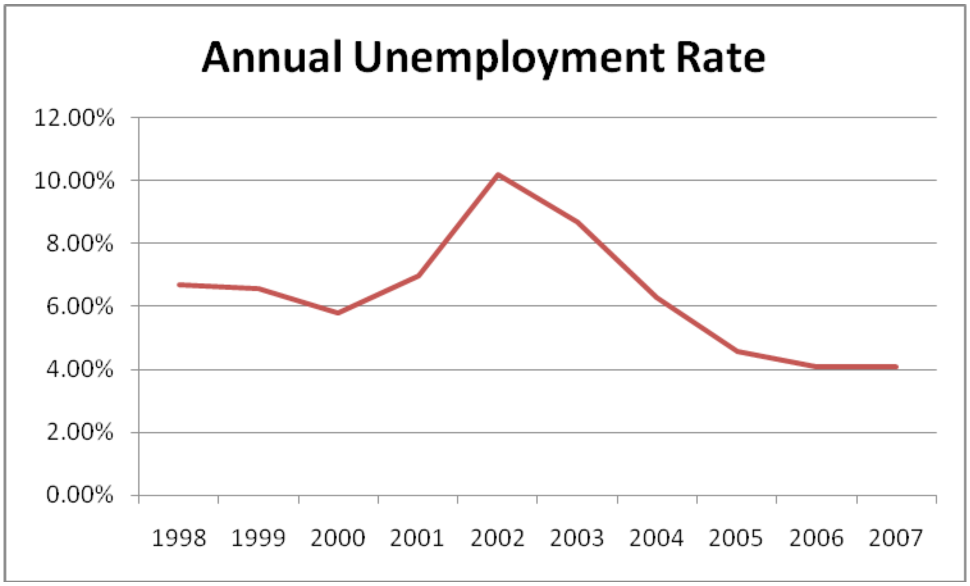
Table 5.1: Employment Status

	Phil Campbell		Franklin County	
Population 16 years and over	**868**	**100%**	**24,493**	**100%**
In labor force	476	54.8%	13,862	56.6%
Civilian labor force	476	54.8%	13,862	56.6%
Employed	438	50.5%	13,089	53.4%
Unemployed	38	4.4%	773	3.2%
Percent of civilian labor force	8	(X)	5.6	(X)
Not in labor force	392	45.2%	10,631	43.4%
Females 16 years and over	**459**	**100%**	**12,665**	**100%**
In labor force	206	44.9%	6,130	48.4%
Civilian labor force	206	44.9%	6,130	48.4%
Employed	196	42.7%	5,782	45.7%
Own children under 6 years	**68**	**100%**	**2,192**	**100%**
All parents in family in labor force	37	54.4%	1,155	52.7%

According to 2000 US Census counts, the Town of Phil Campbell has a labor force of 868 individuals, defined as persons 16 years of age within the town limits. Approximately 476 (54.8%) were in the labor force, and 392 (45.2%) were not in the labor force. Franklin County's labor force was approximately 24,493 in 2000, with 13,862 (56.6%) in the labor force and 10,631(43.4%) not in the labor force. Female labor force participation was 206 (44.9%) in Phil Campbell and 6,130 (48.4%) in Franklin County. Among families with children less than 6 years old, in Phil Campbell 54.4% had all parents in the labor force and county-wide the rate was 52.7%. Most workers in Phil Campbell (77.9%) were private wage and salary workers, a rate comparable to county, state, and national rates. Average commute time to work in Phil Campbell was approximately 25 minutes.

5.1.2 Unemployment

Franklin County's unemployment rate has fluctuated greatly in the past decade or so, showing marked improvement over earlier years. Estimates from the Bureau of Labor Statistics, unemployment in Franklin County was higher than 10% throughout most of 2002 and early 2003, peaking at 11.6% in February of 2003 prior to beginning a steady decline in recent years. In April of 2007, the unemployment rate hit its most recent low point at 3.7% and began a gradual rise over the next year.



5.1.3 Employment Profile

Northwest Alabama, including Franklin County and Phil Campbell, has struggled as a region to hold onto jobs in industries suffering from downsizing and cutbacks related to globalization. In the past 25 years, total employment in Franklin County has fluctuated on a generally upward path; however, economic development efforts have struggled against job losses in staple manufacturing sectors such as textiles and home furnishings, and mobile homes that have resulted from changes in the economic climate due to outsourcing and product preference. As a result employment in several sectors plummeted in Franklin County, losing, for example, 568 jobs in apparel manufacturing and 178 in primary metals manufacturing (100% of both industries as major employers closed their doors).

According to the US Census Bureau's 2006 County Business Patterns, the largest employment sector in Franklin County is still the manufacturing sector, which is a combination of manufacturing subsectors that taken together account for approximately 44% of the county's total employment and just over half of the county's total payroll (Table 5.2). Altogether, there were approximately 600 individual business and industry establishments in Franklin County, employing approximately 10,733 employees and had an annual payroll of $260,877,000. Based on these statistics, the average establishment size was (10,733/600 = 17.88) approximately 18 employees per establishment. Among just manufacturing establishments, however, employment was considerably higher, with an average of 88 employees per establishment. Approximately 51 establishments were located in the vicinity of Phil Campbell based on a survey of telephone numbers with Phil Campbell listings.

Table 5.2: Selected Statistics by Economic Sector: 2006 Franklin County, AL

2002 NAICS code	Industry description	Establish-ments (number)	Paid employees for pay period including March 12 (number)	Annual payroll ($1,000)
0	Total for all sectors	600	10,733	260,887
11	Forestry, fishing & hunting, & ag support services (113-115)	13	62	1,692
21	Mining	2	b	D
22	Utilities	4	b	D
23	Construction	33	241	5,659
31-33	Manufacturing	53	4,658	133,894
42	Wholesale trade	30	308	6,291
44-45	Retail trade	116	1,072	17,764
48-49	Transportation & warehousing	25	195	4,963
51	Information	12	65	2,208
52	Finance & insurance	49	332	8,896
53	Real estate & rental & leasing	15	b	D
54	Professional, scientific, & technical services	32	109	2,901
55	Management of companies & enterprises	3	b	D
56	Administrative & support & waste management & remediation service	15	g	D
62	Health care & social assistance	73	1,291	35,833
71	Arts, entertainment, & recreation	7	b	D
72	Accommodation & food services	48	591	5,344
81	Other services (except public administration)	69	288	4,660
99	Industries not classified	1	a	D

Source: U.S. Bureau of the Census, 2006 County Business Patterns

D: Withheld to avoid disclosing data for individual companies; data are included in higher level totals.

a: 0-19 employees b: 20-99 employees g: 1,000 to 2,499 employees

In the Town of Phil Campbell, the 2000 US Census reported (Table 5.3, from sampled population), a similar distribution across employment sectors for residents of Phil Campbell. Manufacturing was the largest sector, with 37% of employment, followed by educational, health and social services (15.3%) and retail trade (10%).

Table 5.3: Phil Campbell Employment of Workers by Employment Sector (2000 Census estimates)

INDUSTRY	Employees	%	Employees	%
Agriculture, forestry, fishing and hunting, and mining	9	2.1%	567	4.3%
Construction	41	9.4%	871	6.7%
Manufacturing	162	37%	4,588	35.1%
Wholesale trade	15	3.4%	537	4.1%
Retail trade	45	10.3%	1,396	10.7%
Transportation and warehousing, and utilities	18	4.1%	729	5.6%
Information	2	0.5%	121	0.9%
Finance, insurance, real estate, and rental and leasing	7	1.6%	438	3.3%
Professional, scientific, management, administrative, and waste management services	8	1.8%	413	3.2%
Educational, health and social services	67	15.3%	2,063	15.8%
Arts, entertainment, recreation, accommodation and food services	17	3.9%	438	3.3%
Other services (except public administration)	27	6.2%	581	4.4%
Public administration	20	4.6%	347	2.7%

Production, transportation, and material moving occupations made up the bulk of worker occupations (29.9%) in Phil Campbell in 2000, followed by construction, extraction, and maintenance occupations (19.2%), and management, professional and related occupations (17.9%). The following table summarizes occupational data for Phil Campbell.

Table 5.4: Occupation Statistics for Phil Campbell (Census 2000)

OCCUPATION	Number	%	Number	%
Management, professional, and related occupations	78	17.8%	2,623	20%
Service occupations	71	16.2%	1,473	11.3%
Sales and office occupations	71	16.2%	2,443	18.7%
Farming, fishing, and forestry occupations	3	0.7%	221	1.7%
Construction, extraction, and maintenance occupations	84	19.2%	1,770	13.5%
Production, transportation, and material moving occupations	131	29.9%	4,559	34.8%

5.2 Income, Payroll, and Earnings

Despite gains in recent years, Franklin County and Phil Campbell continue to lag behind the rest of the state and the nation in terms of income and earnings. The average household income in Phil Campbell in 2000 was approximately $2,579 less than Franklin County, $9,537 less than the State of Alabama, and $17,396 less than the United States. Estimates of poverty status among Phil Campbell families were slightly better than those for Franklin County, but worse than the state or national values. For families with children under 18, however, Phil Campbell's poverty rate was higher than the county, state, or nation. Likewise, the poverty rate among individuals was higher in Phil Campbell than in the county, state, or nation.

Median Household Income Franklin County

Year	Income
1990	$17,907
2000	$27,177

Median Household Income Phil Campbell, Alabama

Year	Income
1990	$14,484
2000	$24,598

Average payroll per employee was $24,300 in 2006. Average payroll was highest in the following sectors:

Information: $33,969
Manufacturing: $28,745
Forestry, fishing and agricultural support services: $27,290
Finance and insurance: $26,795
Professional, scientific, and technical services: $26, 614

5.3 Retail Sales

Retail sales per capita were estimated by the US Census Bureau in 2002 to be $5,129 per person for Franklin County residents. Using this value, the estimated potential for retail sales in Phil Campbell in 2006 was approximately $5.4 million (1,051 x $5,129), down from an estimated $5.6 million in 2000 due to population loss.

5.5 Education Profile

Among Phil Campbell residents, the rate of high school and college graduation was less than statewide. A larger percentage of residents had some college, less than 1 year than statewide or at large in Franklin County. A larger percentage of residents of Phil Campbell reported having more than one year of college, but no college degree, or an associate's degree than for Franklin County at-large. However, a higher concentration of individuals statewide possessed bachelor's degrees than in Franklin County or the town of Phil Campbell.

