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ABBREVIATIONS

208 Plan	208 Areawide Water Quality Management Plan
BCD	Berkeley-Charleston-Dorchester
BCDCOG	Berkeley-Charleston-Dorchester Council of Governments
CDBG	Community Development Block Grant
COG	Council of Governments
DMA	Designated Management Agencies
DO	Dissolved Oxygen
EDA	Economic Development Administration
EPA	Environmental Protection Agency
FW	Freshwaters
LMI	Low and moderate income
MSA	Metropolitan Statistical Area
ND	Land Application Discharge
NOAA	National Oceanic and Atmospheric Administration
NPDES	National Pollutant Discharge Elimination System
ONRW	Outstanding National Resource Waters
ORW	Outstanding Resource Waters
PEDC	Palmetto Economic Development Corporation
PER	Preliminary Engineering Report
SCDHEC	South Carolina Department of Health and Environmental Control
SCDOT	South Carolina Department of Transportation
SFH	Shellfish Harvesting Waters
SRF	State Revolving Fund
TMDL	Total Maximum Daily Loads
UOD	Ultimate Oxygen Demand
WRF	Water Reclamation Facility

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SECTION A. INTRODUCTION

The intent of this Section is to: 1) summarize the purpose of the 208 Water Quality Management Planning Program; 2) relate the 208 program to other major planning programs associated with the Federal Clean Water Act; and, 3) identify the major planning goals of the Berkeley-Charleston-Dorchester Council of Governments (BCDCOG) 208 Areawide Water Quality Management Plan.

A-1. Purpose

In South Carolina, the South Carolina Department of Health and Environmental Control (SCDHEC) regulates water quality and is responsible for establishing classifications and standards to protect beneficial uses of streams and lakes in the State. In the Berkeley, Charleston, Dorchester Region (BCD) the areawide wastewater treatment planning process, pursuant to Section 208 of the Federal Clean Water Act, is a responsibility of the BCDCOG. The Council of Governments (COG) maintains and periodically updates the 208 Areawide Water Quality Management Plan (208 Plan) to preserve and enhance state water quality and to meet the goals of the Federal Clean Water Act and the SC Pollution Control Act.

This 208 Plan Update supersedes all previous Berkeley-Charleston-Dorchester Water Quality Management Plan updates, revisions, and past plan amendments. The purpose of the update is to incorporate the latest information into the plan from changing conditions and needs and to present the current issues in water quality planning and policies. Specifically, this update includes:

- a review of the general characteristics of the BCDCOG area using currently available GIS data,
- a review of green infrastructure, water and energy efficiency improvements, and environmentally innovative activities,
- the results of the 2010 census and new projections for growth through 2035,
- changes in stream classifications,
- trends in water quality monitoring,
- current development trends,
- changes in management agency designations and service providers,
- current 208 administrative procedures, and
- changes in regional policies.

This 208 Plan Update serves to guide local decision makers when addressing water quality management by identifying water quality problems and opportunities.

A-2. Background

The BCDCOG 208 Plan has evolved from the provisions of the Federal Water Pollution Control Act Amendments of 1972, 33 U.S.C.A. § 1251-1387 (PL 92-500, as amended PL 95-217, 1977; PL 100-4, 1987). This Act, referred to as the Clean Water Act, provided for a comprehensive Federal-State-Local framework to prevent, reduce and eliminate water pollution. The following two general goals were included in this legislation:

1. To achieve, wherever possible, by July 1, 1983, water that is clean enough for swimming and other recreational uses, and clean enough for the propagation of fish, shellfish and wildlife; and,
2. By 1985, to have no discharges of pollutants into the nations waters.

The above goals were supported in the Clean Water Act by a series of required actions, deadlines and enforcement provisions. The Environmental Protection Agency (EPA) was made responsible for supervising the implementation of the requirements of this Act and Federal control responsibility was extended from inter-State waters to all U.S. waters. EPA was granted power to seek court injunctions against polluters creating health hazards or endangering livelihood, and, Federal aid was made available to local governments to build water reclamation facilities (WRFs).

Specifics of the 1972 Amendments included the following types of activities:

1. Industrial Pollution - Industries discharging pollutants must use the “best practicable” water pollution control technology by July 1, 1977, and the “best available” technology by July 1, 1983.
2. Municipal Pollution - The Act provided for more Federal aid to local governments and set deadlines for stronger control measures. It also provided a means for assigning local responsibilities for providing municipal wastewater collection and treatment services.
3. Water Quality Standards - The water quality standards program initiated under earlier legislation was continued and expanded. Water Quality Standards define uses of specific bodies of water, such as public water supply, propagation of fish and wildlife, recreation, and agricultural and industrial water supply. Standards also include measurable “criteria” based on those uses and a plan to implement and enforce those criteria.
4. Permits and Licenses - A new system of permitting for discharges into the nation's waters was established. No discharge of any pollutant from any source would be allowed without a permit.

EPA's role in planning for water pollution abatement on a nationwide level is extensive. Section 102 of the Clean Water Act directs the Administrator of EPA to prepare comprehensive plans “for preventing, reducing, or elimination the pollution of the navigable waters and ground waters and

improving the sanitary condition of surface and underground waters.” These plans are to be developed in cooperation with federal, state, and interstate agencies, and municipalities and industries.

These objectives were furthered through Section 201, which authorized the Administrator of EPA to make grants to any state, municipality, or intermunicipal or interstate agency for the planning of publicly owned waste treatment works. Such plans analyze and evaluate alternative waste treatment and management systems prior to the selection of a facility design. The plans should provide for the application of best practicable waste treatment technology, so that pollutants will not enter receiving waters.

Section 208 authorizes grants to be made available to designated state and areawide agencies for developing and operating a continuing waste treatment management planning process. The BCDCOG has been designated as an areawide planning agency. Five other COGs in this state have also been so designated. SCDHEC serves as the 208 planning agency for the balance of the state.

Section 303(e) of the Clean Water Act authorizes the development of river basin plans as an element of the SCDHEC planning program. Basin plans assess the extent to which a basin’s waters are polluted and define the nature and volume of pollutants that can be discharged within water quality standards.

The water quality planning program of the EPA is focused on the development of guidelines and regulations to assist the states and areawide planning agencies in the development of the above described planning studies. The agency is also responsible for the review and approval of all studies authorized under the Act.

Most of the responsibilities for accomplishing the provisions of the Federal Clean Water Act have been delegated by EPA to SCDHEC. Activities sponsored by SCDHEC which implement this program may be summarized as follows:

1. Water Classification Standards System - This system classifies the waters of the State according to “best use”, and provides standards of quality that will protect the designated uses.
2. Permit Programs - Administration of the National Pollutant Discharge Elimination System (NPDES) Permit Program. All wastewater point source discharges must have a permit, which includes specific discharge limitations, construction implementation schedules where applicable, and requirements for self-monitoring and reporting of the quantity and quality of discharges. Industrial Discharges must utilize best available technologies in the treatment of pollutants.
3. Monitoring - Monitoring programs are utilized to maintain an inventory of water quality within the State, and, to measure compliance with discharge limits as set forth in permit conditions.

4. Enforcement - This program tracks all permit conditions to include implementation schedules and discharge characteristics to ensure compliance.
5. Municipal Construction Loans - Low interest loans to assist local governments construct wastewater facilities are available through the State Revolving Fund Loan Program. This program is administered jointly with the Division of Local Government within the State Budget & Control Board.
6. Emergency Response Team - A specially trained staff is available to help minimize any adverse effects of environmental emergencies.
7. Water Quality Certification - SCDHEC is responsible for determining if any project requiring a federal license will meet State water quality standards.
8. Water Quality Management Planning - Three basic types of programs are involved in the planning process. They include:

- a. 303(e) Planning.

Beginning in 1992, SCDHEC started to manage its Areawide Water Quality Management Program on a watershed basis and, since this time, SCDHEC has prepared management strategies for all eight watersheds in South Carolina. These plans are prepared to: (1) assess water quality problems and needs to include recommendations for revising water quality standards and identifying areas of priority for State Revolving Loan financial assistance; (2) set forth recommended wasteload allocations for significant point sources of pollutants from wastewater effluent; and, (3) establish and identify goals for other water resource related plans and/or activities.

- b. 208 Water Quality Management Planning.

Section 208 of the Federal Clean Water Act provides that designated planning agencies will develop water quality management plans for (1) municipal and industrial point sources to include storm water if possible; (2) nonpoint sources; (3) the protection of ground water; and, (4) pollution from residential wastes.

More specifically the 208 plan must address:

- an evaluation of existing and potential water quality problems;
- needs for waste treatment systems over a twenty year period;
- an inventory of wastewater effluent point sources of pollutants and projections of future wasteloads;
- the identification of those agencies needed to manage and carry out the plan;
- the determination of water quality standards adequate to achieve the fishable/swimmable goal; and,

- an evaluation of the environmental and economic impacts resulting from the recommended plan.

In South Carolina, groundwater and nonpoint pollution control programs are coordinated by SCDHEC. The BCDCOG 208 Areawide Water Quality Management Planning Program is primarily directed to the needs of domestic and industrial wastewater collection and treatment systems requiring NPDES and Land Application Discharge (ND) Permits. Throughout this 208 Plan, all point source discharges refer to domestic and industrial wastewater effluent discharges unless stated otherwise.

A-3. BCDCOG 208 Water Quality Management Goals

The following goals are the foundation of the BCDCOG 208 program, and they reflect the vision and objectives that the area has for the future.

Goal #1: All surface waters should meet state standards.

Goal #2: Sufficient wastewater treatment capability and conveyance should be provided to accommodate the 20-year growth projected in each service area due to urban and rural development, and still meet Goal #1.

Goal #3: Regional policies should be established and enforced in order to maintain and improve the quality of water resources in the BCDCOG's planning area.

Goal #4: Existing small point source discharges should be discontinued at such time as connection to a regional public wastewater treatment system is available.

Goal #5: New and expanded point source discharges should be discouraged if an environmentally preferable and economically feasible alternative exists.

Goal #6: Alternative wastewater disposal techniques should be considered when plans for new or enlarged treatment systems are being considered.

Goal #7: The BCDCOG should encourage SCDHEC and other state/federal agencies to expand, upgrade and integrate their water quality monitoring programs in the region, in order to identify specific sources of existing and potential water quality problems.

Goal #8: The BCDCOG should support the restoration, protection, development, and enhancement of the natural, historical, economic, and recreational qualities of water with critical resources, including wetlands, wildlife and fisheries habitat, shorelines, and unique natural areas.

Goal #9: The BCDCOG should maintain a continual assessment of the existing or potential need to allocate point source discharges as a result of Total Maximum Daily Loads (TMDL), as well as to recommend TMDL development when necessary.

Goal #10: The BCDCOG and each management agency should support projects that utilize green infrastructure practices; adopt practices that reduce the environmental footprint of water and wastewater treatment, collection, and distribution; help utilities adapt to climate change; enhance water and energy conservation; adopt more sustainable solutions to wet weather flows; and promote innovative approaches to water management problems.

SECTION B. REGIONAL FRAMEWORK

B-1. General Description of the Region

It is the objective of this Section to briefly point out those factors of today's and tomorrow's environment, which will exert major influences upon water quality management planning activities.

B-1-a. The Natural Setting

The BCD Region, one of the most historic and picturesque regions in the state, is located within the central portion of the South Carolina Lowcountry. The three counties have a land area of 2,614 square miles and 91 miles of Atlantic Ocean coastline.

Charleston County's 91 miles of Atlantic Ocean coastline provides the region with potentially large areas of public beach frontage. Beyond the economic significance of the Port of Charleston, the over 220 square miles of inland waters, including Lake Marion and Lake Moultrie in Berkeley County, serve as an invaluable resource for water-oriented recreational activities.

The region is traversed from north to south by US Route 17, which provides direct access to Wilmington, North Carolina to the north and Savannah, Georgia, to the south. Interstates 26 and 95 also provide excellent access to all areas west of the region, and, the densely populated Middle Atlantic States.

The region is about half way between New York and Miami. The recreational center of Myrtle Beach, the State Capital at Columbia and the historic city of Savannah are all within a two-hour drive.

B-1-b. Climate

The climate of a region can be one of its primary assets. Beyond providing either pleasing or displeasing conditions for human comfort, climatic conditions serve to help shape the characteristics of the remaining sectors of the physical environment.

In general terms the climate of the BCD Region is temperate, with warm temperatures and no significant dry season. The average growing season is 294 days. Normal daily temperatures range between 69° F and 92° F in the summer and 38° F to 68° F during the winter. Temperatures of less than 20° F are very infrequent.

While the region experiences no significant dry season, approximately forty-one percent of the 49 inches of average annual precipitation occurs during the summer months. Thunderstorms are

most frequent during the summer and create relatively short durations of concentrated runoff with significant spikes in nonpoint pollutant loadings in adjacent surface waters.

Warm and humid areas often require significant investments in waterproofing, landscaping, extensive drainage systems and other developmental techniques. Erosion may easily become a problem within areas, which have been cleared of their natural cover, and the infiltration of storm drainage into sanitary sewer systems contributes to the occasional overloading of treatment plants.

B-1-c. Topography

The topography of the Lowcountry is very level with only slight undulations in the landscape. Elevations range from mean sea level to slightly over 100 feet. Only in a few areas do grades reach as high as six percent. As a result of the topography, and the humid climate, expansive areas are covered by soils, which are saturated with water for most of the year.

Extensive level areas experience difficulty with storm drainage and other wastewater gravity flow systems, which result in increased costs for materials, installation and operations. High ground water tables adversely impact the costs of materials and the costs associated with their installation. Pumping equipment needed to lift sewage to treatment plants or outfalls, also contribute significantly to the costs of installing and operating collection and transmission systems.

