03050103-01

(Sugar Creek)

General Description

The South Carolina portion of watershed 03050103-01 (formerly 03050103-020) is located in York and Lancaster Counties and consists primarily of ***Sugar Creek*** and its tributaries. The watershed occupies 29,229 acres of the Piedmont region of South Carolina. Land use/land cover in the watershed includes: 47.7% forested land, 37.0% urban land, 12.6% agricultural land, 1.3% barren land, 0.8% forested wetland (swamp), and 0.6% water.

Sugar Creek originates in North Carolina, near the City of Charlotte, and accepts drainage from Flint Hill Branch, Little Sugar Creek, and McAlpine Creek before reaching Steele Creek. Steele Creek also originates in North Carolina and accepts drainage from Blankmanship Branch and Jackson Branch before flowing through the Town of Fort Mill and into Sugar Creek. There are a total of 799.0 stream miles in the entire Sugar Creek watershed (129.1 miles within South Carolina) and 876.7 acres of lake waters (241.7 acres within South Carolina), all classified FW.

Surface Water Quality

Station #	Type	Class	Description
CW-247	W/SPRP	FW	SUGAR CREEK AT MECKLENBURG CO.RD 51 (IN N.C.)
CW-246/CW-627	BIO	FW	SUGAR CK UPSTREAM OF CONFL. WITH MCALPINE CREEK
CW-226	P/SPRP	FW	MCALPINE CREEK AT US 521 IN NC
CW-064	S/W/BIO	FW	MCALPINE CREEK AT S-29-64
CW-009	S/W	FW	STEELE CREEK AT S-46-22 N OF FORT MILL
CW-203	W	FW	STEELE CREEK AT S-46-98
CW-681	BIO	FW	STEELE CREEK AT BY-PASS US 21
CW-011	S/W	FW	STEELE CREEK AT S-46-270
CW-013	P/W	FW	SUGAR CREEK AT SC 160 E OF FORT MILL
CW-036	S/INT	FW	SUGAR CREEK AT S-46-36

Sugar Creek – There are four SCDHEC monitoring sites along Sugar Creek. At the furthest upstream site ***(CW-247)***, aquatic life uses are fully supported. Recreational uses are not supported at this site due to fecal coliform excursions. Compounding this is a significant increasing trend in fecal coliform bacteria. Moving downstream to ***CW-246***, aquatic life uses are partially supported based on macroinvertebrate community data.

Aquatic life and recreational uses are fully supported at ***CW-013***; however, there is a significant increasing trend in total nitrogen concentration. Significant decreasing trends in turbidity and fecal coliform bacteria suggest improving conditions for these parameters. At the furthest downstream site ***(CW-036)***, aquatic life uses are fully supported; however, there are significant increasing trends in five-day biochemical oxygen demand and total nitrogen concentration. There is a significant increasing trend in pH. A significant decreasing trend in total phosphorus concentration suggests improving conditions for this parameter. Recreational uses are not supported at this site due to fecal coliform excursions.

McAlpine Creek **-** There are two SCDHEC monitoring sites along McAlpine Creek. At the upstream site ***(CW-226)***, aquatic life uses are fully supported and decreasing trends in turbidity and total nitrogen concentration suggests improving conditions for these parameters. Recreational uses are not supported at this site due to fecal coliform excursions; however, a significant decreasing trend in fecal coliform bacteria suggests improving conditions for this parameter. At the downstream site ***(CW-064)***, aquatic life uses are fully supported; however, there are significant increasing trends in five-day biochemical oxygen demand and total nitrogen concentration. Significant decreasing trends in turbidity and total phosphorus concentration suggest improving conditions for these parameters. Recreational uses are partially supported at this site; however, a significant decreasing trend in fecal coliform bacteria suggests improving conditions for this parameter.

Steele Creek - There are four SCDHEC monitoring sites along Steele Creek. At the furthest upstream site ***(CW-009)***, aquatic life uses are fully supported; however, there are significant increasing trends in five-day biochemical oxygen demand, turbidity, and total phosphorus. There is a significant decreasing trend in pH. Recreational uses are not supported at this site due to fecal coliform excursions. At the next site moving downstream ***(CW-203)***, aquatic life uses are fully supported and recreational uses are not supported due to fecal coliform excursions. Further downstream ***(CW-681)***, aquatic life uses are partially supported based on pH excursions. At the furthest downstream site ***(CW-011)***, aquatic life and recreational uses are fully supported; however, there is a significant increasing trend in five-day biochemical oxygen demand and a decreasing trend in dissolved oxygen concentration.

