

**WATER MARKETS IN GEORGIA:
AN OVERVIEW OF ONGOING SALES OF WATER**

Water Policy Working Paper #2003-006

Prepared by*

**Professor Phyllis Isley
Coastal Rivers Water Planning and Policy Center
Georgia Southern University
Statesboro, GA**

and

**Robert J. Middleton, Jr.
Legal Consultant
Georgia Water Planning and Policy Center
Albany, GA**

March, 2003

*The authors gratefully acknowledge financial support for this work provided by the Georgia Soil and Water Conservation Commission (480-02-FR1001-2) and the U.S. Department of Agriculture (2001-38869-10607-1).

**WATER MARKETS IN GEORGIA:
AN OVERVIEW OF ONGOING SALES OF WATER**

Abstract

This paper addresses considerations of direct relevance for ongoing debate in the state as to whether or not water should be sold “like a commodity”. The primary point made in the paper is that water is and has long been bought and sold as a commodity in the state. Thus, in the author’s view the ongoing debate is simply out of touch with reality.

This paper presents case studies showing that there are currently wholesale and retail water markets in Georgia. Moreover, such markets have benefitted many Georgians. In each case, the market in water was created in response to the need to support economic development and lower customer’s costs. These markets are subject to regulatory oversight, serve the interest of rural communities, and work in concert with the object of planning and managing water resources.

AN OVERVIEW OF ONGOING SALES OF WATER

I. Introduction

As the Georgia Legislature, during the 2003 session, considers means by which water management in Georgia might be improved, there has been a great deal of controversy¹ centered on whether or not holders of state-issued water use permits in regions of the state with caps on new permits should be able to sell such permits. The rationale for such sales in regions with caps on new permits is to allow patterns of water use to change over time in response to opportunities for economic growth in the affected basin.² Further development of the water market in Georgia will promote the “highest and best use” of a valuable, yet limited resource.

A curious aspect of the argument against such sales of water as “commodity” is that it ignores the simple fact that water *is and has for some time been* effectively treated as a commodity in Georgia, and it is bought and sold very much like other natural resource commodities such as mining and petroleum resources. Indeed, there now exists in Georgia *both wholesale and retail markets* for water. Moreover, ongoing water marketing in Georgia plays a critically important role in smoothing out the allocation of water resources required to accommodate rural economic growth and in increasing the cost effectiveness of municipal water systems. And like the current market, further development of an expanded water market will be subject to regulatory oversight by the Georgia Environmental Protection Division (EPD).

The purpose of this paper is to describe the current state of water marketing in the State

¹ See, e.g., Cummings, R., A. Keeler, and B. Thompson, “Georgia Water - Public Resource or Commodity: What are the Real Policy Questions?” Water Policy Working Paper #2002-008, Coastal Rivers Water Planning and Policy Center, Georgia Southern University, Statesboro (November, 2002)

² See Cummings, R., N. Norton and V. Norton, “Water Rights Transfers: Options for Institutional Reform,” Water Policy Working Paper #2001-001, Coastal Rivers Water Planning and Policy Center, Georgia Southern University, Statesboro (September, 2001).

of Georgia. To this end, the paper is organized in the following way. In section II the wholesale market for water is examined. The wholesale market consists largely of inter-municipal sales of large volumes of water. Two examples are discussed. The first example of a wholesale water market is the agreement by the City of Savannah to sell water to Effingham County. Effingham County in turn has an agreement to sell some of that water to the Effingham County Power Company. The second example is the *inter-state* sale of Georgia's water by Columbus Water Works to buyers in Alabama. It is argued below that both of these examples illustrate how markets flexibly allocate water resources to sustain growth and support economic development.

While not directly relevant for the trading of Georgia's water and therefore not treated in section II, we note as an aside that there are *other* examples of inter-state wholesale transactions in water in Georgia including: 1) an inter-state sale where Rossville, GA, Dade and Walker Counties, also in Georgia, buy water from the Tennessee-American Water Company (located in Chattanooga, TN); and, 2) the purchase by Dalton Utilities of water from Eastside Utilities of Tennessee.

