

03050107-03

(*South Tyger River/Lake Robinson*)

General Description

Watershed 03050107-03 (formerly 03050107-010) is located in Greenville and Spartanburg Counties and consists primarily of *South Tyger River* and its tributaries. The watershed occupies 110,032 acres of the Piedmont region of South Carolina. Land use/land cover in the watershed includes: 48.0% forested land, 31.3% agricultural land, 16.1% urban land, 1.6% forested wetland, 1.6% water, 0.7% barren land, and 0.7% scrub/shrub land.

Mush Creek (Johnson Creek, Dysort Lake, Meadow Fork), Barton Creek (McKinney Creek also known as Burban Fork Creek, Noe Creek), and Pax Creek join to form the South Tyger River near Pax Mountain. Just downstream of the confluence the South Tyger River is impounded to form Lake Robinson. Downstream of Lake Robinson, the South Tyger River is joined by Beaverdam Creek and forms Lake Cunningham (Clear Creek). Downstream from Lake Cunningham near the City of Greer, the river accepts drainage from Frohawk Creek, Wards Creek, and Maple Creek. The river then flows through Berrys Pond and accepts drainage from 58 acre-Silver Lake (Williams Creek), Brushy Creek (Powder Branch), Bens Creek, Chickenfoot Creek, and Ferguson Creek (Quarter Creek, Big Ferguson Creek, Little Ferguson Creek). There are a total of 205.3 stream miles and 1,504.0 acres of lake waters in this watershed.

Surface Water Quality

<u>Station #</u>	<u>Type</u>	<u>Class</u>	<u>Description</u>
B-317	P/W	FW	MUSH CREEK AT SC 253, BELOW TIGERVILLE
RL-04361	RL04	FW	LAKE ROBINSON, 2.3 MI NNW OF DAM
RL-03343	RL03	FW	LAKE ROBINSON, IN COVE 0.5MI SW OF S-23-113 CROSSING
RL-02327	RL02	FW	LAKE ROBINSON, 0.4 MI S OF S-23-113
RL-02453	RL02	FW	LAKE ROBINSON, 0.7 MI S OF S-23-113
RL-04365	RL04	FW	LAKE ROBINSON, 1.0 MI NNW OF DAM
RL-02321	RL02	FW	LAKE ROBINSON, 6.3 MI NNW OF GREER
RL-01025	RL01	FW	LAKE ROBINSON, 5.9 MI NNW OF GREER
CL-100	W	FW	LAKE ROBINSON, IN FOREBAY NEAR DAM
B-341/RL-03347	W	FW	LAKE CUNNINGHAM ,IN FOREBAY NEAR DAM
B-149	S/W	FW	SOUTH TYGER RIVER AT SC 14, 2.9 MI NNW OF GREER
B-263	S/W	FW	SOUTH TYGER RIVER AT SC 290, 3.7 MI E OF GREER
B-625	BIO	FW	MAPLE CREEK AT SR 644
B-005	S/SPRP	FW	SOUTH TYGER RIVER AT S-42-63
B-782	BIO	FW	BENS CREEK AT SC 417
RS-01048	RS01	FW	SOUTH TYGER RIVER OFF COUNTY RD 9978, 3.5 MI NE OF WOODRUFF
B-332	W	FW	SOUTH TYGER RIVER AT S-42-86, 5 MI NE OF WOODRUFF
B-787	BIO	FW	FERGUSON CREEK AT SR 86

Mush Creek (B-317) – Aquatic life uses are fully supported, and significant decreasing trends in turbidity and total nitrogen concentration suggest improving conditions for these parameters. Recreational uses are not supported due to fecal coliform bacteria excursions.

Lake Robinson – There are eight SCDHEC monitoring stations along Lake Robinson (*RL-04361, RL-03343, RL-02327, RL-02453, RL-04365, RL-02321, RL-01025, CL-100*), and aquatic life and recreational uses are fully supported at all sites. A very high concentration of cadmium

was measured in the 2003 sediment sample from **RL-03343**, and DDT and DDE (a metabolite of DDT) were detected. A very high concentration of cadmium was measured in the 2001 sediment sample from **RL-01025**, and DDE (a metabolite of DDT) was detected. Although the use of DDT was banned in 1973, it is very persistent in the environment.

Lake Cunningham (B-341/RL-03347) – Aquatic life and recreational uses are fully supported; however, there is a significant decreasing trend in dissolved oxygen concentration. A very high concentration of cadmium was measured in the 2003 sediment sample. DDT, DDD, and DDE (metabolites of DDT) were also detected in the sample. Although the use of DDT was banned in 1973, it is very persistent in the environment. *Fish tissue samples from Lake Cunningham indicate no advisories are needed at this time.*

South Tyger River – There are five SCDHEC monitoring stations along the South Tyger River. Aquatic life and recreational uses are fully supported at the furthest upstream site (**B-149**); however, there is a significant decreasing trend in dissolved oxygen concentration. There is a significant increasing trend in pH. At the next site downstream (**B-263**), aquatic life uses are fully supported. Significant decreasing trends in turbidity and increasing trends in dissolved oxygen concentration suggest improving conditions for these parameters. Recreational uses are partially supported at this site due to fecal coliform bacteria excursions; however, a significant decreasing trend in fecal coliform bacteria concentration suggests improving conditions for this parameter.