B-1-d. Soils

Soil Characteristics are one of the major factors that affect the methods utilized in both agricultural and urban land development practices. The soils of this region vary from well-drained sandy loams to muck lands. Generally, alluvial deposits border the larger streams, organic deposits underlie the swamps, and various types of loams cover the better drained areas.

Unfortunately, large areas within the region are covered by soil types, which drain very poorly. For example, approximately ninety percent of the land area within Charleston County contains soils, which pose moderate to severe limitations upon urban land uses. The financial costs for developing these areas must include provisions for adequate drainage facilities and, costs associated with protecting wetlands.

Because of potential soil drainage problems, where septic tanks are contemplated for use, careful determinations should be made to assure lot sizes which are sufficient to: 1) accommodate the septic tank and tile fields; 2) provide successful absorption of the septic tank effluent; and, 3) give adequate protection to ground waters and adjacent surface waters. From the stand point of public health, central water and sewer systems should be required services available to almost all small lot developments.

B-1-e. Vegetation

Excluding the grasses of the tidal marshlands, forests composed of deciduous and coniferous trees constitute the primary forms of vegetation native to the region. Four species of pines, the shortleaf, longleaf, loblolly and slash, have provided this region with a most valuable natural and economic resource. Moist lowlands are known for their cypress swamps and bottomland hardwoods, including heavy stands of red and black gums and many species of southern oaks.

B-1-f. Land Cover

According to 2006 data from the NOAA Coastal Services Center, nearly half of the BCD region is forested. These forests are evenly divided between wetland forests, woody wetlands and dry land forested areas. Between 1996 and 2006, however, nearly 139 square miles of forestlands in the region were converted to other land cover types. Within the region, Dorchester County has the largest percent of land in agricultural production, and Berkeley County has the largest amount of land covered by water and by wooded area. About 42% of the undeveloped land within the region could be suitable for conversion to built-up land, while the remaining lands consists of wetland and coastal areas. Additionally, a large portion of the remaining undeveloped land is currently protected, either as part of state and national forests and federal wildlife refuges, or under conservation easements, placing pressure on the remaining open spaces in the region. However, there are several developed areas within the region that hold the potential for higher intensity development. As of 2010, incorporated municipalities with a population of 2,500 or more (Charleston, Hollywood, James Island, Goose Creek, Hanahan, Isle of Palms, Moncks Corner, Mount Pleasant, North Charleston, and Summerville) cover about 11.9% of the total land area of the region (Source: *US Census Bureau, 2010*).

Table 1
BCD Land Use/Land Cover by County
Based on Satellite Imagery, 2006¹

	Berkeley	Charleston	Dorchester	Regional Totals ²
High/ Medium Intensity Development	0.86%	1.76%	0.70%	1.22%
Low Intensity Development	2.21%	3.67%	3.13%	3.00%
Open Space Development	1.77%	2.38%	2.82%	2.22%
Grassland	2.74%	1.26%	3.38%	2.22%
Agriculture	5.82%	3.50%	14.47%	6.40%
Forested	31.30%	16.45%	27.28%	24.19%
Scrub/Shrub	9.31%	5.38%	11.45%	8.01%
Woody Wetland	30.95%	15.38%	33.04%	24.65%
Emergent Wetland	4.21%	17.68%	2.29%	9.64%
Barren Land	0.38%	1.68%	0.57%	0.98%
Open Water	10.46%	30.87%	0.88%	17.48%

Source: NOAA Coastal Services Center, 2006

Notes:

¹⁾ Totals may not equal 100% due to rounding.

²⁾ Regional total is based on the percentage of the total regional area.

Based on 2010 US Census data, Charleston, Dorchester, and Berkeley Counties are ranked 3rd, 10th, and 13th in the state for population per square mile of land area. Charleston County has the densest population on its lands with approximately 382 people per square mile, while Berkeley County, with a density of about 162 people per square mile of land area, is less than half as densely developed as Charleston County (Source: *US Census Bureau, 2010*).

A large percentage of the total land area in the BCD region is government owned, as shown on the State and Federally Owned Lands chart below. (Source: *Nationalatlas.gov, 2010*). Within the BCD Region, nearly 28 percent of all lands are encumbered by either the US government or by South Carolina, including the Francis Marion National Forest in Charleston and Berkeley counties and the Cape Romain National Wildlife Refuge in Charleston County. In Berkeley County, over 44% of all lands are publically owned, primarily the Francis Marion National Forest. These large holdings of public lands will limit the extent of development in the region and could potentially increase pressure on the remaining upland areas of the region to develop at a greater intensity.

Table 2

	All Land	Total Public Land	State	Federal	% Public Land
Berkeley	708,941	313,873	104,758	209,115	44.27%
Charleston	600,090	143,456	43,350	101,106	23.91%
Dorchester	368,077	8,909	8,909	0	2.42%
Region Totals	1,677,108	466,238	156,017	310,221	27.80%

Source: South Carolina Statistical Abstract, 1998, for State Data, US Department of Defense and US Forest Service, 2010, for Federal Data.

B-1-g. Drainage

The surface drainage system within this Region is the most significant natural feature of the landscape in terms of influencing development patterns. As a result of the level topography and humid climate, the Region includes extensive areas of wetlands, fresh water swamps and tidal marshes.

Natural drains are very broad, have small grades and are heavily vegetated. They are very shallow with little or no channel, and cause ponding in depressed areas. Large marsh and swampland areas exist along all of the principal rivers and their tributaries. These areas of marsh, swamp, and gently flowing water courses often serve as “natural greenbelts” dividing the Region into many separate localities.

B-1-g-1 Basin Descriptions

This Region has been divided into two major drainage basins, or watersheds, by SCDHEC for planning purposes. The upper half of Dorchester County, and the western edge of Charleston County, are included in the Saluda-Edisto Watershed. The balance of the region has been included within the Catawba-Santee Watershed.

Both of the above watersheds are very large, and have been subdivided into smaller sub-basins. The BCD Region is totally included in the Edisto Watershed, which is further divided into four smaller basins, two of which are at least partly included in this Region. These latter two sub-basins are further divided into fifteen watersheds, ten of which are at least partly in this Region. The Catawba-Santee Basin is divided into the Catawba, Santee and Ashley-Cooper sub-basins, the latter two being at least partly in this Region. Six watersheds in the Santee sub-basin are at least partly in this Region. The Ashley-Cooper sub-basin and its fifteen sub-basins are entirely in this Region.

Volume II of this Plan includes information regarding thirty one (31) watersheds that are at least in part in this Region. The watersheds are described, water quality analyzed, likely growth potential identified, and existing and planned wastewater facilities and service areas are also identified.

B-1-g-2. Stream Segment Classifications

Where surface waters are not classified by name, the use classification and numeric standards of the stream to which they are a tributary apply (Source: *SCDHEC R.61-68, Water Classifications & Standards, Effective April 25, 2008*).

Class Abbreviations:

- ONRW - Outstanding National Resource Waters - freshwaters or saltwaters which constitute an outstanding national recreational or ecological resource.
- ORW - Outstanding Resource Waters - freshwaters or saltwaters which constitute an outstanding recreational or ecological resource or those freshwaters suitable as a source for drinking water supply purposes with treatment levels specified by the Department.
- SFH - Shellfish Harvesting Waters - tidal saltwaters protected for shellfish harvesting. Suitable also for uses listed In Class SA and Class SB waters.
- SA - Class SA - tidal saltwaters suitable for primary or secondary contact recreation, crabbing and fishing. Suitable also for uses listed in Class SB with the same exception.
- SB - Class SB - tidal saltwaters suitable for primary and secondary contact recreation, crabbing, and fishing, except harvesting of clams, mussels, or oysters for market purposes or human consumption. Also suitable for the survival and propagation of a balanced indigenous aquatic community of marine fauna and flora. The difference between SA and SB saltwater concerns Dissolved Oxygen (DO) limitations. Class SA waters must

- maintain daily DO averages not less than 5.0 mg/l, with a minimum of 4.0 mg/l, and SB waters maintain DO levels not less than 4.0 mg/l.
- FW - Freshwaters - freshwaters suitable for primary and secondary contact recreation and as a source for drinking water supply after conventional treatment in accordance with the requirements of the Department. Suitable for fishing and the survival and propagation of a balanced indigenous aquatic community of fauna and flora. Suitable also for industrial and agricultural uses.

For further information regarding the specific water quality parameters associated with the above classifications of surface waters, the reader is referred to the Office of Environmental Quality Control within SCDHEC or the SCDHEC website.

Standards are used as instream water quality goals, and must not be violated due to wastewater discharges. Using mathematical models, the impact of a proposed wastewater discharge is predicted, and limits for different pollutants are established. These limits are then included in the NPDES permits issued by SCDHEC. The NPDES permit limits are set so that, as long as the permittee meets the established permit limits, the discharge will not be the cause of a standards violation in the receiving stream. All discharges to the waters of the State are required to have an NPDES permit and must abide by those permit limits under penalty of law.

If approved by the State Legislature, the classification of a waterbody can be upgraded as uses and conditions change. The most significant result of such a reclassification is the issuance of more stringent permit limits on the NPDES permitted discharges to protect the upgraded uses. Stream Classifications cannot be downgraded.

Classifications are based upon desired uses, not on natural or existing water quality. Classification is strictly a legal means to obtain the best available treatment of discharged wastewater to protect desired uses. Several waterbodies in this Region do not meet classification standards as a result of natural processes (swamps, blackwater rivers, tidal creeks, etc.). Several such waterbodies have been given site-specific standards variances. The Classifications of Surface Waters list in the BCD Region is updated periodically, and in 2008, is presented in Table 3. An “*” by the class means site-specific standards for certain parameters have been established for that waterbody. The site-specific standards are listed in parentheses.

Table 3
Waterbodies

WATERBODY NAME	COUNTIES	CLASS	WATERBODY DESCRIPTION & SITE-SPECIFIC STANDARD
Adams Creek	Charleston	ORW	Entire creek tributary to Bohicket Creek
Alston Creek	Charleston	SFH	Entire Tributary to the Wando River
Ashley River	Dorchester, Charleston	FW	From Beginning at Hurricane Branch to Bacon Bridge
Ashley River	Dorchester, Charleston	SA	Bacon Bridge to Church Creek

WATERBODY NAME	COUNTIES	CLASS	WATERBODY DESCRIPTION & SITE-SPECIFIC STANDARD
Ashley River	Charleston	SA*	Church Creek to Orangegrove Creek (D.O. not less than 4 mg/l)
Ashley River	Charleston	SA	From Orangegrove Creek to Charleston Harbor
Back River	Berkeley	FW	Entire Stream to Cooper River
Bailey Creek	Charleston	ORW	Entire tributary St. Pierre Creek
Beresford Creek	Berkeley	SFH	From the Wando River to a point 4 miles from the Wando River.
Beresford Creek	Berkeley	SA	From a point 4 miles from the Wando River to Clouter Creek
Big Bay Creek	Charleston	ORW	Entire Creek Tributary to the South Edisto River
Bohicket Creek	Charleston	ORW	Entire Creek Tributary from North Edisto River to Church Creek
Boone Hall Creek	Charleston	SFH	Entire Creek Tributary to Horlbeck Creek
Brickyard Creek	Charleston	SB	Entire Tributary to Ashley River
Bulls Bay	Charleston	ORW	Entire Bay
Bulls Creek	Charleston	SA*	Entire Tributary to Ashley River (D.O. not less than 4 mg/l)
Bullyard Sound	Charleston	ORW	Entire Sound
Cape Romain Harbor	Charleston	ORW	Entire Harbor
Caper's Inlet	Charleston	ORW	Entire Tributary to Atlantic Ocean
Charleston Harbor	Charleston	SB	From Battery to Atlantic Ocean
Church Creek	Charleston	ORW	From Wadmalaw Sound to Ravens Point
Church Creek	Charleston	SFH	From Ravens Point to Hoopstick Island
Clark Sound	Charleston	SB	Entire Tributary to Charleston Harbor
Coastal Waters	Charleston	SFH	Land to limits of State Jurisdiction
Cooper River	Berkeley, Charleston	FW	From U.S. 52 to a point approximately 30 miles above the Junction of the Ashley and Cooper Rivers
Cooper River	Berkeley, Charleston	SB	That portion below a point approximately 30 miles above the Junction of the Ashley and Cooper Rivers to the Junction of the Ashley and Cooper Rivers
Copahee Sound	Charleston	ORW	The Entire Sound
Cypress Swamp	Dorchester	FW	Entire Tributary to the Ashley River
Darell Creek	Charleston	SFH	Entire Tributary to the Wando River
Dawho River	Charleston	ORW	Entire River from the South Edisto to the North Edisto
Dewee's Inlet	Charleston	SFH	Entire Stream Tributary to the Atlantic Ocean
Diversion Canal	Berkeley	FW	Entire Canal between Lake Marion & Lake Moultrie
Duck Island Channel	Charleston	SA*	Entire Channel connecting two segments of the Ashley River (D.O. not less than 4 mg/l)
Eagle Creek	Charleston	SB	Entire Tributary to the Ashley River
Edisto River	Charleston	ORW	From U.S. 17 to its confluence with the Dawho River and the South Edisto River
Edisto River (Main stem)	Charleston, Dorchester	FW	From the confluence of the North & South Forks to its confluence with the South Edisto River and Dawho
Fishing Creek	Charleston	ORW	From its headwaters to a point 2 miles from its
Fishing Creek	Charleston	ORW	From a point 2 miles from its mouth to its
Fishing Creek	Charleston	ORW	The entire creek tributary to Dawho River.
Five Fathom Creek	Charleston	SFH	Entire Tributary to Bull's Bay
Folly River	Charleston	SFH	The entire stream tributary to the Stono River.

