

**Water Rights Transfers:
Options For Institutional Reform**

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Water Rights Transfers: Options For Institutional Reform Executive Summary

This paper is motivated by a critical question which the State of Georgia must address for basins like the Flint River Basin wherein it is unlikely that new water use permits will be issued in the future. Under such conditions, the question becomes:

Under conditions where “new” users cannot acquire access to water supplies, how does a region grow, take advantage of economic development opportunities, and avoid conditions leading to a stagnant economy?

In an effort to respond to this question, the authors of this study review the successes and failures of market-like institutions as they have been used in Western States. They identify the following seven issues associated with experiences in other states that have given rise to problems.

- Issue #1. Protect environmental and third-party interests at reasonable transactions costs;
- Issue #2. Create well-defined rights;
- Issue #3. Enforce provisions for forfeiture of rights due to non-use in order to reduce speculative water rights acquisitions;
- Issue #4. Conduct monitoring and enforcement at moderate costs;
- Issue #5. Provide for gains in efficiency by allowing partial as well as full permitted transfers;
- Issue #6. Protect local, rural economies from the effects of transfers; and.
- Issue #7. Protect against unwanted out-of-state exports of the state’s water resources.

The authors then suggest two alternative designs for a water permit transfer system that they feel are consistent with Georgia’s interests and values. Both designs avoid problems associated with the seven issues given above. Under the proposed institutions for water permit transfers:

- the environment and third party interests are protected; indeed, instream flows are *increased* as a result of any transfer;
- usufructuary rights become well defined, and provisions for the forfeiture of a permit for non-use are provided;
- transfers are monitored at reasonable costs;
- gains in water use efficiency are obtained, and local, rural economies are protected against any adverse effect of a transfer; and
- the state’s water resources are protected from out-of-state exports.

The author’s recommendations are not submitted as the *only* way to respond to the scarcity question given above; nor do they argue that their suggested approach is necessarily the best. They *do* argue, however, that for continued economic growth and environmental protection, a change in the current system is needed, and they invite discussions of alternative approaches that may be offered by others.

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Water Rights Transfers: Options For Institutional Reform

Section I. Introduction

Under conditions where “new” users cannot acquire access to water supplies, how does a region grow, take advantage of economic development opportunities, and avoid conditions leading to a stagnant economy? This question is of paramount interest to residents in the Flint River Basin where a moratorium has been placed on new water use permits -- a moratorium that many suspect will become a permanent restriction.

There are two commonly used approaches for a region to “stretch” fixed water supplies in order to accommodate new uses, both of which may involve the transfer of water rights or water use permits: (1) increase efficiency by current water users, and then make water supplies accordingly saved available for new uses; and (2) allow transfers of the right-to-use water between current and new users. The first presumes that water users have *incentives* to increase the efficiency of water use. However, unless others (the state, for example) pay for the efficiency improvements, such incentives arise only when the permit holder can realize gains that offset investment costs required to achieve greater water use efficiency. Relevant gains could derive from cost savings associated with pumping and distributing water, and/or the user’s ability to lease or sell conserved water (potential gains from the latter action are related directly to the second approach discussed below).

The second approach for “stretching” fixed water supplies involves allowing water permits to move from current to higher valued uses. Such permit transfers will likely involve changes in the point of water diversion and/or in type of use relative to those associated with the original permit.

Both of the above approaches to “stretching” water supplies involve transfers of permits or rights-to-use water. However, under present Georgia laws and regulations, the extent to which transfers of the right-to-use water are possible is unclear. This is because language used in relevant regulatory provisions, reflecting language used in existing legislation, is ambiguous.

There are no clear statements in Georgia legislation or regulations that indicate the state's specific intent to allow water rights transfers (other than those tied to changes in land ownership) as a part of general water management policies, or in areas of water shortage. It is time, we argue, for the state to consider new and innovative "Georgia" policies that allow transfers in water-short regions, which will then enhance efforts to respond to challenges and opportunities of the future.

The purpose of this paper is to identify changes in water policy that might better serve the interests -- current and future -- of stakeholders in the Flint River Basin as well as throughout the state. To this end, we have organized the remainder of the paper as follows:

- Section II - We examine how water transfers typically operate in *other* states; and what lessons can be learned from their successes and failures?
- Section III - Water law and management in Georgia is discussed. The nature of water rights in Georgia is described, and provisions in Georgia's water laws for the transfer of water permits are examined.
- Section IV - Attention is returned to the basic purpose of this study: What are the options for reforming Georgia's system of water management that allow for transfers of water use permits, take advantage of lessons learned in other states, and reflect Georgia's values and traditions?
- Section V - Concluding remarks.

The purpose of the paper is as described above. We wish to make equally clear what is *not* an intended purpose of the paper. It is not intended as a state water plan. However, it can serve as a component of a Basin water plan for the Flint River Basin. In this regard, we strongly support Kundell *et al.*'s lesson #4 which recognizes the need for state water planning to occur at both state and sub-state levels.¹ We believe that those who must live with policies derived from water plans should have input into their designs. This also reflects our admitted bias in terms of the determination of roles and responsibilities for those involved in the water planning process.² In these regards, we invite the reader to examine Trelease's discussion of the relationship

¹ James E. Kundell, Terry A. DeMeo, and Margaret Myszewski, "Developing A Comprehensive State Water Management Plan," mimeo, 55 pp., Research Atlanta, Andrew Young School of Policy Studies, Georgia State University (Atlanta: no date), at p. 8.

² *Ibid* at p. 9.

between a state's water plan, its "wise administrator," and the "... Bureaucrat."³ Our view is that the EPD has played and continues to play very well the role of the "wise administrator."

³ Frank J. Trelease "The Model Water Code, The Wise Administrator, and the Goddam Bureaucrat," *14 Natural Resources J.* 207 (1974).

Section II. Water Rights and Transfers In Other States: Lessons That Can Be Learned⁴

II-A. The Nature Of Water Rights

II-A-1. Surface Water: One important difference between water management in Eastern states and most Western states is the way in which water rights are defined. Rights to water use in Western states are established under the prior appropriation doctrine. In Eastern states (and some Western states that use both doctrines) water rights are governed by the common law, riparian doctrine.

Under the prior appropriation doctrine, a water right is established by the simple act of putting water to beneficial use. Along any watercourse to which this doctrine applies, the first person to put water to beneficial use has a right to the water so used that *is superior* to the right established by a second person putting water to beneficial use. The second person's right is superior to that of any third person who puts water to beneficial use, and so on. The common description of this system is "first in use, first in right." The practical meaning of "first in use, first in right" is that in times of shortage, the uses of the most senior user must be satisfied regardless of upstream or downstream location, before uses by a junior rights holder can take place.

In the prior appropriation system, a water right is a *property right*. The owner of the water right "owns" the water. The amount of water "owned" by an appropriator has two dimensions: water diverted and water consumed. The appropriator's right to water *diverted* from streams is established by putting the water to beneficial use: beneficial use is "...the basis, the measure, and the limit of the right."⁵ However, state courts have generally decided that the quantity of water associated with a right acquired through beneficial use *that can be transferred*

⁴ The authors recognize the limited nature of this review of experiences in other states. Clearly, this review falls well short of the *comprehensive* study of laws and practices in the 50 states, the need for which is suggested in Stephen E. Draper, "Effective Georgia Water Policy for the 21st Century," *Proceedings of the World Water and Environmental Resources Congress, Environmental and Water Resources Institute, American Society of Civil Engineers, Orlando, FL, May 21-24, 2001*, at p. 4. We concur with many of Dr. Draper's suggestions for water planning processes, and particularly with the emphasis that he gives to the critical need for such a comprehensive review. The authors plan to extend the review presented here in efforts to more closely satisfy that need.

