

**03050103-06**  
**(Catawba River)**

**General Description**

The South Carolina portion of watershed 03050103-06 (formerly 03050103-010, a portion of 030, 080) is located in York, Chester, and Lancaster Counties and consists primarily of the *Catawba River* and its tributaries from the Lake Wylie dam to Big Wateree Creek. The watershed occupies 142,532 acres of the Piedmont region of South Carolina. Land use/land cover in the watershed includes: 61.3% forested land, 17.8% urban land, 15.3% agricultural land, 4.4% water, 0.7% forested wetland (swamp), and 0.5% barren land.

The Catawba River flows through the Catawba Dam near the Town of Fort Mill, and is joined by Johnnytown Branch, Big Dutchman Creek (Little Dutchman Creek), Hidden Creek, Dye Branch (Jones Branch), Manchester Creek, and Burgis Creek (all originating near the City of Rock Hill) before accepting drainage from the Sugar Creek watershed. Downstream from the Sugar Creek drainage, the Catawba River flows past the Catawba Indian Reservation and is joined by Haggins Branch, Sixmile Creek (Barber Creek), Ferry Branch, Abernathy Creek, Greene Creek, the Twelvemile Creek watershed, and Waxhaw Creek (Causar Branch, Andrew Jackson State Park Lake, Mill Branch, Foster Branch). The Landsford Canal connects the bend in the river where the Twelvemile Creek watershed enters. Further downstream, the river accepts the drainage of Rock Water Spring Branch, Dunn Creek, and the Cane Creek watershed near the Town of Fort Lawn. The Catawba River then flows into Fishing Creek Reservoir, which is impounded by the Fishing Creek Dam. Bear Creek forms an arm of the reservoir.

The Catawba River is dammed again just downstream of the Fishing Creek Dam and the flow diverted to form Great Falls Reservoir. The retention time for Great Falls Reservoir is approximately one day, and essentially functions as an expanded area of the diverted Catawba River. The Fishing Creek watershed drains into Great Falls Reservoir just below the Fishing Creek Dam. Great Falls Reservoir is impounded by the Dearborn Dam, and together with the Cedar Creek Dam downstream serve to back the water up into the true Catawba River bed to form Cedar Creek Reservoir. The section of the Catawba River upstream of Cedar Creek Reservoir and downstream of the Catawba River Diversion Dam is dry and serves as an emergency spillway. Great Falls Reservoir also has a dam between it and this dry section used for periods of flood. Camp Creek originates near the City of Lancaster and accepts the drainage of Dry Creek before flowing into Cedar Creek Reservoir. The Rocky Creek watershed drains into the section of Cedar Creek Reservoir between the Dearborn Dam and the Cedar Creek Dam. Debutary Creek drains into and forms an arm of Cedar Creek Reservoir just above the Cedar Creek Dam. Duke Power Company oversees the operation of these reservoirs, and they are used for power generation as well as recreation. Fishing Creek Reservoir is used as water supply. Andrew Jackson State Park is another natural resource in the area. There are a total of 710.0 stream miles in this portion of Catawba River watershed extending into North Carolina

(610.7 miles within South Carolina) and 4,005.8 acres of lake waters (3,926.2 acres within South Carolina), all classified FW.

