

Georgia Department of Natural Resources

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Chris Clark, Commissioner

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Environmental Protection Division

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MEMORANDUM

TO: Interested Parties
FROM: Linda MacGregor, Branch Chief -Watershed Protection
DATE: March 24, 2010
RE: Draft Water Resource Assessments - Public Review and Comment

EPD is releasing for public review and comment, synopses of three draft water resource assessments: groundwater availability, surface water availability and surface water quality (assimilative capacity). As described in the State Water Plan, these draft water resource assessments are evaluations of the current capacity of water resources to meet demands for water supply and wastewater discharge without unreasonable impacts.

The models used in the draft current resource assessments were developed by experts with national and international experience in water resource modeling, many of whom live in Georgia. The models use state-of-the-practice approaches and include the best data that is currently available. Models have been calibrated to real-world conditions, and the modeling approaches have been reviewed by EPD and are being reviewed by the scientific and engineering advisory panel.

Refinements and adjustments to the draft current resource assessments are expected and will be based on input from regional water planning council members, interested groups, the general public and the scientific and engineering advisory panel. Although EPD will continually improve the resource assessments, in March the ten regional water planning councils will begin using the draft baseline resource assessments to develop management practices that meet future water demands.

Draft Groundwater Availability Assessment

- Conducted for priority aquifers and/or units within those aquifers.
- Coastal Plain aquifers with numerical (MODFLOW) computer models:
 - Upper Floridan aquifer in the Dougherty Plain
 - Upper Floridan aquifer in South Central Georgia
 - Cretaceous aquifer between Macon and Augusta
 - Claiborne aquifer in southwestern Georgia
 - Upper Floridan aquifer in the eastern Coastal Plain
- Paleozoic aquifer in Northwest Georgia (numerical MODFLOW model for study area)
- Streamflow-based water balance models in the north Georgia crystalline rock aquifer (Piedmont and Blue Ridge study basins)
- For priority aquifer and/or aquifer units, determined 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 (sustainable yield).
- Preliminary results indicate:
 - that for all of the areas evaluated there is more groundwater available than is withdrawn to meet current demands;

- exceptions are seen in areas on the coast affected by saltwater intrusion and portions of the Lower Flint River basin (which are currently subject to special permitting provisions).

Draft Surface Water Availability Assessment

- Conducted state-wide for sub-basins, called Local Drainage Areas, which are defined by evaluation points.
- Evaluation points are located at USGS gages with long-term records, which are as close to regional council boundaries as possible and do not divide withdrawals and returns from major users, or at dams (e.g., Russell Dam on the Savannah River, W.F. George Dam on the Chattahoochee River).
- There are 45 evaluation points for which surface water availability results were produced.
- Preliminary results indicate:
 - that in much of the state there is sufficient water to meet current demands for offstream, consumptive water use and instream flow targets, even during dry periods;
 - in some parts of the state, instream flow targets and current offstream needs cannot be fully met during dry periods.

Draft Surface Water Quality Assessment

- Conducted for surface waters across the state using 1) steady state models that evaluate dissolved oxygen levels in stream segments and 2) watershed and lake/harbor models that evaluate nutrients (i.e., chlorophyll in selected lakes and loading from the lake watersheds). The model prioritization process focused on rivers and streams with existing wastewater discharges and larger water bodies that contained lakes with water quality standards.
- For the dissolved oxygen evaluation models, results are expressed as color-coded stream segments indicating available dissolved oxygen.
- For watershed and lakes with in-lake and/or tributary loading standards, results highlight in-lake locations and tributaries where standards have been exceeded.
- For watershed and lakes without standards, results highlight likely problems given the standards that may be adopted in the future.
- Preliminary results indicate:
 - that many of the water bodies evaluated are likely to be able to assimilate additional wastewater discharge (although downstream effects will have to be evaluated). For some waterbodies, higher levels of treatment may be required for additional wastewater discharges.
 - Non-point sources are a large source of nutrients to some surface waters, and are likely causing higher values of chlorophyll-a in lakes.

Comments on the draft water resource assessments may be submitted through www.georgiawaterplanning.org or via mail or fax to:

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The comment period will be open for at least sixty days from the time of posting. EPD will consider all comments, provide responses and make necessary revisions to the draft resource assessments.