⁵ See language in Reclamation Act of 1902, 43 USCS §§372.

to a new owner is defined by *consumptive use*, **not** the quantity diverted.⁶ The result has been extensive and costly litigation wherein individuals must go to the courts to have their consumptive water use quantified (“adjudicated”).

Under the riparian doctrine, for waters running through or abutting lands of any landowner, the landowner has a right to “reasonable use” of that water. In most states, including Georgia, irrigation has been held to be a “reasonable use.” However, the amount of water put to uses that are “reasonable” remains an open question. Unlike an appropriative right, a riparian right is not a property right, it is a “usufructuary” right.⁷ A usufructuary right gives a riparian landowner the right to (“reasonable”) *use* of the water. The landowner does not “own” the water; he/she “owns” only the right to use it.⁸

Involuntary forfeiture of unused water rights or permits is an issue of importance to private investors and to water managers/regulators. In most Western states if the holder of an *appropriative* right fails to use that right within a certain amount of time (usually 3 to 5 years) the right is forfeited to the state. In these cases, the rationale for forfeiture is straightforward: since an appropriative right is obtained and rationalized by the act of putting water to “beneficial use,” this rationale for the right disappears with non-use.⁹ Thus, with non-use the right is forfeited, and such forfeiture occurs without compensation.

The forfeiture-for-non-use issue, along with the question as to whether such forfeiture requires compensation, is not so straightforward in those Western States that have both appropriative and riparian rights, or in Eastern States that rely exclusively on the riparian

⁶ See, as examples, *Farmers Highland Canal & Reservoir Co. v. City of Golden*, 975 P.2d 189 (Colorado, 1999), *CF&I Steel Corp. v. Rooks*, 495 P.2d 1134 (Colorado, 1972), and Gould, George A., “Water Rights Transfers and Third Party Effects,” 23 *Land & Water Law Rev.* 1, 20-21 (1988).

⁷ An exception is seen in a 1980 case in Georgia, *Pyle v. Gilbert*, 265 S.E.2d 584 (1980). Referring to a non-navigable stream, the Georgia Supreme Court held that a riparian right is a property right, and that it can be “ceded by grant” (i.e., sold) to others, even to non-riparians. We emphasize the apparent limit of this ruling to non-navigable streams. Referring to the Notes section in Georgia Code 44-8-1, reliance on *Hendrix v. Roberts Marble Co.*, 175 Ga. 389 (1932) seems to suggest that along *navigable* streams a riparian owner *cannot* convey to another the right to use water flowing along or through his property.

⁸ See, e.g., Gould, George A. and Douglas L. Grant, *Cases and Materials on Water Law*, 6th Ed., West Group Publishing Company (St. Paul: 2000).

⁹ The inextricable tie between appropriative rights and beneficial use has a long history. For example, the Reclamation Act of 1902 states: “The right to the use of water acquired under the provisions of this Act shall be appurtenant to the land irrigated, and beneficial use shall be *the basis, the measure, and the limit of the right.*” (emphasis added), *Supra* Note 5.

doctrine for surface water. A thorough exploration of the forfeiture issue, its relationship to the Public Trust Doctrine, and implications for policy reform in Georgia would go beyond the intended purposes of this paper.¹⁰

II-A-2. Ground Water: Ground water rights are typically not treated the same as surface water. States have generally adopted different doctrines related to the nature of and limits to individual rights to ground water supplies. At one extreme is the “absolute ownership doctrine,” used in (e.g.) Maine and Texas.¹¹ In Texas, landowners have exercised unrestricted use to ground waters underlying his/her land (although a 1997 Senate Bill gave more authority to ground water districts to regulate use). Twelve Western States apply the appropriation doctrine to ground water.¹² Most other states use one form or another of the “reasonable use” doctrine, or the “correlative rights” doctrine which provides that ground water be apportioned equitably among owners in times of shortage.¹³

Eastern States have generally not adopted a particular doctrine of rights in ground water use. A notable exception is in Wisconsin, where ground water flowing in well-defined channels is regulated under the riparian doctrine while other ground water is subject to “reasonable use” criteria.¹⁴ In most other Eastern States, “rights” to ground water use are those set out by the states’ laws (if any) requiring permits for ground water use.

One of the major problems of ground water management encountered in many (mostly Western) states involves controlled depletion of storage. Policies differ across states. New Mexico, for example, allows new water permits to the point where the amount of water that can be withdrawn from a township of overlying land will leave one-third of the water in storage at the end of 40 years.¹⁵ Nebraska’s Upper Republican Natural Resources District maintains

¹⁰ We expect to present results from explorations of these issues in follow-up White Papers which we hope to complete by early fall, 2001.

¹¹ Gould and Grant *Supra* Note 8 cite four reasons why ground water receives separate legal treatment: it is hidden from sight; available water derives from both annual recharge and accumulated storage; use requires the drilling of wells; and it flows much more slowly than surface water (see pp. 325-326).

¹² Alaska, Idaho, Kansas, Montana, Nevada, New Mexico, North Dakota, Oregon, South Dakota, Utah, Washington, and Wyoming, *Ibid*

¹³ See the 1979 revised (Official Draft §858) Restatement (Second) of Torts § 858A (Tent. Draft No. 17, 1971); and Richard Ausness, “Water Rights Legislation in the East: A Program for Reform,” 24 *Wm and Mary L. Rev.* 547.

¹⁴ See, e.g., *State v. Michels Pipeline Construction, Inc.*, 63 Wis. 2d 278 (1974).

¹⁵ See *Mathers v. Texaco, Inc.*, 421 P.2d 771 (N.M. 1966).

stringent controls on ground water use, limiting each farmer's use of ground water through a "quota" that is based on, among other considerations, changes in ground water levels.¹⁶ In some Oregon ground water areas, ground water use is limited to "sustainable yield," while Nevada uses a related limitation: "safe yield."¹⁷

Regardless of a state's doctrine for defining rights to ground or surface water, the complexities noted above pale in significance relative to cases involving physically connected ground and surface water. For discussion of these issues, the reader is referred to scholarly debate found in various law reviews.¹⁸

II-A-3. Summary - The Nature of Water Rights: Major strengths of appropriative rights to surface water used in many Western States are that rights are well-defined (although adjudication for the purpose of quantifying consumptive use can be costly), and waste is (at least theoretically) mitigated by provisions for the forfeiture of rights for non-use. Western Doctrines concerning rights to ground water suffer a number of shortcomings. Neither the absolute ownership doctrine nor the reasonable use doctrine requires the equitable sharing of water during times of shortage. Inherent to the absolute ownership doctrine are incentives for inefficient water use (a "race to the bottom"). While the correlative rights doctrine appears to be more equitable (ground water is equally shared in times of shortage), its implementation requires information concerning ground water storage that is seldom available -- and the accuracy of such information (when available) is generally problematic.

There is little that can be said about rights to ground water in Eastern States because case law that might delineate such rights is limited. If ground water use is restricted in an Eastern State, such restrictions typically derive from state laws related to the permitting of ground water

¹⁶ "Rules and Regulations of the Upper Republican Natural Resources District," Upper Republican Natural Resources District, Order No. 23 (12 pp.), Imperial, NE, September 1, 2000.