WATERBODY NAME	COUNTIES	CLASS	WATERBODY DESCRIPTION & SITE-SPECIFIC STANDARD
Foster Creek	Charleston	SFH	The entire creek tributary to the Wando River.
Four Hole Swamp	Berkeley, Dorchester	FW*	The entire stream tributary to Edisto River (D.O. not less than 4 mg/l, pH 5.0-8.5).
Frampton Creek	Charleston	ORW	The entire creek tributary to Frampton Inlet.
Frampton Inlet	Charleston	ORW	The entire inlet tributary to Atlantic Ocean.
Garden Creek	Charleston	ORW	The entire creek tributary to Toogoodoo Creek.
Gibson Creek	Charleston	ORW	The entire creek tributary to Wadmalaw River.
Goose Creek	Berkeley	FW	From its headwaters to the Goose Creek Reservoir dam.
Goose Creek	Berkeley	SB	From the Goose Creek Reservoir dam to the Cooper River.
Graham Creek	Charleston	SFH	Entire Tributary to Bull's Bay
Grays Sound	Charleston	SFH	The entire sound.
Ground Waters	All Counties	GB	The entire ground waters of the state - unless otherwise listed.
Guerin Creek	Berkeley, Charleston	SFH	The entire creek tributary to the Wando River.
Gum Branch	Dorchester	FW*	The entire branch tributary to Indian Field Swamp (D.O. not less than 4 mg/l, pH 5.0-8.5).
Hobcaw Creek	Charleston	SFH	The entire creek tributary to the Wando River.
Horlbeck Creek	Charleston	SFH	The entire creek tributary to the Wando River.
Indian Field Swamp	Dorchester	FW*	The entire stream tributary to Polk Swamp (D.O. not less than 4 mg/l, pH 5.0-8.5).
Intracoastal Waterway	Charleston	ORW	From Gibson Creek to the confluence of Wadmalaw Sound and Stono River.
Intracoastal Waterway	Charleston	SFH	From the confluence of Wadmalaw Sound and Stono River to S.C.L. Railroad Bridge over the Stono
Intracoastal Waterway	Charleston	SB	From confluence of Elliott Cut and the Stono River through Charleston Harbor to the Ben Sawyer Bridge
Intracoastal Waterway	Charleston	SFH	From the Ben Sawyer Bridge to the South Santee River.
Intracoastal Waterway	Charleston	SFH	From the South Edisto River to Dawho Creek.
Intracoastal Waterway	Charleston	ORW	From Dawho River to Gibson Creek.
Jeremy Inlet	Charleston	ORW	The entire inlet tributary to the Atlantic Ocean.
Lake Marion	Berkeley	FW	The entire lake.
Lake Moultrie	Berkeley	FW	The entire lake.
Leadenwah Creek	Charleston	ORW	The entire creek tributary to the North Edisto River.
Long Creek	Charleston	ORW	The entire creek tributary to Steamboat Creek.
Lower Toogoodoo Creek	Charleston	SFH	From its headwaters to a point 3 miles from its mouth.
Lower Toogoodoo Creek	Charleston	ORW	From a point 3 miles from its mouth to its confluence with Toogoodoo Creek.
Mark Bay	Charleston	ORW	Entire Bay
Mcleod Creek (Also called Tom Point Creek)	Charleston	ORW	The entire creek tributary to the North Edisto River.

WATERBODY NAME	COUNTIES	CLASS	WATERBODY DESCRIPTION & SITE-SPECIFIC STANDARD
Milton Creek	Charleston	ORW	The entire creek tributary to St. Pierre Creek.
Molasses Creek	Charleston	SFH	The entire creek tributary to the Wando River.
Mud Creek	Charleston	ORW	The entire creek tributary to the South Edisto River.
New Cut	Charleston	SFH	The entire cut between Church Creek and the Stono River.
North Edisto River	Charleston	ORW	From its headwaters to the Intracoastal Waterway.
North Edisto River	Charleston	SFH	From the Intracoastal Waterway to Steamboat Creek.
North Edisto River	Charleston	ORW	From Steamboat Creek to the Atlantic Ocean.
Ocella Creek	Charleston	ORW	The entire creek tributary to the North Edisto River.
Oyster House Creek	Charleston	ORW	The entire stream tributary to the Wadmalaw River.
Polk Swamp	Dorchester	FW*	The entire stream tributary to the Edisto River (D.O. not less than 4 mg/l, pH 5.0-8.5)
Price Inlet	Charleston	ORW	The entire stream tributary to the Atlantic Ocean
Privateer Creek	Charleston	ORW	The entire creek tributary to the North Edisto River.
Ralston Creek	Berkeley	SFH	The entire creek tributary to the Wando River.
Rathall Creek	Charleston	SFH	The entire creek tributary to the Wando River.
Russell Creek	Charleston	ORW	The entire creek tributary to the Dawho River.
Sand Creek	Charleston	ORW	The entire creek tributary to Steamboat Creek.
Santee River	Berkeley	FW	That portion of the river below Lake Marion to the North & South Santee Rivers.
Sawmill Branch	Berkeley, Dorchester	FW	The entire stream tributary to Dorchester Creek.
Scott Creek	Charleston	ORW	The entire creek from Big Bay Creek to Jeremy Inlet.
Sewee Bay	Charleston	SFH	Entire Bay
Shem Creek	Charleston	SB	The entire stream tributary to Charleston Harbor.
Shingle Creek	Charleston	ORW	The entire creek tributary to St. Pierre Creek.
South Creek	Charleston	ORW	The entire creek tributary to Ocella Creek.
South Edisto River	Charleston	ORW	From Dawho to Mud River Creek.
South Edisto River	Charleston	SFH	From Mud Creek to the Atlantic River Ocean.
South Santee River	Berkeley, Charleston	FW	That freshwater portion.
South Santee River	Berkeley, Charleston	SA	From U.S. 17 to 1000 ft. below the Intracoastal Waterway.
Swinton Creek	Charleston	ORW	The entire creek tributary to the Lower Toogoodoo Creek.
Tailrace Canal	Berkeley	FW	From the Lake Moultrie Power Plant to Moncks Corner.
Tom Point Creek (also called Mcleod Creek)	Charleston	ORW	The entire creek tributary to the North Edisto River.
Toogoodoo Creek	Charleston	ORW	The entire creek tributary to the North Edisto River.
Toomer Creek	Charleston	SFH	The entire creek tributary to the Wando River.
Townsend River	Charleston	ORW	The entire river tributary to Frampton Inlet.
Wadmalaw River	Charleston	ORW	The entire river from Wadmalaw Sound to the North Edisto River.
Wadmalaw Sound	Charleston	ORW	The entire Sound.
Wagner Creek	Charleston	SFH	The entire creek tributary to the Wando River.

WATERBODY NAME	COUNTIES	CLASS	WATERBODY DESCRIPTION & SITE-SPECIFIC STANDARD
Wando River	Berkeley, Charleston	SFH	From its headwaters to a point 2.5 miles north of its confluence with the Cooper River.
Wando River	Berkeley, Charleston	SA	From a point 2.5 miles north of Its confluence with the Cooper River to its confluence with the Cooper River.
Wapoo Creek	Charleston	SB	Entire tributary to the Stono River.
Westbank Creek	Charleston	ORW	The entire creek tributary to the North Edisto River.
Whooping Island Creek	Charleston	ORW	The entire Creek tributary to Steamboat Creek.

Source: SCDHEC R.61-68, *Water Classifications & Standards, Effective April 25, 2008*

B-1-g-3 Use Impaired Waterbodies

Streams are considered impaired if they are unable to meet classified uses for aquatic life, recreation, or fish consumption based on the corresponding standards.

In general, support of aquatic life uses is determined based on the percentage of DO and pH excursions, increases in water temperature due to heated effluents, and impacts to the macroinvertebrate community. Support for recreational uses is based on the frequency of fecal coliform bacteria excursions, and the occurrence of bathing area advisories and closures. Class SFH standards for the consumption of shellfish are stricter than the 400 per 100 ml figure used to evaluate recreational use support. The decision to close an area to harvesting is made by SCDHEC's Shellfish Sanitation Section, based on a different system of monitoring stations and sampling frequency than that of the ambient monitoring network. Fish/shellfish consumption use support is determined by the occurrence of advisories or bans on consumption for a waterbody (Source: *SCDHEC R.61-47 Shellfish, Effective June 27, 2008*).

Specifically, for DO, pH and fecal coliform bacteria, an excursion percentage less than or equal to 10 represents full support of uses. A percentage greater than 10 and less than or equal to 25 is considered partial support of uses, unless excursions are due to natural conditions. A percentage greater than 25 is considered to represent nonsupport of uses, unless excursions are due to natural conditions. For aquatic life uses, even if chemical conditions indicate full support, an impacted macroinvertebrate community reduces use support to nonsupport status. For the support of fish consumption uses, a fish consumption advisory or conditionally approved shellfish harvesting status indicates partial use support. A consumption ban on shellfish or shellfish harvesting bed closure indicates nonsupport of uses. This is in keeping with the intent of the most recent US EPA 305(b) guidance. The impaired waterbody list in the BCD Region is updated every two years, and in 2010, is presented in Tables 4 and 5 (Source: *SCDHEC State of South Carolina Integrated Report for 2010*). The list includes Not Supported sites covered under an approved TMDL.

**Table 4
Saluda - Edisto Basin**

DESCRIPTION	COUNTY	IMPAIRED USE	CAUSE
03050205-020			
Dean Swamp at US 176	Berkeley	Recreation	Fecal Coliform
03050205-030			
Four Hole Swamp at SC 453	Dorchester	Aquatic Life	Dissolved Oxygen
Four Hole Swamp at SC 453	Dorchester	Fish Consumption	Mercury
Four Hole Swamp at US 78 E	Dorchester	Recreation	Fecal Coliform
03050206-010			
Edisto River Near the End of Fishtale Rd.	Dorchester	Recreation	Fecal Coliform
Edisto River at US 15	Dorchester	Fish Consumption	Mercury
¹ Cattle Creek at S-18-19	Dorchester	Recreation	Fecal Coliform
03050206-020			
Polk Swamp at S-18-180	Dorchester	Aquatic Life	Dissolved Oxygen
Polk Swamp at S-18-19	Dorchester	Aquatic Life	Dissolved Oxygen
¹ Polk Swamp at S-18-19	Dorchester	Recreation	Fecal Coliform
Indian Field Swamp at S-18-19	Dorchester	Aquatic Life	Dissolved Oxygen
¹ Indian Field Swamp at S-18-19	Dorchester	Recreation	Fecal Coliform
¹ Gum Branch at S-18-167	Dorchester	Recreation	Fecal Coliform
03050206-030			
Edisto River at SC 61	Dorchester	Fish Consumption	Mercury
Edisto River Above HWY 17	Charleston	Fish Consumption	Mercury
Penny Creek	Charleston	Fish Consumption	Mercury
Edisto River at Willtown Bluff	Charleston	Fish Consumption	Mercury
St. Pierre Creek at Peters Pt.	Charleston	Shellfish Harvesting	Fecal Coliform
Fishing Creek at Sandy Creek	Charleston	Shellfish Harvesting	Fecal Coliform
Store Creek	Charleston	Shellfish Harvesting	Fecal Coliform
Shingle Creek at Milton Creek	Charleston	Shellfish Harvesting	Fecal Coliform
Bailey Creek	Charleston	Shellfish Harvesting	Fecal Coliform
Alligator Creek and S. Fork Edisto River	Charleston	Shellfish Harvesting	Fecal Coliform
Frampton Inlet at North End of Jeremy Cay	Charleston	Shellfish Harvesting	Fecal Coliform
South Edisto River at Alligator Creek	Charleston	Aquatic Life	Turbidity
03050206-040			
Lower Toogoodoo Creek	Charleston	Shellfish Harvesting	Fecal Coliform
Toogoodoo Creek at Lower Toogoodoo Creek	Charleston	Shellfish Harvesting	Fecal Coliform
Stono River at Marker #63	Charleston	Shellfish Harvesting	Fecal Coliform
Raven Point Creek at Church Creek	Charleston	Shellfish Harvesting	Fecal Coliform
Church Creek at Drainage Discharge 1/8 Mile East of Power Lines	Charleston	Shellfish Harvesting	Fecal Coliform
Pine Creek at First Fork	Charleston	Shellfish Harvesting	Fecal Coliform
Church Creek and New Cut Confluence	Charleston	Shellfish Harvesting	Fecal Coliform
Yonges Island Creek at Marker #90	Charleston	Aquatic Life	Ammonia
Unnamed Creek to Leadenwah Creek 3.7 mi NW of Rockville	Charleston	Aquatic Life	Turbidity
Bohicket Creek at Fickling Creek	Charleston	Shellfish Harvesting	Fecal Coliform

DESCRIPTION	COUNTY	IMPAIRED USE	CAUSE
Bohicket Creek at Fickling Creek	Charleston	Aquatic Life	Dissolved Oxygen
Bohicket Creek at HWY 700	Charleston	Shellfish Harvesting	Fecal Coliform
Bohicket Creek Opposite Hoopstick Island	Charleston	Shellfish Harvesting	Fecal Coliform
Bohicket Creek Opposite Old Dam	Charleston	Shellfish Harvesting	Fecal Coliform
Bohicket Creek Opposite Boy Scout Camp	Charleston	Shellfish Harvesting	Fecal Coliform
Church Creek 350 yds West of HWY 700	Charleston	Shellfish Harvesting	Fecal Coliform
Church Creek at SC 700	Charleston	Aquatic Life	Dissolved Oxygen
Bohicket Creek 3 mi SW SC 700	Charleston	Aquatic Life	Dissolved Oxygen
Sand Creek at HWY 174	Charleston	Shellfish Harvesting	Fecal Coliform
Sand Creek at Westendorf Clam Farm Intake	Charleston	Shellfish Harvesting	Fecal Coliform
Dawho River at Marker #126	Charleston	Shellfish Harvesting	Fecal Coliform
Dawho River at SC 174	Charleston	Aquatic Life	Dissolved Oxygen
North Edisto River 200 yds from West Bank Creek	Charleston	Aquatic Life	Turbidity
Dawho River 10.5 mi N of Edisto Beach	Charleston	Aquatic Life	Turbidity
Dawho River 10.5 mi N of Edisto Beach	Charleston	Aquatic Life	Dissolved Oxygen
Fishing Creek Near Jehossee Island	Charleston	Aquatic Life	Turbidity
Dawho River 0.2 mi S of North Creek/AIWW	Charleston	Recreation	Fecal Coliform