In section III, attention is turned to a second, and perhaps more interesting market: the retail water market. The evolution of retail water marketing in Georgia is described, and the role of this market in providing water to hundreds of thousands of Georgians living in rural areas is discussed. Given the importance of issues related to water rights to the retail water market, legal principles or doctrines by which common property, like water, is made private property are also discussed in this section. Concluding remarks are offered in section IV.

II. Wholesale Water Transactions: Overcoming the Cap on Withdrawals from the Floridan Aquifer

A. Intra-state sales of water. A historically rural county, Effingham County is among the fastest growing counties in Georgia. Between 1999 and 2000 it ranked as the 22nd fastest growing county in Georgia with an annual growth rate of 3.9%. It grew at an average annual rate of 4.6% between 1990 and 2000. Located along the Savannah River adjacent to Chatham County, the rapid population growth can be attributed to urban spillover from Chatham County. Springfield, population 2,651 in 2000, and Rincon, population 6,525 also in 2000, are the two largest towns in the county. With a total county population of 37,535, near 75% of the county's residents are rural.

The southern portion of Effingham County is included in the area to which restrictions apply on new permits for the withdrawal of groundwater from the Upper Floridan Aquifer.³ This cap prohibits cost effective development of groundwater as an option for sustaining growth in the fastest growing portion of the county. To overcome the potentially stifling effects on growth created by the cap on permits for groundwater withdrawals in Effingham County, the County has prepared and approved a local water management plan that includes provisions for the purchase of water from the Savannah water system as a cost effective means by which it can accomplish two purposes: provide potable water supplies for residents of Effingham County; and provide water needed by Effingham County Power, LLC, a subsidiary of Progress Power, who plans to construct a electric generating plant in the County.

A brief examination of the agreements between Effingham County and Savannah serves

³ "Interim Strategy for Managing Saltwater Intrusion in the Upper Floridan Aquifer of Southeast Georgia," Georgia Environmental Protection Division, April, 1997.

two useful purposes.⁴ First, they demonstrate how planning and markets work together to accomplish regulatory goals while providing water to high valued uses. Second, they make clear the fact that water is being traded as a commodity. Reliance on markets as an integral part of the local planning process is made manifest by language in the agreement between Effingham County and Savannah that establishes the rationale for the agreement. Examples include provisions that: "...a regional approach to the management of water resources to achieve long-term sustainable withdrawals from the Floridan Aquifer is in the best interest of all parties that rely on this valuable natural resource."⁵ Emphasis on planning is seen in the agreement's acknowledgment that "Savannah has planned, for the long-term benefit of the region, the development of alternative sources of potable water".⁶

The terms of the agreement between the City of Savannah, Effingham County and Effingham County Power, LLC., include the following:

1. Effingham County and Effingham County Power, LLC., will cooperate to construct a 36 inch diameter water line from a point in Chatham County to the planned Effingham County Power plant site which will be the delivery point for water for both the plant and domestic customers in Effingham County;
2. Effingham County will own and operate a water utility;
3. Savannah *shall sell*, and Effingham *shall purchase* potable water⁷ at a base wholesale⁸ rate of .67 the effective rate charged by Savannah to its retail customers on the outside-

⁴ "Water Agreement Between The City Of Savannah And The Effingham County Board Of Commissioners" and "Water Use Agreement Between The City Of Savannah, Effingham County, and Effingham County Power, LLC.

⁵ Water Agreement, page 1.

⁶ *Ibid.*, page 1. To reduce demands on the groundwater in the region, the City of Savannah has developed a treatment plant for surface water drawn from the Savannah River.

⁷ *Ibid.*, page 7. Emphasis added.

⁸ *Ibid.*, pages 2 and 7.

city rate;⁹

4. The quantity of First Tier Water is to be approximately 1.0 MGD^{10 11}
5. The amount reserved to Effingham County may be increased by 12.5 MGD in increments of 1.0 MGD;
6. Effingham will own and operate a water utility to serve Effingham County Power, as a wholesale customer, and retail customers in the unincorporated areas of Effingham County, and potentially the municipal water systems of the Cities of Rincon, Springfield, and Guyton.

