

# STATE WATER POLICY ALTERNATIVES FOR WATER ALLOCATION AND REALLOCATION

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**Abstract.** The question addressed is: How should the total allowed consumptive and non-consumptive withdrawal amounts from a stream or aquifer be allocated among the competing present users and future users of the water? Who gets the water and how much and for how long? What should be the basis for making this decision for permit applicants? How can the Georgia EPD implement the policy?

The panelists present their proposals for what the policy should be, and discuss the advantages and disadvantages of the alternative policies. The panel is intended to provide ideas and information useful as background for the public, EPD and the Georgia Water Council in preparing the state policy component of the Comprehensive State-wide Water Management Plan.

## Panel Participants:

Kevin Farrell, DNR Environmental Protection Division  
Ciannat Howett, Southern Environmental Law Center  
Joel Cowan, Habersham and Cowan Inc., and past-chair,  
Metro North Georgia Water Planning District  
David Newman, University of Georgia, Forest Resources  
Robert S. Bomar, Georgia Attorney General's Office  
Moderator: Michael Wald, Bureau of Labor Statistics  
Assistant Moderators: Sarah Gaines and Justin Ellis,  
Institute of Ecology, University of Georgia  
Panel Organizer: Kathryn J. Hatcher, Institute of Ecology,  
University of Georgia.

## INTRODUCTION

### State Water Plan Initiative

The 2004 Comprehensive State-wide Water Management Planning Act (HB 237) requires the Georgia DNR Environmental Protection Division (EPD) to develop a comprehensive state-wide management plan for Georgia, and to submit the draft plan to the state Water Council for review by July 1, 2007. The Water Council may modify the

plan and will recommend it for consideration by the Georgia General Assembly for the 2008 session.

Section 12-5-522(a) provides that “The division (EPD) shall develop and propose a comprehensive state-wide water management plan not inconsistent with this chapter and in accordance with the following policy statement:

*‘Georgia manages water resources in a sustainable manner to support the state's economy, to protect public health and natural systems, and to enhance the quality of life for all citizens.’”*

Section 12-5-522(c) provides that “The proposed comprehensive state-wide water management plan shall set forth state-wide water policies not inconsistent with this chapter which shall guide river basin and aquifer management plans, regional water planning efforts, and local water plans.” (underline added)

In the first meeting of the Water Council on March 2, 2005, the Water Council chair and EPD director, Carol Couch, outlined the scope of the 2005 state water plan to include “articulation of state water resources management policy issues” and “recommendations for statutes, regulations, and policies to implement plan” along with guidelines and recommendations for process of sub-state (regional) planning. A list of 42 state water issues to be addressed in the state water plan had previously been developed and recommended by the Joint Comprehensive Water Plan Study Committee (Aug. 2002).

### Policy Panels Project

Five panel discussions to address state water policy issues are scheduled for the 2005 Georgia Water Resources Conference. The panels are intended to provide ideas and information useful as background for the public, EPD and the Water Council in considering several of the key state water policy issues facing Georgia. The panels are not intended to reach consensus or to make recommendations....only to provide useful background information about the difficult water policy issues, the policy choices available, and the pros/cons of each choice.

The five panel topics were selected by the EPD director, who also recommended a DNR-EPD staff member to serve on each panel. Each panel consists of five panelists: a DNR-EPD representative; three panelists representing various interest groups to summarize their group's desired policy choice and view of the pros/cons for the policy choices; and a technical or legal expert), plus a neutral moderator acceptable to all the panelists, and an assistant moderator (a graduate student). The panel topics are:

1. Protection of Instream and Downstream Flows
2. \* Water Quantity Allocation/Reallocation among Users
3. Minimum Aquifer Levels Protection Policy
4. Water Quality Allocation (TMDL allocation policy)
5. Water Conservation/Efficiency and Reuse Policy

### **Policy for Water Allocation and Reallocation**

#### **Summary of the Issue**

Georgia's citizens, businesses and communities derive both economic benefit and quality of life benefits from the offstream (withdrawal) use of the state's rivers and aquifers. Withdrawal uses include indoor municipal, commercial and industrial water supply, outdoor landscape watering, golf course irrigation, agricultural irrigation, power plant cooling water. Each additional state permit for increased withdrawal from a stream or aquifer provides a free benefit to the withdrawer and allows growth of the withdrawal use and all the community and economic activity directly and indirectly associated with that withdrawal use.

#### **Policy Question**

How should the total allowed consumptive and non-consumptive withdrawal amounts from a stream or aquifer be allocated among the competing present users and future users of the water? Who gets the water and how much and for how long? What should be the basis for making this decision for permit applicants? How can the Georgia EPD implement the policy?

