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Volume II - Basin Management Assessment

LIST OF TABLES AND FIGURES

SECTION A. INTRODUCTION

The purpose of Volume II is to describe each basin and sub-basin in detail. SCDHEC has identified major watershed basins, watershed sub-basins, and watersheds for planning purposes. The BCD region is located in two major watershed basins: the Saluda-Edisto Watershed and the Catawba-Santee Watershed (Exhibit 1). The Saluda-Edisto Watershed covers the southwestern edge of Charleston County and the northern portion of Dorchester County. The Catawba-Santee Watershed covers the remaining portions of Dorchester and Charleston Counties and the entire area of Berkeley County. These major watershed basins have been subdivided into smaller sub-basins.

The portion of the BCD region that is in the Saluda-Edisto Watershed is entirely contained in the Edisto Watershed. This sub-basin is further subdivided into 4 smaller basins, 2 of which are partly located in the BCD region. These 2 basins are further divided into 15 watersheds, 10 of which are at least partly in this region. These 10 watersheds are numbered by the hydrologic units of 03050205 and 03050206.

The portion of the BCD region that is in the Catawba-Santee Basin is divided into the Catawba, Santee, and Ashley-Cooper sub-basins. The Santee sub-basin is located partly in the region. This sub-basin is further subdivided into watersheds. The watersheds that are located in the BCD region are numbered by the hydrologic units of 03050111 and 03050112. The Ashley-Cooper sub-basin and its 15 sub-basins are entirely in this region. These 15 sub-basins are numbered by the hydrologic units of 03050201 and 03050202.

Thirty-one (31) watersheds are at least partly located in the BCD region. All of these watersheds are described in this volume. Each watershed description includes a map and assessment of the watershed. Watershed maps were prepared by the BCDCOG from GIS data available for the BCD area. The watershed assessments were prepared by SCDHEC in the *Watershed Water Quality Assessment: Santee River Basin, 2005* and *Watershed Water Quality Assessment: Edisto River Basin, 2004.* Assessments are regularly updated by SCDHEC, with the next update of the Santee River Basin expected in 2012 and the next update Edisto planned for 2011. **NOTE: Information provided in the assessments may become outdated and no longer applicable or accurate from the time it is originally published by SCDHEC and its next update issuance.** For example, there are numerous references within the assessment material in this Volume to ongoing TMDL related modeling efforts within several watershed descriptions. These modeling efforts have been completed and the TMDLs allocated since the publication of 2004 / 2005 Assessments by SCDHEC.

A supplemental table (Table 1) to the watershed descriptions provides the projected growth and DMAs for each watershed based on 2010 US Census Data and 201 Facilities Management Plan. In Table 1, the capacity increase is the projected growth in wastewater needs from 2010 through 2035. This was calculated using DHEC's standard unit contributory load rate of 400 gallons per day per residence.

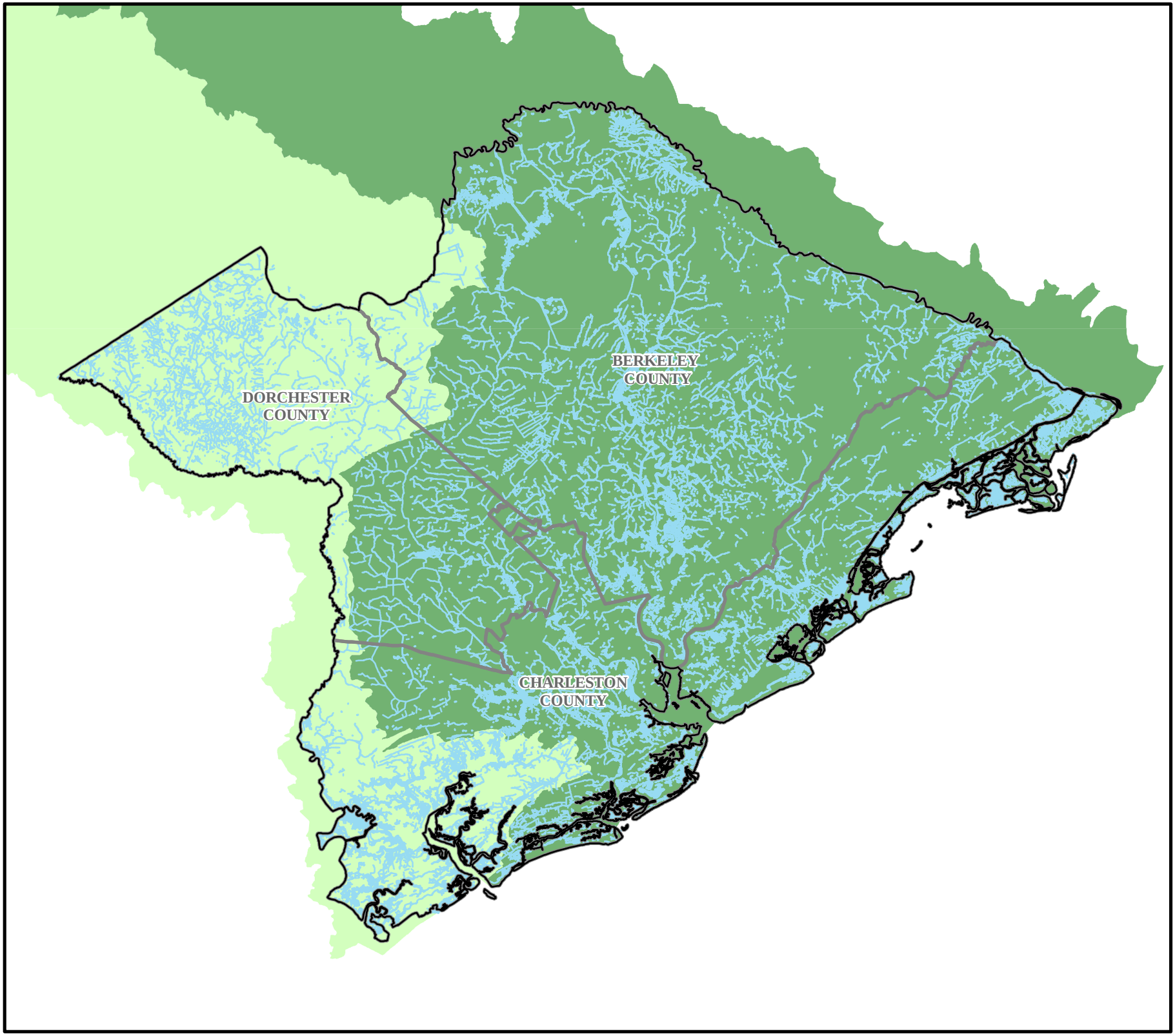
Each watershed description includes:

- A BCDCOG Map showing :
  - location of the watershed,
  - landfills,
  - industrial sites,
  - golf courses,
  - marinas,
  - boat landings,
  - cultural/historic resources, and
  - point source dischargers.

- A SCDHEC Watershed Assessment (latest published edition) including:
  - General Description,
  - Surface Water Quality,
  - NPDES Program,
  - Nonpoint Source Management Program,
  - Growth Potential, and
  - Watershed Protection and Restoration.

TABLE 1 - BASIN PROJECTIONS

BASIN	2010 Population	2035 Population	2010 Housing Units	2035 Housing Units	2010 Employment	2035 Employment	2010-2035 Capacity Increase, MG	DMAs
03050111-010	1,789	2,028	1,081	922	146	108	0.00	Berkeley Co.
03050112-010	663	3,296	374	1394	70	64	0.41	Berkeley Co.
03050112-020	4,795	4,910	2158	2435	1,410	2,606	0.11	Berkeley Co.
03050112-030	2,738	3,330	1,216	1,274	355	1,172	0.02	Town of Moncks Corner, Berkeley Co.
03050112-050	595	1331	292	397	25	38	0.04	Charleston Co., Berkeley Co.
03050112-060	563	1331	268	397	63	69	0.05	Charleston Co.
03050201-010	10,753	9,039	5,149	4,423	4,940	4,646	0.00	Town of Moncks Corner, Berkeley Co.
03050201-020	8,474	8,310	3,558	3,445	1,590	5,493	0.00	Berkeley Co.
03050201-030	12,348	13,667	5,030	5,572	10,685	12,765	0.22	Town of Moncks Corner, Berkeley Co.
03050201-040	3,470	6,592	1,514	2,515	444	1,472	0.40	Berkeley Co., City of Charleston
03050201-050	34,954	46,864	17,323	20,706	52,409	60,025	1.35	Berk. Co., City of Charleston, North Charleston Sewer District, Town of Mt. Pleasant, Chas. Co.
03050201-060	36,771	36,815	14,187	14,373	8,400	8,493	0.07	Berkeley Co., Town of Moncks Corner
03050201-070	103,188	120,576	42,029	48,557	34,166	42,221	2.61	Berkeley Co., North Charleston Sewer District, Dorchester Co.
03050201-080	49,591	48,500	20,660	19,017	12,826	17,351	0.00	Berkeley Co., City of Charleston, Town of Mt. Pleasant, Charleston Co.
03050202-010	11,488	32,717	4,124	13,437	3,688	12,911	3.73	Berkeley Co., Dorchester Co., Town of Ridgeville
03050202-020	36,863	34,263	13,909	13,617	4,342	6,910	0.00	Town of Summerville, Dorchester Co., Town of Ridgeville, Berkeley Co.
03050202-030	63,929	67,994	26,935	27,132	25,197	28,508	0.08	Berkeley Co., North Charleston Sewer District, Dorchester Co., Town of Summerville
03050202-040	105,541	111,333	47,252	48,759	70,124	76,248	0.60	Charleston Co., City of Charleston, North Charleston Sewer District, Dorchester Co.
03050202-050	58,646	97,791	27,524	40,402	32,906	47,165	5.15	Dorchester Co., Charleston Co., Town of Hollywood, Town of Ravenel, City of Charleston, James Island PSD
03050202-060	23,471	30,608	13,648	12,428	9,154	9,170	0.00	City of Isle Of Palms, Town of Sullivan's Island, Town of Mt. Pleasant, Charleston Co.
03050202-070	58,927	72,093	33,948	31,216	27,856	36,282	0.00	City of Chas, Folly Beach, JI PSD, Sullivan's Is., Town of Mt. Pleasant, Chas Co, Seabrook,Kiawah
03050205-010	47	156	51	133	0	0	0.03	Dorchester Co.
03050205-020	329	467	154	199	33	0	0.02	Dorchester Co.
03050205-030	554	623	275	399	48	56	0.05	Dorchester Co.
03050205-040	8,516	11,638	3,875	4,849	3,776	4,461	0.39	Town of St. George, Dorchester Co., Town of Harleyville
03050205-050	28	156	25	133	6	3	0.04	Dorchester Co.
03050205-060	3,667	5,347	1,994	1,844	128	2,306	0.00	Dorchester Co., Charleston Co.
03050205-070	13,772	13,842	6,652	5,525	4,004	5,404	0.00	Town of Hollywood, City of Charleston, Town of Meggett, Charleston Co, Town of Seabrook Island
03050206-040	1,427	1,868	663	930	454	760	0.11	Dorchester Co., Town of Harleyville
03050206-060	1,010	1,831	434	658	138	142	0.09	Berkeley Co.
03050206-070	5,700	5,689	2,239	1,835	1,541	5,107	0.00	Berkeley Co., Town of Ridgeville, Dorchester Co., Town of Harleyville
Totals	**664,607**	**795,005**	**298,541**	**328,923**	**310,924**	**391,956**	**12.15**	



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BERKELEY-CHARLESTON-DORCHESTER COUNCIL OF GOVERNMENTS

JACOBS

Exhibit 1:

Major Watershed Basins in the BCDCOG Region

Legend

- BCDCOG Region
- County Lines
- Streams
- Edisto Basin
- Santee Basin

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SECTION B. DESIGNATED MANAGEMENT AGENCIES

The following is a description of the Designated Management Agencies (DMA) and the public sewer providers that provide wastewater collection within each DMA. It also contains information about the jurisdiction of each DMA. Refer to Exhibit 2 for a map of the DMAs in the BCDCOG region. The DMAs are presented in alphabetical order.

Designated Management Agency:	*Berkeley County*
Service Providers:	Berkeley County Water & Sanitation, Town of Moncks Corner Commission of Public Works, Charleston Water System, Mount Pleasant Waterworks Summerville Commission of Public Works
Jurisdiction:	Unincorporated Area, City of Goose Creek, City of Hanahan, Town of St. Stephen

Berkeley County is served by Berkeley County Water & Sanitation, the Town of Moncks Corner PWC, Charleston Water System, and Mount Pleasant Waterworks. Charleston Water System's legal name is the Commissioners of Public Works of the City of Charleston, SC.

Designated Management Agency:	*Charleston County*
Service Providers:	None
Jurisdiction:	Unincorporated Area, without areas currently being served

Charleston County became a DMA for the unincorporated areas of Charleston County in 2010. Portions of the county are served by Charleston Water System and Mount Pleasant Waterworks.

Designated Management Agency:	*City of Charleston*
Service Provider:	Charleston Water System
Jurisdiction:	Corporate Limits, St. Andrews Public Service District, COG designated modified Urban Growth Boundary

The entire City of Charleston and St. Andrews Public Service District is served by the Charleston Water System.

Designated Management Agency:	*City of Folly Beach*
Service Provider:	City of Folly Beach
Jurisdiction:	Corporate Limits

The City of Folly Beach is a DMA and service provider. Portions of the City of Folly Beach are served by sewer lines owned by the City. These areas include the downtown business district, Sunset Point subdivision, and Mariners Cay. The City of Folly Beach has an agreement with James Island PSD to transport collected wastewater to Charleston Water System's Plum Island facility for treatment. The remainder of the island relies on on-site wastewater treatment (septic tank systems).

The 201 plan reports that on-site treatment on Folly Beach is judged inadequate to provide wastewater treatment. Groundwater and surface water pollution has resulted from the use of these systems. The plan recommends the construction of a low pressure sewer system to serve the island.

Designated Management Agency:	*City of Isle of Palms*
Service Provider:	Isle of Palms Water and Sewer Commission
Jurisdiction:	Corporate Limits

The City of Isle of Palms is served by the Isle of Palms Water and Sewer Commission.

Designated Management Agency:	*Dorchester County*
Service Providers:	Dorchester County Water & Sewer Department, Summerville Commissioners of Public Works
Jurisdiction:	Unincorporated Area, Reevesville

Most of Dorchester County is served by Dorchester County Water & Sewer Department. Some portions of the unincorporated areas of Dorchester County are served by Summerville Commissioners of Public Works, including Salisbury Acres and Indian Springs.

Designated Management Agency:	*James Island Public Service District*
Service Providers:	James Island Public Service District
Jurisdiction:	District Limits

James Island Public Service District (PSD) is a DMA and service provider. James Island PSD also has an agreement with Charleston Water System, the provider of treatment for wastewater for the area. A Consent Order dated October 23, 1995, provides:

1. The 1978 Agreement and the 1984 Agreement between the PSD and Charleston Water System continue to govern subject to certain amendments contained in the October 23, 1995, Consent Order Agreement;

2. The PSD and Charleston Water System will serve the tract of land annexed by the City of Charleston in 1977 commonly referred to the Ellis Properties, which include TMS #340-00-00-003, as they may later be subdivided or resubdivided. Customers within these annexed areas will connect to the District's and line existing on the area, and Charleston Water System will collect and pay the PSD the rates for treatment and transportation as established by the PSD in its Use and Rate Schedule, as amended from time to time;

3. Ownership of lines installed before and after April 11, 1980, will remain vested as they were on October 23, 1995, with each party responsible for maintenance and repair of lines owned by it;

4. Charleston Water System will not extend its transportation lines on James Island to serve new customers or to remove customers from the PSD's transportation lines with the exception that Charleston Water System has the right of first refusal to serve new customers connecting to existing Charleston Water System transportation lines going through Charleston Water System pump station #56 and not going through the master meter at Charleston Water System's Plum Island Treatment Plant; however the PSDt has the right of first refusal to require all other new customers whose wastewater could flow through the master meter to connect to the PSD's transportation lines;

5. Charleston Water System may provide service to and bill the City of Charleston residents directly; provided that Charleston Water System will utilize the PSD's transmission lines to transport the wastewater to Plum Island.

Designated Management Agency:	*North Charleston Sewer District*
Service Provider:	North Charleston Sewer District
Jurisdiction:	District Limits Lincolnville

North Charleston Sewer District is a DMA and service provider.

Designated Management Agency:	*Town of Harleyville*
Service Provider:	Town of Harleyville
Jurisdiction:	Corporate Limits

The Town of Harleyville is a DMA and service provider.

Designated Management Agency:	*Town of Hollywood*
Service Provider:	Town of Hollywood
Jurisdiction:	Corporate Limits, Petersfield

The Town of Hollywood is a DMA and service provider. Hollywood currently has partial sewer coverage, and has received grants to extend sewer service in the future. Once the expansion projects are completed, Hollywood will be close to completely served by sewer. The town has an agreement with Charleston Water System to transport and treat their wastewater at Plum Island (up to 675,000 gallons per day, pending COG approval for an additional 200,000 gpd).

Designated Management Agency:	*Town of Kiawah Island*
Service Provider:	Kiawah Island Utility
Jurisdiction:	Corporate Limits

The Town of Kiawah Island is served by Kiawah Island Utility.

Designated Management Agency:	*Town of Meggett*
Service Provider:	Town of Meggett
Jurisdiction:	Corporate Limits

The Town of Meggett is a DMA and service provider. Meggett has an agreement with the Town of Hollywood and Charleston Water System to transport and treat the town's wastewater at Plum Island (50,000 gpd). Meggett has received a grant to build the necessary sewer lines to complete the project.

Designated Management Agency:	*Town of Moncks Corner*
Service Provider:	Town of Moncks Corner Commission of Public Works
Jurisdiction:	Corporate Limits

The Town of Moncks Corner is served by the Town of Moncks Corner Commission of Public Works.

Designated Management Agency:	*Town of Mount Pleasant*
Service Provider:	Mount Pleasant Waterworks
Jurisdiction:	Commission Limits (Wastewater)

The Town of Mount Pleasant is served by Mount Pleasant Waterworks.

Designated Management Agency:	*Town of Ravenel*
Service Provider:	Town of Ravenel
Jurisdiction:	Corporate Limits

The Town of Ravenel is a DMA and service provider. The Towns of Hollywood and Ravenel entered into a sewer agreement for transportation of the Ravenel wastewater to Hollywood Pump Station No. 7, which in turn pumps to Charleston Water System's Plum Island facility for treatment.

Designated Management Agency:	*Town of Ridgeville*
Service Provider:	Dorchester County Water & Sewer Department
Jurisdiction:	Corporate Limits

The Town of Ridgeville has an agreement allowing Dorchester County Water & Sewer Department to transport and treat the town's wastewater.

Designated Management Agency:	*Town of Seabrook Island*
Service Provider:	Seabrook Island Utility Commission
Jurisdiction:	Corporate Limits, Hope Plantation

The Town of Seabrook Island is served by the Seabrook Island Utility Commission.

Designated Management Agency:	*Town of St. George*
Service Provider:	Dorchester County Water & Sewer Department
Jurisdiction:	Corporate Limits

The Town of St. George is served by Dorchester County Water & Sewer Department.

Designated Management Agency:	*Town of Sullivan's Island*
Service Provider:	Town of Sullivan's Island Water & Sewer Department
Jurisdiction:	Corporate Limits

The Town of Sullivan's Island is served by the Town of Sullivan's Island Water & Sewer Department.

Designated Management Agency:	*Town of Summerville*
Service Providers:	Summerville Commissioners of Public Works, North Charleston Sewer District, Dorchester County Water & Sewer Department, Berkeley County Water & Sanitation
Jurisdiction:	Commission Limits

The Town of Summerville is served by the Summerville Commissioners of Public Works, the North Charleston Sewer District, Dorchester County Water & Sewer Department, and Berkeley County Water & Sanitation. North Charleston Sewer District has an agreement with Summerville Commissioners of Public Works to serve as area off Lincolnville Road in the Lakes of Summerville area currently located in the commission limits.

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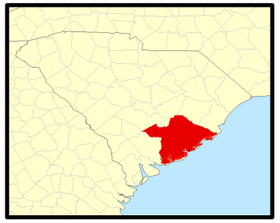

Exhibit 2:

Designated Management Agencies in the BCDCOG Region

BERKELEY COUNTY

DORCHESTER COUNTY

CHARLESTON COUNTY

17A

HIGHWAY 41

402

I-26

I-95

US 15

SC 61

US 17-A

DELEMAR

5TH

HIGHWAY 165

Legend

- County Lines
- Major Roads

Designated Management Agencies

- Berkeley County
- Charleston County
- City of Charleston
- City of Folly Beach
- City of Isle of Palms
- Dorchester County
- James Island PSD
- North Charleston Sewer District
- Town of Harleyville
- Town of Hollywood
- Town of Kiawah Island
- Town of Meggett
- Town of Moncks Corner
- Town of Mt. Pleasant
- Town of Ravenel
- Town of Ridgeville
- Town of Seabrook Island
- Town of St. George
- Town of Sullivan's Island
- Town of Summerville

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SECTION C. SERVICE PROVIDERS

The following is a list of the public sewer providers in the BCDCOG region. It contains information about their service areas, service agreements with other providers, and a description of their water reclamation facilities. Refer to Exhibit 3 for a map of the service providers in the BCDCOG region. The service providers are presented in alphabetical order.

Berkeley County Water & Sanitation

Berkeley County Water & Sanitation currently operates three water reclamation facilities. The utility has an agreement with:

- Charleston Water System to serve a portion of the Cainhoy Peninsula in unincorporated Berkeley County,
- Mount Pleasant Waterworks to serve an area along Highway 41 in unincorporated Berkeley County,
- Summerville CPW to serve an area along Interstate 26 within the Town of Summerville,
- Town of Moncks Corner Commission of Public Works to serve a defined portion of unincorporated Berkeley County, and

Facility	Discharge Permit	Receiving Stream	Permitted Amount
Lower Berkeley	SC0046060	Cooper River	22.5 MGD
Central Berkeley	SC0039764	Cooper River	6.0 MGD
Upper Berkeley	SC0025259	Santee River	0.9 MGD

Charleston Water System

Charleston Water System currently operates two water reclamation facilities, Plum Island and Daniel Island. The Daniel Island facility is currently off-line and mothballed for future use. Charleston Water System has the right to reserve the waste load allocation for the Daniel Island facility in the 208 Plan until the plant is returned to service. Charleston Water System has treatment and transportation agreements with:

- James Island PSD,
- Town of Hollywood,
- Town of Meggett, and
- Town of Ravenel.

Facility	Discharge Permit	Receiving Stream	Permitted Amount
Plum Island	SC0021229	Charleston Harbor	36 MGD
Daniel Island	SC0047074	Cooper River	4.0 MGD

City of Folly Beach

Portions of the City of Folly Beach are served by sewer lines owned by the City. These areas include the downtown business district, Sunset Point subdivision, and Mariners Cay. The City of Folly Beach has an agreement with James Island PSD to transport collected wastewater to Charleston Water System's Plum Island plant for treatment. The remainder of the island relies on on-site wastewater treatment (septic tank systems).

Dorchester County Water & Sewer Department

Dorchester County Water & Sewer Department operates two water reclamation facilities. In 2009, the utility purchased the St. George Wastewater Treatment Plant and all associated active infrastructure. Currently, Dorchester provides wastewater transportation and treatment for the Towns of St. George and Ridgeville.

Facility	Discharge Permit	Receiving Stream	Permitted Amount
Lower Dorchester	SC003882	Coosaw Creek to Ashley River	12 MGD
Upper Dorchester	SC0025844	Polk Swamp	1.8 MGD

Isle of Palms Water and Sewer Commission

The Isle of Palms Water and Sewer Commission was founded July 1, 1992 by an ordinance enacted by the City of the Isle of Palms to own, operate, and manage the water and wastewater systems, and currently operates two water reclamation facilities, Forest Trail and Wild Dunes. The Wild Dunes Wastewater Treatment Plant is located within the confines of Wild Dunes and discharges the treated effluent to a lagoon where it is used to irrigate portions of the Wild Dunes golf courses.

Facility	Discharge Permit	Receiving Stream	Permitted Amount
Forest Trail	SC0025283	Intracoastal Waterway	0.3 MGD
Wild Dunes	SC0062260	Land Application	1.07 MGD

James Island Public Service Department

James Island PSD owns the sewer lines within the district limits. Collected wastewater is transported and treated by Charleston Water System.

Kiawah Island Utility
Kiawah Island Utility currently operates one water reclamation facility. Treated effluent is used for golf course irrigation.

Facility	Discharge Permit	Receiving Stream	Permitted Amount
Kiawah Island	ND0017361	Land Application	1.7 MGD

Mount Pleasant Waterworks
Mount Pleasant Waterworks operates two water reclamation facilities.

Facility	Discharge Permit	Receiving Stream	Permitted Amount
Center Street	SC0040771	Charleston Harbor	3.7 MGD
Rifle-Range Road	SC0040771	Charleston Harbor	6.0 MGD

North Charleston Sewer District
North Charleston Sewer District currently operates one water reclamation facility. The North Charleston Sewer District has transportation and treatment contracts with:

- US Air Force Base,
- Naval Base,
- Naval Weapons Station Annex, and
- Naval Radar Station.

The 1994 201 Facilities Plan Update projected growth within the North Charleston Sewer District service area to be sluggish. The current treatment plant capacities should be adequate to accommodate the growth. However, four pump stations along the sewer trunk system need to be enlarged immediately and eight others will meet their capacities before the year 2020. The plan update recommends the enlargement of all twelve pump stations.

Facility	Discharge Permit	Receiving Stream	Permitted Amount
Felix C. Davis Plant	SC0024783	Cooper River	34 MGD

Seabrook Island Utility Commission
Seabrook Island Utility Commission operates one water reclamation facility to serve Seabrook Island and Hope Plantation. Treated effluent is used for golf course irrigation.

Facility	Discharge Permit	Receiving Stream	Permitted Amount
Seabrook Island	ND0063347	Land Application	1.1 MGD

Summerville Commissioners of Public Works
The Summerville Commissioners of Public Works currently operates one water reclamation facility. The utility has an agreement with Dorchester County Water & Sewer Department to serve areas outside the commission limits including Salisbury Acres and Indian Springs subdivisions, and North Charleston Sewer District to serve as area off Lincolnville Road in the Lakes of Summerville area currently located in the commission limits.

Facility	Discharge Permit	Receiving Stream	Permitted Amount
Summerville CPW	SC0037541	Ashley River	10 MGD

Town of Harleyville
The Town operates one water reclamation facility which is near its treatment capacity.

Facility	Discharge Permit	Receiving Stream	Permitted Amount
Town of Harleyville	SC0038504	Tom and Kate Branch	0.15 MGD

Town of Hollywood
Portions of the Town of Hollywood are served by sewer lines owned by the Town. Charleston Water System transports and treats the Town's collected wastewater.

Town of Meggett
The Town of Meggett is served by sewer lines owned by Meggett. The Town of Hollywood and Charleston Water System transport the Meggett's collected wastewater to Charleston Water System's Plum Island Facility for treatment.

Town of Moncks Corner Commission of Public Works
The Town of Moncks Corner Commission of Public Works currently operates one water reclamation facility. The utility has an agreement with Berkeley County Water & Sanitation to serve a defined area of unincorporated Berkeley County.

Facility	Discharge Permit	Receiving Stream	Permitted Amount
Town of Moncks Corner	SC0021598	Cooper River	3.2 MGD

Town of Ravenel

In November 2005, the Town of Ravenel was designated a sewer service provider. The Towns of Hollywood and Ravenel entered into a sewer agreement for transportation of the Ravenel wastewater to Hollywood Pump Station No. 7, which in turn pumps to Charleston Water System's Plum Island Facility.

Town of Sullivan's Island Water & Sewer Commission

Town of Sullivan's Island Water & Sewer Commission operates one water reclamation facility.

Facility	Discharge Permit	Receiving Stream	Permitted Amount
Sullivan's Island	SC0020052	Cove Creek	0.57 MGD

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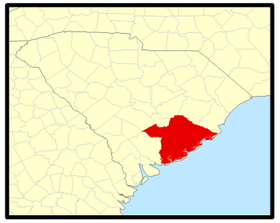

Exhibit 3:

Service Providers in the BCDCOG Region

BERKELEY COUNTY

DORCHESTER COUNTY

CHARLESTON COUNTY

I-95

US 15

I-26

SC 61

US 17-A

DELEMAR

5TH

I-26

17A

402

HIGHWAY 41

HIGHWAY 165

Legend

- County Lines
- Major Roads

Service Providers

- City of Folly Beach
- City of Isle of Palms
- Town of Harleyville
- Town of Hollywood
- Town of Kiawah Island
- Town of Meggett
- Town of Ravenel
- Town of Sullivan's Island
- Charleston Water System
- James Island PSD
- Dorchester County W&SD
- Berkeley County W&S
- Moncks Corner CPW
- Mount Pleasant Waterworks
- North Charleston Dewer District
- Summerville CPW
- Seabrook Island Utility Com

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SECTION D. SPECIFIC PLANNING CRITERIA CARRIED OVER FROM THE 1987 PLAN

The 1987 Water Quality Management Plan identified five river basins in the region and wrote specific plans for these areas. This current plan is only an update of past Water Quality Management Plans and does not nullify the information in those plans; however, it is important to restate some of the specific recommendations that were made in the previous plan. These recommendations are still relevant and should still affect present water quality planning decisions.

A. Lower Edisto River Basin:

1. Permits for the development or expansion of marina in the Lower Edisto River system (both North Edisto and South Edisto) should not be granted where activities associated with marina use would jeopardize the attainment and maintenance of Class ORW water quality standards in areas so classified, or Class SA water quality standards in areas so classified.

2. Charleston County, Colleton County, the Town of Seabrook Island, Hollywood, Meggett, local citizens, and development interests should work cooperatively to develop am administrative framework for stormwater management on a basin-wide basis.

3. Where feasible developments in the basin should tie into existing wastewater treatment systems - e.g., Charleston CPW - to provide wastewater treatment.

B: Stono River Basin:

1. Existing Johns Island discharges should connect to the Charleston CPW system at such time as such connection becomes available. Existing and new development on Johns Island should be served either by Charleston CPW or by re-use/land application systems.

2. **Lower Johns Island** – As environmentally and economically feasible, wastewater disposal systems in this area should expand existing or develop new re-use/land application systems. Charleston County should investigate the assumption of a coordinating role when multiple such systems are developed.

3. A basin wide stormwater management program, involving the active participation and cooperation of the City of Charleston, Charleston County and Dorchester County, is needed and should be established in order to control the deleterious environmental impacts associated with stormwater runoff in the Stono River basin. The Towns of Hollywood, Ravenel and Meggett, and the City of Folly Beach should also participate.

4. Agricultural runoff should be directed into holding areas, rather than being discharged into the river system.

C: Middle Ashley River Basin:

1. **City of Charleston** – Portions of the middle Ashley River basin located within the City of Charleston should be served by Charleston CPW, with discharge to Charleston Harbor.

2. **City of North Charleston** – Portions of the middle Ashley River basin located east of the Ashley River, whether located in the City of North Charleston or unincorporated Charleston County, should be served by North Charleston Sewer District, with discharge to the Cooper River. The small discharges currently permitted in this area should be eliminated at such time as connection to the North Charleston Sewer District system is reasonably available.

D: Wando River Basin:

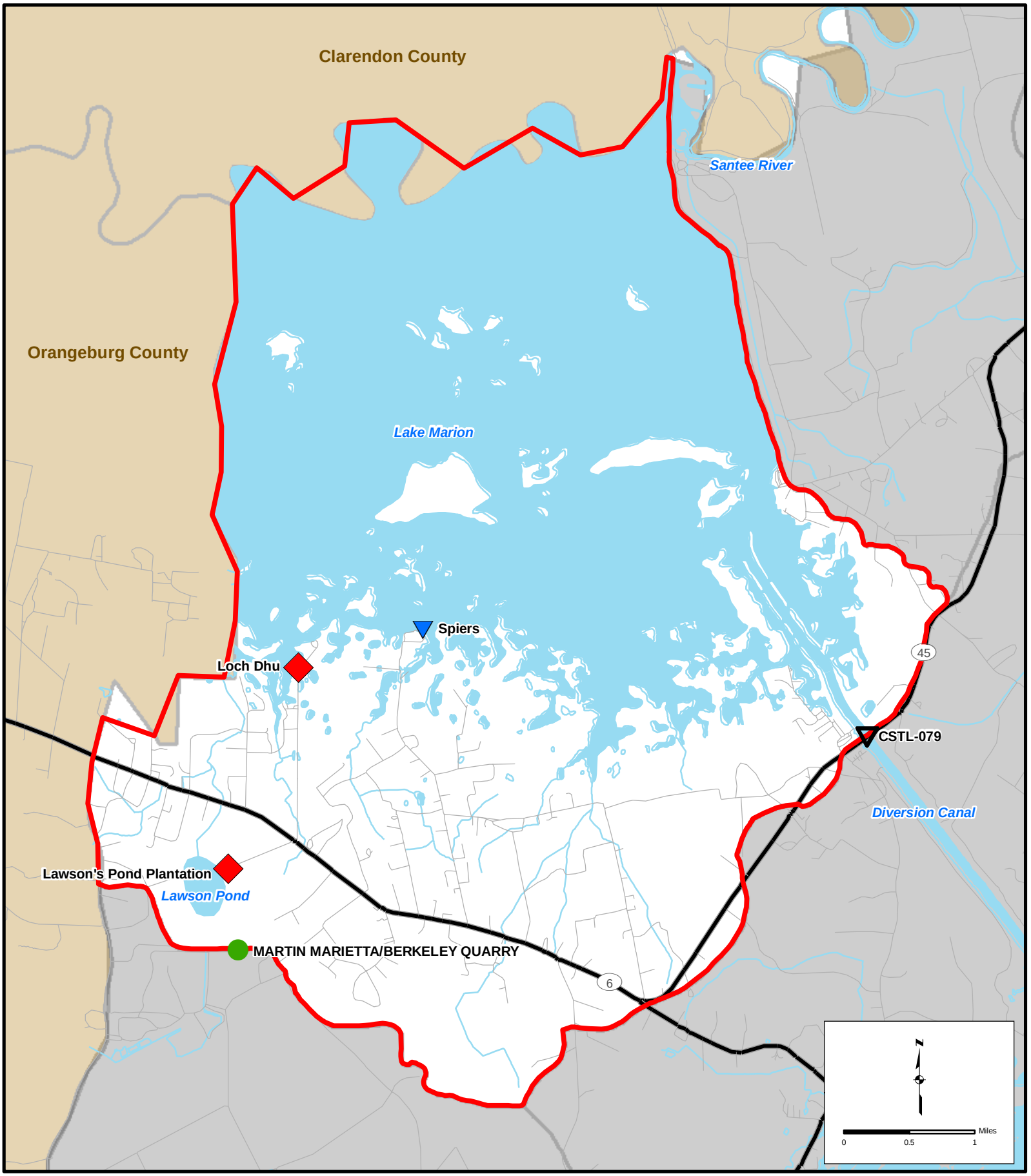
1. **East Cooper** – All point sources in the Mt. Pleasant Designated Service Area shall connect to the Mt. Pleasant Waterworks and Sewer Commission's wastewater disposal system, as such connection becomes available.

2. **Daniel Island/Cainhoy** – New point source discharges associated with development in the Daniel Island/Cainhoy area will discharge to a water body other than the Wando River, or its tributaries, if an environmentally preferable and economically feasible alternative exists.

SECTION E. BASIN ASSESSMENTS

The watershed assessments were prepared by SCDHEC in the *Watershed Water Quality Assessment: Santee River Basin, 2005* and *Watershed Water Quality Assessment: Edisto River Basin, 2004.* Assessments are regularly updated by SCDHEC, with the next update of the Santee River Basin expected in 2012 and the next update Edisto planned for 2011. **NOTE: Information provided in the assessments may become outdated and no longer applicable or accurate from the time it is originally published by SCDHEC and its next update issuance.** For example, there are numerous references within the assessment material in this Volume to ongoing TMDL related modeling efforts within several watershed descriptions. These modeling efforts have been completed and the TMDLs allocated since the publication of 2004 / 2005 Assessments by SCDHEC.

Figure 1
Sub-Basins in the BCDCOG Region



BCDCOG
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JACOBS

Water Quality Management Plan Update

Basin
03050111-010

Legend

- Limited Access
- Highway/ Major Roads
- Minor Road
- Watershed Boundary
- Streams
- Water Features
- Other Counties
- Fish Stations
- NPDES Permits
- Boat Ramps
- National Register Sites

Watershed Evaluations

03050111-010

(Santee River/Lake Marion)

General Description

Watershed 03050111-010 is located in Sumter, Clarendon, Calhoun, Orangeburg, and Berkeley Counties and consists primarily of the ***Santee River*** and its tributaries that flow into ***Lake Marion***. The watershed occupies 223,194 acres of the Upper and Lower Coastal Plain regions of South Carolina. The predominant soil types consist of an association of the Chastain-Cantey-Faceville-Goldsboro-Rains series. The erodibility of the soil (K) averages 0.24 and the slope of the terrain averages 2%, with a range of 0-6%. Land use/land cover in the watershed includes: 34.0% water, 29.8% forested land, 16.7% agricultural land, 9.2% forested wetland, 8.5% scrub/shrub land, 0.7% nonforested wetland, 0.6% urban land, and 0.5% barren land.

The Congaree River and the Wateree River join to form the headwaters of the Santee River. The Santee River flows through Lake Marion and exits through the Santee Dam or through the Diversion Canal to fill Lake Moultrie. Before entering the impounded Lake Marion, the Santee River receives drainage from Broadwater Creek and the Santee Swamp receives drainage from Tavern Creek and Mill Creek. Streams draining into Lake Marion include Squirrel Creek, Warley Creek, Spring Grove Creek (Pine Tree Creek, Ballard Creek, Half Way Creek, Duckford Branch), Richardson Branch, the Halfway Swamp Creek watershed, Little Poplar Creek, Big Poplar Creek, the Jacks Creek watershed, Cantey Bay (Oyster Bay, Monkey Bay), Chapel Branch, Webbs Creek, Mill Creek, Savana Branch, the Tawcaw Creek watershed, Eutaw Creek, and the Potato Creek watershed. Additional natural resources in the watershed include the Santee State Park, near Big Poplar Creek, and the Santee National Wildlife Refuge, which extends over the northern shoreline from Jacks Creek-Cantey Bay area to the Santee Dam. The South Carolina Public Service Authority (Santee Cooper) oversees the operation of the lake with uses that include power generation and numerous forms of recreation (hunting, fishing, boating, swimming). There are a total of 160.8 stream miles and 89,011.7 acres of lake waters in this watershed, all classified FW.

Surface Water Quality

Station #	Type	Class	Description
SC-004	SC	FW	Upper Santee River 0.1 mi upstr mouth of Broadwater Creek
ST-527	BIO	FW	Tavern Creek at SR 808
C-014/SC-006	BIO/SC	FW	Warley Creek at SC 267
SC-058	SC	FW	Stream originating upstr of Safety Kleen haz landfill
SC-057	SC	FW	Surface drainage from Safety Kleen hazardous landfill
SC-005	SC	FW	Upper Lake Marion near Pack's Landing
ST-034	INT	FW	Lake Marion at RR trestle at Lone Star
RL-01002	RL01	FW	Lake Marion at RR trestle at Lone Star
SC-008	SC	FW	Lake Marion at RR trestle at Lone Star
ST-535/SC-009	BIO/SC	FW	Spring Grove Creek at SR 26 bridge
SC-039	SC	FW	Upper Lake Marion 1.25 mi below Rimini rr trestle
SC-044	SC	FW	Upper Lake Marion 0.3 mi NE of Stumphole Landing

SC-010	SC	FW	UPPER LAKE MARION AT CHANNEL MARKER 150
SC-012/RL-02306	SC/RL02	FW	LAKE MARION AT JACKS CREEK EMBAYMENT
SC-011	SC	FW	BIG POPLAR CREEK AT S-38-105 BRIDGE
SC-042	SC	FW	MID LAKE MARION AT NORTH END OF I-95/US 301 BRIDGES
SC-045	SC	FW	STREAM FLOWING THROUGH SANTEE NATL. GOLF COURSE POND AT HWY 6
SC-014	SC	FW	UPPER LAKE MARION AT HEADWATERS OF CHAPEL BRANCH FLOODED CREEK
ST-025/SC-015	W/SC	FW	LAKE MARION AT OLD US 301/15 BRIDGE AT SANTEE
RL-01016	RL01	FW	LAKE MARION 1.6 MI DIRECTLY SW OF I-95 BRIDGE (MIDDLE) OVER LAKE
RL-01001	RL01	FW	LAKE MARION 2.5 MI DIRECTLY SW OF I-95 BRIDGE (MIDDLE) OVER LAKE
RL-01031	RL01	FW	LAKE MARION 3.75 MI DIRECTLY SW OF I-95 BRIDGE (MIDDLE) OVER LAKE
SC-040	SC	FW	MID LAKE MARION AT CHANNEL MARKER 79
SC-041	SC	FW	MID LAKE MARION 2 MI N OF CHANNEL MARKER 79
SC-016/RL-02308	SC/RL02	FW	LAKE MARION AT CHANNEL MARKER 69
RL-02310	RL02	FW	LAKE MARION NEAR SANTEE NAT'L WILDLIFE REFUGE
SC-035/RL-01011	SC/RL01	FW	LK MARION, 1.1MI SSE OF SANTEE NATL WILDLIFE REF & 1MI S OF EAGLE PT
SC-021	SC	FW	LOWER LAKE MARION, 0.9 MI NE OF ROCKS POND CAMPGROUND
CL-042/SC-022	INT/SC	FW	LAKE MARION FOREBAY, SPILLWAY MARKER 44
RL-01021	RL01	FW	LAKE MARION, 3 MI WSW OF EADYTOWN IN SE CORNER OF THE LAKE

Santee River (SC-004) - Aquatic life and recreational uses are fully supported.

Tavern Creek (ST-527) - Aquatic life uses are fully supported based on macroinvertebrate community data.

Warley Creek (C-014/SC-006) - Aquatic life uses are fully supported based on macroinvertebrate community data. Recreational uses are not supported due to fecal coliform bacteria excursions.

Stream Upstream of Safety Kleen Pinewood (SC-058) - Aquatic life uses are not supported due to pH excursions. Recreational uses are fully supported.

Surface Drainage From Safety Kleen (SC-057) - Aquatic life and recreational uses are fully supported.

Lake Marion - There are thirteen SCDHEC monitoring sites in Lake Marion and there are fifteen South Carolina Public Service Authority - Santee Cooper (SCPSA) monitoring sites, many overlapping to provide greater coverage of a site. All lake sites were fully supported for recreational uses. Lake sites that are also fully supported for aquatic life uses include ***SC-005, SC-039, RL-02306/SC-012, SC-042, RL-01001, RL-01031, SC-040, SC-041, RL-02310, RL-01011/SC-035, SC-021, CL-042/SC-022***, and ***RL-01021***.

At the combined site of ***ST-034/RL-01002/SC-008***, aquatic life uses are not supported due to total phosphorus excursions. Aquatic life uses are partially supported at ***SC-044*** due to pH excursions and not supported at ***SC-010*** due to total phosphorus excursions. Aquatic life uses are not supported at ***SC-014,*** located in the Chapel Branch arm of the lake, due to excursions of pH, total phosphorus, total nitrogen, and chlorophyll-*a*. At the combined site of ***ST-025/ SC-015***, aquatic life uses are not supported due to total phosphorus excursions. There is also a significant decreasing trend in dissolved oxygen concentration. There is a significant decreasing trend in pH. A significant decreasing trend in five-day

biochemical oxygen demand suggests improving conditions for this parameter. Aquatic life uses are partially supported at ***RL-01016*** and ***RL-02308/ SC-016*** due to pH excursions.

Due to the shallow depth and high nutrient level of the lake, aquatic macrophytes have proliferated and public access has been restricted. Hydropower generation and recreation have been impaired by the plants. Treatment measures have included aquatic herbicides and/or grass carp stocking since 1989 to the present. Aquatic herbicide continues to be applied to upper, mid, and lower lake regions to reduce problem plant populations and to reduce impacts to public accesses, recreational uses, irrigation withdrawals, navigation, and water quality. Some of the areas recently treated include the Santee State Park Swimming Lake (2001, 2004, 2005), Church Branch Impoundment (2001-2004), Fountain Lake (2001-2004), and Dean Swamp Impoundment (2001-2004).

Spring Grove Creek (ST-535/SC-009) – Aquatic life uses are fully supported based on macroinvertebrate community data. Recreational uses are not supported due to fecal coliform bacteria excursions.

Big Poplar Creek (SC-011) - Aquatic life uses are fully supported, but recreational uses are not supported due to fecal coliform bacteria excursions.

Chapel Branch (SC-045) - Aquatic life and recreational uses are fully supported.

A fish consumption advisory has been issued by the Department for mercury and includes Lake Marion within this watershed (see advisory p.39).

