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Water, Water, Everywhere, But Not Enough to Drink?: A Look at Water Supply and Florida's Growth Management Plan

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Cover Page Footnote

The author wishes to express special thanks to the staff of the Florida Senate Committee on Natural Resources for all the valuable background information and feedback received on this article and to her parents for their support and encouragement.

WATER, WATER, EVERYWHERE, BUT NOT ENOUGH TO DRINK?: A LOOK AT WATER SUPPLY AND FLORIDA'S GROWTH MANAGEMENT PLAN

DANA L. CROSBY*

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I. INTRODUCTION

*Water historically has been viewed as a problem in the state of Florida, not a resource.*¹

When Florida's State Comprehensive Plan was enacted in 1985,² legislators included a provision requiring the state to provide an adequate water supply and improved water quality.³ Unfortunately, local government plans mandated by the Local Government Comprehensive Planning and Land Development Regulation Act⁴ have not addressed water supply issues in a sufficiently integrated fashion. These plans are often criticized for concentrating on the availability of water facilities instead of addressing the adequacy of the actual water supply status in a particular region.⁵ In other

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1. Pat Leisner & Ron Word, *Water Fight: Floridians Move to Save Their Dwindling Supplies*, CHI. TRIB., Sept. 21, 1994, at 8 (quoting Richard Hamann, University of Florida Water Specialist).

2. 1985 Fla. Laws ch. 85-57, § 1 (codified at FLA. STAT. §§ 187.101-.201).

3. FLA. STAT. § 187.201(8)(a) (1995) provides:

Florida shall assure the availability of an adequate supply of water for all competing uses deemed reasonable and beneficial and shall maintain the functions of natural systems and the overall present level of surface and ground water quality. Florida shall improve and restore the quality of waters not presently meeting water quality standards.

Id.

4. *Id.* § 163.3161.

5. See TASK FORCE ON LAND USE AND WATER PLANNING, FINAL REPORT 2 (1994) [hereinafter TASK FORCE REPORT].

words, Florida has moved from the realm of *planning* for water supply use to simply *regulating* water consumption.⁶

Serious consequences, such as dried-up lakes, damaged wetlands, and tainted water supplies, have resulted from the lack of an integrated land use and water supply plan.⁷ Such ad hoc planning and development has heavily impacted the whole of Florida's water resources.⁸ Although water policy is specifically addressed in the State Comprehensive Plan,⁹ the "tie between land and water planning is a significant 'missing link' in Florida's growth management planning process."¹⁰ In fact, some observers claim that the only apparent connection between comprehensive planning and water supply policy is the state's permitting requirement.¹¹

Until recently, the cumulative impact of development on water supply went unnoticed. Now the crises created by uncoordinated water supply planning practices have become painfully obvious in some regions of Florida. To study the water issue in more depth, state government leaders developed the Land Use and Water Planning Task Force in 1993, the Florida House Select Committee on Water Policy in 1994, and the Florida Senate Select Committee on Water Policy in 1995.¹² Innumerable proposals and recommendations on the subject of water supply have subsequently emerged but have added very little new information to this subject.¹³

Florida has five water management districts created in response to the Florida Water Resources Act of 1972.¹⁴ In addition, a twenty-

6. See STAFF OF FLA. H.R. SELECT COMMITTEE ON WATER POLICY, WATER SUPPLY POLICY CONSIDERATIONS: INTERIM PROJECT REPORT 5 (Dec. 1995) [hereinafter HOUSE REPORT].

7. See *id.* at 6 (discussing the consequences of Florida's water supply problems); see also Leisner, *supra* note 1, at 8 (reporting that thousands of acres of lakes and wetlands dry up as the demand for water increases).

8. See HOUSE REPORT, *supra* note 6, at 6 (stating that water management practices have resulted in conditions in which the demand exceeds the sustainable water supply).

9. FLA. STAT. § 187.201(8)(a) (1995).

10. TASK FORCE REPORT, *supra* note 5, at 1 (quoting the Third Environmental Land Management Study Committee's 1992 Report); see also FLORIDA DEP'T OF ENVTL. PROTECTION ET AL., 1995 FLORIDA WATER PLAN 10 (1995) [hereinafter FLA. WATER PLAN] (stating that inadequate links between land and water planning and between planning and program implementation result in conflicts and inefficiencies in these planning programs).

11. See HOUSE REPORT, *supra* note 6, at 5. Permits for water use are required except for domestic consumption by individual users. See *id.* (citing FLA. STAT. ch. 373 (1995)); see also Roy Kenneth Pace II, *The Year of Water*, FLA. SPECIFIER, Jan. 1996, at 22.

12. Select Committees are created at the prerogative of the speaker of the House and the President of the Senate.

13. See also HOUSE REPORT, *supra* note 6, at 35 (discussing how other reports on water policy consistently highlight the need to develop and implement functional water supply plans, to compile the necessary data to determine a sustainable yield, and to integrate land and water use planning). See generally TASK FORCE REPORT, *supra* note 5, at 35-43 (recommending ways to improve Florida's water supply policy).

14. 1972 Fla. Laws ch. 72-299 (codified at FLA. STAT. ch. 373 (1995)).

one member Water Management District Review Commission was created in 1994 to comprehensively review Florida's system of regional water management.¹⁵ The Commission presented several recommendations in a December 1995 report, and the process was finalized in early 1996.¹⁶ Although 1996 was expected to be a busy year for Florida water policy legislation, the Legislature passed few such laws during this session.¹⁷

This article addresses water supply and planning laws, exploring the nexus between the assessment of available water supply when engaging in local and regional planning and the consequences resulting from failure to perform such an assessment. Current recommendations designed to alleviate present and future water supply problems are highlighted and presented throughout this article. By way of introduction, Part II of this article provides background on Florida's water situation. Part III gives an overview of pertinent state and local growth management plans. Part IV analyzes the potential benefits resulting from integrating state, regional, and local planning efforts with those of the water management districts and alternative sources of water supply and conservation. Part V examines a few of the major difficulties directly affecting Florida's water supply: population growth, demographics, agriculture, and pollution. This article concludes with recommendations, which generally follow the policies expounded in the State Comprehensive Plan for alleviating many of the state's current water supply problems.