### **LEGAL ASPECTS OF WATER QUANTITY ALLOCATION/REALLOCATION IN GEORGIA**

By: Robert S. Bomar

Deputy Attorney General, Georgia Department of Law

As presently set forth in Georgia and federal law, key references to any discussion of water allocation/reallocation include the following:

- Georgia's Riparian Rights Doctrine, O.C.G.A. § 51-9-7;
- Georgia's "Regulated Riparianism" Law, O.C.G.A.

- § 12-5-31 (Georgia Water Quantity Control Act);
- Georgia's Modified Absolute Ownership Doctrine, Saddler v. Lee, 66 Ga. 45 (1879); Amard v. Lehman, 120 Ga. 253 (1904); Stoner v. Patten, 132 Ga. 178 (1909);
- Georgia's "Regulated Reasonable Use" Law, O.C.G.A. §§ 12-5-90 et seq. (Ground Water Use Act of 1972);
- Comprehensive State-Wide Water Management Planning Act, O.C.G.A. §§ 12-5-520 et seq.;
- Metropolitan North Georgia Water Planning District Act, O.C.G.A. §§ 12-5-570 et seq.;
- Allocation of Groundwater for Farm Use, O.C.G.A. § 12-5-105 (Ground-Water Use Act of 1972);
- Georgia Water Supply Act, O.C.G.A. §§ 12-5-470 et seq.
- Federal Statutes Affecting Surface Water Allocation:
  - o Rivers and Harbors Act of 1945, Pub. L. No. 79-14; 59 Stat. 10;
  - o Rivers and Harbors Act of 1946, Pub. L. No. 79-525; 60 Stat. 634;
  - o Water Supply Act, 43 U.S.C. § 390(b)(d);
  - o The Clean Water Act, 33 U.S.C. §§ 1251 et seq.;
  - o The Endangered Species Act, 16 U.S.C. §§ 1531 et seq.;
  - o The National Environmental Policy Act, 42 U.S.C. §§ 4321 et seq.;
  - o Original Jurisdiction of Supreme Court Over Water Allocation Cases; 28 U.S.C. § 1251(a).

Generally speaking, there are just three basic types of property in flowing fresh water. The types of property are: 1) common property; 2) private property; and 3) public property.<sup>1</sup>

#### **Common Property**

The common law doctrine of riparian rights as adopted early on by most eastern states, is a prime example of the common property legal regime in the United States. In Georgia this doctrine is found in O.C.G.A. § 51-9-7 which provides in part, to wit:

"The owner of land through which non navigable watercourses flow is entitled to have the water in such streams come to his land in its natural and usual flow, subject only to such detention or diminution as may be caused by a reasonable use of it by other riparian proprietors ...."

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<sup>1</sup> Joseph Dellapenna, Special Challenges To Water Markets In Riparian States, in Critical Issues in Georgia Water Law and Policy – A Seminar, pp. 6, 7, January 7, 2004, Georgia State University Law.

Under this doctrine, resolution of conflicting claims is left to the courts through a rule of tort. While this doctrine may be sufficient protection for small water users, Biologist Garrett Hardin in his work The Tragedy of the Commons<sup>2</sup>, explained why a common property system can function only when a common pool resource is available in much greater supply than the demand for the resource. In Georgia, as well as most eastern states, this is no longer the situation. Consequently, since a common property system can no longer survive, the question is what system should be substituted.

### **Private Property**

Regarding a present day private system of water allocation and management, the prior-appropriation doctrine probably comes the closest.<sup>3</sup> Under this doctrine, among the persons whose properties border on a waterway, the earliest users of the water have the right to use all they can before anyone else has a right to it.<sup>4</sup> However, as explained by Professor Dellapenna, markets in water as such have never actually played much of a role even in states which employ the prior appropriation doctrine. He explains that the reason for this goes under the name of “externalities” -- a use by any person affects the uses by many others, perhaps all others, and hence a significant change in any use infringes upon the interests of all others. Even in states adhering to the prior appropriation doctrine, the senior appropriation cannot change the time, place, or manner of use if it would produce a significant inquiry to the junior appropriation. Furthermore, the burden of proof of no injury generally lies with the one seeking to make the change.<sup>5</sup>

