Executive Summary

North Carolina's Basinwide Approach to Water Quality Management

Basinwide water quality planning is a nonregulatory watershed-based approach to restoring and protecting the quality of North Carolina's surface waters. Basinwide water quality plans are prepared by the NC Division of Water Quality for each of the seventeen major river basins in the state. Each basinwide plan is revised at five-year intervals. While these plans are prepared by the Division of Water Quality, their implementation and the protection of water quality entails the coordinated efforts of many agencies, local governments and stakeholders in the state. The first basinwide plan for the Catawba River basin was completed in 1995.

This document is the first five-year update of the Catawba River Basinwide Water Quality Plan approved. The format of this plan was revised in response to comments received by various people interested in the basin plans. Much of the general information in the original plan was replaced by more detailed information specific to the Catawba River basin. A greater emphasis has been placed on identifying causes and sources of pollution on individual streams in order to facilitate restoration efforts at the local level.

Comments from the seven pubic workshops held in the basin were seriously considered during plan development. While not all of the comments may have been addressed to the satisfaction of the commentors, this input will help guide continuing DWQ activities in the basin. In addition, a workshop questionnaire was used to obtain further input on the basinwide planning process for the Catawba River basin.

Goals of the Basinwide Approach

The primary goals of DWQ's basinwide program are to:

- identify water quality problems and restore full use to impaired waters;
- identify and protect high value resource waters;
- protect unimpaired waters while allowing for reasonable economic growth;
- develop appropriate management strategies;
- assure equitable distribution of waste assimilative capacity for dischargers; and
- improve public awareness and involvement in the management of the state's surface waters.

Catawba River Basin Overview

The Catawba River basin, along with the Broad River basin, forms the headwaters of the Santee-Cooper River system. This river system begins on the eastern slopes of the Blue Ridge Mountains in NC, flows through the NC piedmont to the NC-SC border near Charlotte, and continues to flow through SC to the Atlantic Ocean.

The basin contains the Linville River, one of only four state designated Natural and Scenic Rivers. The mainstem of the Catawba River is regulated by a series of seven hydropower

reservoirs: Lake James, Lake Rhodhiss, Lake Hickory, Lookout Shoals Lake, Lake Norman, Mountain Island Lake and Lake Wylie. Lake Wylie crosses the border of NC and SC.

About one-half of the land in the basin is forested, and about 23 percent is in urban and developed land use. Between 1982 and 1992, cultivated and uncultivated lands decreased by about 26 percent, while urban and developed areas increased by about 35 percent.

The population of the basin, based on 1990 census data, was estimated at 1,033,347 people. The overall population density of the basin was 321 persons per square mile, as compared to the statewide average of 123 persons per square mile. The percent population growth over the past ten years (1980 to 1990) was 16.5 percent, as compared to the statewide average of 12.7 percent. Population density is greatest in the Mecklenburg County are of the basin.

Assessment of Water Quality in the Catawba River Basin

Waters are classified according to their best intended uses. Determining how well a waterbody supports its designated uses is an important method of interpreting water quality data and assessing water quality. This determination results in a use support rating. The use support ratings refer to whether the classified uses of the water (such as water supply, aquatic life protection and swimming) are fully supported, partially supported or not supported. For instance, waters classified for fishing and water contact recreation (Class C) are rated as fully supporting if data used to determine use support (such as chemical/physical data collected at ambient sites or benthic macroinvertebrate bioclassifications) did not exceed specific criteria. However, if these criteria were exceeded, then the waters are rated as partially supporting or not supporting, depending on the degree of exceedence. Streams rated as either partially supporting or not supporting are considered *impaired.*

Overall water quality conditions in the basin are good, as reflected by use support ratings based on recent monitored and evaluated information. The greatest number of impaired stream miles is in the Mecklenburg County area (subbasin 03-08-34). The greatest number of good to excellent water quality ratings are in the headwaters of the basin (subbasins 03-08-30 and 03-08-31). A summary of current use support ratings for the Catawba River basin is presented in Table 1. For further information and definition of monitored and evaluated streams, refer to Appendix III.