¹⁷ The complexities of these and other tools for limiting ground water use are discussed in Gould and Grant, *Supra* Note 8 at Chapter 4, §2; also, see Ausness, *Supra* Note 13.

¹⁸ As examples, Robert J. Glennon and Thomas Maddock, "In Search of Subflow: Arizona's Futile Effort to Separate Groundwater from Surface Water," 36 *Ariz. L. Rev.* 567 (1994), Jeffrie Minier, Casenote, "Conjunctive Management of Stream-Aquifer Water Rights: the *Hubbard* Decision," 38 *Nat. Res. J.* 651 (1998), and David L. Harrison and Gustav Sandstrom, Jr., "The Groundwater-Surface Water Conflict and Recent Colorado Water Legislation," 43 *U. Colo. L. Rev.* 1, 18 (1971).

use. Riparian rights for water use are not well-defined, and in all but a handful of states, are not subject to forfeiture for non-use. Problems associated with riparian rights are described by Ausness as follows:¹⁹

“Unfortunately, riparian rights are vague and uncertain...one cannot be certain who may use the available water or how much and for what purpose it may be used. This uncertainty exists because water use must be reasonable relative to uses of other riparian owners, and these other uses constantly change. Additionally, place-of-use restrictions on both ground water and surface water excessively inhibit water use by nonriparian landowners...it fails to recognize the relationship between surface water and ground water.(and there is) the absence of an efficient mechanism for resolving disputes among competing water users.”²⁰

II-B. Water Rights Transfers

Referring to questions that parallel those motivating this study, Trelease writes:

“How many users will get permits entitling them to share in the water available for private use? If there is not enough water for all holders of permits, which users will get the water? When new needs arise, how can the water be switched from old uses to the new? This is the stuff of the law of private water rights. The answers to these questions are found today in rules of law, rules that establish rights which can be enforced in court. If A has a water right, and B, without right takes A’s water, A can enjoin B and thus receive the water...If B has the greater need and A the water right, in one way or another B can purchase A’s right or at least buy his forbearance to enforce it...both laws (riparian and prior appropriation) create types of water rights.”²¹

II-B-1 Surface Water: There are two general processes in the U.S. for the transfer of surface water rights. Contrasts between the two processes reflect differences in the nature of water rights among the states. In Western States, transfers of surface water rights are essentially transfers of property rights, and the process for such transfers is much like the process for transferring any other property right: *a market*.

In Eastern States with usufructuary rights, transfers of a riparians right to a non-riparian are typically prohibited by the common law Riparian Doctrine.²² In states requiring permits for surface water use, however, the transfer of a permit may be allowed, but generally such transfers

¹⁹ See, also, Trelease, *Supra* Note 3.

²⁰ *Supra* Note 3, at page 4.

²¹ Trelease, *Supra* Note 3 at p. 211

²² An exception is seen in the Georgia case, *Pyle v. Gilbert*, *Supra* Note 7.

are limited by place-of-use restrictions (i.e., the water permit is tied to the land; when title to the land is transferred, the new land owner acquires the existing permit). This is the case in Georgia, Mississippi, Florida, and Ohio.

Regarding western water markets, it is *typically* the case that the sale of a water right requires the approval of the state's engineer or of some other state water authority. When federal water projects are involved, there is an additional party to the transaction: usually the Bureau of Reclamation.²³ Generally, the proposed sale is advertised in local newspapers, and a hearing is held (chaired by the state's agent) at which individuals may present arguments for or against the proposed sale. The role of the state's agent is to protect the public interest (economic, environmental, social, etc.) That may be affected by a proposed sale, particularly when changes in use and/or point of diversion are involved.

II-B-2. Ground Water: Transfers of ground water are less prevalent in Western states, but do take place in many states. At least until recently, ground water was freely marketed in Texas.²⁴ In Nebraska's Upper Republican Natural Resources District (URNRD), farmers have a quota for ground water withdrawals. Farmers in the URNRD are free to use less than their quota, and to "bank" the amount not used. A banking rule recently adopted in the District makes it possible for farmers to sell some or all of their accumulated allocations. *However*, there are two important conditions that must be met for such a sale to take place. First, the Board of Directors of the District must approve the sale. In making their decision, the Board considers precedent and potential adverse environmental or third party effects of the transfer/sale. Second, an "offset" which is basically a transfer tax may be imposed on the sale: for example, if the seller is offering 1,000 acre-feet, the buyer receives only 90% of the 1,000 acre-feet. The remaining 10% is attained by the URNRD and "retired," thereby increasing the public's stock of water for conservation purposes, or to be made available to other users as deemed appropriate by the Board.²⁵

²³ Ellis, W. and C. DuMars, "The Two-Tiered Market in Western Water," 57 *Nebraska Law Review* 333 (1978).

²⁴ See, e.g., *City of Altus v. Carr*, 255 F.Supp. 828 (WD Tex. 1966).

²⁵ Upper Republican Natural Resources District, *Supra* Note 16.

Issues encountered by Western states with the transfer/marketing of ground water parallel those for surface water. In terms of the transfer of ground water rights in Eastern States, such transfers are allowed in a few states; however, as with the case of surface water transfers, they are typically limited in terms of changes in point of diversion and/or use.

II-C. Lessons Learned From Experience In Other States.

Water transfers *via* market mechanisms are viewed by many as essential components of successful water management in the Western states. These states, however, have encountered some difficult issues associated with transfers of surface water rights, seven of which warrant particular mention.

Issue #1. Although most transfers require prior approval, including public notice and right to be heard, some transfers have had significant environmental and third party effects. Unanticipated effects may be realized only after the transfer has taken place (for example, wind erosion on tracts in arid areas that are no longer irrigated because of the purchase of water rights by municipal or industrial users). Thus, even conscientious efforts on the part of the state to protect the environment may fail. Moreover, the approval process can become lengthy, and decisions by the state administrator can be challenged in the courts. In such cases, large “transactions costs” can be an impediment to an effective transfer system.²⁶

Issue #2. A well-functioning transfer or market system requires that property rights be clearly defined. This is generally not the case with water rights in most states. As we noted earlier, state courts in the west have generally decided that the quantity of water associated with a right acquired through beneficial use that can be transferred (to an different use and/or a different point of diversion) is defined by *consumptive use*, not the quantity diverted. In the east, “reasonable use,” the common criterion for establishing usufructuary rights, is typically not well defined.

²⁶ For example, see discussions in Robert A. Young, “Why are there so few transactions among water users?” 68 Am. J. Agricultural Econ. 1143 (1986), Victor Brajer, Al Church, Ronald Cummings, and Phillip Farah, “The Strengths and Weaknesses of Water Markets as they affect Water Scarcity and Sovereignty Interests in the West,” 29 Nat. Res. J. 489 (1989), and Trelease *Supra* Note 3.