### **Public Property**

Finally, we turn to the public property regime; one employed by the State of Georgia for both surface and underground waters, regulating withdrawals in amounts greater than 100,000 gallons per day. This system is centered in a permitting system, administered by the State where all uses (with one significant exception) qualifying for a permit must be “reasonable.” See O.C.G.A. §§ 12-5-31(g); 12-5-96(c). This system, for allocating surface water has been referred to as “Regulated Riparianism.” See J. Dellapenna, “Regulated Riparianism: in Waters and Water Rights § 9.01 at 417, n. 23 (describing Georgia as one of several states with a “regulatory permit system based on riparian principles”). It should be pointed out, however, that Georgia’s surface water and groundwater allocation laws provide applicants for farm use permits an almost total

exception from the criteria applied to non-farm use applicants for water allocation permits. It should also be noted that Georgia’s surface water allocation statute preserves certain basic riparian rights. O.C.G.A. § 12-5-46 provides that nothing in this law can be construed to prevent a riparian owner from exercising his rights to suppress nuisances or to abate any pollution. However, it is suggested that the granting of a surface water allocation permit raises a presumption of reasonableness of use by the permit grantee.

Professor Dellapenna favors the public property form of water allocation. He observes that regulated riparianism has three distinct advantages over riparian rights. First, by its application, we don’t face the “tragedy of the commons;” second, having a permit in advance of investment provides the security of right needed for intelligent planning and investment decisions; and third, regulated riparianism allows for comprehensive planning.<sup>6</sup>

Although Georgia has employed the public property concept of water allocation, this does not mean that the present system cannot be improved. Such improvements are anticipated as a result of the enactment of the Metropolitan North Georgia Water Planning District Act, O.C.G.A. §§ 12-5-570 et seq. and the Comprehensive State-Wide Water Management Planning Act, O.C.G.A. §§ 12-5-520 et seq. The Model Water Code might prove to be a valuable resource.

### **“Takings” and Water Rights**

In both the Georgia and U.S. Constitution there is a prohibition against the taking of property by a governing authority without just and adequate compensation. In the eastern United States, with the adoption of surface water and grant water allocation statutes, the courts are faced with this issue of riparian rights as vested property rights. However, it is this author’s belief that such statutes are firmly grounded in the State’s inherent and constitutionally authorized police powers.

“Police powers” enable a governing authority to secure the public against some danger, and to limit the activities of some individual or group, if necessary, in order that the welfare, health or property of the body politic may be protected. Crummey v. State, 83 Ga. App. 459 (1951).

The seminal case construing Georgia’s “takings” prohibition is Pope v. City of Atlanta, et al., 242 Ga. 331 (1978). There the Georgia Supreme Court upheld the Metropolitan River Protection Act which made it unlawful to build within a particular stream corridor under certain conditions. The Court said that excessive regulation of property violates the “takings” provision of the Georgia Constitution. However, the Court adopted a balancing approach weighing the State’s interest in regulation against

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<sup>2</sup> Garrett Hardin, The Tragedy of the Commons, 162 SCIENCE 1268 (1968).

<sup>3</sup> Dellapenna, *supra* at p. 7.

<sup>4</sup> Black’s Law Dictionary, 1212 (7<sup>th</sup> ed. 1999).

<sup>5</sup> Dellapenna, *supra* at pp. 10-11.

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<sup>6</sup> Dellapenna, *supra* at pp. 15, 16.

the landowner's interest in the unfettered use of his property. In this case, the Court found that the State's interest weighed heavier in the balance. Regarding the State's water allocation statutes, it would appear that the "balancing test" would swing strongly in favor of this type of police power restriction on water use.

Regarding a "takings" claim under the United States Constitution, it is submitted that the water allocation provisions do not establish a Lucas categorical claim in that the abutting property owner is denied only a partial economic use of his property if any denial at all. Further, a Penn Central claim should be rejected because under the economic impact factor, the owner of the abutting property is not denied the opportunity to make profitable use of his property, and under the character factor, the regulation is an exercise of the police power designed to protect the public health, safety, and welfare. See, Rith Energy, Inc. v. United States, 270 F.3d 1347 (Fed. Cir. 2001).

### **Federal Laws Influencing State Water Allocation**

As noted in an earlier section of this paper, there are a number of federal statutes which indirectly affect Georgia's laws and policies governing water allocation. While space does not permit a written discussion of each of these federal directives, two should be briefly mentioned.

The first is federal control over reservoirs constructed pursuant to Congressional authorization. These reservoirs hold large quantities of water and state or local authorities must contract with the Corps of Engineers for the storage or release of such waters for water supply. Operation of various reservoirs located on the Chattahoochee River has been the subject of negotiations and litigation with Florida and Alabama for the past 13 years. In order for Georgia to get an adequate supply of water for desired future growth and development, a successful outcome of this litigation is needed.

The second federal directive requires that a state which seeks to establish its entitlement to a particular share of an interstate river must bring suit in the United States Supreme Court against the other state or states with which it shares the river.