15. 1994 Fla. Laws ch. 94-270 (codified at FLA. STAT. § 373.069 (1995)).

16. See WATER MANAGEMENT DISTRICT REVIEW COMM'N, BRIDGE OVER TROUBLED WATERS: RECOMMENDATIONS OF THE WATER MANAGEMENT DISTRICT REVIEW COMM'N attachment 2 (1995) [hereinafter WMDRC REPORT]. Recommendations and comments on the work of the Water Management District Review Commission were presented before the Florida Senate Select Committee on Water Policy on January 8, 1996. See *id.*

17. Three bills warrant discussion. On January 10, 1996, the Senate Natural Resources Committee discussed Senate Bill 10, proposed by Florida Senator Buddy Dyer (D-Dist. 14). This bill provided for classification and assessment of high-water recharge lands in counties choosing to have a high-water recharge tax assessment program and was withdrawn March 5, 1996. See Fla. SB 10 (1996). Florida Senator Charles Williams (D-Dist. 4) introduced Senate Bill 638, which revised certain criteria for water resources permitting. See Fla. SB 638 (1996). A companion bill, Committee Substitute for House Bill 1887, passed the Legislature in the 1996 session. See 1996 Fla. Laws ch. 96-370 (to be codified at FLA. STAT. § 373.019).

II. FLORIDA'S HISTORICAL WATER SUPPLY

*Water is to Florida what oil is to Saudi Arabia.*¹⁸

Several years ago, then-Governor Bob Martinez highlighted the idea of an "empty water tap" to illustrate the need for growth management and water conservation in Florida.¹⁹ Since then the state's water scenario has worsened. A few specific issues that lawmakers, policymakers, and academics have focused on include: the relative non-accountability of the water management districts,²⁰ Florida population growth rate of approximately 250,000 new residents per year,²¹ groundwater contamination from leaking petroleum storage tanks and pollution, particularly in environmentally sensitive areas such as the Everglades,²² and a lack of water supply concurrency between state, regional, and local growth management plans.²³

Water conservation goals and plans do not go unsupported by the citizens of Florida.²⁴ An opinion poll dating back to the inception of the State Comprehensive Plan reveals that an average of 83% of all Floridians surveyed agreed that water conservation is essential in Florida.²⁵ Current polls reflect a continued public awareness of the need for water conservation, especially in the more water-strapped regions of Florida.²⁶

18. Charley Reese, *Florida Hits Panic Button to Conserve*, ORLANDO SENT., July 15, 1990, at G1 ("Destroy that water by excessive use and pollution and every economic pillar holding up the state—tourism, agriculture, retirement and real estate—will collapse.").

19. *See id.*

20. *See* HOUSE REPORT, *supra* note 6, at 1.

21. *See* TASK FORCE REPORT, *supra* note 5, at 1 (noting approximately 685 new residents enter Florida each day).

22. *See* HOUSE REPORT, *supra* note 6, at 6.

23. *See id.* (stating that localities are independently developing water supply systems without the benefit of a comprehensive regional water supply plan or planning process that would determine the most cost-effective system for all users in a region); *see also* FLA. STAT. § 163.3180 (1995) (stating that "[r]oads, sanitary sewer, solid waste, drainage, potable water, parks and recreation, and mass transit . . . are the only public facilities and services subject to the concurrency requirement on a statewide basis.").

24. *See* Lance deHaven-Smith, *Environmental Publics: Public Opinion on Environmental Protection and Growth Management*, 1987 LINCOLN INST. OF LAND POL'Y 22 (reporting statistics from an opinion poll on selected growth management issues, including water conservation).

25. *See id.* The poll divided the state into three regions: Northern, Central, and Southern Florida, with 78%, 82%, and 88%, respectively, supporting water conservation. *See id.*

26. *See* Prakash Gandhi, *Southwest District's Survey a Gauge of Public Sentiment on Water Supply Issues*, FLA. SPECIFIER, Oct. 1995, at 15. Seventy-eight percent of those surveyed by the Southwest Florida Water Management District would support restrictions to encourage people to use less water in their homes. Seventy-five percent said they would use alternative water sources if it would protect the environment and ensure adequate sources of water in the future. Finally, sixty percent said the most important reason for conserving water is to sustain the existing water supply. *See id.*; Wes Platt, *Public Rallies to Save Water*, ST. PETE. TIMES, June 19, 1994, at 1B (discussing a water conservation rally in northwest Hillsborough County).