By any reading of the agreements between these three parties, water is being bought and sold as a commodity. The cap on new groundwater permits designed to reduce saltwater intrusion in Coastal Georgia had the potential of stifling growth. A wholesale market in water created a win-win situation for two communities effected by the cap. The City of Savannah is able to spread the burden of the capital costs of the facilities for surface water treatment to more users. Effingham County obtains water to support continued growth through a planned, low cost water supply option.

It should be clear from the above that planning and the market work hand-in-hand. A regional approach to water management created a basis for buyers and sellers to know each other and the product alternatives. Both parties, because of the planning process, had established a mutual interest in achieving long-term sustainable withdrawals from the Floridian Aquifer. Further, information is often the most costly input in a market transaction. The requirement that local water supply plans include specific consideration of alternative sources for future water

⁹ There is a separate provision for the charge which will be assessed for the Capital Cost Recovery for facilities Savannah developed to treat and filter surface water. See Water Agreement, page 11.

¹⁰ Effingham County Power has a reserve allocation above this of 7.0 MGD. See, "Water Use Agreement Contract No. XTB1000137."

¹¹ The Water Use Agreement provides that Effingham County shall have the right to provide reuse water to Effingham County Power. See, "Water Use Agreement Contract No. XTB1000137", Section II, B1-9.

resulted in preparation and evaluation of information on the cost effectiveness of alternatives.

B. Inter-state sales of water. The sale of water by Columbus Water Works to customers in Alabama is another example of how the rationality of the market place creates win-win outcomes.¹² There are direct and indirect market forces supporting the rationality of selling Georgia's water to customers in another state: economies of scale and economic development, respectively.

The construction, expansion and improvement of water supply systems involves lumpy capital investments. Spreading the high cost of capital among as many potential users as possible reduces the average cost of capital to all users. This is simply what is referred to as economies of scale. More customers lower the **average** cost of building the necessary facilities that benefit all customers. By selling to consumers in Alabama, Alabama customers pay a share of the cost of capital and Georgians pay less for municipal water services.

While reducing what Georgians must pay for water services is an important direct benefit of the wholesale market in water, there are important indirect benefits that derive from this example of water marketing. These indirect benefits arise from growth in Columbus which is the result of growth within the market area it serves -- growth that is supported by the availability of reasonably priced water.

Markets ignore geo-political boundaries. Columbus, GA is a two state (Georgia and

¹² Until 2000, the Columbus Water Works sold water to Phenix City, AL in order to supply a large textile mill. The mill has since gone out of business, but there are currently active negotiations for sale of this water to other Alabama buyers including a second community within the Columbus, MSA. The sensitivity of the negotiations precludes detailed discussion of the proposed agreements, but it should be emphasized the Columbus Water Works actively seeks customers in Alabama. The authors gratefully acknowledge the generosity of Mr. Billy Turner, President, Columbus Water Works, for time spent by him in helping the authors understand water supply issues relevant for the Columbus area.

Alabama) Metropolitan Statistical Area, with a population of 224,868 in the 2000 census. It is estimated that the market area for the Columbus MSA, divided between Columbus, GA and Montgomery, AL, extends into Alabama approximately 36 miles.¹³ Economic development anywhere within its market area creates additional jobs and income in Columbus. Supporting the growth of jobs and income in adjacent Alabama supports, and grows, more jobs and income in Columbus, Georgia. Providing water for economic development anywhere within the sphere of Columbus's expanded market area increases economic opportunities for Georgians.

C. Conclusions: Wholesale Water Markets. Markets provide flexible solutions to meet consumer demands. Both of the wholesale water markets discussed above arose because local conditions created an opportunity to support growth and economic development. In the case of Columbus, the need was to reinforce and capture the benefits of development within its market area. The result was lower cost of water services than would have otherwise been possible without the market and the forces of economic development within the overall Columbus market area. In the case of Effingham County, there was a similar benefit to the City of Savannah in that the cost of capital was shared among more users. Additionally, Effingham County has been able to continue to grow in spite of the EPD's cap on new groundwater withdrawals in the region. The water market in Effingham in water provides a cost effective solution to minimize the economic consequences in Effingham County of regulatory restrictions that could have stifled growth -- regional cooperation with reliance on markets have had the effect of reducing potential costs associated with EPD's policies designed to protect the Upper Floridan Aquifer.