The Court allocates interstate waters by applying a variety of factors that have evolved under the federal common law of equitable apportionment. Equitable factors include such considerations as reasonability and economic value of water use, conservation, physical and climate conditions, the extent and nature of existing uses, practical effects downstream of wasteful water use upstream, and damage to upstream areas as compared with the benefits to downstream areas if a limitation is imposed on the upstream area. The above factors must ever be considered when the subject of water allocation is addressed.

### **GEORGIA'S PRESENT POLICY**

(summary from Kevin Farrell, Georgia EPD)

The Georgia Environmental Protection Division issues permits for water withdrawals over a threshold amount, based on evaluation of a permit application which includes detailed information. EPD requires applicants to send sufficient information for EPD to evaluate several questions to determine that the applicant has attempted to minimize its impact on other users of the water and on the environment. If those conditions are met, then EPD grants the water withdrawal permits on a first-come first-served basis.

When a water withdrawal permit application is received by EPD, the following process is used to determine the permit conditions, assuming that the permit applicant has supplied all the required information. The application review process includes a staff discussion of pertinent issues and development of final permit recommendations. This discussion generally involves the EPD engineer handling the geographic area affect, his Unit Coordinator, and myself (Kevin Farrell). Some key issues and questions that take up much of the review process include:

- 1) Is there a documented need for the water amount requested in the application (i.e. service area definition, population projections, what years of need);
- 2) Does the need documentation incorporate reasonable assumptions for water conservation, per capita use, unaccounted for water, etc.;
- 3) Are all service area issues resolved so that EPD does not double-allocate water to a particular area or population;
- 4) Is there sufficient information available to answer questions related to near term and long term interbasin transfer and consumptive loss;
- 5) Will water quality standards be protected;
- 6) Will stream low flow requirements be met;
- 7) Are all required plans sufficient (i.e., Water Conservation Plans, Drought Contingency Plans, Reservoir Management Plans, Water Supply Watershed Protection Plans, etc.);
- 8) Is the applicant in good standing with many other EPD regulatory programs;
- 9) Has all the needed coordination and permitting with other agencies occurred as needed (i.e., FERC, Ga Power, US Army COE, etc.);
- 10) If the permit application involves a reservoir: is the yield analysis appropriate, does it look like wetland mitigation issues are addressed, is the particular site the best site, are there better more regional alternatives, are the proposed low flow releases appropriate, is there sufficient information to a 401 certification to be issued, etc...;
- 11) Are the needs of all existing downstream permitted withdrawers protected;
- 12) Additional questions.

The ground water permit applications are governed by O.C.G.A. 12-5-90 and Rule 391-3-2. The surface water permit applications are governed by O.C.G.A. 12-5-31 and Rule 391-3-6.

**POLICY #2**

**THE ZERO SUM WATER ALLOCATION MODEL®**

By Joel H. Cowan and Andrew Chou

**Introduction**

Water supply is often a major concern for fast growing metropolitan areas. Atlanta, the capital of the state of Georgia, has a population of 4 million people which will double within the next 25 years. This means that the water supply will have to double too. However, since the city’s water comes from only two small rivers, that will be difficult. For local governments, this limitation means that their jurisdictional growth will be inhibited due to this limited supply. It would only take a headline to start a political struggle between the 108 local governments of the region... each with a separate interest in supplying water to its growth. In turn, the difficult task of water allocation becomes a nightmare if there is no over arching rationale which can be understood by both governments and the public.

When the water supply is not a limiting factor, these water governing authorities issue water withdrawal permits on a first in time...first in use basis (“first come, first served”). Basically, these authorities permit water withdrawal to any government which asks for it as long as there is a remaining supply. There is typically no thought to any ultimate limit until it is too late to alter course. As population increases and water resources become scarce, the slower growing governments are faced with shortages brought on by effectively over allocating water to the fast growing areas. Most governing authorities are quick to realize that they can no longer permit water withdrawals on a first-come-first-served basis. The need to carefully and cooperatively manage and protect rivers and streams becomes a priority.

The search has been for a way to fairly allocate water, reward good and costly conservation practices and fairly judge the cost/environmental effectiveness of industrial and agricultural uses.

**Zero Sum Water Allocation Model®**

The Zero Sum Water Allocation Model® is an interactive decision-support tool to guide the water allocation between governments. The end result is a projected buildout (“Buildout”) water needs calculation which includes the current water demands and an projection of the additional water needs to Buildout. (Buildout, as defined here, is what it takes for a jurisdiction’s land area to be completely developed the first time. Obviously, redevelopment of old areas can upset any calculations of available resources... which intensifies the need for these considerations.) These additional needs are projected using varying scenarios by watersheds and by jurisdictions. A highly effective decision model results where changes can be made “on the fly” facilitating group compromises.