Table 5.5: Educational Attainment	Alabama	Franklin County, Alabama	Phil Campbell town, Alabama
No schooling completed	1.24%	2.31%	1.46%
Nursery to 4th grade	0.77%	1.86%	1.72%
5th and 6th grade	2.08%	3.80%	1.33%
7th and 8th grade	4.23%	7.16%	7.82%
9th grade	3.83%	7.70%	7.82%
10th grade	4.46%	6.43%	6.63%
11th grade	4.04%	4.70%	7.16%
12th grade, no diploma	4.07%	3.93%	2.92%
High school graduate (includes equivalency)	30.38%	30.50%	27.45%
Some college, less than 1 year	6.51%	6.55%	8.89%
Some college, 1 or more years, no degree	13.96%	10.88%	11.80%
Associate degree	5.38%	4.49%	4.91%
Bachelor's degree	12.18%	5.93%	4.64%
Master's degree	4.77%	2.75%	4.24%
Professional school degree	1.38%	0.81%	0.93%
Doctorate degree	0.70%	0.21%	0.27%

6.0 HOUSING

6.1 General

The total number of housing units within the Phil Campbell incorporated boundary for 1990 was 593. For the year 2000 census, the total number of estimated housing units was 555 units. In 1990 there were 44 vacant units, while in 2000 there were 99 units vacant. This vacancy rate represented 7.4% of the total units in 1990, increasing to 17.8% of the total number of units in 2000, along with a reduction in the total number of units. The majority of the decline in housing units was registered in a loss of housing in structures with 5-9 units, which accounted for 31 of the 38 total units lost from 1990 to 2000. The median value of a home in 1990 was $34,500 and $50,000 in 2000 (adjusted for inflation, $34,500 in 1990 dollars would have the purchasing power of $72,098.30 in $2000). Only 4 units (0.9%) lacked complete plumbing in 2000, an indication of housing quality below acceptable levels. Average household size was 2.51 in 2000.

Table 6.1: Structural Characteristics of Housing Units

Units In Structure	1990	2000	Percent Of Total In 2000
1 Unit Detached	408	414	74.60%
1 Unit Attached	1	2	0.40%
2 Units	57	51	9.20%
3 or 4 Units	18	11	2.00%
5 to 9 Units	33	2	0.40%
10 to 19 Units	20	20	3.60%
20 or more Units	0	3	0.50%
Mobile Home	52	52	9.40%

6.2 Age of Structures

Year-Round Housing Units By Year of Construction

Table 6.2: Year-Round Housing Units by Year of Construction

Age of Structure	Number of Units	Percent Of Total
1999 to March 2000	8	1.40%
1995 to 1998	21	3.80%
1990 to 1994	28	5.00%
1980 to 1989	67	12.10%
1970 to 1979	133	24.00%
1960 to 1969	155	27.90%
1940 to 1959	101	18.20%
1939 or earlier	42	7.60%

The largest percentage of current housing stock was built between 1960 and 1969.

6.3 Condition of Housing Stock

Using units with 1.01 persons or more per room as a measure of overcrowding, a total of seven occupied housing units, representing 1.5% of the total in the Town of Phil Campbell were overcrowded. By comparison, the statewide average according to the 2000 Census was 2.94%.

One of the most widely recognized methods for determining substandard housing conditions involves classifying those housing units as substandard which lack complete plumbing facilities. When employing this method in the Town of Phil Campbell there were only 4 units in the town that did not have complete plumbing facilities in 2000. This accounts for only 0.9% percent of the total housing units. This figure is slightly above the statewide average of 0.56 percent.

In 2000, the median value of an owner-occupied housing unit was $50,000.00. In comparison, the average value of an owner-occupied unit statewide was $85,100. The median contract rent in Phil Campbell was $322.00 per month as compared to the state average of $447.00 per month. Among renters, one-third (33.3%) paid 30% or more of their household income in rent.

7.0 LAND USE

7.1 Existing Land Use

Approximately 1,359 acres of land, over 55% of the total land area of Phil Campbell, are devoted to agricultural uses such as farming and timberland **(Table 7.1 and Map 7.1: Land Use)**. Single-family residential land use occupies about 667 acres and is the next most widespread use of property in Phil Campbell at 27% of the total land area. A sizeable amount of land is devoted to institutional land uses, such as the Phil Campbell schools and the Northwest Shoals Community College campus. Less than 20 acres is devoted to commercial use. In terms of urban form, most developments front on major roads. Local streets have been constructed sporadically to serve immediate development needs. Near the Town's commercial and geographic center there is evidence of a planned layout for blocks and lots adjacent to the downtown commercial district; however, the layout does not extend throughout the Town. The resulting pattern shows a small urban core, made up of downtown commercial buildings and adjacent residential development to the west, which is surrounded by a semi-rural and rural fringe.

Table 7.1: Phil Campbell Land Use

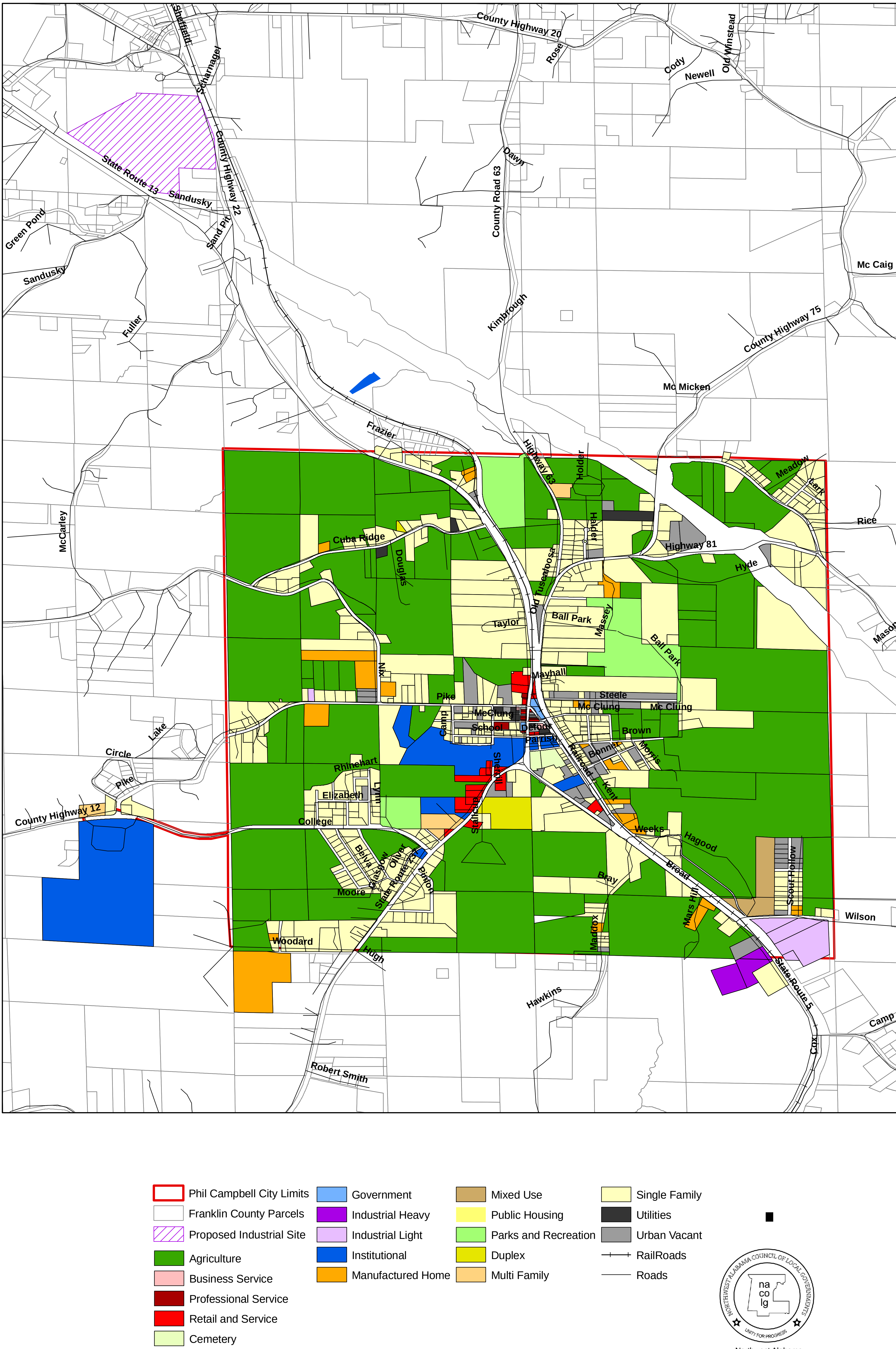
Classification	Parcel Count	Acres	Percent of Land Area
Agricultural	94	1359.07	55.60%
Business Service	3	0.45	0.00%
Professional Services	4	1.37	0.10%
Retail and Services	32	17.36	0.70%
Cemetery	3	4.86	0.20%
Government	3	1.59	0.10%
Light Industry	4	21.32	0.90%
Institutional	13	144.66	5.90%
Mobile Home	23	35.88	1.50%
Mixed use	1	15.77	0.60%
Public Housing	3	75.9	3.10%
Duplex Residential	2	13.29	0.50%
Multi Family Residential	4	11.09	0.50%
Single Family Residential	466	667.24	27.30%
Utilities	8	8.26	0.30%
Urban Vacant	79	65.77	2.70%
Total	742	2443.88	

Calculations are approximate values based on land use survey performed by NACOLG and parcel data supplied by Franklin County.

7.2 Future Land Use

In the study area, as in the most of Franklin County, there is no formal land use or planning process that guides growth and development. Development of any type and intensity may occur virtually anywhere. If the development (residential, commercial, and industrial) can safely use septic tanks and is not in a FEMA identified flood zone, then the development has no land use restrictions.

The land use pattern that is expected to develop during the planning period is driven by the construction and development of the Phil Campbell industrial park and the completion of the Appalachian Corridor V (Highway 24), which will complete a major east-west route just a few miles north of Phil Campbell and the Haleyville Bypass, which will connect Franklin County to I-22. Planning for future economic development opportunities, the citizens of Phil Campbell have allotted and set aside acreage north of Town to be the new Phil Campbell Industrial Park and mixed use development. The creation of this development is dependent on the Town of Phil Campbell being able to provide services that would make the property more attractive to new businesses, which would include a sanitary sewer collection and treatment system. A discouraging effect on future growth and development will result from the lack of centralized wastewater collection and treatment system.



Map 7.1: Phil Campbell Land Use

Northwest Alabama
Council of Local Governments
Source: Franklin Co. Parcels and NACOLG Survey
8/15/08

0.4 0.2 0 0.4 Miles

8.0 WASTEWATER FLOW RATES

8.1 Wastewater Capacity and Existing Conditions

The Phil Campbell Water and Sewer Board currently operates a sanitary sewer collection and treatment system generally within the town limits of the Town of Phil Campbell. The collection system consists of smaller diameter PVC lines connected to grinder pumps, pumping stations, and force mains, which transmit wastewater to the Town's treatment plan. The existing plant utilizes an oxidation ditch with a boat clarifier and a chlorination/dechlorination disinfection system with a head works static screen. The plant is presently permitted to treat up to 250,000 gallons per day.

Sanitary sewer service is not currently available at the town's industrial park located north of Phil Campbell on Alabama State Highway 13. The town is currently in the planning stage of developing an industrial park on this property. The lack of an adequate sanitary sewer system will limit the town's ability to grow and recruit new industries and commercial establishments. The town must explore various sewer collection and treatment alternatives in order to determine the best possible solution for serving this area.

This plan must address both the existing wastewater flow rates within the Town of Phil Campbell, as well as flow rates that are expected with the development of the industrial park. As a part of the plan, an analysis will be made of Phil Campbell's existing system, and recommendations made for handling the anticipated growth over the next 10 years. Alternates included in the analysis include treating the waste from the new development using an on-site treatment and disposal system, and pumping the waste to Phil Campbell's existing treatment facility. In order to complete this analysis, flow rates must be projected alongside projections of anticipated growth, and cost estimates must be developed for each alternate.

