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SHARING WATER THROUGH INTERBASIN TRANSFER AND BASIN OF ORIGIN PROTECTION IN GEORGIA: ISSUES FOR EVALUATION IN COMPREHENSIVE STATE WATER PLANNING FOR GEORGIA'S SURFACE WATER RIVERS AND GROUNDWATER AQUIFERS

Stephen E. Draper*

INTRODUCTION

Economic prosperity and quality of life in 21st century Georgia will, in large part, depend upon how Georgia manages its surface water rivers and groundwater aquifers. Georgia can meet the challenge by drafting an effective statewide comprehensive water management plan. Of the eleven essential elements of Georgia's Statewide Water Management Plan ("GSWM Plan" or "Plan"), no issue is more important than interbasin transfer of water and basin of origin protection.¹

Georgia's fourteen surface water river basins and six groundwater aquifers must ensure adequate supplies of quality water to meet critical requirements of municipalities, business and industry, agribusiness, water-based recreation, public health, aquatic ecosystems, and a sustainable environment.² Fortunately, Georgia has

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1. See Memorandum from Stephen E. Draper, Georgia's Comprehensive Statewide Water Management Plan: Essential Components, The Draper Group, to the Attorney General, Thurbert Baker (Dec. 8, 2003) (on file with Georgia State University Law Review); see also Stephen E. Draper, The Essentials for GA Water Planning: The Relationship Between the Proposed GA State Comprehensive Water Plan and the Alabama-Florida-Georgia Water Sharing Dispute (The Failure to Agree on the Two Compacts), Presentation to the Attorney General's Water Advisory Council (Oct. 28, 2003), at <http://www.rivercenter.uga.edu/publications/pdf/ag-draper.pdf>.

2. See, e.g., *The Twenty-First Century Water Commission Act of 2003: Notice for Hearing on H.R. 135 Before the House Subcomm. on Water Res. and Env't*, 108th Cong. (scheduled for May 7, 2003), available at <http://www.house.gov/transportation/water/05-07-03/05-07-03memo.html>; Stephen E.

an abundance of source water, with the most plentiful supplies in Middle Georgia. Significant source water exists in the agricultural regions of Southwest Georgia, although state response to a recent drought has limited permits for irrigation withdrawals. Available source water in the industrial regions and coastal communities of Southeast Georgia is considerable, although excessive groundwater use has caused saltwater intrusion in several areas. The headwaters regions of North Georgia have the least plentiful supplies.³

The geographic location of Georgia's rivers and aquifers present a significant source-water challenge. Georgia's largest and most densely populated region is in North Georgia's headwaters region where the State has the least amount of source water. The consequence of 50 years of recent urban growth in this region presents the challenge of how that growth can continue without augmenting the region's source water supply. Potential solutions include improving water efficiency and constructing additional dams and water supply reservoirs.⁴ Another option is to use a method commonly used in the western United States, the practice of interbasin transfer of water from regions outside of the greater Metropolitan Atlanta Region.⁵

Proposals for interbasin transfer of water, however, present a series of critical questions about how extensively the practice should be

Draper, *International Duties and Obligations for Transboundary Water Sharing*, 123 J. WATER RESOURCES PLAN. & MGMT. 344, 348 (1997).

3. See Stephen E. Draper, *Effective Georgia Water Policy for the 21st Century*, *Proceedings of the World Water & Environmental Resources Congress*, in BRIDGING THE GAP: MEETING THE WORLD'S WATER AND ENVIRONMENTAL RESOURCES CHALLENGES 1-2 (Envtl. and Water Res. Institute CD-ROM, May 21-24, 2001), at <http://www.cviog.uga.edu/water/whitepapers/effectivepolicy.pdf>.

4. See *id.*; Chris DeVinney & Nolton Johnson, *Interbasin Water Transfers in Georgia*, GEORGIA PLANNING.COM, <http://www.georgiaplanning.com/watertoolkit/Documents/WatershedPlanningTools/InterbasinWaterTransfersArticle.doc> (last visited Nov. 19, 2004); Julia Hill et al., *Municipal Water Efficiency*, ETOWAH INITIATIVE, Summer 1998 (Inst. Ecology UGA 1998), available at <http://www.rivercenter.uga.edu/education/etowah/documents/pdf/municipal.pdf>; UGA RIVER BASIN SCI. & POLICY CTR., *RESERVOIRS IN GEORGIA: MEETING WATER SUPPLY NEEDS WHILE MINIMIZING IMPACTS* 22 (Gail Cowie ed. May 2002), available at <http://outreach.ecology.uga.edu/publications/pdf/reservoir.pdf>.

5. See *The Story of the Los Angeles Aqueduct*, Los Angeles Department of Water and Power, at <http://wsoweb.ladwp.com/Aqueduct/historyoflaa/> (last visited Nov. 23, 2004); see also Rudy Yniguez, *Guidebook to Global Water Issues: Los Angeles*, ITT INDUSTRIES, at <http://www.ittind.com/waterbook/LA.asp> (last visited Nov. 23, 2004).

used. Who decides when an interbasin transfer of water is necessary? Will water sharing through interbasin transfers occur only between nearby cities and counties; between adjacent river basins; between distant river basins within the state; with adjacent states; with distant states? Will the basin of origin from which a water transfer is made have a voice equal to that of the receiving basin to which the water is transferred? Will interbasin transfers without safeguards lead to for-profit private sales of bulk water to distant states and foreign countries? These compelling questions can only be answered with the application of a multi-disciplined approach that considers the fields of science, engineering, economics, social science, and law.⁶

Interbasin water transfer involves the withdrawal, diversion, or pumping of surface water or groundwater from one river basin (the “basin of origin”) and the release of all, or any part of, the water into another river basin (the “receiving basin”).⁷ An interbasin transfer provides the receiving basin with an additional water source to continue its economic growth and to support an expanding population. However, the loss of water from the basin of origin, caused by the interbasin transfer, could harm the long-term economic prosperity and quality of life of the basin of origin as well as its water quality and public health.⁸ The degree of harm to the basin of origin depends largely on the magnitude of water loss.

These potential harms to the basin of origin have caused most interbasin transfer proposals in Georgia to be very controversial, pitting the Metropolitan Atlanta Region against other areas of the State. Concerned citizens fear that Metropolitan Atlanta will take water from other regions in Georgia, harming other parts of the State

6. Stephen E. Draper, *Future Water Reform Legislation in Georgia: Major Water Rights Issues Facing Georgia*, in WATER LAW SEMINAR: PROGRAM MATERIALS 4 (Inst. of Continuing Legal Educ. in Ga. ed., 2002).

7. See GA. JOINT COMPREHENSIVE WATER PLAN STUDY COMM., FINAL REPORT OF THE JOINT COMPREHENSIVE WATER PLAN STUDY COMMITTEE 8 (2002), available at <http://www.cviog.uga.edu/water/finalreport.pdf> [hereinafter GA. WATER PLAN].

8. See INTERBASIN TRANSFER WORKING GROUP, FINAL REPORT OF THE INTERBASIN TRANSFER WORKING GROUP TO THE JOINT COMPREHENSIVE STATE WATER PLAN STUDY COMMITTEE 5 (2002), available at <http://www.cviog.uga.edu/water/workinggroups/interbasin/interbasin.pdf>.

while helping itself.⁹ Proposals to transport water over a greater distance, perhaps even out of the State, cause further concern.¹⁰ Throughout the State, citizens, stakeholders, and some officials fear interbasin transfer to the Atlanta area.¹¹ The interbasin water transfer controversy has been so intense that the Georgia Legislature decided that water planning for the metro Atlanta area “shall neither study nor include in any plan any interbasin transfer of water from outside the district area.”¹² Others, however, have urged a cautionary approach, suggesting that “[i]nterbasin transfers should be scrutinized and minimized based on options available, but [that] they cannot be eliminated.”¹³

Georgia already uses interbasin water transfers and will continue to do so. But whether interbasin transfer should be used as a first or last resort remains an issue. Consequently, three major challenges exist. The first challenge is to determine what, if any, restrictions the State should impose on interbasin transfers. The second challenge is to determine how the basin of origin can be protected from serious, perhaps irretrievable, harm that may result from loss of its water. The third challenge is to structure Georgia law to provide an efficient, effective, and equitable interbasin regulatory scheme that meets the needs of potential receiving basins while protecting basins of origin.