NPDES Program

Active NPDES Facilities

RECEIVING STREAM ***FACILITY NAME*** ***PERMITTED FLOW @ PIPE (MGD)***	***NPDES#*** ***TYPE*** ***COMMENT***
SUGAR CREEK UTILITIES OF SC/FOXWOOD SD	SC0027146 MINOR DOMESTIC
SUGAR CREEK TRIBUTARY WIKOFF COLOR CORP.	SCG250094 MINOR INDUSTRIAL
STEELE CREEK TRIBUTARY PRESSLEY RECYCLING CENTER/PRESSLEY MINE	SCG730498 MINOR INDUSTRIAL
MCALPINE CREEK CWS/LAMPLIGHTER VILLAGE SD	SC0030112 MINOR DOMESTIC
STEELE CREEK TRIBUTARY COLTHARP INC./CBM LANDFILL MINE	SCG730566 MINOR INDUSTRIAL
JACKSON BRANCH JENNINGS ENTERPRIZES/JENNINGS ENTERPRIZES MINE	SCG731114 MINOR INDUSTRIAL

JACKSON BRANCH TRIBUTARY	SC0038113
UTILITIES OF SC/CAROWOOD SD.	MINOR DOMESTIC

Municipal Separate Storm Sewer Systems (MS4)

RECEIVING STREAM	***NPDES#***
MUNICIPALITY	***MS4 PHASE***
RESPONSIBLE PARTY	***MS4 SIZE***
IMPLEMENTING PARTY	
SUGAR CREEK	SCR039101
FORT MILL	PHASE II
FORT MILL	SMALL MS4
FORT MILL	
SUGAR CREEK	SCR039104
UNINCORPORATED AREAS	PHASE II
YORK COUNTY	SMALL MS4
YORK COUNTY	

Nonpoint Source Management Program

Land Disposal Activities

Landfill Facilities

LANDFILL NAME	***PERMIT #***
FACILITY TYPE	***STATUS***
COOKS C&D LANDFILL	----------
INDUSTRIAL	INACTIVE
COOKS LANDFILL	291004-1301
C&D	INACTIVE
CONTAINER CORP. OF CAROLINA/TRANSFER STA.	463323-6001
INDUSTRIAL	ACTIVE
JOHN HOWARD INERT LANDFILL	----------
INDUSTRIAL	INACTIVE
SAM FISCHER LANDFILL	----------
INDUSTRIAL	INACTIVE
CUTSHAW C/C LANDFILL	462425-1201
CONSTRUCTION	INACTIVE
CUTSHAW C&D LANDFILL	----------
C&D	INACTIVE
COLTHARP LANDFILL	462602-1201
CONSTRUCTION	ACTIVE
PRESSLEY WOOD CHIPPING FACILITY	462655-3001
WOOD CHIPPING	ACTIVE
PRESSLEY WOOD INCINERATOR	292655-4001
INCINERATOR	INACTIVE
CITY OF FT. MILL COMPOSTING SITE	461003-3001
COMPOSTING	ACTIVE

GUPTON COMPOSTING FACILITY	292625-3001
COMPOSTING	ACTIVE

Land Application Sites

LAND APPLICATION SYSTEM FACILITY NAME	***ND# TYPE***
SPRAYFIELD	ND0067105
LAZY DAZE CAMPGROUND	DOMESTIC

Mining Activities

MINING COMPANY MINE NAME	***PERMIT # MINERAL***
CBM LANDFILL COMPANY	1094-91
CBM LANDFILL MINE	SAND/CLAY
PRESSLEY MINING CO.	0808-57
PRESSLEY MINE	CLAY
RESERVE DOMICILES LTD TRUSTEES	1392-91
COLTHARP ROAD MINE	SAND

Growth Potential

This watershed has high growth potential and contains a portion of the Town of Fort Mill and rapidly growing residential areas near I-77 and U.S. Hwy 21in the Fort Mill Township and the northern tip of Lancaster County's Indian Land. Major developments include the Paramount Carowinds amusement park and surrounding industrial and commercial uses along Carowinds Blvd. and the S.C. Hwy 160/U.S. Hwy 521 interchange. The Charlotte Knights baseball stadium and its surrounding property are slated for redevelopment when the team moves to a new stadium in Charlotte, N.C. in 2014. Industrial and commercial growth is expected to continue along Carowind Blvd and the S.C. Hwy 160 corridor leading to U.S. Hwy 521 in Lancaster County. Water service is present in all sections of the watershed, except for some areas east of Fort Mill. Sewer service is present in Fort Mill and its surrounding area, along the Carowinds Blvd and the S.C. Hwy 160 corridor. The presence of Charlotte, N.C. just across the State line and the easy access into that city via I-77and U.S. Hwy 521 ensure that strong growth will continue into the near future. Transportation factors, which will have an impact on the area, include the proposed Fort Mill bypass for S.C. Hwy 160.