A brief overview of geology and terminology is necessary to properly understand Florida's water system. The continuous movement of water over the Earth's surface is described as the hydrologic cycle,²⁷ which begins with the evaporation of water by the sun.²⁸ The water then becomes precipitation and falls back to the Earth.²⁹ Water aquifers are recharged when water enters the aquifer from the surface during the hydrologic cycle.³⁰ Florida has several of these groundwater aquifer systems that provide the majority of the state's water supply.³¹ Because some regions are more conducive to replenishment, dramatic differences exist between the aquifers' recharge capacity throughout the state.³² For example, South Florida, the East Coast, and Pinellas County generally have no recharge capacity, and the area just south of the heavily populated Tampa region has very low recharge capacity.³³ Areas of high or moderate recharge capacity are located throughout the central portion of Florida and the panhandle.³⁴

III. OVERVIEW OF THE STATE AND LOCAL GROWTH MANAGEMENT PLANS

*I do not believe Florida has a water policy. It has a number of water empires and would-be emperors, but no comprehensive policy.*³⁵

Florida is recognized as a national leader in comprehensive planning.³⁶ With the adoption of its Local Government Comprehensive Planning and Land Development Act in 1975,³⁷ the Florida Legislature required that each local government adopt a plan to make future growth decisions consistent with the Act.³⁸ Future water supply needs and water conservation were to be included in the local

27. See ED LANE, FLORIDA'S GEOLOGICAL HISTORY AND GEOLOGICAL RESOURCES 43 (1994) [hereinafter FLA. GEO. SURVEY].

28. See *id.*

29. See *id.*

30. See *id.*

31. The Floridan Aquifer, underlying the majority of Central and Northern Florida, is one of the world's most productive aquifers. See *id.*

32. See FLA. WATER PLAN, *supra* note 10, at 19. Central West and South Florida are described as water caution areas in this report. See *id.*

33. See *id.* at 43.

34. See *id.*

35. Leisner, *supra* note 1, at 8 (quoting Jeb Bush, 1994 Republican gubernatorial candidate).

36. See Thomas G. Pelham, *Adequate Public Facilities Requirements: Reflections on Florida's Concurrency System for Managing Growth*, 19 FLA. ST. U. L. REV. 973, 974 (1992).

37. 1975 Fla. Laws 75-257, § 4. (codified at FLA. STAT. § 163.31 (1995)).

38. See FLA. STAT. 163.3167(2) ("Each local government shall prepare a comprehensive plan of the type and in the manner set out in this act or shall prepare amendments to its existing comprehensive plan to confirm it to the requirements of this part in the manner set out in this part."); see also TASK FORCE REPORT, *supra* note 5, at 8.

plan.³⁹ However, the plan gave local governments no funding and only minimal guidelines.⁴⁰

The State Comprehensive Plan, adopted in 1985,⁴¹ is now the cornerstone of Florida's integrated planning system.⁴² Once the state plan originated, the Local Government Comprehensive Planning Act received substantial updating, thus strengthening its consistency requirements.⁴³ While these changes have provided funding to local governments and guidance to local planners,⁴⁴ concurrency between state, regional, and local entities in the area of water supply continues to be problematic.⁴⁵

As late as 1987, no adequate data on water supply was available to local governments.⁴⁶ The result was years of comprehensive plan review by the Florida Department of Community Affairs, which lacked the water supply data it needed to sufficiently complete this portion of their task.⁴⁷ In hindsight, adequate water supply data and an ability to serve future needs, not just the availability of adequate public facilities, prove to be critical components of the review process.⁴⁸

Florida's water supply problem is exacerbated by the failure to formally integrate local land use decisions and regional water availability within the current growth management process.⁴⁹ Despite a concurrency requirement that local plans include an adequate water supply,⁵⁰ local governments often plan without regard for the supply

39. See FLA. STAT. § 163.3177(6)(d) (1995). The comprehensive plan shall include: A conservation element for the conservation, use, and protection of natural resource in the area, including air, water, water recharge areas, wetlands, waterwells, estuarine marshes, soils, beaches, shores, flood plains, rivers, bays, lakes, harbors, forests, fisheries and wildlife, marine habitat, minerals, and other natural and environmental resources. Local governments shall assess their current, as well as projected, water needs and sources for a 10-year period.

Id.

40. See Department of Community Affairs Secretary Jim Murley, Presentation to the Florida Senate Select Committee on Water Policy (Jan. 8, 1996) (notes on file with author) [hereinafter Murley].

41. 1985 Fla. Laws 85-57, § 1 (codified at FLA. STAT. §§ 187.101-.201 (1995)).

42. See TASK FORCE REPORT, *supra* note 5, at 1.

43. See *id.* at 8.

44. See Murley, *supra* note 40.

45. See generally HOUSE REPORT, *supra* note 6, at 6 (discussing the attempt of localities to explore the development of alternative water supply systems without the benefit of a comprehensive regional water supply plan).

46. See Murley, *supra* note 40; see also TASK FORCE REPORT, *supra* note 5, at 2.

47. See Murley, *supra* note 40.

48. See TASK FORCE REPORT, *supra* note 5, at 2.

49. See *id.* at 25; see also Juanita Greene, *State Water Woes Stems From Dearth of Courage, Not Water*, FLA. ENVIRONMENTS, Jan. 1996, at 24.

50. See FLA. STAT. § 163.3180(2)(a) (1995) (requiring that adequate public facilities and services be available concurrent with the impact of development); see also FLA. ADMIN. CODE r.

needs of regionally located entities dependent on the same water supply.⁵¹ The cumulative impact of this disjointed planning process may be undetected in the critical early planning stages of water supply, resulting in serious problems later in the process.⁵²

The Florida Legislature has taken steps to rectify integration problems. Because the local comprehensive plan is the "primary focus" for both water management and land use, the Legislature greatly expanded the Intergovernmental Coordination Element for each local plan in 1993.⁵³ Despite such legislative action, the decisions of the water agencies have no clear link to the local comprehensive plans, largely because the state, as opposed to the local government, controls water allocation.⁵⁴

Future comprehensive plan amendments that emerge from local planning offices throughout Florida should receive broader review. Components, such as water resources and supply and the Coastal Zone Management Plan, must receive consideration along with local governmental coordination of water supply data.⁵⁵ The water management districts and DEP need to provide more detailed data to local governments for comprehensive planning purposes, and approval of future Local Comprehensive Plan amendments should involve the assessment of this data.⁵⁶

9J-5.0055(3)(a)(1) (1994) (requiring that necessary water facilities be in place and able to serve a new development at the time the development order or permit is issued).