Issue #3. While, as noted above, many states (all prior appropriation states) have specific provisions for the forfeiture of a water right that is not put to use for a specified period of time, few states have enforced these provisions in any consistent way. This lack of enforcement is, to some extent, attributable to the relatively high costs associated with systematic tracking of non-use. The result is waste in the sense that, in fully-appropriated streams, water that could be put to socially beneficial uses is left idle by the non-diligent water rights holder. A second result is that failure to enforce forfeiture for non-use can encourage acquisition of water rights strictly for speculative purposes, which can have detrimental effects on local economies, and create artificially high prices for water rights.²⁷

Issue #4. A fourth issue associated with the transfer or marketing of surface water rights concerns enforcement to assure that the seller of a right does not continue to use water. Suppose, for example, that a farmer historically applied 36 inches of water per acre on his/her crops. He/she now asserts that only 24 inches are being applied, and the 12-inch excess is sold to another person. In the absence of a metering device, the problem of determining whether a farmer is using 24, 36, or any other number of inches on an acre is obvious. It is essentially impossible to determine this from air photography (a method used in some states). Enforcement can be accomplished by the use of meters, *provided* that the meters are appropriately sealed and monitored by an enforcement agency. Most states, however, have adopted less than “ideal” approaches (and suffer the consequent inefficiencies). That is, they use an “all or nothing” approach, requiring that when an agricultural water right is sold, *all* water use allowed by the right must be sold and the land served by that right must be taken completely out of irrigation. In this way compliance can be monitored *via* air photography.

Issue #5. Potential efficiencies to be gained are less if only all-or-nothing transfers are allowed than would be the case if partial transfers were allowed. After a certain amount of applied irrigation water, additional inches add less and less to the total yield. Ideally, from the

²⁷ See Landry, Clay J., *Saving Our Streams Through Water Markets*, Political Economy Research Center (Bozeman MT: 1998), at p. 14.

standpoint of efficiency, farmers would be allowed to reduce the amount of water applied to each acre of irrigated crop -- making more efficient use of water -- and then *a la* approach (1) described above in Section I, to sell the quantity “saved”. If a farmer could transfer a portion of the water use allowed under a right and retain the remainder, overall efficiency of water use would be enhanced. It is important, however, under a system of partial transfers, to consider the end effect on consumptive use.

Issue #6. Unfortunately, the common approach to enforcement -- taking lands out of production -- gives rise to a sixth issue. All-or-nothing transfers have led to what is referred to as “water farming”: the purchase of agricultural lands solely to acquire the water right for speculative purposes and/or to move the right elsewhere. But local economies and the tax base of rural counties rely on agricultural activities, and both can suffer if water rights are transferred from a rural area to some distant location.²⁸ The potential effects of water transfers on rural economies that are based primarily on agriculture are important. As an example, following Arizona’s stringent restrictions on ground water use in 1980, cities like Tucson were forced to look to rural areas to acquire additional water supplies. In some cases, lands in rural areas abutting canals of the Central Arizona Project were purchased by the city strictly for the purpose of securing their water rights. The CAP canals were then used to transport the water to the city system. Since, under Arizona law, political entities (the City of Tucson) cannot be taxed by other political entities (counties in which purchased farm land is located), such purchases were viewed as seriously eroding the tax base of rural counties.²⁹

Issue #7. The seventh issue that can attend the transfer or marketing of surface water rights concerns the extent to which such transfers might leave the state’s resources unprotected *vis-a-vis* other states. This issue is succinctly stated by Draper in the following way:

²⁸ See Alberta H. Charney and Gary C. Woodard, “Socioeconomic Impacts of Water Farming on Rural Areas of Origin in Arizona,” 72 *Amer. J. Agricultural Economics* 1193 (1990); and Brajer, *et al.*, *Supra* Note 26.

²⁹ See Mumme, S. and H. Ingram, “Community Values in Southwest Water Management,” 5 *Policy Studies Review* 377, and Charney and Woodard, *Supra* Note 28.

“(sales of water rights to the highest bidders)...could mean purchasers in other states or other countries could derive the benefit from a state’s water resources. Without a specific public right to water, such private sales may cause significant harm to individuals and businesses within the state.”³⁰

All else equal, one might be inclined to rely on the state, *via* its role as a third party to any water transfer, to disallow out-of-state transfers as injurious to the welfare of its citizens; thereby dealing with the threat identified by Draper.³¹ Unfortunately, all else is *not* equal. In *Sporhase v. Nebraska*³², the U.S. Supreme Court held that water is an “article in commerce” which is protected by the commerce clause of the U.S. Constitution. The effect being that a state cannot impede by state law or regulations the movement of this “commodity” across state boundaries. Thus, the Court’s ruling in *Sporhase* opens any state’s ground water stocks to use by other states, absent state laws that are narrowly defined to protect health, safety, and general welfare.³³ While *Sporhase* involved ground water, the commerce clause challenge can apply with equal weight to surface water unless a state’s surface water supplies have been specifically allocated to the state through a Congressional apportionment, an interstate compact, or an equitable apportionment by the U.S. Supreme Court. For a discussion of these issues within the context of a state’s inability to limit out-of-state acquisition of water within the state’s boundaries, the reader is referred to a case in which a U.S. District Court struck down provisions in a state’s laws prohibiting the export of ground water.³⁴

³⁰ Draper, Stephen E., “Who Owns Georgia’s Water?”, *Albany Herald*, January 22, 2001.

³¹ This issue can also be seen as an interesting dimension relevant to Kundell and Tetens’ question concerning Georgia’s waters: “Whose Water Is It?” See Kundell, James E. and Diana Tetens, “Whose Water Is It? Major Water Allocation Issues Facing Georgia,” mimeo (57 pp.), Carl Vinson Institute of Government, University of Georgia (Athens: 1998).

³² *Sporhase, et al. v. Nebraska*, 458 U.S. 941 (1982).

³³ “In order to withstand (commerce clause) attack the discriminatory provision (in state law) must be necessary to effectuate a compelling state interest...the Court will insist on a very close means-end fit, a vital state interest, and the absence of less commerce burdensome alternatives.” Abrams, Robert H., “Moving Water: Theory and Law,” Annual Meeting of the American Bar Association, Section of Natural Resources, Energy, and Environmental Law, Vol. 1 (14 pp.), Ashville, North Carolina, September 30, 1993.

³⁴ *City of El Paso v. Reynolds*, 563 F. Supp. 379 (D.N.M., 1983).

The seven issues identified above are, for convenience, summarized in Table 1.

Table 1. Seven Issues Encountered in States When Transfers or Marketing of Water Rights are Allowed A Summary
How To:
#1: Protect environmental and third-party interests at reasonable transactions costs.
#2: Create well-defined water rights
#3: Enforce provisions for non-use forfeiture to reduce potential for speculation
#4: Conduct monitoring and enforcement at moderate costs
#5: Provide for gain in efficiency by allowing partial transfers
#6: Protect local and rural economies
#7: Protect against unwanted out-of-state exports of state's water

While the issues that Western states have encountered with water transfers and marketing are often discussed, the successes of the water transfers/sales are also evident. Well-defined water rights and the ability to market those rights (with conditions) jointly create value for farmers or other water rights owners; offer considerable flexibility among users and in times of shortages; expand economic growth opportunities; and reduce the need for regulatory interventions. The existence of water markets has also facilitated efforts by the federal government, state governments, and private entities to institute programs designed to enhance in-stream flows for the purpose of improving environmental conditions.³⁵ These *positive* aspects can provide needed stability and reduce uncertainties about water use and economic investments over time.

Georgia's Flint River Basin is now and is likely to continue to live under a moratorium on water permits. As a result, we suggest that policy makers may wish to reform Georgia's water management policies to the end of providing flexibility for a region to change patterns of water use and take advantage of future opportunities for economic expansion. Consideration should be given to a system whereby water use permits can be transferred among users, and changes in type of use and point of diversion are allowed. In the light of issues that have been encountered in other states discussed above, any consideration of such reform in Georgia's

³⁵ See Landry, *Supra* Note 27.

policies must focus on the critically important question:

Can a system allowing water transfers be designed in such a way that the issues experienced in other states and summarized in Table 1, are avoided or ameliorated?