Part I of this Article discusses the history of and future issues facing the interbasin transfer of water in Georgia. Part II examines the nature of interbasin transfers of source water, focusing on water as a unique natural resource, and the justification for interbasin transfers in Georgia. Part III provides an overview of water law generally, Georgia water law, interbasin transfer law in states

9. See *id.* at 6; STATE OF GA. BD. OF NATURAL RES., WATER ISSUES, WHITE PAPER 14 (2001) (on file with the Georgia State University Law Review) [hereinafter WATER ISSUES].

10. See WATER ISSUES, *supra* note 9, at 14; INTERBASIN TRANSFER WORKING GROUP, *supra* note 8, at 6.

11. See INTERBASIN TRANSFER WORKING GROUP, *supra* note 8, at 6; Anna Simon, *Officials Fear Proposed Water Pump Storage Facility Would Hurt Upstate Growth*, GREENVILLE NEWS, Feb. 26, 2001, available at <http://www.greenvillenews.com/communities/2001/02/26/200102262828.htm>; see also Marie Hardin, *Murky Waters*, GA. TREND ONLINE MAG., July 2002, available at <http://www.georgiatrend.com/site/page952.html>.

12. O.C.G.A. § 12-5-584(f) (Supp. 2004).

13. Benita M. Dodd, *Commentary: Georgia Needs the Option of Interbasin Transfers*, GA. PUB. POL'Y FOUND., Feb.-Mar. 2004, available at <http://www.gppf.org/article.asp?RT=20&p=pub/Water/Interbasin040227.htm>.

adjacent to Georgia, and expert proposals for future interbasin transfer law. Finally, Part IV provides recommendations for the creation of efficient, effective, and equitable interbasin water transfer law in Georgia.

I. INTERBASIN TRANSFERS OF WATER IN GEORGIA

A. *History of Interbasin Transfers in Georgia*

Despite controversy and political efforts to deny interbasin transfers as a viable option to solve the Metropolitan Atlanta Region's future water scarcity problems, interbasin water transfers currently exist in Georgia and have existed since the early 1900s.¹⁴ Georgia uses this water management technique extensively in the Metropolitan Atlanta area, "where there is a large population (almost 4 million people) in about 20 counties, with five river basins either passing through or starting their headwaters in those counties."¹⁵

The need for interbasin water transfers is in the hydrogeography of North Georgia, where almost 54% of the population lives.¹⁶ The river basins within the Metropolitan Atlanta Region are long and narrow and, consequently, many of the cities in the region extend over more than one basin.¹⁷ Local governments withdraw "raw" water from a specific river to meet their needs, treat the water to potable standards, and distribute the "treated" water for use in residences, commerce, agribusiness, and industry.¹⁸ Local governments treat the wastewater after use and discharge this wastewater into the watercourse nearest the treatment facility. The treatment facility may be in another river basin, resulting in an interbasin transfer of water.¹⁹ In contrast, Middle, Southwest and Southeast Georgia have significant source water rivers and aquifers and interbasin transfer is rare.

14. STATE OF GA. BD. OF NATURAL RES., *supra* note 9, at 13.

15. *Id.* at 13, 17 (including the Coosa, Tallapoosa, Chattahoochee, Flint, Ocmulgee, Oconee, and Savannah Rivers).

16. Dodd, *supra* note 13.

17. See INTERBASIN TRANSFER WORKING GROUP, *supra* note 8, at 5.

18. *Id.* at 5-6.

19. INTERBASIN TRANSFER WORKING GROUP, *supra* note 8, at 5.

The vast majority of the interbasin transfers in Georgia have been for municipal use, largely between the cities and counties within the Atlanta area.²⁰ To continue growing, the metropolitan area requires more water, but the available sources cannot meet future demand.²¹ Some argue that we should first exhaust conservation practices, but such practices cannot meet the expected future demands. Consequently, interbasin transfers of treated or raw water within and into the Metropolitan Atlanta Region will likely increase in quantity and scope, thus extending their geographical reach.²² Although the current concern in Georgia involves interbasin transfers into greater Metropolitan Atlanta for water supply purposes, the potential exists for large scale, bulk transfers of water across the State line, involving quantities that dwarf the current transfers.²³ Pending legal challenges between states could result in increased transfers. This Article confines the discussion to interbasin transfers of water within Georgia.

B. Interbasin Transfer Issues in Georgia

Several questions arise regarding extensive interbasin transfers. When will greater Metropolitan Atlanta have enough water? What are the current and future standards in law that ensure interbasin transfers will not disrupt the economy, recreation, public health, environment, and local sovereignty of the basin of origin? Currently, these questions remain largely unanswered. Georgia lacks an existing comprehensive water plan to address interbasin transfers and basin of origin protection. This Article addresses the unique opportunities

20. *Id.* at 4-5.

21. *But see* Harold Reheis, *Metro Atlanta Is Not Running Out of Water*, ATLANTA J. CONST., June 10, 2002, available at http://www.ganet.org/dnr/environ/whatsnew_files/press.cgi?prfile=PR.20020610.01 (refuting predictions that sufficient water will not be available in metro Atlanta by 2030).

22. Letter from Stephen E. Draper, The Draper Group, to Representative Terry Coleman, Georgia Speaker of the House (Feb. 3, 2003) (on file with Georgia State University Law Review) (stating that the pre-conditions of interbasin transfer should be consultation and compensation).

23. *See* JOSEPH W. DELLAPENNA & STEPHEN E. DRAPER, WATER ISSUES, WHITE PAPER: STRAIGHT TALK ABOUT MARKETS FOR WATER 27-28 (2003), available at www.cviog.uga.edu/water/whitepapers/markets.pdf [hereinafter STRAIGHT TALK].

inherent in the drafting of a statewide water management plan, a process that is currently underway.

Georgia law and the drafters of Georgia's proposed comprehensive statewide water management plan need to provide some certainty for the potential basins of origin. Prior to proposing and adopting the suitable laws and policies, Georgia's lawmakers, policy makers, and stakeholders must examine four issues concerning interbasin transfers in Georgia. The first issue is the role that the GSWM Plan can play in formulating and developing efficient, effective, and equitable interbasin transfer laws and policies. The second issue is the need for credible knowledge about the magnitude of surface water and groundwater involved in various interbasin transfer proposals and about the potential harms that those proposals may inflict on the basins of origin. The third issue is the difference between the interbasin transfer of treated water by municipal water suppliers and the interbasin transfer of raw, untreated water. The fourth issue concerns the need for laws protecting basins of origin when suppliers contemplate interbasin water transfers.

1. Role of the Georgia Water Statewide Management Plan

In 2004, the Georgia Legislature passed, and the Governor signed, legislation implementing the GSWM Plan to provide for effective and efficient water planning in Georgia.²⁴ The Plan "should support a structured, yet flexible, approach to regional water planning and provide guidance and incentives for regional and local water planning efforts."²⁵ The Environmental Protection Division ("EPD") of the Georgia Department of Natural Resources will develop and publish the GSWM Plan by 2007.²⁶ The development of the Plan provides a unique opportunity to integrate laws and policies concerning the interbasin transfer of surface water and groundwater in a manner that is advantageous for both the basin of origin and the receiving basin. Properly developed, the GSWM Plan may provide each geographic

24. O.C.G.A. § 12-5-520 (2004).

25. *Id.*

26. O.C.G.A. § 12-5-523(c) (2004).

region in Georgia with certainty in the application of policy, law, and regulation for interbasin transfers.

2. *Magnitude of Water Involved in Interbasin Transfers*

The second issue, the development of effective laws and policies for interbasin transfers, requires an appreciation of the amount of water involved in interbasin transfers and of the potential harms inflicted on the basins of origin. In most cases, interbasin transfers for water supply purposes produce minimal harm to the basin of origin.²⁷ It is the harm resulting from the cumulative effects of successive interbasin transfers that the legislature should consider and upon which it should act.