## Surface Water Quality

<u>Station #</u>	<u>Type</u>	<u>Class</u>	<u>Description</u>
CW-221	S/W	FW	HIDDEN CREEK AT HWY. 161, 0.4 MI W OF I-77
CW-014	P/SPRP	FW	CATAWBA RIVER AT US 21
RS-06176	RS06	FW	SIXMILE CREEK AT BRIDGE ON S-46-691, 2.9MI NE OF RODDY
CW-041	PSPRP	FW	CATAWBA RIVER AT SC 5 ABOVE BOWATER
CW-145	W/INT	FW	WAXHAW CREEK AT S-29-29
CW-016	P/INT	FW	CATAWBA RIVER AT SC 9 AT FORT LAWN
CW-016F	P/W	FW	FISHING CREEK RESERVOIR 2 MI BELOW CANE CREEK
CW-057	P/INT	FW	FISHING CREEK RESERVOIR 75 FT ABOVE DAM NEAR GREAT FALLS
RL-05414	RL05	FW	GREAT FALLS RESERVOIR, 1.0 MI E JUNCTION OF SC 99 AND US 21
RL-08062	RL08	FW	GREAT FALLS RESERVOIR, 0.9 MI OF NITROLEE, W SIDE OF CUT BETW 2 ISLANDS
RL-04379	RL04	FW	CEDAR CREEK RESERVOIR, 1.25 MI ESE OF GREAT FALLS, NW OF HILL ISLAND
CW-235	W/INT	FW	CAMP CREEK AT SC 97
RL-06431	RL06	FW	CEDAR CREEK RESERVOIR, 1.6 MI SE OF GREAT FALLS, E OF BIG ISLAND
RL-01007	RL01	FW	CEDAR CREEK RESERVOIR, 2.15 MI SE OF GREAT FALLS
RL-04375	RL04	FW	CEDAR CREEK RESERVOIR, 2.2 MI SE OF GREAT FALLS, SE OF BOWDEN ISLAND
RL-07003	RL07	FW	CEDAR CREEK RES. NEAR E SHORE OF PICKETT ISLAND, 0.5MI NNW OF S-29-405
RL-05391	RL05	FW	CEDAR CREEK RES., 0.42 MI NNW OF S-29-405 ON LANCASTER/CHESTER LINE
RL-06443	RL06	FW	CEDAR CREEK RESERVOIR, 2.3 MI SE OF GREAT FALLS, S OF PICKETT ISLAND
RL-06429	RL06	FW	CEDAR CREEK RESERVOIR, 1.2 MI SE OF GREAT FALLS, W OF BIG ISLAND
CW-174	S/W	FW	CEDAR CREEK RES. AT UNIMPROVED RD ABOVE JUNCTION WITH ROCKY CREEK
RL-08046	RL08	FW	CEDAR CREEK RES., 0.27 MI SE OF S-12-141 BELOW GREAT FALLS DAM
RL-05416	RL05	FW	CEDAR CREEK RES., 0.4 MI E OF DEBUTARY CK & S-20-268
CW-033	W	FW	CEDAR CREEK RESERVOIR 100 M N OF DAM

**Hidden Creek (CW-221)** – Aquatic life uses are fully supported; however, there are significant increasing trends in five-day biochemical oxygen demand and turbidity. Recreational uses are not supported due to fecal coliform bacteria excursions.

**Catawba River** – There are three SCDHEC monitoring sites along the Catawba River in this watershed. At the upstream site (**CW-014**), aquatic life uses are fully supported; however, there is a significant increasing trend in five-day biochemical oxygen demand. A significant decreasing trend in total nitrogen concentration suggests improving conditions for this parameter. Recreational uses are fully supported. At the midstream site (**CW-041**), aquatic life and recreational uses are fully supported; however, there are significant increasing trends in five-day biochemical oxygen demand, total nitrogen concentration, total suspended solids, and fecal coliform bacteria concentration.

At the downstream site (**CW-016**), aquatic life and recreational 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. Significant increasing trends in dissolved oxygen concentration and decreasing trends in total phosphorus concentration suggest improving conditions for these parameters.

**Sixmile Creek (RS-06176)** - Aquatic life uses are partially supported based on macroinvertebrate community data. Recreational uses are fully supported.

**Waxhaw Creek (CW-145)** – Aquatic life uses are not supported due to occurrences of copper in excess of the aquatic life chronic criterion. In addition, there is a significant increasing trend in five-day biochemical oxygen demand. Recreational uses are not supported due to fecal coliform bacteria excursions.