¹³ This was calculated using a modified version of Reilly's Law. See Bartolomei, Natalia and Mary Dowling. "A New Look at an Old Formula: Reilly's Law," *Southern Economic Developer*, Spring, 2002, page 23.

III. The Retail Water Market in Georgia

A. Overview. In this section we describe the evolution of retail water markets in Georgia. These markets involve Public Water Systems and Community Water Systems. As we will demonstrate, these retail water marketing institutions have developed in response to the needs of primarily rural communities in the state. These developments are considered below in sub-section B. A somewhat peripheral but important issue is taken up in sub-section C for the purpose of providing the reader with a more comprehensive appreciation for the development of retail water markets in Georgia. This issue centers on the extent to which property rights related to water are clearly defined -- an essential prerequisite for the effective operation of any private market.

B. The evolving, private retail market for water in Georgia. The provision of drinking water is regulated nationally by the U.S. Environmental Protection Agency,¹⁴ and in Georgia by the State's Environmental Protection Division.¹⁵ The regulations cover two types of water systems: Public Water Systems (PWS); and Community Water Systems (CWS). A PWS serves at least 15 connections or regularly provides water for human consumption to at least 25 persons daily, for at least 60 days per year. A Community Water System (CWS), which is a sub-set of PWS, has at least 15 service connections used by year-round residents or regularly serves at least 25 year-round residents. As of July 1999, there were 180,364 PWS in the U.S., 50,289 (28%) of which were CWS, serving 243 million people.¹⁶

¹⁴The Safe Water Drinking Act was passed in 1974, amended in 1986 and 1996.

¹⁵ EPD's regulations focus on consumer protection, requiring that: water meet certain quality standards; adequate amounts be provided to costumers, and that provisions are made to protect consumers in the case of company failure for financial or other reasons.

¹⁶ EPA, National Characteristics of Drinking Water Systems Serving Population Under 10,000, EPA -816 R-99-010, July 1999.

In Georgia, there are 2,553 PWS listed on the Georgia EDP website.¹⁷ Of these, 1,673 are CWS, serving the rural water needs of more than 678,000 Georgians. 1,074 (64%) of Georgia's CWS are privately owned, small, public water systems. The balance, or 599 CWS, are owned and operated by small, rural municipalities. Of the 1,074 privately owned CWS most are owned by sole proprietors, owning only one system. However, at least 14 companies have developed portfolios of systems with holding in multiple counties.^{18 19} These 14 companies include at least one South Carolina company with a portfolio of 25 systems in 7 southwest Georgia Counties. Inspection permit applications held by the EPD indicate that firms specializing in CWS emerged in two ways. First, some of the firms began to specialize in the business of CWS because they were drillers who evolved into operators as systems became more regulated.²⁰ On the other hand, some firms specialized in the business of CWS because they have the necessary expertise with respect to the regulatory process required to obtain a permit.²¹

Firms specializing in the CWS business are generally concentrated in the fast growing regions of Coastal Georgia and to a more limited extent around small and mid-sized cities in rural south central and south west Georgia.²² Population growth in rural Georgia clusters around small cities. In many cases the small cities, surrounding larger urban areas, are the municipal

¹⁷ See www.state.ga.us/dnr/environ/regcomm_files/wrb/webpws.

¹⁸ Derived through a query of the www.state.ga.us/dnr/environ/regcomm_files/wrb/webpws. CRWPPC is currently conducting a survey of the identified businesses. One of the questions asked of the businesses is the identify of the primary competitors. This is an effort to identify other firms which may not have emerged through the query.

¹⁹ The multiple county definition was employed to differentiate between holders of multiple permits where the permits actually applied to sequential of sub-division of the same parcel of land.

²⁰ See EPD, CWS permit file 147009.

²¹ See Coastal Water & Sewer Co., LLC., South Atlantic Utilities, Inc., or Sunbelt Utilities, Inc.

