

Section 6

Concerns and Priority Issues

The assessments in Section 5 present a number of water quality and quantity concerns within the Chattahoochee River basin. This section aggregates the assessment data to identify priority issues for development of management strategies. Water quality and quantity issues are discussed separately, although the connection between quantity and quality should not be overlooked.

6.1 Identified Water Quality Planning and Management Concerns

Section 5 identified both site-specific and generalized sources of water quality stressors. Some issues are limited to specific segments, such as the impact of de-oxygenated water releases from Buford Dam, but a number of water quality concerns apply throughout the basin. The criterion listed most frequently in the 1995 Water Quality Assessment as a contributor to non-supporting or partially-supporting status was fecal coliform bacteria (774 out of 1588 miles, or 49% of the stream miles which were assessed within the basin), followed by metals such as zinc, copper and lead (384 out of 1588 miles, or 24% of assessed stream miles, including waters with violations of standards for both fecal coliform bacteria and metals). Both fecal coliform and metals violations are most often attributed to “urban runoff” as a primary source or one among several sources (531 miles for fecal coliforms, 329 miles for metals), followed by “nonpoint or unknown” sources (266 miles for fecal coliforms, 60 miles for metals). Within some individual stream reaches, other sources may be of greater importance (e.g., CSOs as a source of fecal coliform violations); however, urban runoff and general nonpoint sources represent a basin-wide concern. Further, strong population growth and development pressure in parts of the basin (e.g., Atlanta metro area) will tend to increase the importance of urban runoff as a stressor of concern. For such widespread concerns, basin-wide management strategies will be needed.

Major water quality concerns for the Chattahoochee River basin are summarized by geographic area in terms of the stressors of concern and sources of these stressors in Table 6-1. Table 6-2 summarizes the relationship between specific designated uses and stressors causing lack of full support for those uses.

In the following pages, priority water quality concerns are presented by Hydrologic Unit. As in Section 5, several of the Hydrologic Units are broken down into sub-sections for ease of discussion. Detailed strategies for addressing these concerns are then supplied in Section 7.

Each concern is listed in the form of a “Problem Statement” which summarizes the linkage between stressor sources and water quality impacts. The order in which concerns are listed for each Hydrologic Unit should not be considered to be significant. Prioritization of basin concerns requires consensus among all stakeholders, and has not been finalized; however, short term water quality action priorities for EPD are summarized in Section 6.2. Priorities for addressing water quantity issues within the Chattahoochee basin are being addressed as part of the ACT/ACF study, and are summarized in Section 6.3.

Table 6-1. Summary of Concerns in the Chattahoochee River Basin

Stressor	Source of the Stressor by Sub-Area					
	HUC 03130001 Area A Headwaters to Lake Lanier	HUC 03130001 Area B Buford Dam to Peachtree Creek	HUC 03130002 Area A Peachtree Creek to West Point Lake	HUC 03130002 Area B West Point Dam to Columbus	HUC 03130003 Columbus to Lake W. F. George	HUC 03130004 Lake W. F. George to Lake Seminole
Metals	nonpoint sources, urban runoff, point source discharges, atmospheric deposition	urban runoff, point source discharges	urban runoff, point source discharges, rural nonpoint sources	urban runoff, point source discharges, rural nonpoint sources, atmospheric depos.	urban runoff, atmospheric deposition	nonpoint sources, atmospheric deposition
Fecal Coliform Bacteria	urban runoff, agriculture, rural nonpoint sources	urban runoff, rural nonpoint sources, CSOs	urban runoff, CSOs, rural nonpoint sources	urban runoff, agriculture, rural nonpoint sources	urban runoff, rural nonpoint sources	
Erosion and Sedimentation	urban runoff, rural roads, forestry, agriculture, construction	urban runoff, nonpoint sources, construction	urban runoff, rural roads, forestry, agriculture, construction	urban runoff, rural roads, forestry, agriculture, construction	urban runoff, rural roads, forestry, construction, agriculture	
Dissolved Oxygen		dam operation, CSOs, urban runoff		dam operation, urban runoff, nonpoint sources		dam operation
Nutrients	agriculture, urban runoff, point sources		point sources, urban runoff, agriculture		point sources, urban runoff, agriculture	
Synthetic Organic Chemicals		Historic uses, sediment	Historic uses, sediment	Historic uses, sediment	Historic uses, sediment	Historic uses, sediment
Water Temperature		dam operation, urban runoff, point source discharges	dam operation, urban runoff, point source discharges			
Water Quantity	Competing uses	Competing uses				
Aquatic Weeds						Infestation