3. *Interbasin Transfers of Treated Versus Untreated Water*

A third interbasin transfer issue involves the potential challenges between interbasin transfers of treated water for municipal supply purposes between adjacent basins and interbasin transfers of raw water transferred in bulk over long distances. Consider, as an example of the latter, the 1.3 million acre-feet that Los Angeles siphons from the Colorado River and then transfers over a distance of 242 miles.²⁸ Currently, the use of interbasin transfers for water supply purposes in Georgia is, in part, a necessity that involves relatively small volumes compared to other states. The goals of a municipality

27. For example, Habersham County has submitted a permit application to withdraw 12.5 million gallons per day ("mgd") from the Savannah River Basin for use and for discharge into the Chattahoochee River Basin. See *Interbasin Water Transfer—Conflict in the New Millenium*, LAKE HARTWELL ASS'N NEWSL. (Lake Hartwell Ass'n, Fairplay, S.C.), Mar. 2001, at 1. Expressed in terms of acre-feet per day, rather than mgd, the proposed Habersham County withdrawal is 38.375 acre-feet per day. Since the area of Lake Hartwell is 56,000 acres, the Habersham withdrawal will lower lake levels one-thousandth of an inch. In this instance, the effect on the lake is not significant. However, Georgia law does not limit the withdrawal to 12.5 mgd, 1250 mgd, or even 12,500 mgd, and the concerned stakeholders have no certainty that larger withdrawals might not occur in the future. In 1994-95, interbasin transfers out of the Murrumbidgee River in Australia netted 87,000 acre-feet. This type of large transfer above Lake Hartwell would drop lake levels by more than a foot and a half. Of course, impacts on the basin of origin are more complicated than just lake levels and their effects on recreation and tourism, so this example does not fully describe possible impacts. See TERRY ANDERSON & PAMELA SNYDER, *WATER MARKETS: PRIMING THE INVISIBLE PUMP* 195 (Cato Inst. 1997).

28. See Yniguez, *supra* note 5.

are to provide adequate supplies of clean water to its citizens efficiently and effectively and to dispose of the wastewater after use. For cost purposes, these objectives require minimizing the number of treatment plants and efficiently locating these plants to minimize costs of treatment, delivery, and discharge. Since water flows downhill, it is often most efficient (and far less costly) for cities to withdraw water from one basin and to discharge the wastewater to another. The reasons for long distance transfers of bulk quantities of water are more expansive, involving “the idea of interlinking [] ‘surplus’ basins with ‘deficit’ basins”²⁹ to correct an “extreme imbalance of water and land resources.”³⁰ Financial considerations normally justify long distance interbasin transfers, or “interlinking” of rivers.³¹ Unfortunately, too many fail to adequately consider the potential harms to the basin of origin.

4. *Basin of Origin Protection in Interbasin Transfer*

Because interbasin transfers cannot take place without consequences to the basin of origin, lawmakers, policymakers, and stakeholders must learn to appreciate the need for protective safeguards to aid basins of origin in Georgia. This issue is relevant to interbasin transfers for water supply purposes within Georgia and, should they ever occur, interbasin transfers of bulk water to other states or countries. Short distance and long distance interbasin transfers of surface water from rivers or of groundwater from aquifers can have lasting, irreversible effects on the basin of origin. The State must fashion the GSWM Plan and state policies, laws, and regulations to protect the citizens of and stakeholders in the basin of

29. Jayanta Bandyopadhyay & Shama Perveen, *The Interlinking of Indian Rivers: Questions on the Scientific, Economic and Environmental Dimensions of the Proposal*, CTR. FOR DEV. AND ENV'T POLICY INDIAN INST. OF MGMT § 1.1 (2002) (paper presented at seminar in Calcutta, India, June 17, 2002), available at <http://www.saciwaters.org/interlinking.htm>; see, e.g., Dr. R.N. Athavale et al., *Linking of Rivers: Need for Reconsideration: Memo to Prime Minister*, in 1 DAMS, RIVERS AND PEOPLE 2 (2003), available at <http://www.narmada.org/sandrp/jun2003.pdf>.

30. Zuo Dakang, *China's South-To-North Water Transfer Proposals*, in LONG-DISTANCE WATER TRANSFER: A CHINESE CASE STUDY AND INTERNATIONAL EXPERIENCES (Asit K. Biswas et al. eds., 1983), available at <http://www.unu.edu/unupress/unupbooks/80157e/80157E00.htm>.

31. See *id.*

origin, who are as entitled to enjoy economic prosperity and a high quality of life as those in the receiving basin. Currently, Georgia law contains only weak protection provisions for interbasin transfers and even weaker provisions for basins of origin.³² A unique opportunity exists to draft into the GSWM Plan needed protections for water transfers affecting each of Georgia's fourteen major rivers and six major aquifers.

II. THE NATURE OF INTERBASIN TRANSFERS OF SOURCE WATER

A. *Water as a Unique Natural Resource*

To appreciate Georgia's need to provide effective and equitable policies, laws, and regulations for interbasin transfers, it is appropriate to discuss several special characteristics of the natural resources, surface water, and groundwater. Adequate supplies of clean water are "central to survival itself Water is a central component of the Earth system, providing important controls on the world's weather and climate."³³ Water is also central to our collective economic well-being, supporting commerce, industry, agriculture, "forestry, navigation, waste processing, and hydroelectricity."³⁴ The water in surface water rivers and in groundwater aquifers is different from commodities like oil and gold. Flowing water does not stay within the four corners of any boundaries.³⁵ Because water is a non-excludable natural resource, it is subject to the same collective dilemmas that plague other common-pool resources: overexploitation of ecosystem services and under-investment in natural capital.³⁶ Finally, water science now recognizes a strong connection between

32. See GA. WATER PLAN, *supra* note 7, at 8-11, B-6.

33. Charles J. Vörösmarty, *Global Water Assessment and Potential Contributions from Earth Systems Science*, 64 AQUATIC SCI. 328, 328 (2002).

34. *Id.*

35. Joseph W. Dellapenna, *The Importance of Getting Names Right: The Myth of Markets for Water*, 25 WM. & MARY ENVTL. L. & POL'Y REV. 317, 336-37 (2000).

36. See *id.* at 330-31.

surface water and groundwater, making policy separation between the two artificial.³⁷

Water, unlike commodities such as “oil or gold, is a shared, mobile and common resource that is used and reused for different purposes as it moves through the hydrologic cycle.”³⁸ Water is unique because multiple consumers “use the same water repeatedly as the water travels downstream, as in the case of surface water rivers, or downgradient, as in the case of groundwater aquifers.”³⁹ Atlanta, an upstream user, “withdraws much of [its] reliable water supply from the Chattahoochee River, consumes a portion of the water, and then returns the greater part of the water to the river for use by downstream users such as LaGrange, Columbus, and even cities in Alabama and Florida.”⁴⁰ This use and reuse is a unique characteristic of water, shared with no other natural resource.

B. The Justification for Interbasin Transfers in Georgia

The justification for interbasin transfers is largely economic.⁴¹ Natural resource economists advance the argument that the ultimate goal of water allocation should be to allocate water to higher and better uses, thereby maximizing economic efficiency.⁴² Financial value and economic value are often synonymous. Therefore, some equate maximizing the economic efficiency of water allocation to maximizing the financial return gained from the use of the allocated

37. See Nat'l Park Serv., *Freshwater Resources Management: Water Resources Management*, in NATURAL RESOURCE MANAGEMENT REFERENCE MANUAL #77, available at <http://www.nature.nps.gov/rm77/Freshwater/WaterResources.htm> (last visited Aug. 30, 2004).

38. STRAIGHT TALK, *supra* note 23, at 20.

39. *Id.*

40. *Id.* at 20-21; see ENVTL. & WATER RES. INST. OF AM. SOC'Y OF CIVIL ENG'RS, MODEL WATER SHARING AGREEMENTS FOR THE TWENTY-FIRST CENTURY, at iv (Stephen E. Draper ed., 2000).

41. See, e.g., NAT'L WATER COMM., WATER POLICIES FOR THE FUTURE: FINAL REPORT TO THE PRESIDENT AND TO THE CONGRESS OF THE UNITED STATES 317-31 (1973); see also *Water Sources for Meeting Future Needs: RWPGs To Evaluate Available Supplies*, Water for Tx., (Tx. Water Dev. Board, Austin, Tx.), Spring 2000, available at www.twdb.state.tx.us/publications/newsletters/WaterforTexas/wftspring00/article1.htm (“The TNRCC may approve an interbasin transfer only to the extent that the benefits to the receiving basin outweigh the detriments to the basin of origin.”).

42. See A. Dan Tarlock, *Current Trends in United States Water Law and Policy: Private Property Rights, Public Interest Limitations and the Creation of Markets*, in THE SCARCITY OF WATER: EMERGING LEGAL AND POLICY RESPONSES 183, 190-91 (Edward Brans et al. eds., 1997).

water.⁴³ A transfer that moves the water to a higher and better use—a use that provides a better financial return than the use of the water in the basin of origin—justifies an interbasin transfer.⁴⁴ This view gives scant attention to the environmental, health, and social effect of water transfers on basins of origin.