In order to determine the required collection and treatment capacities for a new system, the amount, timing and characteristics of the waste generated must be established. Flows must be considered from residential, commercial and industrial establishments in the proposed service area. The time variation of flows is also important in determining the expected minimum and peak flows for designing a system. Any collection system must sustain minimum volumes and flow-rates for self-cleansing and proper maintenance, as well as accommodating peak flows. The overall Phil Campbell sewer system appears to be in good condition and is not experiencing an inflow/infiltration problem like other systems, largely due to the fact that most of the Phil Campbell sewer system consists of small diameter PVC lines.

8.2 Future Wastewater Demand

8.2.1 Future Demand and Economic, Population, and Housing Characteristics

Economic conditions in Phil Campbell will affect the need for wastewater collection and treatment facilities to the extent that changes in population and business and industry mix can be expected to increase or decrease demand for wastewater service. Wastewater demand will be affected by the change in population in Phil Campbell, which will likely affect business and residential demand for wastewater treatment. Reviewing the population forecast from previous sections, the downward population trend indicates a decline in the demand for wastewater facilities in Phil Campbell's existing system that will continue into the next few years. With falling population, housing unit vacancy may increase, creating unused capacity within the wastewater treatment system. Assuming that average household size in Phil Campbell remains constant at the 2000 estimate of 2.5 persons per unit, then the loss of an additional 226 people (equal to the number lost from 1990 to 2000) over the next ten years would reduce wastewater demand estimates by amount equal to the demand from 90 households (226 people/ 2.51 people per household). At an average 150 to 200 gallons per day, population loss and the concurrent reduction in wastewater demand by residences would reduce treatment demand by 13,500 to 18,000 gallons per day at a rate of population decline equivalent to that experienced by Phil Campbell from 1990 to 2000. Choosing the midpoint of this range, reduced demand can be expected to equal approximately 16,000 GPD. Additional losses could be expected as the result of business closures resulting from population decline. Increased employment opportunities are expected to help arrest, but not entirely stop, this decline in coming years. For the purposes of wastewater planning, this indicates sufficient treatment capacity to support additional demand for treatment at existing facilities-- considerations of cost and efficiency notwithstanding.

8.2.2 Future Demand and Industrial Development

In order to improve the quality of life of Franklin County residents, including residents of Phil Campbell, better employment opportunities and higher wages must be obtained. The economic profile of Franklin County informs a strategy that emphasizes the need for continued development of the manufacturing sector. Manufacturing sector employment accounts for a high percentage of the county's employment and, thus, a higher skill-concentration in production. Additionally, the manufacturing sector has the highest payroll per employee and the highest employment per establishment, indicating that the overall impact of expanding manufacturing employment is high. For these reasons, the location of an industry in Phil Campbell is highly desirable

The Town of Phil Campbell currently owns 83 acres designated for industrial use. Presently, the property consists mainly of open space with some wooded areas and very little development. The topography is flat to gently sloping with slopes less than 10%. The size of the Phil Campbell industrial park lends itself to an industry, or combination of industries, employing up to 500 individuals. It is unknown whether this will occur as the result of several small industries locating within the park or with the location of a single, larger prospect. The typical industrial use is projected to create additional wastewater demand based on employment, at a rate of 50 gallons per day per employee. As a result, wastewater flows can be expected to increase by approximately 25,000 gallons per day due to employment in the industrial park.

It should be noted, however, that this estimate of wastewater demand considers only bathroom waste associated with employment and not wastewater flows associated with industrial processes, which in most cases would require pre-treatment prior to disposal in the public wastewater system. Additional capacity may be required to accommodate the needs of particular industrial prospects, and the projected capacity surplus will undoubtedly frame economic development activities.

9.0 WASTEWATER TREATMENT ALTERNATIVES

9.1 Alternative 1: Separate Flows and On-site Industrial Park Systems

Wastewater flows from the Town of Phil Campbell and the proposed industrial park can be considered as separate flows that will be treated and discharged at different locations. It is likely that the industrial park will grow slowly on an industry-by-industry basis and that a small 25-50 employee industry will locate first. One alternate for sanitary sewer treatment and disposal is for each establishment to construct an individual system to meet its needs. With small flow volumes, the individual systems could consist of one or more septic tanks to provide sedimentation and sludge disposal, and a disposal field for treating and disposing of the effluent. Certain establishments would be required to provide pre-treatment such as grease traps and sedimentation basins prior to the individual system. This alternate will be beneficial during the preliminary development of the property, when flows are minimal. Permitting for the individual systems will be by the Alabama Department of Public Health through the local office.

Because of the soils in the area, an industry of this size will probably utilize a septic tank, grease trap, and field lines to handle its sewage. This type of system would cost each industry approximately $25,000. As each industry locates in the area, most will choose this same method of handling waste. Under this scenario, once the industrial park is full, it is recommended that a sewer collector system be constructed for the area.

Assuming that a large industry with 500 employees locates in this area, it is possible that septic tanks and field lines could be installed to handle the waste. This type of system and the size necessary would consume five to ten acres of the land in the industrial park. This type of system would cost approximately $300,000. The value of the land must be considered before installing a treatment system of this type. It is recommended that nothing be constructed over these field lines, including parking areas. While the septic system and field lines are very reliable, they must be maintained by being pumped out regularly.

Other types of on-site treatment systems will work, but will require land for disposal fields, making them more costly. A system that would require a discharge point is also going to be very costly because of the required treatment and permitting. It should be noted that there is no good receiving stream in the area and the treatment cost would be high. Other land application methods would have larger property requirements, reducing the amount of available land area in the industrial park.

9.2 Alternative 2: Combined Flow and Treatment

Alternatively, wastewater flows may be combined and treated at the city's current facility. From the preceding analysis the wastewater capacity of the Phil Campbell system is summarized by the following table, which indicates sufficient wastewater capacity to support development within the Town of Phil Campbell under a variety of scenarios, including those in which residential demand increases as a result of successful economic development programs. The following table summarizes wastewater capacity expectations in the next ten years, indicating sufficient, and increasing, treatment capacity due to the loss of residents. Twenty-year capacity was also calculated based on demographic expectations, with similar results- i.e. higher capacity due to residential decline.

Table 8.1: Wastewater Capacity Summary

Total Permitted Capacity	250,000 GPD
- Present Usage (3 year average)	135,000 GPD
= Present capacity	**115,000 GPD**
+ Residential loss (10 year)	16,000 GPD
- Industrial Demand (10 year)	25,000 GPD
= Future capacity (10 year)	**106,000 GPD**

The Phil Campbell Wastewater Treatment Plant will have no problem handling the restroom waste from this number of people. The waste from this facility can be pumped back to the Phil Campbell system. The cost to get this sewage back into the system is $553,323.00, which includes engineering fees. A cost breakdown for this project is included in **(Appendix B: Cost Estimates)**. It is recommended that two pump stations be installed to lower the overall head of the pumps and to allow for better operation and maintenance. This estimate is based on the calculation that each person at the industrial park will use approximately 50 gallons per day or a collective total of 25,000 GPD.

Table 8.2

Proposed Sewer Pumping Stations
for Proposed Industrial Park
Phil Campbell, Alabama

Project Budget

Item No.	Quantity	Unit	Item Description	Unit Cost	Total Cost
1	12,680	L.F.	6" PVC Class 250 Sewer Force Main No. 1	$10.00	$126,800.00
2	1	L.S.	Sewer Pumping Station No. 1 (200 GPM @ 112' TDH)	$95,000.00	$95,000.00
3	5,800	L.F.	6" PVC Class 250 Sewer Force Main No. 2	$10.00	$58,000.00
4	1	L.S.	Sewer Pumping Station No. 2 (200 GPM @ 40' TDH)	$85,000.00	$85,000.00
5	1	L.S.	Subsurface Crossing (Set Up) Bypass	$1,000.00	$1,000.00
6	200	L.F.	Subsurface Crossing (18" Casing) Bypass	$185.00	$37,000.00
7	210	L.F.	Subsurface Crossing (6" DI Carrier Pipe) Bypass	$45.00	$9,450.00
8	1	L.S.	Subsurface Crossing (Set Up) RR	$1,000.00	$1,000.00
9	100	L.F.	Subsurface Crossing (18" Casing) RR	$185.00	$18,500.00
10	110	L.F.	Subsurface Crossing (6" DI Carrier Pipe) RR	$45.00	$4,950.00
11	1	L.S.	Subsurface Crossing (Set Up) RR	$1,000.00	$1,000.00
12	100	L.F.	Subsurface Crossing (18" Casing) RR	$185.00	$18,500.00
13	110	L.F.	Subsurface Crossing (6" DI Carrier Pipe) RR	$45.00	$4,950.00
14	1	L.S.	Connection to Existing System	$1,000.00	$1,000.00
15	200	Ton	Asphalt Replacement	$95.00	$19,000.00
			Total Estimated Construction Cost		$481,150.00
			Engineering Design and Inspection		$72,172.50
			Total Estimated Project Cost		**$553,322.50**

Assume 500 employees at industrial park. Assume restroom waste only.
Assume 50 gallons/person/day = 25,000 GPD
Use two pumping stations to keep pumping head to a minimum.
Place one on site and one near Campbell Arms Apartments.

8/6/08

10.0 SELECTED ALTERNATIVES

The preferred alternative for wastewater treatment in Phil Campbell must reflect a number of considerations and alternative development scenarios. Existing conditions indicate a decline in population and residential wastewater demand through the next several years. The success of the Town's economic development strategy, which centers on the development of the Phil Campbell Industrial Park, will be measured by the slowing or reversal of this trend. However, in the immediate future, the treatment of residential wastewater does not appear to reduce the ability of the Town to meet wastewater demands in other areas. Likewise, wastewater flows from businesses are not expected to reduce treatment capacity in the near term. Therefore, the primary factor affecting treatment alternatives will be the development of the Town's industrial property.

The two primary collection and treatment alternatives for the industrial park are (1) on-site collection and disposal, with an eventual connection to the treatment facility at Phil Campbell and (2) immediate connection to Phil Campbell's existing treatment facility. The speed with which the industrial park develops, the size of industries locating within the park, and the need for process waste discharge will be the primary determinants of which alternative is chosen. Both alternates have difficulties, but both are sufficient under different conditions.

The benefit of alternative (1) is its relatively low up-front cost to Phil Campbell; however, long-term costs will be higher overall. But, the lack of sewer service to the site is an unmistakably strong deterrent to most industrial prospects, and this alternative would narrow the development prospects considerably. Additionally, the soils of the area are not of the highest quality in terms of septic treatment capacity, which could lead to increased installation costs, land area requirements, and maintenance costs—all of which would deter industry. Finally, the cost of extending sewer service to the area will increase over time, and the future cost will be ineligible for many funding opportunities associated with new economic development prospects.

Alternative (2), which calls for the delivery of wastewater to the Phil Campbell treatment facility via force main and pumping stations, is likewise problematical. Up-front costs would be considerably higher for the Town, and, unless full build-out is achieved relatively quickly, lines and stations will require upgrading to accommodate gradual development. This alternative works best in a scenario with a single large industry locating within the park; however, such factors are not predictable. The presence of sewer service to the site would be beneficial to marketing the site.

Of the two alternatives presented, the preferred alternative will be that which is sufficient to meet the needs of new industries and can be most readily financed. Phil Campbell will continue to pursue opportunities to enhance the infrastructure of the industrial park through wastewater facilities improvements- as a means to both decrease overall development costs and promote the park's industrial growth. However, the on-site treatment alternative will be held open for circumstances in which it is a viable alternative; e.g., where an immediate prospect is willing to create jobs without access to centralized sewer service.