Table 6-2. Summary of Sources of Lack of Full Support for Classified Uses in the Chattahoochee River Basin

Use Classification of Waterbody Segments	Geographic Area					
	HUC 03130001 Area A Headwaters to Lake Lanier	HUC 03130001 Area B Buford Dam to Peachtree Creek	HUC 03130002 Area A Peachtree Creek to West Point Lake	HUC 03130002 Area B West Point Dam to Columbus	HUC 03130003 Columbus to Lake W. F. George	HUC 03130004 Lake W. F. George to Lake Seminole
Fishing (Support for Aquatic Life)	metals, erosion, toxicity, impaired biota	metals, dissolved oxygen, erosion, temperature	metals, toxicity, temperature, erosion, dissolved oxygen, impaired biota	metals, dissolved oxygen, erosion, impaired biota	metals, pH, erosion, toxicity	dissolved oxygen
Fishing (Fish Consumption)		synthetic organic compounds, metals	synthetic organic compounds	synthetic organic compounds, metals	synthetic organic compounds, metals	synthetic organic compounds, metals
Fishing (Secondary Contact Recreation)	fecal coliform bacteria, metals	fecal coliform bacteria, metals	fecal coliform bacteria, metals	Fecal coliform bacteria, metals	fecal coliform bacteria	fecal coliform bacteria
Drinking Water		fecal coliform bacteria, erosion	fecal coliform bacteria, impaired biota			
Recreation	fecal coliform bacteria, pH, erosion, nutrients, water quantity	fecal coliform bacteria, dissolved oxygen, erosion, fish consumption guidelines, water quantity	nutrients, fish consumption guidelines	fish consumption guidelines	metals, nutrients, fish consumption guidelines	metals

Problem Statements

Hydrologic Unit 03130001, Area A (Headwaters to Lake Lanier)

A. Metals: The water use classification of fishing was not fully supporting in two Chattahoochee River mainstem segments, in 4 tributary stream segments, and in two areas of Lake Lanier due to exceedences of the water quality standards for metals. Lead, copper, and/or zinc standards were exceeded in the river due to a water pollution control plant discharge in one segment and to nonpoint sources in the second segment; zinc, copper, lead and/or mercury standards were exceeded in tributary streams due primarily to nonpoint sources in three segments and to a water pollution control plant in one segment; and nonpoint sources of lead and mercury were exceeded once each in a different portions of Lake Lanier.

B. Fecal Coliform Bacteria: The water use classification of fishing or recreation was not fully supported in three Chattahoochee River mainstem segments and 30 tributary stream segments due to exceedances of the water quality standard for fecal coliform bacteria. These may be attributed to a combination of urban runoff, septic systems, sanitary sewer overflows, rural nonpoint sources and/or animal wastes. This area has a high concentration of poultry operations, and spreading of poultry waste on fields may be a potential source.

C. Erosion and Sedimentation: The water use classifications of fishing, recreation, and drinking water are potentially threatened in waterbodies by erosion and loading of sediment, which can alter stream morphology, impact habitat, and reduce water clarity. Potential sources include urban runoff and development (particularly construction), unpaved rural roads, forestry practices, and agriculture. There are no stream segments listed at this time in this subbasin as not fully supporting designated water uses due to poor fish communities or sedimentation.

D. Nutrients: The water use classifications of fishing, drinking water, and recreation are potentially threatened in Lake Lanier due to inputs of nutrients which may cause excess algal growth in the lake. Nutrient sources include water pollution control plant discharges and nonpoint sources from urban and agricultural areas.

E. Water Quantity: Sufficient surface water quantity to meet the competing demands for drinking water, minimum instream flow rate and other environmental releases, hydropower, recreation, and (downstream) navigation uses may not be available within Lake Lanier and the upstream basin.