Source: SCDHEC State of South Carolina Integrated Report for 2010

¹Not Supported Sites Covered Under an Approved TMDL

**Table 5
Catawba-Santee Basin**

DESCRIPTION	COUNTY	IMPAIRED USE	CAUSE
03050112-010			
Santee River Below Lake Marion	Berkeley	Fish Consumption	Mercury
Rediversion Canal	Berkeley	Fish Consumption	Mercury
03050112-020			
Echaw Creek at Pitch Landing	Berkeley	Recreation	Fecal Coliform
Santee River at SC 41/US 17A	Berkeley	Fish Consumption	Mercury
03050112-030			
Wambaw Creek	Charleston	Fish Consumption	Mercury
¹ South Santee River Near the Midpoint of Grace Is	Charleston	Shellfish Harvesting	Fecal Coliform
¹ Alligator Creek Nearest South Santee River	Charleston	Shellfish Harvesting	Fecal Coliform
South Santee River 400 yds N ICWW	Charleston	Aquatic Life	Turbidity
Cedar Creek at Cnty Rd 857	Charleston	Recreation	Fecal Coliform
South Santee River at US 17	Charleston	Fish Consumption	Mercury
¹ South Santee River at Alligator Creek	Charleston	Shellfish Harvesting	Fecal Coliform
¹ South Santee Inlet	Charleston	Shellfish Harvesting	Fecal Coliform
03050201-010			
Diversion Canal	Berkeley	Fish Consumption	Mercury
Lake Moultrie at Dam	Berkeley	Fish Consumption	Mercury
Lake Moultrie SW in Open Water	Berkeley	Aquatic Life	Ammonia
Tributary 0.6 km Upstream of SC HWY 6	Berkeley	Recreation	Fecal Coliform
Tributary of Lake Moultrie at Cross Generation Station	Berkeley	Aquatic Life	Copper
Tributary of Lake Moultrie at Cross Generation Station	Berkeley	Recreation	Fecal Coliform
Lake Moultrie at Fred Day Landing	Berkeley	Fish Consumption	Mercury
Lake Moultrie at Hatchery Landing	Berkeley	Fish Consumption	Mercury
03050201-020			
Wadboo Swamp at S-08-447	Berkeley	Recreation	Fecal Coliform
Walker Swamp at US 52	Berkeley	Aquatic Life	Dissolved Oxygen
Wadboo Creek at Rembert Dennis Ramp	Berkeley	Fish Consumption	Mercury
Cane Gullet Branch at S-05-97	Berkeley	Recreation	Fecal Coliform
03050201-030			
Turkey Creek at Forest Service Rd	Berkeley	Recreation	Fecal Coliform
East Fork of Cooper River Near Quinby Creek	Berkeley	Fish Consumption	Mercury
03050201-040			
Wando River at Deep Creek	Charleston	Shellfish Harvesting	Fecal Coliform
Wando River Opposite Paradise Is	Charleston	Shellfish Harvesting	Fecal Coliform
Wando River at paradise Landing	Charleston	Shellfish Harvesting	Fecal Coliform
Deep Creek 1 mi from Wando River	Charleston	Shellfish Harvesting	Fecal Coliform
Wando River at Alston Creek	Charleston	Shellfish Harvesting	Fecal Coliform
Guerin Creek at Old House Creek	Berkeley	Shellfish Harvesting	Fecal Coliform
Toomer Creek 2.5 mi E SC 41 Over Wando River	Charleston	Aquatic Life	Dissolved Oxygen
Boone Hall Creek Opposite County Rec Area	Charleston	Shellfish Harvesting	Fecal Coliform
New Bridge Route I-526	Charleston	Shellfish Harvesting	Fecal Coliform

DESCRIPTION	COUNTY	IMPAIRED USE	CAUSE
Nowell Creek at Martin Creek	Berkeley	Shellfish Harvesting	Fecal Coliform
Rat Hall Creek at Wando River	Charleston	Shellfish Harvesting	Fecal Coliform
Beresford Creek 5.3 mi NNE of Wando and Cooper	Berkeley	Aquatic Life	Dissolved Oxygen
Boone Hall Creek 1.5 mi WNW of Intersection US 17 and SC 41	Charleston	Recreation	Fecal Coliform
¹ Wando River at SC 41	Berkeley	Aquatic Life	Dissolved Oxygen
03050201-050			
Cypress Swamp at US 78	Dorchester	Recreation	Fecal Coliform
03050201-060			
¹ Dorchester Creek at SC 165	Dorchester	Recreation	Fecal Coliform
Dorchester Creek at SC 165	Dorchester	Aquatic Life	Dissolved Oxygen
Ashley River at SC 165	Dorchester	Recreation	Fecal Coliform
¹ Ashley River at SC 165	Dorchester	Aquatic Life	Dissolved Oxygen
Eagle Creek at SC 642	Dorchester	Recreation	Fecal Coliform
Eagle Creek at SC 642	Dorchester	Aquatic Life	Ammonia
Ashley River at Dorchester State Park	Dorchester	Fish Consumption	Mercury
Ashley River at Magnolia Gardens	Charleston	Aquatic Life	Turbidity
Ashley River at Magnolia Gardens	Charleston	Recreation	Fecal Coliform
¹ Ashley River at Magnolia Gardens	Charleston	Aquatic Life	Dissolved Oxygen
Ashley River 1.8 mi NW Runnymede Plantation	Charleston	Recreation	Fecal Coliform
¹ Ashley River 1.8 mi NW Runnymede Plantation	Charleston	Aquatic Life	Dissolved Oxygen
Ashley River at Salrr Bridge	Charleston	Aquatic Life	Copper
¹ Ashley River at Salrr Bridge	Charleston	Aquatic Life	Dissolved Oxygen
James Island Creek N of White Hall Plantation	Charleston	Aquatic Life	Dissolved Oxygen
James Island Creek N of White Hall Plantation	Charleston	Recreation	Fecal Coliform
¹ Sawmill Branch at S-18-706	Dorchester	Recreation	Fecal Coliform
03050201-070			
Cooper River at US 17A	Berkeley	Fish Consumption	Mercury
Foster Creek at Charleston CPW Water Intake	Berkeley	Aquatic Life	Dissolved Oxygen
Back River Reservoir	Berkeley	Aquatic Life	Dissolved Oxygen
Back River Reservoir	Berkeley	Fish Consumption	Mercury
Cooper River at Bushy Park	Berkeley	Fish Consumption	Mercury
¹ West Branch Cooper River at End of Rice Mill Rd	Berkeley	Aquatic Life	Dissolved Oxygen
Durham Creek	Berkeley	Fish Consumption	Mercury
Goose Creek at S-08-136 Bridge	Berkeley	Recreation	Fecal Coliform
Goose Creek at US 52	Charleston	Aquatic Life	Dissolved Oxygen
Goose Creek Reservoir	Berkeley	Aquatic Life	Dissolved Oxygen
Goose Creek Reservoir	Berkeley	Aquatic Life	Total Phosphorous
Goose Creek Reservoir	Berkeley	Aquatic Life	Chlorophyll A
Fludd's Creek at Clark Sound	Charleston	Shellfish Harvesting	Fecal Coliform
Outfall of Morris Island Discharge	Charleston	Shellfish Harvesting	Fecal Coliform
AIWW at SC 703	Charleston	Aquatic Life	Copper
Shem Creek at US 17	Charleston	Recreation	Fecal Coliform
Shem Creek at US 17	Charleston	Aquatic Life	Ammonia

DESCRIPTION	COUNTY	IMPAIRED USE	CAUSE
Charleston Harbor at Ft. Johnson	Charleston	Aquatic Life	Ammonia
Charleston Harbor at Shem Creek	Charleston	Aquatic Life	Copper
Cooper River 1 mi Downstream From Noisette Creek	Berkeley	Recreation	Fecal Coliform
Filbin Creek at Virginia Ave	Charleston	Recreation	Fecal Coliform
Unnamed Tributary to Parrot Point Creek	Charleston	Aquatic Life	Turbidity
03050202-010			
Rantowles Creek at Stono River	Charleston	Shellfish Harvesting	Fecal Coliform
03050202-020			
Log Bridge Creek at SC 162	Charleston	Aquatic Life	Ammonia
Stono River (AIWW) at Marker #27	Charleston	Shellfish Harvesting	Fecal Coliform
Stono River (AIWW) at Marker #51	Charleston	Shellfish Harvesting	Fecal Coliform
Stono River (AIWW) at Marker #54	Charleston	Shellfish Harvesting	Fecal Coliform
Stono River (AIWW) at Marker #25	Charleston	Shellfish Harvesting	Fecal Coliform
Mouth of Elliot Cut at S-10-26	Charleston	Aquatic Life	Dissolved Oxygen
Stono River at SC 700	Charleston	Aquatic Life	Dissolved Oxygen
Kiawah River on the Flats	Charleston	Aquatic Life	Copper
Abbapoola Creek at Small Creek	Charleston	Shellfish Harvesting	Fecal Coliform
Bass Creek near Cider Creek Confluence	Charleston	Shellfish Harvesting	Fecal Coliform
Abbapoola Creek at Blind Road	Charleston	Recreation	Fecal Coliform
Tributary to Stono Inlet 11 mi SW of Charleston	Charleston	Aquatic Life	Turbidity
03050209-010			
¹ Alligator Creek at Marker #26	Charleston	Shellfish Harvesting	Fecal Coliform
¹ Casino Creek at Marker #29	Charleston	Shellfish Harvesting	Fecal Coliform
¹ Dupree Creek Near Marker #30	Charleston	Shellfish Harvesting	Fecal Coliform
Alligator Creek at State Shellfish Ground	Charleston	Aquatic Life	Turbidity
Casino Creek at Closure Line	Charleston	Aquatic Life	Ammonia
E Fork of Devils Den Creek	Charleston	Aquatic Life	Copper
Little Papas Creek 0.4 mi SW of Muddy Bay	Charleston	Aquatic Life	Ammonia
03050209-020			
Graham Creek at Marker #64	Charleston	Shellfish Harvesting	Fecal Coliform
Awendaw Creek at Marker #57	Charleston	Shellfish Harvesting	Fecal Coliform
Awendaw Creek at Marker #57	Charleston	Aquatic Life	Turbidity
Doehall Creek Third Bend	Charleston	Shellfish Harvesting	Fecal Coliform
Sandy Point Creek Fourth Bend	Charleston	Shellfish Harvesting	Fecal Coliform
AIWW at Unnamed Creek 1.5 mi SW of Graham Creek	Charleston	Shellfish Harvesting	Fecal Coliform
Jeremy Creek Near McClellanville Town Hall	Charleston	Aquatic Life	Dissolved Oxygen
Five Fathom Creek at Bull River	Charleston	Aquatic Life	Turbidity
Seewee Bay at Moores Landing	Charleston	Aquatic Life	Ammonia
AIWW Midway Between Awendaw and Graham Creek	Charleston	Recreation	Fecal Coliform
AIWW Across from Mouth of Graham Creek	Charleston	Recreation	Fecal Coliform
AIWW Tributary N of Seewee Camp	Charleston	Recreation	Fecal Coliform
Tributary to Mathews Creek	Charleston	Aquatic Life	Turbidity
Venning Creek 0.7 mi from Mouth of Vanderhorst Creek	Charleston	Aquatic Life	Turbidity
Venning Creek 0.7 mi from Mouth of Vanderhorst Creek	Charleston	Aquatic Life	Ammonia

DESCRIPTION	COUNTY	IMPAIRED USE	CAUSE
AIWW Adjacent to Wild Dunes	Charleston	Shellfish Harvesting	Fecal Coliform
Bullyard Sounds near Marker #104	Charleston	Aquatic Life	Ammonia
Hamlin Sound	Charleston	Aquatic Life	Ammonia
Hamlin Creek at AIWW	Charleston	Shellfish Harvesting	Fecal Coliform
AIWW at 25 St IOP	Charleston	Shellfish Harvesting	Fecal Coliform
Conch Creek at Lofton Creek	Charleston	Shellfish Harvesting	Fecal Coliform
Upper Reaches of Conch Creek	Charleston	Shellfish Harvesting	Fecal Coliform
Upper Reaches of Inlet Creek	Charleston	Shellfish Harvesting	Fecal Coliform
Upper Inlet Creek at Jennie Creek	Charleston	Shellfish Harvesting	Fecal Coliform
Bay at End of Upper Inlet Creek	Charleston	Shellfish Harvesting	Fecal Coliform
Lower Hamlin Creek at New Bridge Site	Charleston	Aquatic Life	Copper
Lower Hamlin Creek at New Bridge Site	Charleston	Aquatic Life	Ammonia
AIWW 0.5 mi SW of Mouth of Hamlin Creek	Charleston	Aquatic Life	Ammonia

Source: SCDHEC State of South Carolina Integrated Report for 2010

¹Not Supported Sites Covered Under an Approved TMDL

B-1-g-4. Unimpaired Waters of Concern

SCDHEC identifies unimpaired waters with the potential to be listed as impaired on the subsequent 303 (d) list. These waters display long-term trends targeted for additional review. In the 2010 list, there were no unimpaired waters of concern within the BCD Region (Source: SCDHEC State of South Carolina Integrated Report for 2010).