11.0 IMPLEMENTATION AND POTENTIAL FUNDING SOURCES

The expansion of the Phil Campbell wastewater facilities service will be accomplished primarily through private investment and external funding sources. The expansion of the system based on current system revenues would be cost prohibitive. Revenues received from growth and development accompanying sanitary sewer expansion can be expected to provide for operation and maintenance, including capital depreciation; however, initial capital investment costs are beyond the revenue capacity of the system or the Town of Phil Campbell. The system and Town must, therefore, seek external sources of funding to finance construction of the system.

11.1 Private Investment

Typically, private investment is the source of financing for most residential and commercial wastewater extensions, which occur incrementally in the course of land development. As property is taken from its natural state to accommodate the additional demand for housing and commercial and industrial development, the Town's would benefit from establishing development policies, particularly subdivision regulations, to guide the design and installation of sanitary sewers. These regulations must be sufficient to ensure that, among other utilities, the sewer service is adequate for the town.

11.2 Grant Opportunities

A number of sources of external funding are available for investments in community wastewater facilities. Each program has its particular focus area and can be a source of support for implementing the expansion of wastewater services for a given project or area within the study area, depending upon the goals to be met by such an expansion. The following is a list of several of these sources and their main focal points:

<u>USDA Rural Development</u>

Funds are available to public bodies and nonprofit corporations to develop water and waste disposal systems, including solid waste disposal and storm drainage, in rural areas and towns with a population not in excess of 10,000. To qualify, applicants must be unable to obtain the financing from other sources and/or their own resources at rates and terms they can afford.

Community Development Block Grants Program

The State of Alabama currently participates in the state-administered Community Development Block Grant (CDBG) Program. This program is funded by the U.S. Department of Housing and Urban Development and is administered in Alabama by the Alabama Department of Economic and Community Affairs (ADECA). CDBG funds are available under four programs, or funds: Competitive Fund, Planning Fund, Economic Development Fund, and Enhancement Fund. Wastewater projects qualify frequently through Competitive applications, but can be considered for economic development funds, including both grants (with a 20% match) and loans, where an industrial prospect meets certain economic development objectives.

Environmental Protection Agency State and Tribal Assistance Grant Program (EPA STAG)

STAG funds are used to build and enhance the capacity of states and tribes to carry out compliance assurance activities within their respective jurisdictions. The projects selected cover a wide range of activities that have and will continue to enable states and tribes to demonstrate compliance assurance and enforcement outcomes from their activities while serving as models for other states and tribes. These capacity building activities include training, studies, surveys and investigations.

Appalachian Regional Commission

The Appalachian Regional Commission was established in 1965 to improve the economic conditions of Appalachian counties in 13 states, including Franklin County, Alabama. ARC funds are available under one of four broad goals. Wastewater improvements fall under ARC Goal 3: Develop and improve Appalachia's infrastructure to make the Region economically competitive. Grants are available for up to $200,000 per project based upon the attainment status of the county. As of 2008, Franklin County is considered "Transitional" and is required to provide 50% matching funds.

Economic Development Administration

EDA provides grants for utilities and infrastructure improvements in order to promote higher skill and higher wage jobs in an area suffering from economic dislocation. EDA funds are intended to leverage additional private investment through assistance to projects with broad regional and innovative foundations. Generally, EDA funds may not exceed 50% of the total project cost (50% non-federal match requirement).

Special Districts and Private Activity Bonds

A variety of financing options are available to local government entitites and industrial development boards under the heading of special districts and private activity bonds. In general, these financing instruments are available as tax free bonds that are repaid through one or a combination of revenue sources generated from the investment. Tax increment financing and cooperative development districts are common examples.

11.3 Timeline for Implementation

The timeline for implementing the recommendations of this plan depends upon the rate of growth and development in the Town of Phil Campbell and its industrial property. The growth projections based on demographic patterns demonstrate that, under certain assumptions, the Phil Campbell sewer system has sufficient capacity to accommodate changes in population and economic development in the near term. Significantly, wastewater flow rates due to industrial processes are impossible to predict, given the uncertainty surrounding which industries might locate in Phil Campbell. Additional capacity may be required to accommodate such facilities, and the existing capacity surplus will undoubtedly frame economic development activities. Although exact rates of development and exact patterns of development are impossible to predict with high degrees of accuracy, the capacity of the existing treatment and collection systems appears to be sufficient to accommodate growth within traditional areas of the Town, even creating surplus capacity. Elsewhere, implementation will follow the lead of economic developers, who are actively seeking industrial prospects for the Phil Campbell site. Here, too, the Town’s existing capacity is sufficient to accommodate wastewater flows from predictable sources; however, additional needs may become clearer in the course of developing the Phil Campbell industrial park.

Acreage and Proportionate Extent of the Soils

Franklin County, Alabama

Map symbol	Map unit name	Acres	Percent
AbB2	Albertville fine sandy loam, 2 to 6 percent slopes, eroded	1,780	0.4
AbC	Albertville fine sandy loam, 6 to 10 percent slopes	749	0.2
AbC2	Albertville fine sandy loam, 6 to 10 percent slopes, eroded	2,342	0.6
AsD	Albertville fine sandy loam, shallow, 10 to 15 percent slopes (townley)	850	0.2
Bb	Bibb loam	9,031	2.2
CaA	Cahaba fine sandy loam, 0 to 2 percent slopes	353	*
CaB	Cahaba fine sandy loam, 2 to 6 percent slopes	1,062	0.3
CmB2	Cane loam, 2 to 6 percent slopes, eroded	280	*
CmC2	Cane loam, 6 to 10 percent slopes, eroded	254	*
CnB	Captina silt loam, 2 to 6 percent slopes (leadvale)	852	0.2
CoA	Colbert silt loam, 0 to 2 percent slopes (tupelo)	2,862	0.7
CoB2	Colbert silt loam, 2 to 6 percent slopes, eroded	10,050	2.4
CoC2	Colbert silt loam, 6 to 10 percent slopes, eroded	5,101	1.2
CoD2	Colbert silt loam, 10 to 15 percent slopes, eroded	1,317	0.3
CrB3	Colbert silty clay loam, 2 to 6 percent slopes, severely eroded	1,011	0.2
CrC3	Colbert silty clay loam, 6 to 10 percent slopes, severely eroded	1,384	0.3
CsC	Cuthbert fine sandy loam, 6 to 10 percent slopes (luverne)	5,594	1.4
CsD	Cuthbert fine sandy loam, 10 to 15 percent slopes (luverne)	1,649	0.4
CtC3	Cuthbert sandy clay loam, 6 to 10 percent slopes, severely eroded (luverne)	685	0.2
CtE3	Cuthbert sandy clay loam, 10 to 25 percent slopes, severely eroded (luverne)	1,354	0.3
CuD	Cuthbert and Ruston soils, 10 to 15 percent slopes (luverne) (smithdale)	1,559	0.4
CuE	Cuthbert and Ruston soils, 15 to 25 percent slopes (luverne) (smithdale)	49,483	12.0
DaB2	Decatur silt loam, 2 to 6 percent slopes, eroded	1,451	0.4
DAM	Dam	43	*
DcB3	Decatur silty clay loam, 2 to 6 percent slopes, severely eroded	3,278	0.8
DcC3	Decatur silty clay loam, 6 to 10 percent slopes, severely eroded	2,252	0.5
DcD3	Decatur silty clay loam, 10 to 15 percent slopes, severely eroded	438	0.1
DoA	Dowellton silty clay, 0 to 2 percent slopes (ketona)	3,144	0.8
Du	Dunning silty clay	3,076	0.7
GrB2	Greenville loam, 2 to 6 percent slopes, eroded	770	0.2
GrB3	Greenville loam, 2 to 6 percent slopes, severely eroded	267	*
GrC3	Greenville loam, 6 to 10 percent slopes, severely eroded	1,019	0.2
GrD3	Greenville loam, 10 to 15 percent slopes, severely eroded	194	*
GuD2	Guin gravelly sandy loam, 10 to 15 percent slopes, eroded (flomaton)	8,563	2.1
GuF	Guin gravelly sandy loam, 15 to 40 percent slopes (flomaton)	57,436	13.9
Gw	Gullied land	1,192	0.3
Ho	Hollywood silty clay	1,023	0.2
Hs	Hollywood silty clay, shallow (barfield)	454	0.1
Hu	Huntington silt loam, local alluvium	646	0.2
Is	Iuka fine sandy loam	6,788	1.6
Iu	Iuka fine sandy loam, local alluvium	806	0.2
Ld	Lindside silt loam (chenneby)	4,568	1.1
Le	Lindside silt loam, local alluvium (chenneby)	297	*

Acreage and Proportionate Extent of the Soils

Franklin County, Alabama

Map symbol	Map unit name	Acres	Percent
LkB2	Linker fine sandy loam, 2 to 6 percent slopes, eroded	2,295	0.6
LkC	Linker fine sandy loam, 6 to 10 percent slopes	893	0.2
LkC2	Linker fine sandy loam, 6 to 10 percent slopes, eroded	4,290	1.0
LkD2	Linker fine sandy loam, 10 to 15 percent slopes, eroded	854	0.2
Me	Melvin silt loam	3,153	0.8
Mp	Mine pits and dumps	4,364	1.1
Oc	Ochlockonee fine sandy loam	7,274	1.8
OrB2	Ora fine sandy loam, 2 to 6 percent slopes, eroded	2,479	0.6
OrC	Ora fine sandy loam, 6 to 10 percent slopes	551	0.1
OrC2	Ora fine sandy loam, 6 to 10 percent slopes, eroded	2,801	0.7
OsB2	Ora fine sandy loam, heavy substratum, 2 to 6 percent slopes, eroded	610	0.1
PrA	Prentiss fine sandy loam, 0 to 2 percent slopes	990	0.2
PrB	Prentiss fine sandy loam, 2 to 6 percent slopes	702	0.2
RaD	Ramsey fine sandy loam, 10 to 15 percent slopes (hector)	1,243	0.3
Ro	Rock land, limestone	31,838	7.7
Rs	Rock land, sandstone	58,601	14.2
RuB2	Ruston fine sandy loam, 2 to 6 percent slopes, eroded (smithdale)	2,272	0.5
RuC	Ruston fine sandy loam, 6 to 10 percent slopes (smithdale)	2,665	0.6
RuC2	Ruston fine sandy loam, 6 to 10 percent slopes, eroded (smithdale)	7,267	1.8
RuC3	Ruston fine sandy loam, 6 to 10 percent slopes, severely eroded (smithdale)	1,955	0.5
RuD2	Ruston fine sandy loam, 10 to 15 percent slopes, eroded (smithdale)	1,629	0.4
RuD3	Ruston fine sandy loam, 10 to 15 percent slopes, severely eroded (smithdale)	1,051	0.3
SaB	Saffell gravelly fine sandy loam, 2 to 6 percent slopes	1,821	0.4
SaC	Saffell gravelly fine sandy loam, 6 to 10 percent slopes	4,279	1.0
SaC2	Saffell gravelly fine sandy loam, 6 to 10 percent slopes, eroded	14,185	3.4
ShC3	Savannah loam, 6 to 10 percent slopes, severely eroded	1,479	0.4
SnA	Savannah very fine sandy loam, 0 to 2 percent slopes	355	*
SnB	Savannah very fine sandy loam, 2 to 6 percent slopes	1,900	0.5
SnB2	Savannah very fine sandy loam, 2 to 6 percent slopes, eroded	19,223	4.6
SnC	Savannah very fine sandy loam, 6 to 10 percent slopes	5,424	1.3
SnC2	Savannah very fine sandy loam, 6 to 10 percent slopes, eroded	9,811	2.4
Ss	Slickens	737	0.2
TaB2	Talbott silt loam, 2 to 6 percent slopes, eroded (remlap)	3,264	0.8
TaC2	Talbott silt loam, 6 to 10 percent slopes, eroded (remlap)	862	0.2
TbB3	Talbott silty clay, 2 to 6 percent slopes, severely eroded (remlap)	883	0.2
TbC3	Talbott silty clay, 6 to 10 percent slopes, severely eroded (remlap)	921	0.2
TdB	Tilden fine sandy loam, 2 to 6 percent slopes (ora)	553	0.1
TuA	Tupelo silt loam, 0 to 2 percent slopes	769	0.2
W	Water	10,280	2.5
Total		413,830	100.0

* Less than 0.1 percent.