Natural Swimming Areas

FACILITY NAME	***PERMIT #***
RECEIVING STREAM	***STATUS***
CAMP MAC BOYKIN	43-N04
LAKE MARION	ACTIVE
ROCKS POND	38-N06
LAKE MARION	ACTIVE
SPIERS LANDING	08-N05
LAKE MARION	ACTIVE
SANTEE STATE PARK	38-N04
LAKE MARION	ACTIVE

Groundwater Quality

Well #	Class	Aquifer	Location
AMB-003	GB	BLACK CREEK	ELLOREE

NPDES Program

Active NPDES Facilities

RECEIVING STREAM / ***FACILITY NAME*** / ***PERMITTED FLOW @ PIPE (MGD)***	***NPDES#*** / ***TYPE*** / ***COMMENT***
LAKE MARION PINEWOOD SITE-HILLS/LABRUCE MINE PIPE #: 001 FLOW: M/R	SCG730026 MINOR INDUSTRIAL
LAKE MARION PINEWOOD CUSTODIAL TRUST PIPE #: 001, 002, 02A FLOW: M/R	SC0042170 MINOR INDUSTRIAL (GSX; LAIDLAW; SAFETY-KLEEN)
LAKE MARION TRIBUTARY MARTIN MARIETTA/BERKELEY QUARRY PIPE #: 001 FLOW: M/R	SCG730058 MINOR INDUSTRIAL
BALLARD CREEK TOWN OF PINEWOOD WWTP PIPE #: 001 FLOW: 0.134	SC0046868 MINOR DOMESTIC

Nonpoint Source Management Program

Land Disposal Activities

Landfill Facilities

LANDFILL NAME / ***FACILITY TYPE***	***PERMIT #*** / ***STATUS***
DUKE POWER CO. INDUSTRIAL	463303-1601 (IWP-192, IWP-128) ACTIVE
JF CLECKLEY & CO./PLT #4 INDUSTRIAL	IWP-025, IWP-023 ---------
JF CLECKLEY & CO./PLT #6 INDUSTRIAL	IWP-060 ---------
LAIDLAW ENVIR. SERVICES HAZARDOUS WASTE	IWP-145 ACTIVE

Land Application Sites

LAND APPLICATION SYSTEM / ***FACILITY NAME***	***ND#*** / ***TYPE***
SPRAYFIELD TOWN OF ELLOREE	ND0067628 DOMESTIC
TILEFIELD LAKE MARION RESORT & MARINA	ND0067610 DOMESTIC
SPRAY ON GOLF COURSE SANTEE PSD	ND0065676 DOMESTIC
ABSORPTION FIELD SANTEE RESORT HOTEL WWTP	ND0067652 DOMESTIC

TILEFIELD	ND0067326
SANTEE LAKES CAMPGROUND	DOMESTIC
SPRAYFIELD	ND0062227
CYPRESS POINT CONDO	DOMESTIC
LOW PRESSURE IRRIGATION SITE	ND0067920
SCDPRT/SANTEE STATE PARK	DOMESTIC

Mining Activities

MINING COMPANY ***MINE NAME***	***PERMIT #*** ***MINERAL***
S.C. WATERFOWL ASSOC. (SAFETY KLEEN)	0712-27
MINGO MINE #4	CLAY
KESTREL HORIZONS (SAFETY KLEEN)	1014-27
HILLS-LABRUCE	CLAY
LAFORGE MATERIALS, INC.	1069-17
MCCURRY PIT	CLAY

Growth Potential

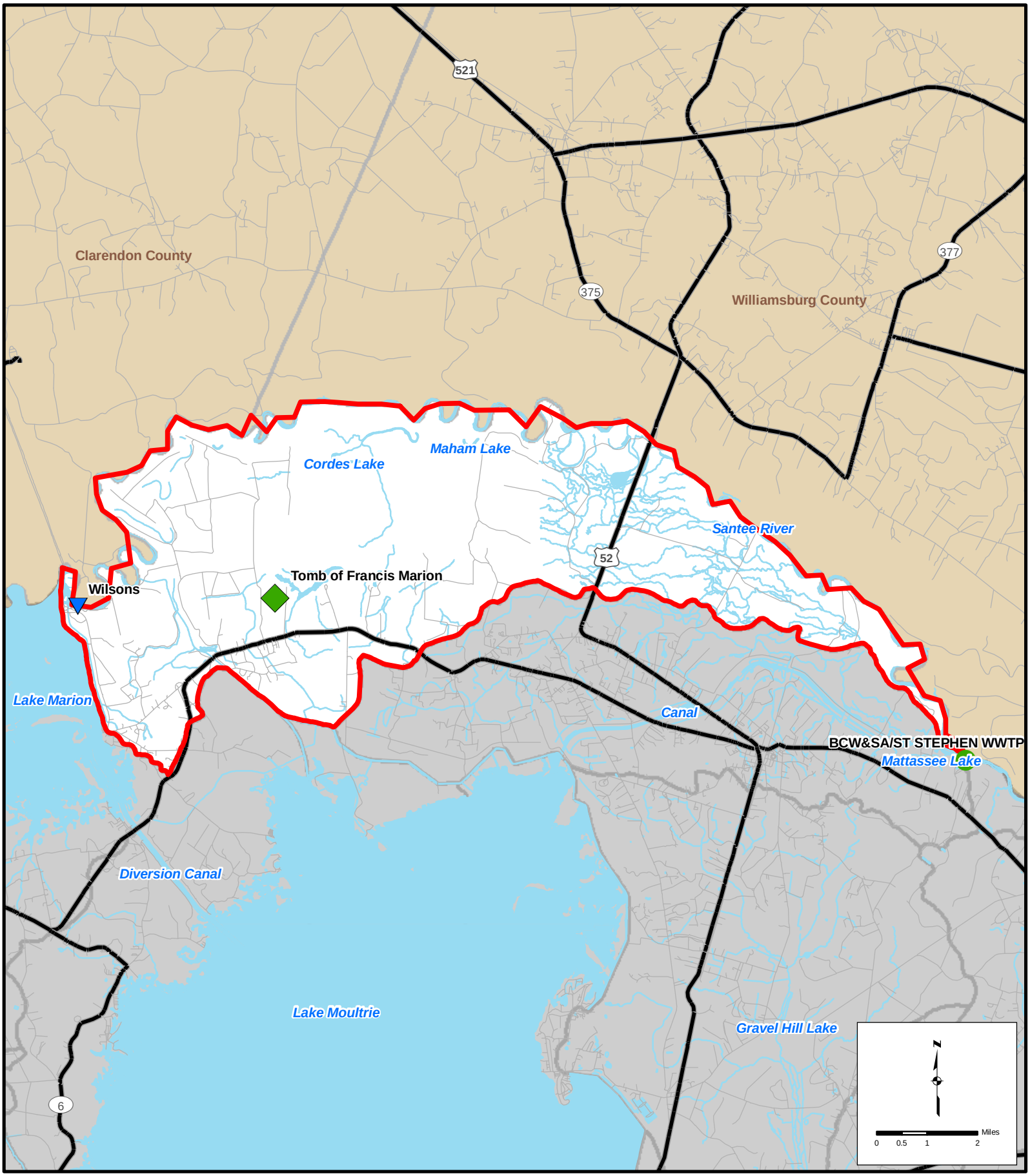
There is a moderate potential for growth in this watershed, which contains portions of the Towns of Pinewood, Elloree, Santee, Vance, and Eutawville due primarily to the Lake Marion related factors of fishery tourism, new lakeside subdivisions, marinas, landings, and camping facilities. There is also a potential for residential, commercial, and industrial growth around the interchanges of I-95 at the Town of Santee and with U.S. Hwy. 301 and U.S. Hwy. 15.

Watershed Restoration and Protection

Special Projects

Santee Cooper FERC Relicensing

Hydroelectric projects require licenses issued by the Federal Energy Regulatory Commission in order to operate. These licenses require re-evaluation periodically in order to incorporate new information for the protection of the common good and typically last from 30 to 50 years. In addition to economic factors, a wide variety of natural resource elements can be considered including: reservoir water quality, downstream water quality, fisheries issues, flow issues, and shoreline management issues. State and federal agencies as well as citizens and nonprofit groups have been meeting to discuss these issues in the Santee Cooper re-licensing process. All federal permits, which have any bearing on waters of the state, must first receive a §401 water quality certification. The §401 water quality certification will be SCDHEC's main responsibility in the process. For more information on Santee Cooper's re-licensing, view their website at: http://www.santeecooper.com/environment/ferc/index.html.



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Water Quality Management Plan Update

Basin
03050112-010

Legend

- Limited Access
- Highway/ Major Road
- Minor Road
- Watershed Boundary
- Streams
- Water Features
- Other Counties
- NPDES Permits
- Boat Ramps
- Parks & Cultural Sites

03050112-010

(Santee River)

General Description

Watershed 03050112-010 is located in Clarendon, Williamsburg, and Berkeley Counties and consists primarily of the ***Santee River*** and its tributaries downstream of Lake Marion to Crawl Creek (Rediversion canal). The watershed occupies 120,847 acres of the Upper and Lower Coastal Plain regions of South Carolina. The predominant soil types consist of an association of the Chastain-Tawcaw-Lynchburg-Emporia series. The erodibility of the soil (K) averages 0.24 and the slope of the terrain averages 2%, with a range of 0-6%. Land use/land cover in the watershed includes: 45.4% forested land, 28.8% forested wetland, 14.5% agricultural land, 10.2% scrub/shrub land, 0.7% water, and 0.4% barren land.

This segment of the Santee River flows out of the Santee Dam of Lake Marion and incorporates the drainage of the Little River, the Dead River, Highland Creek (Hicks Branch, Meetinghouse Branch, Bennetts Branch), Doctors Branch (Torkiln Branch, Mill Branch), Mt. Hope Swamp (Hagan Branch, Long Branch, Junkyard Bay, Guise Bay, Little Junkyard Bay, Cypress Bay), Campbell Branch, Walnut Branch, and Johns Run. There are a total of 188.0 stream miles and 444.6 acres of lake waters in this watershed, all classified FW. The oxbow lakes include Couturier Lake, Cordes Lake, Solomon Lake, Little Solomon Lake, Wood Lake, and Maham Lake.

Surface Water Quality

Station #	Type	Class	Description
SC-024	SC	FW	SANTEE RIVER AT WILSONS LANDING BELOW SPILLWAY DAM
ST-537	BIO	FW	DOCTOR BRANCH AT SR 48
ST-536	BIO	FW	BENNETTS BRANCH AT SR 351
ST-016	P/INT	FW	SANTEE RIVER AT US 52, 6.5 MI NNW OF ST. STEPHENS

Santee River – There is one SCPSA monitoring site and one SCDHEC site along this section of the Santee River. At the upstream site ***(SC-024)***, aquatic life and recreational uses are fully supported. At the downstream site ***(ST-016)***, aquatic life uses are fully supported; however, there is a significant increasing trend in turbidity. Significant decreasing trends in five-day biochemical oxygen demand and total nitrogen concentration suggest improving conditions for these parameters. There is a significant increasing trend in pH. Recreational uses are fully supported at this site and a significant decreasing trend in fecal coliform bacteria concentration suggests improving conditions for this parameter.

Doctor Branch (ST-537) – Aquatic life uses are partially supported based on macroinvertebrate community data.

Bennetts Branch (ST-536) – Aquatic life uses are partially supported based on macroinvertebrate community data.

A fish consumption advisory has been issued by the Department for mercury and includes the Santee River within this watershed (see advisory p.39).

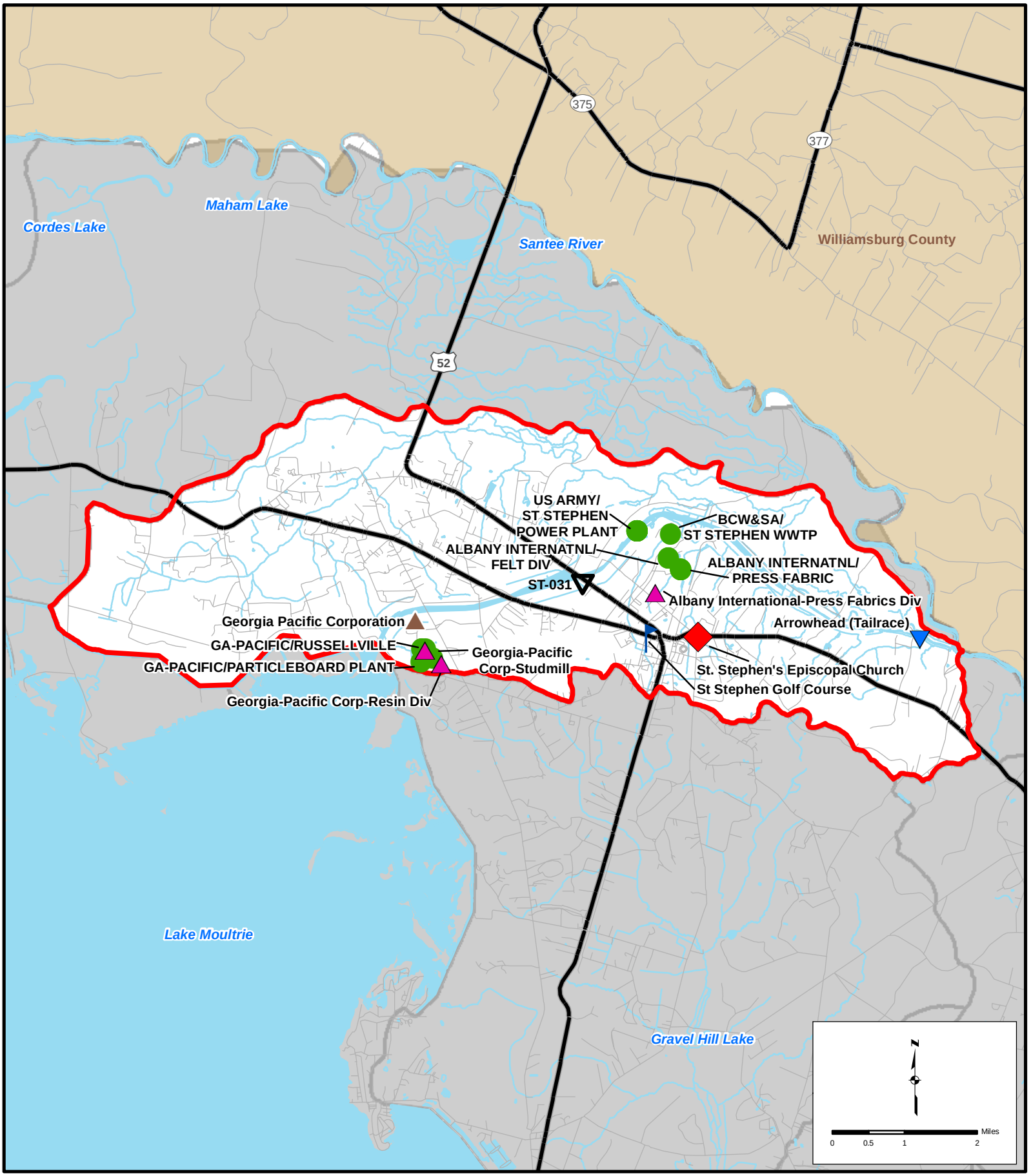
NPDES Program

Active NPDES Facilities

RECEIVING STREAM	***NPDES#***
FACILITY NAME	***TYPE***
PERMITTED FLOW @ PIPE (MGD)	***COMMENT***
SANTEE RIVER	SC0048097
WILLIAMSBURG CO. W&SA/SANTEE RIVER WWTP	MINOR DOMESTIC
PIPE #: 001 FLOW: 0.50	

Growth Potential

There is a low potential for growth projected in this watershed, which contains a portion of the Town of Greeleyville and is occupied largely by the Santee National Wildlife Refuge.



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Water Quality Management Plan Update

Basin
03050112-020

Legend

- Limited Access
- Highway/ Major Road
- Minor Road
- Watershed Boundary
- Streams
- Water Features
- Other Counties
- Boat Ramp
- Fish Station
- NPDES Permits
- Landfill
- Industry
- Golf Course
- National Register Sites

03050112-020

(Rediversion Canal)

General Description

Watershed 03050112-020 extends through Berkeley County and consists primarily of the ***Rediversion Canal (Crawl Creek)*** and its tributaries. The watershed occupies 23,426 acres of the Lower Coastal Plain region of South Carolina. The predominant soil types consist of an association of the Chastain-Tawcaw-Pantego-Noboco-Bonneau series. The erodibility of the soil (K) averages 0.15 and the slope of the terrain averages 2%, with a range of 0-6%. Land use/land cover in the watershed includes: 37.3% forested land, 18.9% scrub/shrub land, 17.0% agricultural land, 12.9% forested wetland, 5.8% water, 4.3% barren land, and 3.8% urban land.

The 11.5 mile Rediversion Canal connects Lake Moultrie with the lower Santee River near the Town of St. Stephen. Mattassee Lake accepts drainage from Crawl Creek (Lifeland Branch, Big Bay Branch) and Curriboo Branch before entering the Rediversion Canal. Also draining into the canal are Ponteaux Branch and Mattassee Branch. There are a total of 36.4 stream miles and 10.7 acres of lake waters in this watershed, all classified FW. An additional natural resource is the Francis Marion National Forest, which extends over the base of the watershed.

Surface Water Quality

Station #	Type	Class	Description
SC-037	SC	FW	REDIVERSION CANAL AT SC 45 BRIDGE
ST-031/SC-037A	P/INT/SC	FW	REDIVERSION CANAL AT US 52

Rediversion Canal – There are two monitoring sites (SCPSA, SCDHEC) along the Rediversion Canal. Aquatic life and recreational uses are fully supported at the upstream site ***(SC-037)***. Aquatic life uses are also fully supported at the downstream site ***(ST-031/SC-037A)***, and significant decreasing trends in five-day biochemical oxygen demand and total nitrogen concentration suggest improving conditions for these parameters. There is a significant increasing trend in pH. Recreational uses are fully supported at this site and a significant decreasing trend in fecal coliform bacteria concentration suggests improving conditions for this parameter.

A fish consumption advisory has been issued by the Department for mercury and includes the Rediversion Canal within this watershed (see advisory p.39).

Groundwater Quality

Well #	Class	Aquifer	Location
AMB-021	GB	BLACK CREEK/MIDDENDORF	ST. STEPHEN

NPDES Program

Active NPDES Facilities

RECEIVING STREAM *FACILITY NAME* *PERMITTED FLOW @ PIPE (MGD)*	*NPDES#* *TYPE* *COMMENT*
REDIVERSION CANAL US ARMY/ST. STEPHEN POWER PLANT PIPE #: 001 FLOW: M/R	SC0047937 MINOR INDUSTRIAL
REDIVERSION CANAL GA PACIFIC RESINS/RUSSELVILLE/CHEM PIPE #: 001 FLOW: M/R	SCG250181 MINOR INDUSTRIAL
REDIVERSION CANAL GA PACIFIC CORP./RUSSELVILLE/PARTICLE PIPE #: 01A, 01B FLOW: M/R	SCG250179 MINOR INDUSTRIAL
CURRIBOO BRANCH ALBANY INTNL/PRESS FABRIC PIPE #: 001-003 FLOW: M/R	SC0002569 MINOR INDUSTRIAL

Nonpoint Source Management Program

Land Disposal Activities

Landfill Facilities

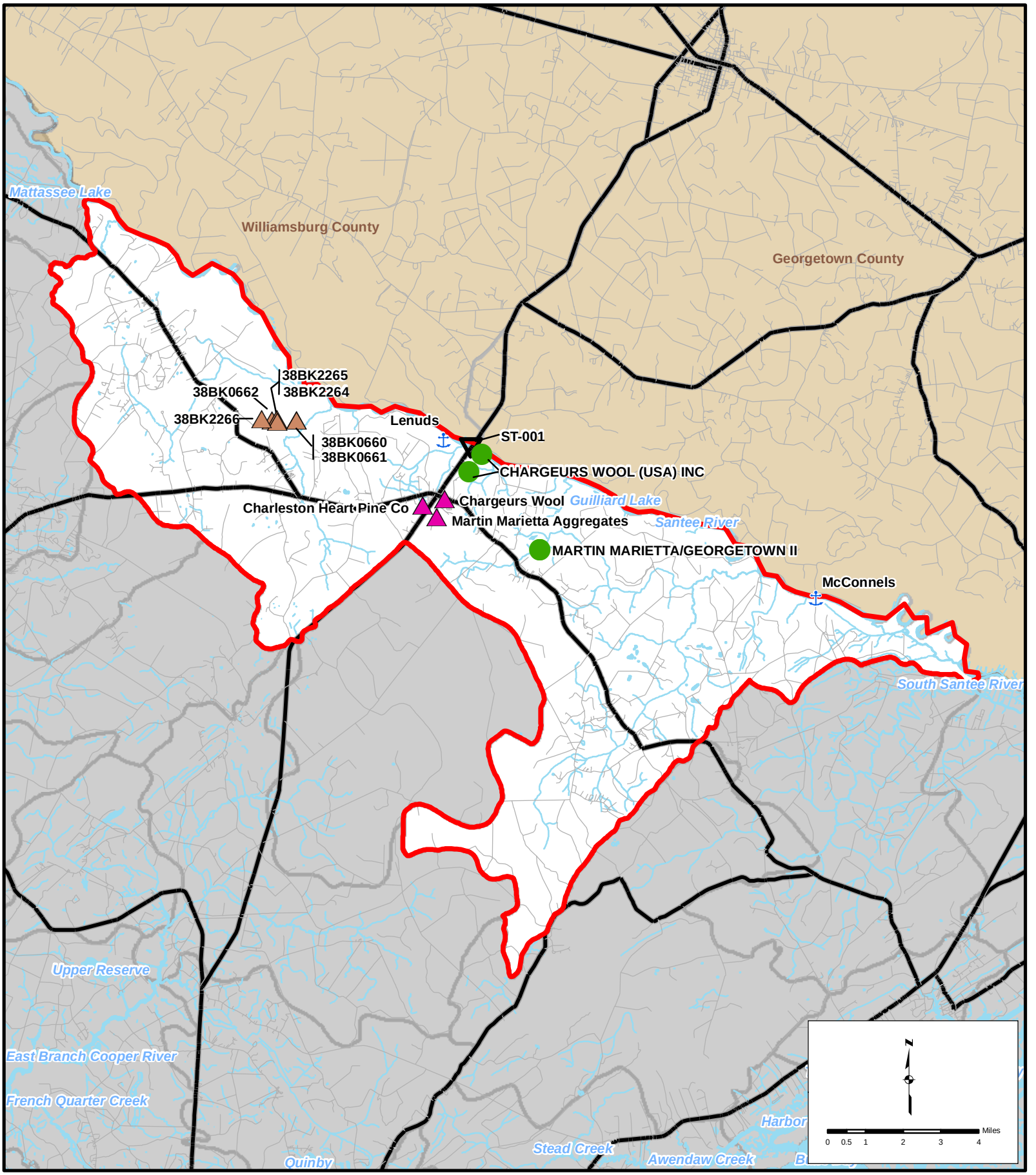
LANDFILL NAME *FACILITY TYPE*	*PERMIT #* *STATUS*
GA PACIFIC CORP. CHEM. INDUSTRIAL	083304-1601 (IWP-078, CWP-026) ACTIVE

Mining Activities

MINING COMPANY *MINE NAME*	*PERMIT #* *MINERAL*
DAVID & RALPH WOODWARD OLD FIELD MINE	0929-15 SAND/CLAY

Growth Potential

There is a low to moderate potential for growth in this watershed, which contains the Town of St. Stephen and portions of the communities of Pineville and Russellville. The Town of St. Stephen has both water and sewer services available, which may aid in attracting development to the area. Another source of potential growth is U.S. Hwy. 52, which is scheduled to be widened to four lanes.



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Water Quality Management Plan Update

Basin
03050112-030

Legend

- Limited Access
- Highway/ Major Road
- Minor Road
- Water Features
- Other Counties
- Watershed Boundary
- Streams
- NPDES Permits
- Archeological Sites
- Industry
- Boat Ramp
- Fish Station

03050112-030

(Santee River)

General Description

Watershed 03050112-030 is located in Williamsburg, Berkeley, and Georgetown Counties and consists primarily of the ***Santee River*** and its tributaries from the Rediversion Canal to Wadmacon Creek. The watershed occupies 137,119 acres of the Lower Coastal Plain and Coastal Zone regions of South Carolina. The predominant soil types consist of an association of the Chastain-Bladen-Wahee-Tawcaw-Hobcaw series. The erodibility of the soil (K) averages 0.17 and the slope of the terrain averages 1%, with a range of 0-2%. Land use/land cover in the watershed includes: 63.2% forested land, 24.4% forested wetland, 5.3% scrub/shrub land, 5.3% agricultural land, 1.0% water, 0.4% nonforested wetland, 0.3% barren land, and 0.1% urban land.

This lowest segment of the Santee River accepts the upstream river drainage together with Wedboo Creek (Meeting House Branch, Beauford Branch), Savanna Creek, Byno Creek, Wittee Lake (June Branch), Wittee Branch (Mill Creek), and Ferry Lake. Further downstream, Dutart Creek, Echaw Creek (Bark Island Slough, Beaman Branch, Bay Branch, Pole Branch, June Pond), and Put-on Branch (Buck Branch) enter the river. Hell Hole Bay extends across the watershed near the headwaters of Dutart and Savanna Creeks. Velvet Branch and Red Bluff Creek flow into the river at the base of the watershed. There are a total of 180.9 stream miles and 148.7 acres of lake waters in this watershed, all classified FW. Additional natural resources include the Francis Marion National Forest, the Hell Hole Bay Wilderness Area, and the Guilliard Lake Scenic Area.

Surface Water Quality

Station #	Type	Class	Description
ST-001	P/INT	FW	SANTEE RIVER AT SC 41/US 17A NE OF JAMESTOWN
RS-02467	RS02	FW	ECHAW CREEK AT PITCH LANDING, FRANCIS MARION NATIONAL FOREST

Santee River (ST-001) – Aquatic life uses are fully supported. Significant decreasing trends in five-day biochemical oxygen demand, total phosphorus concentration, and total nitrogen concentration, and a significant increasing trend in dissolved oxygen concentration suggest improving conditions for these parameters. There is a significant increasing trend in pH. Recreational uses are fully supported and a significant decreasing trend in fecal coliform bacteria concentration suggests improving conditions for this parameter.

Echaw Creek (RS-02467) – Aquatic life uses are fully supported. This is a blackwater system, characterized by naturally low dissolved oxygen conditions. Although dissolved oxygen excursions occurred, they were typical of values seen in blackwater 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 mercury and includes the Santee River within this watershed (see advisory p.39).*

NPDES Program

Active NPDES Facilities

RECEIVING STREAM *FACILITY NAME* *PERMITTED FLOW @ PIPE (MGD)*	*NPDES#* *TYPE* *COMMENT*
SANTEE RIVER TOWN OF ST STEPHEN PIPE #: 001 FLOW: 0.9	SC0025259 MINOR DOMESTIC
SANTEE RIVER CHARGEURS WOOL (USA), INC. PIPE #: 001 FLOW: M/R	SC0000990 MAJOR INDUSTRIAL
DUTART CREEK MARTIN MARIETTA/GEORGETOWN II (SOUTHERN AGGR.) PIPE #: 001 FLOW: 10.8	SCG730059 MINOR INDUSTRIAL

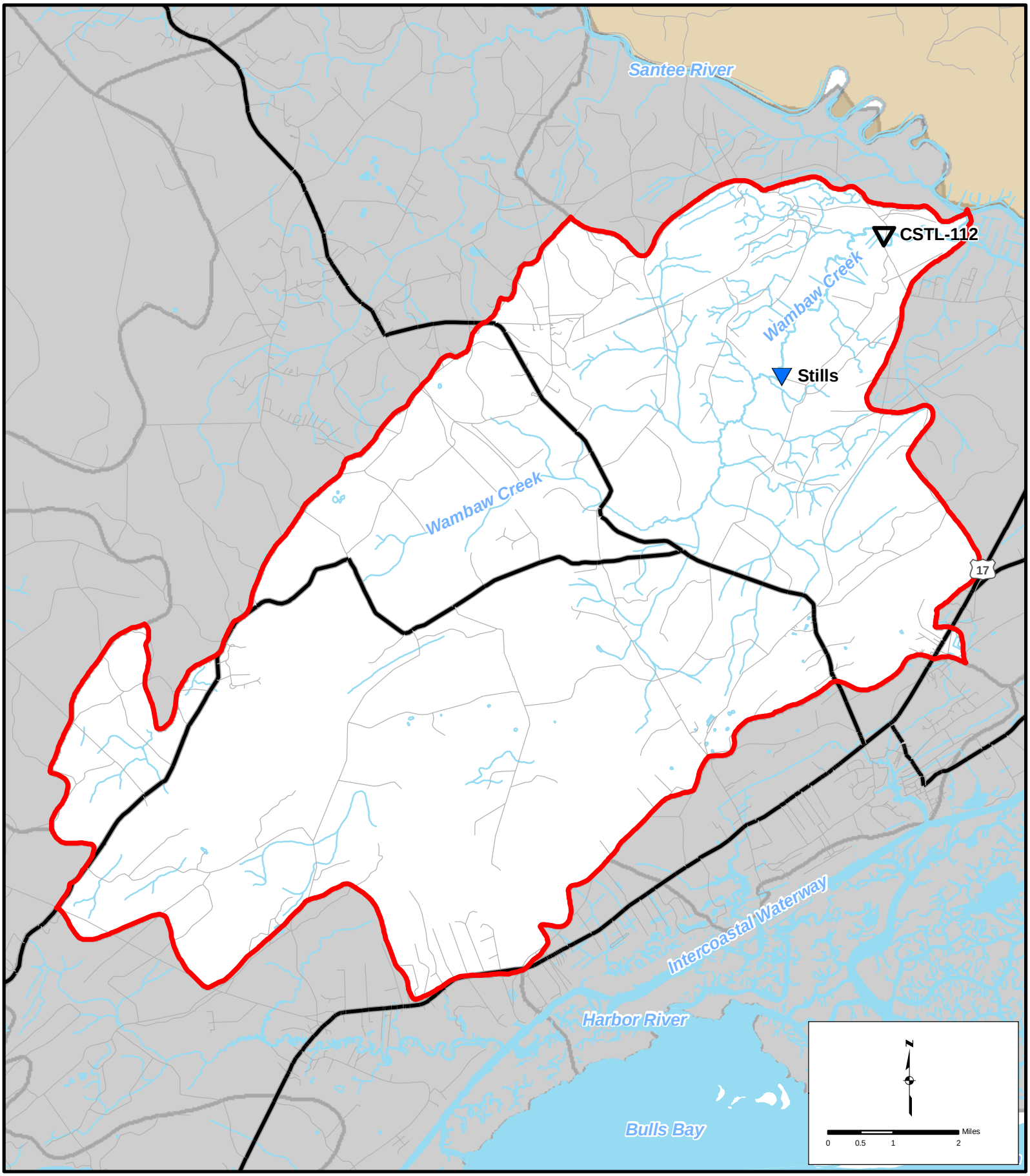
Nonpoint Source Management Program

Mining Activities

MINING COMPANY *MINE NAME*	*PERMIT #* *MINERAL*
MARTIN MARIETTA MATERIALS, INC. GEORGETOWN II QUARRY	0885-15 LIMESTONE

Growth Potential

There is a low potential for growth in this watershed, which contains the Town of Jamestown and the communities of Alvin, Honey Hill, and Shulerville. Jamestown provides water, but there is no sewer service. The majority of the watershed extends over wetland (bays and swamps) areas.



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JACOBS

Water Quality Management Plan Update

Basin
03050112-050

Legend

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- Industry
- Boat Ramp
- Fish Station

03050112-050

(Wambaw Creek)

General Description

Watershed 03050112-050 is located in Berkeley and Charleston Counties and consists primarily of ***Wambaw Creek*** and its tributaries. The watershed occupies 63,437 acres of the Lower Coastal Plain and Coastal Zone regions of South Carolina. The predominant soil types consist of an association of the Chipley-Yauhannah-Yemassee-Leon series. The erodibility of the soil (K) averages 0.12 and the slope of the terrain averages 1%, with a range of 0-2%. Land use/land cover in the watershed includes: 87.2% forested land, 10.6% forested wetland, 1.9% nonforested wetland, 0.2% scrub/shrub land, and 0.1% barren land.

Wambaw Creek accepts drainage from Wambaw Swamp, Mechaw Creek, Mill Branch, and Cane Branch (Keepers Branch). Little Wambaw Swamp connects Wambaw Swamp and Mechaw Creek. Further downstream, Big Morgan Branch (Little Morgan Branch) enters Wambaw Creek and flows into the South Santee River. There are a total of 67.4 stream miles and 3.8 acres of lake waters, and 8.8 acres of estuarine areas in this watershed, all classified FW. An additional natural resource is the Francis Marion National Forest, which extends across the entire watershed. Located within the National Forest are the Wambaw Creek National Wilderness Area, the Wambaw Swamp National Wilderness Area, and the proposed Waterhorn Historic Area.

Surface Water Quality

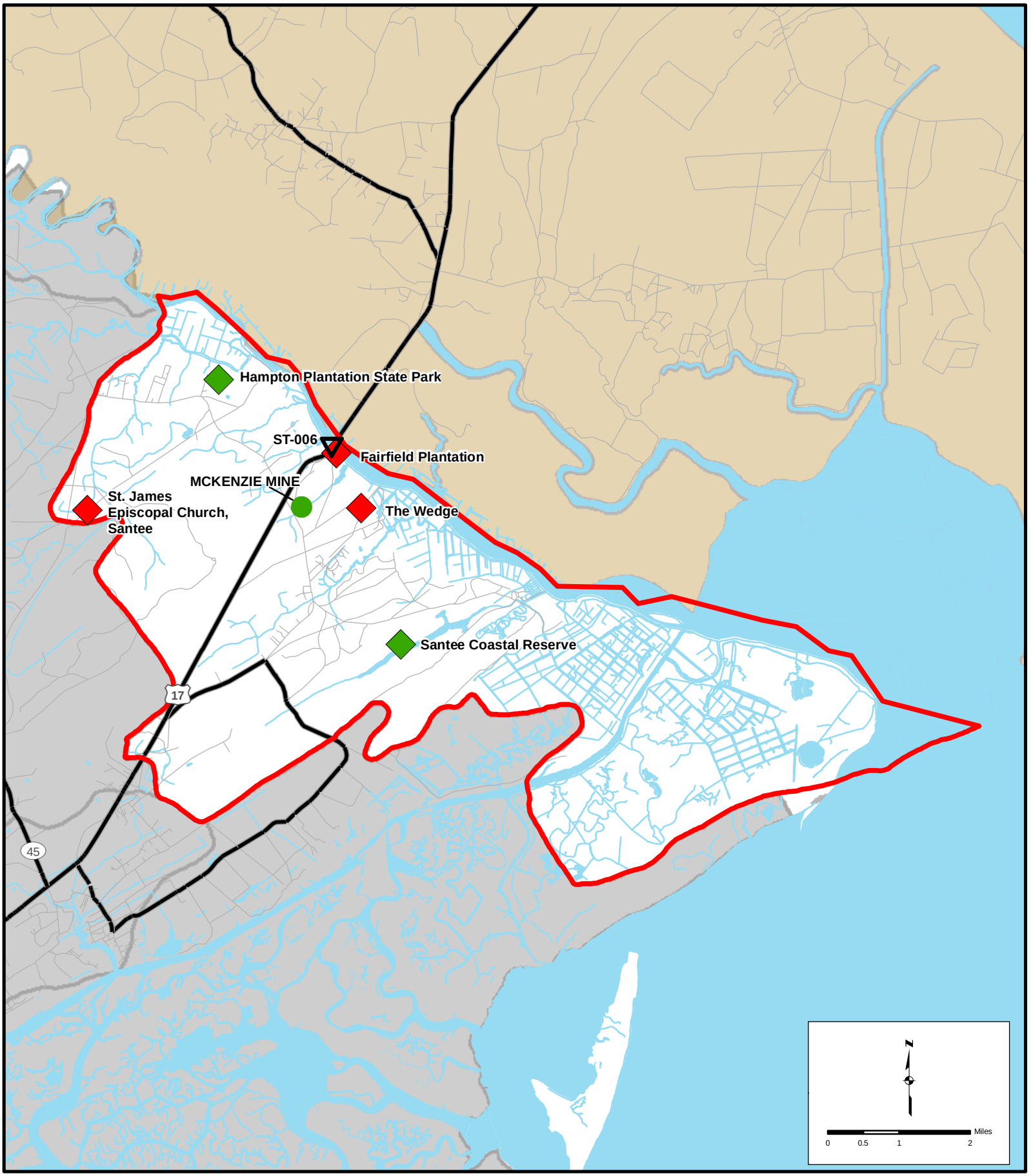
Station #	Type	Class	Description
CSTL-112	W/INT	FW	WAMBAW CREEK AT EXTENTION OF S-10-857

Wambaw Creek (CSTL-112) – Aquatic life uses are fully supported; however, there is a significant increasing trend in turbidity. There is a significant increasing trend in pH. This is a blackwater system, characterized by naturally low dissolved oxygen conditions. Although dissolved oxygen excursions occurred, they were typical of values seen in blackwater systems and were considered natural, not standards violations. A significant decreasing trend in five-day biochemical oxygen demand suggests improving conditions for this parameter. Recreational uses are partially supported due to fecal coliform bacteria excursions.

A fish consumption advisory has been issued by the Department for mercury and includes Wambaw Creek within this watershed (see advisory p.39).

Growth Potential

There is a low potential for growth projected for this watershed.



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JACOBS

Water Quality Management Plan Update

Basin
03050112-060

Legend

- Limited Access
- Highway/ Major Road
- Minor Road
- Water Features
- Other Counties
- Watershed Boundary
- Streams
- NPDES Permits
- National Register Sites
- Parks & Cultural Sites
- Fish Station

03050112-060

(North Santee River/South Santee River)

General Description

Watershed 03050112-060 is located in Charleston County and consists primarily of the ***South Santee River and the North Santee River*** and their tributaries. The watershed occupies 79,788 acres of the Coastal Zone region of South Carolina. The predominant soil types consist of an association of the Bohicket-Capers-Chipley series. The erodibility of the soil (K) averages 0.19 and the slope of the terrain averages 1%, with a range of 0-2%. Land use/land cover in the watershed includes: 46.2% forested land, 36.8% nonforested wetland, 10.6% water, 4.5% forested wetland, 1.5% scrub/shrub land, 0.3% barren land, and 0.1% agricultural land.

The lower Santee River divides into the South Santee River and the North Santee River, both draining into the Atlantic Ocean. Both the South and North Santee Rivers are classified FW from their origin to the U.S. Hwy. 17 crossing, SA from the U.S. Hwy. 17 crossing to 1000 feet below the Atlantic Intracoastal Waterway (AIWW) crossing, and ORW from 1000 feet below the AIWW crossing to the Atlantic Ocean. The South Santee River accepts drainage from Chicken Creek, Hampton Creek (Cedar Creek), Montgomery Creek, Garfish Creek, Sixmile Creek, and Collins Creek. Pleasant Creek connects Sixmile Creek to the South Santee River. Fourmile Creek Canal and Alligator Creek also drain into the South Santee River. Sall Creek drains directly into the Atlantic Intracoastal Waterway (AIWW), which bisects the South and North Santee Rivers. This section of the AIWW is classified SFH.

The North Santee River accepts drainage from Cedar Creek, Pole Branch, Bonny Clabber Creek, White Oak Creek, and Sixmile Creek. Minim Creek drains into the North Santee River and into the North Santee Bay, and incorporates the drainage of Kinloch Creek (Bluff Creek), Pleasant Meadow Creek, Bella Creek, and Cork Creek. Atchison Creek and Fourmile Creek Canal drain directly into the river, and Little Duck Creek, Duck Creek, Big Duck Creek, Mosquito Creek, and Beach Creek drain into the North Santee Bay. Cane Creek connects the North Santee River to the North Santee Bay and Bird Bank Creek enters the river just before it flows into the Atlantic Ocean.

There are a total of 68.5 stream miles in this watershed, along with 657.1 acres of lake waters, and 5,266.9 acres of estuarine areas. Additional natural resources in the watershed include the Francis Marion National Forest (covering the southeastern portion of the watershed), several wildlife management areas, the Yawkey Center, and Hampton Plantation State Park.

Surface Water Quality

Station #	Type	Class	Description
ST-005	S/W	FW/SA	North Santee River at US 17
RT-01654	RT01	SA	Minim Creek, 9 mi S of Georgetown
RO-01122	RO01	ORW	Big Duck Creek, 9 mi S of Georgetown
MD-263	INT	ORW	Santee Bay at Beach Creek
RS-01056	RS01	FW	Cedar Creek at county rd 857, Hampton Plantation St Pk.
ST-006	P/INT	FW/SA	South Santee River at US 17
RO-02004	RT02	ORW	South Santee River, 1.1 mi NW of Atlantic Ocean

North Santee River (ST-005) – The water quality assessment for both the freshwater and saltwater classifications for this stream are identical. Aquatic life uses are fully supported and a significant decreasing trend in five-day biochemical oxygen demand suggests improving conditions for this parameter. There is a significant increasing trend in pH. Recreational uses are fully supported.

Minim Creek (RT-01654) - Aquatic life uses are not supported due to turbidity excursions. Recreational uses are fully supported.

Big Duck Creek (RO-01122) - Aquatic life and recreational uses are fully supported. This is a blackwater system, characterized by naturally low dissolved oxygen conditions. Although dissolved oxygen excursions occurred, they were typical of values seen in blackwater systems and were considered natural, not standards violations.

Santee Bay (MD-263) - Aquatic life and recreational uses are fully supported.

Cedar Creek (RS-01056) - Aquatic life uses are fully supported. This is a blackwater system, characterized by naturally low dissolved oxygen conditions. Although dissolved oxygen excursions occurred, they were typical of values seen in blackwater systems and were considered natural, not standards violations. Recreational uses are not supported due to fecal coliform bacteria excursions.

South Santee River - There are two SCDHEC monitoring sites along the South Santee River. The upstream site ***(ST-006)*** has both freshwater and saltwater classifications**.** The freshwater classification is not supported for aquatic life uses due to turbidity excursions, and the saltwater classification is fully supported. However, both classifications indicate significant increasing trends in turbidity. Both classifications indicate significant decreasing trends in five-day biochemical oxygen demand and total nitrogen concentration suggesting improving conditions for these parameters. There is a significant increasing trend in pH with both classifications. Recreational uses are partially supported with both classifications, and are compounded by a significant increasing trend in fecal coliform bacteria concentration. The downstream site ***(RO-02004)*** is fully supported for aquatic life and recreational uses.

Aquatic macrophytes have proliferated and public access has been restricted in the Santee Delta Plantation Wildlife Management Area and the Santee Coastal Reserve. To abate aquatic plant growth and enhance waterfowl habitat in these areas, aquatic herbicides were applied in 2004 and 2005 to the Santee Delta, and in 1998, 1999, and 2002-2005 to the Coastal Reserve.

A fish consumption advisory has been issued by the Department for mercury and includes the North and South Santee Rivers within this watershed (see advisory p.39).

Groundwater Quality

Well #	Class	Aquifer	Location
AMB-087	GB	SURF SANDS	NORTH SANTEE

Shellfish Monitoring Stations

Station #	Description
06A-01	SOUTH SANTEE RIVER AT ALLIGATOR CREEK
06A-01A	SOUTH SANTEE RIVER NEAR THE MIDPOINT OF GRACE ISLAND
06A-02	SOUTH SANTEE INLET
06A-03	NORTH SANTEE RIVER AT BEACH CREEK
06A-04	NORTH SANTEE INLET
06A-04A	NORTH SANTEE BAY – E. OF CANE ISLAND
06A-04B	NORTH SANTEE RIVER - SW OF CANE ISLAND
06A-04C	NORTH SANTEE RIVER NEAR NORTHWESTERN TIP OF CANE ISLAND
06A-05	NORTH SANTEE RIVER AND MOSQUITO CREEK
06A-11	AIWW AT MINUM CREEK
06B-13	ALLIGATOR CREEK NEAREST SOUTH SANTEE RIVER BETWEEN MARKERS 24&25

NPDES Program

Active NPDES Facilities

RECEIVING STREAM / ***FACILITY NAME*** / ***PERMITTED FLOW @ PIPE (MGD)***	***NPDES#*** / ***TYPE*** / ***COMMENT***
NORTH SANTEE RIVER GCW&SD NORTH SANTEE WWTP PIPE #: 001 FLOW: 0.052	SC0042439 MINOR DOMESTIC
NORTH SANTEE RIVER SCPSA/WINYAH STEAM IPE #: 002 FLOW: M/R	SC0022471 MAJOR INDUSTRIAL

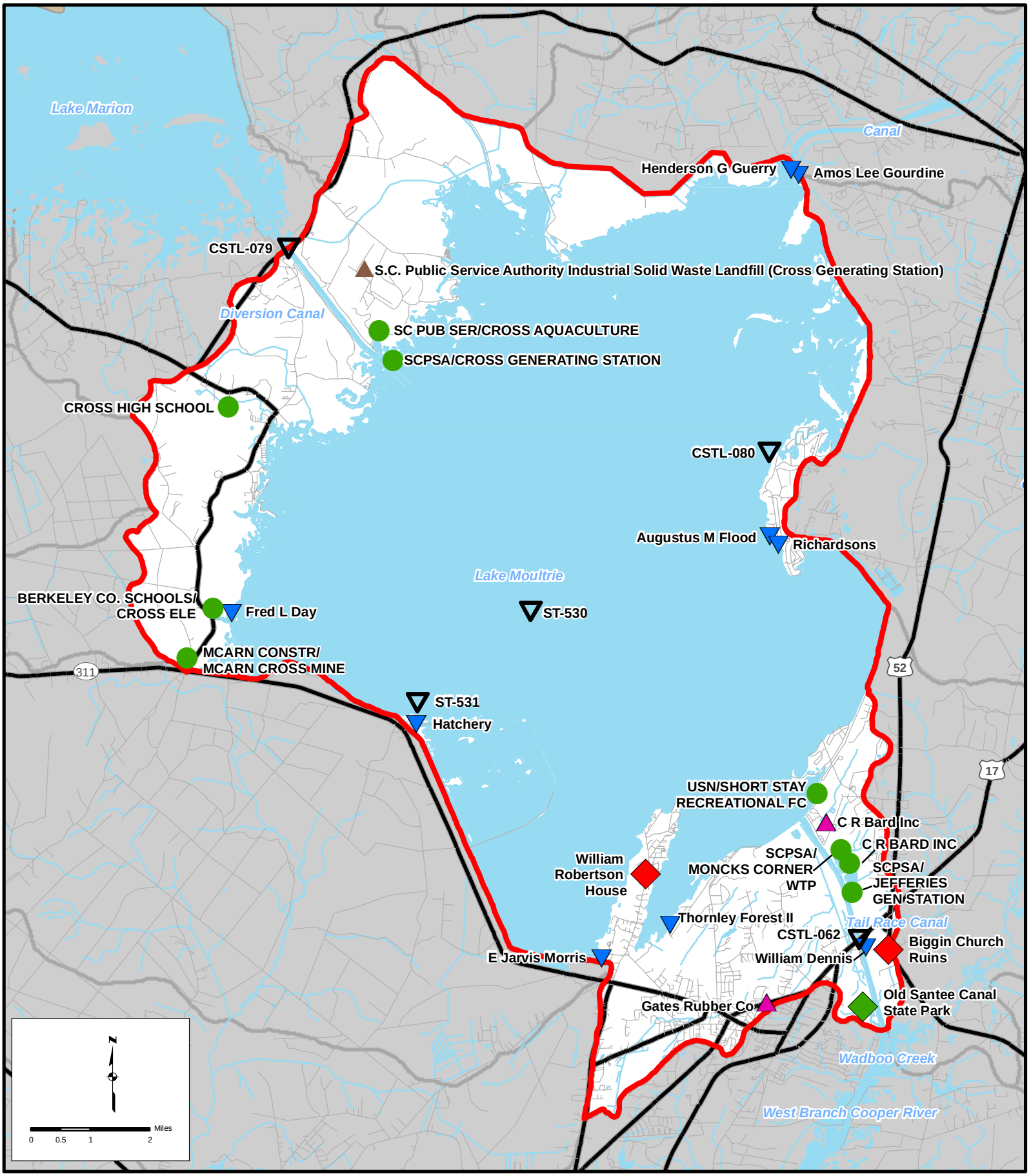
Nonpoint Source Management Program

Mining Activities

MINING COMPANY / ***MINE NAME***	***PERMIT #*** / ***MINERAL***
MCKENZIE BACKHOE & DOZIER SERVICE, INC. MCKENZIE MINE	1240-19 SAND
MCKENZIE BACKHOE & DOZIER SERVICE, INC. CHARLES CLARK MINE	1531-19 SAND
SHELLEYS LANDCLEARING TAYLOR POND MINE	1544-43 SAND

Growth Potential

There is a low potential for growth in this watershed.