One must evaluate significant costs to the basin of origin along with the benefits to the receiving basin before permitting an interbasin transfer.⁴⁵ One cost is the opportunity cost of future economic growth and prosperity to the basin of origin.⁴⁶ It is unusual to find a situation in which the basin of origin could not productively use the water proposed for an interbasin transfer, either for increased output of existing uses or for potential future uses. One should include values associated with water use in the basin of origin, foregone as a result of the water transfer, as a cost to the proposed interbasin transfer.⁴⁷ This valuation may be difficult, especially in a less developed area that has little prospect of short term infusion of new industry or commerce.

Interbasin transfers of water may have a negative effect on public health within the basin of origin. A sufficient amount of water to absorb or assimilate pollutants is a basic requirement for clean water. While the Clean Water Act (“CWA”)⁴⁸ requires the treatment of discharges from point sources to meet standards that are not

43. See Kenneth D. Frederick, *The Economics of Risk in Water Resource Planning*, in WATER RESOURCES ADMINISTRATION IN THE UNITED STATES: POLICY, PRACTICE, AND EMERGING ISSUES 182, 185-87 (Martin Reuss ed., 1993); see also Dean E. Mann, *Political Science: The Past and Future of Water Resources Policy and Management*, in WATER RESOURCES ADMINISTRATION IN THE UNITED STATES: POLICY, PRACTICE, AND EMERGING ISSUES 55, 59-60 (Martin Reuss ed., 1993); MARK W. ROSEGRANT & RENATO S. GAZMURI, REFORMING WATER ALLOCATION POLICY THROUGH MARKETS IN TRADABLE WATER RIGHTS: LESSONS FROM CHILE, MEXICO, AND CALIFORNIA 3-6 (Int'l Food Policy Research Inst. 1994), available at <http://www.ifpri.org/divs/eptd/dp/papers/eptdp06.pdf>.

44. See Frederick, *supra* note 43, at 185-87; ROSEGRANT & GAZMURI, *supra* note 43, at 3-6.

45. See generally COLO. RIVER WATER CONSERVATION DIST., BASIN OF ORIGIN PROTECTION, available at <http://www.crwcd.gov/H2Oh/BasinofOriginProtection.pdf> (last visited Oct. 8, 2004).

46. See ANDREW G. KEELER ET AL., CONCEPTS AND DEFINITIONS RELATED TO WATER USE IN GEORGIA 7 (River Basin Sci. Policy Ctr. 2002), available at <http://www.cviog.uga.edu/water/whitepapers/concepts.pdf>.

47. DAVID S. BROOKSHIRE ET AL., AN ANALYSIS OF CONTEMPORARY AND HISTORICAL ECONOMICS ASSOCIATED WITH WATER DEVELOPMENT PROJECTS IN WYOMING app. at D.2 (Wyo. Water Res. Ctr. 1990), available at <http://library.wrds.uwyo.edu/wrp/90-12/90-12.html>.

48. 33 U.S.C. §§ 1311-1330 (2004); see *Introduction to TMDLs*, U.S. Environmental Protection Agency, at <http://www.epa.gov/owow/tmdl/intro.html> (last modified Nov. 5, 2004).

hazardous to human health, only assimilation by the water body that receives the discharge can treat a non-point discharge.⁴⁹ The CWA attempted to address this problem with its imposition of the Total Maximum Daily Load (“TMDL”) standards, which limit the concentrations of pollutants within a water body.⁵⁰ A sufficiently large loss of flow may make it more difficult to meet TMDL standards in the basin of origin, inhibiting economic growth and quality of life. Remediation or compensation to the basin of origin for this effect is difficult to measure.

The risk of environmental harm to the basin of origin due to an interbasin water transfer is also difficult to quantify or value. Incremental degradation of the ecosystem may have minor short-term economic and quality of life effects on the basin of origin, but over the long-term, the effects may be significant or even catastrophic. The documented long-term negative effects on the Everglades National Park in Florida lend support to this idea.⁵¹ Parties seldom consider intergenerational justice when justifying interbasin water transfers, but preserving opportunities for future generations is an important value.⁵²

There is also a potentially unquantifiable philosophical cost to interbasin transfers. The values inherent in surface water and groundwater mean different things to different people. There are certain important ecological, environmental, aesthetic, and spiritual benefits, in addition to the benefit of human survival, whose value cannot be measured simply by the market price for water as these benefits serve the greater good for society as a whole.⁵³ To many

49. 33 U.S.C. § 1312 (2004); see *S. Fla. Water Mgmt. Dist. v. Miccosukee Tribe of Indians*, 541 U.S. 95, 1538 (2004) (suggesting that an NPDES permit may be necessary to engage in interbasin transfers for purposes other than water supply).

50. See KEELER ET AL., *supra* note 46, at 6.

51. See U.S. ENVIRONMENTAL PROTECTION AGENCY, SOUTH FLORIDA ECOSYSTEM ASSESSMENT: EVERGLADES WATER MANAGEMENT, SOIL LOSS, EUTROPHICATION AND HABITAT (2000), available at <http://www.epa.gov/region4/sesd/reports/epa904r00003.html>.

52. See TALBOT PAGE, CONSERVATION AND ECONOMIC EFFICIENCY: AN APPROACH TO MATERIALS POLICY 9, 11 (1977); NATIONAL RESEARCH COUNCIL ET AL., VALUING GROUND WATER: ECONOMIC CONCEPTS AND APPROACHES 122 (Nat’l Acad. Press 1997).

53. C.J. PERRY ET AL., WATER AS AN ECONOMIC GOOD: A SOLUTION OR A PROBLEM? 2 (Int’l Irrigation Mgmt. Inst., Research Report 14, 1997).

individuals and societies, water symbolizes security, opportunity, and self-determination. People in areas where water scarcity is the norm associate water with life, power, and status.⁵⁴ A valid benefit evaluation cannot appropriately quantify certain water uses associated with quality of life issues or involving social or civic purposes.

III. THE LAW AND INTERBASIN TRANSFERS OF WATER

A. *Water Law Generally*

The nature and scope of laws pertaining to interbasin water transfers vary widely throughout the United States. Differences in the underlying foundation of each individual state's water law create the variances. Initially, the riparian rights doctrine dictated the water law in most states. This common law doctrine treats water as a common resource, limiting water withdrawals for reasonable uses to landowners adjacent to a watercourse.⁵⁵ In the eastern United States, the regulated riparian rights doctrine, which treats water as a public resource, has begun to supplant common law riparian rights as states have recognized the need for active public management of water. For example, Georgia now requires a water withdrawal permit.⁵⁶

Because of water scarcity, states in the western United States adopted the appropriative rights doctrine that treats water essentially as private property. This doctrine appropriates surface water according to the "first in time, first in right" principle.⁵⁷ By 1997, 18 western states had introduced the appropriative rights doctrine into

54. See Esther J. de Haan, *Balancing Free Trade in Water and the Protection of Water Resources in GATT*, in *THE SCARCITY OF WATER: EMERGING LEGAL AND POLICY RESPONSES* 245, 247 (Edward Brans et al. eds., 1997); HELEN INGRAM, *WATER POLITICS: CONTINUITY AND CHANGE* 5 (1990); Peter Whiteley & Vernon Masayesva, *The Use and Abuse of Aquifers: Can the Hopi Indians Survive Multinational Mining?*, in *WATER, CULTURE, AND POWER: LOCAL STRUGGLES IN A GLOBAL CONTEXT* 9, 13-18 (John M. Donahue & Barbara R. Johnston eds., 1998).

55. JOSEPH W. DELLAPENNA & STEPHEN E. DRAPER, *WATER ISSUES, WHITE PAPER: WATER LAW DOCTRINES AS APPLIED TO GEORGIA WATER LAW 2* (2002), available at <http://www.cviog.uga.edu/water/whitepapers/waterlawdoctrines.pdf> [hereinafter *WATER LAW DOCTRINES*].

56. *Id.*

57. *Id.*

state law.⁵⁸ Some form of the regulated riparian rights doctrine is present in at least 20 states.⁵⁹ Most of the states have introduced the regulated reasonable use doctrine for groundwater.⁶⁰ However, “[t]raditionally, doctrines of law for surface water and groundwater were separate and distinct.”⁶¹ This is the case with Georgia.⁶² Surface water and groundwater doctrines are separate, even though the interconnectivity between surface waters like the Flint River and the Floridian aquifer is evident.⁶³ These contradictions exist in law despite the fact that the science of hydrogeology and other sciences recognize the interconnectivity of surface water and groundwater. Georgia water law, and that of many other states, treats these waters separately based on misconceptions that have existed for centuries.