Table 1 Use Support Summary for All Monitored and Evaluated Streams in the Catawba River Basin (1999)

	Monitored and Evaluated Streams*			Monitored Streams Only**	
	Miles	%		Miles	%
Supporting	2375.3	79			
Fully Supporting	1694.5	56		638.2	59
Fully Supporting but Threatened	680.8	23		265.9	25
Impaired	186.6	6			
Partially Supporting	173.6	6		162.1	15
Not Supporting	12.4	<1		7.4	1
Not Rated	444.1	15			
Total	3005.4			1073.6	

* = Percent based on total of all named and classified streams, both monitored and evaluated.
** = Percent based on total of all monitored streams.

Recommended Management Strategies for Restoring Impaired Waters

The long-range mission of basinwide management is to provide a means of addressing the complex problem of planning for increased development and economic growth while protecting and/or restoring the quality and intended uses of the Catawba River basin's surface waters. In striving towards its mission, DWQ's highest priority near-term goals are to:

- identify and restore impaired waters in the basin;
- identify and protect high value resource waters and biological communities of special importance; and
- protect unimpaired waters while allowing for reasonable economic growth.

Within this basinwide plan, DWQ presents management strategies for those waters considered to be impaired. Table 2 presents impaired waters in the Catawba River basin, the sources of impairment, summaries of the recommended management strategies, and location of further information in the basinwide plan.

Water quality problems are primarily attributed to nonpoint source pollution. However, certain streams are degraded by point source pollution. Where point sources of pollution are known, the plan presents a management strategy to reduce that pollutant source.

The tasks of identifying nonpoint sources of pollution and developing management strategies for these impaired waters is very resource intensive. Accomplishing these tasks is overwhelming, given the current limited resources of DWQ, other agencies (e.g., Division of Land Resources, Division of Soil and Water Conservation, Cooperative Extension Service, etc.) and local governments. Therefore, only limited progress towards restoring NPS impaired waters can be expected during this five-year cycle unless substantial resources are put toward solving NPS problems.

DWQ plans to further evaluate the impaired waters in the Catawba River basin in conjunction with other NPS agencies and develop management strategies for a portion of these impaired waters for the next Catawba River Basinwide Water Quality Plan.

Addressing Waters on the State's 303(d) List

For the next several years, addressing water quality impairment in waters that are on the state's 303(d) list will be a DWQ priority. The waters in the Catawba River basin that are on this list are presented in the individual subbasin descriptions in Section B.

Section 303(d) of the federal Clean Water Act requires states to develop a 303(d) list of waters not meeting water quality standards or which have impaired uses. States are also required to develop Total Maximum Daily Loads (TMDLs) or management strategies for 303(d) listed waters to address impairment. EPA issued guidance in August 1997 that called for states to develop schedules for developing TMDLs for all waters on the 303(d) list within 8-13 years.