**Fishing Creek Reservoir** – There are two SCDHEC monitoring sites along Fishing Creek Reservoir and recreational uses are fully supported at both sites. At the uplake site (**CW-016F**), aquatic life uses are not supported due to total nitrogen and total phosphorus concentration excursions. In addition, there is a significant increasing trend in total nitrogen concentration. Significant decreasing trends in turbidity and fecal coliform bacteria concentration suggest improving conditions for these parameters. At the downlake site (**CW-057**), aquatic life uses are not supported due to total nitrogen, total phosphorus, and pH excursions. In addition, there are significant increasing trends in five-day biochemical oxygen demand and total nitrogen concentration. There is a significant increasing trend in pH. Significant decreasing trends in turbidity, total phosphorus concentration, and fecal coliform bacteria concentration suggest improving conditions for these parameters at this site.

**Great Falls Reservoir** - There are two SCDHEC monitoring sites along Great Falls Reservoir and recreational uses are fully supported at both sites. At the uplake site (**RL-05414**), aquatic life uses are not supported due to total phosphorus concentration excursions. At the downlake site (**RL-08062**), aquatic life uses are not supported due to total nitrogen and total phosphorus concentration excursions.

**Cedar Creek Reservoir** - There are twelve SCDHEC monitoring sites along Cedar Creek Reservoir and recreational uses are supported at all sites. Moving from uplake to downlake, aquatic life uses are not supported due to total phosphorus concentration excursions at stations **RL-04379**, **RL-06431**, **RL-01007**, and **RL-04375**. Aquatic life uses are fully supported at **RL-07003**. Although pH excursions occurred at this site, they were typical of values seen in lake systems and were considered natural, not standards violations. At **RL-05391**, aquatic life uses are not supported due to total phosphorus concentration excursions. Aquatic life uses at station **RL-06443** are partially supported due to pH excursions. At **RL-06429**, aquatic life uses are not supported due to total phosphorus concentration excursions. Although dissolved oxygen excursions occurred at this site, they were typical of values seen in lake systems and were considered natural, not standards violations. Aquatic life uses are not supported at **CW-174** due to total phosphorus excursions. In addition, there are significant decreasing trends in dissolved oxygen concentration and increasing trends in five-day biochemical oxygen demand. Aquatic life uses are not supported at **RL-08046** due to total nitrogen and total phosphorus excursions, and at **RL-05416** and **CW-033** due to total phosphorus excursions.

**Camp Creek (CW-235)** - Aquatic life uses are fully supported. Although pH excursions occurred, they were typical of values seen in such systems and were considered natural, not

standards violations. Recreational uses are not supported due to fecal coliform bacteria excursions.

*A fish consumption advisory has been issued by the Department for PCBs and includes the Catawba River, Fishing Creek Reservoir, and Cedar Creek Reservoir within this watershed. . For background information and the most current advisories please visit [www.scdhec.gov/fish](http://www.scdhec.gov/fish).*