Hydrologic Unit 03130001, Area B (Buford Dam to Peachtree Creek near Atlanta)

A. Metals: The water use classification of fishing was not fully supported in one segment of the Chattahoochee River and in 11 tributary stream segments due to exceedances of water quality standards for metals primarily in the Atlanta metropolitan area. Lead, copper, and zinc standards were exceeded in the river primarily due to urban runoff and zinc, copper, cadmium, and/or lead standards were exceeded in tributary streams also due primarily to urban runoff.

B. Fecal Coliform Bacteria: The water use classification of fishing was not fully supported in four Chattahoochee River segments and in 30 tributary stream segments due to exceedances of the water quality standard for fecal coliform bacteria. These may be attributed to a combination of urban runoff, combined sewer overflows, septic systems, sanitary sewer overflows, and rural nonpoint sources.

C. Elevated Water Temperatures: The segment of the Chattahoochee from Buford Dam to Peachtree Creek is designated as a secondary trout water. The cold temperature is largely governed by patterns of release from Buford Dam. The water use classification of fishing is potentially threatened in this segment due to urban runoff from impervious areas, loss of riparian tree canopy, and water pollution control plant discharges. There are no waters currently listed for excursion of temperature standards in this segment of the river.

D. Low Dissolved Oxygen: The fishing water use classification was not fully supported in one segment of the Chattahoochee River and in one tributary segment due to dissolved oxygen concentrations less than standards. Low dissolved oxygen in the river segment was due to bottom water discharges from Buford Dam, and in the tributary, Clear Creek, was due to nonpoint sources and combined sewer overflows.

E. Erosion and Sedimentation: The water use classification of fishing is potentially threatened in many segments by erosion and loading of sediment, which can alter stream morphology, impact habitat, reduce water clarity, and clog drinking water systems. Currently, there is one stream segment listed in this subbasin as partially supporting designated uses due to poor fish community. Sediment may be a factor influencing the fish community in these segments. Potential sources include urban runoff and development (particularly construction), unpaved rural roads, forestry practices, and agriculture.

F. Instream Flows: The water use classifications of fishing and recreation are potentially threatened by inadequate instream flows in the Chattahoochee River mainstem.

G. Fish Consumption Guidelines: The water use classification of fishing was not fully supported in the Chattahoochee River mainstem from Buford Dam to Morgan Falls Dam and from Morgan Falls Dam to Peachtree Creek. PCBs, mercury, or chlordane were the cause of consumption guidelines in the upper segment of the river and PCBs caused the guidelines in the lower segment of the river. The guidelines are for rainbow trout, carp, largemouth bass, and yellow perch in the upper segment and for carp in the lower segment.

Hydrologic Unit 03130002, Area A (Peachtree Creek to West Point Lake)

A. Metals: The water use classification of fishing was not fully supported in three segments of the Chattahoochee River and in 15 tributary stream segments due to exceedances of water quality standards for metals primarily in the Atlanta metropolitan area. Lead or copper standards were exceeded in the river primarily due to urban runoff and zinc, copper, cadmium, lead and/or mercury standards were exceeded in tributary streams also due primarily to urban runoff.

B. Fecal Coliform Bacteria: The water use classification of fishing was not fully supported in three Chattahoochee River segments and in 45 tributary stream segments due to exceedances of the water quality standard for fecal coliform bacteria. These may be attributed to a combination of urban runoff, combined sewer overflows, septic systems, sanitary sewer overflows, and rural nonpoint sources.

C. Nutrients: The water use classifications of fishing, drinking water, and recreation are potentially threatened in West Point Lake due to inputs of nutrients which may cause excess algal growth in the lakes. Nutrient sources are upstream water pollution control plant discharges and nonpoint sources from urban and agricultural areas. Water quality standards

are in place to address nutrients in West Point Lake. At this time water quality data indicate compliance with standards.

D. Erosion and Sedimentation: The water use classification of fishing is potentially threatened in many segments, by erosion and loading of sediment, which can alter stream morphology, impact habitat, reduce water clarity, and clog drinking water systems. There are 19 stream segments listed in this subbasin as partially supporting designated uses due to poor fish communities. Sediment may be a factor influencing fish communities in these areas. Potential sources include urban runoff and development (particularly construction), unpaved rural roads, forestry practices, and agriculture.

