



Georgia's State Water Plan

Water Resource Assessments Summary

State Water Plan

The Georgia Comprehensive State-wide Water Management Plan (State Water Plan) was adopted by the General Assembly in 2008. The State Water Plan provides for:

- **Water Resource Assessments**

The Georgia Environmental Protection Division (EPD) will conduct water resource assessments to: 1) determine a sound scientific understanding of the condition of the water resources, in terms of the quantity of surface water and groundwater available to support current and future instream and offstream uses, and; 2) to measure the capacity of Georgia's surface waters to absorb pollutants without unacceptable degradation of water quality.

- **Forecasts**

Forecasts of future population expectations, water demands, wastewater returns, land surface types and distribution and employment characteristics will be developed. Water use forecasts will be developed for: 1) domestic/ commercial water use; 2) industrial water use; 3) energy water use; and 4) agricultural water use.

- **Regional Water Planning**

Regional Water Planning Councils will prepare recommended Water Development and Conservation Plans. These regional plans will promote the sustainable use of Georgia's waters, through the selection of an array of management practices, to support the state's economy, to protect public health and natural systems, and to enhance the quality of life for all citizens. The plans will identify steps to be taken to ensure that the forecasted needs can be met. Implementation of the State Water Plan requires that EPD provide the Regional Water Planning Councils with technical assistance, such as contractor support, resource assessments, forecasts and guidance. After the Water Development and Conservation Plans are adopted, EPD permits and Georgia Environmental Facilities Authority (GEFA) grants and loans for water projects will be guided by the Plan.

Water Resource Assessments

EPD with the assistance of other state agencies, the University System of Georgia and other research institutions, the U.S. Geological Survey and contractors, will conduct water resource assessments to determine Surface Water Availability, Groundwater Availability, and Surface Water Quality. The assessments will include modeling, monitoring, and the compilation and management of data. Assessments will be provided to each regional water planning council as a starting point for the development of a recommended Water Development and Conservation Plan.

Surface Water Availability

The Surface Water Availability assessment will help determine the amount of water that can be consumed from the rivers and lakes of Georgia without altering the desired flow regime and the opportunities for use of water supported by that flow regime. EPD and its contractors will use the “River Basin Planning Tool”, developed by the Georgia Water Resources Institute at Georgia Tech, to analyze flows in Georgia’s river systems. The 14 river basins in Georgia will be delineated into smaller hydrologically connected areas, or sub-basins. The River Basin Planning Tool will allow EPD to determine the quantity of water available for consumptive use in each sub-basin. Consumptive use refers to the amount of water taken from but not returned to, without undue delay, surface water sources. Critical constraints for the technical analysis include: unimpaired flow data of all river basins, the desired flow regime of the river system, the amount of storage for water supply purpose, the desired quantity of water supply, the desired reliability of water supply, and expected quantity of return of treated wastewater to the system.

Groundwater Availability

The Groundwater Availability assessment will provide information on the ability of water from aquifers in Georgia to meet current and future needs. Together with the Surface Water Availability Assessment, they form the “consumptive use assessment” described in the State Water Plan. EPD will prioritize the aquifers for Groundwater Availability assessment based on the current condition of an aquifer and expected future demands on that aquifer.

For the prioritized aquifers, EPD, with contractor support, will develop groundwater budget models, essentially input and output balances, to determine sustainable yields (the amount of water that can be withdrawn without creating an unacceptable impact such as dropping aquifer level, salt-water intrusion, or significantly lowered surface water). For the other aquifers, benchmarks will be established to indicate the potential for unacceptable impacts from future withdrawals. Management of these aquifers will focus on monitoring of aquifer response, and the response of other connected water resources, to future increases in withdrawal.

Groundwater withdrawals may need to be limited so as not to impair groundwater quality. Examples include: limiting withdrawals from Atlantic Coastal Plain aquifers to manage salt water intrusion, and limiting withdrawals from crystalline and Paleozoic rock aquifers in areas of man-made pollutant plumes (e.g. landfill leachate, dry cleaner plumes, underground storage tank (UST) plumes).

Surface Water Quality

Surface Water Quality refers to the amount of pollution waterways can handle and still meet water quality standards. The Assimilative Capacity assessment will measure the capacity of Georgia’s surface waters to absorb pollutants without unacceptable degradation of water quality. This process includes basic modeling of all of Georgia’s 52 watersheds. More complex models will be developed for watersheds where the assimilative capacity may not be adequate to support projected needs for wastewater discharge. The water quality models will be used to evaluate the impacts of forecasted flows, proposed discharge locations, and future land use patterns.

Monitoring and Information Management

For ongoing assessment of the state's water resources, EPD will develop a comprehensive monitoring program and a well-coordinated, computer/web based system for information management. To develop the comprehensive monitoring program, EPD and its contractors will compile existing data, coordinate and integrate governmental and voluntary water monitoring programs, identify information gaps and develop a program to fill those gaps. This information management system will be accessible to a variety of users.

For More Information

For more information on the State Water Plan visit www.georgiawaterplanning.org or contact Arnetia Murphy, arnettia_murphy@dnr.state.ga.us, 404-656-4157.