## **NPDES Permitted Activities**

### ***Active NPDES Facilities***

<b><i>RECEIVING STREAM FACILITY NAME</i></b>	<b><i>NPDES# TYPE</i></b>
CATAWBA RIVER ABIBOW US INC.	SC0001015 MAJOR INDUSTRIAL
CATAWBA RIVER SPRINGS INDUSTRIES/GRACE COMPLEX	SC0003255 MAJOR INDUSTRIAL
CATAWBA RIVER CITY OF ROCK HILL/MANCHESTER CREEK PLANT	SC0020443 MAJOR DOMESTIC
CATAWBA RIVER TOWN OF FT. MILL WWTP	SC0020371 MAJOR DOMESTIC
CATAWBA RIVER CITY OF LANCASTER/MAIN PLANT	SC0046892 MAJOR DOMESTIC
CATAWBA RIVER LANCASTER COUNTY P&D/FOSTER PLANT	SC0027391 MINOR INDUSTRIAL
CATAWBA RIVER LANCASTER COUNTY/INDIANLAND WWTP	SC0047864 MAJOR DOMESTIC
CATAWBA RIVER NATION FORD CHEMICAL CO. (R-M INDUSTRIES)	SC0035360 MINOR INDUSTRIAL
CATAWBA RIVER (CEDAR CREEK RES.) TOWN OF GREAT FALLS WWTP	SC0021211 MAJOR DOMESTIC
CATAWBA RIVER TRIBUTARY INCHEM CORP.	SCG250111 MINOR INDUSTRIAL
CAUSAR CREEK SARATOGA PROPERTIES LLC	SC0041807 MINOR DOMESTIC
BURGIS CREEK TRIBUTARY EDGAR SMITH/QUAIL MEADOW MHP	SC0028622 MINOR DOMESTIC
BARBER CREEK UTILITIES OF SC/SHANDON SD	SC0027189 MINOR DOMESTIC
ABERNATHY CREEK CEDAR VALLEY MHP	SC0032417 MINOR DOMESTIC
MANCHESTER CREEK TRIBUTARY AQUASOL CORP./ROCK HILL	SCG250249 MINOR INDUSTRIAL

MANCHESTER CREEK CORNERSTONE DEV. OF THE CAROLINAS	SCG730587 MINOR INDUSTRIAL
CATAWBA RIVER BORAL BRICK INC./FAILE MINE	SCG730642 MINOR INDUSTRIAL
SIXMILE CREEK TRIBUTARY UNITED CONTRACTORS/SC 5 CATAWBA MINE	SCG731175 MINOR INDUSTRIAL

***Municipal Separate Storm Sewer Systems (MS4)***

<i>RECEIVING STREAM</i>	<i>MUNICIPALITY</i>	<i>RESPONSIBLE PARTY</i>	<i>IMPLEMENTING PARTY</i>	<i>NPDES#</i>	<i>MS4 PHASE</i>	<i>MS4 SIZE</i>
FISHING CREEK RESERVOIR-CATAWBA RIVER	FORT MILL	FORT MILL	FORT MILL	SCR039101	PHASE II	SMALL MS4
FISHING CREEK RESERVOIR-CATAWBA RIVER	ROCK HILL	ROCK HILL	ROCK HILL	SCR039102	PHASE II	SMALL MS4
FISHING CREEK RESERVOIR-CATAWBA RIVER	UNINCORPORATED AREAS	YORK COUNTY	YORK COUNTY	SCR039104	PHASE II	SMALL MS4

**Nonpoint Source Permitted Activities**

***Land Disposal Activities***

**Landfill Facilities**

<i>LANDFILL NAME</i>	<i>FACILITY TYPE</i>	<i>PERMIT #</i>	<i>STATUS</i>
TOWN OF GREAT FALLS	C/C INDUSTRIAL	121002-1201	INACTIVE
TOWN OF GREAT FALLS	C/C INDUSTRIAL	-----	INACTIVE
TOWN OF GREAT FALLS	C/C MSW	-----	INACTIVE
TOWN OF GREAT FALLS	COMPOSTING	121002-3001	ACTIVE
TOWN OF GREAT FALLS	C&D	121002-1701	INACTIVE
TOWN OF GREAT FALLS	-----	-----	INACTIVE
GREENS OF ROCK HILL ISW LANDFILL	INDUSTRIAL	463312-1601	ACTIVE