Before turning our attention to a response to this question, a few brief comments are made in the next Section concerning existing conditions in Georgia.

Section III. Water Resources And Water Management In Georgia: An Overview

As in most Eastern states, Georgia's water law related to surface waters is based on the common law riparian doctrine. Under the riparian doctrine, for waters running through or abutting lands of any landowner, the landowner has a right to the "reasonable use" of that water.³⁶ The Georgia Supreme Court has recognized irrigation as a "reasonable use."³⁷ As in all Eastern, riparian States, however, the *quantity* of water that constitutes "reasonable use" remains an open question.

Two decades ago, the Georgia legislature adopted laws requiring water use permits to be issued by the Environmental Protection Division of the Georgia Department of Natural Resources (EPD) for uses greater than 100,000 gallons per day.³⁸ The state's requirement of a permit for water use does not necessarily eliminate or replace a landowner's common law riparian right. Rather, as a legitimate exercise of a state's police power provided in the U.S. Constitution, the permit requirement places limits on those rights, in ways very similar to the limits placed on the use of real property by, for example, zoning requirements.³⁹

Georgia imposes non-use conditions on water use permits, other than those issued for agricultural use (O.C.G.A. 12-5-31 (k)(4)). A non-agricultural water use permit can be revoked in whole or in part with non-use of the allowable amount (or a significant portion thereof) for two years. Exceptions are allowed for non-use caused by factors beyond the permit holder's control. The present exclusion of agricultural permits from use requirements is an issue that warrants attention. It is our view that, in general, forfeiture for non-use is a desirable feature of an efficient water rights system. While one may argue that forfeiture for non-use should have been a part of Georgia's permit system when it was first introduced, the fact is that it was not.

³⁶ See, e.g., Gould and Grant, *Supra* Note 8.

³⁷ Pyle v. Gilbert, *Supra* Note 7.

³⁸ Georgia Code 12-5-31(a)(1)(A)..

³⁹ For extended discussion, see Ausness *Supra* Note 13

Therefore, if at any point, the State wishes to impose forfeiture-for-non-use as a condition on *existing* permits, it will be necessary to carefully examine conditions related to notification and reasonable time to exercise an existing right.

Returning now to the central theme of this section, the fact that water rights in Georgia are usufructuary, as opposed to property rights *per se*, does not in itself mean that such rights could not be exchanged. If the EPD-issued water use permit can be exchanged, the effect is an exchange of water rights. Indeed, current Georgia law allows for exchange in ownership of water use permits, but there is considerable ambiguity as to the limits placed on such exchanges. Georgia Code 12-5-31(a)(3) provides that “Permits issued under this paragraph...may be transferred or assigned to subsequent owners of the lands which are the subject of such permit; provided, however, that the division (EPD) shall receive written notice of any such transfer or assignment.” All else equal, this provision would appear to limit the transfer of permits to the transfer of land ownership. Seemingly -- although not tested in the courts -- transfers that would result in a change in the point of diversion (the water is withdrawn or diverted at some other location apart from the land) and/or a change in use (municipal/industrial, e.g., rather than agriculture) would be prohibited.

However, Georgia Code 12-5-31(a)(3) *also* provides that “Any modification *in the use* or capacity conditions contained in the permit, *or in the lands which are the subject of such permit* shall require the permittee to submit an application for review and approval by the director consistent with this Code section.” (Emphasis added) One can read these latter provisions as providing for changes in point of diversion and/or use so long as the director of the EPD approves such changes. To our knowledge, this latter interpretation has not been argued in any formal forum (or before the courts).

There is one aspect of water rights in Georgia that is particularly important when considering permit transfer reforms in Georgia water management laws and institutions. We noted above that a critical prerequisite for a well-functioning market is that *property rights must be well-defined*. At issue here is the following question: For any holder of an EPD-issued water

use permit (particularly for agricultural use), what is *the limit* on the quantity of water to which the permit holder is entitled? Georgia Code 12-5-31(a)(3) provides that surface water permits (for agricultural uses) based on use prior to July 1, 1988 “...shall be granted for diversion equal to the greater of the operating capacity in place for withdrawal or diversion on July 1, 1988, or, when measured in gallons per day on a monthly average for a calendar year, the greatest withdrawal or diversion capacity during the five-year period immediately preceding July 1, 1988.” Applications submitted after July 1, 1991, or regardless of when submitted if based upon withdrawals or diversion after July 1, 1988, the permit “...shall be issued to ensure the applicant’s right to *a reasonable use* of such surface waters (emphasis added).” Identical provisions concerning permits for ground water use are found in Georgia Code 12-5-105.

What do these provisions really mean in terms of the quantification of water rights represented by the agricultural water use permit? “Pumping capacity” is typically defined in terms of gallons-per-minute (g.p.m.). If a water use permit is transferred to a different user, is the new user entitled to an amount of water up to the limit of the original owner’s pumping capacity (g.p.m. times 525,600, the number of minutes in a year)? One would think not. The fact that a water use permit also requires a description of the uses to which the water is to be put, and in the case of agriculture, the number of acres to be irrigated, one would think that a judicial interpretation of this limit (consistent with the common law, riparian doctrine) would be reasonable *use required for the stipulated number of acres to be irrigated*. Thus, regardless of when a permit was granted, “reasonable use” is the likely (but still uncertain and clearly arguable) limit to water use under the permit.

Even if one accepts that, in general, “reasonable use” is the substance and limit of a usufructuary water right in Georgia, the remaining issue is: what constitutes “reasonable use?” How does the “reasonable use” criterion translate into a maximum amount of water use allowed under the permit? And, how does “reasonable use” become a “well defined water right?” This is a critically important measure in instances where an agricultural water permit is to be transferred to uses other than agriculture, or where a partial amount is transferred to another irrigator.

Notwithstanding the ambiguity surrounding the substance of water rights represented by a water use permit, a moment's reflection is sufficient for one to recognize that a functioning market for water rights *already exists* in Georgia -- certainly not a Western-style market, but a market in any case. Like most other Eastern States, water use permits are tied to the land. When land is sold, the permit is automatically (with notification to the EPD) transferred to the new land owner. Given the EPD imposed moratorium on new permits and the resulting "scarcity" of permits, the value of farm land in the Flint River Basin has become tied even more directly to whether or not the owner has a water use permit. *The value of the permit is capitalized into the selling price of the land.* Land with a water use permit is more valuable than land without a permit -- and the difference in value will likely grow in the future. Thus, the "market" for water in Georgia is inextricably tied to the market for land.

We now turn our attention to a discussion of possible options for water management reform in the State of Georgia.