Selected Soil Interpretations

Franklin County, Alabama

[The information in this table indicates the dominant soil condition but does not eliminate the need for onsite investigation. The table shows only the top five limitations for any given soil. The soil may have additional limitations]

*This soil interpretation was designed as a "limitation" as opposed to a "suitability". The numbers in the value columns range from 0.01 to 1.00. The larger the value, the greater the potential limitation.

Map symbol and soil name	Pct. of map unit	ENG - Septic Tank Absorption Fields *	
		Rating class and limiting features	Value
AbB2:			
Albertville	90	Very limited	
		Slow water movement	1.00
		Depth to bedrock	0.89
AbC:			
Albertville	85	Very limited	
		Slow water movement	1.00
		Depth to bedrock	0.89
		Slope	0.01
AbC2:			
Albertville	85	Very limited	
		Slow water movement	1.00
		Depth to bedrock	0.89
		Slope	0.01
AsD:			
Albertville, (Townley)	85	Very limited	
		Slow water movement	1.00
		Depth to bedrock	1.00
		Slope	0.84
Bb:			
Bibb	85	Very limited	
		Flooding	1.00
		Depth to saturated zone	1.00
		Slow water movement	0.50
CaA:			
Cahaba	90	Very limited	
		Seepage, bottom layer	1.00
		Slow water movement	0.50
		Flooding	0.40

Selected Soil Interpretations

Franklin County, Alabama

Map symbol and soil name	Pct. of map unit	ENG - Septic Tank Absorption Fields *	
		Rating class and limiting features	Value
CaB:			
Cahaba	90	Very limited	
		Seepage, bottom layer	1.00
		Slow water movement	0.50
		Flooding	0.40
CmB2:			
Cane	90	Very limited	
		Slow water movement	1.00
		Depth to saturated zone	1.00
CmC2:			
Cane	85	Very limited	
		Slow water movement	1.00
		Depth to saturated zone	1.00
		Slope	0.01
CnB:			
Captina, (Leadvale)	90	Very limited	
		Depth to saturated zone	1.00
		Slow water movement	1.00
		Depth to bedrock	0.59
CoA:			
Colbert, (Tupelo)	90	Very limited	
		Slow water movement	1.00
		Depth to saturated zone	1.00
CoB2:			
Colbert	90	Very limited	
		Slow water movement	1.00
		Depth to saturated zone	1.00
		Depth to bedrock	0.52

Selected Soil Interpretations

Franklin County, Alabama

Map symbol and soil name	Pct. of map unit	ENG - Septic Tank Absorption Fields *	
		Rating class and limiting features	Value
CoC2:			
Colbert	85	Very limited	
		Slow water movement	1.00
		Depth to saturated zone	1.00
		Depth to bedrock	0.52
		Slope	0.01
CoD2:			
Colbert	85	Very limited	
		Slow water movement	1.00
		Depth to saturated zone	1.00
		Slope	0.84
		Depth to bedrock	0.52
CrB3:			
Colbert	85	Very limited	
		Slow water movement	1.00
		Depth to saturated zone	1.00
		Depth to bedrock	0.52
CrC3:			
Colbert	85	Very limited	
		Slow water movement	1.00
		Depth to saturated zone	1.00
		Depth to bedrock	0.52
		Slope	0.01
CsC:			
Cuthbert, (Luverne)	85	Very limited	
		Slow water movement	1.00
		Slope	0.01
CsD:			
Cuthbert, (Luverne)	85	Very limited	
		Slow water movement	1.00
		Slope	0.84

Selected Soil Interpretations

Franklin County, Alabama

Map symbol and soil name	Pct. of map unit	ENG - Septic Tank Absorption Fields *	
		Rating class and limiting features	Value
CtC3:			
Cuthbert, (Luverne)	85	Very limited	
		Slow water movement	1.00
		Slope	0.01
CtE3:			
Cuthbert, (Luverne)	85	Very limited	
		Slow water movement	1.00
		Slope	1.00
CuD:			
Cuthbert, (Luverne)	50	Very limited	
		Slow water movement	1.00
		Slope	0.84
Ruston, (Smithdale)	40	Very limited	
		Seepage, bottom layer	1.00
		Slope	0.84
		Slow water movement	0.50
CuE:			
Cuthbert, (Luverne)	50	Very limited	
		Slope	1.00
		Slow water movement	1.00
Ruston, (Smithdale)	40	Very limited	
		Slope	1.00
		Seepage, bottom layer	1.00
		Slow water movement	0.50
DaB2:			
Decatur	90	Somewhat limited	
		Slow water movement	0.50
DAM:			
Udorthents	95	Not rated	

Selected Soil Interpretations

Franklin County, Alabama

Map symbol and soil name	Pct. of map unit	ENG - Septic Tank Absorption Fields *	
		Rating class and limiting features	Value
DcB3:			
Decatur	85	Somewhat limited	
		Slow water movement	0.50
DcC3:			
Decatur	85	Somewhat limited	
		Slow water movement	0.50
		Slope	0.01
DcD3:			
Decatur	85	Somewhat limited	
		Slope	0.84
		Slow water movement	0.50
DoA:			
Dowellton, (Ketona)	85	Very limited	
		Flooding	1.00
		Slow water movement	1.00
		Depth to saturated zone	1.00
		Depth to bedrock	0.78
Du:			
Dunning, (Ketona)	85	Very limited	
		Flooding	1.00
		Slow water movement	1.00
		Depth to saturated zone	1.00
		Depth to bedrock	0.01
GrB2:			
Greenville, (Lucedale)	90	Somewhat limited	
		Slow water movement	0.50
GrB3:			
Greenville, (Lucedale)	85	Somewhat limited	
		Slow water movement	0.50

Selected Soil Interpretations

Franklin County, Alabama

Map symbol and soil name	Pct. of map unit	ENG - Septic Tank Absorption Fields *	
		Rating class and limiting features	Value
GrC3:			
Greenville, (Lucedale)	85	Somewhat limited	
		Slow water movement	0.50
		Slope	0.01
GrD3:			
Greenville, (Lucedale)	85	Somewhat limited	
		Slope	0.84
		Slow water movement	0.50
GuD2:			
Guin, (Flomaton)	85	Very limited	
		Seepage, bottom layer	1.00
		Filtering capacity	1.00
		Slope	0.84
GuF:			
Guin, (Flomaton)	85	Very limited	
		Slope	1.00
		Seepage, bottom layer	1.00
		Filtering capacity	1.00
Gw:			
Gullied land	85	Very limited	
		Slope	1.00
		Slow water movement	0.32
Ho:			
Hollywood	90	Very limited	
		Slow water movement	1.00
Hs:			
Hollywood, (Barfield)	90	Very limited	
		Depth to bedrock	1.00
Hu:			
Huntington, (Emory ponded)	85	Very limited	
		Ponding	1.00
		Slow water movement	0.50
		Depth to saturated zone	0.08

Selected Soil Interpretations

Franklin County, Alabama

Map symbol and soil name	Pct. of map unit	ENG - Septic Tank Absorption Fields *	
		Rating class and limiting features	Value
Is:			
Iuka	85	Very limited	
		Flooding	1.00
		Depth to saturated zone	1.00
		Slow water movement	0.50
Iu:			
Iuka	85	Very limited	
		Flooding	1.00
		Depth to saturated zone	1.00
		Slow water movement	0.50
Ld:			
Lindside, (Chenneby)	85	Very limited	
		Flooding	1.00
		Depth to saturated zone	1.00
		Seepage, bottom layer	1.00
		Slow water movement	0.50
Le:			
Lindside, (Chenneby)	85	Very limited	
		Flooding	1.00
		Depth to saturated zone	1.00
		Seepage, bottom layer	1.00
		Slow water movement	0.50
LkB2:			
Linker, (Nauvoo)	90	Somewhat limited	
		Depth to bedrock	0.99
		Slow water movement	0.50
LkC:			
Linker	85	Very limited	
		Depth to bedrock	1.00
		Slow water movement	0.50
		Slope	0.01

Map symbol and soil name	Pct. of map unit	ENG - Septic Tank Absorption Fields *	
		Rating class and limiting features	Value
LkC2:			
Linker	85	Very limited	
		Depth to bedrock	1.00
		Slow water movement	0.50
		Slope	0.01
LkD2:			
Linker	85	Very limited	
		Depth to bedrock	1.00
		Slope	0.84
		Slow water movement	0.50
Me:			
Melvin, (Wehadkee)	85	Very limited	
		Flooding	1.00
		Depth to saturated zone	1.00
		Slow water movement	0.50
Mp:			
Pits, mine	90	Very limited	
		Slope	1.00
		Seepage, bottom layer	1.00
Oc:			
Ochlockonee	85	Very limited	
		Flooding	1.00
		Depth to saturated zone	1.00
		Seepage, bottom layer	1.00
		Slow water movement	0.50
OrB2:			
Ora	90	Very limited	
		Depth to cemented pan	1.00
		Depth to saturated zone	1.00
		Slow water movement	0.50

Selected Soil Interpretations

Franklin County, Alabama

Map symbol and soil name	Pct. of map unit	ENG - Septic Tank Absorption Fields *	
		Rating class and limiting features	Value
OrC:			
Ora	85	Very limited	
		Depth to cemented pan	1.00
		Depth to saturated zone	1.00
		Slow water movement	0.50
		Slope	0.01
OrC2:			
Ora	85	Very limited	
		Depth to cemented pan	1.00
		Depth to saturated zone	1.00
		Slow water movement	0.50
		Slope	0.01
OsB2:			
Ora	85	Very limited	
		Depth to cemented pan	1.00
		Depth to saturated zone	1.00
		Slow water movement	0.50
PrA:			
Prentiss	90	Very limited	
		Depth to cemented pan	1.00
		Depth to saturated zone	1.00
		Slow water movement	0.50
PrB:			
Prentiss	90	Very limited	
		Depth to cemented pan	1.00
		Depth to saturated zone	1.00
		Slow water movement	0.50