GREENS OF ROCK HILL ISW ASH MONOFILL INDUSTRIAL	463312-1602 ACTIVE
BOWATER, INC. ISW LANDFILL INDUSTRIAL	463318-1601 ACTIVE
BOWATERS CAROLINA CORP. INDUSTRIAL	----- INACTIVE
BOWATERS CAROLINA CORP. INDUSTRIAL	----- INACTIVE
COMBS SHORT-TERM C&D LANDFILL C&D	292903-1301 INACTIVE
LANCASTER COUNTY LCD&YT LANDFILL C&D	291001-1703 ACTIVE
LANCASTER COUNTY COMPOSTING FACILITY COMPOSTING	291001-3001 ACTIVE
CITY OF LANCASTER SW TRANSFER STATION MSW TRANSFER STATION	291003-6001 ACTIVE
CITY OF LANCASTER MSW LANDFILL MSW	----- INACTIVE
INDUSTRIAL CHEMICAL CO., INC. INDUSTRIAL	----- INACTIVE
CREEKSIDE OF YORK COUNTY LCD C&D	462748-1701 ACTIVE

### ***Mining Activities***

<b><i>MINING COMPANY</i></b> <b><i>MINE NAME</i></b>	<b><i>PERMIT #</i></b> <b><i>MINERAL</i></b>
BORAL BRICKS, INC. FAILE MINE	0778-57 CLAY
DEESE HAULING & GRADING JIL & N PIT	1221-91 SAND
CORNERSTONE DEVELOPMENT I-77 MINE SITE	1292-91 SAND

### **Growth Potential**

This watershed has moderate to high growth potential and contains portions of the cities of Rock Hill and Fort Mill in the upper portion of the watershed. On the Fort Mill side of the Catawba River, there is a relatively wide floodplain, which will limit development adjacent to the river. Water and sewer service is available to most of the area on this side of the river, which includes a large portion of the Town of Fort Mill and the residential area west of the town. Potential growth areas include residential expansion around Fort Mill and new commercial and industrial development around the I-77/ S.C. Hwy 160 interchange. On the Rock Hill side of the river, there is extensive residential development in the city with other developed residential areas

to the east in the Catawba and Lesslie communities. Major industrial and commercial development has occurred to the east of Rock Hill along the Dave Lyle Blvd and Cell River corridors (the Waterford area) where water and sewer service is available and the large Resolute paper mill complex is located to the south. Extension of a water line from Rock Hill to Resolute along the U.S. Hwy 21/S.C. Hwy 5 corridor provides opportunities for higher density development in the area.

Portions of the Towns of Fort Lawn and Great Falls are located in the lower portion of this watershed. There is a concentrated area of industrial development along S.C. Hwy 9 between Fort Lawn and the City of Lancaster, and there is a limited residential development along the shoreline of Fishing Creek Reservoir. There is public water and sewer service in the Towns of Fort Lawn and Great Falls and water along portions of S.C. Hwy 9 and U.S. Hwy 21, but growth prospects are limited in this area of the watershed.

Lancaster County continues to develop a mixed-use community, "Catawba Ridge", along Fishing Creek Reservoir. The development would extend from S.C. Hwy 9 down to S.C. Hwy 200, within the County. To date, some residential developers have purchased acreage in the development with some limited housing construction underway.

Several additional factors will influence future development in the watershed. The presence of I-77 provides excellent access to the Charlotte, N.C. and Columbia, S.C. urban areas, encouraging residential, industrial, distribution, and commercial development. The proposed Dave Lyle Boulevard Extension will be built across the Catawba River into Lancaster County, opening up large areas with good access to Rock Hill and I-77. Rock Hill's Waterford area will continue to expand its existing office, manufacturing, commercial, distribution, and residential uses as will the section of S.C. Hwy 160 between Fort Mill and I-77. The Catawba Indian Nation is continuing to develop its tribal lands along the river. Rail service from Rock Hill and Fort Mill is available into the Charlotte metropolitan area. The available industrial and commercial sites near Rock Hill and Fort Mill complete with infrastructure and the presence of I-77 all point to continued growth into the future for this portion of the watershed.