Section IV. Options For Reforming Georgia's Water Management Institutions

The options for water management reforms to be discussed below involve conditions under which usufructuary water rights can be transferred. The suggested institution can certainly be thought of as embracing a form of a water market. Some people are uncomfortable with the basic idea of water markets and the placement of value on water. For example, in a recent article appearing in the *Lincoln* (Nebraska) *Journal Star*, a number of questions concerning water markets are posed. Examples include: "If the wealthy can buy up scarce water, what about the poor?"⁴⁰ Further, "How do we decide who wins and who loses - - is this just a market issue?"⁴¹ This issue is presented by Trelease in the following way:

"Prior appropriation (and associated water markets) is (are) regarded with suspicion, even with what might be called prejudice, by many in the eastern states. It has its faults, under it mistakes have been made,...Repeatedly, the authors of the Model Code (for eastern states) state that prior appropriation 'in its pure form,' is not for the eastern states. So be it. **Let the problems be approached as original propositions.**"⁴² (emphasis added)

We do not minimize concerns about marketing of water. Indeed, in our earlier review of issues in other states (summarized in Table 1) we pointed to the potentially adverse effects on local (often poor) rural economies that can attend the transfer of water rights. Also, we have noted the potential for adverse effects from speculation in water rights acquisitions. Detrimental economic and environmental effects can occur, *unless* state policy makers anticipate potential effects and design water management policies that avoid such problems.

Our recognition of the adverse experiences in other states and concerns expressed by others about potential adverse effects of water transfers are reflected in the options for water management reform that we suggest be considered by policy makers in Georgia. We give particular emphasis to policy designs that protect rural communities and that *improve*, as opposed to degrade or even maintain, the existing ecological environment of the Flint River

⁴⁰ Mort Rosenblum, "As Eyes Turn to the Power Crunch, a Worse Crisis Looms," *Lincoln Journal Star*, May 12, 2001.

⁴¹Ibid.

⁴² Trelease, *Supra* Note 3 at p. 213.

Basin.

We then ask the reader to resist any temptation to reject *consideration* of these options out of hand simply because they see provisions that appear to be market-like. Borrowing from Trelease, we invite the reader to join us in letting “...the problems be approached as original propositions.” Readers may find aspects of our policy suggestions objectionable. But this is precisely the dialog that we hope to provoke: a discussion of means by which Georgia’s water management institutions can be improved to meet the challenges of the future. We trust that options presented in this Section, along with suggestions and recommendations of other writers,⁴³ serve as a point of departure for such a dialog.

Although our suggestions in this paper are generally applicable to all of Georgia, the hypothetical illustration we use here is oriented to the Lower Flint River Basin; and because agriculture accounts for most of the water use in this area, we include agriculture in this illustration. Assume for illustrative purposes that in the Flint River Basin we have an applicant for a new water permit. Assume further that granting the permit would create new jobs and economic opportunities in the Basin. Let’s say that it would generate \$10 million in annual value, compared to \$2 million for the old use. Consider two possibilities: one in which either partial or full permitted use can be transferred, and the other in which only full permitted use can be transferred.

- **Partial or full transfers allowed:** Assume that the new permit is granted, but with the conditions that: (a) the applicant acquires the amount of water needed from existing permits; (b) a portion of acquired water (which we term an “offset”) must be ceded to EPD and retired from use; (c) a distance limit is placed on the transfer; and (d) a farmer can satisfy the needs of the new permit with a voluntary partial transfer of his/her allocation (with compensation as agreed upon between the permit holder and the entity to which part of the allocation is voluntarily being transferred) and can retain the remainder for crop applications.

⁴³ As examples, see Draper *Supra* Note 4, and James E. Kundell, Terry A. DeMeo, and Margaret Myszewski, “Developing a Comprehensive State Water Management Plan,” 55 pp., Research Atlanta, Inc., Andrew Young School of Policy Studies, Georgia State University (Atlanta: no date).

In this example, it will be possible for the original permit holder to continue some or all of the agricultural production that had an assumed value added due to irrigation equal to \$2 million under existing permits. The decrease in agricultural values as a result of the partial transfer will likely be minimal, because the transferred water was previously earning small yields (and net returns) at the margin. Thus, the economy of the region enjoys a net increase in economic activity nearly equal to \$10 million. If the full permitted amount rather than only a partial amount is transferred, the situation would be the following.

- **All-or-nothing transfer:** The permit is granted with the same conditions [(a) through (c)] as stipulated above. The farmer involved in the transfer voluntarily transfers his/her *entire* water permit (with appropriate compensation as agreed upon by the parties) to the new user. In this example the region's economy enjoys the economic benefits associated with the "new" uses, \$10 million, but loses the \$2 million of agricultural value previously generated due to irrigation.⁴⁴

Under either of the above possibilities, notwithstanding uses by the new permittee, flows in the Flint River *are increased* due to the transfer and the associated EPD required offset. Thus, the riverine environment in the Flint River Basin is enhanced. This is clearly a win-win scenario. Transfers are voluntary on the part of current permit holders. The environment benefits from enhanced flows, *and at no cost to the state*. The regional economy benefits from new economic opportunities, although the gain is less if only all-or-nothing transfers are allowed. Members of the agricultural community benefit by being able to continue irrigated agricultural production with part of their permitted water (if partial transfers are allowed), and by being paid for the remainder that is involved in the transfer; or by voluntarily relinquishing all of their water permit with a reimbursement that meets their requirements. And the security of the state's resources is assured because of the distance limitation.

Our question: Is it possible to design water management institutions in Georgia that result in actual win-win scenarios?

⁴⁴ Of course, dry land production with its lower valued production and high year-to-risks could be reestablished on the tract.

We will demonstrate that such designs are possible. But before we move to laying out these designs, we think it important that the reader keep the following caveats in mind.

First, from the standpoint of the farmer (while our discussion in this paper is generally applicable to all water uses throughout Georgia, the following illustration is couched in the context of existing agricultural permits in the Lower Flint Basin), participation in any of the options we propose is strictly voluntary. That is to say, the farmer chooses whether or not he/she wishes to participate in any transfer program. Each program will have regulatory requirements that are necessary for the program's feasibility. The farmer must accept these regulatory obligations *only* if he/she chooses to be a participant. Some modest costs may be associated with the regulatory program (for enforcement, primarily). Of course, the prudent farmer would bear these costs in mind during any negotiations concerning whether or not to participate in the transfer of part or all of his water use permit.

Second, while new legislation may be required to implement the options that we present, we eschew discussion of the specific nature of such changes until some later date at which there is manifest interest.

Third, while the options developed below may apply to any of Georgia's river basins, we have not thoroughly explored the implications of the options for basins other than the Flint. Thus, at this point our options should be thought of as applying primarily to the Flint River and its tributaries, and to ground water in the Floridan Aquifer in Southwest Georgia.

Fourth, we will use specific numbers in our descriptions of policy options. Our use of these numbers is intended to serve *simply for expository purposes*. Policy makers at the EPD would, of course, determine specific numerical parameters that they feel would best serve the state's interests.

We present two management options in what follows. The options are ordered in terms of their relative impact on the overall efficiency of water use. To facilitate our discussions of policy options, we restate the major issues with market-like institutions that have been encountered in other states. These seven issues, outlined in Section II and summarized in Table

1, are how to:

Issue #1. Protect environmental and third-party interests at reasonable transactions costs;

Issue #2. Create well-defined rights;

Issue #3. Enforce provisions for forfeiture of rights due to non-use in order to reduce speculative water rights acquisitions;

Issue #4. Conduct monitoring and enforcement at moderate costs;

Issue #5. Provide for gains in efficiency by allowing partial as well as full permitted transfers;

Issue #6. Protect local, rural economies from the effects of transfers; and

Issue #7. Protect against unwanted out-of-state exports of the state's water resources.

Option 1: Partial Transfers of Permitted Water Use are Allowed. Our first option consists of the following components. The relationships between any component and the seven “issues” experienced in other states are summarized below in Table 2 at the end of this Section.