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Water Quality Management Plan Update

Basin
03050201-010

Legend

- Limited Access
- Highway/ Major Road
- Minor Road
- Watershed Boundary
- Streams
- Water Features
- Other Counties
- Industry
- Boat Ramps
- NPDES Permits
- National Register Sites
- Parks & Cultural Sites
- Fish Station

03050201-010

(Lake Moultrie)

General Description

Watershed 03050201-010 is located in Berkeley County and consists primarily of ***Lake Moultrie*** and its tributaries. The watershed occupies 87,730 acres of the Lower Coastal Plain region of South Carolina. The predominant soil types consist of an association of the Yauhannah-Yemassee-Rains-Lynchburg series. The erodibility of the soil (K) averages 0.17 and the slope of the terrain averages 1%, with a range of 0-2%. Land use/land cover in the watershed includes: 64.4% water, 21.1% forested land, 5.4% forested wetland, 4.1% urban land, 3.1% scrub/shrub land, 1.4% agricultural land, and 0.5% barren land.

Lake Moultrie was created by diverting the Santee River (Lake Marion) through a 7.5 mile Diversion Canal filling a levee-sided basin and impounding it with the Pinopolis Dam. South Carolina Public Service Authority (Santee Cooper) oversees the operation of Lake Moultrie, which is used for power generation, recreation, and water supply. The 4.5 mile Tail Race Canal connects Lake Moultrie with the Cooper River near the Town of Moncks Corner, and the Rediversion Canal connects Lake Moultrie with the lower Santee River. Duck Pond Creek enters the lake on its western shore. The Tail Race Canal accepts the drainage of California Branch and the Old Santee Canal. There are a total of 43.8 stream miles and 57,535.3 acres of lake waters in this watershed, all classified FW. Additional natural resources in the watershed include the Dennis Wildlife Center near the Town of Bonneau, Sandy Beach Water Fowl Area along the northern lakeshore, the Santee National Wildlife Refuge covering the lower half of the lake, and the Old Santee Canal State Park near Monks Corner.

Surface Water Quality

Station #	Type	Class	Description
CSTL-079/SC-025	P/W/SC	FW	Diversion Canal at SC 45 12.6 mi W of St. Stephens
SC-031	SC	FW	Northern Quadrant of Lake Moultrie at mouth of Rediversion Canal
SC-028	SC	FW	NW Quadrant of Lake Moultrie near Angel's Landing cove
SC-043	SC	FW	Tributary flowing to Lake Moultrie from Cross Generating Station
SC-026	SC	FW	Lake Moultrie trib 0.4 mi upstream of SC 6
SC-027	SC	FW	SW Quadrant of Lake Moultrie, 0.75 mi E of shoreline
SC-034	SC	FW	Duck Pond Creek at SC 6
RL-02328	RL02	FW	SW Lake Moultrie near Duck Pond Creek, approx. 2 mi E of Cross
RL-02322	RL02	FW	NE Lake Moultrie, 3 mi from Bonneau Beach
ST-037/SC-030	INT/SC	FW	Lake Moultrie at Channel Marker 17
RL-02454	RL02	FW	SW Lake Moultrie in open water
RL-01006	RL01	FW	Lk Moultrie, 5.5mi N of Moncks Corner & 1.5mi NW of Camp Moultrie
RL-01026	RL01	FW	Lk Moultrie, 4.5mi N of Moncks Corner, 1.5mi NNE of S-08-5 ending
SC-046	SC	FW	SE Quadrant of Lake Moultrie at Pinopolis embayment
SC-032	SC	FW	SE Quadrant of Lake Moultrie at Channel Marker 2
CSTL-062/SC-033	P/INT/SC	FW	Tailrace Canal at US 52 & 17A below Lake Moultrie

Diversion Canal (CSTL-079/SC-025) - Aquatic life uses are fully supported; however, there is a significant decreasing trend in dissolved oxygen concentration and a significant increasing trend in turbidity. A

significant decreasing trend in five-day biochemical oxygen demand suggests improving conditions for this parameter. Recreational uses are fully supported.

Lake Moultrie – There are eleven monitoring stations on Lake Moultrie, both SCDHEC and SCPSA sites (***SC-031, SC-028, SC-027, RL-02328, RL-02322, ST-037/SC-030, RL-02454, RL-01006, RL-01026, SC-046, SC-032***). Aquatic life and recreational uses are fully supported at all sites. Aquatic macrophytes have proliferated and public access has been restricted. Treatment measures have included aquatic herbicides and/or grass carp stocking since 1989 to the present. Aquatic herbicide continues to be applied to reduce problem plant populations, enhance waterfowl habitat, and to reduce impacts to public accesses, recreational uses, irrigation withdrawals, navigation, and water quality.

Lake Moultrie Tributary (SC-043) - Aquatic life uses are fully supported, but recreation uses are not supported due to fecal coliform bacteria excursions.

Lake Moultrie Tributary (SC-026) - Aquatic life uses are fully supported, but recreation uses are not supported due to fecal coliform bacteria excursions.

Duck Pond Creek (SC-034) - Aquatic life and recreational uses are fully supported.

Tail Race Canal (CSTL-062/SC-033)- Aquatic life uses are fully supported; however, there is a significant decreasing trend in dissolved oxygen concentration. There is a significant increasing trend in pH. Significant decreasing trends in five-day biochemical oxygen demand and total nitrogen concentration suggest improving conditions for these parameters. Recreational uses are fully supported and a significant decreasing trend in fecal coliform bacteria concentration suggests improving conditions for this parameter

Old Santee Canal State Park Swimming Lake - The Lake has been treated annually from 1989 to 1998 with aquatic herbicides in an attempt to control aquatic macrophyte growth that has impaired the lake's recreational uses. In addition, *Tilapia* (200 fish/vegetated acre or 2,000 fish) and grass carp (15 fish/acre or 150 fish) were stocked in 1995, *Tilapia* (2,000 fish) were restocked in 1996, and grass carp (150 fish) were restocked in 1997.

A fish consumption advisory has been issued by the Department for mercury and includes the Diversion Canal, Lake Moultrie, and the Tail Race Canal within this watershed (see advisory p.69).

Natural Swimming Areas

FACILITY NAME	***PERMIT #***
RECEIVING STREAM	***STATUS***

SOMERSET POINT — 15-N06
LAKE MOULTRIE — ACTIVE

LIONS BEACH — 15-N01
LAKE MOULTRIE — ACTIVE

BERKELEY FAMILY YMCA — 15-1006N
LAKE MOULTRIE — ACTIVE

Groundwater Quality

Well #	Class	Aquifer	Location
AMB-053	GB	PEE DEE	MONCKS CORNER

NPDES Program

Active NPDES Facilities

RECEIVING STREAM — ***NPDES#***
FACILITY NAME — ***TYPE***
PERMITTED FLOW @ PIPE (MGD) — ***COMMENT***

DIVERSION CANAL — SC0037401
SCPSA/CROSS GENERATING STATION — MAJOR INDUSTRIAL
PIPE #: 003 FLOW: 0.079
PIPE #: 001,02A,02B,004 FLOW: M/R

LAKE MOULTRIE — SC0024708
US NAVY/SHORT STAY REC. FAC. — MINOR INDUSTRIAL
PIPE #: 001 FLOW: M/R

LAKE MOULTRIE — SC0027103
BERKELEY COUNTY/CROSS HIGH SCHOOL — MINOR DOMESTIC
PIPE #: 001 FLOW: 0.0158

TAIL RACE CANAL — SC0001091
SCPSA/JEFFERIES GENERATING STATION — MAJOR INDUSTRIAL
PIPE #: 001 FLOW: 0.006
PIPE #: 002 FLOW: 376
PIPE #: 003,004,006,007 FLOW: M/R

TAIL RACE CANAL — SC0035190
C.R. BARD, INC. — MAJOR INDUSTRIAL
PIPE #: 001 FLOW: 0.382

TAIL RACE CANAL — SCG641011
SCPSA/MONCKS CORNER WTP — MINOR DOMESTIC
PIPE #: 001 FLOW: M/R

DUCK POND CREEK — SC0034479
BERKELEY COUNTY/CROSS ELEM SCHOOL — MINOR DOMESTIC
IPE #: 001 FLOW: 0.015

Nonpoint Source Management Program

Mining Activities

MINING COMPANY — ***PERMIT #***
MINE NAME — ***MINERAL***

D&A PARTNERSHIP	0747-15
JOHN R. CUMBIE MINE	SAND
DAVID WEEKS	1488-15
WEEKS MINE	SAND

Land Disposal Activities

Landfill Facilities

LANDFILL NAME	***PERMIT #***
FACILITY TYPE	***STATUS***
SCPSA/CROSS GENERATING STATION	085801-1601 (083337-1601, IWP-186)
INDUSTRIAL	ACTIVE
SCPSA/CROSS GENERATING STATION	IWP-185
INDUSTRIAL	CLOSED
SCPSA	083322-1201 (CWP-034)
C&D LANDFILL	--------

Water Quantity

WATER USER	***REGULATED CAPACITY (MGD)***
STREAM	***PUMPING CAPACITY (MGD)***
SANTEE COOPER REG. WTR. AUTH.	36.0
LAKE MOULTRIE	38.0

Growth Potential

There is a moderate potential for growth in this watershed. Lake Moultrie contributes significantly to the growth in the area in terms of fishery tourism and residential development. The Towns of Monk Corner, Cross, and Bonneau should benefit from the lake-based growth. Monks Corner provides both water and sewer services and may encourage future growth. The Pinopolis peninsula has low density residential, including several historic structures, and a Santee Cooper semi-private recreation/conference center. There is a regional domestic water supply system on Lake Moultrie near Lions Beach (water withdrawn from Pinopolis cove) that serves the Berkeley County Water and Sewer Authority, Moncks Corner, Goose Creek, and the Summerville Public Service Area.

Watershed Protection and Restoration

Total Maximum Daily Loads (TMDLs)

Two TMDLs addressing dissolved oxygen were developed by SCDHEC for the ***Charleston Harbor Estuary:*** one covering the Ashley River and the other covering the Charleston Harbor, the Cooper River, and the Wando River. The Harbor/Cooper River/Wando River portion of the system (consisting of the Tail Race Canal, West Branch Cooper River, East Branch Cooper River, Shipyard Creek, Town Creek, Back River, Goose Creek, Wando River and Charleston Harbor) is not considered to be impaired with respect to dissolved oxygen (with the exception of the Wando River monitoring site MD-115); however, available information indicates much of the system does not meet the applicable water quality standard for dissolved

oxygen for significant periods of time and is considered water quality limited for the purposes of wasteload allocation (WLA) development. WLAs are an integral part of a TMDL, and although not always developed through the TMDL process, the Department and EPA have chosen to use the TMDL process to develop WLAs for the Charleston Harbor system (see following section). Results of a water quality model indicate the need for a 70% reduction in discharge of oxygen demanding substances to the overall system. A phased approach to achieving these reductions is proposed with an initial Phase I reduction of 60%. For more detailed information on TMDLs, please visit the SCDHEC's Bureau of Water homepage at http://www.scdhec.gov/water and click on "Watersheds and TMDLs" and then "TMDL Program".

Special Models

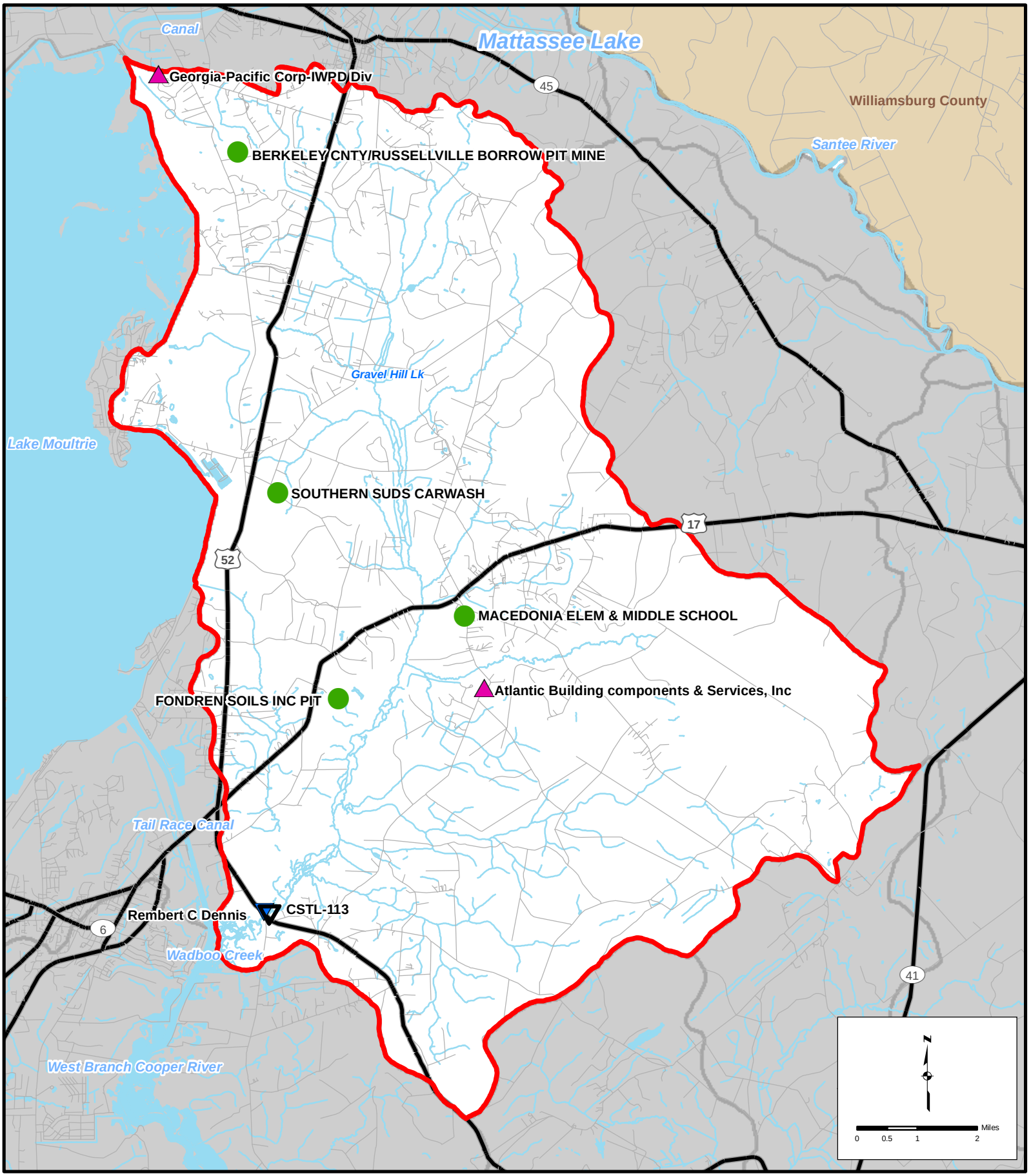
Charleston Harbor System TMDLs

The modeling efforts for Charleston Harbor and its tributaries have been completed and phased TMDLs for the Ashley and the Cooper systems have been issued by the Department and approved by EPA Region 4. Interim TMDL limits were included in NPDES permits for a number of dischargers while final TMDL limits were included for some dischargers who were already meeting the final limits. Permits included compliance schedules that allowed the opportunity for additional modeling work to be completed before compliance with final limits is required. A group of dischargers working through the local Councils of Government has initiated another modeling effort that is currently underway. If this effort is successfully completed within the allotted time, the existing TMDLs will be revised and, as appropriate, new limits incorporated into NPDES permits for discharges covered by the TMDL.

Special Projects

Santee Cooper FERC Relicensing

Hydroelectric projects require licenses issued by the Federal Energy Regulatory Commission in order to operate. These licenses require re-evaluation periodically in order to incorporate new information for the protection of the common good and typically last from 30 to 50 years. In addition to economic factors, a wide variety of natural resource elements can be considered including: reservoir water quality, downstream water quality, fisheries issues, flow issues, and shoreline management issues. State and federal agencies as well as citizens and nonprofit groups have been meeting to discuss these issues in the Santee Cooper re-licensing process. All federal permits, which have any bearing on waters of the state, must first receive a §401 water quality certification. The §401 water quality certification will be SCDHEC's main responsibility in the process. For more information on Santee Cooper's re-licensing, view their website at: http://www.santeecooper.com/environment/ferc/index.html.



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JACOBS

Water Quality Management Plan Update

Basin
03050201-020

Legend

- Limited Access
- Highway/ Major Road
- Minor Road
- Water Features
- Other Counties
- Watershed Boundary
- Streams
- NPDES Permits
- Industry
- Boat Ramps
- Fish Station

03050201-020

(Wadboo Creek)

General Description

Watershed 03050201-020 is located in Berkeley County and consists primarily of ***Wadboo Creek*** and its tributaries. The watershed occupies 80,973 acres of the Lower Coastal Plain region of South Carolina. The predominant soil types consist of an association of the Bladen-Wahee-Hobcaw-Mouzon-Chipley series. The erodibility of the soil (K) averages 0.17 and the slope of the terrain averages 1%, with a range of 0-2%. Land use/land cover in the watershed includes: 77.3% forested land, 7.7% scrub/shrub land, 7.2% forested wetland, 6.7% agricultural land, 0.7% barren land, 0.3% water, and 0.1% urban land.

Wadboo Swamp originates near the Town of St. Stephen and merges with the Tail Race Canal to form the West Branch Cooper River. Gravel Hill Swamp accepts the drainage of Walker Swamp (Halfway Swamp) then flows into Wadboo Swamp followed by Rice Hope Swamp, Stewart Creek, Whiskinboo Creek (Cane Pond Branch), Cane Gully Branch (Graveyard Lead, Peters Swamp, Callum Branch), Bullhead Run (Mary Anne Branch), and Broad Ax Branch (Canady Branch, Mingo Branch). Wadboo Swamp becomes Wadboo Creek downstream of Broad Ax Branch. Walleye Bay, located at the headwaters of Whiskinboo Creek and Cane Gully Branch accepts drainage from Big Ocean Bay, Whitten Bay, and Boggy Swamp. Little Ocean Bay, Graveyard Bay, Huckleberry Bay, and Mill Bay drain into Peters Swamp. There are a total of 105.1 stream miles and 57.4 acres of lake waters in this watershed, all classified FW. Another natural resource is the Francis Marion National Forest, which extends across the entire watershed.

Surface Water Quality

Station #	Type	Class	Description
ST-007	S/W	FW	WALKER SWAMP AT US 52 2.5 MI S OF ST. STEPHENS
RS-02461	RS02	FW	WADBOO SWAMP AT S-08-447 THIRD BRIDGE FROM WEST
CSTL-113	W/INT	FW	WADBOO CREEK AT SC 402

Walker Swamp (ST-007) – Aquatic life uses are fully supported, and a significant decreasing trend in five-day biochemical oxygen demand suggests improving conditions for this parameter. Recreational uses are not supported due to fecal coliform bacteria excursions.

Wadboo Creek – There are two SCDHEC monitoring sites along Wadboo Creek. This is a blackwater system, characterized by naturally low dissolved oxygen conditions. Although dissolved oxygen excursions occurred at both sites, they were typical of values seen in blackwater systems and were considered natural, not standards violations. At the upstream site ***(RS-02461)***, aquatic life uses are fully supported, but recreational uses are partially supported due to fecal coliform bacteria excursions. At the downstream site ***(CSTL-113)***, aquatic life uses are fully supported. There is a significant increasing trend in pH. Significant decreasing trends in five-day biochemical oxygen demand, turbidity, and total nitrogen 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.

A fish consumption advisory has been issued by the Department for mercury and includes Wadboo Creek within this watershed (see advisory p.69).

NPDES Program

Active NPDES Facilities

RECEIVING STREAM ***FACILITY NAME*** ***PERMITTED FLOW @ PIPE (MGD)***	***NPDES#*** ***TYPE*** ***COMMENT***
HALFWAY SWAMP GA PACIFIC/RUSSELLVILLE PIPE #: 001 FLOW: 0.905	SCG250179 MINOR INDUSTRIAL EFFLUENT
WADBOO SWAMP MACEDONIA ELEM & HIGH SCHOOL PIPE #: 001 FLOW: 0.0298	SC0027090 MINOR DOMESTIC

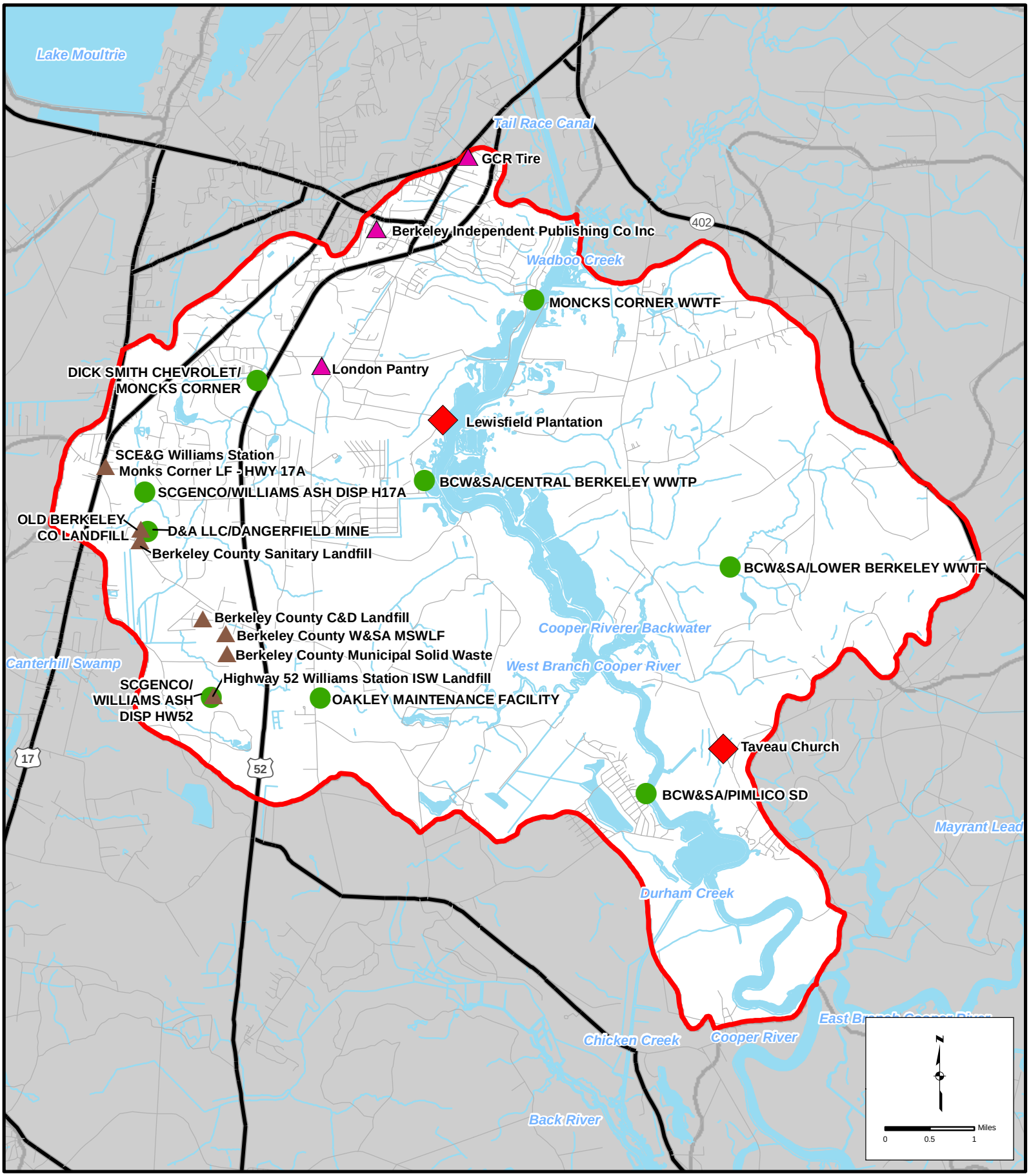
Nonpoint Source Management Program

Mining Activities

MINING COMPANY ***MINE NAME***	***PERMIT #*** ***MINERAL***
WARE BROTHERS, INC. FONDREN EARTH EXCAVATION	0817-15 SAND/GRAVEL

Growth Potential

There is a low potential for growth in this watershed, which contains the Town of Bonneau and portions of the communities of Macedonia and Russellville. A large portion of the watershed is contained within the Francis Marion National Forest.



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JACOBS

Water Quality Management Plan Update

Basin
03050201-030

Legend

- Limited Access
- Highway/ Major Road
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- Water Features
- Other Counties
- Watershed Boundary
- Streams
- NPDES Permits
- Industry
- Landfills
- National Register Sites

03050201-030

(West Branch Cooper River)

General Description

Watershed 03050201-030 is located in Berkeley County and consists primarily of the ***West Branch Cooper River*** and its tributaries. The watershed occupies 36,155 acres of the Lower Coastal Plain region of South Carolina. The predominant soil types consist of an association of the Bladen-Bohicket-Wahee-Chipley series. The erodibility of the soil (K) averages 0.14 and the slope of the terrain averages 1%, with a range of 0-2%. Land use/land cover in the watershed includes: 63.6% forested land, 11.6% water, 7.6% urban land, 7.3% forested wetland, 7.2% agricultural land, 2.2% scrub/shrub land, and 0.5% barren land.

The West Branch Cooper River is flows out of Lake Moultrie through the Tail Race Canal and accepts drainage from Wadboo Creek. The West Branch Cooper River then accepts drainage from Mepkin Creek, Molly Branch (Stony Branch, Wappoola Swamp) and Durham Creek (Durham Canal) before merging with the East Branch Cooper River to form the Cooper River. The West Branch Cooper River also drains into the Back River watershed via Durham Creek. There are a total of 68.3 stream miles and 729.2 acres of lake waters in this watershed, all classified FW.

Surface Water Quality

Station #	Type	Class	Description
CSTL-085	S/INT	FW	PIER IN W. BRANCH COOPER RIVER AT END OF RICE MILL ROAD IN PIMLICO

West Branch Cooper River (CSTL-085) - Aquatic life and recreational uses are fully supported. There is a significant increasing trend in pH. A significant decreasing trend in five-day biochemical oxygen demand and a significant increasing trend in dissolved oxygen concentration suggest improving conditions for these parameters. To abate aquatic plant growth, aquatic herbicides have been applied from 1998 2005.

A fish consumption advisory has been issued by the Department for mercury and includes the West Branch Cooper River within this watershed (see advisory p.69).

Groundwater Quality

Well #	Class	Aquifer	Location
AMB-024	GB	BLACK MINGO	SANTEE COOPER

NPDES Program

Active NPDES Facilities

RECEIVING STREAM / *FACILITY NAME* / *PERMITTED FLOW @ PIPE (MGD)*	*NPDES#* / *TYPE* / *COMMENT*
WEST BRANCH COOPER RIVER TOWN OF MONCKS CORNER WWTP PIPE #: 001 FLOW: 2.4	SC0021598 MAJOR DOMESTIC

WEST BRANCH COOPER RIVER BCW&SA/CENTRAL BERKELEY WWTP PIPE #: 001 FLOW: 1.0	SC0039764 MINOR DOMESTIC
WAPPOOLA SWAMP SCE&G/WILLIAMS ASH DISP PIPE #: 001 FLOW: M/R	SC0046175 MINOR INDUSTRIAL UNCONSTRUCTED
MOLLY BRANCH SCE&G/WILLIAMS LANDFILL PIPE #: 001 FLOW: 0.033	SC0039535 MINOR INDUSTRIAL
MOLLY BRANCH TRIBUTARY OAKLEY MAINTENANCE FACILITY PIPE #: 001 FLOW: 0.0075	SC0026867 MINOR DOMESTIC
MOLLY BRANCH D&A PARTNERSHIP/DANGERFIELD MINE PIPE #: 001 FLOW: M/R	SCG730125 MINOR INDUSTRIAL

Nonpoint Source Management Program

Mining Activities

MINING COMPANY ***MINE NAME***	***PERMIT #*** ***MINERAL***
SC GENERATING CO., INC. WILLIAMS ASH DISPOSAL	0964-15 SAND

Land Disposal Activities

Landfill Facilities

LANDFILL NAME ***FACILITY TYPE***	***PERMIT #*** ***STATUS***
SCE&G/WILLIAMS STATION INDUSTRIAL	083320-1601 (IWP-191) ACTIVE
SCE&G/GENCO/WILLIAMS STATION INDUSTRIAL	083309-1601 ACTIVE
BERKELEY COUNTY LANDFILL MUNICIPAL	081001-1101 (DWP-105, ACTIVE 081001-1102)
OLD BERKELEY COUNTY MUNICIPAL	DWP-015 CLOSED
OLD BERKELEY COUNTY/NEIGHBORS SITE MUNICIPAL	DWP-073 CLOSED
BERKELEY COUNTY C&D LANDFILL CONSTRUCTION	081001-1201 --------
BERKELEY COUNTY TIRE DISPOSAL MUNICIPAL	081001-5101 --------

Growth Potential

Future growth is expected in several areas within the watershed, including the Town of Moncks Corner, the Whitesville and Pimlico Communities, and the Berkeley Country Club area. The Town of Moncks Corner and Berkeley County operate water and sewer systems in the area, which may allow scattered development.

Watershed Protection and Restoration

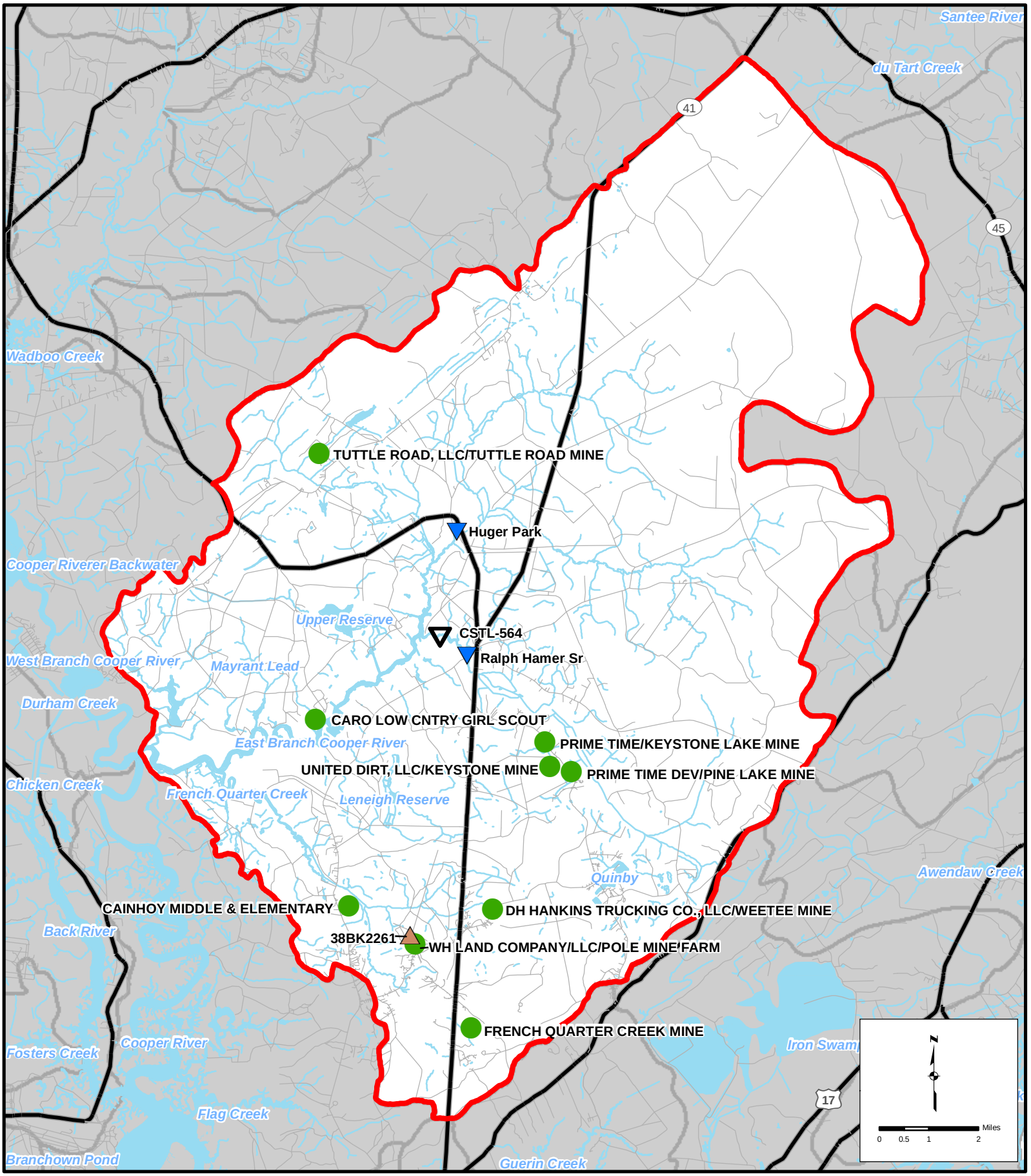
Total Maximum Daily Loads (TMDLs)

Two TMDLs addressing dissolved oxygen were developed by SCDHEC for the ***Charleston Harbor Estuary:*** one covering the Ashley River and the other covering the Charleston Harbor, the Cooper River, and the Wando River. The Harbor/Cooper River/Wando River portion of the system (consisting of the Tail Race Canal, West Branch Cooper River, East Branch Cooper River, Shipyard Creek, Town Creek, Back River, Goose Creek, Wando River and Charleston Harbor) is not considered to be impaired with respect to dissolved oxygen (with the exception of the Wando River monitoring site MD-115); however, available information indicates much of the system does not meet the applicable water quality standard for dissolved oxygen for significant periods of time and is considered water quality limited for the purposes of wasteload allocation (WLA) development. WLAs are an integral part of a TMDL, and although not always developed through the TMDL process, the Department and EPA have chosen to use the TMDL process to develop WLAs for the Charleston Harbor system (see following section). Results of a water quality model indicate the need for a 70% reduction in discharge of oxygen demanding substances to the overall system. A phased approach to achieving these reductions is proposed with an initial Phase I reduction of 60%. For more detailed information on TMDLs, please visit the SCDHEC's Bureau of Water homepage at http://www.scdhec.gov/water and click on "Watersheds and TMDLs" and then "TMDL Program".

Special Models

Charleston Harbor System TMDLs

The modeling efforts for Charleston Harbor and its tributaries have been completed and phased TMDLs for the Ashley and the Cooper systems have been issued by the Department and approved by EPA Region 4. Interim TMDL limits were included in NPDES permits for a number of dischargers while final TMDL limits were included for some dischargers who were already meeting the final limits. Permits included compliance schedules that allowed the opportunity for additional modeling work to be completed before compliance with final limits is required. A group of dischargers working through the local Councils of Government has initiated another modeling effort that is currently underway. If this effort is successfully completed within the allotted time, the existing TMDLs will be revised and, as appropriate, new limits incorporated into NPDES permits for discharges covered by the TMDL.



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JACOBS

Water Quality Management Plan Update

Basin
03050201-040

Legend

- Limited Access
- Highway/ Major Road
- Minor Road
- Water Features
- Other Counties
- Watershed Boundary
- Streams
- NPDES Permits
- Boat Ramps
- Archeological Sites
- Fish Stations

03050201-040

(East Branch Cooper River)

General Description

Watershed 03050201-040 is located in Berkeley and Charleston Counties and consists primarily of the ***East Branch Cooper River*** and its tributaries. The watershed occupies 123,180 acres of the Lower Coastal Plain region of South Carolina. The predominant soil types consist of an association of the Yauhannah-Yemassee-Chipley-Hobcaw series. The erodibility of the soil (K) averages 0.15 and the slope of the terrain averages 1%, with a range of 0-2%. Land use/land cover in the watershed includes: 77.8% forested land, 16.5% forested wetland, 3.1% scrub/shrub land, 2.0% water, and 0.6% agricultural land.

The East Branch Cooper River is formed by the confluence of Huger Creek and Quinby Creek. Prior to the confluence, Huger Creek accepts drainage from Nicholson Creek (Kutz Creek, Darlington Creek, Darlington Swamp, Cooks Creek, Jericho Branch, Fourth of July Branch), Turkey Creek (Huitt Branch, Old Man Lead, Oakie Branch, Muddy Creek, Fox Gully Branch), Negro Field Branch, and Gough Creek (Alligator Creek, Midway Reserve, Little Hellhole Reserve, Little Hellhole Bay, Quarterman Branch, Upper Reserve, Upper Reserve). Quinby Creek accepts drainage from Harleston Dam Creek (Cropnel Dan Creek), Northampton Creek, Bennett Branch, Deep Branch, Pinckney Reserve Branch, Menzer Run, and York Bottom Creek. Bennett Branch flows through a 50-acre recreational pond, and the Hester Canal bypasses Quinby Creek near its mouth. The entire area prior to the confluence of Huger and Quinby Creeks is within the Francis Marion National Forest.

Downstream of the confluence, the East Branch Cooper River receives drainage from Mayrant Lead, French Quarter Creek (Chipper Swamp, Freshing Lead), and Big Dam Lead (Comingtee Creek). There are a total of 161.2 stream miles and 559.2 acres of lake waters in this watershed, all classified FW.

Surface Water Quality

Station #	Type	Class	Description
RS-02483	RS02	FW	TURKEY CREEK AT FOREST SERVICE RD 251 IRISHTOWN FM SC 402
CSTL-123	INT	FW	EAST BRANCH COOPER RIVER AT BONNEAU FERRY PLANTATION

Turkey Creek (RS-02483) - Aquatic life uses are not supported due to dissolved oxygen and pH excursions. Recreational uses are partially supported due to fecal coliform bacteria excursions.

East Branch Cooper River (CSTL-123) - Aquatic life and recreational uses are fully supported. Aquatic macrophytes have proliferated and public access has been restricted in the Bonneau Ferry area of the river. To reduce aquatic plant growth and enhance public access and use, aquatic herbicides were applied in 2004 and 2005.

A fish consumption advisory has been issued by the Department for mercury and includes the East Branch Cooper River within this watershed (see advisory p.69).

Groundwater Quality

Well #	Class	Aquifer	Location
AMB-023	GB	BLACK MINGO	CAINHOY HIGH SCHOOL

NPDES Program

Active NPDES Facilities

RECEIVING STREAM *FACILITY NAME* *PERMITTED FLOW @ PIPE (MGD)*	*NPDES#* *TYPE* *COMMENT*
EAST BRANCH COOPER RIVER CAROLINA LOWCOUNTRY GS COUNCIL PIPE #: 001 FLOW: 0.012	SC0033073 MINOR DOMESTIC
FRENCH QUARTER CREEK FRENCH QUARTER CREEK MINE PIPE #: 001 FLOW: M/R	SCG730086 MINOR INDUSTRIAL

Nonpoint Source Management Program

Mining Activities

MINING COMPANY *MINE NAME*	*PERMIT #* *MINERAL*
FRENCH QUARTER CREEK INVESTORS FRENCH QUARTER MINE	0873-15 SAND/CLAY

Growth Potential

There is a low potential for growth expected in this watershed, which is almost entirely within the Francis Marion National Forest. There are numerous historic structures located in the area, and great public sentiment to preserve the historic character of the area.

Watershed Protection and Restoration

Total Maximum Daily Loads (TMDLs)

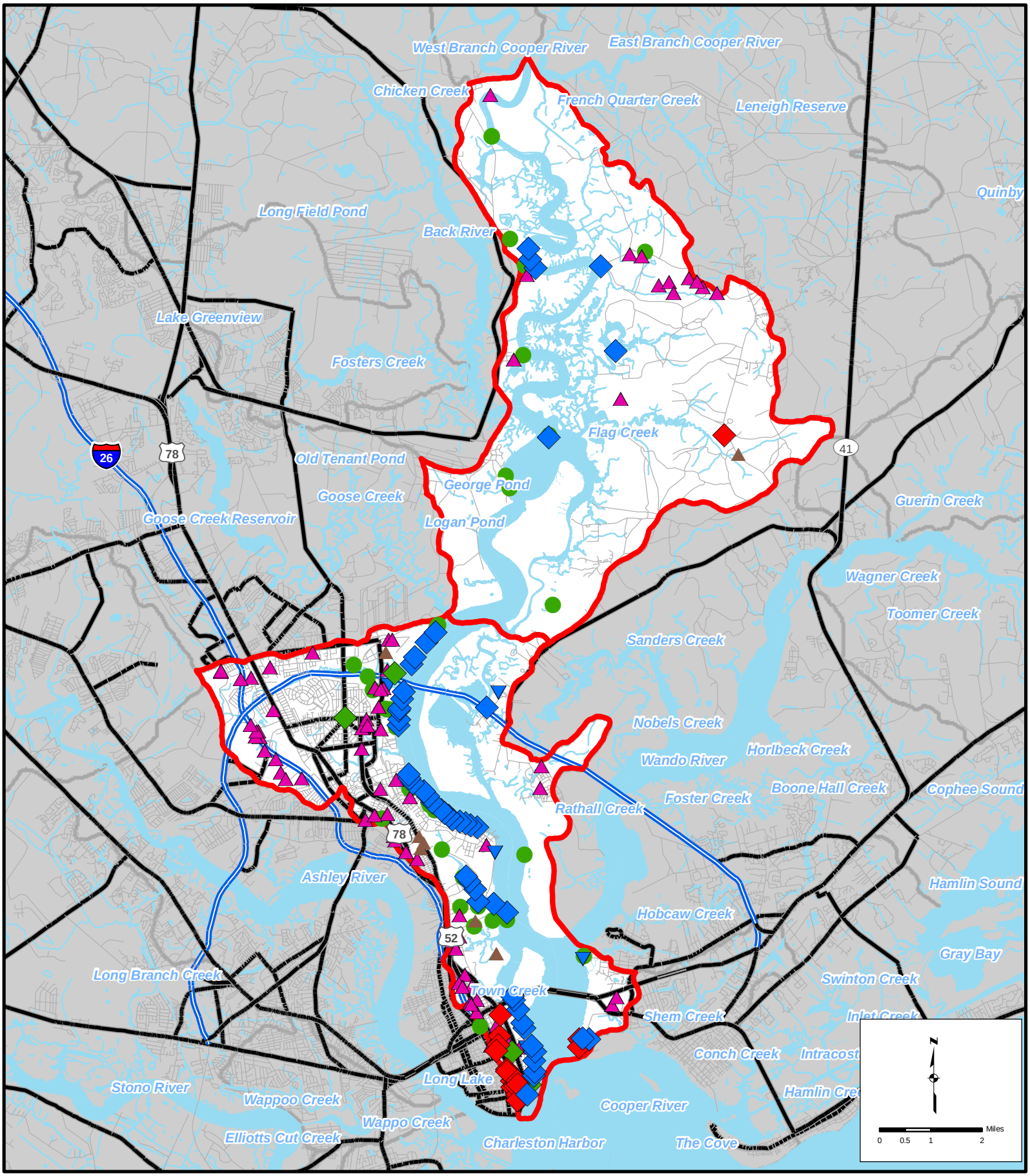
Two TMDLs addressing dissolved oxygen were developed by SCDHEC for the ***Charleston Harbor Estuary:*** one covering the Ashley River and the other covering the Charleston Harbor, the Cooper River, and the Wando River. The Harbor/Cooper River/Wando River portion of the system (consisting of the Tail Race Canal, West Branch Cooper River, East Branch Cooper River, Shipyard Creek, Town Creek, Back River, Goose Creek, Wando River and Charleston Harbor) is not considered to be impaired with respect to dissolved oxygen (with the exception of the Wando River monitoring site MD-115); however, available information indicates much of the system does not meet the applicable water quality standard for dissolved oxygen for significant periods of time and is considered water quality limited for the purposes of wasteload allocation (WLA) development. WLAs are an integral part of a TMDL, and although not always developed through the TMDL process, the Department and EPA have chosen to use the TMDL process to develop WLAs for the Charleston Harbor system (see following

section). Results of a water quality model indicate the need for a 70% reduction in discharge of oxygen demanding substances to the overall system. A phased approach to achieving these reductions is proposed with an initial Phase I reduction of 60%. For more detailed information on TMDLs, please visit the SCDHEC's Bureau of Water homepage at http://www.scdhec.gov/water and click on "Watersheds and TMDLs" and then "TMDL Program".

Special Models

Charleston Harbor System TMDLs

The modeling efforts for Charleston Harbor and its tributaries have been completed and phased TMDLs for the Ashley and the Cooper systems have been issued by the Department and approved by EPA Region 4. Interim TMDL limits were included in NPDES permits for a number of dischargers while final TMDL limits were included for some dischargers who were already meeting the final limits. Permits included compliance schedules that allowed the opportunity for additional modeling work to be completed before compliance with final limits is required. A group of dischargers working through the local Councils of Government has initiated another modeling effort that is currently underway. If this effort is successfully completed within the allotted time, the existing TMDLs will be revised and, as appropriate, new limits incorporated into NPDES permits for discharges covered by the TMDL.



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Water Quality Management Plan Update

Basin
03050201-050

Legend

- Limited Access
- Highway/ Major Road
- Minor Road
- Water Features
- Other Counties
- Watershed Boundary
- Streams
- Ports
- Parks & Cultural Sites
- National Register Sites
- NPDES Permits
- Boat Ramps & Marinas
- Landfills
- Industries

03050201-050

(Cooper River)

General Description

Watershed 03050201-050 is located in Berkeley and Charleston Counties and consists primarily of the ***Cooper River*** and its tributaries. The watershed occupies 50,841 acres of the Lower Coastal Plain and Coastal Zone regions of South Carolina. The predominant soil types consist of an association of the Bohicket-Chipley-Leon-Capers series. The erodibility of the soil (K) averages 0.17 and the slope of the terrain averages 1%, with a range of 0-2%. Land use/land cover in the watershed includes: 33.0% forested land, 25.4% urban land, 17.8% water, 13.1% forested wetland, 6.0% nonforested wetland, 3.2% scrub/shrub land, 1.0% agricultural land, and 0.5% barren land.

The Cooper River is formed at "The Tee" by the confluence of the West Branch Cooper River and the East Branch Cooper River and flows past the City of Charleston and into the Charleston Harbor. En route to the Charleston Harbor, the Cooper River accepts drainage from Tidal Creek, Grove Creek (Little Johnson Creek), the Back River watershed, Flag Creek (Pepper Gully), Slack Reach, Yellow House Creek, the Goose Creek watershed, Filbin Creek, Noisette Creek, Clouter Creek, Shipyard Creek, Newmarket Creek, and the Wando River watershed. There are 362.8 acres of lake waters in the watershed. There are a total of 57.1 stream miles and 7,105.9 acres of estuarine areas, all classified SB. The furthest upstream site on the Cooper River is classified freshwater and saltwater. Other natural resources in this watershed include the Francis Marion National Forest near the Flag Creek headwaters and Cypress Gardens.