Watershed Restoration and Protection

Total Maximum Daily Loads (TMDLs)

Three TMDLs were developed by SCDHEC using the load duration methodology and approved by the EPA for ***Steele Creek*** in Mecklenburg County, NC and York County, SC (monitoring sites CW-009, CW-203, and CW-011). These TMDLs determine the maximum amount of fecal coliform bacteria that Steele Creek at each site can receive from pollution sources and still meet water quality standards. At the time the TMDL was approved there were two permitted continuous dischargers of fecal coliform in the South Carolina portion of the watershed.

There was also one continuous discharger that was permitted to apply wastewater to land. At that time there were several non-continuous dischargers (MS4s) in the watershed with potential to discharge fecal coliform. Potential sources of fecal coliform pollution in the watershed contributing to the impairment of Steele Creek include various urban nonpoint sources. The TMDLs require reductions of 87% (CW-009), 83% (CW-203), and 75% (CW-011) in the current load to the creek to meet standards. For more detailed information on TMDLs, please visit www.scdhec.gov/tmdl.

Special Projects

NPS Assessment and TMDL Development for Nutrients in the Catawba River Basin

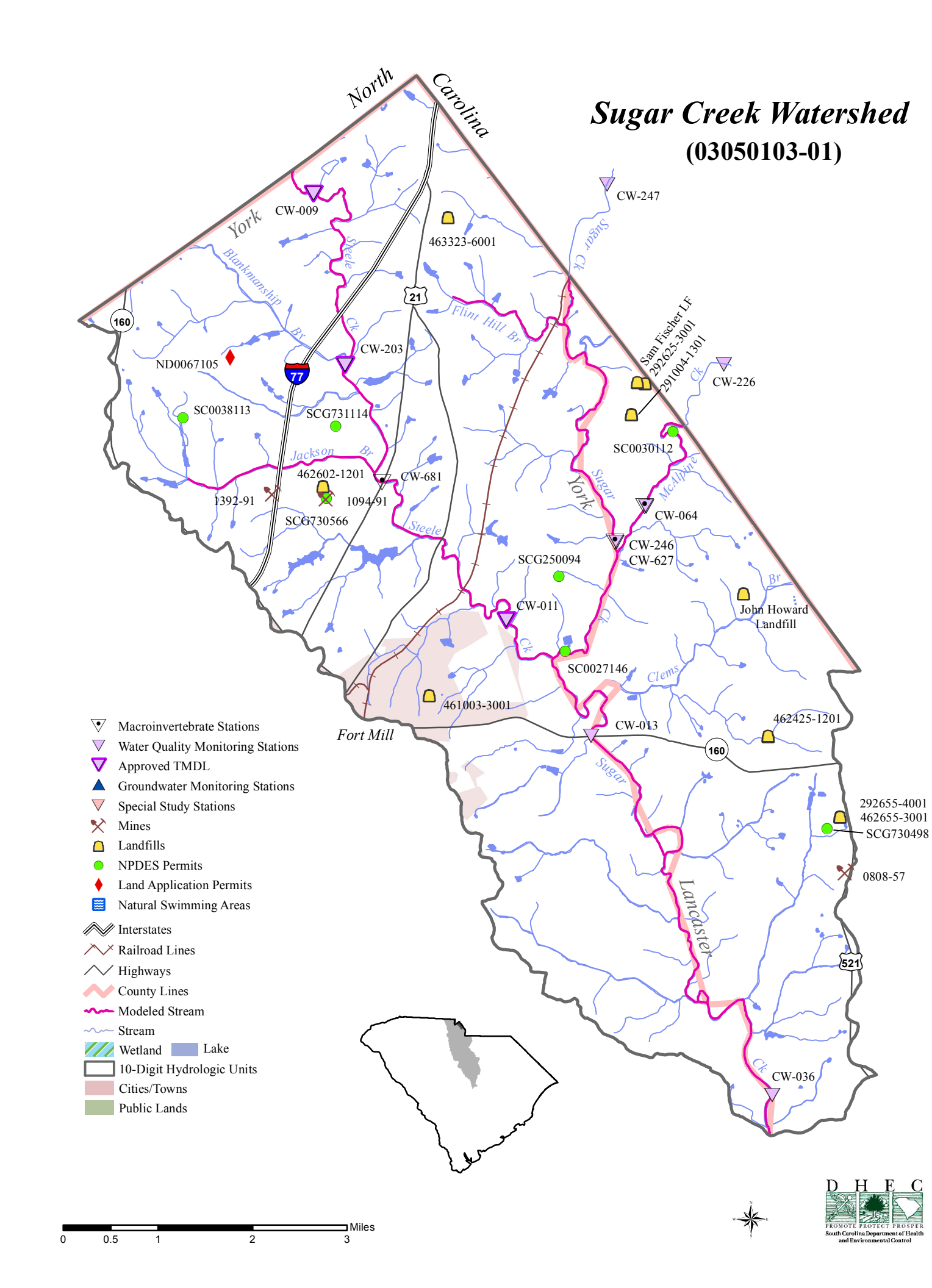
SCDHEC continues to address nutrient loading concerns in the impaired reservoirs (Fishing Creek, Great Falls, and Cedar Creek Reservoirs and Lake Wateree) of the lower Catawba-Wateree Basin using the WARMF (Watershed Analysis Risk Management Framework) water quality model. This watershed model was updated previously through 2005, but changes in phosphorus loading, land use, and population made the model out dated in terms of the model time period. Significant changes in the watershed since 2005 include new phosphorus limits on the three Charlotte-Mecklenburg WWTPs in the Sugar Creek watershed, closing of two major industrial dischargers in the South Carolina portion of the basin, and a significant increase in population and developed land use in the Charlotte – Rock Hill area. In late 2012 SCDHEC began an update of the model that will incorporate these changes in the watershed and make the model as current as feasible. SCDHEC intends to use the updated model for nutrients and pH TMDLs by determining new Wasteload Allocations for point source dischargers and Municipal Separate Storm Sewer Systems (MS4s) and Load Allocations for the nonpoint sources within the Basin.