## **Watershed Protection and Restoration**

### ***Total Maximum Daily Loads (TMDLs)***

A TMDL was developed by SCDHEC and approved by EPA for *Hidden Creek* water quality monitoring site CW-221 to determine the maximum amount of fecal coliform bacteria it can receive from nonpoint sources and still meet water quality standards. The primary source of fecal coliform to the stream was determined to be runoff from urban areas in the watershed. The TMDL states that a 19% reduction in fecal coliform loading from urban sources is necessary for the stream to meet the recreational use standard.

A TMDL was developed by SCDHEC and approved by EPA for *Camp Creek* monitoring site CW-235 to determine the maximum amount of fecal coliform bacteria it can receive from nonpoint sources and still meet water quality standards. The primary sources of fecal coliform to the stream were determined to be runoff from agricultural lands. The TMDL states that a 44%

reduction in fecal coliform loading from agricultural sources is necessary for the stream to meet the recreational use standard.

A TMDL was also developed by SCDHEC and approved by EPA for *Cedar Creek Reservoir* water quality monitoring site CW-174 to determine the maximum amount of fecal coliform bacteria it can receive from nonpoint sources and still meet water quality standards. The primary sources of fecal coliform to the stream were determined to be runoff from urban and agricultural areas in the watershed, including failing septic systems, leaking and overflowing sanitary sewers, and cattle-in-streams. The TMDL states that an 83% reduction in fecal coliform loading from urban and agricultural sources is necessary for the stream to meet the recreational use standard.

A TMDL was developed by SCDHEC and approved by the EPA for *Dutchmans Creek* in Fairfield County (monitoring site RS-02321). The TMDL determines the maximum amount of fecal coliform bacteria that Dutchman Creek at RS-02231 can receive from all pollution sources and still meet water quality standards. At the time the TMDL was approved there were no permitted continuous dischargers of fecal coliform in the watershed. Also the only non-continuous discharger in the watershed with potential to discharge fecal coliform was SC DOT. Potential sources of fecal coliform pollution in the watershed that have been determined to be contributors to the Dutchmans Creek impairment include direct loading from livestock, failing septic systems, wildlife, and other agricultural sources. The TMDL would require a reduction of 63% in the current load to the creek to meet standards.

A TMDL was developed for SCDHEC using the load duration curve methodology and approved by the EPA for *Waxhaw Creek* in Union County, NC and Lancaster County, SC (monitoring site CW-145). The TMDL determines the maximum amount of fecal coliform bacteria that Waxhaw Creek at CW-145 can receive from all pollution sources and still meet water quality standards. At the time the TMDL was approved there was one permitted continuous dischargers of fecal coliform in the South Carolina portion of the watershed. At that time no non-continuous dischargers were identified in the watershed. Potential sources of fecal coliform pollution in the watershed contributing to the impairment of Waxhaw Creek include grazing cattle, wildlife, land application of manure, and failing septic systems. The TMDL requires a reduction of 86% in the current nonpoint source load to the creek to meet standards. For more detailed information on TMDLs, please visit [www.scdhec.gov/tmdl](http://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.