B. Georgia Water Law

Georgia now follows the regulated riparian rights water law doctrine.⁶⁴ This doctrine requires a water user to seek state permission (a permit) to withdraw and use large amounts of water for a specific purpose. The doctrine usually requires water withdrawals above a certain threshold to have a permit but exempts withdrawals below 100,000 gallons per day (“gpd”).⁶⁵ For surface source withdrawals below 100,000 gpd, “Georgia’s water law closely adheres to the common law Riparian Rights doctrine, clarified by decisions of the Georgia Supreme Court”⁶⁶ For aquifer withdrawals that are greater than 100,000 gpd, “Georgia’s . . . water

58. *Id.* at 3.

59. *Id.*

60. *Id.*

61. WATER LAW DOCTRINES, *supra* note 55, at 2.

62. *See, e.g.*, O.C.G.A. §§ 12-5-20, 12-5-90 (2001).

63. *See* JOHN C. DONAHUE, GROUND-WATER QUALITY IN GEORGIA FOR 2000, at 1-5 (Ga. Envtl. Prot. Div. 2001); DEBBIE WARNER & VIRGIL NORTON, AN OVERVIEW OF WATER-RESOURCE ISSUES IN THE MIDDLE AND LOWER FLINT RIVER SUBBASINS, SOUTHWEST GEORGIA (Kathryn J. Hatcher ed., 2003), available at http://ga.water.usgs.gov/pubs/other/gwrc2003/pdf/Warner_Norton-GWRC2003.pdf.

64. *See* Honorable Thurbert Baker, Attorney General of Georgia, Remarks at the Joint Meeting of the Comprehensive Water Plan Study Committee and the Water Plan Advisory Committee (Jan. 7, 2002), <http://www.cviog.uga.edu/water>; ROBERT S. BOMAR, GEORGIA WATER LAW 1 (Ga. Dep. Law, 2000), available at <http://www.cviog.uga.edu/water/whitepapers/waterlawbomar.pdf>.

65. BOMAR, *supra* note 64, at 3.

66. *Id.* at 1.

law can be classified as a form of the Regulated Reasonable Use Doctrine for groundwater.”⁶⁷ For groundwater source withdrawals “that are less than 100,000 [gpd], Georgia’s water law is ambiguous.”⁶⁸ However, one can make a strong case that Georgia common law for groundwater rights has evolved to a form of the reasonable use doctrine.⁶⁹

Georgia laws related to interbasin transfers of water are few in number and ambiguous in scope. The Georgia Code authorizes interbasin transfers by allowing the EPD, the agency that regulates withdrawal rights under Georgia’s regulated riparianism, to grant permits involving interbasin transfers of water.⁷⁰ The surface water withdrawal statute only requires the EPD Director to “give due consideration” to existing uses and applications that do not involve interbasin transfers before granting a permit for such a transfer.⁷¹ The EPD Director must also give notice in the form of a press release for issuance of interbasin transfer permits.⁷² “For the sixteen-county area in the Metropolitan North Georgia Water Planning District, Georgia law provides that the District, in formulating its water supply plan, ‘shall neither study nor include in any plan any interbasin transfer of water from outside the district area.’”⁷³ If Alabama and Georgia resolve the water-sharing dispute over the Alabama-Coosa-Tallapoosa (“ACT”) River Basin, and they form a federally sanctioned interstate compact, additional authorization for interbasin transfers will exist under federal law.⁷⁴ Georgia currently has no

67. *Id.*

68. *Id.*

69. *See id.*; *see also* WATER LAW DOCTRINES, *supra* note 55, at 1.

70. O.C.G.A. § 12-5-31(n) (Supp. 2004).

71. O.C.G.A. § 12-5-31(n)(1) (Supp. 2004).

72. O.C.G.A. § 12-5-31(n)(2) (Supp. 2004).

73. CIANNAT M. HOWETT, WATER MANAGEMENT LAWS IN GEORGIA 3 (S. Envtl. Law Ctr.), available at <http://www.rivercenter.uga.edu/publications/pdf/ag-howett.pdf> (last visited Jan. 16, 2005) (quoting O.C.G.A. § 12-5-584(f) (Supp. 2004)).

74. *See* ADECA OFFICE OF WATER RES., ALABAMA-COOSA-TALLAPOOSA (ACT) RIVER BASIN COMPACT: DRAFT WATER ALLOCATION FORMULA OF MAY 1, 2003, FREQUENTLY ASKED QUESTIONS (FAQ) LIST 6 (May 1, 2003) (assisting interested parties in understanding the Draft Agreement) [hereinafter ACT FAQ].

provision for compensation to the basin of origin for the costs associated with interbasin transfers.⁷⁵

No one has challenged the legal status of the EPD's right to grant interbasin transfers of water. However, Georgia law may impose more limitations on interbasin transfers than the Georgia Code provides. The common law plays a significant role in the legality of interbasin transfers because the Code specifically preserves the common law for surface water rights.⁷⁶ Essentially, laws enacted by the General Assembly must conform to Georgia's common law.⁷⁷

Until 1980, the common law in Georgia restricted water withdrawal rights to reasonable use on riparian lands.⁷⁸ In 1980, the Georgia Supreme Court expanded these rights considerably in *Pyle v. Gilbert*.⁷⁹ This case involved a dispute between the owner of a 140-year-old gristmill and five irrigating farmers.⁸⁰ The mill owner claimed that the irrigation use was unreasonable because it limited his ability to operate the mill, and he requested that the irrigation cease.⁸¹ The Georgia Supreme Court posed the problem before it as choosing "between the past and the present."⁸² The court determined that the farmers could use the water on non-riparian land if the use of water for irrigation was reasonable.⁸³ The court implied that, as long as the legislature acknowledged that the diversion was reasonable, Georgia law did not prohibit it.⁸⁴ An expansive reading of the decision provides a legal basis for interbasin transfer. The court expressly refused to adopt a rule protecting a judicially prescribed minimum level for the downstream users.⁸⁵

The *Pyle* ruling was especially important for municipalities in North Georgia. Courts treat municipalities like private riparians. Prior

75. INTERBASIN TRANSFER WORKING GROUP, *supra* note 8, at 6.

76. *See* O.C.G.A. § 12-5-46 (2001).

77. *See id.*

78. *See* *City of Elberton v. Pearle Cotton Mills*, 50 S.E. 977, 977-78 (Ga. 1905).

79. 265 S.E.2d 584 (Ga. 1980).

80. *Id.* at 585.

81. *Id.* at 585, 588.

82. *Id.* at 585.

83. *Id.* at 589.

84. *Id.* at 588.

85. *See Pyle*, 265 S.E.2d at 588-89.

to the *Pyle* decision, a court would consider the distribution of water supply to users within the city who were in a different river basin unreasonable *per se*.⁸⁶ The *Pyle* decision legitimized a long-standing practice of municipalities in North Georgia where cities withdraw water for water supply purposes and discharge water after use to another river basin. Additionally, it appears to have opened the legality of interbasin transfers, at least between adjacent watersheds.

However, the *Pyle* decision did not settle the critical issue of return flows after non-riparian use. Diversion of a portion of a watercourse for non-riparian use “should not be considered a protected right, regardless of its source.”⁸⁷ Under the Georgia common law, a downstream owner is

entitled to have the water in such streams come to his land in its natural and usual flow, subject only to such detention or diminution as may be caused by a reasonable use of it by other riparian proprietors. The diverting of the stream in whole or in part from its natural and usual flow, or the obstructing thereof so as to impede its course or cause it to overflow or injure the land through which it flows or any right appurtenant thereto, or the polluting thereof so as to lessen its value to the owner of such land shall constitute a trespass upon the property.⁸⁸

One can make the case that the portion of unconsumed water involved in an interbasin transfer must return to the basin of origin. Thus, the *Pyle* decision may have significant ramifications with regard to the development of effective, efficient, and equitable interbasin water transfer law in Georgia.

86. See JOSEPH W. DELLAPENNA, WATER ISSUES, WHITE PAPER: EXERCISING RIPARIAN RIGHTS AND NON-RIPARIAN LAND 4 (2002), available at <http://www.cviog.uga.edu/water/whitepapers/riparianrights.pdf>.

87. David Montgomery Moore, *Water Law and Policy in Georgia*, in STATE B. GA. ENVTL. L. SEC. 1, 6 (Summer 2004).

88. *Dawson v. Wade*, 361 S.E.2d 181, 183 (Ga. 1987).