Selected Soil Interpretations

Franklin County, Alabama

Map symbol and soil name	Pct. of map unit	ENG - Septic Tank Absorption Fields *	
		Rating class and limiting features	Value
RaD:			
Ramsey	85	Very limited	
		Depth to bedrock	1.00
		Seepage, bottom layer	1.00
		Slope	0.84
Ro:			
Barfield	85	Very limited	
		Depth to bedrock	1.00
		Slope	0.04
Rs:			
Gorgas	85	Very limited	
		Depth to bedrock	1.00
		Slope	1.00
		Seepage, bottom layer	1.00
RuB2:			
Ruston, (Bama)	90	Somewhat limited	
		Slow water movement	0.50
RuC:			
Ruston, (Smithdale)	85	Very limited	
		Seepage, bottom layer	1.00
		Slow water movement	0.50
		Slope	0.01
RuC2:			
Ruston, (Smithdale)	85	Very limited	
		Seepage, bottom layer	1.00
		Slow water movement	0.50
		Slope	0.01
RuC3:			
Ruston, (Smithdale)	85	Very limited	
		Seepage, bottom layer	1.00
		Slow water movement	0.50
		Slope	0.01

Selected Soil Interpretations

Franklin County, Alabama

Map symbol and soil name	Pct. of map unit	ENG - Septic Tank Absorption Fields *	
		Rating class and limiting features	Value
RuD2:			
Ruston, (Smithdale)	85	Very limited	
		Seepage, bottom layer	1.00
		Slope	0.84
		Slow water movement	0.50
RuD3:			
Ruston, (Smithdale)	85	Very limited	
		Seepage, bottom layer	1.00
		Slope	0.84
		Slow water movement	0.50
SaB:			
Saffell	85	Very limited	
		Seepage, bottom layer	1.00
		Slow water movement	0.50
SaC:			
Saffell	85	Very limited	
		Seepage, bottom layer	1.00
		Slow water movement	0.50
		Slope	0.01
SaC2:			
Saffell	85	Very limited	
		Seepage, bottom layer	1.00
		Slow water movement	0.50
		Slope	0.01
ShC3:			
Savannah	85	Very limited	
		Depth to cemented pan	1.00
		Depth to saturated zone	1.00
		Slope	0.01

Map symbol and soil name	Pct. of map unit	ENG - Septic Tank Absorption Fields *	
		Rating class and limiting features	Value
SnA:			
Savannah	90	Very limited	
		Depth to cemented pan	1.00
		Depth to saturated zone	1.00
SnB:			
Savannah	85	Very limited	
		Depth to cemented pan	1.00
		Depth to saturated zone	1.00
SnB2:			
Savannah	90	Very limited	
		Depth to cemented pan	1.00
		Depth to saturated zone	1.00
SnC:			
Savannah	85	Very limited	
		Depth to cemented pan	1.00
		Depth to saturated zone	1.00
		Slope	0.01
SnC2:			
Savannah	85	Very limited	
		Depth to cemented pan	1.00
		Depth to saturated zone	1.00
		Slope	0.01
Ss:			
Slickens	85	Very limited	
		Slow water movement	1.00
		Depth to saturated zone	1.00
TaB2:			
Talbott, (Remlap)	85	Very limited	
		Slow water movement	1.00

Selected Soil Interpretations

Franklin County, Alabama

Map symbol and soil name	Pct. of map unit	ENG - Septic Tank Absorption Fields *	
		Rating class and limiting features	Value
TaC2:			
Talbott, (Remlap)	85	Very limited	
		Slow water movement	1.00
		Slope	0.01
TbB3:			
Talbott, (Remlap)	85	Very limited	
		Slow water movement	1.00
TbC3:			
Talbott, (Remlap)	85	Very limited	
		Slow water movement	1.00
		Slope	0.01
TdB:			
Tilden, (Ora)	90	Very limited	
		Depth to cemented pan	1.00
		Depth to saturated zone	1.00
		Slow water movement	0.50
TuA:			
Tupelo	90	Very limited	
		Slow water movement	1.00
		Depth to saturated zone	1.00
W:			
Water	95	Not rated	

Selected Soil Interpretations

This report allows the customer to produce a report showing the results of the soil interpretation(s) of his or her choice. It is useful when a standard report that displays the results of the selected interpretation(s) is not available.

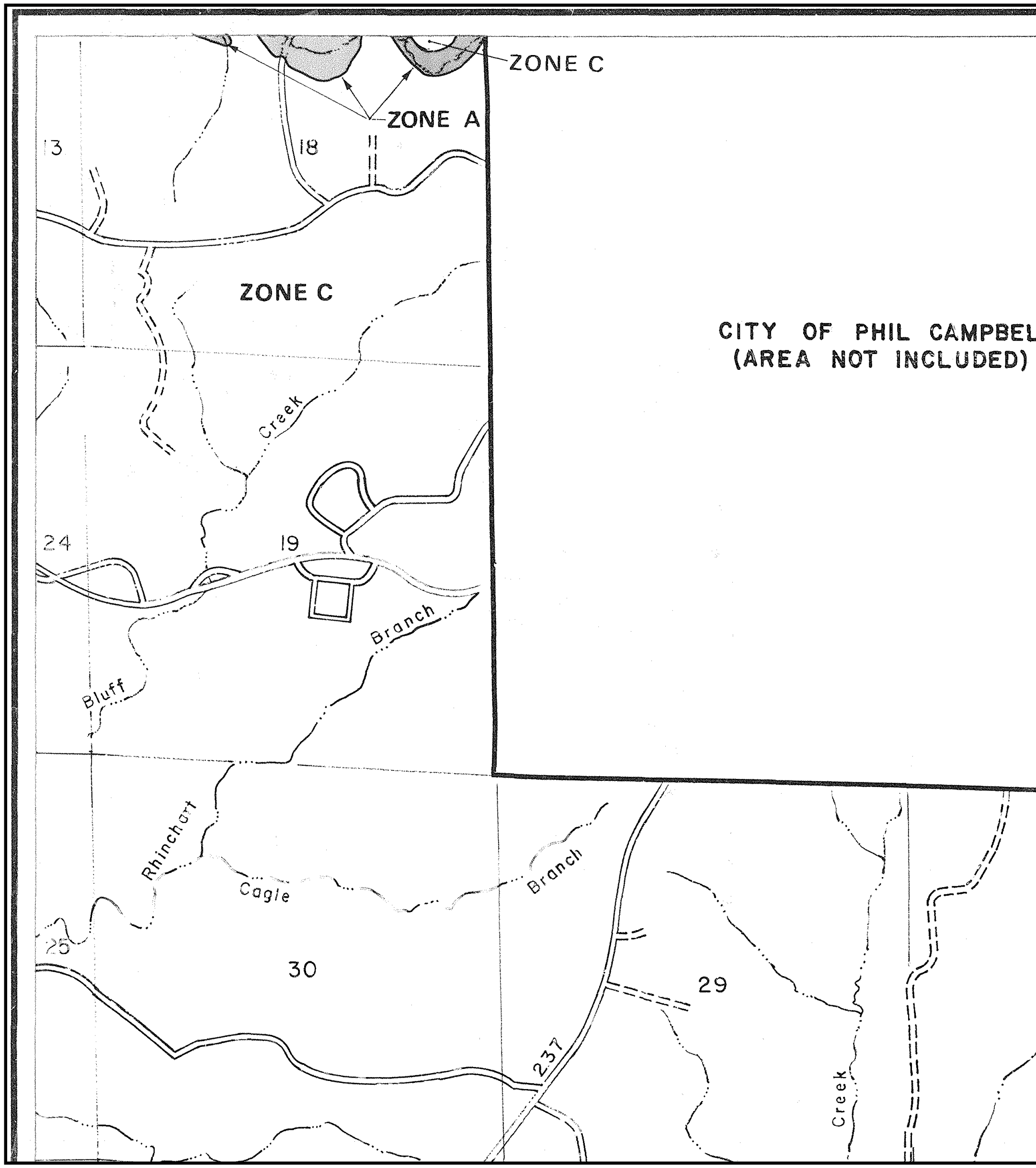
When customers select this report, they are presented with a list of interpretations with results for the selected map units. The customer may select up to three interpretations to be presented in table format.

For a description of the particular interpretations and their criteria, use the "Selected Survey Area Interpretation Descriptions" report.

Prime and other Important Farmlands

Franklin County, Alabama

Map symbol	Map unit name	Farmland classification
AbB2	Albertville fine sandy loam, 2 to 6 percent slopes, eroded	All areas are prime farmland
CaA	Cahaba fine sandy loam, 0 to 2 percent slopes	All areas are prime farmland
CaB	Cahaba fine sandy loam, 2 to 6 percent slopes	All areas are prime farmland
CmB2	Cane loam, 2 to 6 percent slopes, eroded	All areas are prime farmland
CnB	Captina silt loam, 2 to 6 percent slopes (leadvale)	All areas are prime farmland
DaB2	Decatur silt loam, 2 to 6 percent slopes, eroded	All areas are prime farmland
DcB3	Decatur silty clay loam, 2 to 6 percent slopes, severely eroded	All areas are prime farmland
GrB2	Greenville loam, 2 to 6 percent slopes, eroded	All areas are prime farmland
GrB3	Greenville loam, 2 to 6 percent slopes, severely eroded	All areas are prime farmland
Hu	Huntington silt loam, local alluvium	All areas are prime farmland
Is	Iuka fine sandy loam	All areas are prime farmland
Iu	Iuka fine sandy loam, local alluvium	All areas are prime farmland
Ld	Lindside silt loam (chenneby)	All areas are prime farmland
Le	Lindside silt loam, local alluvium (chenneby)	All areas are prime farmland
LkB2	Linker fine sandy loam, 2 to 6 percent slopes, eroded	All areas are prime farmland
Oc	Ochlockonee fine sandy loam	All areas are prime farmland
OrB2	Ora fine sandy loam, 2 to 6 percent slopes, eroded	All areas are prime farmland
OsB2	Ora fine sandy loam, heavy substratum, 2 to 6 percent slopes, eroded	All areas are prime farmland
PrA	Prentiss fine sandy loam, 0 to 2 percent slopes	All areas are prime farmland
PrB	Prentiss fine sandy loam, 2 to 6 percent slopes	All areas are prime farmland
RuB2	Ruston fine sandy loam, 2 to 6 percent slopes, eroded (smithdale)	All areas are prime farmland
SnA	Savannah very fine sandy loam, 0 to 2 percent slopes	All areas are prime farmland
SnB	Savannah very fine sandy loam, 2 to 6 percent slopes	All areas are prime farmland
SnB2	Savannah very fine sandy loam, 2 to 6 percent slopes, eroded	All areas are prime farmland
TaB2	Talbott silt loam, 2 to 6 percent slopes, eroded (remlap)	All areas are prime farmland
TdB	Tilden fine sandy loam, 2 to 6 percent slopes (ora)	All areas are prime farmland



APPROXIMATE SCALE

2000 0 2000 FEET

NATIONAL FLOOD INSURANCE PROGRAM

FIRM
FLOOD INSURANCE RATE MAP

FRANKLIN COUNTY,
ALABAMA
(UNINCORPORATED AREAS)