E. Elevated Water Temperature: The segment of the Chattahoochee from Peachtree Creek to Utoy Creek is designated as a secondary trout water. The water use classification of fishing is not fully supported in this segment due to elevated water temperature associated with wastewater discharges, power plant operation, and urban runoff from impervious areas.

F. Fish Consumption Guidelines: The water use classification of fishing was not fully supported in the Chattahoochee River mainstem or in West Point Lake based on fish consumption guidelines due to PCBs and chlordane in the river segment and PCBs in the lake. The guidelines are for largemouth and striped bass, carp, and channel catfish in the river and for largemouth and hybrid bass, carp, and channel catfish in the lake. The use of PCBs and chlordane are banned in the United States.

Hydrologic Unit 03130002, Area B (West Point Dam to Columbus)

A. Metals: The water use classification of fishing was not fully supported in Long Cane Creek in the LaGrange area and in Goat Rock Lake due to exceedance of the water quality standards for metals. Copper, lead, and zinc standards were exceeded in Long Cane Creek and the copper standard was exceeded in Goat Rock Lake. The metals in Long Cane Creek may be attributed to a combination of effluent from a LaGrange water pollution control plant discharge and urban runoff and in Goat Rock Lake to nonpoint sources. The LaGrange water pollution control plant discharge has been removed from the creek.

B. Fecal Coliform Bacteria: water use classification of fishing was not fully supported in five stream segments in the LaGrange area and three stream segments in rural areas due to exceedances of the water quality standard for fecal coliform bacteria. These may be attributed to a combinations of urban runoff, septic systems, sanitary sewer overflows, agriculture, rural nonpoint, and natural sources.

C. Erosion and Sedimentation: The water use classification of fishing is potentially threatened by erosion and loading of sediment, which can alter stream morphology, impact habitat, reduce water clarity, and clog drinking water systems. Sediment may be a factor influencing fish communities in these areas. Potential sources include urban runoff and development (particularly construction), unpaved rural roads, forestry practices, and agriculture. There are no stream segments listed at this time in this subbasin as not fully supporting designated water uses due to poor fish communities or sedimentation.

D. Low Dissolved Oxygen: The fishing water use classification was not fully supported in one segment of the Chattahoochee River and in two tributary segments due to dissolved oxygen

concentrations less than standards. Low dissolved oxygen in the river segment was due to bottom water discharges from West Point Lake and in the tributaries due to nonpoint sources.

E. Fish Consumption Guidelines: The water use classification of fishing was not fully supported in Lake Harding, Goat Rock Lake, and Lake Oliver based on fish consumption guidelines. PCBs and mercury were the cause of consumption guidelines. The guidelines are for largemouth and hybrid bass, channel catfish, crappie, black crappie, catfish, and spotted sucker.

Hydrologic Unit 03130003 (Columbus to Lake W.F. George, including Lake George)

A. Metals: The water use classification of fishing was not fully supported in 11 river tributary stream segments in the Columbus area due to exceedance of the water quality standard for copper. Copper and lead standards were also exceeded in the Chattahoochee River below Columbus. The metals may be attributed to urban runoff.

B. Fecal Coliform Bacteria: The water use classification of fishing was not fully supported in seven stream segments due to exceedances of the water quality standard for fecal coliform bacteria. Elevated fecal coliform bacteria concentrations in the Chattahoochee River (two segments) downstream of Columbus may be attributed to CSOs and urban runoff. Urban runoff is the likely source of violations in four river tributaries in the Columbus area and rural nonpoint sources the source of violations in two tributaries to Lake Walter F. George.

C. Erosion and Sedimentation: The water use classifications of fishing and recreation are potentially threatened in waterbodies by erosion and loading of sediment, which can alter stream morphology, impact habitat, and reduce water clarity. Potential sources include urban runoff and development (particularly construction), unpaved rural roads, forestry practices, and agriculture. There are no stream segments listed at this time in this subbasin as not fully supporting designated water uses due to poor fish communities or sedimentation.