Further downstream (**B-005**), aquatic life uses are not supported due to occurrences of copper in excess of the aquatic life chronic criterion. Significant decreasing trends in total nitrogen concentration and increasing trends in dissolved oxygen concentration suggest improving conditions for these parameters. Recreational uses are partially supported at this site due to fecal coliform bacteria excursions. Aquatic life and recreational uses are fully supported at monitoring site **RS-01048**. At the furthest downstream site (**B-332**), aquatic life uses are fully supported and a significant decreasing trend in total nitrogen concentration suggests improving conditions for this parameter. There is a significant decreasing trend in pH. Recreational uses are partially supported at this site due to fecal coliform bacteria excursions.

Maple Creek (B-625) – Aquatic life uses are fully supported based on macroinvertebrate community data.

Bens Creek (B-782) – Aquatic life uses are fully supported based on macroinvertebrate community data.

Ferguson Creek (B-787) – Aquatic life uses are fully supported based on macroinvertebrate community data.

Natural Swimming Areas

**FACILITY NAME
RECEIVING STREAM**

**PERMIT #
STATUS**

LOOK UP LODGE
BURBAN FORK CREEK

23-N14
ACTIVE

NPDES Program

Active NPDES Facilities

**RECEIVING STREAM
FACILITY NAME
PERMITTED FLOW @ PIPE (MGD)**

**NPDES#
TYPE
COMMENT**

SOUTH TYGER RIVER
SSSD/S. TYGER REGIONAL WWTP
PIPE #:001 FLOW: 1.0

SC0047732
MAJOR DOMESTIC

SOUTH TYGER RIVER
LAKEVIEW STEAK HOUSE
PIPE #: 001 FLOW: 0.0158

SC0030465
MINOR DOMESTIC

SOUTH TYGER RIVER
MIDLAND CAPITAL LLC/MOORE PLANT
PIPE #: 001 FLOW: 0.026

SC0036145
MINOR INDUSTRIAL

SOUTH TYGER RIVER
CITY OF GREER CPW WTP
PIPE #: 001, 002 FLOW: M/R

SCG645020
MINOR DOMESTIC

SOUTH TYGER RIVER
CITY OF GREER/MAPLE CREEK PLT
PIPE #: 001 FLOW: 4.5 (PHASE II)

SC0046345
MAJOR DOMESTIC

BEAVERDAM CREEK
HANSON AGGREGATES/SANDY FLATS
PIPE #: 001 FLOW: M/R

SCG730079
MINOR INDUSTRIAL

BURBAN FORK CREEK
LOOK UP FOREST HOMES ASSOC.
PIPE #: 001 FLOW: 0.03

SC0026379
MINOR DOMESTIC

MEADOW FORK
UNITED UTIL./NORTH GREENVILLE COLLEGE
PIPE #: 001 FLOW: 0.2

SC0026565
MINOR DOMESTIC

WILLIAMS CREEK
MILLIKEN/ARMITAGE PLANT
PIPE #: 001 FLOW: 0.01

SC0023451
MINOR INDUSTRIAL

WILLIAMS CREEK TRIBUTARY
US ALUMOWELD CO., INC.
PIPE #: 001 FLOW: 0.0086

SC0043982
MINOR INDUSTRIAL

SOUTH TYGER RIVER TRIBUTARY
JERRY SMITH/JERRYCO MINE
PIPE #: 001 FLOW: M/R

SCG730567
MINOR INDUSTRIAL

Nonpoint Source Management Program

Land Disposal Activities

Landfill Facilities

<i>LANDFILL NAME</i> <i>FACILITY TYPE</i>	<i>PERMIT #</i> <i>STATUS</i>
BLUE RIDGE LANDFILL DOMESTIC	----- CLOSED
GREENVILLE COUNTY DOMESTIC	----- INACTIVE
GODFREY LANDFILL INDUSTRIAL	IWP-225 CLOSED
GLENN SHORT TERM C&D LANDFILL C&D	232903-1301 INACTIVE
GREER MUNICIPAL SW TRANSFER STATION DOMESTIC	422323-6001 ACTIVE
BROOKWOOD DRIVE LANDFILL C&D	232900-1301 INACTIVE
WR GRACE CO.- CRYOVAC DIV. C&D	422900-1301 INACTIVE
CITY OF GREER SW TRANSFER STATION DOMESTIC	231003-6001 ACTIVE
VICTOR HILL SW PROCESSING FACILITY DOMESTIC	422713-2001 ACTIVE
SMITH LCD&YT C&D	422419-1701 ACTIVE
HAWKINS GRADING LCD C&D	422473-1701; 422473-1702 ACTIVE
BROWN LCD & YT C&D	422474-1702 ACTIVE