²² In Coastal Georgia significant concentrations of private sector CWS ownership are: Bulloch; Chatham; Effingham; and Camden Counties. In south central Georgia significant activity occurs around Lowdens County. In south west Georgia significant private development of public systems around Dougherty and Thomas and Brooks.

operators of small CWS. The limited size and scale of these systems often means that it is cost prohibitive to expand to accommodate incremental demands for water supply. Further, in the public arena where the decision about incurring the cost to extend a municipal system is made, future residents are not represented. Hence, the public sector's response to potential growth is inadequate. The private sector has exploited the opportunity to grow the water market created to some extent by the public sector's failure to meet growth needs. Where the pace of this growth is very high, there is sufficient density in the market for firms specializing in CWS to emerge.

The predominantly privately-owned CWS play an important role in Georgia's rural areas. They lower the cost of housing in areas where municipal services are not available. The lower cost is the result of the increased development densities which a CWS supports relative to development of individual water supplies through individual wells on a given parcel without a CWS. Moreover, the private sector portion of the market has responded more rapidly than the public sector to accommodate growth in communities surrounding center of growth in rural Georgia.

Finally, it is worth noting that CWS are most comparable to mining operations for oil or gas. The vast majority of CWS rely on groundwater.²³ CWS firms develop or own wells and pumping systems to extract groundwater, with on-site facilities for process, in ways that directly parallel oil and gas extraction operations.²⁴

²³ We find but one CWS in the EPD data base that appears to rely on surface water.

²⁴ In our discussions of retail water markets in Georgia, we note that it might be argued that the bulk of the price charged for water is payment for the cost of operations and overhead, not water, in which case it is not really water that is being marketed, but more or less the services of capital. This line of argument is belied by at least two examples related to fugitive property (discussed in detail below). In *Pierson v. Post* [3 Cal. R. 172, R. Am. Dec. 264 (Supreme Court of New York, 1805)] the fugitive property in question was a fox. At the time foxes had a market price, a bounty which was paid in order to encourage eradication, but the price paid for the fox by the bounty hunter was the cost of its capture. The fact that virtually all costs were associated with "capture" was not taken by the court as minimizing private property interest in the fox. Similarly, as noted above, the activities of

C. Issues related to property rights. At issue in this sub-section is the nature of property rights that privately-owned CSW have in the groundwater resources that are extracted by them and then sold to the public. Basic to this issue are laws related to what is referred to as “fugitive property.”

The common law recognizes a class of property called fugitive property. Fugitive property is no one’s property until possessed. Most common property resource are fugitive property. Examples of such resources are: *groundwater*, wild animals, natural gas, oil, and air. Two separate legal rules for assigning ownership rights to fugitive property have evolved. One property rule applied to fugitive property is the right of first possession. In western water law the right of first possession has become known as the doctrine of prior appropriations.²⁵ The second property rule used to regulate conflicting claims of ownership of fugitive property ties entitlement to exploit fugitive property to other “settled” property rights. The owners of certain types of private property have the right to use and prevent others from using the fugitive property “tied to” other settled private property. Owners of property to which the right to use fugitive property attaches only have to establish dominion over the property for it to become their private property. For example, the riparian water rights doctrine ties the right to use the water of a stream to ownership of the land through which the stream flows.

There are advantages and disadvantages to both rules. For example, it is argued that the

firms operating CWS resemble production processes in the mining of oil and gas. Like the case of the fox, the bulk of the price of natural gas or oil or water is the cost associated with drilling, capturing, processing and delivering the product. However, since ownership of natural gas, oil or water comes from ownership of land, some small part of the price for water is also payment for the real property attached to the fugitive settled property. All of this is to make clear that in the market for water, the consumer ultimately pays all costs: 1) the cost of the water; and, 2) the cost of its capture and delivery.

²⁵ See *Irwin v Phillips*, 5 Cal. 140, (Supreme Court of California, 1855), *qui prior est tempore, potior est in jure*.

rule of first possession or prior appropriation is a relatively inexpensive and easily observable means of determining ownership claims. However, even in very early fugitive property cases such as *Pierson v. Post* 3 Cal. R. 172, R. Am. Dec. 264 (Supreme Court of New York, 1805) where the fugitive property in question was a fox, the flaw in the rule of first possession is the center of the argument: when and who actually first established dominion over the fugitive object. The rule leaves a gap in ownership, because the fugitive object is no one's property until it is actually possessed. The economic consequence of the rule of first possession is over investment in the capture of fugitive objects in order to establish ownership and pre-empt ownership by others. The result is over harvesting and monopoly-like control over the resource aimed at acquiring potential speculative gains. This reallocates wealth, but does not create wealth, e.g. economic development.