D. Nutrients: The water use classification of recreation is potentially threatened in Lake Walter F. George due to inputs of nutrients which may cause excess algal growth in the lake. Potential sources may include municipal or industrial point source discharges or nonpoint sources from urban runoff or agriculture.

E. Fish Consumption Guidelines: The water use classification of fishing was not fully supported in the Chattahoochee River mainstem (Oliver Dam to Chattahoochee County) and in Lake Walter F. George based on fish consumption guidelines. PCBs were the cause of the consumption guidelines in the river and mercury, PCBs, and chlordane caused the guidelines in the lake. The guidelines are for channel catfish in the river and for largemouth bass, hybrid bass, and catfish in the lake.

Hydrologic Unit 03130004 (Lake W. F. George to Lake Seminole)

A. Metals: The water use classification of recreation was not fully supported in one segment of the Chattahoochee River due to exceedance of the water quality standard for lead from nonpoint sources.

B. Low Dissolved Oxygen: The fishing water use classification was not fully supported in a segment of the Chattahoochee River downstream of the dam at Walter F. George due to dissolved oxygen concentrations. The low concentrations of dissolved oxygen are a result of releases of bottom water from the dam.

C. Nuisance Weeds: The water use classifications of fishing and recreation are threatened in Lake Seminole due to the presence of nuisance aquatic plant species.

D. Fish Consumption Guidelines: The water use classification of fishing was not fully supported in Lake Seminole based on fish consumption guidelines due to mercury. The guidelines are for bullhead.

6.2 Short Term Water Quality Action Priorities for EPD

Section 6.1 identifies known priority concerns for which management and planning are needed. Because of limited resources, and, in some cases, limitations to technical knowledge, not all these concerns can be addressed at the same level of detail within the current 5-year cycle of basin management. It is therefore necessary to assign action priorities for the short term based on where the greatest return for available effort can be expected.

Current priorities for action by EPD (1996) are summarized in Table 6-3 and discussed below. These priorities were presented to and discussed with the local advisory committee. In addition, the priorities were presented to the public in stakeholder meetings in Helen, Atlanta, and Columbus in 1996. The priorities were also public noticed and approved by the USEPA as a part of the 303(d) listing process in 1996 and discussed in the report, *Water Quality in Georgia, 1995-1996*.

For many waters, control strategies already planned are expected to result in attainment of designated uses. The majority of EPD resources will be directed to insuring the ongoing pollution control strategies are implemented as planned and water quality improvements are achieved. These waters (see Appendix E) are identified as active 305(b) waters, and are the highest priority waters, as these segments will continue to require resources to complete actions and insure standards are achieved. These stream segments have been assigned priority one.

In addition, in the 1996-1997 time period, a very significant level of effort is being directed to the development of a dynamic water quality model of the Chattahoochee River from Buford Dam to Franklin. During the same time period, EPD is working on a lake modeling project for West Point Lake which in conjunction with the river model will provide EPD with defensible, decision making tools for use in developing TMDLs or watershed pollution control or reduction

Table 6-3. EPD's Short-Term Priorities for Addressing Waters Not Fully Supporting Use

Priority	Type
1	Active 305(b) waters where ongoing pollution control strategies are expected to result in achieving support of designated uses; Active special projects.
2	Segments with dissolved oxygen violations or with multiple data points showing violation of standards for toxic metals.
3	Waters for which government partners are available, including low DO problems associated with dam releases and potential impact from agricultural nonpoint sources
4	Waters for which urban runoff and generalized nonpoint sources have resulted in violations of standards for metals or fecal coliform bacteria.

strategies for the river and the lake. EPD has completed Clean Lakes Phase I Diagnostic-Feasibility Studies for West Point Lake and Lake Walter F. George and adopted site-specific water quality standards. Lake standards were adopted for chlorophyll *a*, nitrogen, phosphorus, pH, fecal coliform, and dissolved oxygen. In addition, annual nutrient loading standards were set for major tributaries. Work continues on a Clean Lakes Phase I Diagnostic-Feasibility Studies for Lake Lanier. Following completion of the study, EPD will propose and adopt specific water quality standards for Lake Lanier and its major tributaries.