51. See TASK FORCE REPORT, *supra* note 5, at 25.

52. See *id.*; see also THE GOVERNOR'S COMM'N FOR A SUSTAINABLE SOUTH FLORIDA: INITIAL REPORT 39 (1995) [hereinafter SUSTAINABLE S. FLA. REPORT]. This task is more ominous than it may seem at first glance. For example, Florida has 67 counties and over 400 local government units in Florida. The Commission report indicates that approximately 200 different plans are being developed and are devoted exclusively to the management of water resources at the federal, state, local, tribal, and regional levels in South Florida alone. The Commission also reports that there is no consistency, coordination, or consensus regarding South Florida's options in this area. See *id.*

53. See TASK FORCE REPORT, *supra* note 5, at 35.

54. The Department of Environmental Protection (DEP) and the water management districts control the allocation of water. See TASK FORCE REPORT, *supra* note 5, at 1.

55. See Murley, *supra* note 40.

56. See *id.*

IV. THE ROLE OF THE WATER MANAGEMENT DISTRICTS

*Marrying the water districts, created some years ago, to the statewide growth management plan . . . will help manage the state's growth and water supply . . .*⁵⁷

Five geographically drawn water management districts in Florida regulate, manage, conserve, develop, and provide for the proper use of Florida's surface and ground waters.⁵⁸ Specifically, water management districts protect against flooding and manage natural resources, water supply, and water quality.⁵⁹ Policy guidelines, implementation strategies, and other guidance emerging from the water management districts are generally considered the most comprehensive sources of water data available to local and regional planners.⁶⁰ Though currently engaged in district-wide planning, the water management districts may play a greater role in future local planning processes.⁶¹

Over the years the water management districts have been increasingly criticized by those in the public and private sector.⁶² This criticism originates from the relative non-accountability of the water management districts and from the districts' taxing, rulemaking, and

57. Reese, *supra* note 18, at G1 (quoting Greg Parker, Florida state employee and drinking water specialist).

58. See FLA. STAT. § 373.069 (1995); see also TASK FORCE REPORT, *supra* note 5, at 2. Florida's five water management districts were drawn along hydrologic lines and are: Northwest Water Management District (covering the panhandle region of Florida); the Suwannee River Water Management District (covering roughly the area between Tallahassee and Gainesville); the St. Johns Water Management District (covering the central and northern portion of Florida, on the East Coast); the Southwest Florida Water Management District (covering the central West coast of Florida); and the South Florida Water Management District (covering the southern portion of Florida). See FLA. STAT. § 373.069 (1995).

59. See FLA. ADMIN. CODE r. 62-40.510(2)(b) (1994) (requiring DEP to create a Florida Water Plan, which must be developed in coordination with District Water Management Plans and must include goals and responsibilities with respect to protection and management controls of water supplies, floods, water quality, and natural systems).

60. See TASK FORCE REPORT, *supra* note 5, at 24 (reporting that *Florida Administrative Code* rule 62-40.520 lists planning data to be included in the district water management plans as specific policy guidance regarding regional water supply, flood protection, water quality, and natural resources; policies to protect, enhance or improve regional water resources, water areas, and water restoration efforts; and the natural resources of regional significance, identified by geographic location).

61. See TASK FORCE REPORT, *supra* note 5, at 30-36 (making recommendations for the assistance of water management districts to regional planning councils and local governments); see also HOUSE REPORT, *supra* note 6, at 39 (recommending the development of a supply plan by the water management districts for each of their planning areas).

62. See Leisner, *supra* note 1, at 8 (stating that the work of the water districts has been criticized by homeowners, environmentalists, and politicians alike).

water rationing authority.⁶³ One problem is the districts' authority to levy ad valorem taxes.⁶⁴ Another is the differing regulation and planning among the districts due to the differences in population, water resource availabilities, flood controls, and the economic bases of the districts.⁶⁵

Recently, upon completion of their comprehensive review of Florida's water management system, the twenty-one member Water Management District Review Commission (WMDRC) raised a number of salient points and suggestions.⁶⁶ These findings were reported to the Florida Legislature in early 1996.⁶⁷ First, the WMDRC recognizes that all future land use decisions consider anticipated water supply problems.⁶⁸ The water management districts acquire a large amount of public land in Florida,⁶⁹ and the WMDRC further recommends implementation of a more efficient land acquisition and conservation program⁷⁰ and utilization of a shared responsibility concept in land use planning and water supply management by the Governor, Florida Legislature, water management districts, DEP, and local governments.⁷¹ Finally, the WMDRC considers legislative

63. See HOUSE REPORT, *supra* note 6, at 1. "There is a relative absence of programmatic supervision of the water management districts resulting in a water management system that is regional in nature with only minimal state oversight." *Id.*

64. See FLA. CONST. art. VII, § 9 (authorizing the districts to levy ad valorem taxes). Four water management districts are authorized to levy up to 1.0 mill (\$1.00 tax per \$1000 of assessed property value). The Northwest Water Management District is authorized to levy up to 0.05 mill. See, e.g., FLA. STAT. §§ 373.171-175 (1995).

65. See FLA. WATER PLAN, *supra* note 8, at 1. For example, due to differing recharge capabilities, the northern part of Florida remains more water-rich than the south, which is more heavily dependent on rainfall. See Leisner, *supra* note 1, at 8. See generally FLA. GEO. SURVEY, *supra* note 27 (discussing Florida's hydrologic system).

66. See WMDRC REPORT, *supra* note 16, at 2-3.

67. See *id.* at 3.

68. See *id.* at 19 (recommending an amendment to section 163.3177(6)(a), *Florida Statutes* that would require consideration in a future land use plan of "the present and future availability of water supply"); see also Former Florida Senator Philip D. Lewis, Presentation to the Florida Senate Select Committee on Water Policy (Jan. 8, 1996) (notes on file with author).