C. Interbasin Transfer Law in States Adjacent to Georgia

A number of states adjacent to Georgia have enacted interbasin transfer provisions in their laws that require a state permit for each interbasin transfer.⁸⁹ The conditions under which states issue permits vary, but most require, at a minimum, that the transfer be consistent with the public interest.⁹⁰

1. Florida

When granting a permit, the Florida Department of Environmental Management must consult with all local governments affected by the proposed transfer and must consider the value of the applicant's existing capital investment in water-related infrastructure.⁹¹ Subject to approval, local governments within the district allow groundwater transfers between Water Management Districts upon a finding that the transfer is in the public interest.⁹² "State regulations preempt any regulation or prohibition of interbasin transfers by a water management district or local unit."⁹³

2. South Carolina

South Carolina has one of the most detailed interbasin water transfer laws. The Division of Health and Environmental Control ("Division") will grant a permit only if the proposed transfer will not adversely affect the public health and welfare.⁹⁴ The proposed interbasin transfer cannot diminish the basin of origin below the seven-day, ten-year low flow.⁹⁵ The Division also considers the impact on interstate water use.⁹⁶ Prior to granting the permit, the South Carolina law charges the Division with the following duties:

89. FLA. STAT. ANN. § 373.223 (West 2000).

90. *Id.* § 373.223(1)(c).

91. *Id.* § 373.223(3)(f)-(g).

92. *Id.* § 373.2295.

93. PAUL G. FORAN ET AL., SURVEY OF EASTERN WATER LAW: A REPORT TO THE ILLINOIS DEPARTMENT OF NATURAL RESOURCES 46 (1995).

94. S.C. CODE ANN. § 49-21-30(D) (Law. Co-op. 2004).

95. *Id.* § 49-21-30(E).

96. *Id.* § 49-21-30(C)(9).

- (1) Protect present, and consider projected stream uses of the losing river basin generally and of the losing river specifically including, but not limited to, present agricultural, municipal, industrial and instream uses, and assimilative needs.
- (2) Protect water quality of the losing river basin.
- (3) Consider reasonably foreseeable future water needs of the losing river basin.
- (4) Consider the reasonably foreseeable future water needs of the applicant for the water to be transferred, including methods of water use, conservation, and efficiency of use.
- (5) Consider beneficial impact on the State and its local subdivisions of any proposed transfer, and the capability of the applicant to implement effectively its responsibilities under the requested permit.
- (6) Consider the nature of the permittee's use of the water, to determine whether the use is reasonable and beneficial.
- (7) Consider whether the proposed project shall promote and increase the storage and conservation of water.
- (8) Consider the feasibility of alternative sources of supply and their comparative costs.
- (9) Consider impact on interstate water use.
- (10) Consider requirements of other state or federal agencies with authority relating to water resources.
- (11) Consider availability of water in the losing river basin to respond to emergencies, including drought.
- (12) Consider whether the project shall have any beneficial or detrimental impact on navigation, hydropower generation, fish and wildlife habitat, aesthetics, or recreation.
- (13) Consider such other facts and circumstances as are reasonably necessary to carry out the purposes of this chapter.⁹⁷

97. *Id.* § 49-21-30(C).

3. *Tennessee*

Tennessee also enacted a comprehensive interbasin water transfer law. The State does not permit any transfer of water that would cause the remaining flow in the losing river basin to be less than the instream flow as established prior to the transfer.⁹⁸ When granting permits, the Division shall consider:

- (a) the quantity of the proposed withdrawal and the stream flow of the losing river(s) . . . ;
- (b) protection of the present uses, and consideration of projected stream uses of the losing river(s) . . . ;
- (c) protection of the water quality in the losing river(s) at low flow conditions;
- (d) the reasonably foreseeable future water needs of the losing river basin;
- (e) the reasonably foreseeable future water needs of the [receiving basin], including methods of water use, conservation, and efficiency . . . ;
- (f) the beneficial impact of any proposed transfer . . . ;
- (g) [whether the applicant's water use] is reasonable and beneficial;
- (h) whether the proposed project shall promote conservation of water;
- (i) the feasibility, the costs, and the environmental impacts of alternative sources of supply;
- (j) the requirements of other state or federal agencies with authority relating to water resources;
- (k) the availability of water in the losing river basin to respond to emergencies, including drought;
- (l) . . . any beneficial or detrimental impact on navigation, . . . power generation, fish and wildlife habitat, aesthetics, or recreation;

98. See TENN. COMP. R. & REGS. 1200-4-13-.05(3) (2004).

- (m) the quantity, location, and timing of water returned to the basin of origin or a downstream basin;
- (n) climatic conditions;
- (o) any offsetting increases in flow in the basin of origin that may be arranged through permit conditions;
- (p) the number of downstream river miles from which water will be diverted as a result of the transfer; and
- (q) such other factors as are reasonably necessary to carry out the purposes of the Act⁹⁹

4. *Alabama*

Among the states bordering Georgia, Alabama has the least developed interbasin transfer law and does not appear to have addressed the issue of interbasin transfer except in relation to the ACT Compact negotiations with Georgia.¹⁰⁰ This potential interbasin transfer, discussed in the ACT Compact negotiations, would occur within the State of Georgia under the jurisdiction of Georgia water law.¹⁰¹

D. Interbasin Transfer Laws Proposed by Learned Panels

Three committee reports of learned panels, including a federal committee, a national professional organization, and a State of Georgia committee, have published reports on interbasin water transfer law. States should consider these recommendations in the development of an interbasin transfer of water law. These recommendations include the 1973 National Water Commission Report,¹⁰² the American Society of Civil Engineers (“ASCE”) Water Regulatory Standards Committee’s ASCE/EWRI Standard 40-03,

99. *Id.* § 1200-4-13-.05(2).

100. *See generally* ACT FAQ, *supra* note 74.

101. *See generally id.*

102. NAT’L WATER COMM., *supra* note 41.

Regulated Riparian Model Water Code,¹⁰³ and the 2002 Georgia Joint Study Committee's report.¹⁰⁴

1. *National Water Commission*

In 1968, Congress established the National Water Commission to provide a national, long-range perspective on water problems in the United States.¹⁰⁵ The Commission's 1973 Report concluded that evaluation of proposed interbasin water transfers should focus on the economics of the specific proposal, evaluating whether the proposal offers the least-cost source of water supply and whether the value of the new uses in the receiving basin exceeds the value of the water use in the basin of origin.¹⁰⁶ With regard to basin of origin protection, the Report noted that interbasin transfer restrictions attempt to protect the communities' needs over those of individuals.¹⁰⁷ The Commission also found that the need for basin of origin protection in interbasin transfers of water was different from needs associated with the export of coal, oil, copper, timber, and other natural resources because conventional markets set the price of these other resources.¹⁰⁸ For the other natural resources, the area of origin normally receives its protection in the form of taxes and revenues from the export of the resource.¹⁰⁹ The Commission required a link between safeguards for a water exporting area and future or potential water development in the area.¹¹⁰

103. REGULATED RIPARIAN MODEL WATER CODE: ASCE/EWRI STANDARD 40-03 (Am. Soc'y of Civil Eng'rs 2004) [hereinafter ASCE/EWRI STANDARD 40-03].

104. GA. WATER PLAN, *supra* note 7.

105. National Water Commission Act, Pub. L. No. 90-515, 82 Stat. 868; *see* NAT'L WATER COMM., *supra* note 41, at ix-xi.

106. *See id.* at 317-31.

107. *See id.* at 322-33; *see also* Ronald A. Kaiser, *Texas Water Marketing in the Next Millennium: A Conceptual and Legal Analysis*, 27 TEX. TECH L. REV. 181, 215 (1996) ("Unlike other protectionist statutes like the no-injury rule, the interbasin transfer restrictions are intended to safeguard the needs of the entire community, not just those of other water users.").

108. NAT'L WATER COMM., *supra* note 41, at 323.

109. *Id.*

110. *Id.*

2. American Society of Civil Engineers

In 1997, ASCE published *The Regulated Riparian Model Water Code* (“ASCE Model Code”).¹¹¹ The purpose of this publication, which the organization has since adopted as a Standard,¹¹² was to “develop proposed legislation for adoption by state governments for allocating water rights among competing interests and for resolving other quantitative conflicts over water.”¹¹³ The ASCE Model Code recommended adoption of a policy to “protect the reasonable needs of water basins of origin through the regulation of interbasin transfers.”¹¹⁴

The ASCE Model Code recommended that, in addition to the normal requirements for the issuance of water withdrawal permits, special standards apply to interbasin transfers. The issuing authority should consider the following:

- (a) the supply of water available to users in the basin of origin and available to the applicant within the basin in which the water is proposed to be used;
- (b) the overall water demand in this basin of origin and in the basin in which the water is proposed to be used; and
- (c) the probable impact of the proposed transportation and use of water out of the basin of origin on existing or foreseeable shortages in the basin of origin and in the basin in which the water is proposed to be used.¹¹⁵

The commentary noted:

Large transfers of water from one water basin to another have become common. Often these transfers involve the transfer of

111. See generally AM. SOC’Y OF CIVIL ENG’RS, *THE REGULATED RIPARIAN MODEL WATER CODE* (Joseph W. Dellapenna ed., 1997) [hereinafter MODEL WATER CODE].