Surface Water Quality

Station #	Type	Class	Description
MD-152	P/W	FW/SB	Cooper River at S-08-503, 6.2 mi ESE of Goose Creek
MD-043	P/SPRP	SB	Cooper River at Channel Marker 72 near USN Ammo Depot
MD-044	P/W	SB	Cooper River below mouth of Goose Creek at Chan. Buoy 60
MD-249/MD-593	P/W	SB	Filbin Creek at Virginia Ave., North Charleston
MD-248	P/SPRP	SB	Cooper River at Mark Clark Bridge (I-526)
RT-01633	RT01	SB	Clouter Creek, 2.5 mi E of North Charleston
MD-045	P/INT	SB	Cooper River above mouth of Shipyard Ck at Chan Buoy 49
MD-243	P/W	SB	Shipyard Creek between Marker #6 and McAlloy Dock
MD-047	P/W	SB	Town Creek (W side of Drum Island) under Grace Mem. Brdg
MD-046	P/W	SB	Cooper River under Grace Memorial Bridge

Cooper River – There are six SCDHEC monitoring sites along the Cooper River. Recreational uses are fully supported at all sites and, with the exception of MD-152, a significant decreasing trend in fecal coliform bacteria concentration suggests improving conditions for this parameter. At the furthest upstream site ***(MD-152)***, which is mapped in 03050201-060, aquatic life and recreational uses are fully supported for both freshwater and saltwater classifications. There is a significant increasing trend in pH. Significant decreasing trends in five-day biochemical oxygen demand and total nitrogen concentration and a significant increasing trend in dissolved oxygen concentration suggest improving conditions for these parameters. Aquatic life uses are fully supported at the next site downstream ***(MD-043)***, and

significant decreasing trends in five-day biochemical oxygen demand, total phosphorus concentration, and total nitrogen concentration and a significant increasing trend in dissolved oxygen concentration suggest improving conditions for these parameters. Further downstream ***(MD-044)***, aquatic life uses are fully supported. Significant decreasing trends in five-day biochemical oxygen demand and total nitrogen concentration, and a significant increasing trend in dissolved oxygen concentration suggest improving conditions for these parameters.

Aquatic life uses are again fully supported further downstream ***(MD-248)***. Significant decreasing trends in five-day biochemical oxygen demand, turbidity, total phosphorus concentration, and total nitrogen concentration and a significant increasing trend in dissolved oxygen concentration suggest improving conditions for these parameters. There is a significant increasing trend in pH. At the furthest sites downstream ***(MD-045, MD-046)***, aquatic life uses are fully supported and significant decreasing trends in five-day biochemical oxygen demand and total nitrogen concentration and a significant increasing trend in dissolved oxygen concentration suggest improving conditions for these parameters.

Filbin Creek (MD-249) - Aquatic life uses are partially supported due to dissolved oxygen excursions. Significant decreasing trends in five-day biochemical oxygen demand and turbidity, and a significant increasing trend in dissolved oxygen concentration suggest improving conditions for these parameters. There is a significant increasing trend in pH. Recreational uses are not supported due to fecal coliform bacteria excursions.

Clouter Creek (RT-01633) - Aquatic life and recreational uses are fully supported.

Shipyard Creek (MD-243) – Aquatic life uses are fully supported. Significant decreasing trends in five-day biochemical oxygen demand, turbidity, total phosphorus and total nitrogen concentration, and a significant increasing trend in dissolved oxygen concentration suggest improving conditions for these parameters. Recreational uses are fully supported and a significant decreasing trend in fecal coliform bacteria concentration suggests improving conditions for this parameter.

Town Creek (MD-047) - Aquatic life uses are fully supported. Significant decreasing trends in five-day biochemical oxygen demand and total nitrogen concentration and a significant increasing trend in dissolved oxygen concentration suggest improving conditions for these parameters. Recreational uses are fully supported and a significant decreasing trend in fecal coliform bacteria concentration suggests improving conditions for this parameter.

A fish consumption advisory has been issued by the Department for mercury and includes the Cooper River within this watershed (see advisory p.69).

Shellfish Monitoring Stations

Station #	Description
09B-13	CONFLUENCE OF WANDO RIVER AND COOPER RIVER
10B-06	CENTER OF CHANNEL OFF CHARLESTON YACHT CLUB

NPDES Program

Active NPDES Facilities

RECEIVING STREAM *FACILITY NAME* *PERMITTED FLOW @ PIPE (MGD)*	*NPDES#* *TYPE* *COMMENT*
COOPER RIVER MEAD WESTVACO SC PIPE #: 001, 002 FLOW: M/R	SC0001759 MAJOR INDUSTRIAL
COOPER RIVER AMERADA HESS/VIRGINIA AVE. N. PIPE #: 001, 002 FLOW: M/R	SC0002852 MINOR INDUSTRIAL
COOPER RIVER AMERADA HESS/VIRGINIA AVE. S. PIPE #: 001,002 FLOW: M/R	SC0002861 MINOR INDUSTRIAL
COOPER RIVER ALLIED TERMINALS/CHARLESTON PIPE #: 001 FLOW: M/R	SC0001350 MINOR INDUSTRIAL
COOPER RIVER SOPUS PRODUCTS/CHAS. PIPE #: 001 FLOW: M/R	SC0003026 MINOR INDUSTRIAL (EQUILON ENTERPRIZES)
COOPER RIVER SUN CHEMICAL CORP. PIPE #: 001 FLOW: M/R	SC0003441 MAJOR INDUSTRIAL (BAYER CORP.)
COOPER RIVER US NAVY/WEAPONS STATION PIPE #: 001,002,003 FLOW: M/R	SC0043206 MINOR INDUSTRIAL
COOPER RIVER NCSD/FELIX DAVIS WWTP PIPE #: 001 FLOW: 27.0	SC0024783 MAJOR DOMESTIC
COOPER RIVER OAK AMERICAS LLC/COOPER RIVER PLT. PIPE #: 001 FLOW: M/R	SC0026506 MAJOR INDUSTRIAL (E.I. DUPONT)
COOPER RIVER BP AMOCO CHEMICALS/COOPER RIVER PIPE #: 001 FLOW: M/R	SC0028584 MAJOR INDUSTRIAL
COOPER RIVER BCW&SA/LOWER BERKELEY WWTP PIPE #: 001 FLOW: 15.0	SC0046060 MAJOR DOMESTIC
COOPER RIVER NUCOR STEEL/BERKELEY PLT PIPE #: 001-003 FLOW: M/R	SC0047392 MAJOR INDUSTRIAL
COOPER RIVER TRIBUTARY MT PLEASANT WATER PLANT #2	SC0043273 MINOR DOMESTIC

PIPE #: 001 FLOW: 0.5

COOPER RIVER TRIBUTARY — SCG250040
EVENING POST PUBLISHING CO. — MINOR INDUSTRIAL
PIPE #: 001 FLOW: M/R

TIDAL CREEK TO COOPER RIVER — SC0047074
CHARLESTON CPW/DANIEL ISLAND — MINOR DOMESTIC
PIPE #: 001 FLOW: 0.5
PROPOSED FLOW: 0.75, 1.0, 2.0, 4.0 — MAJOR DOMESTIC

TIDAL CREEK TO COOPER RIVER — SC0003883
SCE&G/WILLIAMS STATION — MAJOR INDUSTRIAL
PIPE #: 001-005 FLOW: M/R

FILBIN CREEK — SCG340022
DEFENSE FUEL SUPPORT PT/CHAS. — MINOR INDUSTRIAL
PIPE #: 001,002 FLOW: M/R — (SC0021997)

FILBIN CREEK — SC0001759
MEAD WESTVACO CORP/CHAS. — MAJOR INDUSTRIAL
PIPE #: 004 FLOW: M/R

FILBIN CREEK — SCG340015
KINDER MORGAN BULK TERM./N. CHAS. — MINOR INDUSTRIAL
PIPE #: 001 FLOW: M/R — (MARATHON ASHLAND/SC0034134)

SHIPYARD CREEK — SC0048046
KINDER MORGAN BULK TERM./SHIPYARD RIV. TERM. — MINOR INDUSTRIAL
PIPE #: 001 FLOW: M/R

SHIPYARD CREEK — SC0041173
MONTENAY CHARLESTON/RESOURCE RECOVERY — MINOR INDUSTRIAL
PIPE #: 001-004 FLOW: M/R — (FOSTER WHEELER)

Nonpoint Source Management Program

Mining Activities

MINING COMPANY / ***MINE NAME***	***PERMIT #*** / ***MINERAL***
OL THOMPSON CONSTRUCTION CO., INC.	0962-15
PRIMUS TRACT	SAND/CLAY

Land Disposal Activities

Landfill Facilities

SOLID WASTE LANDFILL NAME / ***FACILITY TYPE***	***PERMIT #*** / ***STATUS***
WESTVACO LANDFILL	IWP-177, IWP-090, IWP-150
INDUSTRIAL	--------
CHARLESTON/SPRUIL AVE. DUMP	---------
MUNICIPAL	CLOSED

GASTON DUMP MUNICIPAL	--------- CLOSED
HOLSTON LANDFILL MUNICIPAL	DWP-003 NEVER OPENED
ROMEY STREET LANDFILL MUNICIPAL	DWP-079, DWP-061 CLOSED

Growth Potential

The Union Terminal (Sea Port Facility) within the City of Charleston is projected to be an area of population growth. The population in the urban areas west of the Cooper River has declined in the last decade and are not expected to grow in the near future. The U.S. Navy Base/Shipyard was closed by the Navy in 1996. The Office/Manufacturing/Industrial reuses of this property will occur well into the future, but residential uses are not significant components of the Base Reuse Plan. The Bushy Industrial Park, which includes several very large industries, is also located in this watershed, and should continue to encourage industrial growth.

Watershed Protection and Restoration

Total Maximum Daily Loads (TMDLs)

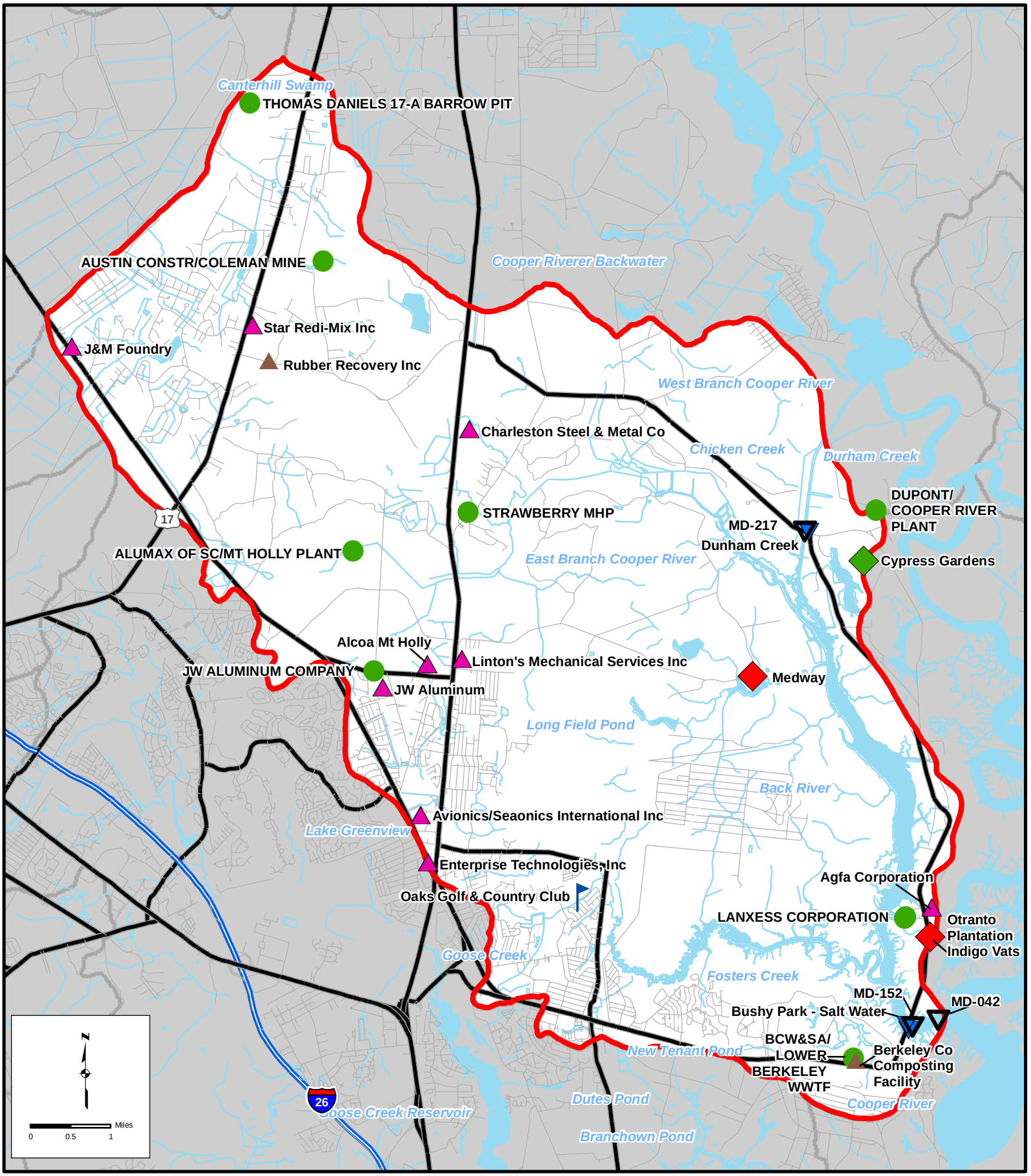
Two TMDLs addressing dissolved oxygen were developed by SCDHEC for the ***Charleston Harbor Estuary:*** one covering the Ashley River and the other covering the Charleston Harbor, the Cooper River, and the Wando River. The Harbor/Cooper River/Wando River portion of the system (consisting of the Tail Race Canal, West Branch Cooper River, East Branch Cooper River, Shipyard Creek, Town Creek, Back River, Goose Creek, Wando River and Charleston Harbor) is not considered to be impaired with respect to dissolved oxygen (with the exception of the Wando River monitoring site MD-115); however, available information indicates much of the system does not meet the applicable water quality standard for dissolved oxygen for significant periods of time and is considered water quality limited for the purposes of wasteload allocation (WLA) development. WLAs are an integral part of a TMDL, and although not always developed through the TMDL process, the Department and EPA have chosen to use the TMDL process to develop WLAs for the Charleston Harbor system (see following section). Results of a water quality model indicate the need for a 70% reduction in discharge of oxygen demanding substances to the overall system. A phased approach to achieving these reductions is proposed with an initial Phase I reduction of 60%. For more detailed information on TMDLs, please visit the SCDHEC's Bureau of Water homepage at http://www.scdhec.gov/water and click on "Watersheds and TMDLs" and then "TMDL Program".

Special Models

Charleston Harbor System TMDLs

The modeling efforts for Charleston Harbor and its tributaries have been completed and phased TMDLs for the Ashley and the Cooper systems have been issued by the Department and approved by EPA Region 4. Interim TMDL limits were included in NPDES permits for a number of dischargers while final TMDL limits were included for some dischargers who were already meeting the final limits. Permits

included compliance schedules that allowed the opportunity for additional modeling work to be completed before compliance with final limits is required. A group of dischargers working through the local Councils of Government has initiated another modeling effort that is currently underway. If this effort is successfully completed within the allotted time, the existing TMDLs will be revised and, as appropriate, new limits incorporated into NPDES permits for discharges covered by the TMDL.



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JACOBS

Water Quality Management Plan Update

Basin
03050201-060

- Limited Access
- Highway/ Major Road
- Minor Road
- Water Features
- Other Counties
- Watershed Boundary
- Streams
- Fish Stations
- Golf Course
- Parks & Cultural Sites
- National Register Sites
- NPDES Permits
- Boat Ramps
- Landfills
- Industries

03050201-060

(Back River)

General Description

Watershed 03050201-060 is located in Berkeley County and consists primarily of the ***Back River*** and its tributaries. The watershed occupies 49,168 acres of the Lower Coastal Plain region of South Carolina. The predominant soil types consist of an association of the Bladen-Wahee-Bohicket-Hobcaw series. The erodibility of the soil (K) averages 0.17 and the slope of the terrain averages 1%, with a range of 0-2%. Land use/land cover in the watershed includes: 70.7% forested land, 11.9% urban land, 7.5% forested wetland, 5.1% agricultural land, 3.0% scrub/shrub land, 1.4% water, and 0.3% barren land.

The Back River forms from swamp drainage and flows into the Cooper River. Laurel Swamp (Gants Mill Branch, Tillmans Branch, Poplar Branch, Daisy Swamp, King Branch, Huckhole Swamp), Sophia Swamp (Lindsey Branch, Brick Bound Swamp), and Canterhill Swamp flow into the Back River, which is joined downstream by Chicken Creek. The Back River is dammed further downstream to create the Back River Reservoir (also know as the Bushy Park Reservoir) and insure freshwater storage for industrial purposes. Water is not released from the dam but is pumped into the Cooper River near Bushy Industrial Park. The waters downstream from the dam are essentially backflow from the Cooper River (SB). Prioleau Creek (Long Field Pond, Crane Pond) enters Back River Reservoir in the upper lake region and Foster Creek enters the reservoir near the dam. There are a total of 87.3 stream miles, 287.1 acres of lake waters, and 80.3 acres of estuarine areas in this watershed.

Surface Water Quality

Station #	Type	Class	Description
MD-240	P/W	FW	FOSTER CREEK AT CHARLESTON CPW WATER INTAKE
CSTL-124	INT	FW	BACK RIVER RESERVOIR IN FOREBAY EQUIDISTANT FROM DAM AND SHORELINES
MD-217	P/W	FW	DURHAM CREEK AT S-08-9 BRIDGE

Foster Creek (MD-240) – Aquatic life uses are not supported due to dissolved oxygen excursions. Significant decreasing trends in five-day biochemical oxygen demand, turbidity, and total nitrogen concentration suggest improving conditions for these parameters. There is a significant increasing trend in pH. Recreational uses are fully supported and a significant decreasing trend in fecal coliform bacteria concentration suggests improving conditions for this parameter.

Back River Reservoir **(CSTL-124) –** Aquatic life uses are not supported due to occurrences of copper in excess of the aquatic life acute criterion and dissolved oxygen excursions. Recreational uses are fully supported. Aquatic macrophytes have proliferated and public access has been restricted on the reservoir. Aquatic herbicides were applied from 1998-2005 in order to reduce aquatic plant growth, enhance water quality and public access and use, maintain electric power generation, and minimize impacts to water intakes.

Durham Creek (MD-217) – Aquatic life and recreational uses are fully supported. Significant decreasing trends in five-day biochemical oxygen demand and total nitrogen concentration suggest improving conditions for these parameters. There is a significant increasing trend in pH.

A fish consumption advisory has been issued by the Department for mercury and includes the Back River Reservoir and Durham Creek within this watershed (see advisory p.69).

NPDES Program

Active NPDES Facilities

RECEIVING STREAM / ***FACILITY NAME*** / ***PERMITTED FLOW @ PIPE (MGD)***	***NPDES#*** / ***TYPE*** / ***COMMENT***
LINDSEY BRANCH JW ALUMINUM CO. PIPE #: 001 FLOW: M/R	SCG250105 MINOR INDUSTRIAL
POPLAR BRANCH THOMAS DANIELS 17A BORROW PIT PIPE #: 001 FLOW: M/R	SCG730005 MINOR INDUSTRIAL
LAUREL SWAMP STRAWBERRY MHP PIPE #: 001 FLOW: 0.015	SC0032859 MINOR DOMESTIC (KC MHP #3)

Nonpoint Source Management Program

Land Disposal Activities

Landfill Facilities

LANDFILL NAME / ***FACILITY TYPE***	***PERMIT #*** / ***STATUS***
SANTEE RIVER RUBBER CORP. INDUSTRIAL	082623-5201 --------

Mining Activities

MINING COMPANY / ***MINE NAME***	***PERMIT #*** / ***MINERAL***
ACRE MAKER, A PARTNERSHIP 17A MINE PIT	0743-15 SAND; SAND/CLAY

Water Quantity

WATER USER / ***STREAM***	***REGULATED CAPACITY (MGD)*** / ***PUMPING CAPACITY (MGD)***
CHARLESTON CPW FOSTER CREEK	125.0 150.0

Growth Potential

There is a moderate potential for growth in the form of scattered low density development, in this watershed containing a large portion of the Town of Goose Creek. Water and sewer service is available to most of the watershed. Fresh water is a vital necessity to the area's economy. The Back River and its tributaries are a major source of fresh water for the public water supply and many of the large industries located along the Cooper River. Another source is the interbasin transfer via a pipeline connecting the Edisto River to the Hanahan WTP.

Watershed Protection and Restoration

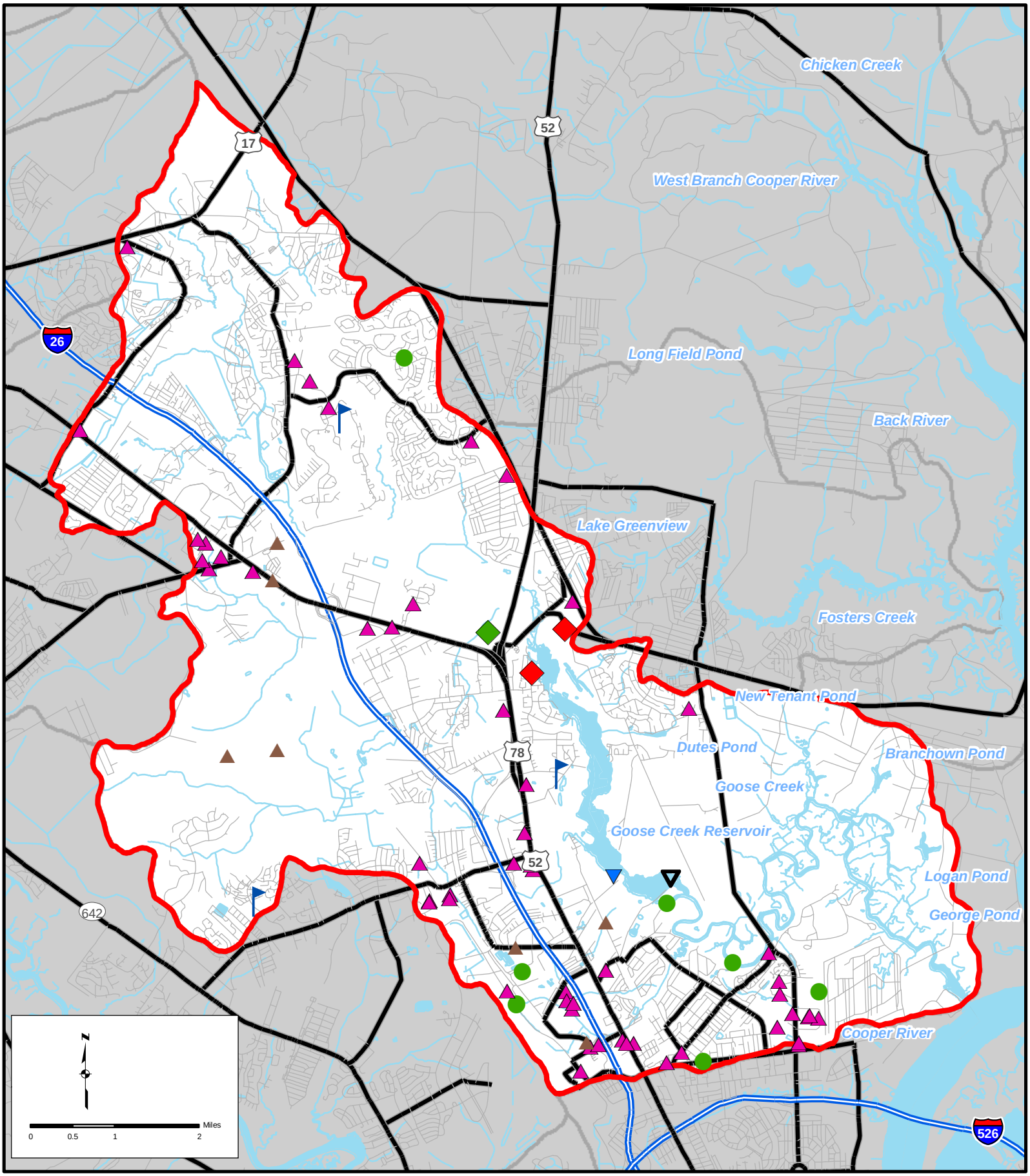
Total Maximum Daily Loads (TMDLs)

Two TMDLs addressing dissolved oxygen were developed by SCDHEC for the ***Charleston Harbor Estuary:*** one covering the Ashley River and the other covering the Charleston Harbor, the Cooper River, and the Wando River. The Harbor/Cooper River/Wando River portion of the system (consisting of the Tail Race Canal, West Branch Cooper River, East Branch Cooper River, Shipyard Creek, Town Creek, Back River, Goose Creek, Wando River and Charleston Harbor) is not considered to be impaired with respect to dissolved oxygen (with the exception of the Wando River monitoring site MD-115); however, available information indicates much of the system does not meet the applicable water quality standard for dissolved oxygen for significant periods of time and is considered water quality limited for the purposes of wasteload allocation (WLA) development. WLAs are an integral part of a TMDL, and although not always developed through the TMDL process, the Department and EPA have chosen to use the TMDL process to develop WLAs for the Charleston Harbor system (see following section). Results of a water quality model indicate the need for a 70% reduction in discharge of oxygen demanding substances to the overall system. A phased approach to achieving these reductions is proposed with an initial Phase I reduction of 60%. For more detailed information on TMDLs, please visit the SCDHEC's Bureau of Water homepage at http://www.scdhec.gov/water and click on "Watersheds and TMDLs" and then "TMDL Program".

Special Models

Charleston Harbor System TMDLs

The modeling efforts for Charleston Harbor and its tributaries have been completed and phased TMDLs for the Ashley and the Cooper systems have been issued by the Department and approved by EPA Region 4. Interim TMDL limits were included in NPDES permits for a number of dischargers while final TMDL limits were included for some dischargers who were already meeting the final limits. Permits included compliance schedules that allowed the opportunity for additional modeling work to be completed before compliance with final limits is required. A group of dischargers working through the local Councils of Government has initiated another modeling effort that is currently underway. If this effort is successfully completed within the allotted time, the existing TMDLs will be revised and, as appropriate, new limits incorporated into NPDES permits for discharges covered by the TMDL.



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JACOBS

Water Quality Management Plan Update

Basin
03050201-070

- Limited Access
- Highway/ Major Road
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- Fish Stations
- Golf Course
- Parks & Cultural Sites
- National Register Sites
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- Boat Ramps
- Landfills
- Industries

03050201-070

(Goose Creek)

General Description

Watershed 03050201-070 is located in Berkeley, Charleston, and Dorchester Counties and consists primarily of ***Goose Creek*** and its tributaries. The watershed occupies 38,766 acres of the Lower Coastal Plain region of South Carolina. The predominant soil types consist of an association of the Bohicket-Bladen-Wahee-Yonges series. The erodibility of the soil (K) averages 0.15 and the slope of the terrain averages 1%, with a range of 0-2%. Land use/land cover in the watershed includes: 41.7% urban land, 45.0% forested land, 4.5% nonforested wetland, 2.6% scrub/shrub land, 2.6% agricultural land, 2.1% forested wetland, 1.4% water, and 0.1% barren land.

Ancrum Swamp and Huckhole Swamp flow into Bluehouse Swamp (Ladson Branch, McChune Branch) to form the headwaters of Goose Creek, which is dammed into Goose Creek Reservoir and used for recreation and water supply. Goose Creek is classified FW from its headwaters to the Goose Creek Reservoir Dam, and SB downstream from the reservoir. Turkey Creek (SB) flows into Goose Creek downstream of the reservoir near the Town of Hanahan. Old Goose Creek drains into Goose Creek as does New Tenant Pond, Brown Pond, and Logan Pond before it flows into the Cooper River. The entire watershed is within the U.S. Naval Reserve. There are a total of 44.1 stream miles, 589.7 acres of lake waters, and 364.3 acres of estuarine areas in this watershed.

Surface Water Quality

Station #	Type	Class	Description
MD-114	P/W	FW	GOOSE CREEK AT U.S. 52 N CHARLESTON
RL-01008	RL01	FW	GOOSE CREEK RESERVOIR, 2.3 MI S OF GOOSE CREEK TOWN CENTER
ST-033/CL-050	W	FW	GOOSE CREEK RES. AT 2ND POWER LINES UPSTREAM OF BOAT RAMP
ST-032/CL-049	P/SPRP	FW	GOOSE CREEK RESERVOIR 100 M UPSTREAM OF DAM
MD-039	P/INT	SB	GOOSE CREEK AT S-08-136 BRIDGE

Goose Creek **-** There are two SCDHEC monitoring sites along Goose Creek. Aquatic life uses are not supported at the upstream site ***(MD-114)*** due to dissolved oxygen excursions, which are compounded by a significant decreasing trend in dissolved oxygen concentration. Significant decreasing trends in five-day biochemical oxygen demand, turbidity, and total nitrogen concentration suggest improving conditions for these parameters. There is a significant increasing trend in pH. 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.

Aquatic life uses are fully supported at the downstream site ***(MD-039)***, and significant decreasing trends in five-day biochemical oxygen demand and total nitrogen concentration suggest improving conditions for these parameters. There is a significant increasing trend in pH. Recreational uses are not 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.

Goose Creek Reservoir - There are three SCDHEC monitoring sites along Goose Creek Reservoir. Recreational uses are fully supported at all sites. Aquatic life uses are partially supported at the upstream site ***(RL-01008)*** due to dissolved oxygen excursions. At the midstream site ***(ST-033),*** aquatic life uses are not supported due to excursions in pH, total phosphorus, chlorophyll-*a*, and copper. At the furthest downstream site ***(ST-032),*** aquatic life uses are not supported due to excursions in pH, total phosphorus, and chlorophyll-*a*. A significant increasing trend in dissolved oxygen concentration suggests improving conditions for this parameter. There is a significant increasing trend in pH at this site. To abate aquatic plant growth in the reservoir, aquatic herbicides were applied from 1998-2005.
A fish consumption advisory has been issued by the Department for mercury and includes Goose Creek Reservoir within this watershed (see advisory p.69).

NPDES Program

Active NPDES Facilities

RECEIVING STREAM ***FACILITY NAME*** ***PERMITTED FLOW @ PIPE (MGD)***	***NPDES#*** ***TYPE*** ***COMMENT***
GOOSE CREEK CHARLESTON CPW/HANAHAN WTP PIPE #: 001 FLOW: M/R	SCG645043 MINOR DOMESTIC (SC0040266)

Nonpoint Source Management Program

Land Disposal Activities

Landfill Facilities

LANDFILL NAME ***FACILITY TYPE***	***PERMIT #*** ***STATUS***
M&S DEVELOPMENT CO. INDUSTRIAL	IWP-136 --------
G&S ROOFING PRODUCTS INDUSTRIAL	102434-1601 (IWP-046, IWP-162) ACTIVE
ROBERT O. COLLINS C/C LANDFILL CONSTRUCTION	102407-1201 (CWP-039) ---------
PEPPERHILL DEVELOPMENT C&D CONSTRUCTION	182441-1201 (182441-1601) ACTIVE
S.C. PUB. SERV. AUTH./CHARLESTON MUNICIPAL	DWP-004 CLOSED
WESTVACO/CHARLESTON CO. INDUSTRIAL	--------- CLOSED

Land Application Sites

LAND APPLICATION ***FACILITY NAME***	***PERMIT #*** ***YPE***

SPRAYFIELD	ND0073491
CHARLESTON CPW/HANAHAN WTP	DOMESTIC

Mining Activities

MINING COMPANY ***MINE NAME***	***PERMIT #*** ***MINERAL***
BANKS CONSTRUCTION COMPANY LAKEVIEW MINE	0488-19 SAND/CLAY
ROBERT O. COLLINS COMPANY, INC. SPRINGROVE MINES	0595-19 SAND/CLAY

Water Quantity

WATER USER ***STREAM***	***REGULATED CAPACITY (MGD)*** ***PUMPING CAPACITY (MGD)***
CITY OF CHARLESTON	10.0
GOOSE CREEK RESERVOIR	10.0

Growth Potential

The primary population growth areas in this watershed include the Town of Hanahan, North Charleston, and Berkeley County. In addition, the Charleston County Parks and Recreation Commission has purchased a large parcel of land above Goose Creek Reservoir for development as a county park. The interbasin transfer of fresh water via a pipeline connecting the Edisto River to the Hanahan WTP will help to provide for growth in this area.

Watershed Protection and Restoration

Total Maximum Daily Loads (TMDLs)

Two TMDLs addressing dissolved oxygen were developed by SCDHEC for the ***Charleston Harbor Estuary:*** one covering the Ashley River and the other covering the Charleston Harbor, the Cooper River, and the Wando River. The Harbor/Cooper River/Wando River portion of the system (consisting of the Tail Race Canal, West Branch Cooper River, East Branch Cooper River, Shipyard Creek, Town Creek, Back River, Goose Creek, Wando River and Charleston Harbor) is not considered to be impaired with respect to dissolved oxygen (with the exception of the Wando River monitoring site MD-115); however, available information indicates much of the system does not meet the applicable water quality standard for dissolved oxygen for significant periods of time and is considered water quality limited for the purposes of wasteload allocation (WLA) development. WLAs are an integral part of a TMDL, and although not always developed through the TMDL process, the Department and EPA have chosen to use the TMDL process to develop WLAs for the Charleston Harbor system (see following section). Results of a water quality model indicate the need for a 70% reduction in discharge of oxygen demanding substances to the overall system. A phased approach to achieving these reductions is proposed with an initial Phase I reduction of 60%. For more detailed information on TMDLs, please visit

the SCDHEC's Bureau of Water homepage at http://www.scdhec.gov/water and click on "Watersheds and TMDLs" and then "TMDL Program".

Special Models

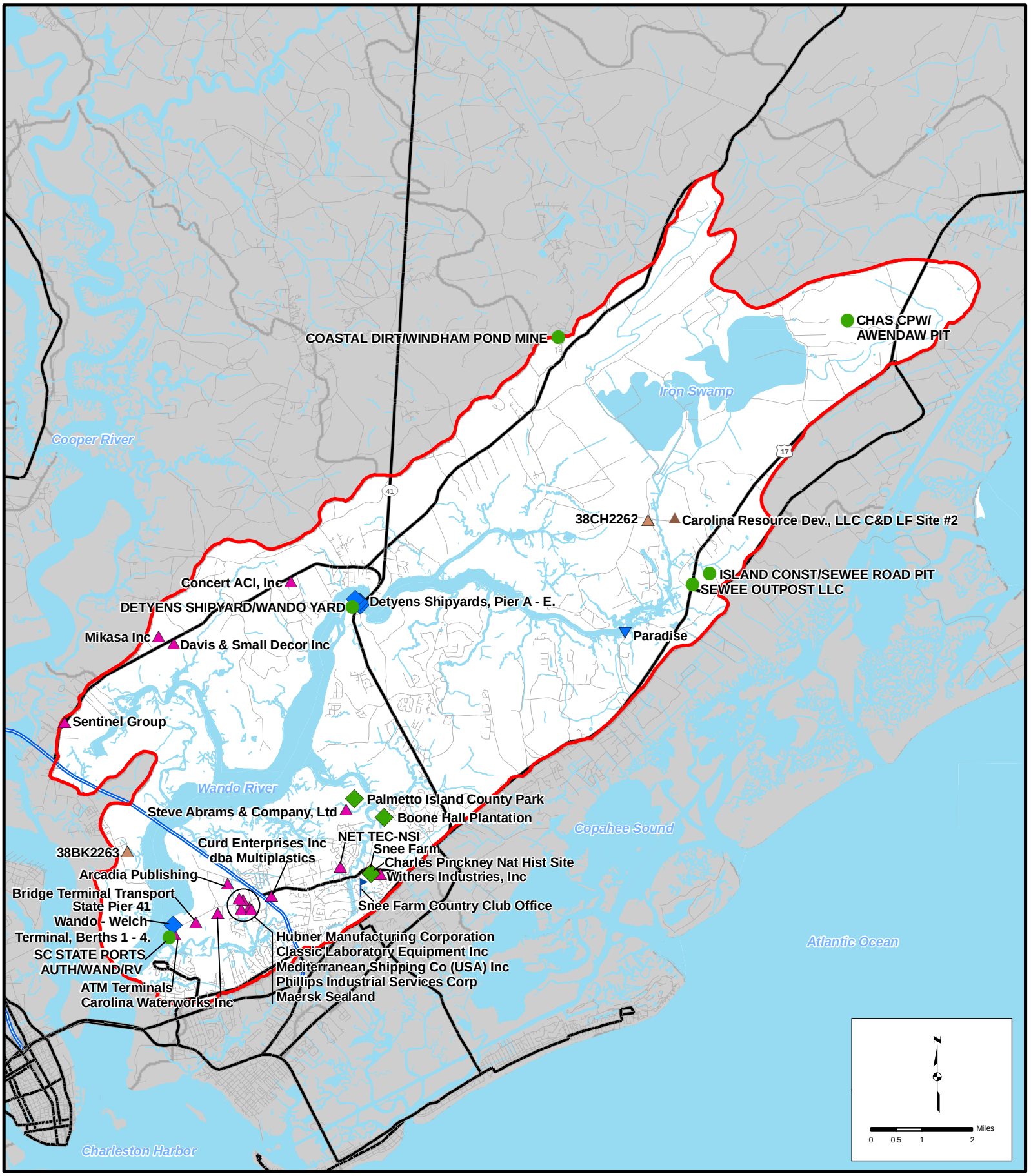
Charleston Harbor System TMDLs

The modeling efforts for Charleston Harbor and its tributaries have been completed and phased TMDLs for the Ashley and the Cooper systems have been issued by the Department and approved by EPA Region 4. Interim TMDL limits were included in NPDES permits for a number of dischargers while final TMDL limits were included for some dischargers who were already meeting the final limits. Permits included compliance schedules that allowed the opportunity for additional modeling work to be completed before compliance with final limits is required. A group of dischargers working through the local Councils of Government has initiated another modeling effort that is currently underway. If this effort is successfully completed within the allotted time, the existing TMDLs will be revised and, as appropriate, new limits incorporated into NPDES permits for discharges covered by the TMDL.

Special Projects

Goose Creek Reservoir Restoration

Goose Creek Reservoir is located in Berkeley County, north of the City of Charleston. Nuisance aquatic plant growth and fish kills, as a result of low dissolved oxygen, have occurred. Various activities have focused on eliminating the excess vegetation. The S.C. Department of Natural Resources, in implementing the recommendations of the S.C. Aquatic Plant Management Council, has used chemical treatments and sterile grass carp with positive results. SCDHEC's OCRM, in cooperation with the local Soil and Water Conservation District, have used §319 funds to remove other masses of vegetation and open up more of the reservoir for enhanced circulation and re-aeration of the water surface. As of 2004, the Goose Creek Reservoir meets standards for dissolved oxygen at all monitoring locations.



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Water Quality Management Plan Update

Basin
03050201-080

- Limited Access
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03050201-080

(Wando River)

General Description

Watershed 03050201-080 extends through Berkeley and Charleston Counties and consists primarily of the ***Wando River*** and its tributaries. The watershed occupies 74,017 acres of the Coastal Zone region of South Carolina. The predominant soil types consist of an association of the Bohicket-Chipley-Yonges-Kiawah-Chisolm series. The erodibility of the soil (K) averages 0.12 and the slope of the terrain averages 1%, with a range of 0-6%. Land use/land cover in the watershed includes: 64.3% forested land, 13.9% nonforested wetland, 8.9% water, 5.5% urban land, 4.2% forested wetland, 2.3% scrub/shrub land, 0.8% agricultural land, and 0.1% barren land.

The Wando River accepts drainage from the Iron Swamp (Mayrants Reserve), Alston Creek, Darrell Creek, Deep Creek, Toomer Creek, and Wagner Creek before receiving Guerin Creek drainage (Lachicotte Creek, Old House Creek, Fogarty Creek) near Cat Island. The Guerin Creek drainage flows through the Francis Marion National Forest. Johnfield Creek enters the river downstream followed by Horlbeck Creek (Boone Hall Creek), Fosters Creek, Beresford Creek (Martin Creek, Sanders Creek, Hopewell Creek), Ralston Creek, Rathall Creek and Bermuda Creek. Beresford Creek is connected to Clouter Creek in watershed 03050201-050. From the headwaters to a point 2.5 miles north of its confluence with the Cooper River, the Wando River is Classified SFH; downstream of this point to its confluence with the Cooper River, the Wando River is classified SA. Hobcaw Creek (Lake Woodlawn) and Molasses Creek enter the Wando River at the base of the watershed (SFH) near the Town of Mount Pleasant. The Wando River then drains into the Cooper River, which flows into the Charleston Harbor. There are a total of 20.3 stream miles, 70.9 acres of lake waters, and 5,509.1 acres of estuarine areas in this watershed.

Surface Water Quality

Station #	Type	Class	Description
MD-115	P/INT	SFH	WANDO RIVER AT S.C. 41
RO-02014	RO02	SFH	WANDO RIVER, 2.0 MI W OF PHILIP
RO-01162	RO01	SFH	WANDO RIVER, 6.25 MI E OF NORTH CHARLESTON
MD-264	INT	SFH	WANDO RIVER AT I-526 MARK CLARK EXPRESSWAY
MD-198	P/W	SFH	WANDO RIVER BETWEEN RATHALL & HOBCAW CREEKS

Wando River **-** There are five SCDHEC monitoring sites along the Wando River and recreational uses are fully supported at all sites. At the furthest upstream site ***(MD-115)***, aquatic life uses are partially supported due to occurrences of copper in excess of the aquatic life acute criterion. There is also a significant increasing trend in turbidity. Significant decreasing trends in five-day biochemical oxygen demand and total nitrogen concentration suggest improving conditions for these parameters. At the midstream sites ***(RO-02014, RO-01162, MD-264)***, aquatic life uses are fully supported.

Aquatic life uses are also fully supported at the furthest downstream site ***(MD-198)***, and a significant increasing trend in dissolved oxygen concentration and significant decreasing trends in five-

day biochemical oxygen demand, total nitrogen concentration, and fecal coliform bacteria concentration suggest improving conditions for these parameters. *Fish tissue samples from the lower Wando River indicate no advisories are needed at this time.*

Shellfish Monitoring Stations

Station #	Description
09B-01	WANDO RIVER AT NOWELL CREEK
09B-02	WANDO RIVER AT HORLBECK CREEK
09B-03	WANDO RIVER AT SC HWY 41 BRIDGE
09B-04	WANDO RIVER AT DEEP CREEK
09B-05	WANDO RIVER OPPOSITE BIG PARADISE ISLAND
09B-06	WANDO RIVER AT PARADISE BOAT LANDING
09B-07	BOONE HALL CREEK OPPOSITE COUNTY RECREATION AREA
09B-08	WANDO RIVER AT MARKER #29
09B-09	DEEP CREEK – 1 MI FORM CONFLUENCE WITH WANDO RIVER
09B-10	WANDO RIVER AT ALSTON CREEK CONFLUENCE
09B-11	WANDO RIVER AT GUERIN CREEK
09B-12	GUERIN CREEK AT OLD HOUSE CREEK
09B-14	NORTH EDGE OF SC PORT AUTHORITY/WANDO TERMINAL
09B-15	NEW BRIDGE- ROUTE I-526
09B-16	CONFLUENCE OF MARTIN CREEK AND NOWELL CREEK
09B-17	WANDO RIVER MIDWAY BETWEEN STATIONS 3 AND 11 (AT OLD DRY DOCK)
09B-18	RAT HALL CREEK AT CONFLUENCE WITH WANDO RIVER
09B-19	FOSTER CREEK AT CONFLUENCE WITH WANDO RIVER

NPDES Program

Active NPDES Facilities

RECEIVING STREAM *FACILITY NAME* *PERMITTED FLOW @ PIPE (MGD)*	*NPDES#* *TYPE* *COMMENT*
WANDO RIVER DETYENS SHIPYARDS/WANDO YARD PIPE #: 001 FLOW: M/R	SC0033022 MINOR INDUSTRIAL

Nonpoint Source Management Program

Land Disposal Activities

Landfill Facilities

LANDFILL NAME *FACILITY TYPE*	*PERMIT #* *STATUS*
MT PLEASANT TRANSFER STATION MUNICIPAL	101002-6001 --------

Mining Activities

MINING COMPANY *MINE NAME*	*PERMIT #* *MINERAL*
DIRT CHEAP, INC. KIWI MINE	1165-19 SAND

Growth Potential

There is a high potential for growth projected for this watershed, which contains portions of the Towns of Mt. Pleasant and Awendaw, and the City of Charleston. Some of the major development areas include: Dunes West, Liberty, Rivertowne, Brickyard, Long Point, Belle Hall, and Daniel Island. Water and sewer services are available in all potential growth areas.

Watershed Protection and Restoration

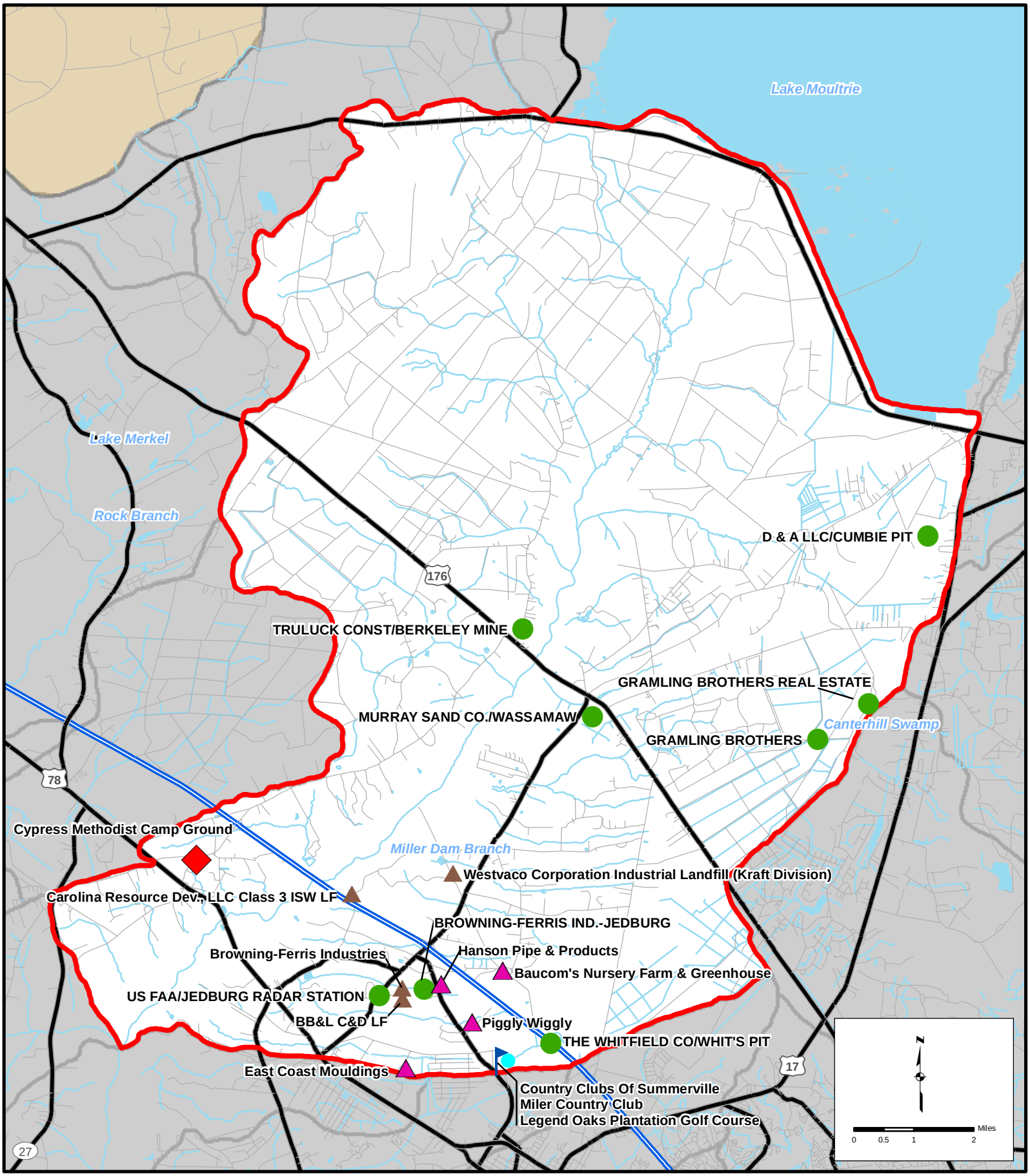
Total Maximum Daily Loads (TMDLs)

Two TMDLs addressing dissolved oxygen were developed by SCDHEC for the ***Charleston Harbor Estuary:*** one covering the Ashley River and the other covering the Charleston Harbor, the Cooper River, and the Wando River. The Harbor/Cooper River/Wando River portion of the system (consisting of the Tail Race Canal, West Branch Cooper River, East Branch Cooper River, Shipyard Creek, Town Creek, Back River, Goose Creek, Wando River and Charleston Harbor) is not considered to be impaired with respect to dissolved oxygen (with the exception of the Wando River monitoring site MD-115); however, available information indicates much of the system does not meet the applicable water quality standard for dissolved oxygen for significant periods of time and is considered water quality limited for the purposes of wasteload allocation (WLA) development. WLAs are an integral part of a TMDL, and although not always developed through the TMDL process, the Department and EPA have chosen to use the TMDL process to develop WLAs for the Charleston Harbor system (see following section). Results of a water quality model indicate the need for a 70% reduction in discharge of oxygen demanding substances to the overall system. A phased approach to achieving these reductions is proposed with an initial Phase I reduction of 60%. For more detailed information on TMDLs, please visit the SCDHEC's Bureau of Water homepage at http://www.scdhec.gov/water and click on "Watersheds and TMDLs" and then "TMDL Program".