Obligations of the farmer

(a) A participating farmer would agree to the quantification of his water permit at the rate of, for example, 18 inches per certified acre. If a farmer owns an EPD-issued water use permit that has been certified as allowing the irrigation of 100 acres, his usufructuary water “right” would be quantified at 1,800 acre-inches annually (i.e., 18 in/acre times 100 acres).

(b) The farmer can transfer to a new user (for whatever “price” is determined in conjunction with the new user) any or all of the water use allowed under his/her permit with the following obligations.⁴⁵ If less than the full amount of his right (1,800 acre-inches annually in the example given above) is being transferred, the farmer can use the amount retained for crop irrigation. However, he/she must agree to install a *sealed* meter on all pumps involved and to grant the EPD permission to enter his property for the purposes of reading the meter and verifying the integrity of the seal. The farmer will pay an annual fee, set at a modest amount, for the EPD's cost of monitoring his pumps.

⁴⁵ An interesting question raised by our colleague, Dean Roy Bahl, concerns how revenues received for a transferred water permit would be taxed by the state. This is certainly a question that would need to be addressed in the event that our proposed (or any other) permit-transfer system would be put in place.

Farmer obligation (a) is intended as a mechanism for achieving Issue #2: creating well-defined water rights (see Table 1). The use of 18" is for illustration purposes only; any other number might be used. Selecting the number to be used for quantifying the transferred right will be a complex matter. Existing or past use would likely play a predominant role in quantification of the right. The difficulty arises from the fact that there are substantial differences in existing uses, reflecting differences in crops irrigated and soil types, among other things. Moreover, *actual* pre-transfer use must be a condition for EPD approval; otherwise the transfer has the effect of substituting non-use for use. Determining the “appropriate” number for quantifying limits on water use allowed under a transferred permit will require concentrated efforts by both farmers and the EPD. In the end, however, if the potential transferor does not like the number chosen by the EPD, he/she can simply decline the opportunity to engage in transfers.

Farmer obligation (b) allows for partial transfers as opposed to all-or-nothing transfers, thereby providing the mechanism necessary to achieving the efficiency ends sought in Issue #5 (Table 1). The annual fee required for the EPD’s monitoring activities should be “modest,” thereby achieving Issue #4 (Table 1).

Obligations of the EPD

Any transfer must be approved by the EPD. After appropriate notification to the general public of the proposed transfer, the EPD will hold a hearing for the purpose of determining any adverse effects on public welfare that might attend the transfer, and to then approve or disallow the transfer.

The purpose of the EPD approval process is to accomplish the ends sought in Issue #1 - - protecting environmental and third party interests - - and Issue #6: protecting local, rural economies from the effects of any transfer (Table 1). This process has been reasonably successful in other states in accomplishing these ends. Unlike systems in other states, however, obligations imposed on the new user (given below) will increase the effectiveness of the approval process in dealing with Issues #1 and #6.

Obligations of the Transferee (new user)

In addition to obligations that the EPD might consider as a part of the process described immediately above, the transferee (the new user) must satisfy the following obligations:

(a) For surface or ground water transfers, the new point of diversion must be located within three contiguous counties⁴⁶ from the site at which the farmer's point of diversion is located. If the new proposed use is for ground water, then in addition to this limitation on any new point of diversion, the Director of the EPD must approve any new point of diversion (any new pump location) in order to protect parts of the Floridan Aquifer that are already heavily used.

(b) For any amount of use (in acre-inches) proposed by the transferee (new user), the transferee must acquire rights to *200% of this level*. If the new use entails surface water, surface water rights must be acquired. If the new use entails ground water, *either* surface or ground water rights may be acquired (subject to the conditions in (a) above). The residual over proposed use (100% of the proposed use) is ceded to the EPD for retirement. The EPD may consider a different "offset", if any, that would apply for transfers between farmers where water use will continue to be used solely for agricultural purposes.⁴⁷

(c) Other than in instances involving farmer-to-farmer transfers, the transferee acknowledges that the permit obtained by the transfer will *not* be considered as an "agricultural" water use permit. Thus, provisions set out *ad passim* Georgia Code 12-5 relating to municipal and industrial permits will apply (rules related to conservation plans, water quality standards, etc.).⁴⁸

(d) A forfeiture for non-use provision applies to the new permit that is created as a result of the transfer.

Our suggested system for transfers is set apart from those in some other states by the obligations (a through d) imposed on the Transferee. Obligation (a) requires that, for both surface and ground water transfers there is a geographical limit on the location of the transferee's point of diversion. A limit of three contiguous counties is used for expository purposes. The

⁴⁶EPD may wish to make exceptions to this requirement in cases where the new water use is for municipal water supplies.

⁴⁷ In order not to jeopardize agricultural production, requiring the new irrigator to acquire rights only equal to 100% of proposed use is one option. However, at issue here is the following possibility, which is especially relevant for surface water. Suppose a farmer is not managing his/her soil water very well and applies 18" when 12" (properly applied) would produce the same crop yield (assume a 10" consumptive crop use). Water not consumed by the crop will eventually return to the river system. If this farmer decides to sell 8" to another farmer, both the old user and new user would become very efficient with the limited water. All 18" is now (most likely) consumptive use and river flows could decrease. Underlying this scenario is the importance of the number used for quantifying the water permits and the amount of offset, if any, required.

⁴⁸ Given the characteristics of non-agricultural permits, including such things as time limits on permits, the extent to which these "revised" permits held by non-agricultural users could later be sold back to agriculture is in our view problematic but remains as an open question.

limit could be 3, 2 or 1 counties, or within the county of the transferor. This limit is intended to accomplish two ends: Issue #6, protect local economies from adverse effects of a transfer; and Issue #7, protect the State's resources from out-of-state export (see legal opinion on the subject prepared by Charles DuMars in the Appendix to this report). The relevance of this limit for purposes of protecting the State's resources would be diminished in the (now likely) event that the ACF compact is put into place. The effect of the compact is to allocate waters between the states, which then frees Georgia from commerce clause challenges to rules prohibiting the export of *its share* of ACF waters to residents of another compact state. Compact effects on ground water are more murky, however. The ACF compact explicitly excludes ground water, notwithstanding the fact that large parts of the Flint River's virgin (unimpaired) flows come from ground water discharge into the River. Thus, it appears to us that retention of the limit on point of diversion is advisable to guarantee the achievement of ends sought in Issue #7.

Transferee obligation (b) is intended to serve as a means for *increasing* in-stream flows in the Flint River, thereby responding to the ends sought in Issue #1: environmental protection. For example, if a new user proposes a use of 500 acre-inches, with the requirement that 200% be acquired from existing uses (equivalent to a 100% water tax or "offset"), water rights in the amount of 1,000 acre-inches must be acquired, with 500 acre-inches in rights ceded to the EPD. As before, the specific numbers are used for exposition only. Any other appropriate percentage could be selected by EPD.

An argument for *decreasing* or *increasing* the tax (from the 100% proposed above) *could* arise from potential differences in consumptive use between the transferor and the transferee. Agriculture's consumptive use of water may be well below 100%; for the purpose of this example, assume that it is 50%. If the transferee is a municipality, their consumptive use could be on the order of 30% to 40%, in which case the desired in-stream flow increase would be accomplished with a 0% tax. However, consumptive use for many industries can be much higher, and in some instances as high as 100%. Continuing the example used above, if an industrial user needs 500 acre-inches which *are totally consumed*, he/she would acquire

agricultural permits for 1,000 acre-inches (with the 100% tax) and consumes 500 acre-inches. With agriculture's consumptive use at 50%, the 1,000 acre-inches transferred also represented 500 acre-inches in consumptive use; thus, this transfer would leave in-stream flows unaffected. To increase stream flows, a tax higher than 100% would be necessary.⁴⁹ This simplified illustration assumes that water diverted but not consumed returns quickly to the stream.