69. See WMDRC REPORT, *supra* note 16, at 32 (recommending continued funding for public land acquisition under the Florida Preservation 2000 Act); see also FLORIDA SENATE NATURAL RESOURCES COMMITTEE, A REVIEW OF STATE LAND ACQUISITION AND LAND MANAGEMENT PROGRAMS 2 (1995) [hereinafter P-2000 REPORT]. Thirty percent of all P-2000 funds go to the water management districts for land acquisition. See *id.*

70. See WMDRC REPORT, *supra* note 16, at 32; see also Thomas H. Dyer, Presentation to the Florida Senate Select Committee on Water (Jan. 8, 1996) (notes on file with author) (reporting that the public owns 7.7 million acres of land in Florida and 1.8 million of those acres are owned by the water management districts). Florida has state-owned lands that are controlled by a number of agencies, including DEP, the five water management districts, the Department of Agriculture and Consumer Services, the Game and Fresh Water Fish Commission, and many local governmental units. See P-2000 REPORT, *supra* note 69, at 2.

71. See Mary A. Kumpfe, Presentation to the Florida Senate Select Committee on Water Policy (Jan. 8, 1996) (notes on file with author). Authority for water resource management is shared by the DEP and the water management districts. However, DEP has general statutory

oversight of the water supply issue imperative due in large part to the nexus between water supply and land management practices.⁷²

Some have criticized the WMDRC's work as overly protective of agricultural interests and insufficiently protective of environmental interests.⁷³ In addition, the Legislature implemented virtually no water legislation during its 1996 session. With the 1997 Legislative Session fast approaching, numerous bills concerning water issues can be expected in light of continuing regional difficulties in the area of water supply.

V. POPULATION GROWTH AND POLLUTION

*As Florida's population increases, the demands on water will continue to increase There is no easy answer to this question and beware of anyone who has an easy answer.*⁷⁴

Florida receives approximately 250,000 new residents per year, and each new resident increases the demand on the current and future water supply.⁷⁵ The consequent overpumping of the state's groundwater supply, which is directly associated with Florida's growing population, has resulted in damage to lakes and wetlands⁷⁶ and acceleration of salt water intrusion into groundwater sources.⁷⁷ Florida's growing population also increases pollution that results from pesticide runoff and factory chemicals, percolating into Florida's water supply.⁷⁸ Although Florida has recently received above average rainfall in some regions, water supply problems persist.⁷⁹

Water problems in the Tampa Bay region provide a noteworthy example of the havoc that population growth, development, and the

authority over the water management districts. See HOUSE REPORT, *supra* note 6, at 4; see also FLA. STAT. § 373.016 (1995)).

72. See WMDRC REPORT, *supra* note 16, at 7 (recommending legislative committee oversight of the water management districts in their operational and budgetary priorities); see also Lewis, *supra* note 68.

73. See Kathleen Laufenberg, *Water District Legislation to Make Big Splash This Year*, FLA. ENVIRONMENTS, Jan. 1996, at 6 (quoting Bart Bibler, former employee of DEP and current private consultant).

74. Leisner, *supra* note 1, at 8 (quoting Florida Governor Lawton Chiles).

75. See TASK FORCE REPORT, *supra* note 5, at 1.

76. See Leisner, *supra* note 1, at 8.

77. See HOUSE REPORT, *supra* note 6, at 7.

78. See Northwest Florida Water Management District Executive Director Douglas Barr, Presentation to the Florida Senate Select Committee on Water Policy (Jan. 8, 1995); see also Commentary, *Reasonable Water Restrictions*, TAMPA TRIB., Dec. 24, 1995, at C2 [hereinafter *Reasonable Water Restrictions*].

79. See News Release of the Southwest Florida Water Management District, *District Prepares to Deny St. Pete Permits*, at 1 (July 12, 1996) (on file with the author) [hereinafter *District Prepares*].

lack of a sufficiently integrated regional water supply plan can wreak upon an area. Hillsborough County residents have complained for years that lakes are being depleted and polluted by new development, over-pumping of well fields, and storm water runoff.⁸⁰ Nearby Pasco County waters are threatened as well.⁸¹ Years ago, with an eye toward future development, St. Petersburg received permits to pump water from well fields located north of the city.⁸² The Southwest Florida Water Management District issued these permits to the West Coast Regional Water Supply Authority⁸³/St. Petersburg, the city of St. Petersburg, and the West Coast Regional Water Supply Authority/Hillsborough County.⁸⁴ The status of these municipal well fields is now at issue and presents a complex regional water supply problem.⁸⁵

In response to the environmental issues raised in connection with pumping activities at the above-mentioned well fields, the Southwest Florida Water Management District has taken action to replenish nearby lakes and wetlands.⁸⁶ However, the failure to resolve a number of disputed issues in the region resulted in intense conflict that ultimately culminated in litigation.⁸⁷ Such litigious conflict does not come without a cost, and this water supply conflict is costing the

80. See Jackie Ripley, *Ravaged Lakes Get Ray of Hope*, ST. PETE TIMES, July 17, 1995, at 1B; see also News Release of the Southwest Florida Water Management District, *District Denies St. Petersburg Permits*, at 1 (July 15, 1996) [hereinafter *District Denies*] (discussing the damage to thousands of acres of Hillsborough County and Pasco County Lakes and wetlands).

81. See Ripley, *supra* note 80, at 1B; see also *District Denies*, *supra* note 80, at 1.

82. See *District Denies*, *supra* note 80, at 1.

83. The West Coast Regional Water Supply Authority's mission is to provide member governments with adequate water supplies. Member governments include: City of Tampa, City of St. Petersburg, City of New Port Richie, Hillsborough County, Pasco County, and Pinellas County.