Special Models

Charleston Harbor System TMDLs

The modeling efforts for Charleston Harbor and its tributaries have been completed and phased TMDLs for the Ashley and the Cooper systems have been issued by the Department and approved by EPA Region 4. Interim TMDL limits were included in NPDES permits for a number of dischargers while final TMDL limits were included for some dischargers who were already meeting the final limits. Permits included compliance schedules that allowed the opportunity for additional modeling work to be completed before compliance with final limits is required. A group of dischargers working through the local Councils of Government has initiated another modeling effort that is currently underway. If this effort is successfully completed within the allotted time, the existing TMDLs will be revised and, as appropriate, new limits incorporated into NPDES permits for discharges covered by the TMDL.



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Water Quality Management Plan Update

Basin
03050202-010

Legend

- Limited Access
- Highway/ Major Road
- Minor Road
- Water Features
- Other Counties
- Watershed Boundary
- Streams
- Golf Course
- National Register Sites
- NPDES Permits
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- Industries

03050202-010

(Cypress Swamp)

General Description

Watershed 03050202-010 is located in Berkeley and Dorchester Counties and consists primarily of ***Cypress Swamp*** and its tributaries from its origin to Captains Branch. The watershed occupies 100,364 acres of the Lower Coastal Plain region of South Carolina. The predominant soil types consist of an association of the Rains-Hobcaw-Lynchburg-Mouzon series. The erodibility of the soil (K) averages 0.20 and slope of the terrain averages 1%, with a range of 0-2%. Land use/land cover in the watershed includes: 76.6% forested land, 9.3% forested wetland, 6.8% agricultural land, 5.5% scrub/shrub land, 0.8% urban land, 0.5% barren land, 0.4% water, and 0.1% nonforested wetland.

Williams Branch flows into Big Run and is joined by Black Creek to form Wassamassaw Swamp, which accepts drainage from Mill Branch, Acton Creek, and Simmons Bay. Partridge Creek (Rudd Branch, Mill Branch) joins Wassamassaw Swamp to form the headwaters of the Cypress Swamp. The Cypress Swamp receives drainage from Sandy Run (Smith Branch), Miller Dam Branch, Felder Branch, Dawson Branch, Stanley Branch (Kelly Branch), and Green Bay Branch near the Town of Ridgeville. There are a total of 176.2 stream miles and 82.9 acres of lake waters in this watershed, all classified FW.

Surface Water Quality

Station #	Type	Class	Description
CSTL-063	P/W	FW	WASSAMASSAW SWAMP AT U.S. 176
CSTL-078	W/INT	FW	CYPRESS SWAMP AT U.S. 78

Wassamassaw Swamp (CSTL-063) - Aquatic life uses are not supported due to occurrences of copper in excess of the aquatic life acute criterion. This is a blackwater system, characterized by naturally low dissolved oxygen conditions. Although dissolved oxygen excursions occurred, they were typical of values seen in blackwater systems and were considered natural, not standards violations. There is a significant increasing trend in pH. Significant decreasing trends in five-day biochemical oxygen demand, turbidity, and total nitrogen concentration suggest improving conditions for these parameters. Recreational uses are partially supported due to fecal coliform bacteria excursions, which are compounded by a significant increasing trend in fecal coliform bacteria concentration.

Cypress Swamp (CSTL-078) - Aquatic life uses are not supported due to occurrences of zinc in excess of the aquatic life acute criterion. This is a blackwater system, characterized by naturally low dissolved oxygen conditions. Although dissolved oxygen excursions occurred, they were typical of values seen in blackwater systems and were considered natural, not standards violations. Recreational uses are partially supported due to fecal coliform bacteria excursions.

Groundwater Quality

Well #	Class	Aquifer	Location
AMB-096	GB	TERTIARY LIMESTONE	LEIBER CORRECTIONAL INST.

NPDES Program

Active NPDES Facilities

RECEIVING STREAM *FACILITY NAME* *PERMITTED FLOW @ PIPE (MGD)*	*NPDES#* *TYPE* *COMMENT*
MILL BRANCH D&A PARTNERSHIP/CUMBIE PIT PIPE #: 001 FLOW: M/R	SCG730115 MINOR INDUSTRIAL

Nonpoint Source Management Program

Land Disposal Activities

Landfill Facilities

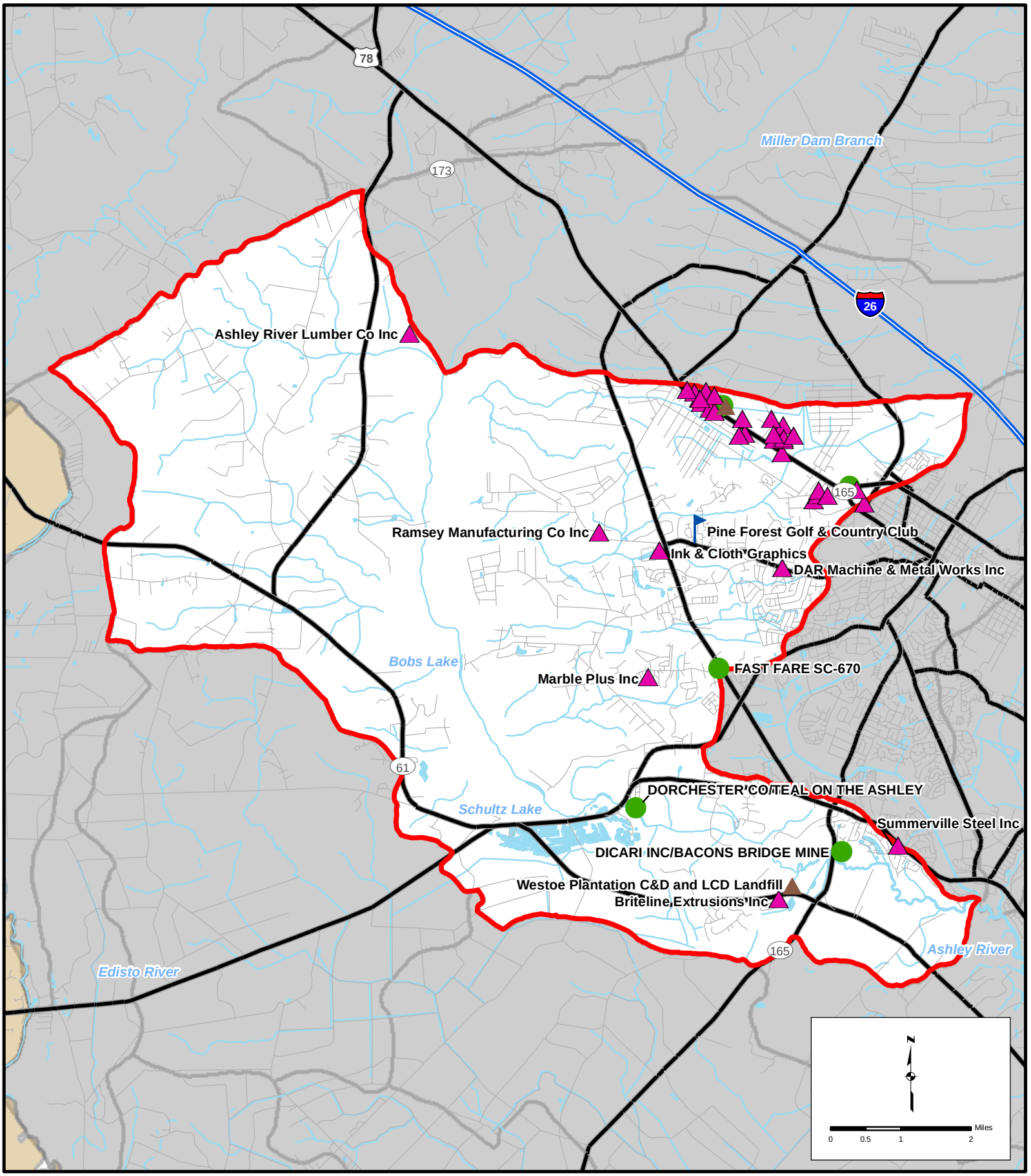
LANDFILL NAME *FACILITY TYPE*	*PERMIT #* *STATUS*
WESTVACO INDUSTRIAL	082430-1601 (IWP-201) ACTIVE
BFI MUNICIPAL	DWP-129, DWP-163 CLOSED
TRIDENT NORTH LANDFILL (BFI) INDUSTRIAL	IWP-163 CLOSED

Mining Activities

MINING COMPANY *MINE NAME*	*PERMIT #* *MINERAL*
ACD, A PARTNERSHIP DANGERFIELD MINE (17A)	0625-15 SAND; SAND/CLAY
WHITFIELD CO. WHITS PIT	0483-15 SAND
TRULUCK INDUSTRIES, INC. BERKELEY MINE	0935-15 SAND

Growth Potential

Low density population growth is projected to occur in this watershed, which contains a portion of the Town of Ridgeville.



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Water Quality Management Plan Update

Basin
03050202-020

Legend

- Limited Access
- Highway/ Major Road
- Minor Road
- Water Features
- Other Counties
- Watershed Boundary
- Streams
- Golf Course
- National Register Sites
- NPDES Permits
- Landfills
- Industries

03050202-020

(Cypress Swamp/Ashley River)

General Description

Watershed 03050202-020 is located in Dorchester and Berkeley Counties and consists primarily of the ***Cypress Swamp*** and the ***Ashley River*** and their tributaries from Captains Branch to Dorchester Creek. The watershed occupies 48,172 acres of the Lower Coastal Plain region of South Carolina. The predominant soil types consist of an association of the Daleville-Jedburg-Meggett-Brookman series. The erodibility of the soil (K) averages 0.28 and the slope of the terrain averages 1%, with a range of 0-2%. Land use/land cover in the watershed includes: 65.9% forested land, 10.5% urban land, 10.4% forested wetland, 8.5% agricultural land, 2.7% scrub/shrub land, 1.4% nonforested wetland, 0.3% water, and 0.3% barren land.

Cypress Swamp accepts drainage from Captains Creek (McKeown Branch), Platt Branch, Rumphs Hill Creek (Negro Branch), Tina Branch, and Hurricane Branch. The confluence of Cypress Swamp and Hurricane Branch forms the headwaters of the Ashley River near the Town of Summerville. The river then flows through Bobs Lake and Schultz Lake to Bacon Bridge and drains into the lower Ashley River. The river is classified FW upstream of Bacon Bridge, and classified SA downstream of the bridge. There are a total of 83.5 stream miles, 237.9 acres of lake waters, and 38.9 acres of estuarine areas in this watershed. Givhans Ferry State Park is located in the headwaters of this watershed.

Surface Water Quality

Station #	Type	Class	Description
CSTL-102	P/INT	FW/SA	ASHLEY RIVER AT SC 165 4.8 MI SSW OF SUMMERVILLE

Ashley River (CSTL-102) - Aquatic life uses are not supported for both fresh and saltwater classifications due to dissolved oxygen excursions. A significant increasing trend in pH occurred with both classifications. Significant decreasing trends in five-day biochemical oxygen demand and total nitrogen concentration occurred with both classifications, suggesting improving conditions for these parameters. Recreational uses are partially supported for both classifications due to fecal coliform bacteria excursions, which are compounded by a significant increasing trend in fecal coliform bacteria concentration.

A fish consumption advisory has been issued by the Department for mercury and includes portions of the Ashley River within this watershed (see advisory p.69).

NPDES Program

Active NPDES Facilities

RECEIVING STREAM *FACILITY NAME* *PERMITTED FLOW @ PIPE (MGD)*	*NPDES#* *TYPE* *COMMENT*
ASHLEY RIVER CWS/TEAL-ON-THE-ASHLEY PIPE #: 001 FLOW: 0.03	SC0030350 MINOR DOMESTIC
PLATT BRANCH LINQ INDUSTRIAL FABRICS, INC. PIPE #: 001 FLOW: M/R	SC0003905 MINOR INDUSTRIAL

Nonpoint Source Management Program

Land Disposal Activities

Landfill Facilities

LANDFILL NAME *FACILITY TYPE*	*PERMIT #* *STATUS*
AMERIACAN RESOURCES INC. --------	182415-5201 --------
WESTCO PLANTATION INDUSTRIAL	182437-1201 (IWP-138, CWP-036)) ACTIVE

Mining Activities

MINING COMPANY *MINE NAME*	*PERMIT #* *MINERAL*
MURRAY MINES, INC. MURRAY MINE	0044-35 SAND
JENNER TRUCKING & CONSTRUCTION, INC. JENNER RECYCLING	1355-35 CLAY
PALMETTO SAND CO. THE PONDS	1150-35 SAND

Growth Potential

There is a high potential for growth in this watershed, which contains a portion of the Town of Summerville, and water and sewer services are available to these growth areas.

Watershed Protection and Restoration

Total Maximum Daily Loads (TMDLs)

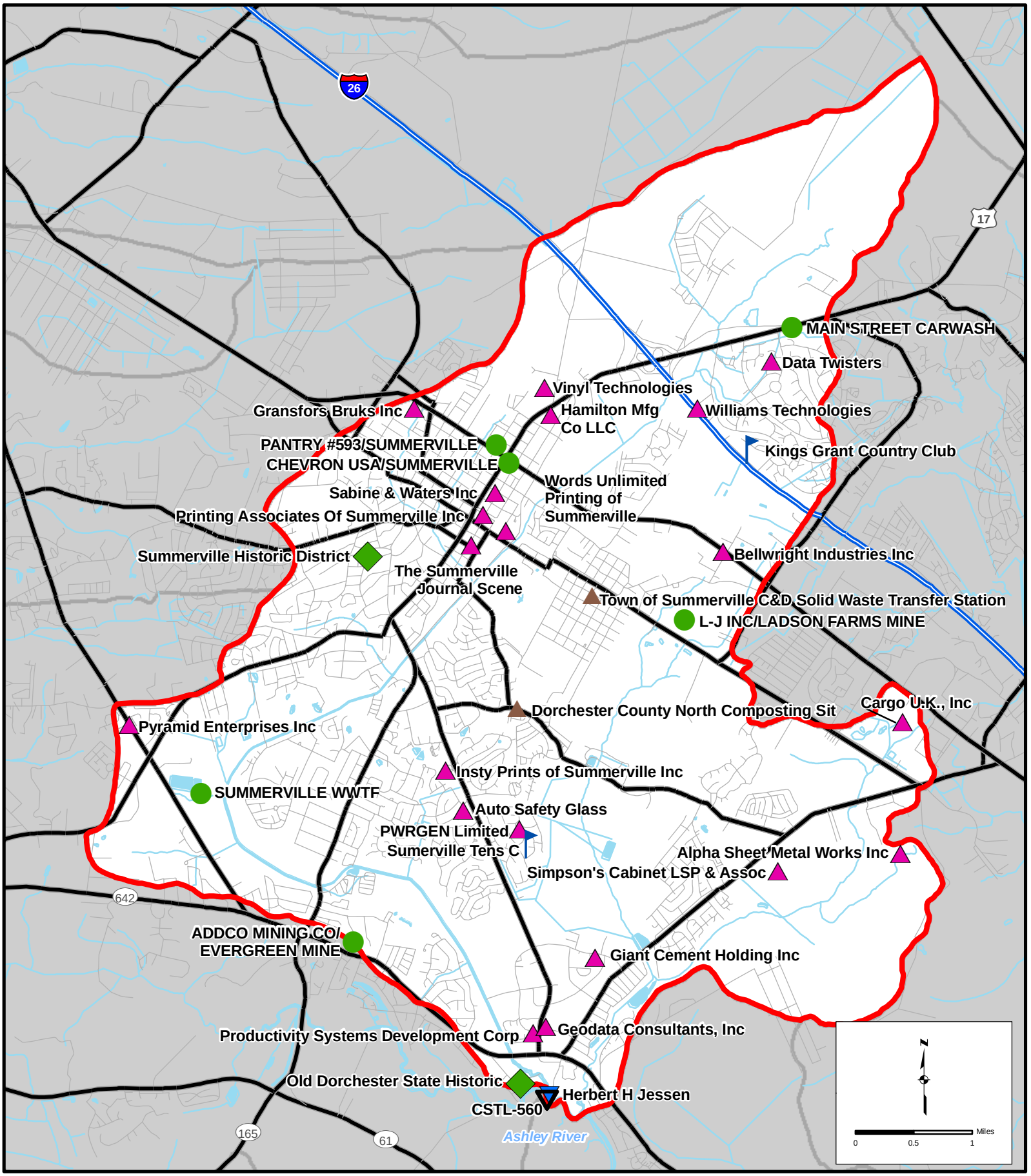
Two TMDLs addressing dissolved oxygen were developed by SCDHEC for the ***Charleston***

Harbor Estuary: one covering the ***Ashley River*** and the other covering the Charleston Harbor, the Cooper River, and the Wando River. The Ashley River portion of the system contains watersheds 03050202-020 and 03050202-040. Dissolved oxygen violations at two stations along the Ashley River (CSTL-102 and MD-049) are considered natural due to conditions exacerbated by point and nonpoint sources of pollution. A water quality model was developed to predict the impact of point source dischargers on dissolved oxygen concentration in the system. Results indicate the need for an overall 36% reduction in discharge of ultimate oxygen demand (UOD) to the Ashley River. For more detailed information on TMDLs, please visit the SCDHEC's Bureau of Water homepage at http://www.scdhec.gov/water and click on "Watersheds and TMDLs" and then "TMDL Program".

Special Models

Charleston Harbor System TMDLs

The modeling efforts for Charleston Harbor and its tributaries have been completed and phased TMDLs for the Ashley and the Cooper systems have been issued by the Department and approved by EPA Region 4. Interim TMDL limits were included in NPDES permits for a number of dischargers while final TMDL limits were included for some dischargers who were already meeting the final limits. Permits included compliance schedules that allowed the opportunity for additional modeling work to be completed before compliance with final limits is required. A group of dischargers working through the local Councils of Government has initiated another modeling effort that is currently underway. If this effort is successfully completed within the allotted time, the existing TMDLs will be revised and, as appropriate, new limits incorporated into NPDES permits for discharges covered by the TMDL.



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JACOBS

Water Quality Management Plan Update

Basin
03050202-030

Legend

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- Other Counties
- Watershed Boundary
- Streams
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- Fish Stations
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- NPDES Permits
- Landfills
- Industries

03050202-030

(Dorchester Creek/Eagle Creek)

General Description

Watershed 03050202-030 is located in Berkeley, Charleston, and Dorchester Counties and consists primarily of ***Dorchester Creek and Eagle Creek*** and their tributaries. The watershed occupies 21,785 acres of the Lower Coastal Plain region of South Carolina. The predominant soil types consist of an association of the Yauhannah-Yemassee-Meggett-Brookman series. The erodibility of the soil (K) averages 0.15 and the slope of the terrain averages 1%, with a range of 0-6%. Land use/land cover in the watershed includes: 47.7% forested land, 44.6% urban land, 3.2% agricultural land, 2.9% scrub/shrub land, 1.2% forested wetland, 0.2% barren land, 0.1% nonforested wetland, and 0.1% water.

Sawmill Branch (Limehouse Branch, Stroberfield Branch) flows past the Town of Summerville and is joined by Rose Creek to form Dorchester Creek, which flows into the Ashley River. Sawmill Branch is classified FW, and Dorchester Creek takes on the classification of the Ashley River, which is SA. Limehouse Branch is connected to Ancrum Swamp in watershed 03050201-070. Eagle Creek (SB) accepts drainage from Chandler Bridge Creek, Spencer Branch, and Federwitz Branch before draining into the Ashley River. There are a total of 27.2 stream miles, 36.4 acres of lake waters, and 105.6 acres of estuarine areas in this watershed.

Surface Water Quality

Station #	Type	Class	Description
CSTL-043	S/W	FW	SAWMILL BRANCH AT SC 78 E OF SUMMERVILLE
CSTL-013	P/INT	SA	DORCHESTER CREEK AT SC 165
CSTL-099	P/W	SB	EAGLE CREEK AT SC 642 5 MI SSE OF SUMMERVILLE

Sawmill Branch (CSTL-043) **-** Aquatic life uses are not supported due to dissolved oxygen excursions. There is a significant increasing trend in pH. A significant decreasing trend in five-day biochemical oxygen demand suggests improving conditions for this parameter. Recreational uses are not supported due to fecal coliform bacteria excursions.

Dorchester Creek (CSTL-013) **-** Aquatic life uses are partially supported due to dissolved oxygen excursions, which are compounded by a significant decreasing trend in dissolved oxygen concentration. Significant decreasing trends in five-day biochemical oxygen demand, turbidity, total phosphorus concentration, and total nitrogen concentration suggest improving conditions for these parameters. Recreational uses are not supported due to fecal coliform bacteria excursions.

Eagle Creek **(CSTL-099) -** Aquatic life uses are not supported due to turbidity excursions. Significant decreasing trends in five-day biochemical oxygen demand and total nitrogen concentration suggest improving conditions for these parameters. Recreational uses are not supported due to fecal coliform bacteria excursions.

Groundwater Quality

Well #	Class	Aquifer	Location
AMB-022	GB	BLACK CREEK/MIDDENDORF	SUMMERVILLE NO.5

Nonpoint Source Management Program

Land Disposal Activities

Landfill Facilities

LANDFILL NAME / *FACILITY TYPE*	*PERMIT #* / *STATUS*
TOWN OF SUMMERVILLE MUNICIPAL	181002-6001 ---

Mining Activities

MINING COMPANY / *MINE NAME*	*PERMIT #* / *MINERAL*
L.J., INC. SHELLMORE FARMS MINE	0644-35 SAND/CLAY
ADDCO MINING CO. EVERGREEN MINE	0252-35 SAND

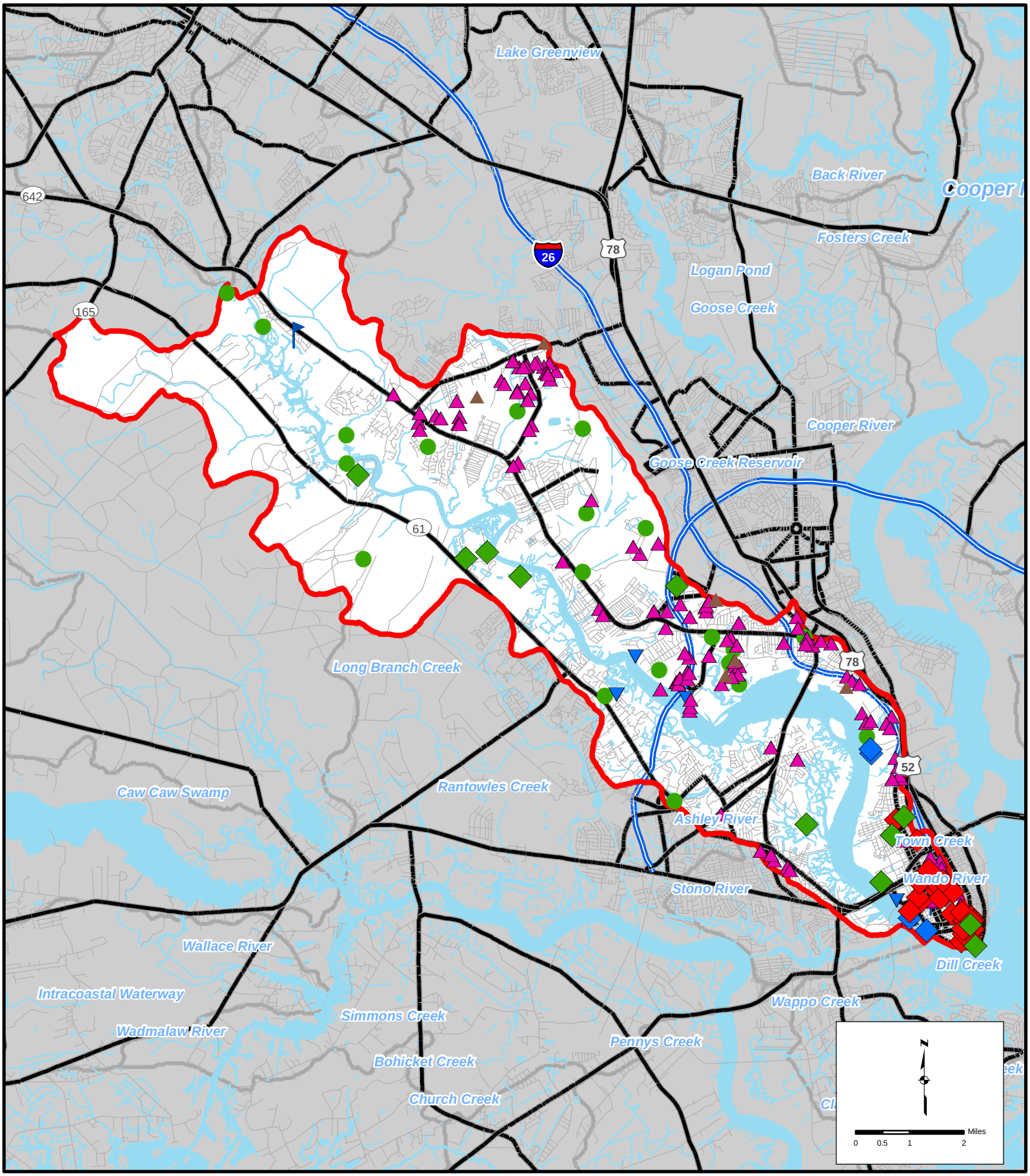
Growth Potential

There is a high potential for growth in this watershed, which contains portions of the Towns of Summerville and Ladson and the City of North Charleston. Water and sewer services are available in these growth areas.

Watershed Protection and Restoration

Total Maximum Daily Loads (TMDLs)

A TMDL was developed by SCDHEC and approved by EPA for ***Sawmill Branch*** water quality monitoring site CSTL-043 and for ***Dorchester Creek*** site CSTL-013 to determine the maximum amount of fecal coliform bacteria it can receive from nonpoint sources and still meet water quality standards. Most of Sawmill Branch and Dorchester Creek have been straightened and channelized. This separates them from their flood plains, removes large woody debris, and eliminates most shade. The primary sources of fecal coliform to the streams were determined to be runoff from urbanized land in the watershed. The TMDL states that a 96% reduction in fecal coliform loading from urban sources for Sawmill Branch and a 93% reduction for Dorchester Creek is necessary for the streams to meet the recreational use standard. For more detailed information on TMDLs, please visit the SCDHEC's Bureau of Water homepage at http://www.scdhec.gov/water and click on "Watersheds and TMDLs" and then "TMDL Program".



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Water Quality Management Plan Update

Basin
03050202-040

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- Industries

03050202-040

(Ashley River)

General Description

Watershed 03050202-040 is located in Dorchester and Charleston Counties and consists primarily of the ***Ashley River*** and its tributaries from Dorchester Creek to the Charleston Harbor. The watershed occupies 44,764 acres of the Lower Coastal Plain and Coastal Zone regions of South Carolina. The predominant soil types consist of an association of the Bohicket-Udorthents-Udipsamments-Yonges series. The erodibility of the soil (K) averages 0.20 and the slope of the terrain averages 1%, with a range of 0-2%. Land use/land cover in the watershed includes: 45.0% urban land, 32.9% forested land, 13.4% nonforested wetland, 6.2% water, 1.3% scrub/shrub land, 0.7% forested wetland, and 0.5% agricultural land.

This segment of the Ashley River originates at Bacon Bridge and accepts drainage from the Dorchester Creek watershed. The river then flows past the Old Dorchester State Park and Middleton Gardens to receive drainage from Coosaw Creek, Olive Branch, and Sawpit Creek. Popperdam Creek enters the river near Magnolia Gardens, the Charleston U.S. Air Force Base, and the Municipal Airport. Further downstream, MacBeth Creek enters the river followed by Keivling Creek and Church Creek. The Ashley River is classified SA from Bacon Bridge to Church Creek, where it changes from SA to SA* (DO not less than 4 mg/l) and remains SA* to the entrance of Orangegrove Creek (Oldtown Creek). Between Church Creek and Orangegrove Creek, the Ashley River receives drainage from Bulls Creek (SA*), Brickyard Creek (SB), and Duck Island Canal (SA*). Downstream of Orangegrove Creek, the Ashley River reverts its classification to SA and drains into the Charleston Harbor and the Atlantic Ocean. In addition to the Old Dorchester State Park and the historic gardens and plantations, another natural resource in the watershed is the historic Charles Towne Landing State Park on the Ashley River near Bulls Creek. There are 237.9 acres of lake waters and 3,017.2 acres of estuarine areas in this watershed.

Surface Water Quality

Station #	Type	Class	Description
MD-049	P/SPRP	SA	ASHLEY RIVER AT MAGNOLIA GARDENS
MD-246	P/W	SA*	CHURCH CREEK MOUTH
MD-135	S/W	SA*	ASHLEY RIVER AT S.C. 7 (NORTH BRIDGE)
MD-052	P/INT	SA	ASHLEY RIVER AT SAL RR BRIDGE

Ashley River – There are three SCDHEC monitoring sites along this reach of the Ashley River. Aquatic life uses are not supported at the upstream site ***(MD-049)*** due to dissolved oxygen, turbidity, copper, and nickel excursions. Significant decreasing trends in five-day biochemical oxygen demand and total nitrogen concentration suggest improving conditions for these parameters. Recreational uses are not supported due to fecal coliform bacteria excursions. Aquatic life and recreational uses are fully supported at the midstream site ***(MD-135)***, and a significant decreasing trend in five-day biochemical oxygen demand and a significant increasing trend in dissolved oxygen concentration suggest improving conditions for these parameters. At the furthest downstream site ***(MD-052)***, aquatic life uses are fully

supported. A significant increasing trend in dissolved oxygen concentration and significant decreasing trends in five-day biochemical oxygen demand and total nitrogen concentration suggest improving conditions for these parameters. There is a significant decreasing trend in pH. Recreational uses are fully supported at this site and a significant decreasing trend in fecal coliform bacteria concentration suggests improving conditions for this parameter.

***Church Creek (MD-246)* -** Aquatic life uses are fully supported. A significant increasing trend in dissolved oxygen concentration and significant decreasing trends in five-day biochemical oxygen demand, turbidity, and total nitrogen concentration suggest improving conditions for these parameters. There is a significant increasing trend in pH. Recreational uses are partially supported; however, a significant decreasing trend in fecal coliform bacteria concentration suggests improving conditions for this parameter.

***Charles Towne Landing State Park Pond* -** The pond has been treated annually from 1989-2001, and 2004 with aquatic herbicides in an attempt to control the growth of aquatic macrophytes that have impaired bank fishing and boating access. *Tilapia* were introduced in 1991, at a stocking rate of 200 fish/vegetated acre for a total of 1000 fish. The fish were restocked annually at the same rate and numbers from 1992 to1996.

A fish consumption advisory has been issued by the Department for mercury and includes portions of the Ashley River within this watershed (see advisory p.69). Fish tissue samples from the lower Ashley River (downstream of US 17) indicate no advisories are needed at this time.

NPDES Program

Active NPDES Facilities

RECEIVING STREAM ***FACILITY NAME*** ***PERMITTED FLOW @ PIPE (MGD)***	***NPDES#*** ***TYPE*** ***COMMENT***
ASHLEY RIVER G&S ROOFING PRODUCTS PIPE #: 001-003 FLOW: M/R	SC0002771 MINOR INDUSTRIAL
ASHLEY RIVER KINGS GRANT ON THE ASHLEY PIPE #: 001 FLOW: 0.238	SC0021911 MINOR DOMESTIC
ASHLEY RIVER TOWN OF SUMMERVILLE/WWTP PIPE #: 001 FLOW: 10.0	SC0037541 MAJOR DOMESTIC
ASHLEY RIVER MIDDLETON INN PIPE #: 001 FLOW: 0.014	SC0039063 MINOR DOMESTIC
BRICKYARD CREEK G&S ROOFING PRODUCTS	SC0002771 MINOR INDUSTRIAL

PIPE #: 003 FLOW: M/R

COOSAW CREEK	SC0038822
DORCHESTER COUNTY/LOWER DORCHESTER PLT	MAJOR DOMESTIC
PIPE #: 001 FLOW: 4.0	

Nonpoint Source Management Program

Mining Activities

MINING COMPANY ***MINE NAME***	***PERMIT #*** ***MINERAL***
MCDIRT LLC.	1249-35
PALMETTO LAKE	SAND

Land Disposal Activities

Landfill Facilities

LANDFILL NAME ***FACILITY TYPE***	***PERMIT #*** ***STATUS***
MOORE DRUMS	--------
INDUSTRIAL	--------
CHARLESTON COUNTY DUMP	---------
MUNICIPAL	CLOSED
G&S ROOFING PRODUCTS	IWP-046
INDUSTRIAL	-------
LOCKWOOD BLVD. DUMP	-------
MUNICIPAL	CLOSED

Growth Potential

There is a high potential for growth in this watershed, which contains portions of the Cities of Charleston and North Charleston. The west bank of the Ashley River contains numerous historic structures including Middleton Place, Drayton Hall, Magnolia Gardens, Runnymead Plantation, and Charles Towne Landing State Park; all are important scenic, cultural, and tourism resources. Areas with a high potential for growth include Amberwood, Jerico on the Ashley, Summerfield, River Oaks, and Shadowmoss in Charleston County; and Coosaw Creek, Whitehall, Avanti Tract, Appian Landing, Bakers Landing, Indigo Fields, and Ricefield/Windsor Hill in Dorchester County. There are water and sewer services available to all these growth areas.

Watershed Protection and Restoration

Total Maximum Daily Loads (TMDLs)

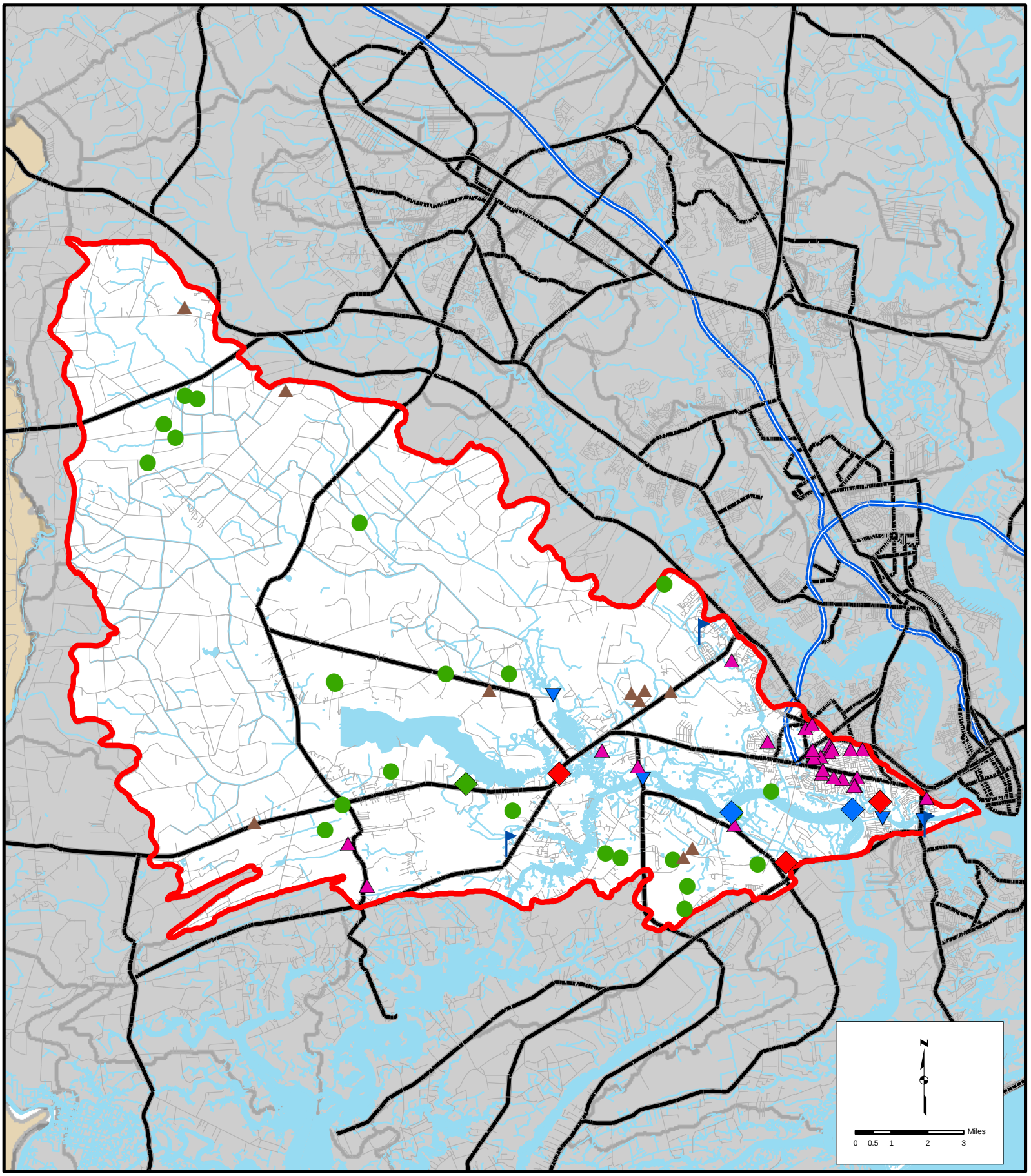
Two TMDLs addressing dissolved oxygen were developed by SCDHEC for the ***Charleston Harbor Estuary:*** one covering the ***Ashley River*** and the other covering the Charleston Harbor, the Cooper River, and the Wando River. The Ashley River portion of the system contains watersheds 03050202-020 and 03050202-040. Dissolved oxygen violations at two stations along the Ashley River (CSTL-102 and MD-049) are considered natural due to conditions exacerbated by point and nonpoint

sources of pollution. A water quality model was developed to predict the impact of point source dischargers on dissolved oxygen concentration in the system. Results indicate the need for an overall 36% reduction in discharge of ultimate oxygen demand (UOD) to the Ashley River. For more detailed information on TMDLs, please visit the SCDHEC's Bureau of Water homepage at http://www.scdhec.gov/water and click on "Watersheds and TMDLs" and then "TMDL Program".

Special Models

Charleston Harbor System TMDLs

The modeling efforts for Charleston Harbor and its tributaries have been completed and phased TMDLs for the Ashley and the Cooper systems have been issued by the Department and approved by EPA Region 4. Interim TMDL limits were included in NPDES permits for a number of dischargers while final TMDL limits were included for some dischargers who were already meeting the final limits. Permits included compliance schedules that allowed the opportunity for additional modeling work to be completed before compliance with final limits is required. A group of dischargers working through the local Councils of Government has initiated another modeling effort that is currently underway. If this effort is successfully completed within the allotted time, the existing TMDLs will be revised and, as appropriate, new limits incorporated into NPDES permits for discharges covered by the TMDL.



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JACOBS

Water Quality Management Plan Update

Basin
03050202-050

- Limited Access
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03050202-050

(Stono River)

General Description

Watershed 03050202-050 is located in Dorchester and Charleston Counties and consists primarily of the ***Stono River*** and its tributaries from Log Bridge Creek to Wappoo Creek. The watershed occupies 157,400 acres of the Lower Coastal Plain and Coastal Zone regions of South Carolina. The predominant soil types consist of an association of the Meggett-Brookman-Bladen-Chisolm series. The erodibility of the soil (K) averages 0.15 and the slope of the terrain averages 1%, with a range of 0-6%. Land use/land cover in the watershed includes: 70.7% forested land, 7.0% forested wetland, 7.0% nonforested wetland, 5.8% urban land, 4.8% scrub/shrub land, 2.4% water, 2.2% agricultural land, and 0.1% barren land.

This segment of the Stono River, classified SFH, runs from Log Bridge Creek (near to its connection with the Edisto River Basin) to Wappoo Creek (which connects to the Ashley River), and drains into the lowest segment of the Stono River. Scotts Branch flows into Fishburne Creek, which in turn flows into Horse Savanna and Rantowles Creek. Rantowles Creek accepts drainage from the Wallace River (Caw Caw Swamp, Drayton Swamp, Caddin Bridge Swamp) and then flows into the Stono River. Log Bridge Creek (Middle Branch, Mellichamp Branch) also flows into the Stono River and shares drainage with the Wallace River. Downstream from the SCL Railroad Bridge, the Stono River incorporates the drainage of Long Branch Creek, Sandy Bay, and Elliott Cut (Wappoo Creek). Wappoo Creek is classified SB. There are a total of 89.6 stream miles, 161.9 acres of lake waters, and 2,389.5 acres of estuarine areas in this watershed.

Surface Water Quality

Station #	Type	Class	Description
MD-121	S/W	SFH	LOG BRIDGE CREEK AT SC 162
MD-202	P/INT	SFH	STONO RIVER AT S-10-20, 2 MI UPSTREAM OF CLEMSON EXP. STATION
MD-025	S/W	SFH	MOUTH OF ELLIOTT CUT AT EDGE WATER DR. (S-10-26 OFF HWY 17)
MD-020	P/W	SB	MOUTH OF WAPPOO CREEK BETWEEN CHANNEL MARKERS 3 & 4

Log Bridge Creek (MD-121) – Aquatic life uses are fully supported; however, there is a significant increasing trend in turbidity. There is a significant increasing trend in pH. This is a blackwater system, characterized by naturally low dissolved oxygen concentration conditions. Although dissolved oxygen excursions occurred, they were typical of values seen in blackwater systems and were considered natural, not standards violations. A significant decreasing trend in five-day biochemical oxygen demand suggests improving conditions for this parameter. Recreational uses are partially supported due to fecal coliform bacteria excursions.

Stono River (MD-202) - Aquatic life uses are not supported due to dissolved oxygen and copper excursions. There is also a significant increasing trend in total phosphorus concentration. A significant increasing trend in dissolved oxygen and significant decreasing trends in five-day biochemical oxygen

demand and total nitrogen concentration suggest improving conditions for these parameters. Recreational uses are fully supported.

Elliott Cut (MD-025) - Aquatic life uses are partially supported due to dissolved oxygen excursions. Significant decreasing trends in five-day biochemical oxygen demand and turbidity suggest improving conditions for these parameters. Recreational uses are fully supported, and a significant decreasing trend in fecal coliform bacteria concentration suggests improving conditions for this parameter.

Wappoo Creek (MD-020) - Aquatic life uses are fully supported. A significant increasing trend in dissolved oxygen and significant decreasing trends in five-day biochemical oxygen demand and total nitrogen concentration suggest improving conditions for these parameters. There is a significant decreasing trend in pH. Recreational uses are fully supported, and a significant decreasing trend in fecal coliform bacteria concentration suggests improving conditions for this parameter.