The foregoing considerations play a major role in the rationale for prioritization of the waters identified as “303(d) waters” — those waters for which impairment is documented and current enforceable requirements are not expected to lead to attainment of water quality standards. A number of other issues also help forge the rationale for priorities. First, the vast majority of waters on the active 303(d) list are a result of exceedance of the criteria for metals, fecal coliform bacteria, or poor fish communities due to urban runoff or nonpoint sources. At the present time the viability of the standards for metals and the efficacy of the fecal coliform bacteria standard are in question in the scientific community, as described in Section 4.2. Also, in many cases, the metals database was minimal with as little as one data point showing a concentration in excess of stream standards placing a stream reach or area of a lake on the partial support lists. Section 7 describes action plans to address these problem waters.

Second priority was allocated to segments with multiple data points which showed metals or other toxic substance concentrations in excess of water quality standards and to segments in which dissolved oxygen concentration was an issue.

Third priority was assigned to segments where governmental partners outside EPD may be available to aid in the process of implementing water quality improvements, such as the Corps of Engineers in segments where dissolved oxygen is low below a dam, or the Georgia Soil and Water Conservation Commission (designated lead agency for agriculture) in segments potentially impacted by nonpoint sources from agricultural practices. It should be noted that few waters are marked as third priority in the 1994-95 water quality assessment (see Appendix E) as it will take some time for the Georgia Soil and Water Conservation Commission to review the active 303(d) waters and make comparisons to the list of potential agricultural problem areas and provide input on areas that are indicated on both lists.

Due to the concerns over quality of the monitoring data and application of water quality standards for metals and fecal coliform bacteria, fourth priority in the short term was assigned to active 303(d) segments where urban runoff and general nonpoint sources caused metal or fecal coliform bacteria standards violations (see tables in Section 5). Within the current round of basin planning these sources of stressors will be addressed primarily through general strategies of encouraging best management practices for control of stressor loading.

Longer term priorities for water quality management will need to be developed by EPD and all other stakeholders during the next iteration of the basin management cycle.

6.3 Priorities for Water Quantity Concerns

Section 5 also identified a number of concerns for water quantity in the Chattahoochee basin, including existing problems with minimum instream flows and potential future problems for competing future demands on water quantity. The Chattahoochee River basin includes much of

the Atlanta Metropolitan Area, as well as the city of Columbus. Thus, the Chattahoochee basin contains a very large portion of the State's total M&I demand. In contrast, the basin's agriculture water needs are small (see Section 3.2.2). The upper basin, above Atlanta, is the site of the State's largest reservoir, Lake Lanier. Lanier is both an important producer of hydropower and one of the most heavily visited Corps of Engineers recreation lakes in the United States; there is also a major investment in home sites on the lake, with a consequent interest in stable lake water levels. West Point Lake and Lake Walter F. George are also major producers of hydropower and West Point is also a significant location for recreation and home ownership. The Chattahoochee river is maintained for navigation as far north as Columbus.

Priorities for Competing Demands

With regard to the priority to be placed on meeting competing demands for future water use, the Environmental Protection Division (in conjunction with a broad group of stakeholders from north, central, and southwest Georgia) has established a set of "guiding principles" which will be followed in developing the state's position regarding the allocation of water among the states of Alabama, Florida, and Georgia. These principles are partially based upon the prioritization given to meeting categories of water needs under Georgia law (i.e., municipal needs are the first priority, and agricultural water needs are second; all other water needs follow these two). The principles are summarized below:

1. Municipal demands have the highest priority.
2. Agriculture needs must be satisfied.
3. Minimum instream flow rates must be met in order to preserve water quality.
4. If other demands (e.g., industrial, recreation, hydropower, navigation, and environment) can not be met under conditions of water shortage, efforts will be made to optimize the mix of economic and environmental values.

While these "guiding principles" were specifically developed to give expression to Georgia's water needs priorities in those areas of Georgia within the study area of the Alabama-Coosa-Tallapoosa/Apalachicola-Chattahoochee-Flint Comprehensive Study, it is likely that they characterize water needs priorities throughout the state. Thus, Georgia places highest value on the use of water for its citizens to use in drinking and water for agricultural needs. It is also extremely important to address needs for sufficient instream flows to maintain acceptable quality of aquatic habitat.