While accurate current water demand can be obtained from public sources, the model focuses on projecting the additional water needs to Buildout. It primarily bases the projection on available land to be developed thereby reserving the resource over time pending use of that area. As a base for testing future scenarios, the model assumes historic uses of developed land, household size, lot-size and water utilization per capita and then projects that onto the remaining developable land. This allows the model to calculate the additional water needs to Buildout. Then, using this base, decision makers test public policies like densities of residential development, industrial/institutional uses, green space conservation (policies to set aside a percentage of remaining developable land), consumptive water limits (vs. sewered return flows). Buildout water needs reflect those factors and are easily changed for discussion. Below is a comparative chart between the Zero Sum Water Allocation Model® and the first-come-first-served model.

	Zero-Sum Model	First Come Model
Bases for “Reasonable Use”	Remaining developable land and its use	Population growth rates
Forecast methodology	Projections are based on Historic “Landuse” trends and available developable land	Projections are mainly based on Historic “Population” trends

### Why is This Unique?

1. Zero Sum Concept: The model causes the decision maker to consider from whom the resource would be taken at the same time it is being awarded to another.
2. Land Use based Water Allocation: It replaces the frequently used “first-come-first-served” allocation methods by examining allocations based on the likely land uses of the available developable land.
3. Accountability: The zero sum and land use based allocation concepts will convince participants to develop sensible land use plans to support and justify their water needs in a fully sustainable and equitable manner.
4. Promotes good behavior and deters bad behavior: Knowing that they are dealing with a finite resource, jurisdictions would need to enforce conservation measures to require lower per capita use, thereby achieving their growth projections. On the other hand, if jurisdictions decide to build water using industry or golf courses, the model will show that future population growth is inhibited by that decision.
5. Respect natural limits and policies: With respect to maintaining a living standard, the model will simulate water needs based on the impact of policies such as consumptive limits, green space preservation and impervious surface limits.
6. Trading Rights: The model would facilitate the trading water withdrawal rights, waste discharge rights and green space rights.
7. Multi-dimensional view: Results and decisions made can be seen by jurisdiction or by watershed thereby facilitating county water management or watershed management.

### Model’s Underlining Principles:

- All citizens, property owners, businesses and local governments will be treated equitably.
- Respect limits derived through contracts and court opinions.
- Respect natural limits which are sustainable.

### Conclusion

With a round-table of jurisdictional leaders, it is not difficult to figure out which jurisdictions would favor which methods of water allocation. The table below outlines the results from the application of both methodologies. Jurisdictions with historically high population growth rates naturally would favor first-come-first-served; On the other hand, jurisdictions with more developable land and higher residential densities would favor zero sum water allocation. The Zero Sum Water Allocation Model<sup>®</sup> is not about making the decision for the group. It is designed to project present practices to a future conclusion thereby creating accountability, improving water management, understanding natural checks-and-balances and enhancing planning. More

importantly, it is about surfacing facts for political leaders to make enlightened decisions for generations to come.

Methodology Results	
Zero Sum Model	First Come Model
Jurisdictions with more developable land and higher residential densities have higher forecasts	Jurisdictions with historically high population growth rates have higher forecasts

### POLICY #3

Policy Proposed by Ciannat Howett  
Discussion of Status Quo and Alternatives

### POLICY #4

Policy Proposed by David Newman  
Discussion of Status Quo and Alternatives

### Overview of Alternative Policies

The selection of a water allocation and reallocation policy for Georgia is a difficult decision, and one which will affect Georgia's citizens and the future condition of the state. The Georgia EPD intends to involve citizens extensively in the development of the water policies for Georgia, policies which will be applied in shaping the comprehensive state water plan. To aid the lay citizen in understanding and participating in this difficult decision, it may be helpful to summarize the issue using a decision table, such as the example shown in Table 1, to show a range of policy alternatives for water allocation/reallocation and to compare the most relevant effects (pros and cons) of each alternative.

Discussion for this panel topic will continue following the conference, with comments received during and after the conference made available.

<http://www.arches.uga.edu/~hatcher/alloc.htm>

**Table 1. Decision Chart for Comparing Water Allocation/Reallocation Policies**

Alter-natives	Policy #1 Present EPD Policy	Policy #2	Policy #3	Policy #4
Description				
Pros: #a #b #c				
Cons: #a #b #c				

REFERENCES

HB 237, Comprehensive State-wide Water Management Planning Act of 2004, signed by Governor Sonny Perdue on May 13, 2004.

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