Shellfish Monitoring Stations

Station #	Description
10B-08	CENTER OF ASHLEY RIVER – OFF COAST GUARD BASE
11-01	ELLIOT CUT AT STONO RIVER
11-02	STONO BRIDGE AT SC HWY 700
11-11	STONO RIVER (AIWW) AT MARKER 21A
11-12	STONO RIVER (AIWW) AT MARKER 27
11-16	STONO RIVER (AIWW) AT MARKER 51
11-17	STONO RIVER (LOG BRIDGE CREEK) AT MARKER 54
11-18	CONFLUENCE OF RANTOWLES CREEK AND THE STONO RIVER
11-20	ASHLEY RIVER AT WAPPOO CUT
11-27	STONO RIVER AT MOUTH OF PENNY CREEK NEAR MARKER 25

NPDES Program

Active NPDES Facilities

RECEIVING STREAM *FACILITY NAME* *PERMITTED FLOW @ PIPE (MGD)*	*NPDES#* *TYPE* *COMMENT*
MIDDLE BRANCH D&A PARTNERSHIP/RAVENEL MINE PIPE #: 001 FLOW: M/R	SCG730126 MINOR INDUSTRIAL

Nonpoint Source Management Program

Land Disposal Activities

Landfill Facilities

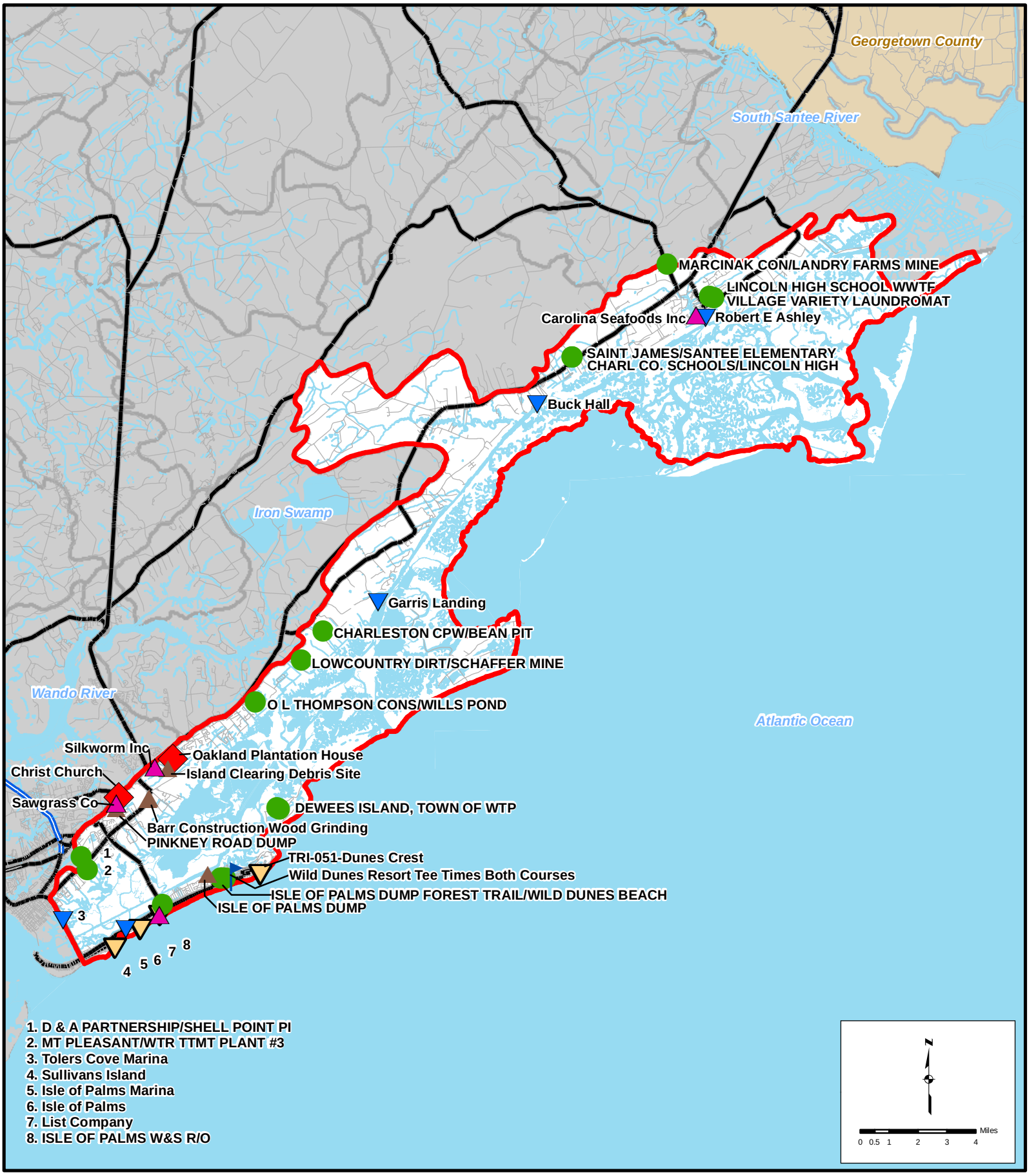
LANDFILL NAME *FACILITY TYPE*	*PERMIT #* *STATUS*
BEES FERRY MUNICIPAL	101001-1201 (101001-1101, ACTIVE DWP-124, DWP-083)
TRIDENT LANDFILL MUNICIPAL	DWP-005 CLOSED

Mining Activities

MINING COMPANY / ***MINE NAME***	***PERMIT #*** / ***MINERAL***
TRULUCK CONSTRUCTION CO., INC. PLANT SITE	0196-19 SAND
MAD DOG MINING, INC. (FELDER) MAD DOG MINE #2	0645-19 SAND; SAND/CLAY
D&A PARTNERSHIP RAVENEL MINE	1089-19 SAND
PALMETTO SAND CO., INC. FISHBURNE CREEK MINE	1092-35 SAND
MURRAY MINES, INC. TREE HOUSE MINE	1110-35 SAND
COASTAL MINING CO. PERRY MINE	1483-35 SAND
COASTAL CONTAINER CO., INC. PERRY MINE	1461-35 SAND
ROGERS & SON CONSTRUCTION CO. CONE UNIT/ASHLEY DISTR.	1466-35 SAND
KEITH BISHOP LAND CLEARING JOELS LAKE MINE	1290-19 SAND
KEITH BISHOP LAND CLEARING JOELS SECOND LAKE	1441-19 SAND
JAMES COOK COOK #1	1295-19 SAND
DAVID P. RICHARDSON RICHARDSON MINE	1532-19 SAND
HOME BUILDERS, INC. TK DIRT WORKS	1277-19 SAND
CHARLESTON COUNTY KINSEY-BLAKE BORROW PIT	0314-19 SAND; SAND/CLAY
W. FRAZIER CONSTRUCTION CO., INC. (DIRTCO) MURRAY WOODS PIT	0512-19 SAND/CLAY
ISLAND CONSTRUCTION CO., INC. TREMONT MINE	0660-19 SAND

Growth Potential

This watershed contains the Towns of Ravenel and Hollywood and a portion of the City of Charleston. The areas with a high potential for growth in the watershed include Stono Ferry in Hollywood; Rushland Plantation, Headquarters Plantation, and Fenwick Acres on Johns Island; and Bees Landing and Essex Farms in the City of Charleston. Water and sewer services are available to all these growth areas.



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Water Quality Management Plan Update

Basin
03050202-060

Legend

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- NPDES Permits
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- Industries

03050202-060

(Atlantic Intracoastal Waterway)

General Description

Watershed 03050202-060 is located in Charleston County and consists primarily of the ***Atlantic Intracoastal Waterway*** and its tributaries from the Ben Sawyer Bridge to the South Santee River. The watershed occupies 118,510 acres of the Coastal Zone region of South Carolina. The predominant soil types consist of an association of the Bohicket-Capers-Chipley series. The erodibility of the soil (K) averages 0.20 and the slope of the terrain averages 1%, with a range of 0-2%. Land use/land cover in the watershed includes: 41.5% nonforested wetland, 35.4% forested land, 16.1% water, 3.0% urban land, 2.2% scrub/shrub land, 0.8% forested wetland, 0.5% agricultural land, and 0.5% barren land.

This watershed contains a portion of the Atlantic Intracoastal Waterway (AIWW), which flows past numerous sea islands and the tidally influenced creeks that separate them. This reach of the AIWW is classified SFH. Inlet Creek, Swinton Creek, and Conch Creek located near Sullivans Island, drain to the Atlantic Ocean via Breach Inlet. Morgan Creek, Seven Reaches, and Cedar Creek flow into Meeting Reach (AIWW). Seven Reaches also drains into Gray Sound (SFH) as does Hamlin Creek and Long Creek. Hamlin and Long Creeks also flow into Hamlin Sound (SFH), which in turn drains into Copahee Sound (ORW) and Bullyard Sound (ORW). Dewees Creek collects drainage from Bullyard Sound and Hamlin Sound, together with Old House Creek and Horsebend Creek, and flows through Dewees Inlet (SFH) to the Atlantic Ocean.

Capers Creek, Watermelon Creek, Toomer Creek, and Whiteside Creek drain to the ocean through Capers Inlet (ORW). The Santee Pass connects Capers Creek to Mark Bay (ORW) and drains to the ocean via Price Inlet (ORW). Other streams draining into Price Inlet include Price Creek, Clauson Creek, and Bull Narrows. Bull Narrows also flows into Sewee Bay (SFH) and Hickory Bay. Back Creek connects Sewee Bay to Bull Creek (Summerhouse Creek, Jack Creek), which flows into Bull Harbor and Bulls Bay (ORW). Other streams draining into Bull Harbor and Bulls Bay include Anderson Creek, Blind Creek, Venning Creek, Belvedere Creek, Vanderhorst Creek, Saltpond Creek, and Graham Creek.

Bell Creek (Cooter Creek, Withey Wood Canal) and Steed Creek join to form Awendaw Creek and Lake Awendaw (125 acres), which flows into the Harbor River (AIWW) and into Bulls Bay. Other streams draining into the Harbor River from the mainland, near the Town of McClellanville, include Sandy Point Creek, Doe Hall Creek, Tibwin Creek, and Long Creek. Bull River (Sett Creek, Little Sett Creek) and Five Fathom Creek (Clark Creek, Key Creek, Key Bay, Santee Path Creek, Papas Creek, Little Papas Creek, Matthews Creek, Town Creek, Clubhouse Creek) drain directly into Bulls Bay. Five Fathom Creek is classified SFH. Jeremy Creek flows into the AIWW across the waterway from Five Fathom Creek. Clubhouse Creek connects Five Fathom Creek to Oyster Bay and Muddy Bay (Nellie Creek, Joe and Ben Creek, Shrine Creek, Horsehead Creek).

The Romain River is formed at the confluence of Santee Path Creek and Nellie Creek, and accepts drainage from Key Creek (Bay Creek), Muddy Bay, and Slack Reach (Devils Den Creek, Horsehead Creek, Mill Den Creek) before flowing into Cape Romain Harbor (ORW). Key Creek also drains into the ocean via Raccoon Creek and Key Inlet. Other streams draining in Cape Romain Harbor include Congaree Boat Creek (Joe and Ben Creek), Casino Creek (Mill Creek, Needles Eye Creek), Deepwater Creek, and Alligator Creek (Ramhorn Creek). There are 2,720.3 acres of lake waters and 13,296.5 acres of estuarine areas in this watershed. Additional natural resources in the watershed include the Cape Romain National Wildlife Refuge (55,000 acres) and portions of the Frances Marion National Forest.

Surface Water Quality

Station #	Type	Class	Description
MD-265	INT	SFH/ORW	ALLIGATOR CREEK AT STATE SHELLFISH GROUND
MD-266	INT	SFH/ORW	CASINO CREEK AT CLOSURE LINE
RT-02016	RT02	ORW	EAST FORK OF DEVILS DEN CREEK HEADWATERS
MD-203	P/W	SFH	JEREMY CREEK NEAR BOAT LANDING AT MCCLELLANVILLE TOWN HALL
RT-01623	RT01	SFH	MATTHEWS CREEK TRIBUTARY, 1 MI S OF MCCLELLANVILLE
MD-267	INT	SFH	FIVE FATHOM CREEK AT BULL RIVER
RO-02008	RO02	SFH	FIVE FATHOM CREEK NEAR MOUTH OF SANTEE PATH CREEK
MD-250	W	SFH	AWENDAW CREEK AT US 17
MD-268	W/INT	SFH	AWENDAW CREEK AT MARKER #57
RT-01668	RT01	SFH	VANDERHORST CREEK, 11.75 MI SW OF MCCLELLANVILLE
MD-269	INT	SFH	SEWEE BAY AT MOORES LANDING
RT-02004	RT02	ORW	BACK CREEK TRIBUTARY ON BULL ISLAND
MD-270	INT	ORW	BULLYARD SOUND AT MARKER #104
MD-271	INT	SFH	HAMLIN SOUND
MD-272	INT	SFH	LOWER HAMLIN CREEK AT SITE OF NEW BRIDGE
RT-02006	RT02	SFH	CONCH CREEK, 1 MI FROM SAWYER BRIDGE
MD-069	INT	SB/SFH	AIWW AT SC 703, E OF MT. PLEASANT

Alligator Creek (MD-265) **-** Aquatic life and recreational uses are fully supported. This is a blackwater system, characterized by naturally low dissolved oxygen concentration conditions. Although dissolved oxygen excursions occurred, they were typical of values seen in blackwater systems and were considered natural, not standards violations.

Casino Creek (MD-266) **-** Aquatic life and recreational uses are fully supported. This is a blackwater system, characterized by naturally low dissolved oxygen concentration conditions. Although dissolved oxygen excursions occurred, they were typical of values seen in blackwater systems and were considered natural, not standards violations.

Devils Den Creek (RT-02016) **-** Aquatic life uses are not supported due to occurrences of copper in excess of the aquatic life acute criterion. This is a blackwater system, characterized by naturally low dissolved oxygen concentration conditions. Although dissolved oxygen excursions occurred, they were typical of values seen in blackwater systems and were considered natural, not standards violations. Recreational uses are fully supported.

Jeremy Creek (MD-203) – Aquatic life uses are not supported due to dissolved oxygen and turbidity excursions, compounded by a significant increasing trend in turbidity. Recreational uses are partially supported due to fecal coliform bacteria excursions.

Matthew Creek Tributary (RT-01623) - Aquatic life uses are not supported due to turbidity excursions. This is a blackwater system, characterized by naturally low dissolved oxygen concentration conditions. Although dissolved oxygen excursions occurred, they were typical of values seen in blackwater systems and were considered natural, not standards violations. Recreational uses are fully supported.

Five Fathom Creek **-** There are two SCDHEC monitoring sites along Five Fathom Creek, and aquatic life and recreational uses are fully supported at both sites ***(MD-267, RO-02008)***. This is a blackwater system, characterized by naturally low dissolved oxygen concentration conditions. Although dissolved oxygen excursions occurred at the upstream site, they were typical of values seen in blackwater systems and were considered natural, not standards violations.

Awendaw Creek - There are two SCDHEC monitoring sites along Awendaw Creek, and aquatic life uses are fully supported at both sites ***(MD-250, MD-268)***. This is a blackwater system, characterized by naturally low pH and dissolved oxygen concentration conditions. Although pH excursions occurred at the upstream site and dissolved oxygen excursions occurred at both sites, they were typical of values seen in blackwater systems and were considered natural, not standards violations. Recreational uses are not supported at the upstream site ***(MD-250)*** due to fecal coliform bacteria excursions and fully supported at the downstream site ***(MD-268)***.

Vanderhorst Creek (RT-01668) - Aquatic life and recreational uses are fully supported. This is a blackwater system, characterized by naturally low dissolved oxygen concentration conditions. Although dissolved oxygen excursions occurred, they were typical of values seen in blackwater systems and were considered natural, not standards violations.

Sewee Bay (MD-269) - Aquatic life and recreational uses are fully supported.

Back Creek Tributary (RT-02004) - Aquatic life and recreational uses are fully supported. This is a blackwater system, characterized by naturally low dissolved oxygen concentration conditions. Although dissolved oxygen excursions occurred, they were typical of values seen in blackwater systems and were considered natural, not standards violations.

Bullyard Sound (MD-270) - Aquatic life and recreational uses are fully supported.

Hamlin Sound (MD-271) - Aquatic life and recreational uses are fully supported.

Hamlin Creek (MD-272) - Aquatic life and recreational uses are fully supported. This is a blackwater system, characterized by naturally low dissolved oxygen concentration conditions. Although dissolved oxygen excursions occurred, they were typical of values seen in blackwater systems and were considered natural, not standards violations.

Conch Creek (RT-02006) - Aquatic life and recreational uses are fully supported.

Atlantic Intracoastal Waterway (MD-069) – The water quality analysis is identical for both SFH and SB classifications. Aquatic life uses are not supported due to occurrences of copper in excess of the aquatic life acute criterion. Significant decreasing trends in five-day biochemical oxygen demand, total phosphorus concentration, and total nitrogen concentration suggest improving conditions for these parameters. There is a significant decreasing trend in pH. Recreational uses are fully supported and a significant decreasing trend in fecal coliform bacteria concentration suggests improving conditions for this parameter.

Santee Coastal Reserve Pond - The pond was treated in 1994, 1995, 1997-1999, and 2002-2005 with aquatic herbicides to control aquatic plant growth and reclaim recreational areas for waterfowl management and public access and use.

Santee Delta Plantation Wildlife Management Area – The management area was treated in 2004 and 2005 with aquatic herbicides to control aquatic plant growth and allow public access and use.

A fish consumption advisory has been issued by the Department for mercury and includes the Atlantic Ocean edging this watershed (see advisory p.69). Fish tissue samples from Muddy Bay and Cape Romain indicate no advisories are needed at this time.

Groundwater Quality

Well #	Class	Aquifer	Location
AMB-084	GB	SURFICIAL SANDS	MCCLELLANVILLE

Shellfish Monitoring Stations

Station #	Description
06B-07	ALLIGATOR CREEK AT MARKER 26
06B-08	CASINO CREEK AT MARKER 26
06B-09	DUPREE CREEK – 500 FT N OF NEW DOCK
06B-10	AIWW AT MARKER 32
06B-12	ALLIGATOR CREEK STATE SHELLFISH GROUND
06B-15	CASINO CREEK AT CAPE ROMAIN HARBOR
06B-16	CASINO CREEK MIDWAY BETWEEN STATION 19&24 (AT SMALL S.BOUND UNNAMED CREEK ON RIGHT)
06B-17	CONGAREE BOAT CREEK AT TOWER CREEK
06B-18	CONFLUENCE OF DUPREE CREEK AND CLUBHOUSE CREEK
06B-19	CONFLUENCE OF CASINO CREEK AND SHRINE CREEK
06B-20	1,000 YDS UPSTREAM DUPREE CREEK FROM CLUBHOUSE CREEK
06B-21	CONFLUENCE OF ALLIGATOR CREEK AND RAMHORN CREEK

06B-22	CONFLUENCE OF RAMHORN CREEK AND MILL CREEK
06B-23	CONFLUENCE OF SHRINE CREEK AND CONGAREE BOAT CREEK
06B-24	CONFLUENCE OF CASINO CREEK AND CONGAREE BOAT CREEK
06B-25	CONFLUENCE OF HORSEHEAD CREEK AND UNNAMED CREEK AT LOWER END OF HORSEHEAD ISLAND
06B-26	CONFLUENCE OF SHRINE CREEK AND UNNAMED CREEK N. OF MUDDY BAY
06B-27	CONFL. OF FIRST LARGE CREEK ON THE LEFT, WITH CONGAREE BOAT CREEK, TRAVELING SE OF STA.23
07-01	VENNING CREEK ADJACENT TO MARKER 67
07-02	GRAHAM CREEK AT MARKER 64
07-03	AWENDAW CREEK AT MARKER 57
07-04	HARBOR RIVER AT MARKER 48
07-04A	HARBOR RIVER AT BULLS BAY
07-05	TIBWIN CREEK AT MARKER 42
07-06	FIVE FATHOM CREEK AT MARKER 20
07-06A	FIVE FATHOM CREEK AT BULL RIVER
07-07	JEREMY CREEK OPPOSITE FIRE TOWER
07-08	CLUBHOUSE CREEK – ¼ MI N. OF FIVE FATHOM CREEK
07-08A	OYSTER BAY AT MUDDY BAY
07-09	CONFLUENCE OF DOEHALL CREEK WITH AIWW – N. OF MARKER 46
07-11	FIVE FATHOM CREEK AT MARKER 11
07-12	CONFLUENCE OF RACCOON CREEK AND ROMAIN RIVER
07-13	ROMAIN RIVER AT CONFLUENCE OF "S" CREEK
07-14	DOEHALL CREEK – THRID BEND
07-15	SANDY POINT CREEK – FOURTH BEND
07-16	CONFLUENCE OF ROMAIN RIVER AND SANTEE PATH CREEK
07-17	SECOND SMALL CREEK N. OF MARKER 26 IN FIVE FATHOM CREEK
07-18	MARKER 65 IN AIWW
07-19	AIWW AT CONFLUENCE WITH UNNAMED CREEK, 1.5 MI SW OF GRAHAM CREEK
08-01	MORGAN CREEK AT NORTHERNMOST CONFLUENCE WITH AIWW – ADJACENT TO MARKER 115
08-02	HAMLIN SOUND
08-03	DEWEES INLET AT AIWW – N. OF MARKER 110
08-04	BULLYARD SOUND - MARKER 104
08-05	WHITESIDE CREEK - MARKER 96
08-06	MARK BAY - MARKER 90
08-07	PRICES INLET
08-08	AIWW - MARKER 82
08-09	MOORES LANDING DOCK AT MARKER 74
08-10	MARKER 116 N. OF ISLE OF PALMS STP OUTFALL IN AIWW
08-11	ISLE OF PALMS STP OUTFALL AT 41ST STREET
08-12	MORGAN CREEK AT 41ST STREET MARINA
08-13	SEWEE BAY POG – SEWEE BAY AT HICKORY BAY
08-14	DEWEES ISLAND – ¼ MI UP HORSEBEND CREEK
08-15	DEWEES ISLAND – MOUTH OF WATERMELON CREEK
08-16	CONFLUENCE OF SEVEN REACHES AND GRAY BAY
08-17	SW COPAHEE SOUND AT PORCHER BLUFF CREEK
08-18	ONE HALF MI UP CEDAR CREEK FROM DEWEES INLET
08-19	CONFLUENCE OF TOOMER CREEK AT COPAHEE SOUND
08-20	UPPER REACHES OF WHITESIDE CREEK
08-21	UPPER REACHES OF CLAWSON CREEK
08-22	CONFLUENCE OF CAPERS CREEK AND SANTEE PASS
08-23	CONFLUENCE OF BULL CREEK AND BACK CREEK
08-24	ANDERSON CREEK AT MAIN FORK ABOVE CONFLUENCE WITH BULLS BAY
08-25	PALMETTO POINT CREEK ADJACENT TO MARKER 84
09A-01	HAMLIN CREEK AT ITS CONFLUENCE WITH AIWW
09A-02	UPPER END OF HAMLIN CREEK AT POG
09A-03	UPPER END OF SWINTON CREEK
09A-05	SHORTCUT – SWINTON CREEK
09A-06	INLET CREEK AND GENTIDE CREEK
09A-07	INLET CREEK AT ITS CONFLUENCE WITH AIWW
09A-08	BREECH INLET

09A-09	BEN SAWYER BRIDGE
09A-11	END OF 10TH STREET AT HAMLIN CREEK
09A-12	SWINTON CREEK AT ITS CONFLUENCE WITH HAMLIN CREEK
09A-14	SWINTON CREEK AT ITS CONFLUENCE WITH AIWW
09A-15	AIWW BETWEEN INLET AND SWINTON CREEKS
09A-17	CONCH CREEK STATE SHELLFISH GROUND – MT. PLEASANT SIDE
09A-17A	CONCH CREEK STATE SHELLFISH GROUND – SULLIVANS ISLAND SIDE
09A-18	AIWW ADJACENT TO WILD DUNES GOLF COURSE STORM DRAINAGE OUTFALL
09A-19	AIWW AT 25TH STREET – ISLE OF PALMS
09A-20	CONCH CREEK AT LOFTON CREEK
09A-21	INLET CREEK 100 YDS PAST FIRST BEND
09A-22	AIWW AT MARKER 118
09A-23	UPPER REACHES OF CONCH CREEK
09A-24	UPPER REACHES OF INLET CREEK
09A-25	UPPER REACHES OF SWINTON CREEK
09A-26	HAMLIN CREEK ½ WAY BETWEEN STATIONS 1&2
09A-27	INLET CREEK WEST OF AIWW AT FIRST BEND
09A-28	SWINTON CREEK WEST OF AIWW AT SECOND BEND
09A-29	LOWER HAMLIN CREEK AT SITE OF NEW BRIDGE
09A-30	UPPER INLET CREEK AT JENNIE CREEK
09A-31	BAY AT END OF UPPER INLET CREEK
09A-32	FIRST CREEK ON RIGHT DOWNSTREAM FROM STATION 6
09A-33	FIRST LARGE CREEK UP INLET CREEK FROM STATION 8
09A-34	AIWW AT CONFLUENCE WITH SULLIVANS ISLAND NARROWS
09A-35	300 YDS UPSTREAM FROM STATION 6
09A-36	CONCH CREEK AT ITS CONFLUENCE WITH AIWW
09A-37	LOWER CONCH CREEK AT MARINA CLOSURE ZONE

NPDES Program

Active NPDES Facilities

RECEIVING STREAM ***FACILITY NAME*** ***PERMITTED FLOW @ PIPE (MGD)***	***NPDES#*** ***TYPE*** ***COMMENT***
HAMLIN CREEK CITY OF ISLE OF PALMS W&S PIPE #: 001 FLOW: M/R	SC0043583 MINOR DOMESTIC
MEETING REACH CITY OF ISLE OF PALMS/FOREST TRAILS SD PIPE #: 001 FLOW: 0.30	SC0025283 MINOR DOMESTIC
DEWEES CREEK TOWN OF DEWEES ISLAND WTP PIPE #: 001 FLOW: 0.025	SC0046817 MINOR DOMESTIC
CLAUSON CREEK LOWCOUNTRY DIRT/SCHAFFER MINE PIPE #: 001 FLOW: M/R	SCG730102 MINOR INDUSTRIAL
AIWW UNNAMED TRIBUTARY ST JAMES/SANTEE ELEM. PIPE #: 001 FLOW: M/R	SCG645033 MINOR DOMESTIC

AIWW UNNAMED TRIBUTARY CHARLESTON CPW/BEAN PIT PIPE #: 001 FLOW: M/R	SCG730226 MINOR INDUSTRIAL
AIWW UNNAMED TRIBUTARY TOWN OF MT PLEASANT/CENTER ST. & RR RD PIPE #: 004 FLOW: M/R	SC0040771 MAJOR DOMESTIC

Nonpoint Source Management Program

Land Disposal Activities

Landfill Facilities

LANDFILL NAME ***FACILITY TYPE***	***PERMIT #*** ***STATUS***
PINCKNEY ROAD DUMP MUNICIPAL	------- CLOSED
CITY OF ISLE OF PALMS DUMP MUNICIPAL	------- CLOSED

Land Application Sites

LAND APPLICATION ***FACILITY NAME***	***PERMIT #*** ***YPE***
TILE FIELD DEWEES ISL. DEV./DEWEES UTILITY CORP.	ND0069329 DOMESTIC
SPRAY ON GOLF COURSE CITY OF ISLE OF PALMS/WILD DUNES BEACH	ND0062260 DOMESTIC
SPRAYFIELD CHARLESTON COUNTY/LINCOLN HIGH SCH	ND0073016 DOMESTIC

Mining Activities

MINING COMPANY ***MINE NAME***	***PERMIT #*** ***MINERAL***
G & H HOLDINGS LLC G&H POND	1388-19 SAND
OL THOMPSON CONSTRUCTION CO. WILLS POND	1356-19 SAND
CHARLESTON COUNTY PUBLIC WORKS BEAN PIT	1159-19 SAND

Growth Potential

There is a high potential for growth in this watershed, which contains the City of Isle of Palms, the Towns of Awendaw and McClellanville, and portions of the Towns of Mt. Pleasant and Sullivans Island. Several suburban growth areas surround the City of Charleston. Some of the larger planned developments include Wild Dunes, Shell Point, Hidden Lakes, Seaside Farms, Palmetto Fort, and the Charleston National Country Club. All growth areas in the watershed have water and sewer services

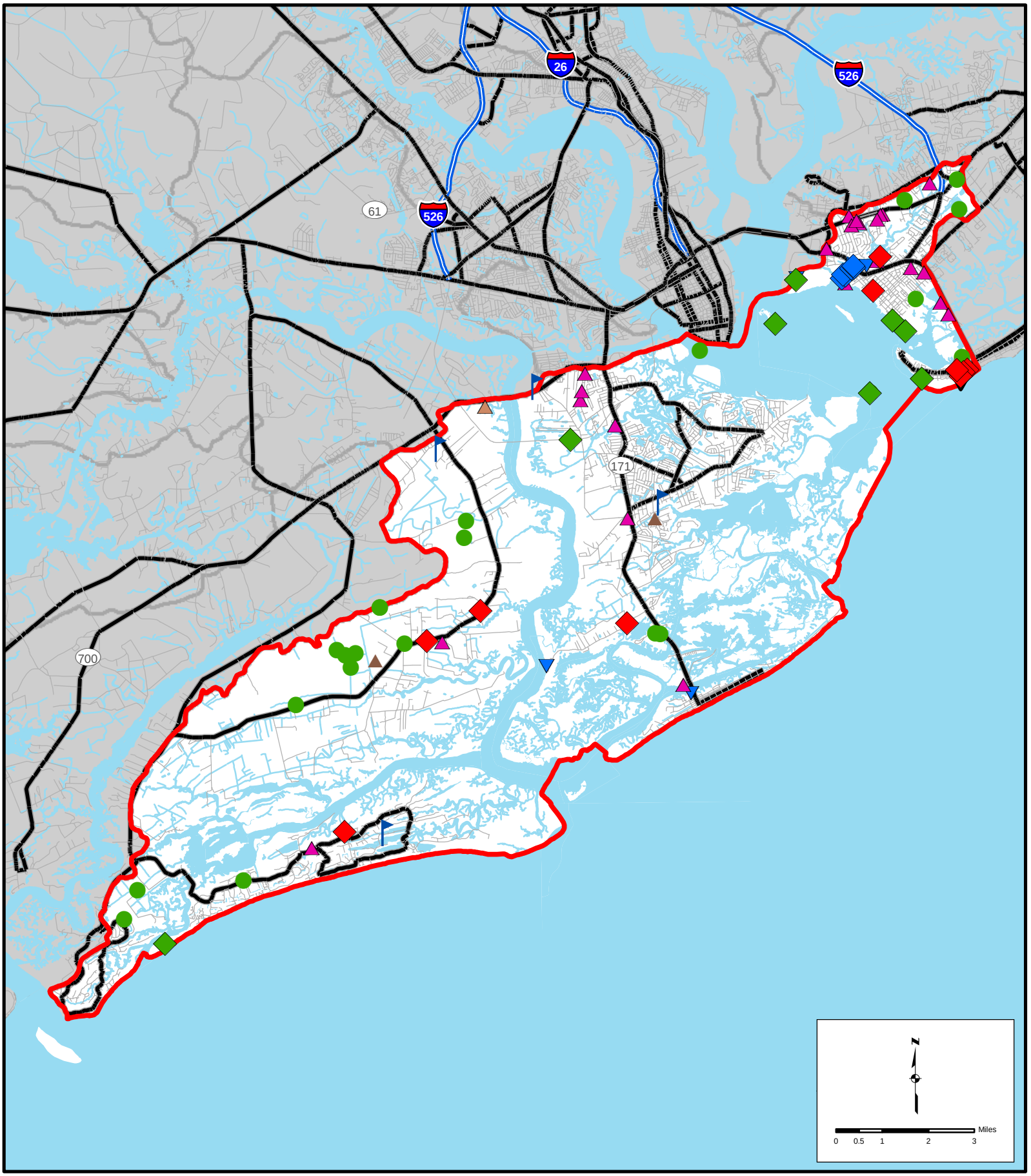
available. Sources of tourism in this watershed include Patriots Point and Fort Moultrie. Although the McClellanville area experiences scattered low density development, significant growth is not anticipated.

Watershed Restoration and Protection

Special Projects

Graham Creek Restoration Project

SCDHEC's Nonpoint Source Monitoring Team in conjunction with the Shellfish Sanitation Section have initiated a special effort to restore certain shellfish waters that currently do not meet standards. Graham Creek, which connects the AIWW with Bulls Bay, is currently classified as Restricted due to elevated bacteria levels. Restoration of the shellfish resource in these areas may be the most cost effective considering the potential resource is large and the impacts may be more easily eliminated than in more developed watersheds. Special intensive monitoring and field surveys have been conducted in these watersheds. In cooperation with the Charleston County Natural Resources Conservation Service, results from the monitoring will be used to target remediation of identified sources of bacteria. Similar projects have been focused on the areas surrounding Abbapoola and Toogoodoo Creeks south of Charleston.



BCDCOG
BERKELEY-CHARLESTON-DORCHESTER COUNCIL OF GOVERNMENTS

JACOBS

Water Quality Management Plan Update

Basin
03050202-070

- Limited Access Highway/ Major Road
- Minor Road
- Water Features
- Other Counties Watershed Boundary
- Streams
- Archeological Sites
- Parks & Cultural Sites
- Ports
- Golf Course
- Beach Stations
- Boat Ramps/Marinas
- National Register Sites
- NPDES Permits
- Landfills
- Industries

03050202-070

(Charleston Harbor/Stono River)

General Description

Watershed 03050202-070 is located in Charleston County and consists primarily of the ***Charleston Harbor*** and its tributaries, and the ***Stono River*** with its tributaries from Wappoo Creek to the Atlantic Ocean. The watershed occupies 81,611 acres of the Coastal Zone region of South Carolina. The predominant soil types consist of an association of the Bohicket-Capers-Kiawah-Foxworth series. The erodibility of the soil (K) averages 0.20 and the slope of the terrain averages 1%, with a range of 0-6%. Land use/land cover in the watershed includes: 28.1% nonforested wetland, 25.2% forested land, 21.9% water, 10.1% urban land, 9.0% scrub/shrub land, 4.6% agricultural land, 0.8% forested wetland, and 0.3% barren land.

This segment of the Stono River, classified SFH, accepts drainage from the upper Stono River watershed (03050202-050), flows between Johns Island and James Island, and then flows through the Stono Inlet to the Atlantic Ocean. On the Johns Island side of the river, the Stono River receives drainage from Pennys Creek, Hut Creek, Abbapoola Creek, Alligator Creek, and the Kiawah River. The Kiawah River accepts drainage from Captain Sams Creek, Haulover Creek, Bryans Creek, and Chaplin Creek. The Kiawah River drains directly into the Atlantic Ocean through Captain Sams Inlet. Bass Creek (Cinder Creek) drains into the Stono River from Kiawah Island.

Streams draining into the Stono River from James Island include James Island Creek or Ellis Creek (Simpson Creek, Wolfpit Run), Holland Island Creek, and Green Creek. The Folly River (Folly Creek, Oak Island Creek, Robbins Creek, King Flats Creek, Cutoff Reach, Cole Creek), classified SFH, drains into the mouth of the Stono River. Robbins Creek and King Flats Creek are also connected to the Stono River through Green Creek. Lighthouse Creek (Block Island Creek, Rat Island Creek, Ft. Johnson Creek, First Sister Creek, Second Sister Creek) flows between Folly Island and Morris Island and through Lighthouse Inlet to the Atlantic Ocean. Ft. Johnson Creek connects the Lighthouse Creek drainage to Clark Sound (Seaside Creek, Secessionville Creek). The sound drains into Charleston Harbor through Schooner Creek near Fort Sumter. Charleston Harbor is classified SB. The Ashley River watershed (03050202-040) draining into the harbor is classified SA and the Cooper River watershed (03050201-050) draining into the harbor is classified SB. Also draining in the Charleston Harbor is Dill Creek, Horse Creek, Shem Creek (SB), The Cove (Cove Creek), Bass Creek, and Parrot Point Creek. There are 754.1 acres of lake waters and 13,852.3 acres of estuarine areas in this watershed.

Surface Water Quality

Station #	Type	Class	Description
MD-069	INT	SB/SFH	AIWW AT SC 703, E OF MT. PLEASANT
MD-071	P/SPRP	SB	SHEM CREEK AT BRIDGE ON US 17
MD-247	P/INT	SB	CHARLESTON HARBOR NEAR MT. PLEASANT WWTP DIFFUSER
MD-034	P/W	SA	RT. BANK OF ASHLEY R. BETW MOUTH OF JAMES ISL. CK & DILL CK
MD-165	P/INT	SB	CHARLESTON HARBOR AT FT.JOHNSON PIER AT MARINE SCIENCE LAB
RO-02016	RO02	SB	CHARLESTON HARBOR, 0.1 MI E OF FT. JOHNSON
MD-048	P/W	SB	S. CHANNEL CHAS HARBOR OFF FT JOHNSON , BELL BUOY 28

RT-01644	RT01	SB	CLARK SOUND, 4 MI S OF CHARLESTON
RT-02008	RT02	SFH	SECOND SISTER CREEK, 0.1 MI FROM CONFL WITH LIGHTHOUSE CREEK
MD-274	INT	SFH	FOLLY CREEK, AT SECESSIONVILLE POLLUTION LINE
MD-130	INT	SFH	FOLLY CREEK AT SC 171
MD-026	P/W	SFH	STONO RIVER AT SC 700
RO-01144	RO01	SFH	STONO RIVER, 7.5 MI SW OF CHARLESTON
MD-206	S/INT	SFH	STONO RIVER AT ABBAPOOLA CREEK
MD-208	S/W	SFH	STONO RIVER MOUTH AT BUOY 10 OFF SANDY POINT
MD-273	INT	SFH	KIAWAH RIVER ON THE FLATS
MD-207	S/W	SFH	KIAWAH RIVER MOUTH AT STONO RIVER
RT-01642	RT01	SFH	TRIBUTARY TO STONO INLET, 11 MI SW OF CHARLESTON

Atlantic Intracoastal Waterway (MD-269) – Although mapped in 03050202-060, the waters reflect this watershed as well. The water quality analysis is identical for both SFH and SB classifications. Aquatic life uses are not supported due to occurrences of copper in excess of the aquatic life acute criterion. Significant decreasing trends in five-day biochemical oxygen demand, total phosphorus concentration, and total nitrogen concentration suggest improving conditions for these parameters. There is a significant decreasing trend in pH. Recreational uses are fully supported and a significant decreasing trend in fecal coliform bacteria concentration suggests improving conditions for this parameter.

Shem Creek (MD-071) – Aquatic life uses are not supported due to occurrences of copper in excess of the aquatic life acute criterion. Significant decreasing trends in five-day biochemical oxygen demand, turbidity, and total nitrogen concentration suggest improving conditions for these parameters. Recreational uses are partially supported due to fecal coliform bacteria excursions.

Charleston Harbor – There are four SCDHEC monitoring sites within the Charleston Harbor, and recreational uses are fully supported at all sites. Aquatic life uses are fully supported at ***MD-247.*** There is a significant decreasing trend in pH. A significant increasing trend in dissolved oxygen concentration and significant decreasing trends in five-day biochemical oxygen demand, total phosphorus concentration, total nitrogen concentration, and fecal coliform bacteria concentration suggest improving conditions for these parameters.

Aquatic life uses are not supported at ***MD-165*** due to occurrences of copper in excess of the aquatic life acute criterion. There is a significant decreasing trend in pH. A significant increasing trend in dissolved oxygen concentration and significant decreasing trends in five-day biochemical oxygen demand, total nitrogen concentration, and fecal coliform bacteria concentration suggest improving conditions for these parameters.

Aquatic life uses are fully supported at ***RO-02016***. Aquatic life are again fully supported at ***MD-048.*** There is a significant decreasing trend in pH. A significant increasing trend in dissolved oxygen concentration and significant decreasing trends in five-day biochemical oxygen demand, total nitrogen concentration, and fecal coliform bacteria concentration suggest improving conditions for these parameters. *Fish tissue samples from the Charleston Harbor indicate no advisories are needed at this time.*

Ashley River (MD-034) - Aquatic life and recreational uses are fully supported. A significant increasing trend in dissolved oxygen concentration and significant decreasing trends in five-day biochemical oxygen demand, total nitrogen concentration, and fecal coliform bacteria concentration suggest improving conditions for these parameters. *Fish tissue samples from the lower Ashley River (downstream of US 17) indicate no advisories are needed at this time.*

Clark Sound (RT-01644) – Aquatic life and recreational uses are fully supported.

Second Sister Creek (RT-02008) – Aquatic life and recreational uses are fully supported. This is a blackwater system, characterized by naturally low dissolved oxygen concentration conditions. Although dissolved oxygen excursions occurred, they were typical of values seen in blackwater systems and were considered natural, not standards violations.

Folly Creek (MD-274) – Aquatic life and recreational uses are fully supported. This is a blackwater system, characterized by naturally low dissolved oxygen concentration conditions. Although dissolved oxygen excursions occurred, they were typical of values seen in blackwater systems and were considered natural, not standards violations.

Folly River (MD-130) – Aquatic life and recreational uses are fully supported.

Stono River – There are four SCDHEC monitoring sites along the Stono River, and recreational uses are fully supported at all sites. At the furthest upstream site ***(MD-026)***, aquatic life uses are not supported due to occurrences of dissolved oxygen and copper excursions. Significant decreasing trends in five-day biochemical oxygen demand, total nitrogen concentration, and fecal coliform bacteria concentration suggest improving conditions for these parameters. Aquatic life uses are fully supported at the next site downstream ***(RO-01144)***.

Further downstream ***(MD-206)***, aquatic life uses are partially supported due to dissolved oxygen excursions. A significant decreasing trend in five-day biochemical oxygen demand suggests improving conditions for this parameter. There is a significant decreasing trend in pH. At the furthest downstream site ***(MD-208)***, aquatic life uses are fully supported and significant decreasing trends in five-day biochemical oxygen demand and fecal coliform bacteria concentration suggest improving conditions for these parameters. There is a significant decreasing trend in pH.

Kiawah River - There are two SCDHEC monitoring sites along the Kiawah River. At the upstream site ***(MD-273)***, aquatic life and recreational uses are fully supported. Aquatic life uses are also fully supported at the downstream site ***(MD-207),*** and a significant decreasing trend in five-day biochemical oxygen demand suggests improving conditions for this parameter. There is a significant decreasing trend in pH. Recreational uses are fully supported and a significant decreasing trend in fecal coliform bacteria concentration suggests improving conditions for this parameter.

Stono Inlet Tributary (RT-01642) – Aquatic life uses are not supported due to turbidity excursions. Recreational uses are fully supported.

A fish consumption advisory has been issued by the Department for mercury and includes the Atlantic Ocean edging this watershed (see advisory p.69).

Shellfish Monitoring Stations

Station #	Description
09A-10	Marker 126 – AIWW at old Pitt Street Bridge
10A-02	Folly Creek Bridge
10A-03	Bowen Island Dock in Folly Creek
10A-04	Backman Creek at Folly Creek
10A-05	King Flats at Folly Creek
10A-06	Opposite Little Island in Folly Creek
10A-07	North boundary of Prohibited Area at Folly Marina
10A-08	Folly River Bridge
10A-09	Last dock north in Folly River
10A-11	rat Island Creek at confluence with first creek on left from Lighthouse Creek
10A-13	Lighthouse Creek at confluence with Folly Creek
10A-15	Secessionville Creek at private docks
10A-15A	Folly Creek at confluence with Secessionville Creek
10A-16	Clark Sound at Ocean View Flats
10A-16A	Fludd's Creek at Clark Sound
10A-18	Mouth of Schooner Creek
10A-18A	Charleston Harbor at Schooner Creek
10A-19	Just inside Clark Sound from Schooner Creek
10A-20	Backman's commercial dock in Backman Creek
10A-22	Folly River State Shellfish Ground opposite Folly Island
10A-23	Lighthouse Creek State Shellfish Ground at mouth of First Sister Creek
10A-24	Cole Creek State Shellfish Ground
10A-25	Folly Marina
10A-26	Just seaward of confluence of Lighthouse Creek and Folly River in Lighthouse Creek
10A-27	Midway Stations 18&18A
10A-28	Mouth of small creek leading to back of Block Island
10A-29	Outfall of Morris Island discharge
10A-30	Second bend in Rathall Creek
10A-31	Upper reaches of Rat Island Creek NW of Station 11
10A-32	Block Island Creek – 100 yds S.of spilt form spoil area
10A-33	Confluence of Lighthouse Creek and Clark Sound
10A-34	The first dock in Secessionville Creek at its confluence with Clark Sound
10A-35	Right fork of Schooner Creek, middle of docks, across from Parrot Point Development
10B-01	Mouth of Charleston Harbor at Buoy #25
10B-02	200 yds east of mouth of FT. Johnson boat basin
10B-02A	Off the end of James Island Yacht Club dock
10B-03	mouth of James Island Creek
10B-04	Ashley River at Buoy #@ - red nun buoy
10B-05	Off the tip of the Battery at white danger marker
10B-07	Off old pier pilings at ruils of Castle Pinkney
10B-09	Mouth of Shem Creek – red marker 16
10B-11	AIWW at tip of Sullivans Island green marker 137
10B-12	Mt. Pleasant WWTP outfall
11-03	Docks between markers 10&11 in Stono River
11-05	Mouth of Abbapoola Creek
11-06	Abbapoola Creek at first large bend

11-0A6	ABBAPOOLA CREEK AT CONFLUENCE WITH SMALL CREEK ON WEST BACK AT 7TH BEND
11-07	GREEN CREEK AT STONO RIVER
11-08	MOUTH OF KIAWAH RIVER
11-10	KIAWAH RIVER AT KIAWAH ISLAND BOAT LANDING
11-21	SOUTH KIAWAH RIVER ON THE FLATS
11-22	KIAWAH RIVER POG AT MINGO POINT
11-23	CAPTAIN SAMS CREEK AND KIAWAH RIVER
11-24	CAPTAIN SAMS CREEK AT S. TIP OF LONG ISLAND
11-28	MULLETT HALL CREEK 150 YDS FROM MOUTH AT FORK
11-29	KIAWAH RIVER BETWEEN BRYANS CREEK AND MULLETT HALL CREEK
11-30	KIAWAH RIVER AT MOUTH OF BRYANS CREEK
11-31	BASS CREEK AT CONFLUENCE WITH KIAWAH RIVER
11-32	BASS CREEK AT CONFLUENCE WITH CINDER CREEK
11-33	SOL LEGARE BOAT LANDING
11-34	CINDER CREEK AT PUBLIC DOCK – 3RD BEND FROM CONFLUENCE WITH BASS CREEK
11-35	BASS CREEK AT PUBLIC DOCK – 5TH BEND FROM CONFLUENCE WITH CINDER CREEK

NPDES Program

Active NPDES Facilities

RECEIVING STREAM ***FACILITY NAME*** ***PERMITTED FLOW @ PIPE (MGD)***	***NPDES#*** ***TYPE*** ***COMMENT***
CHARLESTON HARBOR TOWN OF MT PLEASANT/CENTER ST. & RR RD PIPE #: 001 FLOW: 3.7 PIPE #: 002 FLOW: 6.0 PIPE #: 003,005 FLOW: M/R PIPE #: 006 FLOW: 0.0349	SC0040771 MAJOR DOMESTIC
ASHLEY RIVER INTO CHARLESTON HARBOR CHARLESTON CPW/PLUM ISLAND PIPE #: 001 FLOW: 36.0	SC0021229 MAJOR DOMESTIC
CHARLESTON HARBOR NATIONAL PARK SERVICE/FT SUMTER NATL. MT PIPE #: 001 FLOW: M/R	SC0047147 MINOR INDUSTRIAL
COVE CREEK TOWN OF SULLIVANS ISLAND WWTP PIPE #: 001 FLOW: 0.57	SC0020052 MINOR DOMESTIC
UNNAMED TRIBUTARY TO KIAWAH RIVER KIAWAH RESORT/CASSIQUE GOLF CO. PIPE #: 001 FLOW: M/R	SC0048186 MINOR DOMESTIC
HUT CREEK TO STONO RIVER THREE OAKS/CHICKEN FARM MINE PIPE #: 001 FLOW: M/R	SCG730083 MINOR INDUSTRIAL
FOLLY CREEK TRIBUTARY ATLANTIC FARMS, INC. PIPE #: 001-005 FLOW: M/R	SCG130001 MINOR INDUSTRIAL

Nonpoint Source Management Program

Land Disposal Activities

Landfill Facilities

LANDFILL NAME *FACILITY TYPE*	*PERMIT #* *STATUS*
TOWN OF SULLIVANS ISLAND MUNICIPAL	------- CLOSED

Land Application Sites

LAND APPLICATION *FACILITY NAME*	*PERMIT #* *YPE*
SPRAY ON GOLF COURSE KIAWAH ISLAND UTILITIES	ND0017361 DOMESTIC

Mining Activities

MINING COMPANY *MINE NAME*	*PERMIT #* *MINERAL*
CHARLESTON COUNTY KINSEY-BLAKE BORROW PIT	0314-19 SAND; SAND/CLAY
W. FRAZIER CONSTRUCTION CO., INC. (DIRTCO) MURRAY WOODS PIT	0512-19 SAND/CLAY
ISLAND CONSTRUCTION CO., INC. TREMONT MINE	0660-19 SAND
THREE OAKS CONTRACTORS, INC. CHICKEN FARM MINE	1129-19 SAND
MURRAY SAND CO., INC. DAVIS PIT	1513-19 SAND
WINGATE FARMS WINGATE	1493-19 SAND
DENISE M.MOSIMANN BEAM REACH MINE	1218-19 SAND
SUNNYSIDE FARMS, INC. SUNNYSIDE FARMS	1322-19 SAND

Growth Potential

There is a high potential for growth in this watershed, which contains the Town of Kiawah Island, the City of Folly Beach, and portions of the City of Charleston and the Towns of Seabrook Island, Sullivans Island, and Mt. Pleasant. Suburban growth areas include: the Dills Property, Ellis Property II, Stiles Point Plantation, Stonefield, Fort Lamar, Grimbel Shores, and Harborwoods III on James Island; and Kiawah Island, Andell Property, and Hope Plantation on Johns Island. All growth areas in the watershed have water and sewer services available.

