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Progress Report



August 1999

Report No. 99-06

Florida Water Policy

Discouraging Competing Applications for Water Permits; Encouraging Cost-Effective Water Development

at a glance

Since 1997, new provisions for regional water supply planning have taken effect. The water management districts are drafting plans that should identify solutions to water supply problems and have begun to integrate planning goals into the terms of water use permits.

However, the districts should take further steps to promote needed regional solutions and help discourage competing applications for water use permits.

- The districts should consider water development costs in planning and permitting for those areas of the state where regional solutions would lead to overall cost savings.
- To avoid competing applications and maximize the reasonable and beneficial use of water resources, districts should establish preferred uses when it is infeasible to divert those uses to costly alternatives.
- One or more districts should consider pilot testing a cooperative model for agricultural water users that could discourage competing applications and result in a more efficient allocation and use of water.

Purpose

In accordance with state law, this progress report informs the Legislature of actions taken and other changes since our 1997 report.^{1,2} This report updates our assessment of statewide water policies and recommends additional improvements. However, this report does not address the unique Everglades restoration policies affecting south Florida. Our 1997 review, conducted in response to a request from the House Select Committee on Water Policy, assessed whether state water policies contain the best and most appropriate incentives for the cost-effective development and use of water for all reasonable and beneficial uses.

Background

The 1997 Legislature passed legislation that significantly amended the Florida Water Resources Act of 1972.³ One of the many changes is a new policy goal, "To promote the availability of sufficient water for all existing and future reasonable-beneficial uses and natural systems." To implement this policy, the Legislature integrated water management district planning with water development activities through new requirements, and further directed the districts to participate financially in water resource development.

¹ Section 11.45(7)(f), F.S.

² *Review of the Economic Components of State Water Policy, Report No. 96-82*, April 1997.

³ Chapter 97-160, Laws of Florida.

Core principles

Although revised, the Florida Water Resources Act of 1972 still retains its core principles. The act recognizes that the waters of the state are among its basic resources and that water resources had not previously been conserved or controlled so as to maximize their beneficial use. Thus, the protection and continued maintenance of the integrity of water resources, hydrologic systems, and the ecology associated with them are fundamental principles and goals of Florida water law.

The act established an administratively based water law system and declared water to be a public resource to be managed in the public interest. Programmatic authority for water resource management is shared by the Department of Environmental Protection and the five water management districts. The Executive Office of the Governor also exercises oversight over district budgets.

District responsibilities

One of the water management districts' key responsibilities is regulating water through consumptive use permits. This permitting program is intended to ensure that water use is consistent with district or department objectives and is not harmful to the water resources of the area. Consumptive use permit applicants are required to demonstrate that the proposed use is reasonable-beneficial, will not adversely impact existing legal uses, and is consistent with the public interest.

Other activities essential to district planning and regulatory responsibilities include completing regional water supply plans and setting minimum flows and levels for surface and groundwater sources.

Regional water supply plans

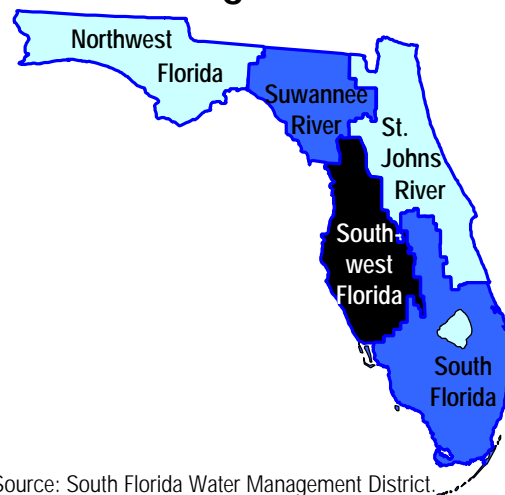
Regional water supply plans are required in all areas where reasonably anticipated

sources of water are deemed inadequate to meet projected demands. In 1998, the districts completed water supply assessments. Four of the five districts determined that in at least a portion of their jurisdiction existing or reasonably anticipated water supplies are inadequate to meet demands projected through 2020. To address the needs of those areas projected to lack sufficient water supplies, the districts anticipate completing regional water supply plans for those areas by April 2000.