Land Application Sites

<i>LAND APPLICATION SYSTEM</i> <i>FACILITY NAME</i>	<i>ND#</i> <i>TYPE</i>
SPRAYFIELD RD ANDERSON APPLIED TECH. CTR.	ND0067351 DOMESTIC

Mining Activities

<i>MINING COMPANY</i> <i>MINE NAME</i>	<i>PERMIT #</i> <i>MINERAL</i>
HANSON AGGREGATES SE, INC. SANDY FLAT QUARRY	0502-45 GRANITE
DUN GRADING PITTMAN MINE	1792-45 SAND

COX & FLYOD GRADING INC.
LISTER ROAD BORROW SITE

1564-83
SAND/CLAY

Water Quantity

WATER USER
STREAM

REGULATED CAP. (MGD)
PUMPING CAP.(MGD)

CITY OF GREER CPW
LAKE CUNNINGHAM

24.0
33.0

Growth Potential

There is a high potential for industrial, commercial, and residential growth in this watershed, which contains the City of Greer, and portions of the Town of Duncan and the City of Woodruff. The Greenville-Spartanburg Airport expansion, the development of the BMW automotive plant, and highway improvements in the area surrounding the BMW plant will stimulate continued growth. Growth is also expected around the I-85 and U.S. Hwy. 29 corridors, which connect the Cities of Greenville, Greer, and Spartanburg. The Town of Duncan is expected to serve as a bedroom community for the Greer-Spartanburg area.

Watershed Protection and Restoration Strategies

Total Maximum Daily Loads (TMDLs)

A TMDL was developed for SCDHEC and approved by EPA for fecal coliform bacteria in **Mush Creek** at water quality monitoring site **B-317**. No currently active facilities that have fecal coliform limits in their NPDES permits discharge into the creek. The watershed is within a Municipal Separate Storm Sewer System (MS4) designated area: Greenville County, though it is outside of the urbanized area. Possible sources of fecal coliform bacteria in Mush Creek include failing onsite wastewater disposal systems, cattle in creeks, pets, and wildlife. The TMDL specifies a reduction in the load of fecal coliform bacteria into Mush Creek of 31% in order for the creek to meet the recreational use standard.

TMDLs were developed for SCDHEC and approved by EPA for fecal coliform bacteria in the **South Tyger River** at water quality monitoring sites **B-263**, **B-005**, and **B-332**. Union's Beltline WWTP (SC0021202) discharges into South Tyger River just downstream of B-286. The watershed is within four MS4 designated areas: City of Greer, City of Duncan, Greenville County, and, Spartanburg County. Possible sources of fecal coliform bacteria in the South Tyger River upstream of B-005 include MS4 runoff, leaking sewers, failing onsite wastewater disposal systems, pets, and wildlife. For the South Tyger River at B-332 possible sources include upstream sources, failing onsite wastewater disposal systems, cattle in streams, pets, and wildlife. The TMDL specifies reductions in the load of fecal coliform bacteria into South Tyger River of 13% (B-263), 8% (B-005), and 33% (B-332) in order for the river to meet the recreational use standard.