Watershed Protection and Restoration

Special Projects

Charleston Harbor Project

For the past five years, the Charleston Harbor Project (CHP) has been conducting hundreds of experiments and studies in an effort to come up with a Special Area Management Plan for the Charleston Harbor. The primary goals are simple: to maintain and enhance the quality of the environment in the Charleston Harbor estuary system, to maintain the wide range of water uses and natural resources of the systems, and to anticipate and address potential problems before adverse impacts occur. The Charleston Harbor project initiated a comprehensive variety of projects designed to inform the public and decision makers on all major issues affecting the Harbor and facilitate the best possible policies for achieving economic and natural resources goals for the region. Considerable scientific research was conducted with over fifty reports published on topics including, ecological dynamics, water quality impacts of urban growth, and recreational uses of the resource.

A publication with recommendations related to these studies was made available in 2000. One particular recommendation of the final report was the development of a Special Area Management Plan focused on the Upper Cooper River region. This project was currently under way in 2004 with the management of old rice fields, a major subject of interest. A website with the final report as well as a searchable database of other information on the project is available at: www.scdhec.gov/eqc/ocrm/HTML/chp.html.

Total Maximum Daily Loads (TMDLs)

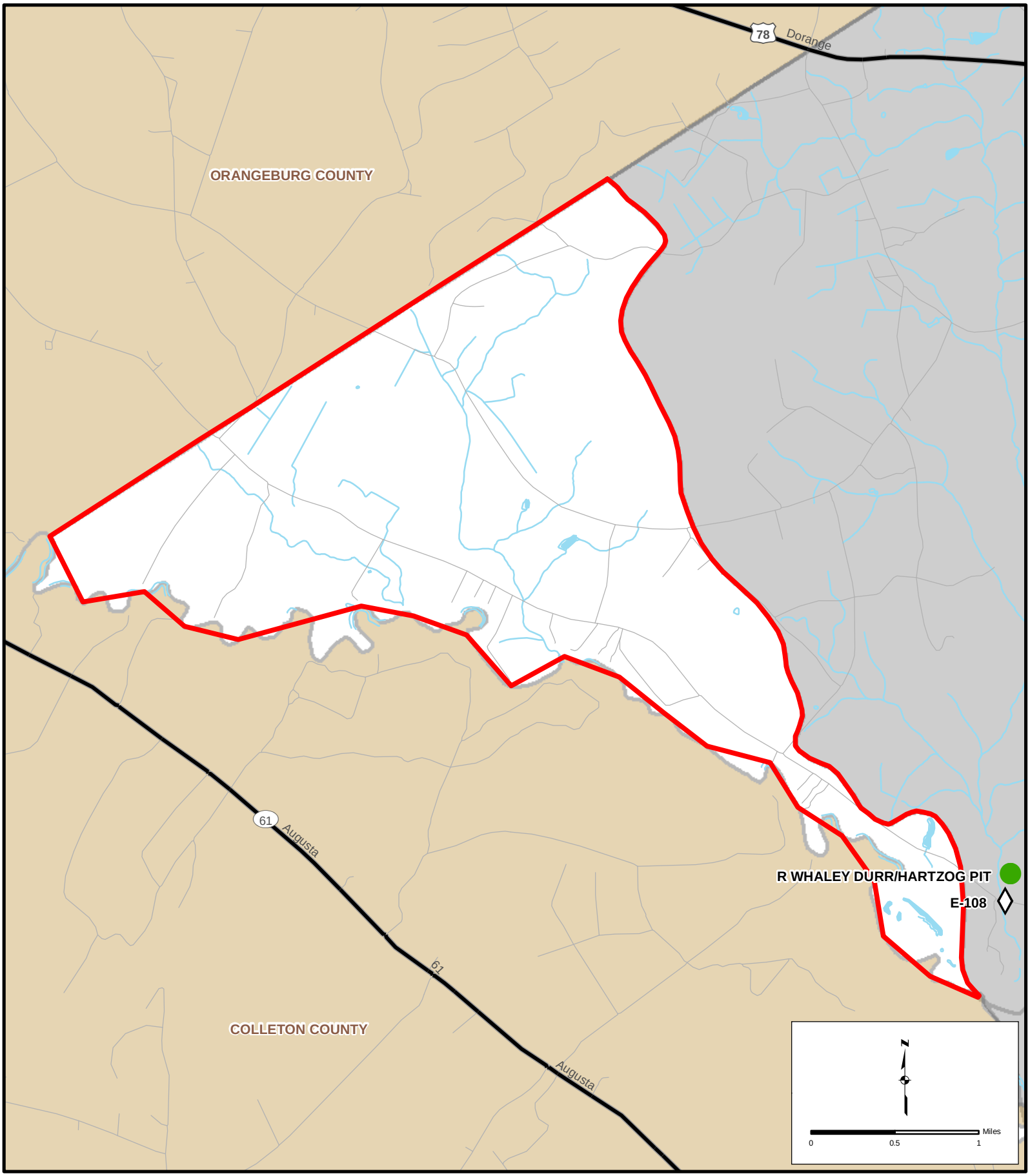
Two TMDLs addressing dissolved oxygen were developed by SCDHEC for the ***Charleston Harbor Estuary:*** one covering the Ashley River and the other covering the Charleston Harbor, the Cooper River, and the Wando River. The Harbor/Cooper River/Wando River portion of the system (consisting of the Tail Race Canal, West Branch Cooper River, East Branch Cooper River, Shipyard Creek, Town Creek, Back River, Goose Creek, Wando River and Charleston Harbor) is not considered to be impaired with respect to dissolved oxygen (with the exception of the Wando River monitoring site MD-115); however, available information indicates much of the system does not meet the applicable water quality standard for dissolved oxygen for significant periods of time and is considered water quality limited for the purposes of wasteload allocation (WLA) development. WLAs are an integral part of a TMDL, and although not always developed through the TMDL process, the Department and EPA have chosen to use the TMDL process to develop WLAs for the Charleston Harbor system (see following section).

Results of a water quality model indicate the need for a 70% reduction in discharge of oxygen demanding substances to the overall system. A phased approach to achieving these reductions is proposed with an initial Phase I reduction of 60%. For more detailed information on TMDLs, please visit the SCDHEC's Bureau of Water homepage at http://www.scdhec.gov/water and click on "Watersheds and TMDLs" and then "TMDL Program".

Special Models

Charleston Harbor System TMDLs

The modeling efforts for Charleston Harbor and its tributaries have been completed and phased TMDLs for the Ashley and the Cooper systems have been issued by the Department and approved by EPA Region 4. Interim TMDL limits were included in NPDES permits for a number of dischargers while final TMDL limits were included for some dischargers who were already meeting the final limits. Permits included compliance schedules that allowed the opportunity for additional modeling work to be completed before compliance with final limits is required. A group of dischargers working through the local Councils of Government has initiated another modeling effort that is currently underway. If this effort is successfully completed within the allotted time, the existing TMDLs will be revised and, as appropriate, new limits incorporated into NPDES permits for discharges covered by the TMDL.



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JACOBS

Water Quality Management Plan Update

Basin
03050205-010

Legend

- Limited Access
- Highway/ Major Road
- Minor Road
- Water Features
- Other Counties
- Watershed Boundary
- Streams
- NPDES Permits
- Biological Stations

03050205-010

(Edisto River)

General Description

Watershed 03050205-010 is located in Bamberg, Orangeburg, Dorchester, and Colleton Counties and consists primarily of the ***Edisto River*** and its tributaries, from its origin to Cattle Creek. The watershed occupies 80,967 acres of the Lower Coastal Plain region of South Carolina. The predominant soil types consist of an association of the Rains-Lynchburg-Goldsboro-Johnston-Lumbee series. The erodibility of the soil (K) averages 0.20 and the slope of the terrain averages 1%, with a range of 0-2%. Land use/land cover in the watershed includes: 50.6% forested land, 27.3% forested wetland (swamp), 17.8% agricultural land, 2.7% barren land, 0.7% urban land, 0.5% water, and 0.4% nonforested wetland (marsh).

The headwaters of the Edisto River are formed from the confluence of the North Fork Edisto River and the South Fork Edisto River near the Town of Bamberg. This section of the Edisto River accepts drainage from Betty Branch (Staley Branch, Mill Branch), Broad Branch, Pen Branch, Brier Creek, Bush Branch, and Box Branch. There are a total of 121.5 stream miles and 200.3 acres of lake waters in this watershed, all classified FW.

Surface Water Quality

Station #	Type	Class	Description
E-013	P/W	FW	EDISTO RIVER AT U.S. 78, W OF BRANCHVILLE
E-013A	W/INT	FW	EDISTO RIVER AT U.S. 21

Edisto River – There are two SCDHEC monitoring sites along this section of the Edisto River, and recreational uses are fully supported at both sites. This is a blackwater system, characterized by naturally low pH and dissolved oxygen concentrations. Although pH excursions were noted at both sites, they were typical of values seen in such systems and considered natural, not standards violations. At the upstream site **(E-013)**, aquatic life uses are fully supported. Significant decreasing trends in five-day biochemical oxygen demand and total nitrogen concentration suggest improving conditions for these parameters. Aquatic life uses are also fully supported at the downstream site **(E-013A)**.

A fish consumption advisory has been issued by the Department for mercury and includes portions of streams within this watershed (see advisory p.38).

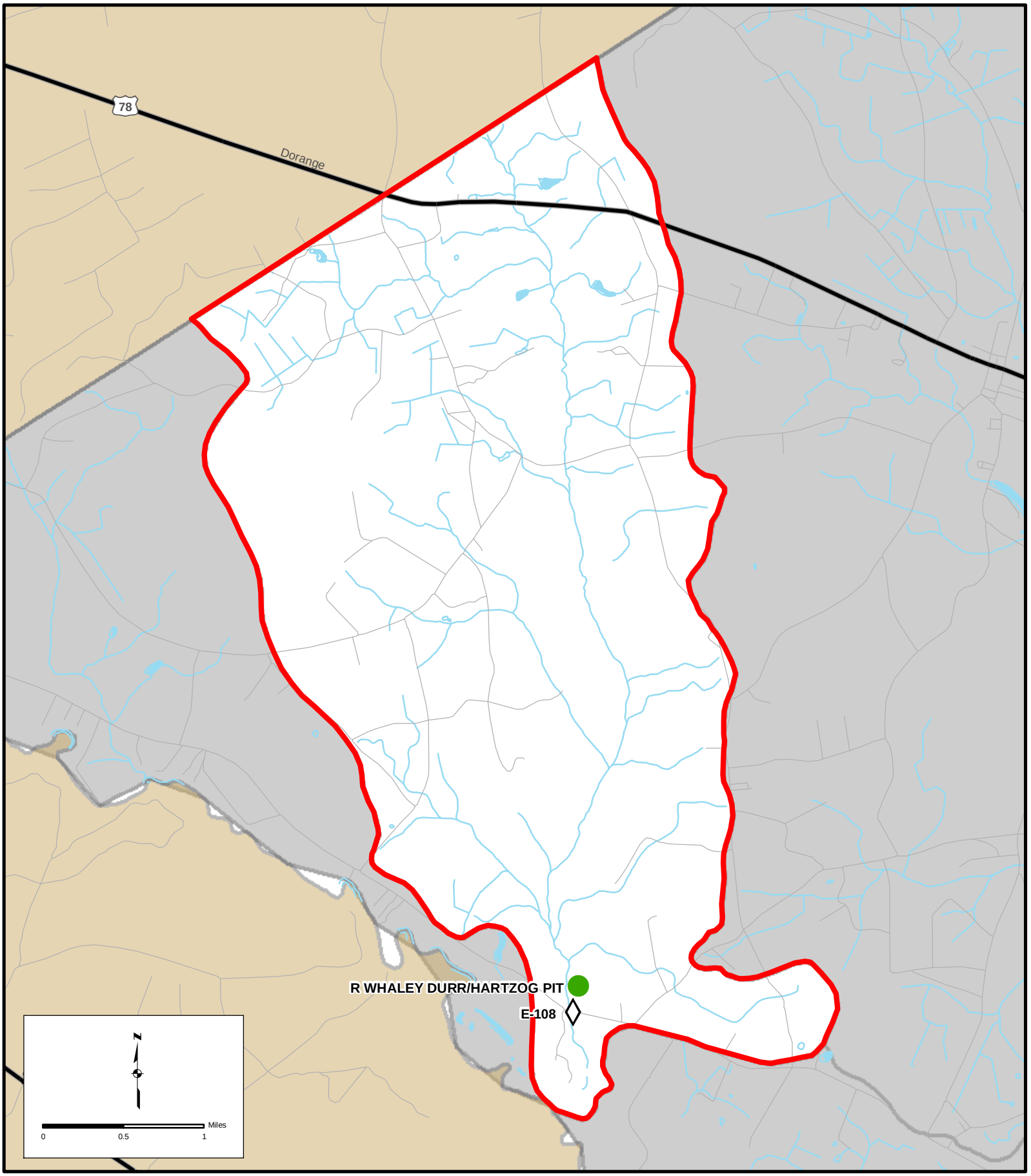
NPDES Program

Active NPDES Facilities

RECEIVING STREAM ***FACILITY NAME*** ***PERMITTED FLOW @ PIPE (MGD)***	***NPDES#*** ***TYPE*** ***COMMENT***
EDISTO RIVER TOWN OF BRANCHVILLE PIPE #: 001 FLOW: 0.15 PIPE #: 001 FLOW: 0.40	SC0047333 MINOR DOMESTIC PHASE I PHASE II (NOT IMPLEMENTED YET)

Growth Potential

There is a low to moderate potential for growth in this watershed, which contains the Towns of Branchville and Rowesville. The Town of Branchville is located in the center of the watershed with U.S. 78 and a rail line connecting it to the Towns of Bamberg and St. George, and U.S. 21 and another rail line connecting it to the City of Orangeburg. The infrastructure is in place, but census data shows a 37% decline in population over the last decade.



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Water Quality Management Plan Update

Basin
03050205-020

Legend

- Limited Access
- Highway/ Major Road
- Minor Road
- Water Features
- Other Counties
- Watershed Boundary
- Streams
- NPDES Permits
- Biological Stations

03050205-020

(Cattle Creek)

General Description

Watershed 03050205-020 is located in Orangeburg and Dorchester Counties and consists primarily of ***Cattle Creek*** and its tributaries. The watershed occupies 42,089 acres of the Lower Coastal Plain region of South Carolina. The predominant soil types consist of an association of the Rains-Lynchburg-Goldsboro series. The erodibility of the soil (K) averages 0.19 and the slope of the terrain averages 1%, with a range of 0-2%. Land use/land cover in the watershed includes: 48.4% forested land, 26.0% agricultural land, 21.9% forested wetland (swamp), 3.2% barren land, 0.4% nonforested wetland (marsh), and 0.1% water.

Cattle Creek originates near the Town of Bowman and accepts drainage from Sandy Run, Murray Branch, Mill Branch, and Big Branch before flowing into the Edisto River. There are a total of 55.9 stream miles and 20.5 acres of lake waters in this watershed, all classified FW.

Surface Water Quality

Station #	Type	Class	Description
E-108	W/BIO/INT	FW	CATTLE CREEK AT S-18-19

Cattle Creek (E-108) - Aquatic life uses are fully supported based on macroinvertebrate community and physiochemical data. Recreational uses are partially supported due to fecal coliform bacteria excursions.

NPDES Program

Active NPDES Facilities

RECEIVING STREAM *FACILITY NAME* *PERMITTED FLOW @ PIPE (MGD)*	*NPDES#* *TYPE* *COMMENT*
CATTLE CREEK R. WHALEY DURR/HARTZOG PIT PIPE #: 001 FLOW: MR	SCG730091 MINOR INDUSTRIAL

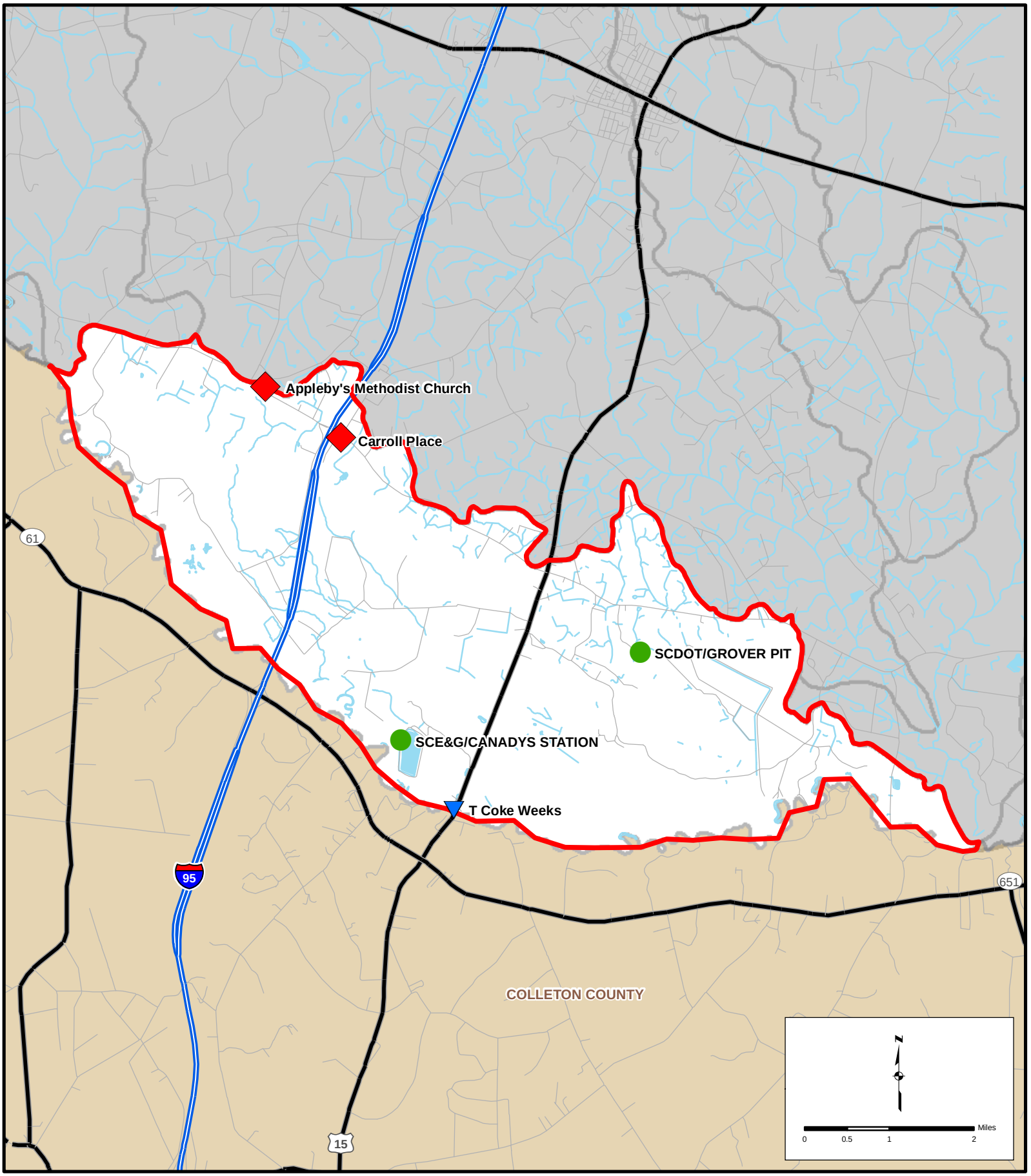
Nonpoint Source Management Program

Mining Activities

MINING COMPANY *MINE NAME*	*PERMIT #* *MINERAL*
DORCHESTER COUNTY HARTZOG PIT	0412-35 SAND; SAND/CLAY

Growth Potential

There is a low potential for growth in this watershed.



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Water Quality Management Plan Update

Basin
03050205-030

Legend

- Limited Access
- Highway/ Major Road
- Minor Road
- Water Features
- Other Counties
- Watershed Boundary
- Streams
- NPDES Permits
- Biological Stations

03050205-030

(Edisto River)

General Description

Watershed 03050205-030 is located in Colleton and Dorchester Counties and consists primarily of the ***Edisto River*** and its tributaries from Cattle Creek to Indian Field Swamp. The watershed occupies 46,571 acres of the Lower Coastal Plain region of South Carolina. The predominant soil types consist of an association of the Chipley-Rains-Leon-Hobcaw-Lynchburg series. The erodibility of the soil (K) averages 0.15 and the slope of the terrain averages 1%, with a range of 0-2%. Land use/land cover in the watershed includes: 53.9% forested land, 24.9% forested wetland (swamp), 14.8% agricultural land, 4.4% barren land, 1.3% water, 0.4% nonforested wetland (marsh), and 0.3% urban land.

This watershed accepts the drainage from the upstream reach of the Edisto River. This section of the river flows past Colleton State Park and accepts drainage from Brickhouse Branch, Crooked Creek, and Skull Branch. There are a total of 69.5 stream miles and 166.3 acres of lake waters in this watershed, all classified FW.

Surface Water Quality

Station #	Type	Class	Description
E-014	S/W	FW	EDISTO RIVER AT US 15, S OF ST. GEORGE
E-086	P/INT	FW	EDISTO RIVER AT S-18-29

Edisto River – There are two SCDHEC monitoring sites along this section of the Edisto River. Aquatic life and recreational uses are fully supported at the upstream site **(E-014)**; however, there is a significant increasing trend in turbidity. There is an increasing trend in pH. Prior to 2001, this was a secondary monitoring station and sampling was intentionally biased towards periods with potentially low dissolved oxygen concentrations. Significant decreasing trends in five-day biochemical oxygen demand and total phosphorus suggests improving conditions for this parameter.

Aquatic life and recreational uses are also fully supported at the downstream site **(E-086)**. There is a significant increasing trend in pH. A significant increasing trend in dissolved oxygen concentration and significant decreasing trends in five-day biochemical oxygen demand, turbidity, and total nitrogen concentration suggest improving conditions for these parameters.

A fish consumption advisory has been issued by the Department for mercury and includes streams within this watershed (see advisory p.38).

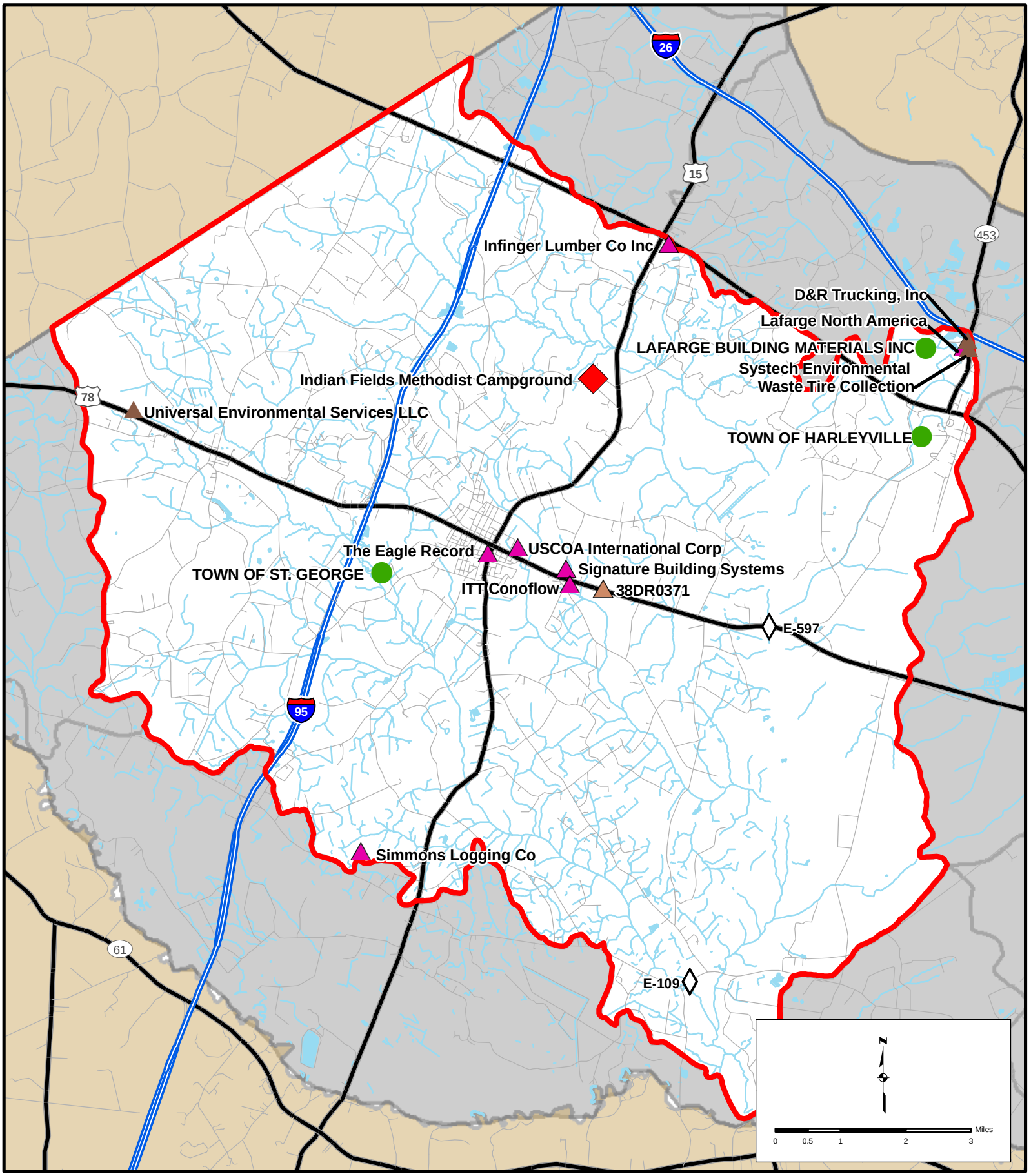
NPDES Program

Active NPDES Facilities

RECEIVING STREAM *FACILITY NAME* *PERMITTED FLOW @ PIPE (MGD)*	*NPDES#* *TYPE* *COMMENT*
EDISTO RIVER SCE&G/CANADYS STATION PIPE #: 001,002,04A, 04B, 005 FLOW: MR PIPE #: 003 FLOW: 1.18 PIPE #: 006 FLOW: 3.79	SC0002020 MAJOR INDUSTRIAL

Growth Potential

There is a low potential for growth in this watershed.



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Water Quality Management Plan Update

Basin
03050205-040

Legend

- Limited Access
- Highway/ Major Road
- Minor Road
- Water Features
- Other Counties
- Watershed Boundary
- Streams
- NPDES Permits
- Biological Stations
- National Register Sites
- Landfills
- Archeological Sites
- Industries

03050205-040

(Indian Field Swamp)

General Description

Watershed 03050205-040 is located in Dorchester and Orangeburg Counties and consists primarily of ***Indian Field Swamp*** and its tributaries. The watershed occupies 101,992 acres of the Lower Coastal Plain region of South Carolina. The predominant soil types consist of an association of the Goldsboro-Lynchburg-Rains-Hobcaw-Mouzon series. The erodibility of the soil (K) averages 0.19, and the slope of the terrain averages 1%, with a range of 0-2%. Land use/land cover in the watershed includes: 42.2% forested land, 30.7% agricultural land, 21.8% forested wetland (swamp), 3.3% barren land, 1.3% urban land, 0.5% nonforested wetland (marsh), and 0.2% water.

Mill Branch and Snell Branch combine to form Indian Field Swamp, which eventually drains into the Edisto River. Downstream from the confluence, Dove Branch and Wadboo Branch enter the swamp, followed by Spring Branch, Big Branch, Tom and Kate Branch, Pineland Branch, Millpond Branch, and Gum Branch. Polk Swamp (Bear Branch, Cowtail Creek) flows past the Town of St. George and drains into Indian Field Swamp at the base of the watershed. There are a total of 163.3 stream miles and 87.4 acres of lake waters in this watershed. Indian Field Swamp and Polk Swamp are classified FW* (Site specific standards - DO not less than 4.0 mg/l, pH between 5.0-8.5 SU), and the remaining streams are classified FW.

Surface Water Quality

Station #	Type	Class	Description
E-016	P/W	FW*	POLK SWAMP AT S-18-180, 2 MILES S OF ST. GEORGE
E-109	W/INT/BIO	FW*	POLK SWAMP AT S-18-19
E-597	BIO	FW*	INDIAN FIELD SWAMP AT US 78
E-032	W/INT	FW*	INDIAN FIELD SWAMP AT S-18-19

Indian Field Swamp – There are two SCDHEC monitoring sites along Indian Field Swamp. Aquatic life uses are fully supported at the upstream site **(E-597)** based on macroinvertebrate community data. At the downstream site **(E-032)**, aquatic life uses are partially supported due to dissolved oxygen excursions, compounded by a significant decreasing trend in dissolved oxygen concentration. There is a significant increasing trend in pH. A significant decreasing trend in five-day biochemical oxygen demand suggests improvements for this parameter. Recreational uses are partially supported due to fecal coliform excursions.

Polk Swamp - There are two SCDHEC monitoring sites along Polk Swamp. At the upstream site **(E-016)**, aquatic life uses are not supported due to dissolved oxygen excursions, compounded by a significant decreasing trend in dissolved oxygen concentration. A significant decreasing trend in total nitrogen concentration suggests improving conditions for this parameter. Recreational uses are not supported at this site due to fecal coliform bacteria excursions.

At the downstream site **(E-109)**, aquatic life uses are not supported due to dissolved oxygen excursions supported by impacts to the macroinvertebrate community. In addition, there is a significant decreasing trend in dissolved oxygen concentration. 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.

NPDES Program

Active NPDES Facilities

RECEIVING STREAM ***FACILITY NAME*** ***PERMITTED FLOW @ PIPE (MGD)***	***NPDES#*** ***TYPE*** ***COMMENT***
TOM AND KATE BRANCH LAFARGE MATERIALS, INC. PIPE #: 001 FLOW: 3.0	SC0022586 MINOR INDUSTRIAL
TOM AND KATE BRANCH TOWN OF HARLEYVILLE PIPE #: 001 FLOW: 0.15	SC0038504 MINOR DOMESTIC WETLAND
POLK SWAMP TOWN OF ST. GEORGE PIPE #: 001 FLOW: 0.80	SC0025844 MINOR DOMESTIC WETLAND

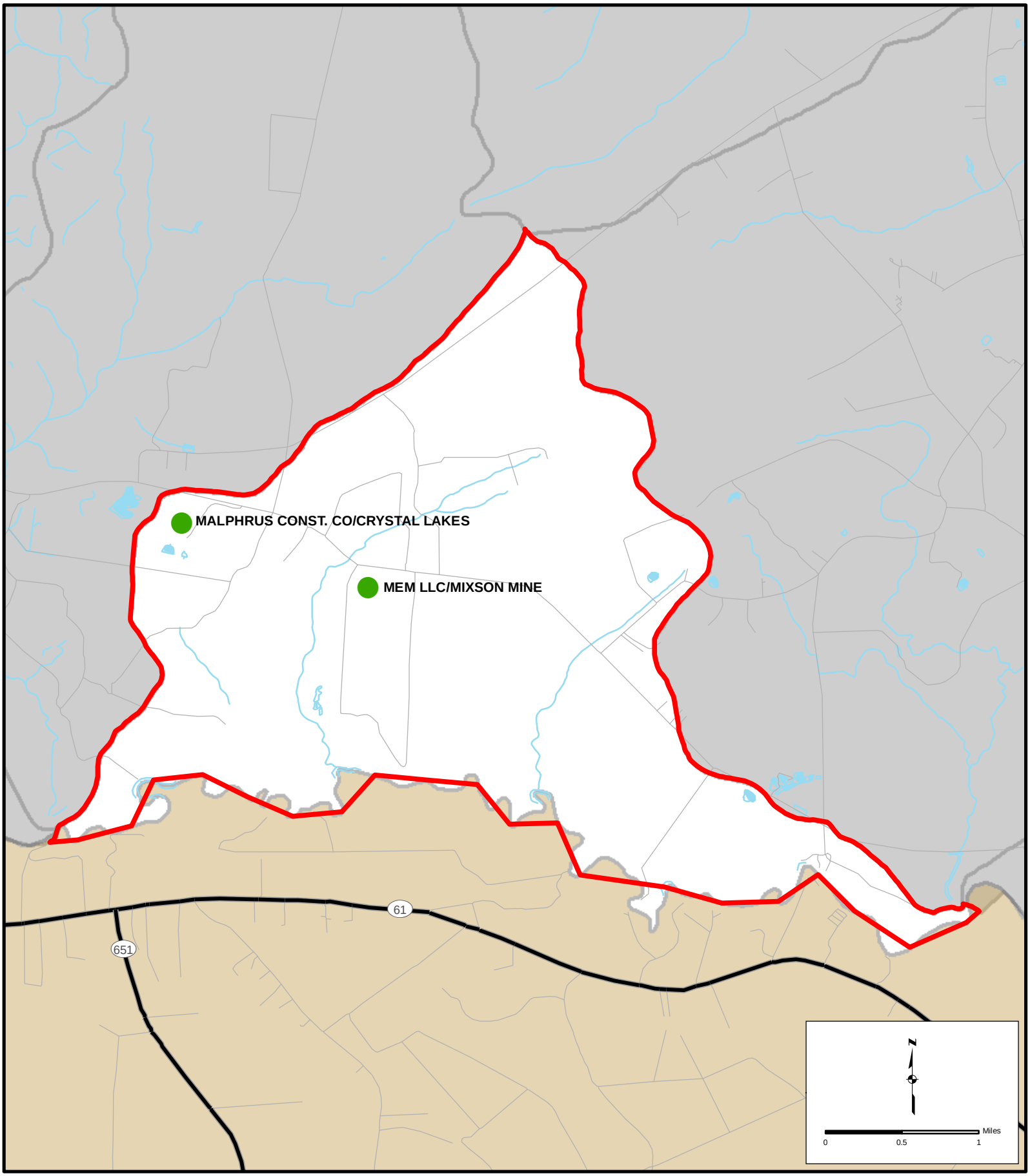
Nonpoint Source Management Program

Mining Activities

MINING COMPANY ***MINE NAME***	***PERMIT #*** ***MINERAL***
PAUL W. JONES HAULING P&M MINE	0950-35 SAND
LAFARGE MATERIALS, INC. HARLEYVILLE QUARRY	0110-35 LIME
PALMETTO SAND COMPANY INDIAN FIELD CREEK PLANT	0786-35 SAND

Growth Potential

Portions of this watershed, which contains the Towns of Reevesville and St. George, and a portion of the Town of Harleyville, have a moderate to high potential for growth. Interstate 95 crosses U.S. 78 near St. George in the center of the watershed. This interchange area has a high growth potential, particularly if U.S. 78 is widened as proposed. The I-95 interchange with U.S. 178 is another growth area. A rail line parallels U.S. 78 through St. George and together with the presence of I-95, provides a high industrial growth potential.



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Water Quality Management Plan Update

Basin
03050205-050

Legend

- Limited Access
- Highway/ Major Road
- Minor Road
- Water Features
- Other Counties
- Watershed Boundary
- Streams
- NPDES Permits

03050205-050

(Edisto River)

General Description

Watershed 03050205-050 is located in Dorchester and Colleton Counties and consists primarily of the ***Edisto River*** and its tributaries from Indian Field Swamp to Four Hole Swamp. The watershed occupies 10,059 acres of the Lower Coastal Plain region of South Carolina. The predominant soil types consist of an association of the Chipley-Ogeechee-Leon-Albany-Rains series. The erodibility of the soil (K) averages 0.15 and the slope of the terrain averages 1%, with a range of 0-2%. Land use/land cover in the watershed includes: 41.0% forested wetland (swamp), 40.3% forested land, 11.6% agricultural land, 3.7% barren land, 2.6% water, and 0.8% nonforested wetland (marsh).

As a reach of the Edisto River, this watershed accepts the drainage from all streams entering the river upstream. This section of the Edisto River also accepts drainage from Poorly Branch. There are a total of 15.0 stream miles and 8.6 acres of lake waters in this watershed, all classified FW.

Surface Water Quality

Station #	Type	Class	Description
E-015	P/INT	FW	EDISTO RIVER AT SC 61, AT GIVHANS FERRY STATE PARK

Edisto River – This watershed was inaccessible for monitoring purposes, so the uppermost site in watershed 03050205-060 **(E-015)** was used to represent the water quality of 03050205-050. Aquatic life uses are fully supported; however, there are significant increasing trends in turbidity and total suspended solids. There is a significant increasing trend in pH. Significant decreasing trends in five-day biochemical oxygen demand and total nitrogen concentration suggest improving conditions for these parameters. Recreational uses are fully supported.

A fish consumption advisory has been issued by the Department for mercury and includes streams within this watershed (see advisory p.38).

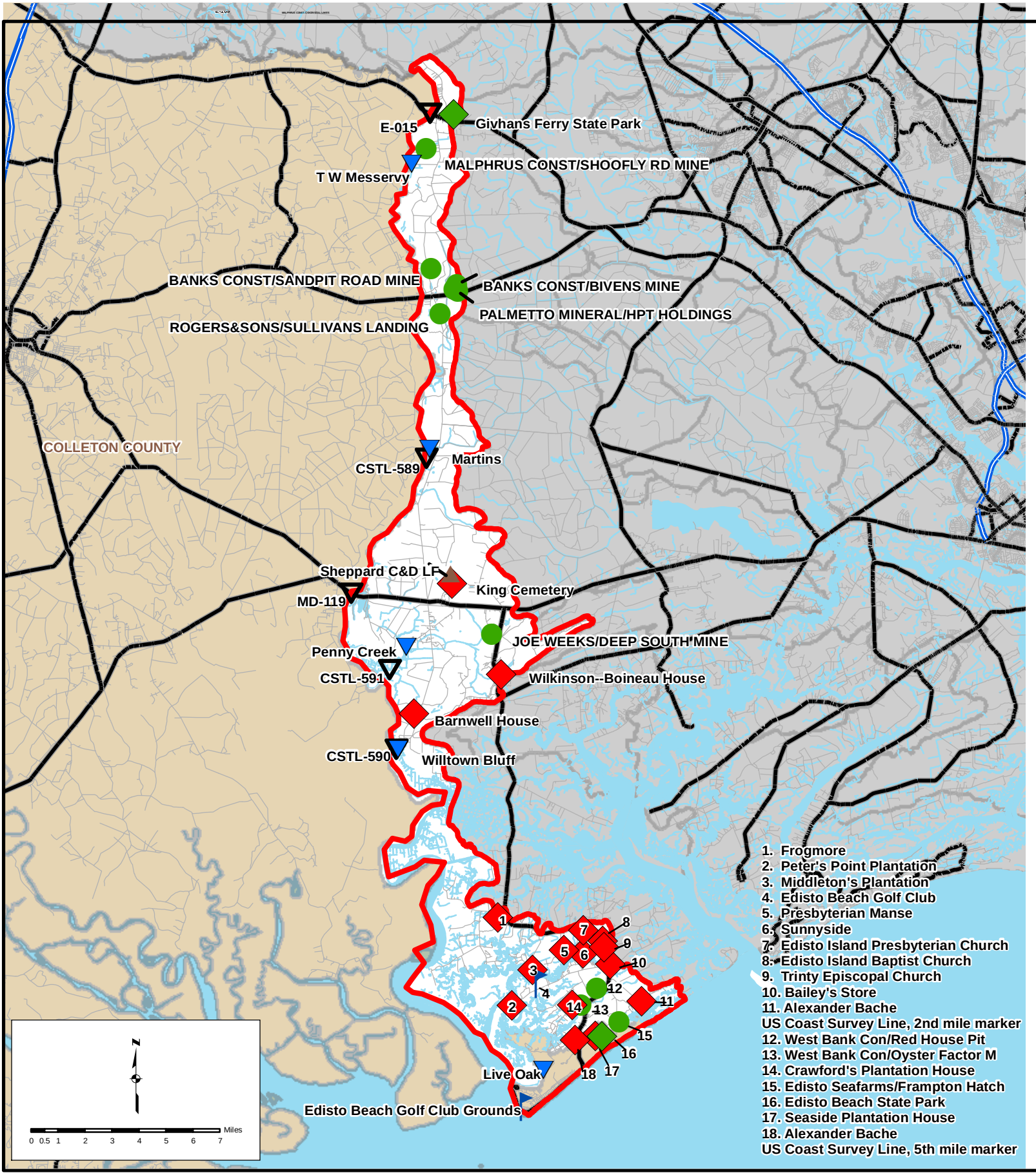
NPDES Program

Active NPDES Facilities

There are currently no point source dischargers in this watershed.

Growth Potential

There is a low potential for growth in this watershed.



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JACOBS

Water Quality Management Plan Update

Basin
03050205-060

Legend

- Limited Access
- Highway/ Major Road
- Minor Road
- Water Features
- Other Counties
- Streams
- Watershed Boundary
- National Register Sites
- Parks & Cultural Sites
- Landfills
- NPDES Permits
- Fish Stations
- Boat Ramps
- Golf Courses

03050205-060

(Edisto River and South Edisto River)

General Description

Watershed 03050205-060 is located in Colleton, Dorchester, and Charleston Counties and consists primarily of the ***Edisto River*** and the ***South Edisto River*** and their tributaries from Four Hole Swamp to the Atlantic Ocean. The watershed occupies 159,521 acres of the Lower Coastal Plain and Coastal Zone regions of South Carolina. The predominant soil types consist of an association of the Bohicket-Chipley-Rains-Chisolm-Yauhannah series. The erodibility of the soil (K) averages 0.15 and the slope of the terrain averages 1%, with a range of 0-6%. Land use/land cover in the watershed includes: 46.4% forested land, 21.6% forested wetland (swamp), 13.8% nonforested wetland (marsh), 9.0% water, 6.1% agricultural land, 2.6% barren land, and 0.5% urban land.

This lowest reach of the Edisto River receives the drainage from the upper reaches of the Edisto River and Four Hole Swamp. The Edisto River joins the Dawho River, which also drains into 03050205-070, and forms the South Edisto River, which drains into the Atlantic Ocean. The Edisto River is classified FW from its origin downstream to its intersection with U.S. 17, and below this point to its confluence with the Dawho River, the river is classified ORW. Cold Water Branch, Deep Creek (Maple Cane Swamp, Horse Pen Branch), and Sandy Run (Big Bay Swamp, Craven Branch, Boston Branch) drain into the Edisto River at the top of the watershed. Further downstream near the Town of Jacksonboro, the Edisto River accepts drainage from Spooler Swamp, Bull Bridge Creek, Allen Meadow, Penny Creek (Adams Run), Horse Creek, and Ashe Creek.

The South Edisto River is classified ORW from its headwaters to Mud Creek, and below Mud Creek to the Atlantic Ocean the river is classified SFH. Mosquito Creek, Sampson Island Creek, and Alligator Creek are all classified ORW and drain into the upper portion of the South Edisto River. Mosquito Creek connects to the Ashepoo River (Salkehatchie River Basin) through Bull Cut, and the Edisto River connects to watershed 03050205-070 through the Dawho River and Watts Cut (SFH). Further downstream, St. Pierre Creek accepts drainage from Bailey Creek, Shingle Creek (Milton Creek), Store Creek, and Fishing Creek (Sandy Creek) before draining into the South Edisto River. Big Bay Creek (SFH) enters downstream from Fishing Creek and accepts drainage from Mud Creek (ORW) and Scott Creek (ORW) near The Mound. Scott Creek also drains into the Atlantic Ocean via Jeremy Inlet (SFH).

There are a total of 143.3 stream miles, 132.1 acres of lake waters, and 8,683.1 acres of estuarine areas in this watershed. Additional natural resource areas in the watershed include Givhans Ferry State Park near the top of the watershed and Edisto Beach State Park at the base of the watershed.

Surface Water Quality

Station #	Type	Class	Description
E-015	P/INT	FW	EDISTO RIVER AT SC 61 AT GIVHANS FERRY STATE PARK

RS-01040	RS01	FW	EDISTO RIVER DOWNSTREAM OF S.C. 61, 7 MI NE OF COTTAGEVILLE
MD-119	P/W	FW/ORW	EDISTO RIVER AT US 17, 12.5 MILES NW OF RAVENEL
MD-260	INT	SFH	S. EDISTO R. AT NORTHERN CONFLUENCE WITH ALLIGATOR CREEK
MD-244	W/SPRP	SFH	SOUTH EDISTO RIVER BELOW ST. PIERRE CREEK
RO-01123	RO01	SFH	SOUTH EDISTO RIVER MOUTH, 1 MI NW OF EDISTO BEACH

Edisto River – There are three SCDHEC monitoring sites along this section of the Edisto River and recreational uses are fully supported at all sites. At the upstream site ***(E-015)***, aquatic life uses are fully supported; however, there are significant increasing trends in turbidity and total suspended solids. There is a significant increasing trend in pH. Significant decreasing trends in five-day biochemical oxygen demand and total nitrogen concentration suggest improving conditions for these parameters. Aquatic life uses are also fully supported further downstream at ***RS-01040***.

At the furthest downstream site ***(MD-119)***, aquatic life uses are again fully supported; however, there is a significant increasing trend in turbidity. There is a significant increasing trend in pH. A high concentration of lead was measured in the 1997 sediment sample, and P,P'DDD was detected in the 1998 sample. Although the use of DDT was banned in 1973, it is very persistent in the environment. Significant decreasing trends in five-day biochemical oxygen demand and total nitrogen concentration suggest improving conditions for these parameters.

South Edisto River **-** There are three SCDHEC sites along the South Edisto River. At the upstream site ***(MD-260)***, aquatic life and recreational uses are fully supported. Further downstream ***(MD-244)***, aquatic life uses are fully supported and a significant decreasing trend in five-day biochemical oxygen demand suggests improving conditions for this parameter. Recreational uses are fully supported and a significant decreasing trend in fecal coliform bacteria concentration suggests improving conditions for this parameter. This is a tidally influenced system with significant marsh drainage, characterized by naturally low dissolved oxygen concentrations. Although dissolved oxygen excursions occurred at MD-260 and MD-244, they were typical of values seen in such systems and considered natural, not standards violations. At the furthest downstream location ***(RS-01123)***, aquatic life uses are not supported due to occurrences of turbidity in excess of the aquatic life standard. Recreational uses are fully supported.