84. Telephone Interview with Michael Molligan, Southwest Florida Water Management District (Aug. 2 & 8, 1996) (notes on file with author); see also Waldo Proffitt, *Pinellas Looks Bad in Water War*, SARASOTA HERALD-TRIB., Feb. 4, 1996, at 3F; News Release of the West Coast Regional Water Supply Auth., *Pasco and Hillsborough Reverse Position on Northwest Hillsborough Regional Wellfield* (July 26, 1996) (discussing the recent status of the permits at issue).

85. See *District Prepares*, *supra* note 79, at 1.

86. See *Reasonable Water Restrictions*, *supra* note 78, at C2.

87. See *District Denies*, *supra* note 80, at 1 (reporting that the Southwest Florida Water Management District has worked for two years to settle this dispute but will now go to court to resolve issues regarding environmental damage). Reconizing its role as a leader in solving problems associated with the West Coast's water needs, the West Coast Regional Authority formulated agreements presented to the Board of Directors of the Authority on December 12, 1996. The goals stated in the agreement are to "(a) preserve[] the rights of member governments to represent the interests of their constituents in water supply facility matters; (b) reduce[] or eliminate[] Member Government future litigation concerning water supply issues; and (c) increase[] the certainty of implementing water supply planning and development decisions approved by a majority of the Authority's Board of Directors." Memorandum from Donald D. Conn, General Counsel, West Coast Water Supply Authority, to Board of Directors, West Coast Water Supply Authority (Dec. 12, 1996) (attached agreements).

taxpayers millions of dollars.⁸⁸ By comparison, North Florida's Suwannee River Water Management District is blessed with a "very clean water supply."⁸⁹ Yet even the water quality in this region has declined due to population-associated effects. Contaminants, including gas and industrial solvents, now threaten this once pristine water supply.⁹⁰

Florida's panhandle region has pollution problems of its own. Peanut farming in Jefferson County, industrial solvents in Leon and Escambia Counties, and chloride concentrations in Okaloosa and Walton Counties have created pollution sources that threaten water quality.⁹¹ Ten of Florida's twenty rivers run interstate in this region, through Georgia or Alabama, requiring coordination among all three states to ensure reduced pollution of the rivers and basins.⁹² Furthermore, the Northwest Water Management District, which covers the bulk of the panhandle region, must finance its projects through reduced millage rates.⁹³ Insufficient funds prevent the district from financing a program to determine the minimum flows and water levels in this region of Florida, a determination considered critical to water supply planning.⁹⁴

Drainage of Florida's wetlands for agricultural use has caused more damage to the state's environment than any other type of development.⁹⁵ In South Florida, agriculture comprises the area's dominant land use, creating water problems for the area.⁹⁶ The needs of sugar farmers and protection of the Everglades clash to provide a highly publicized agricultural versus environmental water

88. *See id.* at 2.

89. David Fisk, Assistant Executive Director, Suwannee River Water Management District, Presentation to the Florida Senate Select Committee on Water Policy (Jan. 8, 1996) (notes on file with author).

90. *See id.*

91. *See Barr, supra* note 78.

92. *See id.*

93. *See* FLA. CONST. art. VII, § 9(b). Northwest Water Management District is authorized to levy up to 0.05 mill for water management purposes. The other four water management districts are authorized to levy up to 1.0 mill. *See id.*

94. The minimum flow is "the limit at which further withdrawals would be significantly harmful to the water resources or ecology of the area." FLA. STAT. § 373.042(1) (1995). The minimum water level "shall be the level of groundwater in an aquifer and the level of surface water at which further withdrawals would be significantly harmful to the water resources of the area." *Id.* § 373.042(2). Although asked to determine minimum flows and levels over 20 years ago, no water management district has completed this task. Many believe that had this task been completed in a timely fashion, some regions of Florida might not be in their current state of crisis. *See* Fla. S. Select Comm. on Water Policy, unpaginated draft transcript of proceedings (June 22, 1996) (on file with committee).

95. *See* LUTHER J. CARTER, *THE FLORIDA EXPERIENCE: LAND & WATER POLICY IN A GROWTH STATE* 26 (1974).

96. *See* SUSTAINABLE S. FLA. REPORT, *supra* note 52, at 28.

conflict in the region.⁹⁷ The extensive planting of sugar, which demands substantial draining of the Everglades, is the underlying problem.⁹⁸ The phosphorus pollution that results from the drainage of this contaminated water harms the Everglades' delicate environment and ecosystem.⁹⁹ Additionally, Broward County's continuing practice of allowing development in the Everglades attracts more water consumers to the area, diminishing the area's storage and recharge capacity.¹⁰⁰ The disruption of the area's natural hydrologic system seriously threatens the Everglades,¹⁰¹ as evidenced by the region's frequent extended water shortages.¹⁰²

VI. RECOMMENDATIONS

Rapid population growth, pollution of groundwater supply, and insufficiently coordinated growth management plans emphasize the need for answers concerning future water supply planning. This section outlines suggestions for more effective water resource management. Many of the following suggestions are similar to those listed in the water resources policy section of the State Comprehensive Plan, originally enacted over a decade ago.¹⁰³

The first recommendation stresses leadership and coordination in planning. The state government elected to take responsibility for growth management¹⁰⁴ and water management¹⁰⁵ and must follow through on this responsibility by addressing the growing concerns about water supply. DEP must acknowledge its obligation to the public in the area of water supply by taking action based on its

97. See generally U. S. GENERAL ACCOUNTING OFFICE, REPORT TO CONGRESSIONAL REQUESTERS, RESTORING THE EVERGLADES: PUBLIC PARTICIPATION IN FEDERAL EFFORTS (1995) [hereinafter EVERGLADES REPORT] (discussing agricultural pollution and the federal government's 1988 lawsuit against two Florida agencies for failure to enforce the state's water quality standards, which led to the 1994 enactment of Florida's Everglades Forever Act).