B-1-h. Development Trends

The purpose of this Section is to identify which areas in the Region are expected to have the greatest potential for negative water quality impacts resulting from changes in settlement patterns.

The land use section illustrated that there is still a great deal of undeveloped land in the region. Even though approximately 30 percent of the total land area in the tri-county region is owned by either the state or federal government, there is ongoing opportunity for growth. Development will continue to concentrate in or near existing municipalities like Mt. Pleasant, the Johns Island/West Ashley area, and the Goose Creek/Summerville area. One exception to this is the proposed East Edisto development in Charleston and Dorchester Counties.

Much of the rural development in the tri-county region will continue to depend on septic systems and well water. In the past, rural development has been sparsely arranged causing the extension of water and sewer service to these areas to be cost prohibitive.

B-1-h-1. Demographics

The Charleston-North Charleston-Summerville Metropolitan Statistical Area (MSA) continues to be the fastest growing region in South Carolina. Although recently the region has not experienced the explosive population growth of the 1970s and 1980s, there was more than double the growth from 2000 to 2010 (21.1%) than occurred from 1990 to 2000 (8.3%). Growth from 1970 through 1990 suggested the start of a continuing trend of suburbanization, as more people relocated, seeking the job markets and amenities of urban and suburban areas, as well as the natural resources and quality of life offered by the coastal region.

While a portion of the slower growth of the 1990s can be attributed to the 1996 closure of the Charleston Naval Base, the significant growth during this past decade resulted from domestic migration (people moving to South Carolina from another state). According to the U.S. Census, from 2007 to 2008, South Carolina had the highest rate of population growth due to domestic migration (49,736 persons) of any other state during this time period.

The region-wide population growth of 21.1 percent from 2000 to 2010 was more than the statewide growth rate of South Carolina (15.3%) during the same time period. Dorchester County saw the largest growth rate with a 41.8 % (40,228 persons) increase in population.

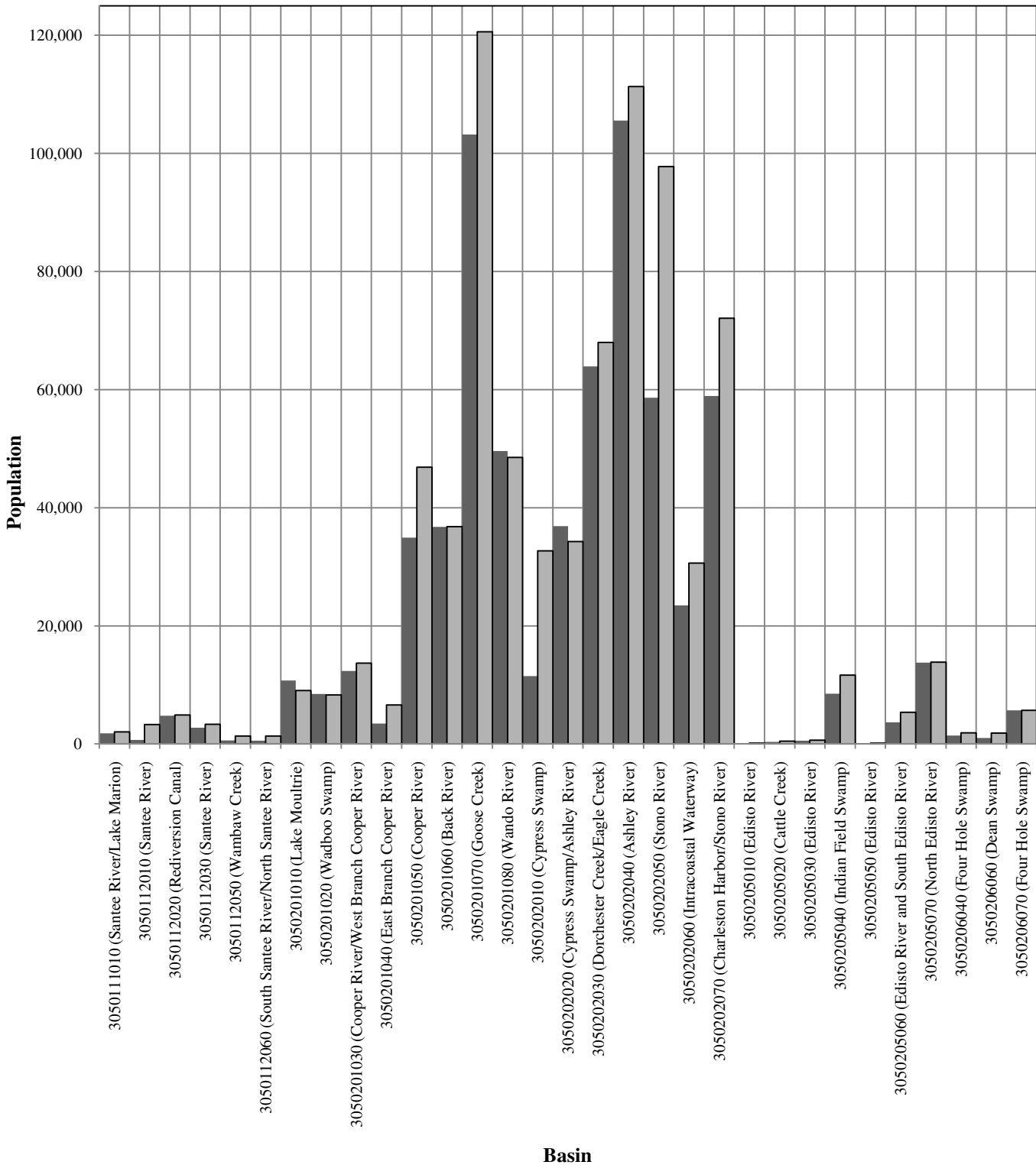
During the past year, the staff of the BCDCOG has been continuously meeting with local planning officials to try to attain some measure of the distribution of future growth patterns. Projections of population, employment and a variety of other variables have been made through the year 2035 within the region. These projections reflect an expectation that this region will grow to 802,230 person, and approximate increase of 290,000 persons, in the 35 years between 2000 and 2035.

A population increase of over 295,000 is not believed to be unrealistic in light of past demographic and economic trends. According to the 2010 Milken Institute Best-Performing Cities Index, the Charleston-North Charleston-Summerville MSA ranked 19th when compared to other U.S. metropolitan areas. The index ranks MSAs by how well they create and sustain jobs and economic growth. The Region's location, thriving ports, climate, and other natural resources are conducive to continued industrial development, increasing tourism, and retirement investment.

While the construction pace has slowed since 2007 when the national housing market dramatically declined, based on current growth trends, the Region can expect to need an additional 70,000 to 100,000 housing units over the next two decades.

Basins 3050201070, 3050201080, 3050202010, 3050202020, 3050202030, 3050202050, 3050202060, and 3050202070 are projected to experience the most growth in population. These basins include Charleston, Hollywood, James Island, Ladson, Mt. Pleasant, North Charleston, Ravenel, North of Jedbarg, Ridgeville, Summerville, and Goose Creek. Watershed basin 3050202050 is projected to have the greatest population growth. This basin contains Charleston, Johns Island, and the Hollywood/Ravenel areas (refer to chart and table below).

**Figure 1
2010-2035 Projected Population Growth by Basin**



**Table 6
Projected Basin Growth from 2010-2035**

BASIN	2010 Population	2035 Population	2010 Housing Units	2035 Housing Units	2010 Employment	2035 Employment
3050111010 Santee River/Lake Marion	1,789	2,028	1,081	922	146	108
3050112010 Santee River	663	3,296	374	1394	70	64
3050112020 Rediversion Canal	4,795	4,910	2158	2435	1,410	2,606
3050112030 Santee River	2,738	3,330	1,216	1,274	355	1,172
3050112050 Wambaw Creek	595	1331	292	397	25	38
3050112060 S. Santee/N. Santee River	563	1331	268	397	63	69
3050201010 Lake Moultrie	10,753	9,039	5,149	4,423	4,940	4,646
3050201020 Wadboo Swamp	8,474	8,310	3,558	3,445	1,590	5,493
3050201030 Cooper River/W. Branch	12,348	13,667	5,030	5,572	10,685	12,765
3050201040 E. Branch Cooper River	3,470	6,592	1,514	2,515	444	1,472
3050201050 Cooper River	34,954	46,864	17,323	20,706	52,409	60,025
3050201060 Back River	36,771	36,815	14,187	14,373	8,400	8,493
3050201070 Goose Creek	103,188	120,576	42,029	48,557	34,166	42,221
3050201080 Wando River	49,591	48,500	20,660	19,017	12,826	17,351
3050202010 Cypress Swamp	11,488	32,717	4,124	13,437	3,688	12,911
3050202020 Cypress Swamp/Ashley River	36,863	34,263	13,909	13,617	4,342	6,910
3050202030 Dorchester Crk/Eagle Crk	63,929	67,994	26,935	27,132	25,197	28,508
3050202040 Ashley River	105,541	111,333	47,252	48,759	70,124	76,248
3050202050 Stono River	58,646	97,791	27,524	40,402	32,906	47,165
3050202060 Intracoastal Waterway	23,471	30,608	13,648	12,428	9,154	9,170
3050202070 Chas Harbor/Stono River	58,927	72,093	33,948	31,216	27,856	36,282
3050205010 Edisto River	47	156	51	133	0	0
3050205020 Cattle Creek	329	467	154	199	33	0
3050205030 Edisto River	554	623	275	399	48	56
3050205040 Indian Field Swamp	8,516	11,638	3,875	4,849	3,776	4,461
3050205050 Edisto River	28	156	25	133	6	3

BASIN	2010 Population	2035 Population	2010 Housing Units	2035 Housing Units	2010 Employment	2035 Employment
3050205060 Edisto River/S. Edisto River	3,667	5,347	1,994	1,844	128	2,306
3050205070 N. Edisto River	13,772	13,842	6,652	5,525	4,004	5,404
3050206040 Four Hole Swamp	1,427	1,868	663	930	454	760
3050206060 Dean Swamp	1,010	1,831	434	658	138	142
3050206070 Four Hole Swamp	5,700	5,689	2,239	1,835	1,541	5,107
Totals	664,607	795,005	298,541	328,923	310,924	391,956

B-1-h-2. Water Quality

Water Quality has improved greatly over the past three decades despite the areas large increase in population (around 200,000 persons). This improvement can be largely attributed to increased levels of wastewater treatment by both public and private entities. Wastewater Treatment systems are key to maintaining future acceptable levels of water quality, although significant growth may necessitate increased levels of treatment in the future. Additionally, impacts from point sources to waterbodies have been substantially reduced through point source controls via the NPDES program.

Nonpoint sources of pollution are believed to be significant contributors to water quality problems, and these sources are difficult to measure and control. The continued population growth of the BCD Region is expected to predominantly occur in new developments on the fringes of existing development. This growth can be expected to increase nonpoint loadings in our water ways. The Stono, Ashley and Wando Rivers (and their tributaries), are all expected to be subject to significant increases in nonpoint pollution loadings. Since 1990, steady progress has been made in controlling nonpoint source impacts through the implementation of South Carolina's Nonpoint Source Management Program. The continued expansion of this program in conjunction with TMDL development and other water quality improvement programs are expected to be effective in reducing the number of impaired waterbodies.

B-2. Institutional Designations & Responsibilities

B-2-a. Federal

The EPA is responsible for implementing the requirements of the Clean Water Act. Section 208 of the Act directs the Administrator of EPA to prepare comprehensive plans "for preventing, reducing, or elimination of the pollution of the navigable waters and ground-waters and improving the sanitary condition of surface and underground waters." These plans are to be developed in cooperation with federal, state, and interstate agencies, and municipalities and industries.

The water quality planning program of the EPA is focused on the development of guidelines and regulations to assist the states and areawide planning agencies in the development of the above described planning studies. The agency is also responsible for the review and approval of all studies authorized under the Act.

B-2-b. State

Most of the responsibilities for accomplishing the provisions of the Clean Water Act have been delegated by EPA to SCDHEC. Basic activities sponsored by SCDHEC which implement this Act and the State Pollution Control Act include:

1. The recommendation of Stream use classifications to the Legislature and the development of standards to meet those classifications;
2. Administration of the national NPDES Permit Program; and,
3. Water Quality Management Planning for Major River Basins and, 208 Planning of areas outside the jurisdiction of Designated 208 Planning Agencies.

B-2-c. Regional

The BCDCOG is the Designated 208 Planning Agency for this three county Planning District. It is responsible for coordinating state and local planning programs in a manner that achieves the objectives of federal, state and local interests in achieving mutual clean water goals.

To assist in achieving these objectives, the BCDCOG established an Environmental Committee to serve as a subcommittee to the full BCDCOG Board. Changes to the 208 Water Quality Management Plan are presented to the Environmental Committee for their recommendation. This recommendation is then sent to the full BCDCOG Board for a final decision. The Environmental Committee, which is appointed by the chairman of the BCDCOG, reviews issues such as the updating of the 208 Plan, plan amendments, and wasteload allocations strategies (See Section C for more information on plan amendments).

The Technical Advisory Committee to the Environmental Committee was established to provide technical assistance to the Environmental Committee. The Committee is made up of representatives of local wastewater contributors who possess relevant technical backgrounds in water and wastewater management. These representatives are appointed by the chairman of the BCDCOG. The Technical Advisory Committee reviews issues and makes recommendation to the Environmental Committee. More information on the activities of the Technical Advisory Committee can be found in Section D-12: Wasteload Allocation Strategy.