Catawba River Water Supply Project Expansion

The Catawba River Water Supply Project (CRWSP) is a joint venture between Lancaster County in South Carolina and Union County in North Carolina, which provides drinking water to the majority of both counties. To better manage water supplies during drought conditions, the CRWSP plans to expand its off-river reservoir to provide additional storage and less reliance on Catawba River flows.

McAlpine Creek Project

The Charlotte-Mecklenburg McAlpine Creek Wastewater Treatment Plant recently completed a pilot study using nutrient recovery technology that turns waste into a natural fertilizer. Results of the pilot study are being reviewed to see if this project is feasible on a large scale. McAlpine Creek flows into South Carolina and has seen a nearly 70% reduction in phosphorous, since 2007, due to regulations imposed by DHEC. The nutrient recycling project could further reduce nutrients in South Carolina's waters.


Sugar Creek Watershed
(03050103-01)
North Carolina
York
CW-009
463323-6001
CW-247
Sugar Ck
Steele
Blankmanship Br
Ck
CW-203
Flint Hill Br
Sam Fischer LF
292625-3001
291004-1301
CW-226
ND0067105
SC0038113
SCG731114
SC0030112
Jackson Br
462602-1201
CW-681
1392-91
1094-91
SCG730566
Steele
Sugar
York
McAlpine
CW-064
CW-246
CW-627
SCG250094
CW-011
John Howard
Landfill
Br
Ck
Ck
SC0027146
Clems
461003-3001
Fort Mill
CW-013
462425-1201
Sugar
292655-4001
462655-3001
SCG730498
0808-57
Lancaster
CW-036
Ck
Macroinvertebrate Stations
Water Quality Monitoring Stations
Approved TMDL
Groundwater Monitoring Stations
Special Study Stations
Mines
Landfills
NPDES Permits
Land Application Permits
Natural Swimming Areas
Interstates
Railroad Lines
Highways
County Lines
Modeled Stream
Stream
Wetland
Lake
10-Digit Hydrologic Units
Cities/Towns
Public Lands
Miles
0
0.5
1
2
3
D H E C
PROMOTE PROTECT PROSPER
South Carolina Department of Health and Environmental Control