98. See *Dialogue*, FLA. ENVIRONMENTS, Jan. 1996, at 12 (interviewing Nathaniel Reed, a member of the governing board of the South Florida Water Management District).

99. See *The History of the Taming of the Everglades* (CNN television broadcast, Nov. 5, 1994) (quoting Charles Lee, Senior Vice President of the Florida Audubon Society) [hereinafter *History*]; see also EVERGLADES REPORT, *supra* note 97, at 5 ("Phosphorus—a plant nutrient—is carried in runoff water from sugar farms to the Everglades, where it supports the growth of cattails, which choke out the native grasses.").

100. See *History*, *supra* note 99.

101. See HOUSE REPORT, *supra* note 6, at 6.

102. See *id.*

103. See FLA. STAT. § 187.201(8)(b) (1995).

104. See *id.* § 187.101(1) (stating that the State Comprehensive Plan will guide long-range policies for the implementation of orderly social, economic, and physical growth of Florida).

105. See *id.* § 373.016(2) (declaring the policy of the state to provide for the management of water and related land resources).

statutory authority for water oversight.¹⁰⁶ Local governments, as well as regional entities and the appropriate water management district, must comprehensively coordinate the water supply needs in their region.¹⁰⁷ In so doing, they should include a consideration of alternative water supplies prior to the issuance of any development permit that will adversely impact local water supply, recharge capacity, or the environment.¹⁰⁸

Though an economically unpopular idea, responsible growth must be achieved to avoid future difficulties. If there is an inadequate water supply available, or if there is a continuing water crisis, the limited recharge capacity regions of Central and South Florida may face economic hardship.¹⁰⁹ Coordinated management of Florida's population growth, development, and water resource availability should be assessed by the state's water management districts, state agents, and local and regional planners when engaging in future planning efforts.¹¹⁰

A second recommendation provides that, in addition to the necessary coordination between state and local planners, regional planning components must be emphasized when formulating water policy.¹¹¹ The state comprehensive planning process requires regional plans to specifically address solutions to problems of "greater than local" concern.¹¹² DEP is currently required to develop a state water plan with the assistance of the water management districts.¹¹³ Each of the five water management districts is required to provide technical assistance to local governments in developing their local comprehensive plan.¹¹⁴ For example, the Southwest Florida Water Management District produces a needs and sources document for local use, which estimates potential water needs over the next several years.¹¹⁵ Such regional water management information is available to all local governments,¹¹⁶ and local plans should utilize this

106. DEP is the oversight agency for the water management districts. See FLA. STAT. § 373.016 (3) (1995).

107. See *id.* § 163.3161(2).

108. See, e.g., Telephone Interview with Michael Molligan, *supra* note 84 (stating that the Southwest Florida Water Management District uses an environmental resource permitting scheme prior to granting permits for larger developments).

109. See discussion *supra* Part II.

110. See, e.g., FLA. STAT. § 187.201(8)(b)(5). One policy is to ensure that new development is compatible with existing local and regional water supplies. See *id.*

111. See *id.*

112. FLA. STAT. § 186.502(3).

113. See *id.* § 373.036. The state water use plan, together with water quality standards, constitute the Florida water plan. See *id.* § 373.039.

114. See *id.* § 373.0391(1).

115. See Telephone Interview with Michael Molligan, *supra* note 84.

116. See *id.*

existing material when considering long term or potential water resources in their region.

The water management districts deserve reproach for failing to complete an important facet of their planning responsibility: the determination of minimum water flows and levels.¹¹⁷ Although a major obligation of the water management districts, efforts to set minimum flows and levels have reportedly been inconsistent or have occurred after the water source is already stressed from withdrawals.¹¹⁸ Information on minimum flows and levels is a critical component of the districts' resource material for regional planning purposes, and data on priority or overstressed waters should be concluded in a timely manner.¹¹⁹

A third recommendation focuses on the State Comprehensive Plan's "local supply first" policy regarding water resources.¹²⁰ Though all sixty-seven Florida counties reportedly support the local supply first policy,¹²¹ the state as a whole may better benefit from inter-district transfers of water, directly facilitated by DEP or the appropriate water management district. Given the extremely dissimilar geographical characteristics and recharge capacity between the various regions of Florida,¹²² this suggestion requires further research to avoid inadvertent harm to the environment.

A fourth recommendation concerns conservation.¹²³ Reduction in water use and the exploration of innovative techniques for increasing water supply are essential components to maintaining an adequate water supply in Florida. For example, implementing simple conservation techniques could result in a 40% reduction in drinking

117. See HOUSE REPORT, *supra* note 6, at 17 (discussing the establishment of minimum flows and levels as a statutory requirement and as a responsibility of the water management districts).

118. See *id.*

119. Senate Bill 2552, which was introduced by Senator Latvala in the 1996 Legislative session, addresses the issue of minimum flows and levels, defines the term "independent scientific peer review," provides for funding to the West Coast Regional Water Supply Authority, and provides for executive oversight of water management district budgets. Fla. SB 2552 (1996). In the 1996 session, the Legislature passed and the Governor approved a companion bill, Committee Substitute for House Bill 2385 and 2399. See 1996 Fla. Laws ch. 96-339 (to be codified at FLA. STAT. §§ 373.019, .042, .116, .1963, .536).

