

## SECTION 6: WATER RESOURCE ASSESSMENT

### Background

Georgia has more than 70,000 miles of streams, 400,000 acres of lakes, 4,500,000 acres of freshwater wetlands, 384,000 acres of tidal wetlands, 854 square miles of estuaries, 100 miles of coastline, and an enormous amount of water in aquifers. Additionally, over the course of an average year Georgia will receive fifty inches of precipitation. These waters are used in a wide variety of ways, and are affected by a number of human activities.

Assessing these resources and their condition, as well as determining what factors influence the ability to utilize these resources in a sustainable manner, is vital to effective water management. Many current water management efforts, such as source water protection plans and watershed protection plans, have water resource assessment components. While varied, the information gathered as a part of these efforts provides a foundation on which to base the management of those resources. To ensure that long-term needs for water are met in a sustainable manner, however, we must build on existing data with a systematic assessment of water availability and assimilative capacity. This assessment must be statewide, but can best be conducted at the regional level.

In the last several decades, Georgia has experienced significant economic growth and development. Georgia is one of the fastest growing states in the nation and as Georgia grows, the demand for water and assimilative capacity will increase. In addition, in the past two decades, Georgia experienced the two worst droughts on record and major flooding, including a one hundred year flood and a five hundred year flood. The spring of 2007 was one of the driest on record and many parts of the state entered the dry summer season with a significant rainfall deficit. In light of these extremes, Georgians are increasingly aware of the need for better information on the capacities of water resources so regional planning efforts can more effectively identify the practices that can effectively manage those resources in a sustainable manner.

If Georgia is to develop water resource plans that will allow continued sustainable use and enjoyment of the state's water resources, the state must first define the capabilities and current use of these water resources. These resource capabilities must be defined in terms of the ability of each water resource to support additional water withdrawals and to safely assimilate larger masses of pollutants without unreasonably foreclosing other opportunities for resource use.

Assessment of resource capacity will require compilation of a substantial information base, a comprehensive monitoring program, and a well-coordinated system for information management. This system would include the compilation of existing data, the coordination and integration of ongoing governmental and voluntary monitoring programs, the identification of gaps in current information and the development of a program to fill the gaps. The information collected and analyzed for these resource assessments must also be available to state agencies and other entities involved

in planning and implementing resource management plans, as well as to the general public.

### Water Resource Assessment Policy

- (1) In accordance with O.C.G.A. §12-5-522(b)(4), the effective management of Georgia's water resources requires a sound scientific foundation which includes a scientific understanding of the condition of the water resources, in terms of the quantity of water available to support current and future instream and offstream uses and the capacity of the water resources to assimilate pollution.
- (2) In accordance with O.C.G.A. §12-5-522(b)(6), a comprehensive and accessible database must be developed to provide sound scientific and technical information upon which effective water resource management decisions can be based.
- (3) Georgia must invest additional resources to coordinate current monitoring efforts and expand monitoring as needed for a statewide assessment of the condition and capacities of Georgia's water resources. This information will support regional planning and comprehensive water management.

### Implementation Actions

Under existing statutory authority and rules, the following actions will be taken to assess Georgia's water resources:

- (1) Plan and Budget
  - a. In accordance with the policies above and with O.C.G.A. §12-5-23(c)(4), the Director will develop an assessment plan and budget that will direct the collection of the scientific data and information necessary to support implementation of the comprehensive statewide water management plan. This assessment plan will include provisions for:
    - i. The compilation of existing data;
    - ii. The coordination, integration, and creation of standards for ongoing governmental, industry, and volunteer monitoring programs, including monitoring required by permits;
    - iii. The identification of gaps in current monitoring and data management programs; and
    - iv. The development of a monitoring and data management program to fill said gaps.
- (2) Water Quantity Resource Assessments
  - a. In accordance with O.C.G.A. §12-5-522 (b), the Director will implement a monitoring program to document surface water flows and groundwater levels. Water resources management efforts must have a sound scientific foundation. Assessment of the quantity of water available to support current and future human use, the needs of natural systems, and other instream uses requires enhanced information on surface water flows and groundwater levels.

- b. The Director will determine the extent to which each water source is capable of yielding quantities of water for offstream use while preserving opportunities for both instream and offstream uses of the water source and water sources that are hydrologically connected. This consumptive use assessment will be source-specific and will be known as a water quantity resource assessment.
- c. In completing any water quantity resource assessment for any water source, the Division will define the aggregate geographic boundaries from which water naturally accrues to that water resource.
- d. In completing a water quantity resource assessment for any water source, the Division will determine the extent to which any specific water source contributes to the flow regimes of hydrologically connected adjoining water sources, so as to ensure preservation of opportunities for other water users and uses. In determining flow support from a water source to other hydrologically connected water resources, the Director will consider the entire history of flows, natural and altered, in the connected water resources, and the flow contributions the source in question has historically made to the hydrologically connected water resources.
- e. In completing any water quantity resource assessment for any water source, the Division will consider the extent to which the water withdrawn from a surface water source will be, after reasonable use, returned to the water source within a time frame that allows contemporary users of that surface water source, and users of hydrologically connected surface water sources, to make corresponding reasonable use of that returned water. In considering the extent, location, and timing of the return of withdrawn water, the Division will evaluate the impact of **on-site sewage management systems**, land application systems, transfers of withdrawn waters to sources that are not by nature hydrologically connected to the subject source, and other water management practices that may impact return flows.
- f. In completing any water quantity resource assessment for a water source, the Division will consider the extent to which prior water development and management practices have affected the consumptive use assessment of a source. The Division will evaluate the impact of the size and operational characteristics of water storage projects, the extent, location, and timing of discharge of waters from **interbasin transfers**, and other current water management practices that have altered the natural sustainable yield of the source.
- g. In completing water quantity resource assessments, a distinction will be made between the flow regime requirements related to the consumptive use assessment of a water source and the instream flow conditions applied to surface water withdrawals from that water source. Instream flow conditions for surface water withdrawal permits will be determined pursuant to the instream flow protection strategy adopted by the

Board of Natural Resources on May 23, 2001, or the most recent revision thereof. Consumptive use assessments and related flow regime requirements may contribute to the information base that will be required to adapt the instream flow protection strategy to different regions of the state, but will not themselves change instream flow conditions applied to surface water withdrawal permits.

### (3) Water Quality Resource Assessments

- a. In accordance with O.C.G.A. §12-5-23(c)(4), the Director will implement a monitoring program to survey the waters of the state to assess water quality conditions and compliance with water quality standards.
- b. In accordance with O.C.G.A. §12-5-23(c)(2) the Director will act in the interest of the people to restore and maintain water quality.
- c. In accordance with O.C.G.A. §§12-5-30(a), 12-5-30(b), and 12-5-30(c), any person desiring to operate facilities that will result in the discharge of pollutants into the waters of the state is required to obtain a permit from the Director to make such discharge. The Director is authorized to issue permits upon the condition that discharges meet or will meet all water quality standards. In accordance with O.C.G.A. §12-5-30(c), the Director is authorized to prescribe conditions in permits to assure compliance with water quality standards.
- d. The Division will define the hydrologic boundaries or watersheds for the determination of conditions for use in permits to assure compliance with water quality standards.
- e. Local governments and water users in the watershed will be responsible for providing forecasts that quantify future discharge needs in terms of discharge flow and discharge location. Such forecasts shall be based on guidelines established by the Director.
- f. The Director will consider present discharge needs and forecasts of future discharge needs in the watershed to establish conditions in permits to assure compliance with water quality standards.