B-2-d. Local/Active Point Source Management Agencies

The provisions of the 208 Plan are carried out by local Designated Management Agencies (DMA). In effect, these are the agencies needed to manage and carry out the plan. These agencies are responsible for constructing, operating, and maintaining publicly owned WRFs and have the legal authorities necessary to implement the plans. Only the DMAs are eligible for low-interest loans from the State Revolving Fund (SRF) program for construction or repair of

wastewater systems.

Management agencies or combinations of agencies must have certain authorities and operational capabilities and be willing to accept the responsibilities associated with each designation. A principle part of this 208 Plan is the identification of each management agency and its respective management boundary.

According to the Clean Water Act, each DMA must have adequate legal authority to:

- A. Carry out appropriate portions of an area-wide waste treatment management plan.
- B. Effectively manage waste treatment works and related facilities serving such an area.
- C. Directly or by contract, design and construct new works, and operate and maintain new and existing works as requires by the plan.
- D. Accept and utilize grants, or other funds from any source, for waste treatment purposes.
- E. Raise revenues, including the assessment of waste treatment charges.
- F. Incur short and long-term indebtedness.
- G. Assure in the implementation of an area-wide waste treatment management plan that each participating community pays its proportionate share of waste treatment.
- H. Refuse to receive any wastes from any municipality or subdivision which does not comply with any provision of an approved plan.
- I. Accept industrial wastewater for treatment.

Each DMA agrees to accept certain responsibilities, usually by signing a Willingness and Implementation Statement, except as noted in the individual Willingness and Implementation Statement, the agencies listed in Table 7 are responsible for:

- A. Establishment or continued implementation of a regulatory program to control:
 1. Location of public and private domestic WRFs (this is to be accomplished before award of an SRF loan).
 2. Appropriate waste treatment policies and procedures to include:
 - i. A schedule of fair user charges.
 - ii. Pretreatment standards for industrial wastes (if needed) and regulatory controls to accept or refuse municipal and/or industrial wastes.
 - iii. Such other policies and procedures as may be appropriate.
 - iv. Implementation of the state and EPA approved area wide facilities waste treatment plan and updating the facilities plan periodically as necessary and appropriate.
- B. Development or continued implementation of an effective series of administrative management procedures and a personnel system appropriate to staff the agency for the discharge of its duties and responsibilities.

The EPA approved a determination by the S.C. Attorney General that all incorporated municipalities, counties, and special purpose district in South Carolina are legally capable of performing the duties of a DMA. If the entity agrees to execute responsibilities as described above, it may be a DMA. The designation must first be certified by the BCDCOG and submitted to the EPA by the Governor of South Carolina.

If a DMA desires to provide wastewater service within another management agency's jurisdiction, both must agree to the modified boundary. Modifications can be made when all affected parties are in agreement and sufficient documentation of the agreement can be provided. Modifications to management agency designations must be submitted to the BCDCOG for review. Once approved, the BCDCOG will amend the plan.

The DMAs within this Region are listed below. This list also identifies the agency providing wastewater services. Volume II, Section B, includes a written description, by watershed, of the service area and area served, by the public wastewater management and treatment systems in this Region. Volume II also includes a series of maps depicting the service areas of the BCD Region.

**Table 7
Designated Management Agencies**

Designated Management Agency	Service Provider	DMA Jurisdiction
Berkeley County	Berkeley County Water & Sanitation, Town of Moncks Corner CPW, Charleston Water System, Mount Pleasant Waterworks, Summerville CPW	Unincorporated Area, City of Goose Creek, City of Hanahan, Town of St. Stephen
Charleston County	None	Unincorporated Area (without areas currently being served)
City of Charleston	Charleston Water System	Corporate Limits, St. Andrews, COG Designated Modified Urban Growth Boundary
City of Folly Beach	City of Folly Beach	Corporate Limits
City of Isle of Palms	Isle of Palms Water and Sewer Commission	Corporate Limits
Dorchester County	Dorchester County W&SD, Summerville CPW	Unincorporated Area, Reevesville
James Island Public Service District	James Island Public Service District	District Limits
North Charleston Sewer District	North Charleston Sewer District	District Limits, Lincolnville
Town of Harleyville	Town of Harleyville	Corporate Limits
Town of Hollywood	Town of Hollywood	Corporate Limits, Petersfield
Town of Kiawah Island	Kiawah Island Utility	Corporate Limits
Town of Meggett	Town of Meggett	Corporate Limits
Town of Moncks Corner	Town of Moncks Corner CPW	Corporate Limits
Town of Mount Pleasant	Mount Pleasant Waterworks	Commission Limits (Wastewater)
Town of Ravenel	Town of Ravenel	Corporate Limits
Town of Ridgeville	Dorchester County W&SD	Corporate Limits
Town of Seabrook Island	Seabrook Island Utility Commission	Corporate Limits, Hope Plantation
Town of St. George	Dorchester County W&SD	Corporate Limits
Town of Sullivan's Island	Town of Sullivan's Island W&SD	Corporate Limits
Town of Summerville	Summerville CPW, North Charleston Sewer District, Dorchester County W&SD, Berkeley County W&S	Commission Limits

SECTION C. ADMINISTRATIVE PROCEDURES

C-1. Plan Amendments

Planning is a multi-staged process that includes provisions for updating/amending as conditions change over time. The BCDCOG Water Quality Management Planning Process provides for the completion of an annual Plan Update, as well as, a method for amending the Plan at any time during the year.

C-1-a. Annual 208 Plan Update

The annual BCDCOG Plan Update will be submitted to the Department of Health & Environmental Control within 30 days of the expiration date of the 205j Contract Period for each fiscal year. The update will include the following information:

1. A listing of all surface waters that have been reclassified since the last update, if any;
2. The TMDLs, if changed by SCDHEC, from values reported in the original plan or previous plan updates; (TMDLs would not necessarily change from year to year. However, they could be revised when new water quality models are developed, or when NPDES permits are reissued under SCDHEC's watershed permitted program).
3. Significant changes in point source regulatory programs.
4. A current inventory of Dischargers.
5. Population, housing or other projections for the region, or parts thereof, if revised since the last update.
6. A summary of DMA activities, including:
 - a. Changes in Management Agency designations;
 - b. Changes in Designated Wastewater Facility Planning Areas, if any;
 - c. Master Plan updates for Designated Service Areas;
 - d. Interlocal Agreements between Management Agencies; and,
 - e. Changes in treatment process, design flow, effluent disposal, discharge location, or service providers.

7. A listing of all NPDES and ND permit applications certified as being in conformance with the BCDCOG 208 Plan during the past year;
8. A summary of all amendments to the BCDCOG 208 Plan approved by the BCDCOG in the past year, including the following information for each amendment:
 - a. A summary of the key provisions of the amendment, including a description of the selected wastewater collection, treatment, and/or effluent disposal alternatives;
 - b. A description (text and/or map) of the wastewater planning area;
 - c. A copy of the BCDCOG Board minutes incorporating the recommended selected alternatives into the 208 Plan.

C-1-b. Major and Minor Plan Amendments

Proposed amendments to the 208 Plan are classified as Major and Minor. The distinction between Major and Minor Amendments is attained in the following paragraphs and is schematically illustrated in Figure 2.

Major Amendments are defined as proposed plan amendments for:

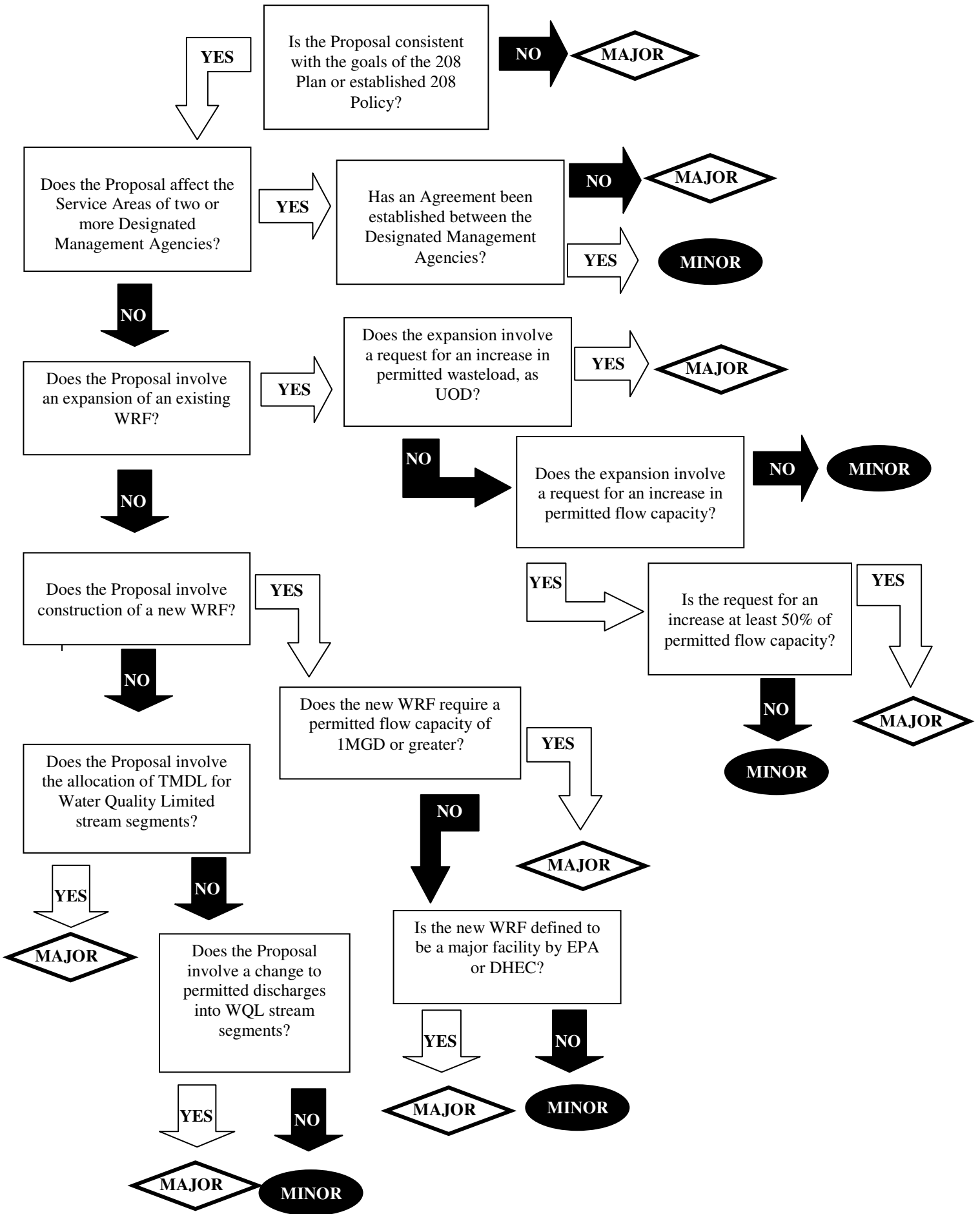
1. New or increased permitted discharges into Water Quality Limited streams;
2. Effects on the allocation of TMDLs for Water Quality Limited streams;
3. Any new WRF requesting a permitted flow of 1.0 million gallons per day, or more, or defined to be a major facility by EPA or SCDHEC;
4. Existing WRFs that will be expanded by at least 50% of the current permitted capacity, with respect to flow;
5. An expansion of an existing WRF which involves a request for increase in the presently permitted wasteload, expressed as Ultimate Oxygen Demand (UOD), which could be discharged to a receiving stream;
6. Effects on the Service Areas of two or more Designated Management Agencies, which do not include appropriate agreements between those Management Agencies;
7. Conflicts with the goals of the BCDCOG 208 Water Quality Management Plan, or established 208 policy, such as:

- a. Goals/Objectives to improve or maintain the quality of surface and ground waters in the Region;
- b. The consolidation of WRFs into larger regional systems owned and operated by Designated 208 Management Agencies; and,
- c. To centralize sewer systems within management agency service areas preferably owned by public entities (as opposed to individual onsite treatment systems or privately-owned treatment plants built to serve small individual developments) wherever feasible to provide an acceptable method of wastewater treatment and effluent disposal for projected residential, commercial, or industrial growth.

Minor Amendments are defined as proposed plan amendments for:

1. A new WRF requesting a permitted flow of less than 1.0 million gallons per day and defined to be a minor facility by EPA or SCDHEC;
2. Improvements to an existing WRF which are necessary to meet NPDES Permit Conditions requiring increased levels of treatment;
3. An existing WRF which would be expanded by less than 50% of the current permitted capacity, with respect to flow;
4. An existing WRF which would be “rerated” to handle a higher permitted flow, but would not result in an increased permitted UOD loading to the receiving stream;
5. A proposed change in the current effluent disposal method, discharge point, or service area for an existing WRF that would be consistent with the goals and other provisions of the BCDCOG 208 Plan. Agreements between Designated Management Agencies involving these same considerations would also be considered as Minor Amendments.

**Figure 2
Amendment Flowchart**



The process for applying for a Major and Minor Amendment is described below. Worksheets are provided by BCDCOG to assist the applicant with the process.

Major Amendments require public input. A public meeting is conducted to consider the request. The meeting is advertised by a two-week notice in a newspaper distributed in the area affected by the proposed amendment, to receive public comments. A public hearing record is to remain open for ten working days following the meeting to receive written comments on the proposed amendment. A responsiveness summary would then be prepared to address all comments received on the proposed amendment. For major amendments (and at the request of the Executive Committee of the Full BCDCOG Board for minor amendments) the Technical Advisory Committee will review the proposed amendment. Recommendations from the Technical Advisory Committee will be sent to the Environmental Committee for review. The Environmental Committee may either send the recommendation back to the Technical Advisory Committee for further review or accept the recommendations for consideration before the Environmental Committee. Once accepted, the recommendation shall be subject to public review and comment prior to any formal action being taken by the Environmental Committee. After review, the Environmental Committee may either refer Technical Advisory Committee recommendations back to the Technical Advisory Committee with comments for further review, or, make a recommendation, with or without comments, to the Board of the BCDCOG regarding its adoption as an amendment to the 208 Plan by the BCDCOG.