The advantage of tying ownership of fugitive objects to ownership of easily observable settled property is that there is no gap in ownership. However, it is argued that this rule has the disadvantage that it is difficult and costly to administer because it can be difficult to establish that the fugitive object, by definition an object that moves, attaches to the settled property. This was the point at issue in *Hammonds v Central Kentucky Natural Gas Co.*, 255 Ky.685, 75 S.W.2d 204 (Circuit of Appeals of Kentucky, 1934) and *Stoner v. Patten*, 132, Ga 178 (1909). In *Stoner*, the Georgia Supreme Court held that non-malicious interference with underground waters is non-actionable unless the waters are part of a stream which "is well defined and its existence known or easily discernable," a nearly impossible burden placed on the person claiming that his or her underground water supply is being depleted.

Rights to groundwater are not always treated the same as surface water rights.²⁶ It is argued that Georgia applies a Modified Absolute Ownership²⁷ rule with respect to the property rights a surface owner may assert over groundwater.²⁸ As to surface waters, Georgia applies the doctrine of reasonable use to a riparian owner's right to use water in streams flowing through the owner's land. Prince v. Hugh Schools Manufacturing Co. 132 Ga. 248 (1909); Pyle v. Gilbert 245 Ga. 403 (1980); O.C.G.A. ' 44-8-1 and ' 51-9-7. For groundwater, Stoner v. Paton, discussed above, and subsequent cases applying Stoner, developed Georgia case law effectively allowing the application of a modified absolute ownership rule²⁹ "the owner of realty owns the property upwards and downwards indefinitely." Georgia did, however, depart from a pure modified absolute ownership doctrine in passage of the Ground-water Use Act of 1972, O.C.G.A. ' 12-5-90 et seq. Under the Act, persons withdrawing over 100,000 gallons of groundwater per day are subject to certain permitting requirements, sometimes referred to regulated reasonable use.³⁰ The right to exploit groundwater is ultimately attached to the ownership of the land which overlays the water. Resources like natural gas, oil and water are fugitive property resources which become private property through the diligence of an effort to possess. A sole proprietor or other business owning a CWS may, subject to meeting legal and regulatory requirements, maintain ownership rights under Georgia law, discussed above, so as to allow them to capture the fugitive water attached to the ownership of lands overlaying the fugitive object.

²⁶ Gould, George A. and Douglas L. Grant, *Cases and Materials on Water Law*, 6th Ed., West Group Publishing Company (St. Paul: 2000)

²⁷ *Ibid.*, page 326-327 for a description of Absolute Ownership.

²⁸ Bomar, Robert S. "Georgia Water Law and Existing and Potential Water Conflicts," *CLE International*.

²⁹ *Ibid.*, page 330-331 for a description of Absolute Ownership.

³⁰ Bomar, Robert S. "Georgia Water Law and Existing and Potential Water Conflicts," *CLE International, Water Law*, April 22-23, 2002.

IV. Concluding Remarks

The oft-heard question “*are Georgia’s waters a public resource or a commodity to be bought and sold?*” is misleading and out of touch with reality Georgia: water is and has been bought and sold as a commodity. Moreover, this reality has, in large part, benefitted many Georgians.

Water markets have generally developed in the past on a “piecemeal,” or case-by-case basis. Recent decreases in water supply due to drought, other factors, coupled with increasing water needs for growth and economic development and the concomitant value placed on water supply, supports the need to “codify,” so to speak, past water market principles. As the Legislature considers legislation to create up to date additional regulatory frameworks to expand water rights transfers, a more mature water market will be promoted.

This paper has presented case studies showing that there are currently wholesale and retail water markets in Georgia. In each case, the water market was created in response to needs supporting economic development and the reduction of consumer’s costs. These markets promote the interest of rural communities and work in concert with the object of planning and managing water resources.