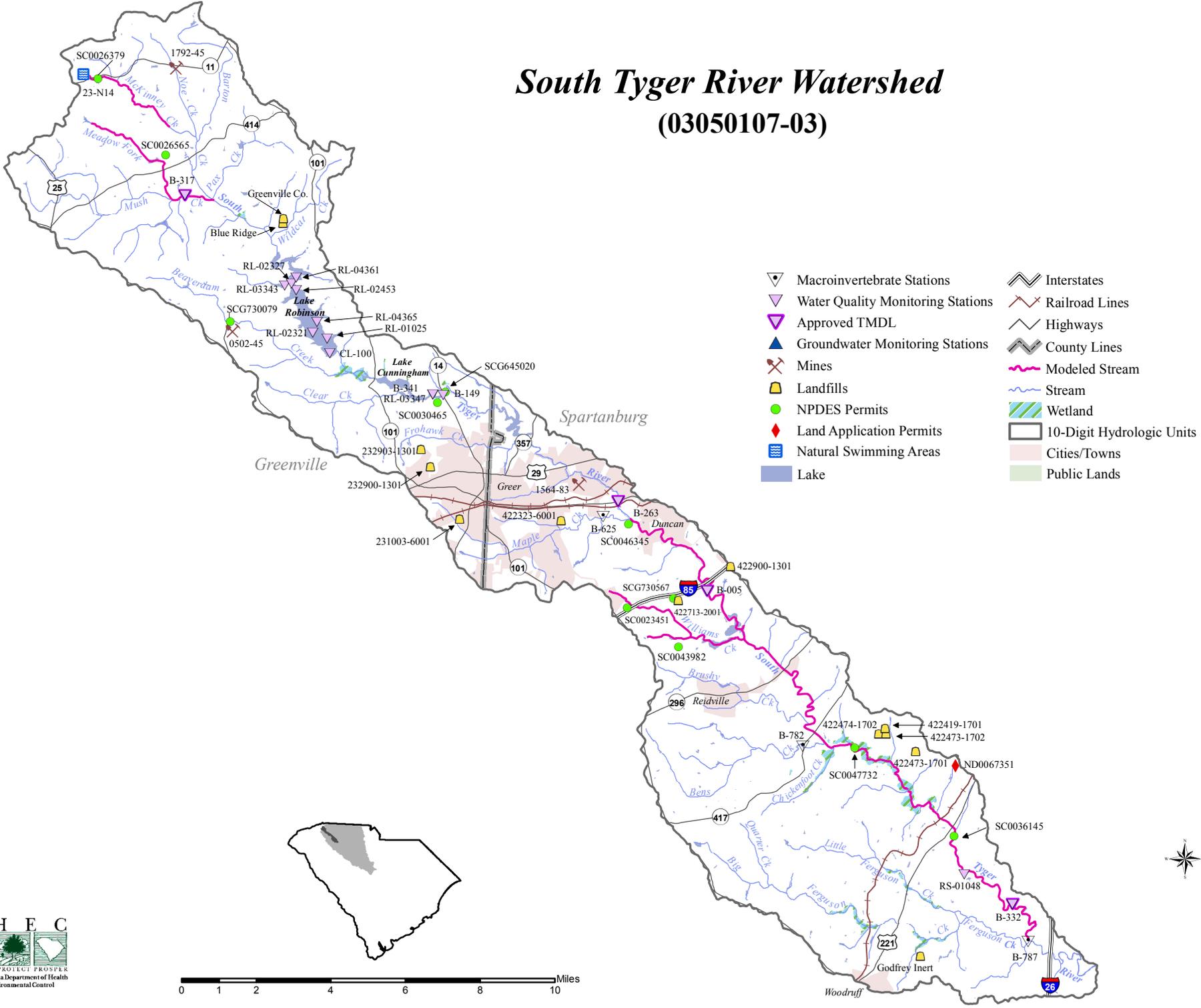
Funding for TMDL implementation activities is currently available. For more information, see the Bureau of Water web page www.scdhec.gov/water or call the Watershed Program at (803) 898-4300.

Special Projects

Tyger River Basin Fecal Coliform TMDL Implementation Project

The Tyger River Basin has been included in the South Carolina's Section 303(d) List for impaired waterbodies for violation of the fecal coliform water quality standard. A TMDL for fecal coliform bacteria was developed for the 25 sampling sites within the watershed. Eleven of these fall within the Municipal Separate Storm Sewer System (MS4) areas. TMDLs for the remaining 15 sites call for reductions ranging from 16% to 82%. The TMDL document indicates that nonpoint sources are the main contributors of fecal coliform bacteria contamination for these sites. Four upstate counties, Soil and Water Conservation Districts, the SJWD Water District, USC Upstate have partnered with Clemson University and several other cooperators to implement the TMDL. Their project addresses several strategies for TMDL implementation through the development and promotion of measures focused at reducing fecal coliform contamination. The goal of the project is to reduce the fecal coliform bacteria load to the Tyger River Basin through agricultural practices, rural residential septic system repairs and urban storm water reductions. This will be done by offering cost share assistance to recruit livestock farmers to develop farm plans and implement BMPs to reduce animal waste from entering the watershed and to recruit homeowners to repair failing septic systems. The project will also educate the public about the potential sources of Fecal Coliform and means of reducing fecal coliform pollution of the watershed.

South Tyger River Watershed (03050107-03)



- ▽ Macroinvertebrate Stations
- ▽ Water Quality Monitoring Stations
- ▽ Approved TMDL
- ▲ Groundwater Monitoring Stations
- ⚡ Mines
- 🗑️ Landfills
- NPDES Permits
- ♦ Land Application Permits
- 🏊 Natural Swimming Areas
- 🟦 Lake
- ⚡ Interstates
- 🚂 Railroad Lines
- 🛣️ Highways
- ⚡ County Lines
- 🌊 Modeled Stream
- 🌊 Stream
- 🌿 Wetland
- 🏠 10-Digit Hydrologic Units
- 🏠 Cities/Towns
- 🌿 Public Lands