The BCDCOG and the applicant for the Plan Amendment must agree to a time, date and place for the public meeting required to obtain public comments on the proposed amendment. The applicant is responsible for placing advertisements in local newspapers, arranging for the physical accommodations for the meeting, and, for developing a record of the proceedings of the meeting. An Affidavit of Publication from the newspaper, and a responsiveness summary to the comments received at the Public Meeting need to be provided to the BCDCOG, before the requested amendment can be acted upon by the BCDCOG.

Public Meetings are not mandatory for proposed *Minor Amendments*. Instead, a public notice is to be sent to interested parties and advertised in a local newspaper, to receive comments on the proposed amendment. If no significant comments are received within two weeks of the date of the notice, the Executive Committee of the Full BCDCOG Board will review the proposed amendment for consideration of approval. If significant comments are received the BCDCOG could elect to treat the Proposal as a Major Amendment.

Worksheet for 208 Major Amendment Process:

1. The applicant will provide at least one public review copy of the application to both the COG and the general purpose government where the proposed discharge or service area is located. These applications will be made available for public review during normal business hours. The advertisement will state where these copies are available.
2. Set public meeting date and place. This date will be at a time agreed upon by the Chair of the Environmental Committee, Executive Director of the BCDCOG, and the representative for the proposed project. The meeting place will be arranged by the representative for the proposed project in a place convenient to the residents of the affected area.

Public Meeting Date: _____

Public Meeting Place: _____

3. Place Public Notice in local newspapers. Applicant is responsible for placing a non-legal advertisement in local newspapers. Advertisements are to be placed in the newspapers in the non-legal section of the newspaper at least fourteen (14) days before the date of the meeting. An Affidavit of Publication from the newspaper needs to be provided to the COG for its records. The notice must contain the following elements: (any changes to the notice must be reviewed by the BCDCOG staff).

**Public Meeting
Proposed Amendment to Water Quality Management Plan
(PROPOSED PROJECT NAME)**

The BCD Council of Governments has scheduled a Public Meeting to solicit public comment and input concerning the (*SHORT DESCRIPTION OF PROJECT*) as an amendment to the BCD Water Quality Management Plan.

The Public Meeting will be held at (*TIME*) (*DATE*) at the (*PLACE*).

The proposed amendment will be considered for approval by the BCDCOG following public review. Comments made at the Public Meeting or submitted in writing by (*TWO WEEKS AFTER MEETING DATE*) will be in the public record for the Plan amendment proposal.

Written comments should be submitted to the BCD Council of Governments, 1362 McMillan Ave. Suite 100, North Charleston, SC 29405. Individuals with questions concerning the proposed amendment may contact the BCDCOG at 529-0400 between the hours of 9 AM and 5 PM.

The Preliminary Engineering Report containing background information and justification for the amendment is available for public review at the (*PLACE*) and the BCD Council of Governments, 1362 McMillan Ave. Suite 100, North Charleston, SC.

Date notice will appear in newspaper: _____

Name of newspaper: _____

3. The public meeting will be set up in conjunction with COG staff and the applicant. The COG staff will explain the 208 amendment process to the meeting attendants. The applicant will be given the opportunity to explain the proposed amendment and respond to questions from the public.
4. A ten working day period is reserved, following the public meeting, for the COG to receive written comments on the proposed amendment. All comments received by the COG will be sent to the representative of the proposed project.
5. Set meeting date for the Technical Advisory Committee. This date will be set at a time agreed upon by the Chair of the Environmental Committee, Executive Director of the BCDCOG, and the representative for the proposed project.

Technical Advisory Committee Meeting Date: _____

6. The Technical Advisory Committee will discuss and vote on a recommendation for the proposed project.
7. Set meeting date for the Environmental Committee. This date will be set at a time agreed upon by the Chair of the Environmental Committee, Executive Director of the BCDCOG, and the representative for the proposed project.

Environmental Committee Meeting Date:_____

Full COG Board Meeting Date:_____

8. Once accepted by the Environmental Committee, the recommendation shall be subject to public review prior to any formal action.
9. After review, the Environmental Committee will discuss and vote on a recommendation for the proposed project.
10. The Full COG Board will consider the Environmental Committee's recommendation and vote on a final decision for the proposed project.

Worksheet for 208 Minor Amendment Process:

1. Set meeting date for Executive Committee of the Full COG Board. This date will be at a time agreed upon by the Chair of the Full COG Board, Executive Director of the BCDCOG, and the representative for the proposed project. The Chair of the Full COG Board has the option to send the proposed project before the Technical Advisory Committee for review.

Technical Advisory Committee Meeting Date (Optional): _____

Full COG Board Meeting Date: _____

2. Place Public Notice in area newspaper. Applicant is responsible for placing advertisements in local newspapers. Advertisements are to be placed in a local newspaper at least two (2) weeks before the date of the meeting or polling of the Environmental Committee can occur. An **Affidavit of Publication** from the newspaper must be provided to the COG for its records. The notice must contain the following elements; (any changes to the notice must be reviewed by the BCDCOG staff).

Public Notice

(COMPANY NAME) is proposing an amendment to the BCD Regional 208 Water Quality Management Plan to discharge *(TYPE OF DISCHARGE)* to *(WATERBODY DISCHARGING INTO)*. Individuals with questions or comments concerning the proposed amendment may contact the BCD Council of Governments, 1362 McMillan Avenue, Suite 100, North Charleston, SC 29405 or by calling (843) 529-0400 between the hours of 9 AM and 5 PM. All comments must be received by 5 PM, *(DATE 2 WEEKS AFTER THE AD IS RUN)*.

Date notice will appear in newspaper: _____

Name of newspaper: _____

3. All comments received by the COG will be sent to the representative of the proposed project. If there are a significant number of comments, or if the Chair of the Full COG Board decides that there is need to treat the proposed project as a Major Amendment, and the Major Amendment Process would be followed. The Full COG Board will vote on a final decision for the proposed project.

C-1-c. General Requirements for Plan Amendments

Plan amendments may be accomplished with a Preliminary Engineering Report (PER), provided that the appropriate issues are addressed in the report. The report content will be the same for industrial and domestic WRFs except that industrial facilities need not address those issues pertaining to the BCDCOG's 20-year planning goals. For domestic WRFs and industrial facilities, with the preceding exception, the following issues must be addressed in the report;

1. Justification for the plan amendment, such as;
 - a. The construction of a new wastewater facility;
 - b. A change in the service area, method of treated effluent disposal, treated effluent discharge point, or increase in design capacity of an existing WRF to meet revised 20-year needs; and,
 - c. The execution of an interlocal agreement between two or more local governments, special purpose districts, or other sewer providers regarding sewer service areas, bulk treatment of wastewater, or joint use of an effluent outfall line.
2. The identification of the designated 20-year planning area.
3. Projected land use patterns over the 20-year planning period for the designated wastewater facilities planning area.
4. Population projections for the designated planning area over a 20-year period and associated wastewater flow.
5. An evaluation of feasible wastewater collection, treatment and/or effluent disposal alternatives, which would be required to handle the projected wastewater, flow to meet 20-year needs for the planning area.
6. An environmental assessment and cost effective analysis (i.e. present worth analysis) of the most feasible wastewater collection, treatment, and/or effluent disposal alternatives.
7. The identification of the selected wastewater collection, treatment, and/or effluent disposal alternatives identified in the above analysis.
8. If the above analysis determines that the existing WRF must be expanded, or that a new facility must be constructed to handle the projected 20-year design flow, the following items must be included in the PER/Facilities Plan Update:
 - a. Process design criteria and typical process flow schematic for the selected

treatment alternative.

- b. Expected effluent quality, wasteload allocation and proposed NPDES permit limits, issued by the SCDHEC, for the selected treatment alternative.
 - c. For phased WRF upgrades (or construction), the phase schedule, design flow, process design, expected effluent quality, and method of treated effluent disposal for each phase.
9. The method of sludge disposal associated with the selected treatment alternative must be identified; offsite disposal shall require the approval of the disposal site operator (responsible local government and/or applicable sewer district).

SECTION D: REGIONAL POLICIES

Certain planning functions and water quality issues require a policy statement to provide a common, consistent basis for making decisions over time. The BCDCOG Water Quality Management Plan contains the following policies, which provide long-term direction to water quality planning and decision making.

D-1. Essential Plan Contents

The 208 Plan must include all activities which involve SCDHEC review and approval of PERs, permit requests or plans and specifications for new and reissued NPDES and ND permits; construction permits; WRFs; waste load allocations; pump stations; force mains; and outfall lines in the BCD Region. In brief, the plan identifies the location, sizing, staging, service area and level of treatment of all WRFs with an NPDES permit under the South Carolina Discharge Permitting System.

The BCDCOG operates under a MEMORANDUM OF AGREEMENT with the SCDHEC to make a recommendation about consistency with the BCDCOG 208 Plan. Any conflict (which is defined as any project which is not addressed by the 208 Plan) will be evaluated by the BCDCOG and the project will be denied or modified, or the 208 Plan modified, as may be necessary to meet the intent of the 208 Plan. Section C-1-b: Major and Minor Amendments explain the amendment process.

D-2. Population Forecasts

Management Agency plans for system expansion should provide for sufficient capacity to accommodate the 20-year growth projected in each service area. Population forecasts should be consistent with such forecasts developed for other regional planning programs.

- A. A basic foundation of water quality planning is the forecast of expected wastewater treatment needs, which is tied to future population, housing and employment levels. Forecasts help define wastewater flow rates and the capacity needed to treat the projected volume of wastewater. They also can be used to indicate when facility expansion or capital improvements may be needed in the future. They are not intended to be used as limits to capacity.
- B. Population, housing and employment forecasts for the BCD Region will be utilized as guidelines for water quality planning activities. These forecasts will be evaluated every five years as required for transportation, economic development, community development and water quality planning purposes. The sum of population, housing and employment forecasts for individual wastewater service areas should not significantly differ from the regional forecasts.

- C. In the preparation of sub-area studies, it is appropriate to evaluate the effects of different growth assumptions. However, population forecasts used for sub-area studies should use the BCDCOG's subarea distributions as one of the alternative forecasts considered. Any other alternative forecast should be developed in conjunction with and approved by the BCDCOG.

D-3. Stream Standards and Classifications

The BCDCOG Water Quality Management Plan recognizes the stream classifications and standards adopted by the General Assembly and the effluent limitations developed by SCDHEC to protect those standards. Within effluent limited waterbodies, it is recognized that TMDL will be allocated among dischargers within the Plan.

- A. The General Assembly is responsible for establishing beneficial use classifications for all streams and lakes in the state. Based on assigned beneficial uses, these streams have basic and numeric water quality standards, which are intended to maintain water quality at a level sufficient to protect the classified uses.
- B. It is a function of the 208 Plan to identify wastewater effluent limitations, which respond to the classifications and standards. The effluent limits needed to meet standards are based on physical and chemical characteristics of the receiving waters, such as decay rates, re-aeration rates and low stream flows.
- C. Watershed Studies undertaken by SCDHEC review existing stream standards and identify use impaired stream sites. SCDHEC also develops the TMDLs for use impaired stream sites. The BCDCOG will recommend allocations of the TMDLs among treatment facilities discharging into those impaired stream sites.

D-4. Septic and Individual Disposal Systems

Septic and individual disposal systems are an acceptable means of waste disposal when they are designed and maintained properly, and located on a suitable site. Unfortunately, poorly located, designed or failed systems can contribute greatly to nonpoint source pollution problems.

Where justifiable (i.e. within the Urban Growth Boundary), areas served by septic and individual disposal systems should be required to connect to a centralized treatment system. Such connections maximize the use of the system, its economical operation, and avoid surface and groundwater contamination resulting from septic and individual system failure.

In rural areas where extension of sewer service is prohibitively expensive and contrary to a jurisdiction's land use planning and infrastructure goals in the region, septic and individual disposal system maintenance programs are supported in place of sewer service extension. Septic maintenance programs, when implemented and performed correctly, are a safe, healthy, and efficient way to meet the needs of rural communities without encouraging costly and

incompatible development.

Septic and individual disposal systems not required to obtain a NPDES Permit are the responsibility of the SCDHEC rather than Designated Management Agencies. The BCDCOG recognizes SCDHEC regulations requiring individuals who commercially install septic systems to be licensed. The BCDCOG also recognizes the need for septage pumpers/haulers to have access to approved disposal sites and to provide for an adequate distribution of such sites among local treatment facilities.

D-5. Green Practices

The BCDCOG encourages the use of green practices at all planning levels and timescales. Many of the practices described below have both environmental and economic benefits and could be used to demonstrate a facility's commitment to customer service and value. Facilities should consider including outreach efforts in the planning of any new green policy or practice.

D-5-a. Green Facility Practices

Green facility practices may include:

- creating baseline carbon footprints and using them to evaluate potential projects,
- incorporating green infrastructure practices such as bioswales and cisterns,
- utilizing reuse wastewater and captured stormwater to irrigate public and private greenspace and to supplement industrial cooling water,
- developing inflow, infiltration and leak reduction programs specific to collection and distribution systems.
- implementing recycling and waste reduction programs, and
- pursuing purchasing strategies designed to ensure that a portion of materials used in maintenance and for capital projects are sustainably harvested, manufactured, and/or transported.

Programs can also be developed to address facility energy consumption via process equipment energy management and alternative utility pricing structures, both of which can result in reduced base loads and associated reduced energy costs. Most green practices have both short- and long-term benefits, and many can be implemented throughout the service area to include multiple facilities.