112. ASCE/EWRI STANDARD 40-03, *supra* note 103, at iii-ix.

113. *Id.* at vii; MODEL WATER CODE, *supra* note 111, at iii.

114. ASCE/EWRI STANDARD 40-03, *supra* note 103, at 10.

115. *Id.* at 113.

water from a rural area to an urban area. Rural areas fear the erosion of their tax base, the economic health of the community, and the possibility of general social disruption that might arise from an interbasin transfer that, in extreme cases, could cause land to be taken out of production or could prevent future investment in the region. Any of the foregoing impacts could also produce severe secondary economic impacts that would cripple the remaining farmers, affect businesses relying on customers formerly employed in activities directly precluded by the interbasin transfer, and even adversely affect fish, wildlife, and in-place uses. In such cases, one can question the wisdom of ravaging a small rural community in order to provide water to an expanding city.¹¹⁶

3. *Georgia Joint Study Committee*

In 2002, the Georgia General Assembly created the Georgia Joint Comprehensive Water Plan Study Committee (“JSC”).¹¹⁷ The General Assembly charged the JSC with providing recommendations to establish a clear framework for comprehensive water management in Georgia.¹¹⁸ The JSC appointed a special task force to evaluate what interbasin transfer policies Georgia should adopt.¹¹⁹ Based on the task force’s report, the JSC recommended a number of policies for inclusion in Georgia law. The JSC defined interbasin transfer as “the withdrawal, diversion, or pumping of surface water from one river basin or the withdrawal of ground water from a point located within or beneath one river basin and release of all or any part of the water in a river basin different from the basin of origin.”¹²⁰

The JSC recommended that the State adopt a policy “to protect the reasonable needs of donor and receiving basins through the

116. *Id.*

117. S.R. 142, 146th Gen. Assem., Reg. Sess. (Ga. 2001), available at http://www.legis.state.ga.us/legis/2001_02/.

118. GA. WATER PLAN, *supra* note 7, at 1.

119. *Id.*

120. *Id.* at 8.

regulation of interbasin transfers”¹²¹ and grant interbasin transfer permits after considering the following factors:

1. the quantity of the proposed withdrawal and the stream flow of the basin of origin, with special concern for low flow conditions;
2. protection of the present uses, and consideration of projected stream uses of the basin of origin, including but not limited to, present agricultural, municipal, industrial and instream uses, and assimilative needs, with special concern for low flow conditions;
3. protection of the water quality in the basin of origin at low flow conditions;
4. the economic feasibility, cost effectiveness, and environmental impacts of the proposed permit in relation to alternative sources of water supply;
5. the overall current water demand and the reasonably foreseeable future water needs of the basin of origin;
6. the supply of water presently available to the receiving basin, as well as the overall current water demand and the reasonably foreseeable future water needs of the receiving basin, including methods of water use, conservation, and efficiency of use;
7. the beneficial impact of any proposed transfer, and the capability of the applicant to implement effectively its responsibilities under the requested permit;
8. the nature of the applicant’s use of the water, to determine whether the use is reasonable and beneficial;
9. whether the receiving basin has implemented all reasonable efforts to promote conservation;
10. whether the proposed project shall promote conservation of water;
11. the requirements of other state or federal agencies with authority relating to water resources;
12. the availability of water to respond to emergencies, including drought in the basin of origin and in the receiving basin;

121. *Id.*

13. whether the project shall have any beneficial or detrimental impact on navigation, hydropower or other power generation, fish and wildlife habitat, aesthetics, or recreation;
14. the quantity, quality, location, and timing of water returned to the basin of origin, receiving basin, or a downstream basin;
15. climatic conditions;
16. any offsetting increases in flow in the basin of origin that may be arranged through permit conditions;
17. the number of downstream river miles from which water will be diverted as a result of the transfer;
18. consultations with local governments affected by the proposed transport and use;
19. the correlation between surface water and ground water in the basin of origin, and whether the proposed use will be harmful to the supply of either;
20. impact on interstate water use;
21. the cumulative effect on the basin of origin and the receiving basin of any water transfer or consumptive water use that is authorized or projected;
22. such other factors as are reasonably necessary to carry out the purposes of Georgia law.¹²²

Almost half of these considerations relate to basin of origin protection.

The JSC further recommended that interbasin transfers affect no more than two adjacent counties, “except to satisfy critical needs, which are temporary, short-term needs”¹²³ Further, the JSC recommended public notice provisions and a provision giving the EPD the authority to revoke an interbasin transfer permit in times of water scarcity.¹²⁴ In addition to the factors considered in granting an interbasin transfer, the JSC reinforced the need for basin of origin protection with the following statement:

122. *Id.* at 8-9.

123. *Id.* at 9.

124. GA. WATER PLAN, *supra* note 7, at 11.

In making a determination on any application for a new interbasin transfer or modification of an existing interbasin transfer, the Division shall consider the present and future water needs of both the basin of origin and the receiving basin and all the possible effects the interbasin transfer could have on communities in the basin of origin including environmental impacts, social impacts, and economic losses, including those due to subsequent declining property values and population decline. When feasible, the non-consumptive portion of the interbasin transfer shall be returned to the basin of origin. Water users receiving water as the result of the proposed interbasin transfer shall implement water conservation procedures and must demonstrate that there are no cost effective alternatives to the interbasin transfer.¹²⁵

IV. CREATING EFFICIENT, EFFECTIVE, AND EQUITABLE GEORGIA INTERBASIN WATER TRANSFER LAW

As the State of Georgia drafts its timely and critical statewide comprehensive water management plan, there is a need for an effective, efficient, and equitable interbasin water transfer law that protects basins of origin. Effective, efficient, and equitable laws follow certain guiding principles.¹²⁶ Among those is the principle of legal certainty; statutes and administrative regulations should set out the applicable law with the greatest possible degree of clarity.¹²⁷ Second, there are the principles of equality and universality.¹²⁸ Third, the State must accord all persons, citizens, or corporations equal treatment without discrimination on any basis.¹²⁹ It then follows that

125. *Id.* at 11.

126. See D. H. ANDERSON, MARITIME BOUNDARIES AND LIMITS: SOME BASIC LEGAL PRINCIPLES 1, 5 (2001), available at <http://www.gmat.unsw.edu.au/ablos/ABLOS01Folder/ANDERSON.PDF>; John Bradford Braithwaite, *Rules and Principles: A Theory of Legal Certainty*, 27 AUSTL. J. LEGAL PHIL. 47 (2002); CONSTANTINE STEPHANOU, GOOD GOVERNANCE AND ADMINISTRATIVE DISCRETION § 2 (2004), available at http://www.unecce.org/trade/workshop/OSCE_0304/presentations/Stephanou.doc.

127. Legal certainty in law is an absolute requirement for effective and efficient business and commerce. See TAKIS TRIDIMAS, THE GENERAL PRINCIPLES OF EC LAW 163 (1999).

128. See STEPHANOU, *supra* note 126, § 2.

129. See *id.*

the pending interbasin water transfer law developed for Georgia must provide clarity, certainty, and equality for both the basin of origin and the receiving basin.

The interbasin laws of South Carolina and Tennessee are similar in many respects to the recommendations by the Georgia JSC.¹³⁰ Each clarifies the preexisting law, and none appear to be discriminatory as to the various direct and indirect needs and uses of water. The laws of the two states and the Georgia JSC recommendations are similar in the duties, factors, or criteria that a state must evaluate prior to granting a permit.¹³¹ An evaluation of these three sets of duties should provide a model for the drafters of Georgia's interbasin water transfer laws.

Issues still exist with these three sets of duties, however. Of the three potential models for interbasin transfers of surface water and groundwater, none provide a description of the weight that these factors or criteria should have in the permit process or of how a balancing of the criteria should factor into the decision-making process.¹³² The Tennessee law requires the permitting agency to consider a list of factors and effects from any proposed interbasin transfer.¹³³ The South Carolina law imposes a duty to protect the existing and potential water users and the water quality of the basin of origin, but the umbrella "duty to protect" provides no specific standards.¹³⁴ Similar to Tennessee, in South Carolina, the permitting agency must consider the remaining factors and effects in making its decision.¹³⁵ Likewise, the Georgia JSC recommendations are not definitive regarding the balancing of the criteria used in the evaluation, and they do not address the weight that the State should give each of the criteria.¹³⁶

Evaluation of these potential interbasin transfer models also reveals that, while all three models add clarity and inclusion in the

130. *See supra* notes 93-98 and accompanying text.