The Interstate Compact which has been drafted by the states and Federal government for the ACF basin does not give the Commission power to determine how Georgia must allocate its share of available water among competing uses; that decision, and the mechanism to implement that allocation, is left to the Environmental Protection Division. Of course, the larger Georgia's share of the available water resource in these basins, the less often any single demand will not be met.

Regional Water Supply Options

In managing Georgia's surface waters, EPD's approach is to meet as many of the identified water needs to the highest extent practicable, while minimizing adverse impacts associated with

meeting those needs. Of foremost importance in meeting those needs is maximizing use of already developed water resources along with aggressive water conservation.

Expected sizeable population growth in the upper reaches of the Chattahoochee basin over the next several decades is likely to result in exhaustion of the water supplies available from already developed sources, even with the employment of very aggressive water conservation measures. New sources will have to be identified and developed. As the population of county and sub-county political jurisdictions in the Chattahoochee River basin continues to expand, the need for water resources is likely to grow beyond the capability of single political jurisdictions to meet demand from the water resources within their political boundaries. Currently available regional sources in the upper Chattahoochee basin (e.g., Lake Sidney Lanier) will also likely be found to have real limits in providing the water resources to meet portions of the expected increases in water demand. Economic growth may be limited by the capabilities of existing local and regional water resources. An alternative strategy is cooperative efforts among adjoining political jurisdictions to plan and construct larger water resources projects. This type of approach would minimize the number of smaller water resources projects, and encourage development of new regional water resources in a more cost-effective and environmentally sensitive manner. Such an approach will require much more inter-jurisdictional cooperation on water supply issues than has been evident to date. Failure to pursue such increased cooperation might very well result in unacceptable water supply based restrictions on regional growth.

6.4 Priorities for Additional Data Collection

In the 1996-97 time frame monitoring efforts are focused on work to support the Chattahoochee River Modeling Project and modeling projects for West Point and Allatoona Lakes as well as on listed priority waters in the Coosa, Oconee, and Tallapoosa river basins in accordance with EPD basin planning schedule. Intensive monitoring will return to the Chattahoochee basin in support of the next iteration of the basin planning cycle in 2000. Prior to this time, EPD and partners will develop a strategic monitoring plan for the Chattahoochee, documented through a written monitoring plan. The monitoring plan will have two major components: general assessment of water quality status within the basin, and targeted assessment to address priority issues and concerns.

The general assessment component will be a continuation of Georgia's ongoing Section 305(b) Use Support Status Monitoring. Key aspects include:

- Expansion of biomonitoring (RBMP and IBI) efforts as an effective, integrative measure of net impacts on water bodies and actual existence of adverse impacts on biota
- Cooperation with WRD and other agencies to develop additional measures of health of aquatic ecosystems
- Expanded toxic substances monitoring associated with drinking water intakes. Where possible, Safe Drinking Water Act funds and community systems would pay for this sampling as is required under the 1996 amendments to the Act.

Targeted Monitoring is designed to address specific areas of concern. Different types of monitoring and assessment techniques can be targeted at different areas depending on identified concerns. For instance, Rapid Bioassessment Protocol (RBMP) monitoring coupled with physical/ chemical monitoring can be conducted to evaluate status of impaired waters and

impacts from BMP or other control strategy implementation. The basin planning team should work to develop specific management goals and select environmental indicators useful for addressing these goals for identified concerns. Recommendations for specific targeted monitoring needs are incorporated into Section 7 Implementation Strategies, and will be expanded upon as a monitoring plan for the Chattahoochee basin is developed.

For both components of monitoring, EPD may be able to increase coverage and effectiveness through use of additional external monitoring sources. Areas currently under consideration by EPD include:

- Better coordination of monitoring efforts among partners (agencies, governments, universities, etc.) within the RBMP framework.
- Development of monitoring consortiums to increase efficiency of monitoring by EPD partners.
- Encouraging extension of the Adopt-a-Stream network to identify areas of concern and to work with local governments to resolve identified issues such as stream bank protection, trash, or other aesthetic impairments.