A fish consumption advisory has been issued by the Department for mercury and includes portions of streams within this watershed (see advisory p.38).

Shellfish Monitoring Stations

Station #	**Description**
13-01	SCOTT CREEK AT THE MOUND
13-02	MOUTH OF BIG BAY CREEK
13-03	MOUTH OF ST. PIERRE CREEK
Station #	**Description**
13-04	ST. PIERRE CREEK AT PETERS PT.
13-05	FISHING CREEK AT SANDY CREEK
13-05A	UPPER REACHES OF SANDY CREEK
13-06	CONFLUENCE OF SHINGLE CREEK AND BAILEY CREEK
13-07	STORE CREEK OPPOSITE HOUSE WITH DOCKS ON RIGHT

13-08	EDISTO RIVER AT ASHEPOO RIVER
13-09	FISHING CREEK AT OYSTER PLANT
13-10	FISHING CREEK AT POLLUTION LINE
13-12	HEADWATERS OF FISHING CREEK PAST OYSTER PLANT
13-17	CONFLUENCE OF WATTS CUT AND SOUTH EDISTO RIVER
13-18	CONFLUENCE OF RUSSELL CK AND WATTS CUT
13-20	NORTHERN CONFLUENCE OF ALLIGATOR CK AND S. EDISTO RIVER
13-21	BIG BAY CREEK HEADWATERS AT FIRST BEND TO RIGHT PAST THE NECK
13-22	HEADWATERS OF SCOTT CREEK AT JEREMY INLET AT THE BOAT LANDING
13-23	JEREMY INLET AT ATLANTIC OCEAN
13-24	FRAMPTON INLET AT NORTH END OF JEREMY CAY
13-25	FRAMPTON INLET AT ATLANTIC OCEAN
13-27	FRAMPTON INLET UPSTREAM OF BOAT RAMP PAST FIRST BEND
13-28	CONFLUENCE OF SHINGLE CREEK AND MILTON CREEK
13-29	BAILEY CREEK, FIRST BEND ADJACENT TO BLUFF ON BAILEY ISLAND (NEAR CONFL. WITH ST. PIERRE CREEK)
13-30	BAILEY CREEK AT CONFLUENCE WITH UNNAMED TRIBUATARY NEAR SW POINT OF SCANAWAH ISLAND
13-31	BAILEY CREEK AT CONFLUENCE WITH SOUTH EDISTO RIVER

Groundwater Quality

Well #	Class	Aquifer	Location
AMB-095	GB	TERTIARY LIMESTONE	EDISTO BEACH WELL 4

NPDES Program

Active NPDES Facilities

RECEIVING STREAM / ***FACILITY NAME*** / ***PERMITTED FLOW @ PIPE (MGD)***	***NPDES#*** / ***TYPE*** / ***COMMENT***
SANDY RUN	SCG730261
FOSTER DIXIANA CORP./SANDY RUN MINE	MINOR INDUSTRIAL
PIPE #: 001 FLOW: M/R	

Nonpoint Source Management Program

Land Disposal Activities

Land Application Sites

LAND APPLICATION SYSTEM / ***FACILITY NAME***	***ND#*** / ***TYPE***
SPRAY IRRIGATION	ND0063789
TOWN OF EDISTO BEACH/FAIRFIELD GOLF COURSE	DOMESTIC
SPRAYFIELD	ND0071510
JEREMY CAY	DOMESTIC

Mining Activities

MINING COMPANY / ***MINE NAME***	***PERMIT #*** / ***MINERAL***
FOSTER DIXIANA CORP.	0755-29
SANDY RUN MINE	SAND

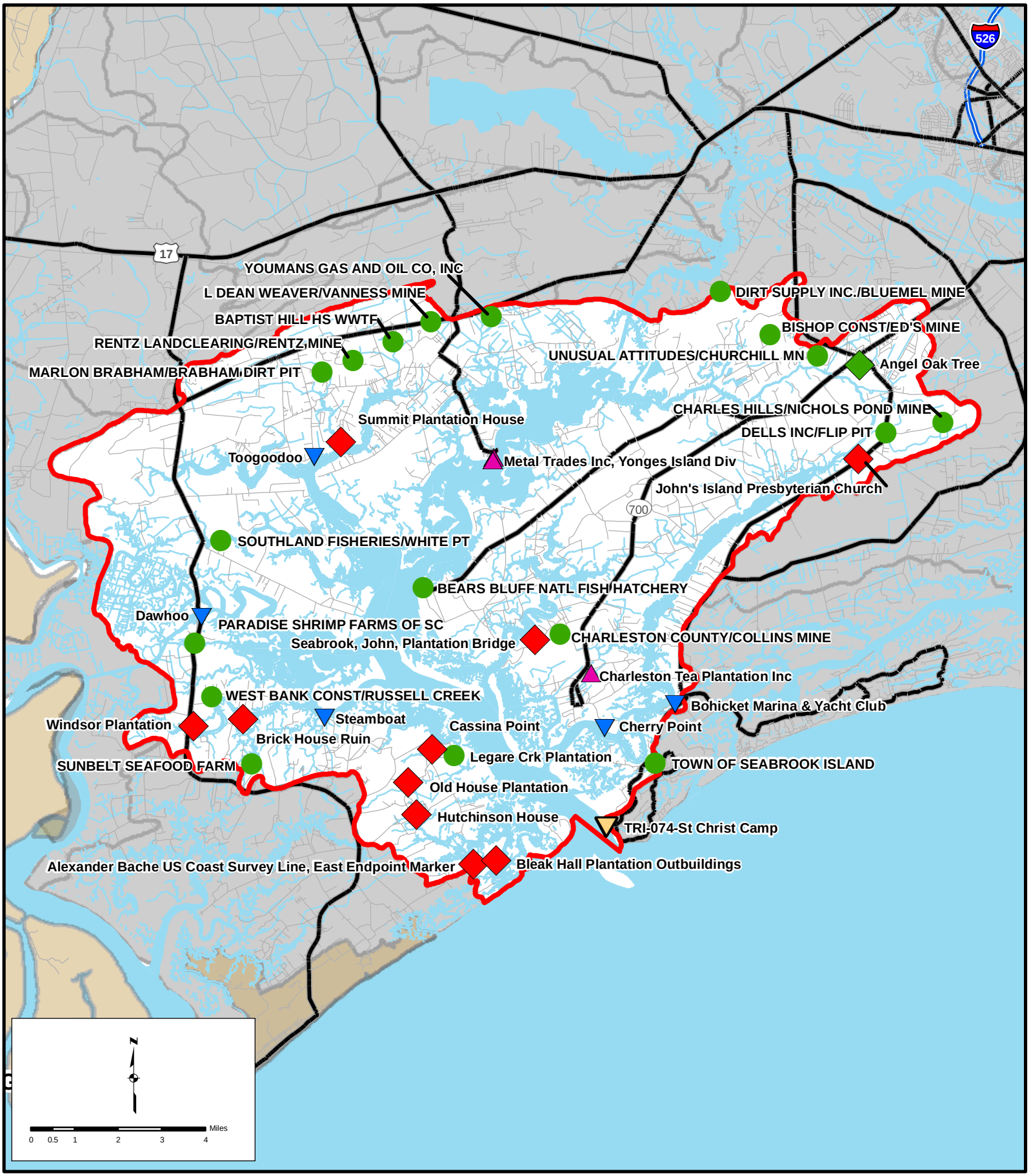
BANKS CONSTRUCTION CO. SANDPIT ROAD MINE	1076-35 SAND
BOHICKET CONSTRUCTION CO., INC. EDINGSVILLE ONE	1090-19 SAND; SAND/CLAY
TRI-COUNTY INVESTMENTS LLC. MAD DOG #3 MINE	1105-35 SAND
POWERS MINING CO. POWERS PIT	1378-29 SAND; SAND/CLAY
BANKS CONSTRUCTION CO., INC. BIVENS MINE	1273-35 SAND; SAND/CLAY
ROGERS & SON CONSTRUCTION CONE TRACT/ASHLEY DISTRICT	1350-35 SAND; SAND/CLAY

Water Quantity

WATER USER (TYPE) ***WATERBODY***	***REGULATED CAPACITY (MGD)*** ***PUMPING CAPACITY (MGD)***
CITY OF CHARLESTON EDISTO RIVER	100.00 150.00

Growth Potential

A high growth potential is projected for the upper portion of the watershed surrounding the Cottageville area. The Cottageville growth along U.S. Highway 17A to Charleston is one of the fastest growing areas in the state. There is a low to moderate growth potential for the lower portion of the watershed, primarily in the unincorporated areas centered around the Town of Edisto Beach. Much of the growth is tourism-based and thus elicits primarily seasonal influence on the area. Only a small proportion of the town is sewered and there are no plans to expand the sewer service area. However, the Town of Edisto Beach will extend sewer lines to serve areas where septic systems have failed (at owner expense). The ORW classification of most of the waters in this watershed prohibits new point source discharges of wastewater to surface waters. Growth that occurs will have to rely primarily on septic tanks and/or land application systems.



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Water Quality Management Plan Update

Basin
03050205-070

Legend

- Limited Access
- Highway/ Major Road
- Minor Road
- Water Features
- Other Counties
- Watershed Boundary
- Streams
- National Register Sites
- Parks & Cultural Sites
- NPDES Permits
- Beach Stations
- Boat Ramps
- Industries

03050205-070

(North Edisto River)

General Description

Watershed 03050205-070 is located in Charleston County and consists primarily of the ***North Edisto River*** and its tributaries. The watershed occupies 110,311 acres of the Coastal Zone region of South Carolina. The predominant soil types consist of an association of the Bohicket-Yonges-Kiawah-Foxworth-Wadmalaw series. The erodibility of the soil (K) averages 0.15, and the slope of the terrain averages 1%, with a range of 0-6%. Land use/land cover in the watershed includes: 33.8% forested land, 26.5% water, 15.0% agricultural land, 12.4% nonforested wetland (marsh), 8.4% forested wetland (swamp), 2.6% barren land, and 1.3% urban land.

The Dawho River joins the Wadmalaw River to form the North Edisto River (ORW), which drains into the Atlantic Ocean. There are a total of 381.1 acres of lake waters, and 11,600.4 acres of estuarine areas in this watershed. The Dawho River accepts drainage from the Edisto River watershed (03050205-060), Fishing Creek, and North Creek before merging with the Wadmalaw River. With the exception of North Creek (SFH), all these streams are classified ORW.

Upstream from the confluence, Church Creek (Raven Point Creek) flows into Wadmalaw Sound and is also connected to Bohicket Creek near Hoopstick Island. Also draining into the sound are the Stono River and Oyster House Creek. New Cut connects the Stono River to Church Creek. The Wadmalaw River flows out of Wadmalaw Sound and accepts drainage from Gibson Creek, Toogoodoo Creek (Lower Toogoodoo Creek, Swinton Creek), Wee Creek, and Tom Point Creek (also known as McLeod Creek) before merging with the Dawho River. Tom Point Creek is connected to Toogoodoo Creek through Garden Creek. Church Creek is classified ORW from Wadmalaw Sound to Raven Point Creek, and SFH from Raven Point Creek to Hoopstick Island. All the remaining streams are classified ORW.

Downstream from the confluence, Whooping Island Creek (Sand Creek) and Russel Creek join to form Steamboat Creek (Long Creek), which drains into the North Edisto River. Also draining into the North Edisto River are Westbank Creek, Leadenwah Creek, Bohicket Creek (Adams Creek, Fickling Creek), Ocella Creek, South Creek (Townsend River, Frampton Creek), and Privateer Creek. Frampton Creek and Townsend Creek (ORW) also drain directly into the ocean via Frampton Inlet (ORW). The Atlantic Intracoastal Waterway runs through Watts Cut and North Creek, down the Dawho River, up into the Wadmalaw River, through Wadmalaw Sound, and into the Stono River and the Santee River Basin.

Surface Water Quality

Station #	Type	Class	Description
RT-01665	RT01	SFH	DAWHO RIVER, 0.8 MI DOWNSTREAM OF S.C. 174
MD-120	P/INT	ORW	DAWHO RIVER AT SC 174, 9 MILES N OF EDISTO BEACH STATE PARK
MD-261	INT	SFH	YONGES ISLAND CREEK; MARKER #90
MD-195	P/W	SFH	CHURCH CREEK AT SC 700, 1 MILE SW OF CEDAR SPRINGS
MD-209	P/INT	ORW	BOHICKET CREEK AT FICKLING CREEK
RO-01145	RO01	SFH	BOHICKET CREEK NEAR CHERRY POINT LANDING NEAR ROCKVILLE
MD-210	S/W	ORW	BOHICKET CREEK MOUTH AT NORTH EDISTO RIVER

MD-262	INT	SFH	NORTH EDISTO RIVER AT LEADENWAH CREEK
RT-01652	RT01	SFH	TRIBUTARY TO OCELLA CREEK, 3 MI SW OF ROCKVILLE
MD-211	S/W	ORW	NORTH EDISTO RIVER MOUTH BETWEEN KIAWAH ISLAND & BOTANY BAY ISLAND

North Edisto River – There are two SCDHEC monitoring sites along the North Edisto River. This is a tidally influenced system with significant marsh drainage, characterized by naturally low dissolved oxygen concentrations. Although dissolved oxygen excursions were noted at both sites, they were typical of values seen in such systems and considered natural, not standards violations. Aquatic life and recreational uses are fully supported at the upstream site ***(MD-262)***. At the downstream site ***(MD-211)***, aquatic life uses are fully supported; however, there is a significant increasing trend in turbidity. There is a significant decreasing trend in pH. Prior to 2001, this was a secondary monitoring station and sampling was intentionally biased towards periods with potentially low dissolved oxygen concentrations. A significant decreasing trend in five-day biochemical oxygen demand suggests improving conditions for this parameter. Recreational uses are fully supported, and a significant decreasing trend in fecal coliform bacteria concentration suggests improving conditions for this parameter.

Yonges Island Creek (MD-261) – Aquatic life uses are not supported due to turbidity excursions. This is a tidally influenced system with significant marsh drainage, characterized by naturally low dissolved oxygen concentration. Although dissolved oxygen excursions were noted, they were typical of values seen in such systems and are considered natural, not standards violations. Recreational uses are fully supported.

Tributary to Ocella Creek (RT-01652) – Aquatic life uses and recreational uses are fully supported. This is a tidally influenced system with significant marsh drainage, characterized by naturally low dissolved oxygen concentration. Although dissolved oxygen excursions were noted, they were typical of values seen in such systems and are considered natural, not standards violations.

Dawho River - There are two SCDHEC monitoring sites along the Dawho River, and recreational uses are fully supported at both sites. At the site outside of the main channel ***(RT-01665)***, aquatic life uses are not supported due to dissolved oxygen and turbidity excursions. At the site along the main channel ***(MD-120)***, aquatic life uses are again not supported due to dissolved oxygen and turbidity excursions. A very high concentration of lead and high concentrations of chromium and nickel were measured in the 2000 sediment sample. Lead exceeded the Effects Range Low (ERL) concentration but was less than the Effects Range Median (ERM) concentration. In the 1997 sediment sample, Chlordane exceeded the ERM concentration. Significant decreasing trends in five-day biochemical oxygen demand and total nitrogen concentration suggest improving conditions for these parameters at this site.

Church Creek (MD-195) - Aquatic life uses are not supported due to dissolved oxygen excursions, and there is also a significant increasing trend in turbidity. This is a tidally influenced system with significant marsh drainage, characterized by naturally low dissolved oxygen concentrations. Natural conditions in this stream may have contributed to the observed low dissolved oxygen values. Significant decreasing

trends in five-day biochemical oxygen demand and total nitrogen concentration suggest improving conditions for these parameters. Recreational uses are fully supported.

Bohicket Creek **-** There are three SCDHEC monitoring sites along Bohicket Creek, and recreational uses are fully supported at all sites. At the upstream site ***(MD-209)***, aquatic life uses are not supported due to dissolved oxygen excursions. There is a significant decreasing trend in pH. Significant decreasing trends in five-day biochemical oxygen demand and total phosphorus concentration suggest improving conditions for these parameters. High concentrations of chromium, lead and nickel were measured in the 1999 sediment sample. Lead exceeded the Effects Range Low (ERL) concentration but was less than the Effects Range Median (ERM) concentration. A significant decreasing trend in fecal coliform concentration suggests improving conditions for this parameter at this site. Further downstream ***(RO-01145)***, aquatic life uses are fully supported.

Near the confluence with the North Edisto River ***(MD-210)***, aquatic life uses are fully supported. Prior to 2001, this was a secondary monitoring station and sampling was intentionally biased towards periods with potentially low dissolved oxygen concentrations. A significant decreasing trend in five-day biochemical oxygen demand suggests improving conditions for this parameter. A very high concentration of cadmium was measured in the 1998 sediment sample. Cadmium exceeded the Effects Range Low (ERL) concentration but was less than the Effects Range Median (ERM) concentration. P,P' DDT was detected in the 1997 sediment sample. The measurement exceeded the ERL concentration, but was less than the ERM concentration. Although the use of DDT was banned in 1973, it is very persistent in the environment. This is a tidally influenced system with significant marsh drainage, which are often characterized by naturally low dissolved oxygen concentrations. Although dissolved oxygen excursions were noted, they were typical of values seen in such systems and considered natural, not standards violations.

Shellfish Monitoring Stations

Station #	Description
11-15	STONO RIVER (AIWW) AT MARKER #63
12-48	FIRST STORMWATER OUTFALL IN HTWTRS OF SAND CR (1998-98)
12-49	DOCK MIDWAY STATIONS 48&50 (1996-96)
12A-09	ADAMS CREEK AT BOHICKET CREEK
12A-10	ROCKVILLE BOAT LANDING
12A-11	ADAMS CREEK BETWEEN ADAMS CREEK MARINA AND SHRIMP DOCK
12A-13	BOHICKET CREEK AT FICKLING CREEK
12A-14	S.C. 700 BRIDGE OVER BOHICKET CREEK
12A-20	BOHICKET CREEK OPPOSITE HOOPSTICK ISLAND
12A-21	OPPOSITE OLD DAM BEHIND RAST HOUSE RESTAURANT
12A-22	OPPOSITE BOY SCOUT CAMP
12A-29	RAVEN POINT CREEK AT CONFLUENCE WITH CHURCH CREEK
12A-31	SOUTHWEST BOUNDARY OF PROHIBITED AREA AT BOHICKET MARINA
12A-32	PRIVATEER CREEK UP MILE AT FORK
12A-38	DRAINAGE DISCHARGE 1/8 MI E OF POWER LINES, N BANK OF CHURCH CREEK
12A-39	CONFL. OF CHURCH CREEK AND SMALL TIDAL CK – 350 YDS W S.C. 700 BRIDGE, N SIDE OF CHURCH CK
12A-40	PINE CREEK AT FIRST FORK

Station #	Description
12A-41	Confluence of Church Creek and New Cut
12A-46	Bohicket Creek midway between Sta.. 21 and 22 at small unnamed tributary on west bank
12B-01	Mouth of Church Creek, Marker #77
12B-02	Goshen Point, Marker #69
12B-03	Yonges Island Creek, at center of metal trade dock
12B-04	Toogoodoo Creek at confluence with AIWW, Marker #102
12B-05	Dawho Creek, Marker #110
12B-06	Steamboat Creek, Marker #2
12B-07	Westbank Creek at North Edisto River, opposite Leadenwah Creek
12B-08	Leadenwah Creek at North Edisto River
12B-09	Dawho Creek, Marker #119
12B-10	South boundary of Protected Area at Metal Trades Dock
12B-12	Leadenwah Creek 1 mile from confluence with North Edisto River
12B-30	Tom Point Creek at Park Island
12B-33	Confluence of Ocella Creek and South Creek
12B-34	Toogoodoo Creek SSG at last creek before fork
12B-35	Public boat ramp, Lower Toogoodoo Creek
12B-36	Confluence of Tom Point Creek and North Edisto River
12B-37	Confluence of Steamboat Creek and Russell Creek
12B-42	Headwaters of Ocella Creek
12B-43	Russell Creek at estuary entering Sunbelt Clam Farms
12B-44	Toogoodoo Creek midway between Stations 4 and 34
12B-45	Toogoodoo Creek at the second bend past the confluence with Lower Toogoodoo Creek
12B-47	Sand Creek bridge at Hwy 174
12B-50	Sand Creek at intake to Westendorf Clam Farm
12B-51	Wadmalaw Sound at day beacon #80
12B-52	Confluence of Whooping Island Creek and Steamboat Creek
12B-53	Dawho River, Marker #126
12B-54	Tom Point Creek, 3 bends upstream of Station #30
13-16	Highway 174 bridge over North creek (1993-98)
13-19	Russell Creek at Area 12/13 boundary (1993-98)

NPDES Program

Active NPDES Facilities

RECEIVING STREAM ***FACILITY NAME*** ***PERMITTED FLOW @ PIPE (MGD)***	***NPDES#*** ***TYPE*** ***COMMENT***
NORTH CREEK (AIWW & WHOOPING IS. CK) PARADISE SHRIMP FARMS OF S.C. PIPE #: 001 & 002 FLOW: M/R	SC0040401 MINOR INDUSTRIAL
BOHICKET CREEK TRIBUTARY THREE OAKS/CHICKEN FARM MINE PIPE #: 001 FLOW: M/R	SCG730083 MINOR INDUSTRIAL
WEE CREEK BEARS BLUFF NATIONAL FISH HATCHERY PIPE #: 001 FLOW: M/R	SC0047848 MINOR INDUSTRIAL

Nonpoint Source Management Program

Land Disposal Activities

Land Application Sites

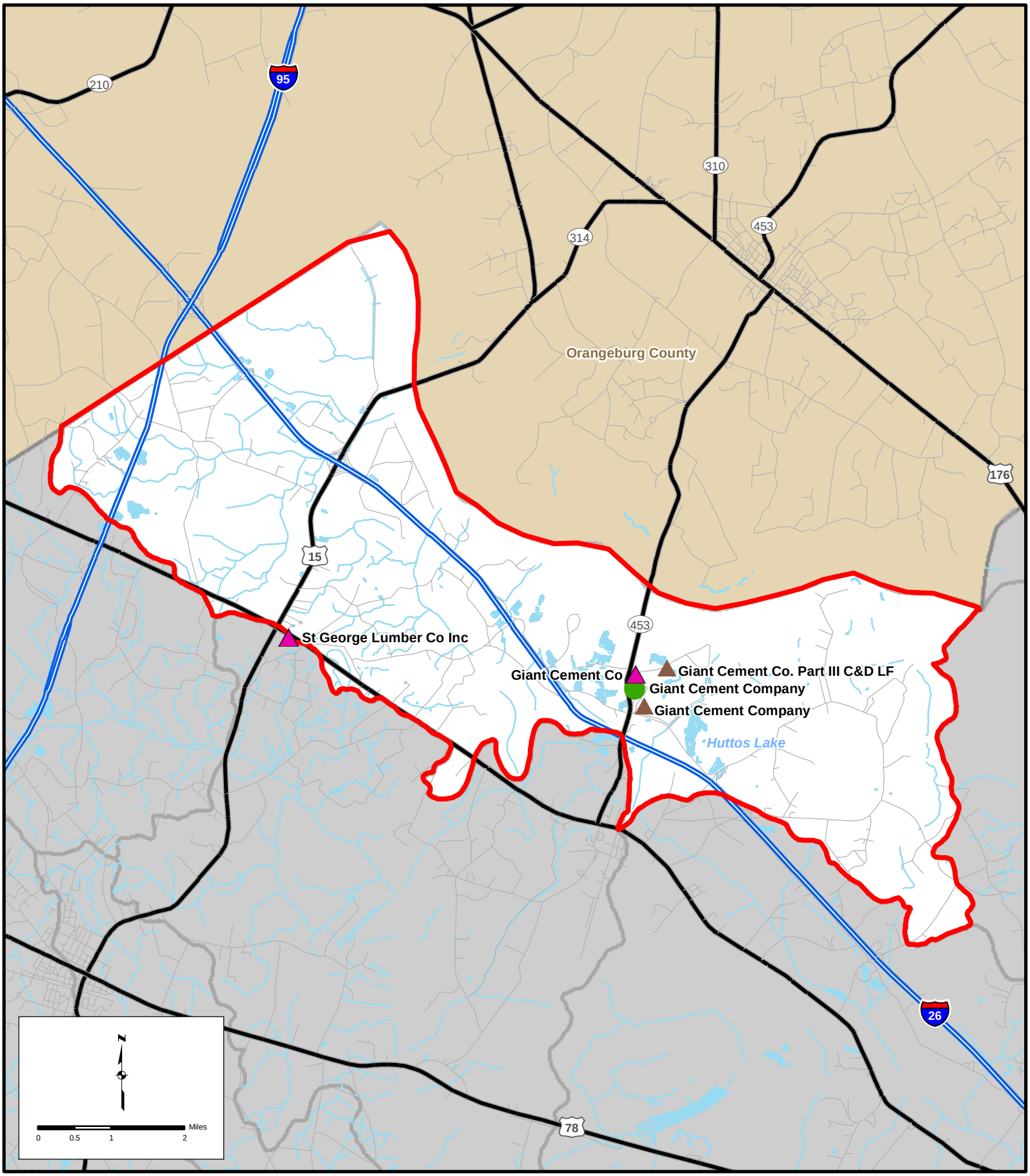
LAND APPLICATION SYSTEM FACILITY NAME	*ND# TYPE*
SPRAY IRRIGATION ON GOLF COURSES TOWN OF SEABROOK ISLAND	ND0063347 DOMESTIC

Mining Activities

MINING COMPANY MINE NAME	*PERMIT # MINERAL*
GUY L. BUCKNER JOHNS ISLAND #1	0122-19 SAND
JOHNNY R. FREEMAN PRIVATE PROPERTY	1258-19 SAND; SAND/CLAY
RENTZ LANDCLEARING RENTZ MINE	0994-19 SAND; SAND/CLAY
LOIS CRIST TLC SERVICES TLC1 – BRODIE LAKE	1263-19 SAND; SAND/CLAY
CHARLESTON CO. PUBLIC WORKS DEPT. EDISTO PIT	1038-19 SAND; SAND/CLAY
LAFARGE MATERIALS, INC. JAMISON	0206-75 CLAY

Growth Potential

There is a low potential for growth in this rural agricultural-based watershed, which contains the Towns of Rockville, Seabrook Island and Meggett, and portions of the Town of Hollywood and the City of Charleston. The ORW classification of most of the waters in this watershed prohibits new point source discharges of wastewater to surface waters. Growth that occurs will have to rely on septic tanks and/or land application (ND) systems.



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Water Quality Management Plan Update

Basin
03050206-040

Legend

- Limited Access
- Highway/ Major Road
- Minor Road
- Watershed Boundary
- Streams
- Water Features
- Other Counties
- NPDES Permits
- Landfills
- Industries

03050206-040

(Four Hole Swamp)

General Description

Watershed 03050206-040 is located in Orangeburg and Dorchester Counties and consists primarily of ***Four Hole Swamp*** and its tributaries from Cow Castle Creek to Dean Swamp. The watershed occupies 66,545 acres of the Lower Coastal Plain region of South Carolina. The predominant soil types consist of an association of the Goldsboro-Rains-Lynchburg-Hobcaw series. The erodibility of the soil (K) averages 0.17 and the slope of the terrain averages 1%, with a range of 0-2%. Land use/land cover in the watershed includes: 33.9% forested land, 33.4% forested wetland (swamp), 26.0% agricultural land, 3.9% barren land, 1.6% urban land, 0.7% water, and 0.5% nonforested wetland (marsh).

As a reach of Four Hole Swamp, this watershed accepts the drainage from all streams entering the swamp system upstream. This section of Four Hole Swamp also receives drainage from the Cow Castle Creek watershed, the Providence Swamp watershed, Target Swamp, Spring Branch, and Mill Branch. Further downstream Huttos Lake and Rowser Lake drain into Four Hole Swamp. Home Branch originates near the Town of Holly Hill and flows past the Town of Four Holes before entering the swamp. Mill Run and Dam Branch drain into the swamp at the base of the watershed. There are a total of 127.8 stream miles and 391.4 acres of lake waters in this watershed. Four Hole Swamp is classified FW* (site specific classification requires DO not less than 4.0 mg/l and pH between 5.0-8.5), and the remaining streams are classified FW.

Surface Water Quality

Station #	Type	Class	Description
E-112	W/INT	FW*	FOUR HOLE SWAMP AT SC 453

Four Hole Swamp (E-112) - Aquatic life uses are not supported due to dissolved oxygen excursions. Recreational uses are fully supported.

NPDES Program

Active NPDES Facilities

RECEIVING STREAM *FACILITY NAME* *PERMITTED FLOW @ PIPE (MGD)*	*NPDES#* *TYPE* *COMMENT*
FOUR HOLE SWAMP GIANT CEMENT COMPANY, INC. PIPE #: 001 FLOW: 0.0073 PIPE #: 002 FLOW: 2.494 PIPE #: 004 FLOW: 0.140 PIPE #: 005 FLOW: M/R	SC0022667 MINOR INDUSTRIAL
FOUR HOLE SWAMP GA PACIFIC/HOLLY HILL FIBERBOARD PIPE #: 002 FLOW: 1.000	SC0001147 MINOR INDUSTRIAL

HUTTOS LAKE GIANT CEMENT COMPANY, INC. PIPE #: 003 FLOW: 0.545	SC0022667 MINOR INDUSTRIAL
HOME BRANCH HOLCIM (US) INC./HOLLY HILL PLT PIPE #: 001 FLOW: 8.000 PIPE #: 001A FLOW: 0.002	SC0002992 MINOR INDUSTRIAL

Nonpoint Source Management Program

Land Disposal Activities

Landfill Facilities

LANDFILL NAME ***FACILITY TYPE***	***PERMIT#*** ***STATUS***
GIANT CEMENT COMPANY, INC. INDUSTRIAL	IWP-244 ----------
CITY OF HOLLY HILL INDUSTRIAL	IWP-205 (381003-1201; CWP-042); ---------- IWP-024
GA PACIFIC INDUSTRIAL	383304-1601 (IWP-221; CWP-008) ACTIVE

Land Application Sites

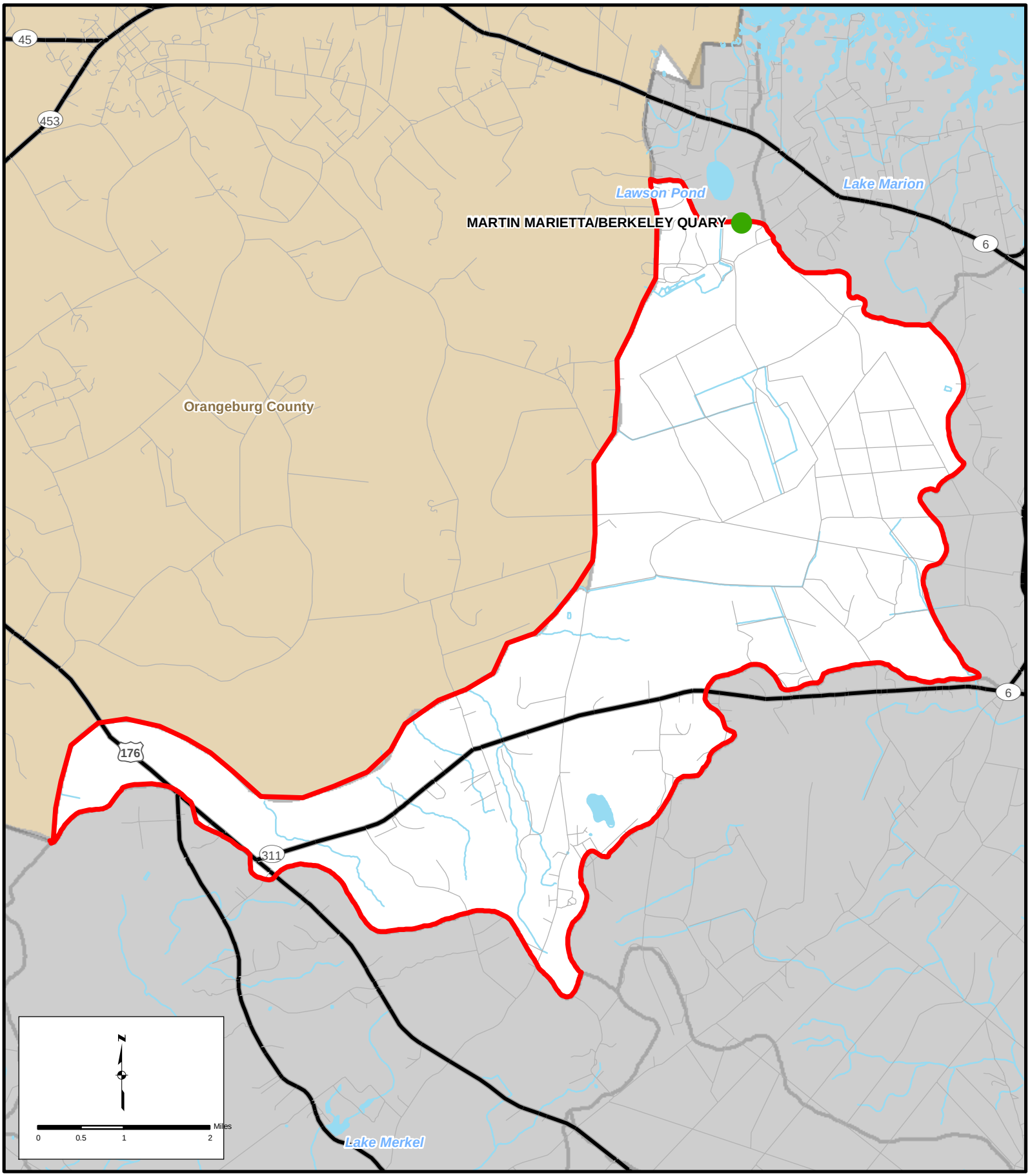
LAND APPLICATION SYSTEM ***FACILITY NAME***	***ND#*** ***TYPE***
SPRAY IRRIGATION CITY OF HOLLY HILL	ND0063380 DOMESTIC

Mining Activities

MINING COMPANY ***MINE NAME***	***PERMIT #*** ***MINERAL***
GIANT CEMENT COMPANY, INC. HARLEYVILLE MINE	0120-35 LIMESTONE
HOLNAM, INC. MARL & CLAY QUARRY	0054-75 LIMESTONE

Growth Potential

Interstates 95 and 26 cross in this watershed and should promote some growth around the following interchanges: I-95 & I-26, I-95 & U.S. 178, and I-26 & S.C. 15; U.S. 176 crosses a rail line in the City of Holly Hill.



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Water Quality Management Plan Update

Basin
03050206-060

Legend

- Limited Access
- Highway/ Major Road
- Minor Road
- Watershed Boundary
- Streams
- Water Features
- Other Counties
- NPDES Permits

03050206-060

(Dean Swamp)

General Description

Watershed 03050206-060 is located in Orangeburg and Berkeley Counties and consists primarily of ***Dean Swamp*** and its tributaries. The watershed occupies 66,753 acres of the Upper and Lower Coastal Plain regions of South Carolina. The predominant soil types consist of an association of the Rains-Lynchburg-Goldsboro-Hobcaw series. The erodibility of the soil (K) averages 0.17 and the slope of the terrain averages 1%, with a range of 0-2%. Land use/land cover in the watershed includes: 46.5% forested land, 33.2% agricultural land, 14.9% forested wetland (swamp), 4.4% barren land, 0.7% urban land, and 0.3% nonforested wetland (marsh).

Sandy Run (Moon Savanna) originates near the Town of Eutawville and accepts the drainage of Cedar Swamp (Toney Bay) before merging with Black Creek (Little Black Creek) to form Dean Swamp, which also accepts the drainage of Briner Branch before draining into Four Hole Swamp. There are a total of 127.5 stream miles and 52.8 acres of lake waters in this watershed, all classified FW.

Surface Water Quality

Station #	Type	Class	Description
E-596	BIO	FW	CEDAR SWAMP AT CEMENT BRIDGE ROAD OFF SR 640
E-030	W/INT	FW	DEAN SWAMP AT U.S. 176

Dean Swamp (E-030) - Aquatic life uses are fully supported. This is a blackwater system, which are often characterized by naturally low pH and dissolved oxygen concentrations. Although dissolved oxygen excursions were noted, they were typical of values seen in such systems and considered natural, not standards violations. Recreational uses are fully supported.

Cedar Swamp (E-596) - Aquatic life uses are fully supported based on macroinvertebrate community data.

Groundwater Quality

Well #	Class	Aquifer	Location
AMB-052	GB	PEE DEE	EUTAW SPRINGS

NPDES Program

Active NPDES Facilities

RECEIVING STREAM *FACILITY NAME* *PERMITTED FLOW @ PIPE (MGD)*	*NPDES#* *TYPE* *COMMENT*
SANDY RUN TRIBUTARY MARTIN MARIETTA/ORANGEBURG PIPE #: 001 FLOW: M/R	SCG730268 MINOR INDUSTRIAL
SANDY RUN TRIBUTARY MARTIN MARIETTA/BERKELEY QUARRY PIPE #: 001 FLOW: M/R	SCG730058 MINOR INDUSTRIAL

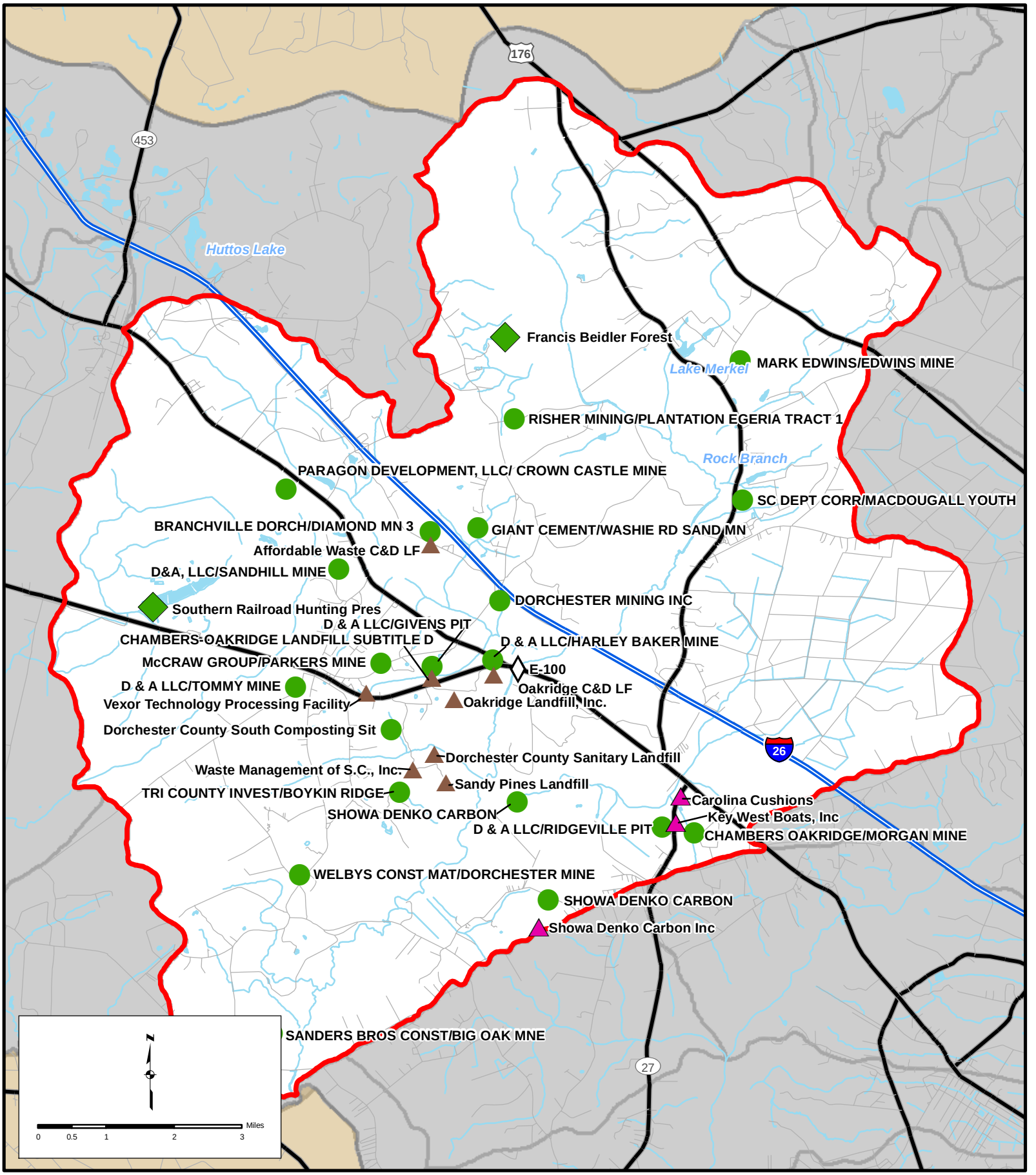
Nonpoint Source Management Program

Mining Activities

MINING COMPANY *MINE NAME*	*PERMIT #* *MINERAL*
MARTIN MARIETTA AGGREGATES BERKELEY QUARRY	0098-15 LIMESTONE
MARTIN MARIETTA AGGREGATES ORANGEBURG QUARRY	0802-75 LIMESTONE

Growth Potential

There is a low potential for growth in this watershed, which contains portions of the City of Holly Hill and the Town of Eutawville. A rail line and S.C. 453 runs from Holly Hill to the Eutawville. This road is bisected by U.S.176 in Holly Hill.



BCDCOG
BERKELEY-CHARLESTON-DORCHESTER COUNCIL OF GOVERNMENTS

JACOBS

Water Quality Management Plan Update

Basin
03050206-070

Legend

- Limited Access
- Highway/ Major Road
- Minor Road
- Other Counties
- Watershed Boundary
- Streams
- Water Features
- Biological Stations
- Parks & Culutural Sites
- NPDES Permits
- Industries
- Landfills

03050206-070

(Four Hole Swamp)

General Description

Watershed 03050206-070 is located in Dorchester and Berkeley Counties and consists primarily of ***Four Hole Swamp*** and its tributaries from Dean Swamp to its confluence with the Edisto River. The watershed occupies 78,723 acres of the Lower Coastal Plain region of South Carolina. The predominant soil types consist of an association of the Hobcaw-Mouzon-Albany-Daleville-Rains series. The erodibility of the soil (K) averages 0.20 and the slope of the terrain averages 1%, with a range of 0-2%. Land use/land cover in the watershed includes: 51.5% forested land, 28.6% forested wetland (swamp), 13.7% agricultural land, 1.0% urban land, 4.5% barren land, 0.4% nonforested wetland (marsh), and 0.3% water.

As a reach of Four Hole Swamp, this watershed accepts the drainage from all streams entering the swamp system upstream. This section of Four Hole Swamp accepts drainage from Merkel Branch (Lake Merkel), Santee Branch (Rock Branch), and Walnut Branch (Coldwater Branch, Little Walnut Branch, Cane Branch, Crawford Branch, Lang Branch, Deep Branch, Marshall Branch) near the Town of Dorchester. Halfway Gut Creek enters the swamp next, followed by Timothy Creek, which flows past the Town of Ridgeville. Powder Horn Branch drains into the swamp at the base of the watershed. There are a total of 151.9 stream miles and 177.2 acres of lake waters in this watershed. Four Hole Swamp is classified FW* (site specific classification requires DO not less than 4.0 mg/l and pH between 5.0-8.5), and the remaining streams are classified FW. The Francis Beidler Forest, a nature preserve, is another natural resource in the watershed.

Surface Water Quality

Station #	Type	Class	Description
E-100	P/W	FW*	FOUR HOLE SWAMP AT US 78, E. OF DORCHESTER
E-015A	W/INT	FW*	FOUR HOLE SWAMP AT S-18-19

Four Hole Swamp - There are two SCDHEC monitoring sites along this section of Four Hole Swamp. At the upstream site **(E-100)**, aquatic life uses are partially supported due to chromium excursions, compounded by significant increasing trends in turbidity and total suspended solids. There is a significant increasing trend in pH. Significant decreasing trends in five-day biochemical oxygen demand and total nitrogen concentration suggest improving conditions for these parameters. The phthalate ester di-n-butylphthalate was detected in the 1998 sediment sample. Recreational uses are partially supported at this site due to fecal coliform bacteria excursions. At the downstream site **(E-015A)**, aquatic life and recreational uses are fully supported. A significant decreasing trend in five-day biochemical oxygen demand suggests improving conditions for this parameter.

NPDES Program

Active NPDES Facilities

RECEIVING STREAM / ***FACILITY NAME*** / ***PERMITTED FLOW @ PIPE (MGD)***	***NPDES#*** / ***TYPE*** / ***COMMENT***
TIMOTHY CREEK SHOWA DENKO CARBON INDUSTRIES PIPE #: 001 FLOW: 0.086	SC0038555 MAJOR INDUSTRIAL
TIMOTHY CREEK D&A PARTNERSHIP/RIDGEVILLE PIT PIPE #: 001 FLOW: M/R	SCG730073 MINOR INDUSTRIAL
DEEP BRANCH GIANT CEMENT CO./WASHIE RD SAND MINE PIPE #: 001 FLOW: M/R	SCG730224 MINOR INDUSTRIAL
MARSHALL BRANCH D&A PARTNERSHIP/CARTER PIT PIPE #: 001 FLOW: M/R	SCG730021 MINOR INDUSTRIAL
FOUR HOLE SWAMP SANDERS BROTHERS CONSTR./BIG OAK MINE PIPE #: 001 FLOW: M/R	SCG730024 MINOR INDUSTRIAL

Nonpoint Source Management Program

Land Disposal Activities

Landfill Facilities

LANDFILL NAME / ***FACILITY TYPE***	***PERMIT#*** / ***STATUS***
SANDY PINES LANDFILL MUNICIPAL	182401-1101 CLOSED
OAKRIDGE LANDFILL DOMESTIC	182400-1101 (DWP-130) ACTIVE
DORCHESTER COUNTY LANDFILL/DEE LEE SITE MUNICIPAL	DWP-080 CLOSED

Mining Activities

MINING COMPANY / ***MINE NAME***	***PERMIT #*** / ***MINERAL***
DORCHESTER DIRT CO., INC. DIAMOND MINE #3	1027-35 SAND; SAND/CLAY
D&A PARTNERSHIP CARTER MINE	1047-35 SAND; SAND/CLAY
D&A PARTNERSHIP GIVENS MINE	1085-35 SAND; SAND/CLAY

SANDERS BROTHERS BIG OAK MINE	1031-35 SAND
LAFARGE MATERIALS, INC. HARLEYVILLE QUARRY	0110-35 LIMESTONE
GIANT CEMENT CO. WASHIE ROAD SAND MINE	1163-35 SAND
DORCHESTER MINING, INC. DORCHESTER MINE	0923-35 SAND; SAND/CLAY
MORGAN CORPORATION MORGAN MINE	1000-35 SAND; SAND/CLAY
D&A PARTNERSHIP RIDGEVILLE MINE	0870-35 CLAY

Growth Potential

Interstate 26 bisects this watershed and some growth may occur near the interchanges at the Towns of Harleyville and Ridgeville. A rail line and U.S. 178/78 parallels I-26; another rail line crosses U.S.78 at S.C. 453.