120. See FLA. STAT. § 187.201(8)(b)(3) (1995). The statute encourages "the development of local and regional water supplies within water management districts instead of transporting surface water across district boundaries." *Id.*

121. See Amy Ellis, *Citrus Water Supply Gets Protection*, HERNANDO TIMES, Dec. 13, 1995, at 1B.

122. See discussion *supra* Part II.

123. See FLA. STAT. § 187.201(8)(b)(11) (stating as policy the promotion of water conservation).

water use.¹²⁴ Other innovative concepts, such as water runoff reservoirs, cisterns, and the use of reclaimed wastewater, should also be encouraged.¹²⁵ Such techniques could be incorporated into future development efforts in providing non-potable water for purposes other than consumption.¹²⁶

Legend's Field, the New York Yankees Spring Training Complex Conservation Project in Tampa, provides an excellent example of water reuse. The complex employs an on-site recycling system for stormwater, and an underdrain system is incorporated into the architectural plans.¹²⁷ The underdrains collect excess rainfall and irrigation and then route the water to retention ponds.¹²⁸ This water is later used for ball field and landscape irrigation.¹²⁹ The conservation benefits of this system are enormous, with eighteen million gallons of groundwater saved annually. Because the water is retained and reused on-site, regional water quality will also benefit.¹³⁰ Legend's Field also utilizes Xeriscape,¹³¹ which is a landscape method to maximize conservation by utilizing specific plants and trees that naturally conserve water resources.¹³² Future development should be encouraged to include similar water-saving landscape and reuse methods.

124. See Anna M. Yaccarino & Carol A. Wisler, Letter to the Editor, *Area's Water Sources Must Be Protected*, TAMPA TRIB., Dec. 3, 1995, at C3 (discussing a study conducted by the league of Women Voters in Hillsborough and North Pinellas counties and the city of St. Petersburg); see also William D. Johnson, *Editorial*, ST. PETE. TIMES, Jan. 3, 1996, at A13 (discussing efforts to conserve, including the delivery of over 25 million gallons of recycled water each day for lawn irrigation and the distribution of over 130,000 water conservation kits to residential customers). In the past, St. Petersburg's efforts have been identified as a model for successful water conservation initiatives. See Letter from William Johnson, Director of Public Works, City of St. Petersburg, to Peter Hubbell, Executive Director, Southwest Florida Water Management District 2 (May 20, 1996)) (on file with author); see also Memorandum from Honey Rand, Director of Public Communications, Southwest Florida Water Management District, to Governing Board and Basin Board Members, District Staff (June 21, 1996) (on file with author).

125. See Yaccarino, *supra* note 124, at C3 (discussing a study conducted by the League of Women Voters in Hillsborough and North Pinellas counties and the City of St. Petersburg); see also FLA. STAT. § 187.201(k)(b)(11) (promoting reuse).

126. See *id.*

127. See SOUTHWEST FLORIDA WATER MANAGEMENT DISTRICT, CONSENT AGENDA & STAFF RECOMMENDATION (1995).

128. See *id.*

129. See *id.*

130. See *id.*

131. See *id.*

132. See generally FLA. STAT. § 125.568(1) (1995) (stating that the Legislature considers Xeriscape, a landscaping method that uses site-appropriate plants and an efficient watering system as a means to conserve water).

A final recommendation for improved water policy calls for encouraging and/or investigating desalination efforts.¹³³ The majority of all desalination plants in the United States pump brackish water from beneath the ground.¹³⁴ As saltwater intrusion continues to threaten the groundwater supply in some areas, desalination may become a more practical and necessary alternative for processing water.¹³⁵ Though there are many desalination facilities in Florida, Dunedin provides a good example of a successful reverse osmosis system.¹³⁶ The Dunedin plant is "totally self-reliant," produces water for less than eighty cents per thousand gallons, and the water produced complies with safe drinking water regulations.¹³⁷ The Dunedin plant should serve as a model for local governments intending to pursue this water resource in Florida.

VII. CONCLUSION

When one thinks of Florida, one thinks of water. As one of Florida's most basic resources, water is necessary not only for human survival but for the maintenance of environmental quality as well. Although many state, local, and regional planning requirements are currently in place in Florida, the water supply planning element is a weak link in the growth management chain.

The recommendations of the Land Use and Water Planning Task Force and the House Select Committee on Water Policy Staff Report have raised public awareness and brought greater focus to this issue. The laws and agencies governing water supply policy currently exist. Now the local, regional, and state entities must work together in future planning efforts to effectively and efficiently address water supply planning. Regional coordination is the key to successful planning in all areas, especially those areas concerning a crucial, but exhaustible resource such as water. Water management is sure to be an important issue in the 1997 Legislative Session. Perhaps these

133. See, e.g., FLA. STAT. § 187.201(8)(b)(1) (encouraging the promotion of desalination and reverse osmosis). See generally Ronald A. Christaldi, Note, *Sharing the Cup: A Proposal for the Allocation of Florida's Water Resources*, 23 FLA. ST. U. L. REV. 1063, 1086-89 (1996) (discussing desalination efforts in Florida and raising concerns over the practicality of the process and the resulting environmental effects).

134. See Kurt Loft, *Symposium to Put Focus on Desalination Seawater Plant*, TAMPA TRIB., Oct. 30, 1995, at 1. Approximately 150 of the nearly 1000 desalination facilities in the United States are located in Florida. See *id.*

135. See HOUSE REPORT, *supra* note 6, at 7 (discussing the acceleration rates of saltwater intrusion, which can be as high as thirty feet per year in some areas).

136. See Nancy Argenziano, Letter to the Editor, "Desal" Will Keep the Bay Area Rolling Along Without Thirst, TAMPA TRIB., Apr. 9, 1995, at C3.

137. See *id.* (stating that the plant in Dunedin produces water which will meet the more stringent regulations required by the Safe Drinking Water Act).

suggestions can be implemented in future water planning proposals to alleviate Florida's increasing water supply dilemmas.