A counter argument to the need to increase the water tax above 100%, is that industrial uses will typically be spread out over the entire year, while agricultural uses are concentrated in the four months when in-stream flows are most critical: May through August. Thus, following the above illustration, agricultural diversion is decreased by 1,000 acre-inches and consumptive use by 500 acre-inches. This would *increase* in-stream flows during the May-August period by 125 acre-inches per month, but would be partially offset by the industrial user's monthly consumptive use which *reduces* flows by 42 acre-inches per month (for 12 months). Therefore, with this transfer from agricultural to industrial use, in-stream flows would *increase* by a *net* of 83 acre-inches per month during the critical summer months. These are factors that the EPD would want to take into account in their establishment of an "appropriate" water tax, if any, to be levied on transfers.

Taken together, transferee obligations a, b, & c will tend to reduce administrative delays and litigation that, in some Western States, have resulted in high transactions costs due to legal challenges on the part of local communities concerned with adverse economic effects of a proposed transfer and others concerned about adverse effects on in-stream flows.⁵⁰ Limiting the allowable distance for changes in point of diversion can reduce the former concerns, while the "transfer tax" may have the effect of easing the latter concern.

Finally, transferee obligation (d) is intended to accomplish ends sought in Issue #3: minimizing the potential for speculation in water permits (Table 1). This is accomplished by imposing forfeiture for non-use conditions on the transferee's new permit. The EPD must, of

⁴⁹ Differences in consumptive use can also occur when the permit transfer is between farmers.

⁵⁰ See Young, and Brajer, *et al.*, *Supra* Note 26.

course, decide what constitutes non-use.

Option 2: Only All-or-Nothing Transfers are Allowed. Option 2 differs from Option 1 only in terms of the structure of component (b) in the farmer’s obligations. Under Option 2 “partial” transfers are *not* allowed. Thus, Option 2 has the following form:

Obligations of the farmer

(a) No Change

(b) [Differs from Option 1] - The farmer can transfer to a new user his EPD-issued water use permit under the following conditions. First, all water use allowed under the permit (quantified at 18” per certified acre) must be included in the transfer. Second, the farmer agrees to remove all existing water distribution equipment; if a well(s) is (are) involved, to permanently cap all wells included under the permit; and to grant the EPD permission to enter upon the property for the purposes of verifying the cessation of water use by the transferor. The farmer will pay an annual fee, set at a modest amount, for EPD’s cost of monitoring.

Obligations of the EPD

No Change

Obligations of the Transferee

No Change

While only one component of the Transferee’s obligations is changed under Option 2, the *effects* of this change may be substantial. By disallowing partial transfers, insisting on the all-or-nothing transfer, the system’s incentives for substantive improvements in on-farm efficiency of water use are greatly diminished.⁵¹ Furthermore, as previously discussed, the inability of the Transferor to continue irrigating reduces the agricultural production value in the region (unless the transfer is made to another farmer). It is true that allowing the partial transfers in Option 1 requires more from the EPD in terms of monitoring activities, but associated water use efficiency

⁵¹ With surface water irrigation, efficiency of use may be more justifiable as a goal for reducing pollution (e.g. fertilizer) runoff from fields than it is for the purpose of improving in-stream flows (i.e., “wasted” water carrying chemicals can return to the river rather quickly especially with the very sandy soils that are common in the lower Flint Basin.)

and economic gains should make the efforts more than worthwhile.

Table 2 summarizes the effectiveness of the two proposed options in dealing with the issues faced in other states.

Table 2. A Comparison of How the Two Options Address the Seven Issues Encountered in Other States		
	Option 1: Partial Transfers Allowed	Option 2: Partial Transfers Not Allowed
<u>ISSUES</u>		
#1: Protects environmental and third-party interests with reasonable trans. costs.	Yes	Yes
#2: Creates well-defined water rights	Yes	Yes
#3: Enforces (new) provisions for non-use forfeiture; reduces potential for speculation	Yes	Yes
#4: Allows monitoring and enforcement at moderate costs	Yes	Yes
#5: Provides for gain in efficiency by allowing partial transfers	Yes	No
#6: Protects local and rural economies	Yes	Weak Yes
#7: Protects against unwanted out-of-state exports of state's water	Weak Yes*	Weak Yes*

* Depends on the distance over which a transfer is allowed. Three contiguous counties would be open to across state line interpretation, and offers weaker protection. Restricting transfers to within the same county would offer strong protection.

Section V. Concluding Remarks

Georgia's EPD has made, and continues to make, significant progress in adapting its water management system to changing conditions of water scarcity. Ongoing studies related to the characteristics of the Floridan aquifer, agricultural water use, and water permit data files will significantly advance the understanding of water supply and water use in the Basin.

The state has numerous pending applications and will continue to receive permit applications in the Flint Basin for new/expanded industrial, municipal, and agricultural uses. The benefits of allowing new uses may be compelling. Clearly, the state must develop a long-term policy for dealing with such requests. There is an obvious need to re-examine water management policies related to the transfer of water use permits. Policies that limit or prohibit transfers of permits other than with changes in land ownership may have well served the state's interests in the past. However, such policies will likely not best serve the state's interests with the realities of water scarcity that now characterize conditions in the Basin. This makes especially timely the initiation of considerations of possible reforms in the state's management system, particularly those elements related to the transfer of water use permits.

Our recommendations for policy designs that might contribute to this policy reform are *not* those of urging Georgia to adopt Western water markets. They reflect our efforts to identify means by which Georgia might benefit by being aware of experiences in other states. We have outlined difficult issues encountered by other states, and suggested a *Georgia* system that allows for transfers, but anticipates and mitigates problems that have occurred in other states when patterns of water use have shifted. The system we suggest allows for transfers of water use permits, but with obligations on the part of the transferor, the transferee, and EPD that will facilitate local growth and prosperity, as well as enhance environmental quality. We hope that this paper will stimulate dialog as to how the state is to cope with problems such as those encountered in the Flint River Basin. Let us *repeat* the fundamental questions relevant for this

Basin if the moratorium on new permits is continued indefinitely:

Under conditions where “new” users cannot acquire access to water supplies, how does a region grow, take advantage of economic development opportunities, and avoid conditions leading to a stagnant economy?

In the spirit of encouraging productive dialog concerning means by which water management in Georgia can be improved -- a dialog that is certainly encouraged by the EPD -- we do not submit our recommended system as the *only* way to respond to the scarcity questions given above; nor do we argue that our suggested approach is necessarily the best. We *do* argue that for continued economic growth and environmental protection, a change in the current system is needed, and we look forward to discussions of alternative approaches that may be offered by others.

Our argument is that without a system that allows for the reasonable transfer of water use permits, the economy of Southwest Georgia has virtually no hope for growth, and sustaining the existing economy in the long run is problematic. A system allowing transfers will not guarantee growth for the Basin; it does, however, contribute positively and perhaps substantially to a basis for rationalizing the Basin's hope.

APPENDIX

Can The Fixed-County Restriction On Water Transfers Withstand A Commerce Clause Challenge?

Legal Opinion Prepared By Charles DuMars

[Note: Appendix not included with this draft]