Table 2 Impaired Waters Within the Catawba River Basin (as of 1999)•

Subbasin	Chapter in Section B	Listed Water	Use Support Rating	Potential Sources	Recommended Management Strategy
03-08-30	1	Lower Mackey Creek	PS	P	DWQ is working with discharge to improve and remove the discharge. DWQ is also developing a TMDL for mercury.
03-08-30	1	Corpening Creek	PS	NP P	More information and local actions to address stormwater runoff are needed.*
03-08-31	2	Lower Creek below Zacks Fork	PS	NP	DWQ supports WPCOG study recommendations. Local actions are needed.*
03-08-31	2	Zacks Fork	PS	NP	DWQ supports WPCOG study recommendations. Local actions are needed.*
03-08-31	2	Spainhour Creek	PS	NP	DWQ supports WPCOG study recommendations. Local actions are needed.*
03-08-31	2	Greasy Creek	PS	NP	DWQ supports WPCOG study recommendations. Local actions are needed.*
03-08-31	2	Bristol Creek	PS	NP	DWQ supports WPCOG study recommendations. Local actions are needed.*
03-08-33	3	McDowell Creek	PS	NP	DWQ will support actions of the Mecklenburg County SWIM program.*
03-08-34	4	Long Creek	PS	NP	DWQ will continue to monitor to assess sources of impairment. Local actions are needed.*
03-08-34	4	Sugar Creek	PS	NP P (upper section)	South Carolina, Charlotte-Mecklenburg Utilities and DWQ are working towards a nutrient reduction plan for point sources. DWQ is developing a fecal coliform bacteria TMDL.*
03-08-34	4	Irwin Creek	PS	NP P	South Carolina, Charlotte-Mecklenburg Utilities and DWQ are working towards a nutrient reduction plan for point sources.*
03-08-34	4	Little Sugar Creek	PS	NP P	South Carolina, Charlotte-Mecklenburg Utilities and DWQ are working towards a nutrient reduction plan for point sources. DWQ is developing a fecal coliform bacteria TMDL.*
03-08-34	4	McAlpine Creek	PS	NP P (lower section)	South Carolina, Charlotte-Mecklenburg Utilities and DWQ are working towards a nutrient reduction plan for point sources. DWQ is developing a fecal coliform bacteria TMDL.*
03-08-35	5	Clark Creek	PS	NP P	DWQ has completed a toxics review with recommendations, and a color reduction strategy is being implemented.*
03-08-35	5	Mauney Creek	PS	NP P	Stanley WWTP has made improvements; more information and local actions are needed.*
03-08-37	7	Catawba Creek	NS	NP P	Many point source reductions are being made. Local actions are needed.*
03-08-37	7	Crowders Creek	PS	NP P	Many point source reductions are being made. Local actions are needed.*

Key: NS = Not Supporting PS = Partially Supporting
NP = Nonpoint sources P = Point Sources
* = Only limited progress towards developing and implementing NPS strategies for these impaired waters can be expected without additional resources.
• = These waters are also on the 303(d) list, and a TMDL and/or management strategy will be developed to remove the water from the list.

There are approximately 470 stream segments on the 303(d) list in NC. The rigorous and demanding task of developing TMDLs for each listed water during a 13-year time frame will require the focus of many resources. It will be a priority for North Carolina's water quality programs over the next several years to develop TMDLs for 303(d) listed waters. This task will be accomplished through the basinwide planning process and schedule.

Challenges Related to Achieving Water Quality Improvements

To achieve the goal of restoring impaired waters throughout the basin, DWQ will need to work more closely with other state and federal agencies and stakeholders to identify and control pollutants. The costs of restoration will be high, but several programs exist to provide funding for restoration efforts. These programs include the Clean Water Management Trust Fund, the NC Agricultural Cost Share Program, the Wetlands Restoration Program and the federally funded Conservation Reserve Enhancement Program (approval pending). Additional funding may be available through the Unified Watershed Assessments program, under the President's recently issued Clean Water Action Plan.

With the tremendous growth occurring within this basin, there will be significant challenges ahead in balancing growth with the restoration and protection of water quality in this basin. Point source impacts to the surface waters of the basin can be measured and addressed through the basinwide planning process. Nonpoint sources of pollution can be identified through the basinwide plan, but actions to address these impacts must be taken at the local level. Such actions should include: development and enforcement of water supply watershed ordinances more stringent than state requirements; development and enforcement of buffer ordinances along tributaries, shorelines and the Catawba River; requirement of stormwater best management practices for existing and new development; development and enforcement of local erosion control ordinances; and land use planning that assesses impacts on natural resources. This basinwide plan presents many water quality initiatives and accomplishments that are underway within the basin. These actions provide a foundation on which future initiatives and successes can be built.