PANEL 225 OF 225

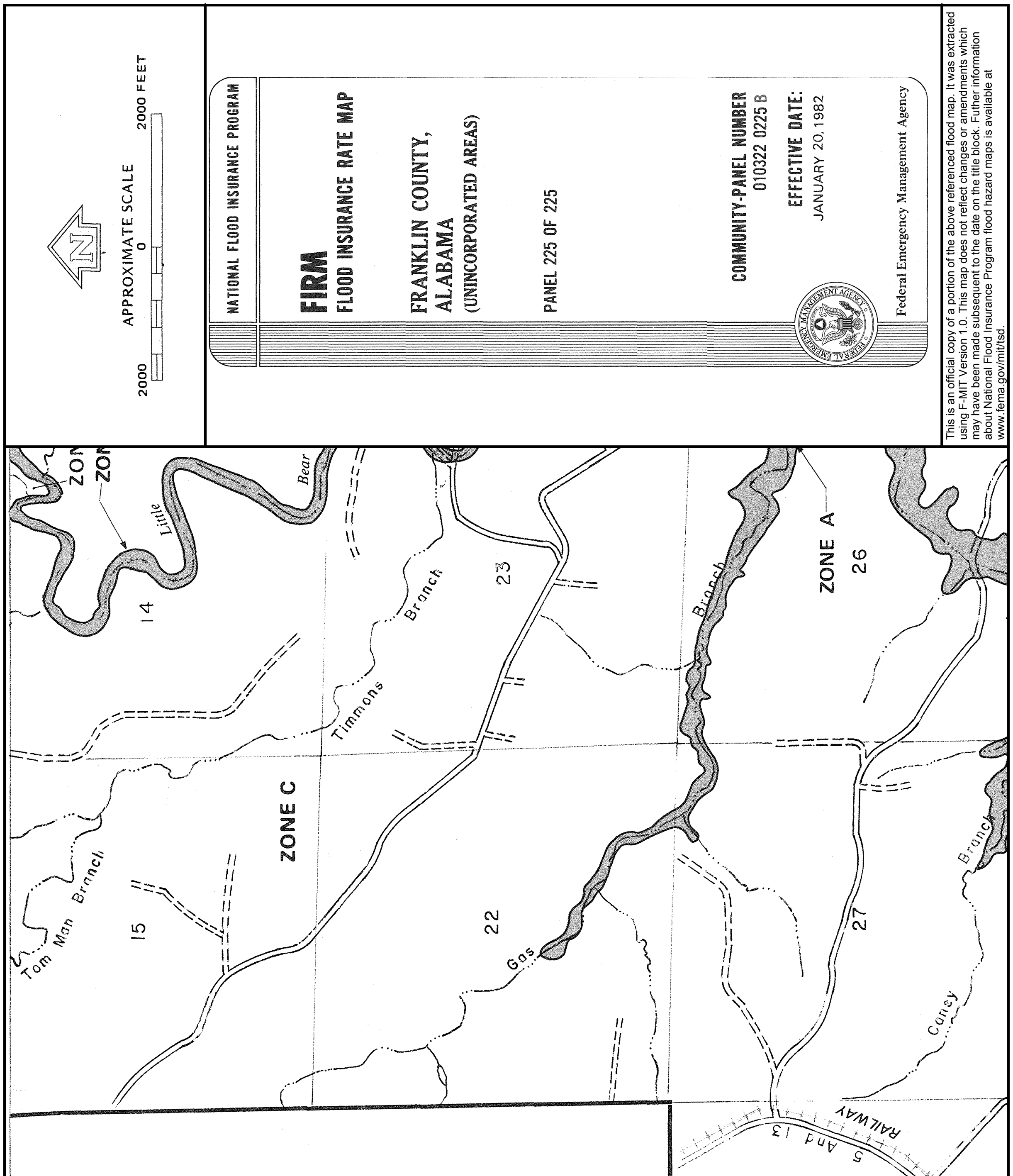
COMMUNITY-PANEL NUMBER
010322 0225 B

EFFECTIVE DATE:
JANUARY 20, 1982

Federal Emergency Management Agency

This is an official copy of a portion of the above referenced flood map. It was extracted using F-MIT Version 1.0. This map does not reflect changes or amendments which may have been made subsequent to the date on the title block. Futher information about National Flood Insurance Program flood hazard maps is available at www.fema.gov/mit/tsd.

PDF Create Date: 8/21/2008 (created at scale and type A)


APPROXIMATE SCALE
2000 0 2000 FEET
NATIONAL FLOOD INSURANCE PROGRAM
FIRM
FLOOD INSURANCE RATE MAP
FRANKLIN COUNTY,
ALABAMA
(UNINCORPORATED AREAS)
PANEL 225 OF 225
COMMUNITY-PANEL NUMBER
010322 0225 B
EFFECTIVE DATE:
JANUARY 20, 1982
Federal Emergency Management Agency
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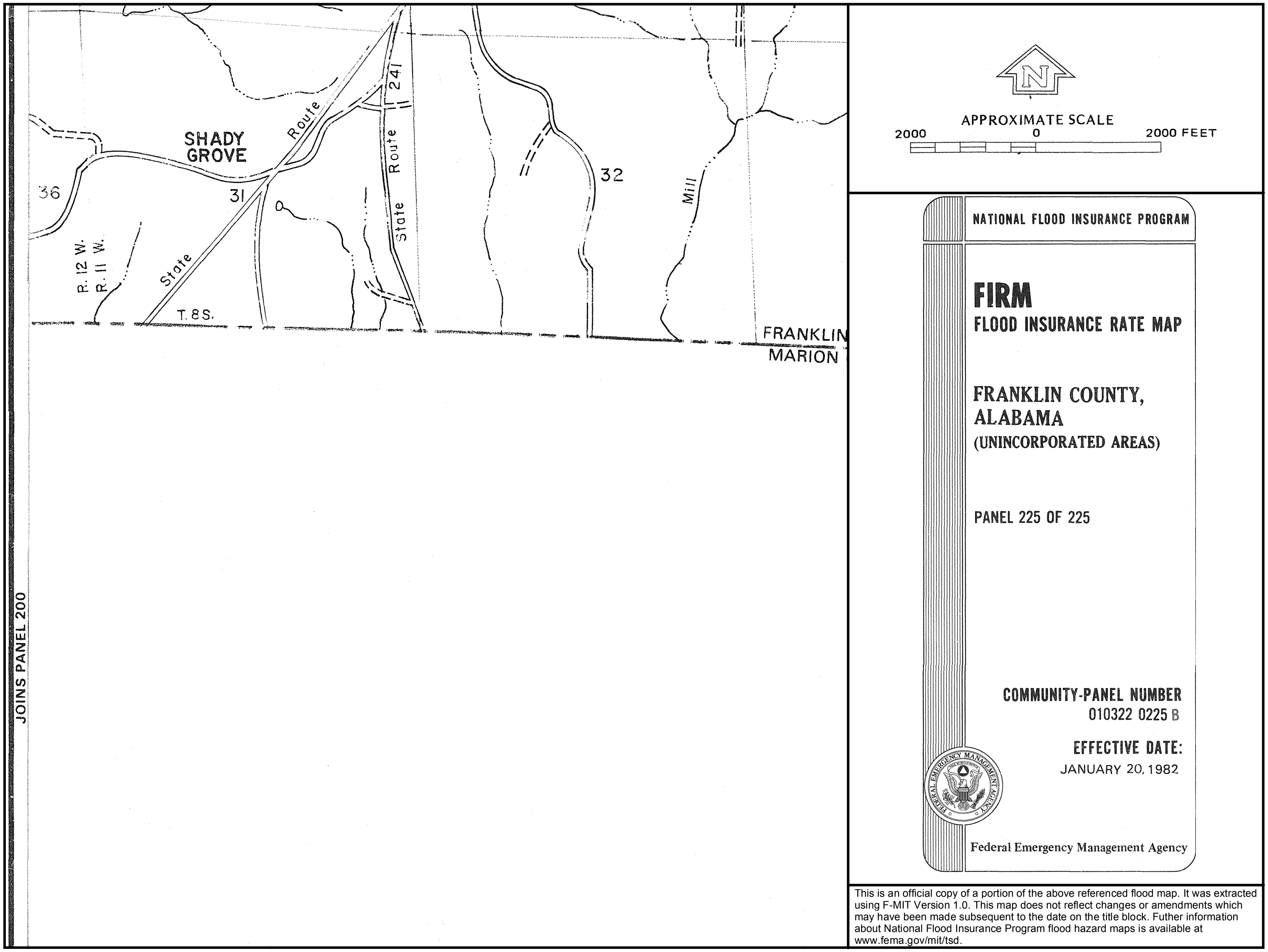
PDF Create Date: 8/21/2008 (created at scale and type A)
ZONE C
ZONE A
Little Bear
Timmons Branch
Tom Man Branch
Gas Branch
Branch
Routes 5 And 13
RAILWAY
14
15
22
23
26
27
28



NATIONAL FLOOD INSURANCE PROGRAM

FIRM
FLOOD INSURANCE RATE MAP

FRANKLIN COUNTY, ALABAMA (UNINCORPORATED AREAS)

PANEL 225 OF 225

COMMUNITY-PANEL NUMBER
010322 0225 B

EFFECTIVE DATE:
JANUARY 20, 1982

Federal Emergency Management Agency

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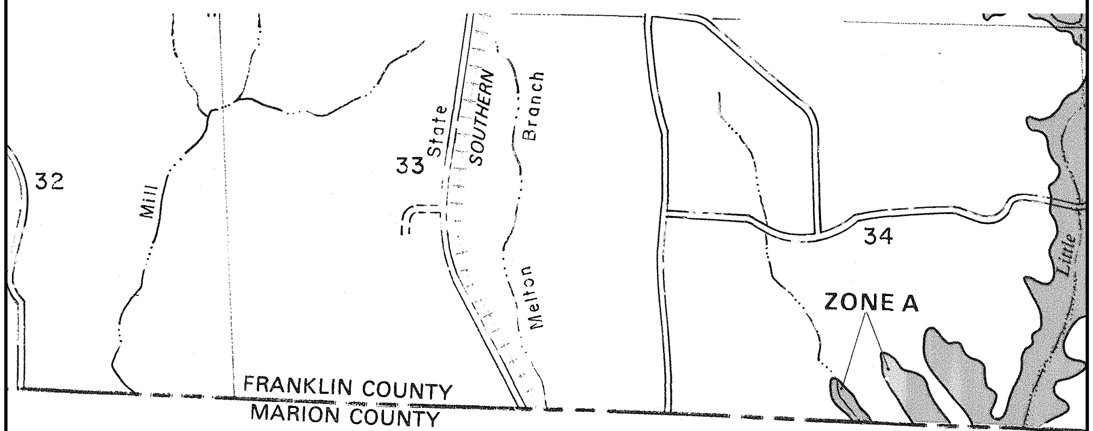
PDF Create Date: 8/21/2008 (created at scale and type A)



APPROXIMATE SCALE

2000 0 2000 FEET

NATIONAL FLOOD INSURANCE PROGRAM

FIRM

FLOOD INSURANCE RATE MAP

FRANKLIN COUNTY, ALABAMA
(UNINCORPORATED AREAS)