Minimum flows and levels

Districts are required to establish minimum flows and levels for priority surface and ground water bodies.⁴ Each district submits to the department an annual priority list and schedule for establishing minimum flows and levels. In cases where a district anticipates that future demands might not be met because withdrawals could cause harm to watersheds or aquifers, the district is required to expeditiously implement a recovery or prevention strategy to end or avoid the harm.

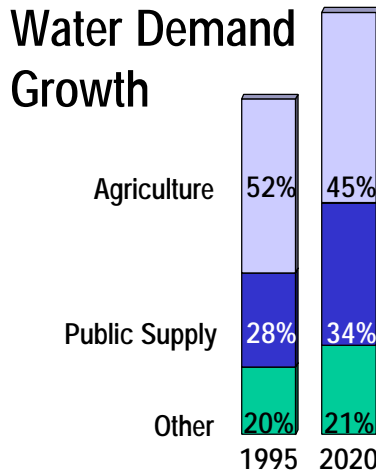
Water Management Districts



⁴ Section 373.042, F.S., provides that minimum flows and levels define the limit at which further withdrawals would be significantly harmful to the water resources or the ecology of the area.

Water use

Although agricultural irrigation is the largest type of use in Florida, water management districts project that public supply demand will grow by 51% by 2020. A region-by-region analysis of demand growth is provided in the appendix.



Source: District regional water supply assessments.

Agricultural irrigation

Regulation of agricultural irrigation is challenging because there are so many permits issued for a wide variety of crops. For instance, in 1994 about 82% of the approximately 8,000 water use permits in Southwest Florida were for agricultural irrigation. In comparison, less than 7% of the permits were held by public utilities.

Demand for irrigation is concentrated in the needs of two types of crops. About 42% of statewide agricultural water demand is for citrus, and 27% irrigates field crops. Irrigation of vegetables, pasture, and nurseries are among the other types of agricultural uses.

Another regulatory challenge is the difficulty in obtaining and interpreting agricultural water use data. These data are often estimated because many agricultural permits do not require accurate water use measurement. Furthermore, agricultural use varies widely due to droughts, market conditions, and other factors.

Public supply

The districts project that most growth in water demand will be for public supply purposes. Public supply permits are held by utilities (owned publicly and privately) and regional water supply authorities.

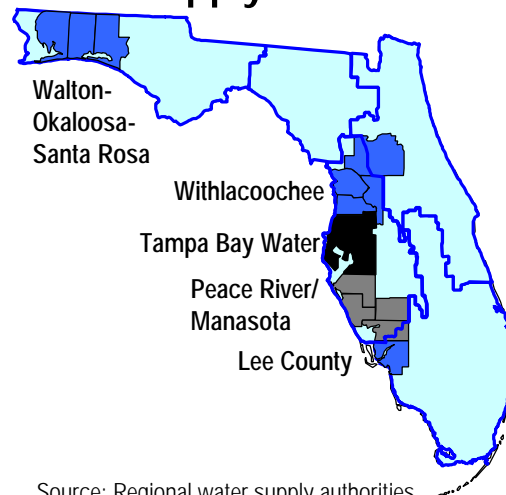
Most public water supply is provided by public utilities. Privately owned utilities are regulated by either the Public Service Commission or counties that have retained jurisdiction. Those regulated by the Public Service Commission serve approximately 8% to 10% of Florida’s population.

Regional water supply authorities

Of the five regional water supply authorities in Florida, the most active by far is Tampa Bay Water.⁵ As the exclusive wholesale water supplier for its member governments, it helps address challenging regional issues.

The powers of each authority are uniquely determined by its member governments. State law allows the authorities to levy ad valorem taxes, acquire water permits, and exercise eminent domain power in order to develop, recover, store and supply water.

Water Supply Authorities



Source: Regional water supply authorities

⁵ Regional water supply authorities are created pursuant to s. 373.1962, F.S., and the special status of Tampa Bay Water (formerly known as the West Coast Regional Water Supply Authority) is described in s. 373.1963, F.S.

Prior Findings

Our prior report concluded that the basic principles of the Florida Water Resources Act of 1972 are sound and offer many advantages for allocating water. We found no indication that the basic concepts of state water policy need to be changed, as most water demands are presently being met. However, some areas of the state are experiencing limited supplies and adverse environmental impacts due to excessive withdrawals.