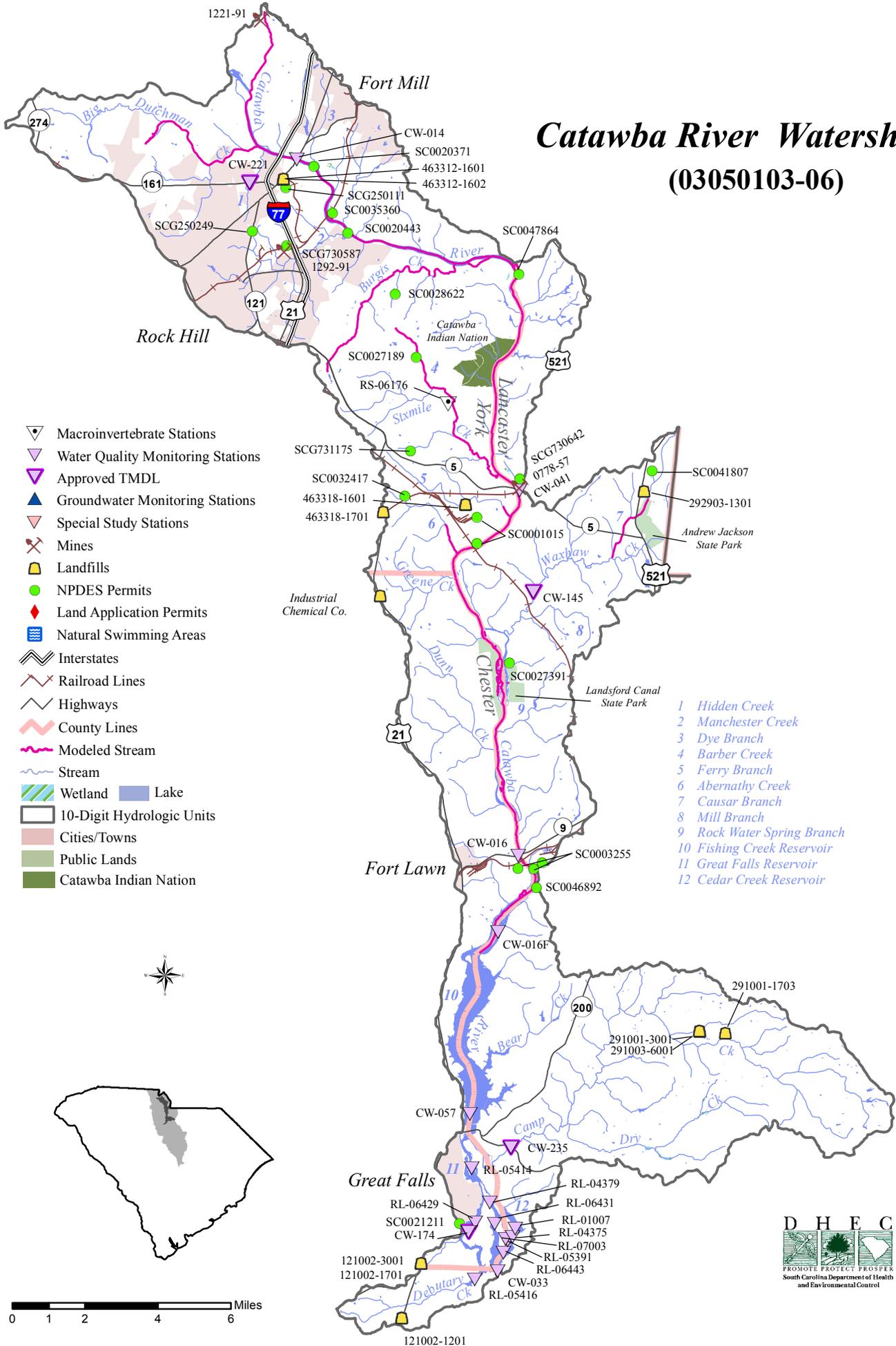
### **Catawba River Water Supply Project Expansion**

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.

### **Catawba Indian National Water Quality Monitoring Initiative**

The Catawba Indian Nation is South Carolina's only federally recognized Indian tribe. With tribal lands situated along the Catawba River near Rock Hill, the Catawbas have a strong interest in water issues. The tribe has specifically expressed interest in conducting water quality monitoring and protecting traditional recreational activities along the Catawba River and its tributaries.

# Catawba River Watershed (03050103-06)



- ▽ 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
- 🏠 Catawba Indian Nation

- 1 Hidden Creek
- 2 Manchester Creek
- 3 Dye Branch
- 4 Barber Creek
- 5 Ferry Branch
- 6 Abernathy Creek
- 7 Causar Branch
- 8 Mill Branch
- 9 Rock Water Spring Branch
- 10 Fishing Creek Reservoir
- 11 Great Falls Reservoir
- 12 Cedar Creek Reservoir

0 1 2 4 6 Miles