D-5-b. Green Wastewater Treatment Practices

In addition to implementing established state-of-the-art wastewater treatment technologies, the BCDCOG is supportive of innovative treatment practices. An abbreviated list of practices compiled by the Environmental Protection Agency including a brief description and a few of the green aspects of each practice are given in Table 8. The technologies listed are at varying stages of development ranging from nascent laboratory models to multi-year pilot projects. Most of the wastewater treatment technologies given in the complete list in the source documentation offer enhanced phosphorous, nitrogen and/or ammonia removal and promise varying degrees of

reduced footprint, lower energy demand, lower biochemical oxygen demand, lower sludge production, greater stability and higher reliability. Similarly, most of the solids handling technologies given in the complete list in the source documentation offer reduced settling time, detention times and sludge volume and promote denitrification and dewaterability.

The technologies given in Table 8 go a step beyond these treatment benefits and have the potential to be used to meet environmental goals. These goals may include reduced energy consumption, reduced materials required for construction, greater production of usable biogas, production of construction materials, and avoided emissions over established technologies.

Table 8
Green Wastewater Practice with Description and Green Aspects

Treatment Area	Innovative Technology	Description	Green Aspects
Biological Treatment	Deep-Shaft Activated Sludge /VERTREAT	A modification of the activated-sludge process, VERTREAT uses vertical shafts in place of surface aeration basins.	Enhanced oxygen transfer reduces energy requirements over traditional systems
	Microbial Fuel Cell Based Treatment System	Current is generated in a fuel cell as a result of bacterial activity.	Wastewater treatment is used to directly generate electricity.
Biosolids Conditioning	Chemical Cell Destruction (Microsludge)	Destroys cell membranes for enhanced anaerobic digestion and greater biogas generation compared to traditional anaerobic digestion.	Higher biogas production could be used to offset more plant and/or community energy, and, depending on the ultimate destination of the biosolids, it could reduce the carbon footprint of the solids handling process when compared to alternative traditional technologies.
Biosolids Stabilization	Thermal Hydrolysis	Dewatered sludge is oxidized under high temperature and pressure, facilitating sludge breakdown and biogas production.	
	Three-Phase Anaerobic Digestion	Improved pathogen destruction and high volatile solids reduction when compared to single-stage anaerobic digestion; increases dewaterability and increases biogas production	
	Two-Phase-Acid/Gas Anaerobic Digestion	Separates separate bacteria into separate phases to maximize their growth; results in increased methane production and shorter digestion time.	
Biosolids Thermal Conversion	Minergy Vitrification	Closed-loop combustion of high solids feed stock creates glass aggregate. Glass aggregate can be used in place of traditional construction materials for grit sandblasting, roofing shingle granules, and asphalt paving.	Locally sourced recycled material obviates need for extraction, manufacture and transport of traditional material. Emissions control technologies on new plants are much better than technology installed on plants a decade or more ago. New processes may significantly reduce emissions via closed loops.
	Melting Furnace	High temperature incineration produces a marketable slag. Slag can be used as fill material, tiles, blocks and other construction materials.	
	Gasification	Two-step process using pyrolysis and partial combustion to convert sludge into combustible synthesis gas ("syngas")	Supplemental fuels from wastewater treatment are sustainable, renewable and do not count towards the carbon footprint.
	Sludge-to-Oil	Enhanced pyrolysis produces lightweight oils from biosolids.	
	SlurryCarb	Temperature and pressure are applied to biosolids cake to liberate carbon dioxide gas which facilitates removing filtrate from the resulting combustible slurry.	

Innovative technologies are suited to the same state and federal funding sources as more traditional treatments. The Clean Water State Revolving Fund has an extensive history of providing funding for practices that reduce nutrient loads. Partial grants may be available for wastewater, including irrigation, environmental enhancement or outdoor recreation. Congress has also authorized the U.S. Army Corps of Engineers to assist with design and construction of water, wastewater and surface water projects. These and other funding mechanisms constitute significant opportunities for creating or upgrading rural treatment systems. For projects that ensure long-term employment and improve business opportunities within an area, the Economic Development Administration has grants totaling up to half of the construction cost. Emerging Technology grants are available from the Environmental Protection Agency for manufacturers to partner with end-users.

D-5-c. Current Practices in the BCDCOG Area

Mount Pleasant Waterworks has implemented several green practices to include:

- utilizing reuse wastewater to irrigate ball fields adjacent to both water reclamation facilities,
- utilizing reuse wastewater for cooling water (heat sink) for the heating, ventilating, and air conditioning systems at the MPW Operations Center and Whitesides Mamie P. Elementary School adjacent to the Rifle Range Road Water Reclamation Facility,
- an aggressive inflow/infiltration abatement program (the average I&I for the past year is 6.1%),
- an aggressive leak reduction program (the average water loss for the past year is 9.5%), and
- using variable frequency drives, soft starters, and high efficiency motors to minimize energy consumption.

D-5-d. References

U.S. Environmental Protection Agency. (2008). *Emerging Technologies for Wastewater Treatment and In-Plant Wet Weather Management*. Fairfax, VA: Parsons Corporation.

U.S. Environmental Protection Agency. (2006). *Emerging Technologies for Biosolids Management*. Washington, D.C.: U.S. EPA.

The Office of Senator Gillibrand. (2009). *A Guide to Water and Wastewater Funding Programs*. New York, NY: U.S. Senate.

D-6. Consolidation of Facilities

The consolidation of wastewater treatment and/or discharge facilities is encouraged, where appropriate. The Water Quality Management Plan may identify opportunities for facility

consolidation. Often, larger WRFs can provide service more effectively while providing a higher degree of treatment, and accountability, than can be achieved through smaller WRFs.

D-7. Groundwater

Groundwater quality should be considered in the development of long-range facility plans. Those activities, which have the potential to adversely affect groundwater resources, need to be recognized and discouraged. State (SCDHEC) and local governments are responsible for dealing with groundwater issues.

D-8. Sludge Disposal Practices

The Clean Water Act directed EPA to develop regulations for the utilization and disposal of sewage sludge. These regulations include disposal siting, uses, procedures for disposal, and specific parameter concentrations for disposal or use. The 1987 amendments to the Act added a requirement for EPA to identify the toxic pollutants in sewage sludge that may adversely affect human health or the environment, establish regulatory management practices, and develop numerical limits for each of the pollutants.

SC State Regulations 61-9.503, 61-9.504, and 61-9.505 include standards for the land application of domestic sludge, processing and disposal of industrial and commercial sludge, use of spray irrigation, and the administrative procedures used for permitting sludge disposal in SC. Beneficial use of sludge through land application, composting or similar uses is encouraged in this region. Such practices benefit both agriculture and society by returning nutrients to soils and by disposing a waste product in a safe and effective manner.

D-9. Nonpoint Source Management

Section 319 of the Clean Water Act requires states to prepare a nonpoint source assessment report, which identifies waters of the state that require the control of nonpoint sources to attain water quality standards. This report also identifies those categories of nonpoint sources, which add significant pollution to each segment of water identified as a problem.

The SC Nonpoint Source Management Program describes how the State will address nonpoint source pollution problems from agricultural lands, forest lands, urban areas, marinas and recreational boating, hydrologic/wetland modification, mining activities and solid waste disposal. This program, coordinated by SCDHEC, is a combination of federal, State and local efforts directed at reducing and managing nonpoint sources of pollution.

The state identifies the best management practices that will be undertaken and identifies the programs needed to achieve implementation of best management practices by category and a schedule of annual milestones for implementation.

The watershed strategies include data, which will address many of the above requirements. In preparing watershed plans and in updating each one every five years, SCDHEC will be able to continually assess water quality and develop best management practices in problem areas. Stormwater management plans should be developed for each of the region's river basins, and stormwater management techniques should be implemented whenever possible.

D-10. Wetlands

Wetlands have been identified as an endangered natural resource. Activities affecting wetlands are regulated under sections 401 and 404 of the Clean Water Act as administered by SCDHEC and the Army Corps of Engineers.

D-11. Clean Lakes

The BCDCOG Water Quality Management Plan will maintain a list of lakes in the region where eutrophication is a problem. The BCDCOG encourages local basin efforts to deal with these types of problems and will provide assistance as time and other resources allow.

D-12. Wasteload Allocation Strategy

The basic intent of the BCDCOG 208 Water Quality Management Plan is to attain those Water Quality Standards assigned to streams in this Region. Where water quality limited sites are identified, the Plan must be amended to provide for a wasteload allocation of the loading capacity of that stream segment among current and future dischargers.

In order to maintain a continual assessment of the existing, or potential, need to allocate TMDLs, as well as, to recommend TMDL when necessary, the BCDCOG will maintain a standing Technical Advisory Committee to the BCDCOG Environmental Committee. This Committee will be appointed by the Chairman of the BCDCOG and include Major Industrial, Public and Private Wastewater Contributors in the Region (major as defined by SCDHEC & EPA guidelines). This Committee may also include representatives of other organizations deemed to be appropriate by the Chairman.

The jurisdiction of the Technical Advisory Committee shall include the entire Region. The Technical Advisory Committee is, therefore, encouraged to utilize a subcommittee system to encourage the participation of users in Water Quality Limited streams.

The Technical Advisory Committee shall have full access to all river models, and other technical information available to the BCDCOG, in order to support their activities.

Recommendations from the Technical Advisory Committee will be sent to the Environmental Committee for review. The Environmental Committee may either send the recommendation back to the Technical Advisory Committee for further review or accept the recommendations for

consideration before the Environmental Committee. Once accepted, the recommendation shall be subject to public review and comment prior to any formal action being taken by the Environmental Committee. After review, Environmental Committee may either refer Technical Advisory Committee recommendations back to the Technical Advisory Committee with comments for further review, or pass Technical Advisory Committee recommendations on to the BCDCOG's Board of Directors, with or without comments, recommending adoption by the Council of Governments.

The BCDCOG recognizes that there are several alternative methods that may be utilized to determine TMDLs. The Technical Advisory Committee should feel free to be creative in addressing the Wasteload Allocation problem.

The following factors are presented as general guidelines for consideration by the Technical Advisory Committee in its deliberations.

- A. Allocations should include sufficient capacity to allow for the continued population and economic growth of the Region.
- B. Allocations must be determined in a timely manner. It is recommended that the Technical Advisory Committee be proactive and assess the loading capacities of streams as soon as possible. Contingency plans need to be developed in order to allow for a timely decision making process.
- C. Costs of implementing allocation strategies should be fair to the affected dischargers. Costs of increasing treatment levels; the proportion of problem causing pollutants originating from any one discharge; and, the history of compliance of dischargers with permit conditions should be considered by the Committee.
- D. The COG may choose not to allocate capacity to a new, or expanded, discharge if alternatives to the discharge are reasonably available, or if the discharger has a poor history of compliance with permit conditions.
- E. If necessary, basin-wide reallocations of TMDLs will be accomplished on a five year cycle in concert with the State Basin Planning Process. Interim reallocations will be considered, however, it is anticipated that interim reallocations would not need to be basin-wide in scope.
- F. Permitted discharges, which significantly exceed actual discharges, may be considered as a means for reducing permitted loadings for short periods of time. The long-term capacities of these treatment systems, however, need to be recognized and accounted for in long-term basin plans for loading allocations.

D-13. Financing Options

There are a number of resources available to local governments to assist in the financing of a public facilities project:

State Community Development Block Grant (CDBG) Program - Administered through the SC Department of Commerce, this grant program may address a public facilities project if the project is designed to accomplish one of the following: (1) to improve, preserve or develop areas of a community in which the population is predominantly low to moderate income; (2) to improve community services to a predominantly low to moderate income population; (3) to alleviate documented threats to the public health or welfare of the community.

The program has been designed to give maximum priority to activities that will benefit low and moderate income (LMI) persons. The State defines low to moderate income as 80% or less of the median family income for a particular area. Each public facility project must be designed to provide a minimum of 51% benefit to LMI persons. Economic Development projects funded under this program must result in the creation of jobs, with at least 51% of the jobs created being filled by persons who are low to moderate income.

FmHA - Rural Development Administration - Grants, loans or combinations of grants and loans are available to local governments that are considered rural (population of less than 10,000) and predominantly low to moderate income. The applicable interest rate for loans is based on a community's median family income. Grants to supplement loans are available for up to 75% of costs if the area to be served meets income requirements and if monthly rates meet or exceed rates for other comparable systems.

State Budget and Control Board - Division of Local Government - Grants are available to local governments as supplemental funding for projects that contain other sources of funds.

Economic Development Administration (EDA) - Funds are available for infrastructure projects related to economic development purposes. Grants of up to 50% of project costs are available for public works and development facilities that create or retain permanent private sector jobs. The amount of funding for a project depends on the number of jobs involved.

EDA Mini Technical Assistance - Grants are available to fund economic development related studies. Many of the studies address water and wastewater systems, particularly the review of system capacity and the improvements needed to serve industrial development.

Clean Water State Revolving Fund (SRF) - Administered jointly by the SC Budget and Control Board and the SCDHEC, program loans may be used for wastewater projects that include wastewater treatment plants, interceptors and collection systems. Financing is available to units of local government at below market rates. Projects must be listed on the SRF priority list.

Palmetto Economic Development Corporation (PEDC) - The PEDC is a private, nonprofit corporation representing fifteen of the state's twenty electric cooperatives and Santee Cooper

and administers the Santee Cooper Economic Development Investment Fund, which provides loans and grants for industrial/commercial development purposes. Assistance is available to areas served by the cooperatives, and is partially funded by the sponsoring cooperative. Grants are available for infrastructure improvements for new or expanding businesses. Technical Assistance grants are available for engineering studies.

SCANA - SCANA's Community Development Grant program provides grants to communities to match state and federal grants for infrastructure improvements required for job creation or retention.