131. *See supra* notes 93-98 and accompanying text.

132. *See supra* notes 93-98 and accompanying text.

133. *See supra* notes 97-98 and accompanying text.

134. *See supra* notes 93-96 and accompanying text.

135. *See supra* notes 93-96 and accompanying text.

136. *See supra* notes 116-24 and accompanying text.

permitting process, the Georgia JSC recommendations add three other duties or criteria that are critical to an efficient, effective, and equitable interbasin transfer law.¹³⁷ The JSC recommends that the permitting agency consult with local governments before granting a permit.¹³⁸ While this need may seem too obvious to warrant inclusion as a criterion, its absence reduces the certainty of the law, at least as to the local governments. All basins affected by the interbasin water transfer must know that they have a voice in the decision-making process.

The Georgia JSC recommendations also necessitate the evaluation of “the correlation between surface water and ground water”¹³⁹ The proposed Georgia interbasin transfer law recognizes this interconnectivity because the transfer of surface water out of the basin of origin may have significant effects on the adjoining groundwater aquifers.

Finally, the Georgia JSC recommendations recognize that the cumulative effect on the basin of origin is an important factor in interbasin transfers of surface water and groundwater.¹⁴⁰ The Georgia law should place some limitation on the total amount of water that receiving basins can divert from any particular river basin. The permitting authority should not concern itself with individual interbasin transfers in isolation, while neglecting the cumulative impact.

A more definitive provision in basin of origin protection legislation can meet the need to provide certainty for citizens and stakeholders within potential basins of origin. Thus, the recommendations of the JSC seem to be the appropriate model for Georgia interbasin transfer law, except that the recommendations do not provide an adequate degree of certainty for the basin of origin. A law modeled solely on these JSC recommendations would not have the certainty for the basin of origin needed to effectively manage business or industry, tourism or outdoor recreation, public health, or ecological protection.

137. See *supra* notes 116-24 and accompanying text.

138. See *supra* notes 116-24 and accompanying text.

139. GA. WATER PLAN, *supra* note 7, at 9.

140. See *supra* notes 116-24 and accompanying text.

Without a more detailed basin of origin protection provision, citizens and stakeholders in Georgia's basins of origin can never be certain as to the result of the interbasin transfer evaluation. Additionally, Georgia can never be certain of the future water supplies that are essential for economic progress and prosperity, quality of life, or ecological sustainability. There are limited standards on which the citizens and stakeholders in the basin of origin can depend to protect their interests.

Essentially, one can place the provisions for basin of origin protection into four categories: limitations on interbasin water transfers, financial compensation to the basin of origin, return of a portion of the transferred water, and legal causes of action for the harm caused by water transfers. With all of these strategies, a means for developing an adequate "interbasin transfer impact statement," similar to the environmental impact statement, is essential. This requires legislation of an adequate funding mechanism. An equitable arrangement might have the receiving party fund the impact statement by either the state or a "disinterested" party.

The first potential basin of origin protection provision limits or prohibits interbasin transfer under certain clearly defined conditions. For example, a state can limit interbasin transfers strictly to water supply needs for municipalities, counties, or other political units across river basins. The provision may also impose a distance limitation on the transfer. Although the Georgia JSC recommendations prohibit interbasin transfer across more than two adjacent counties, it might be more appropriate, from a hydrologic perspective, to limit interbasin transfers to adjacent watersheds.¹⁴¹ This standard would provide more flexibility to the Metropolitan North Georgia Water Planning District in its search for solutions to support continued economic growth in Metropolitan Atlanta.

It would be appropriate to prohibit interbasin transfers from basins of origin that do not meet the CWA's TMDL standards.¹⁴²

141. There are fifty-two watersheds in Georgia's fourteen river basins. See *Water Resources: A Toolkit for Local Governments*, Georgia Department of Community Affairs, at <http://www.georgiaplanning.com/watertoolkit/main.asp?PageID=24> (last visited Oct. 8, 2004).

142. See *supra* notes 49-51 and accompanying text.

Additionally, the law can limit or curtail interbasin transfers during periods of drought based on a specific hydrologic standard. An appropriate standard might be that the interbasin transfer ceases when the flow of the main-stem of the river in the basin of origin diminishes to a minimum flow standard imposed by the state.¹⁴³

Finally, the law can place limitations on the cumulative amounts of interbasin transfer. South Carolina has limited individual interbasin transfers to 5% of the seven-day, ten-year low flow or one million gallons or more of water a day.¹⁴⁴ Georgia can develop a similar limitation for the cumulative amount of interbasin transfer based on the cumulative effect on the basin of origin. Georgia should appoint a special committee or commission to develop the appropriate science-based standards.

Additionally, financial compensation to the basin of origin for water loss may serve as a basin of origin protection. While this approach does not provide the certainty that adequate water will be available to the basin of origin, it does provide compensation for the loss. There are a number of compensation strategies. One potential method of compensation is payment to a special authority for income foregone by the basin of origin, as well as reimbursement of any costs associated with the loss of water, such as programs necessary to meet TMDL standards. An example is a proposed initiative in the Texas Legislature that requires payment of a \$2 per acre-foot (equivalent to \$6.14 per million gallons per day (“mgd”)) per year fee to a state interbasin transfer fund.¹⁴⁵ Another method of compensation is to base payment on a share of the economic gain provided to the receiving party as the result of the interbasin transfer.

A third approach involves an engineering solution to basin of origin protection, where a state may permit interbasin transfers of water on the condition that the receiving basin return all unconsumed

143. In Georgia, the standard is 7Q10 flow—the low flow expected during a week-long drought occurring only once every 10 years. See *Georgia's New Interim Instream Flow Policy*, Georgia Conservancy, at http://www.georgiaconservancy.org/WaterQuality/WQ_instreamflowpolicy.asp (last visited Oct. 8, 2004).

144. See *supra* note 94 and accompanying text.

145. S.B. 1641, 2001 Leg., 77th Sess. (Tex. 2001) (introduced but not passed).

water to the basin of origin, if reasonable and practicable. This proposal would grandfather in the existing municipal and county treatment systems, but new treatment facilities would need to be in the basin of origin and would have to treat wastewater and discharge it back into the basin of origin. This method reduces the loss of water in the basin of origin by as much as 58%.¹⁴⁶ For example, the Texas Water Code provides that a receiving basin must return “surplus” water to the stream “if the water can be returned by gravity flow and it is reasonably practicable to do so.”¹⁴⁷

Finally, there is the legal option. Georgia could create a private cause of action for riparians in donor basins so that the judicial system could determine the remediation or compensation due the basin of origin.

CONCLUSION

A comprehensive analysis of the surface water and groundwater law issues facing Georgia in the 21st century leads to the inescapable conclusion that Georgia needs to include an effective, efficient and equitable interbasin water transfer law and policy for its Statewide Water Management Plan.¹⁴⁸ Lawmakers must draft the law to provide clarity as to when, where, and for what purpose an interbasin water transfer can occur. Further, the law must provide a process that gives an equal voice to the citizens and stakeholders in the basin of origin.¹⁴⁹ Finally, the law must clearly articulate the elements that justify an interbasin water transfer.¹⁵⁰

The recommendations of the 2002 Georgia Joint Water Plan Study Committee Final Report provide a good model for the proposed

146. The Georgia Environmental Protection Division estimates the consumptive use in the Metro area as 42%. See Harold Reheis, *Metro Atlanta is Not Southwest Georgia's Water Enemy*, ATLANTA J. CONST., June 25, 2002, available at http://www.ganet.org/dnr/environ/whatsnew_files/press.cgi?prfile=PR.20020625.01.

147. TEX. WATER CODE ANN. § 11.046 (Vernon 2000).

148. See *supra* notes 125-29 and accompanying text.

149. See *supra* notes 125-29 and accompanying text.

150. See *supra* notes 125-29 and accompanying text.

Georgia interbasin water transfer laws.¹⁵¹ However, more specific basin of origin protection provisions that provide some degree of certainty for the citizens and stakeholders must supplement these recommendations. Georgia's economic viability for future generations and the fate of the State's fourteen major rivers and six major aquifers depend on laws that will address interbasin transfers of surface water rivers and groundwater aquifers while protecting basins of origin.

151. See *supra* notes 97-105 and accompanying text.