PANEL 225 OF 225

COMMUNITY-PANEL NUMBER
010322 0225 B

EFFECTIVE DATE:
JANUARY 20, 1982

Federal Emergency Management Agency

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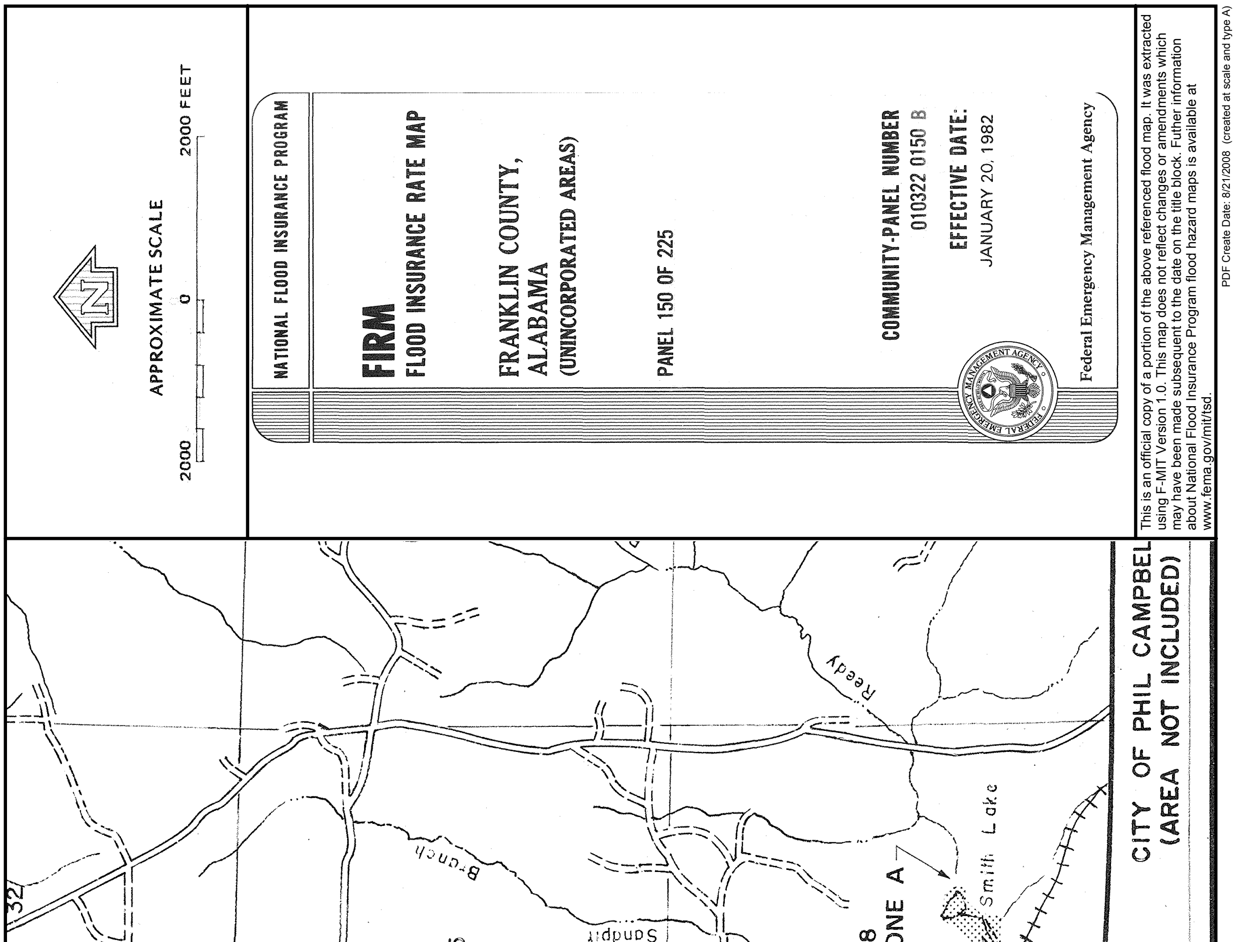
PDF Create Date: 8/21/2008 (created at scale and type A)


APPROXIMATE SCALE
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NATIONAL FLOOD INSURANCE PROGRAM
FIRM
FLOOD INSURANCE RATE MAP
FRANKLIN COUNTY,
ALABAMA
(UNINCORPORATED AREAS)
PANEL 150 OF 225
COMMUNITY-PANEL NUMBER
010322 0150 B
EFFECTIVE DATE:
JANUARY 20, 1982
Federal Emergency Management Agency
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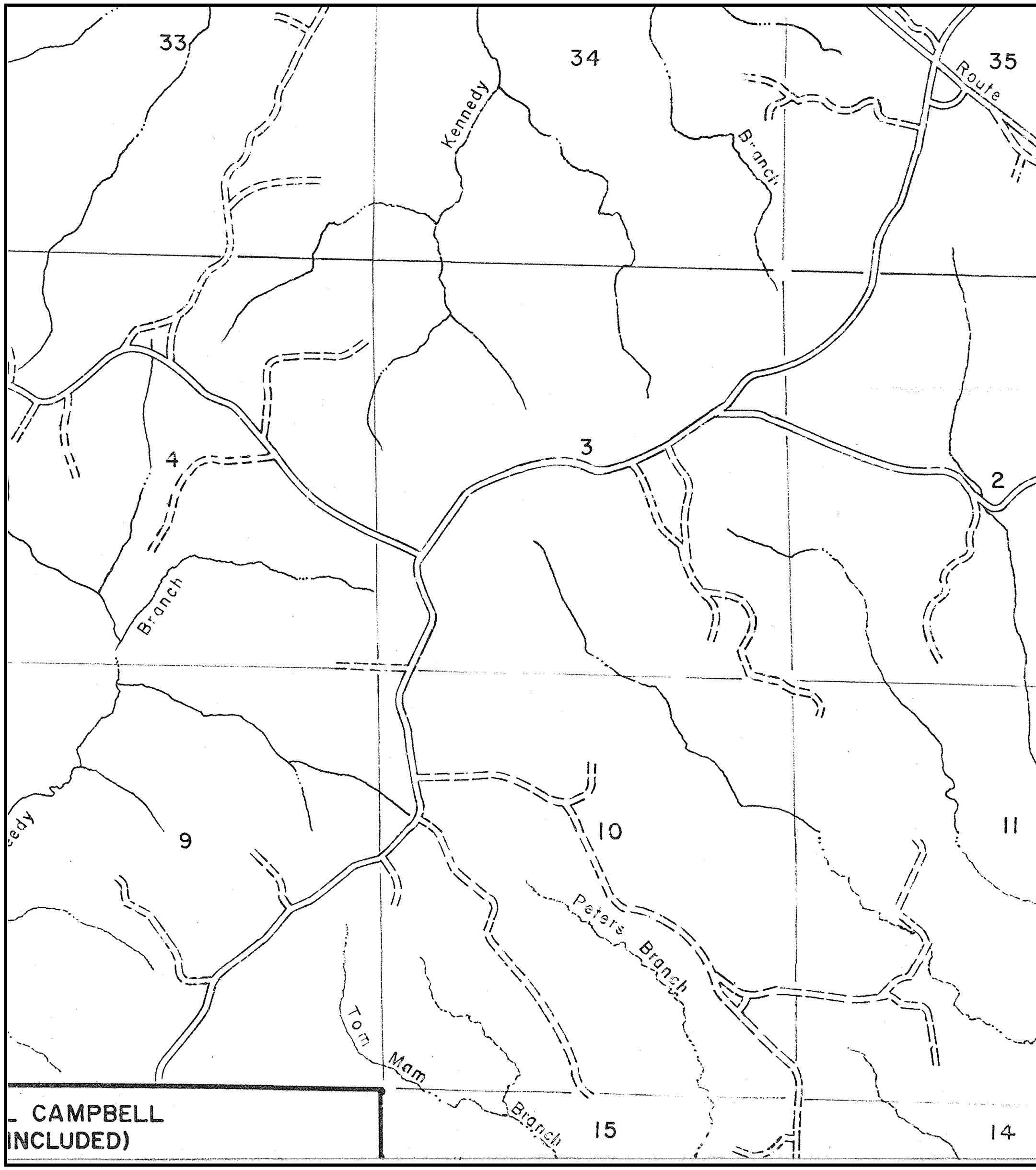
PDF Create Date: 8/21/2008 (created at scale and type A)
CITY OF PHIL CAMPBEL
(AREA NOT INCLUDED)
ZONE A
ZONE C
ZONE A
ZONE C
ZONE C
ZONE A
RAILWAY
Smith Lake
Sandpit
Branch
Reedy
Schrnagel Branch
Creek
State Route 13
State Route
Jackson Highway
T. 7 S.
T. 8 S.
32
5
6
7
8
12
13



APPROXIMATE SCALE

2000 0 2000 FEET

NATIONAL FLOOD INSURANCE PROGRAM

FIRM
FLOOD INSURANCE RATE MAP

FRANKLIN COUNTY,
ALABAMA
(UNINCORPORATED AREAS)

PANEL 150 OF 225

COMMUNITY-PANEL NUMBER
010322 0150 B

EFFECTIVE DATE:
JANUARY 20, 1982

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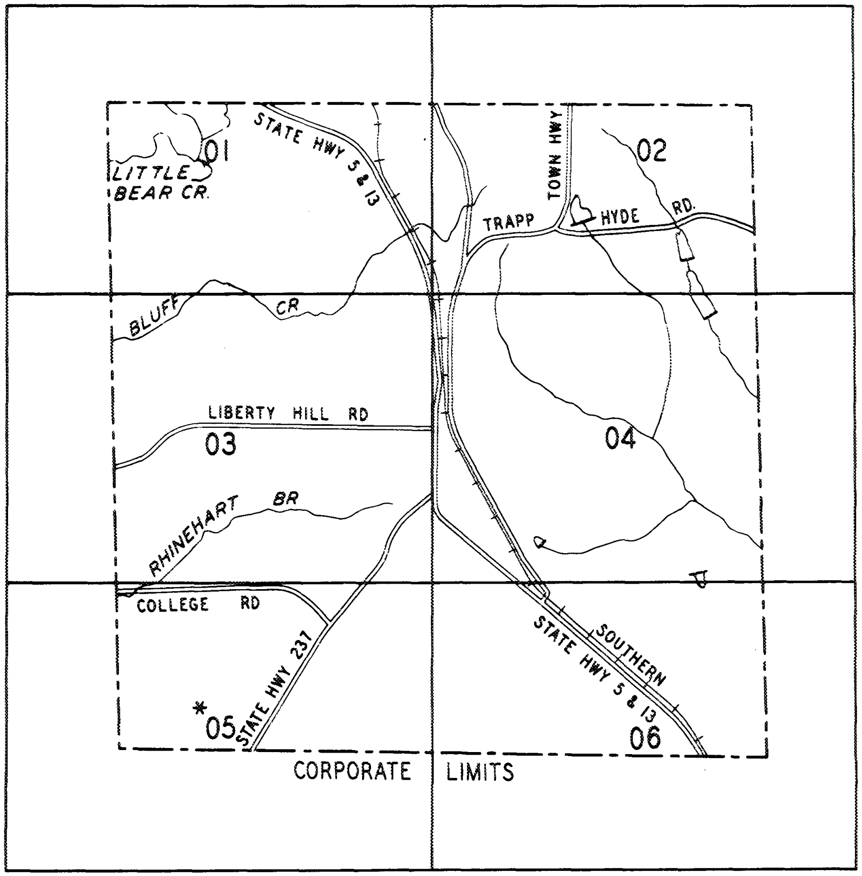

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Community Number: 010333

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