Ongoing and potential water scarcity raises economic issues concerning the development of alternative supplies. Given these concerns, we recommended that the Legislature consider three questions.

- Should water users pay the full costs of developing new water supplies?
- What funding options exist for funding new water supplies?
- What types of improvements are needed to encourage greater efficiency?

Current Status

Who pays for water development?

The 1997 Legislature clarified the roles of various institutions in paying for water development, and the 1999 Legislature included a state funding source for water resource development in the Forever Florida Act.⁶ However, the districts have not finished evaluating the magnitude of water development costs and the Forever Florida Act does not specify an exact amount or percentage of funds to be allocated for water resource development. Our prior report examined the implications of requiring water users to pay the full cost of additional water supply versus the state

assuming responsibility for supplementing water use funding. The state will fund water development based on regional water supply plans and new statutory funding criteria.

How should development be funded?

The Forever Florida Act designates an allocation of documentary stamp tax funds to the department and the districts for various purposes including water resource development.⁷ Our prior report discussed the advantages and disadvantages of a water use fee; the Legislature has not chosen to use a new fee to fund water development.

How should efficiency be encouraged?

The Legislature took action regarding one recommendation to encourage greater water use efficiency. In 1998, the Legislature enacted a "local sources first" provision to better ensure maximizing efficiency prior to considering non-local water transfers.⁸

Recent administrative ruling

Implementation of our recommendation that the water management districts use water markets to encourage greater water use efficiency was discouraged by an administrative law ruling. In a case regarding the Southwest Florida Water Management District's Southern Water Use Caution Area (SWUCA) rules, the administrative law judge found that district-approved voluntary reallocation of water supplies (which could include permit marketing) is contrary to state law.⁹ Among the other proposed rules found invalid are certain preferences for existing users. Although other aspects of the case remain on appeal, these issues were not appealed and are therefore final rulings.

⁶ Chapters 97-160 and 99-247, Laws of Florida. Section 373.0831, F.S., sets out the policy that water resource development is the primary role of the state, and water supply development is the primary role of water utilities. These terms are defined in s. 373.019, F.S.

⁷ Chapter 99-247, Laws of Florida.

⁸ Sections 373.1962(9) and 373.223(3), F.S.

⁹ Division of Administrative Hearings, *Charlotte County v. Southwest Florida Water Management District*, Case No. 94-5742RP.

Current Findings

Districts have clearly identified water supply problems; planning is underway to identify alternative water sources

Since our last report, new statutory provisions for regional water supply planning and development have taken effect and the water management districts have more clearly identified current and potential water supply problems. Using this improved information, the districts are now drafting regional water supply plans that should identify solutions and have begun to integrate their planning goals into the terms of water use permits.

Much of the state faces current or potential water supply problems during the next 20 years. In response to new planning requirements enacted in 1997, the water management districts have provided detailed information on the availability of water resources in their districts and are working closely with users to ensure adequate water supplies by 2020. If the districts and water users successfully implement the regional water supply plans, virtually all reasonable and beneficial demands for water should be met.

Water management district assessments describe 12 of 22 state regions as lacking adequate existing or reasonably anticipated water supplies to meet the needs projected for 2020.¹⁰ These 12 regions include approximately 85% of the state's population. Most of the water demand in those regions is for public supply and agricultural irrigation.

The conditions in each of the 12 regions vary. Some areas have adequate supplies to meet current needs, but in other areas overallocated supplies and shortages are

causing harm to water resources and natural systems. (See appendix for information on the water supply conditions in each region.)

- In four regions, current use is causing harm to water resources or natural systems.
- In one region, current use, if sustained, may soon begin causing harm to water resources or natural systems.
- In seven regions, current water sources are inadequate to meet the needs of projected growth. If growth were met through expanded use of the current water sources, harm to water resources and natural systems would result.
- In the remaining 10 regions, current water sources are adequate to meet the needs of projected growth.

Ongoing or imminent harm to water resources and natural systems will take a number of years to address as the regional water supply plans are implemented by the districts and water users.

Nine regional water supply plans have been initiated by the water management districts, and one plan is complete. Four of the 12 regions are to be addressed in a single regional water supply plan by St. Johns River; Northwest Florida has one plan underway; Southwest Florida has two plans underway covering three regions; and

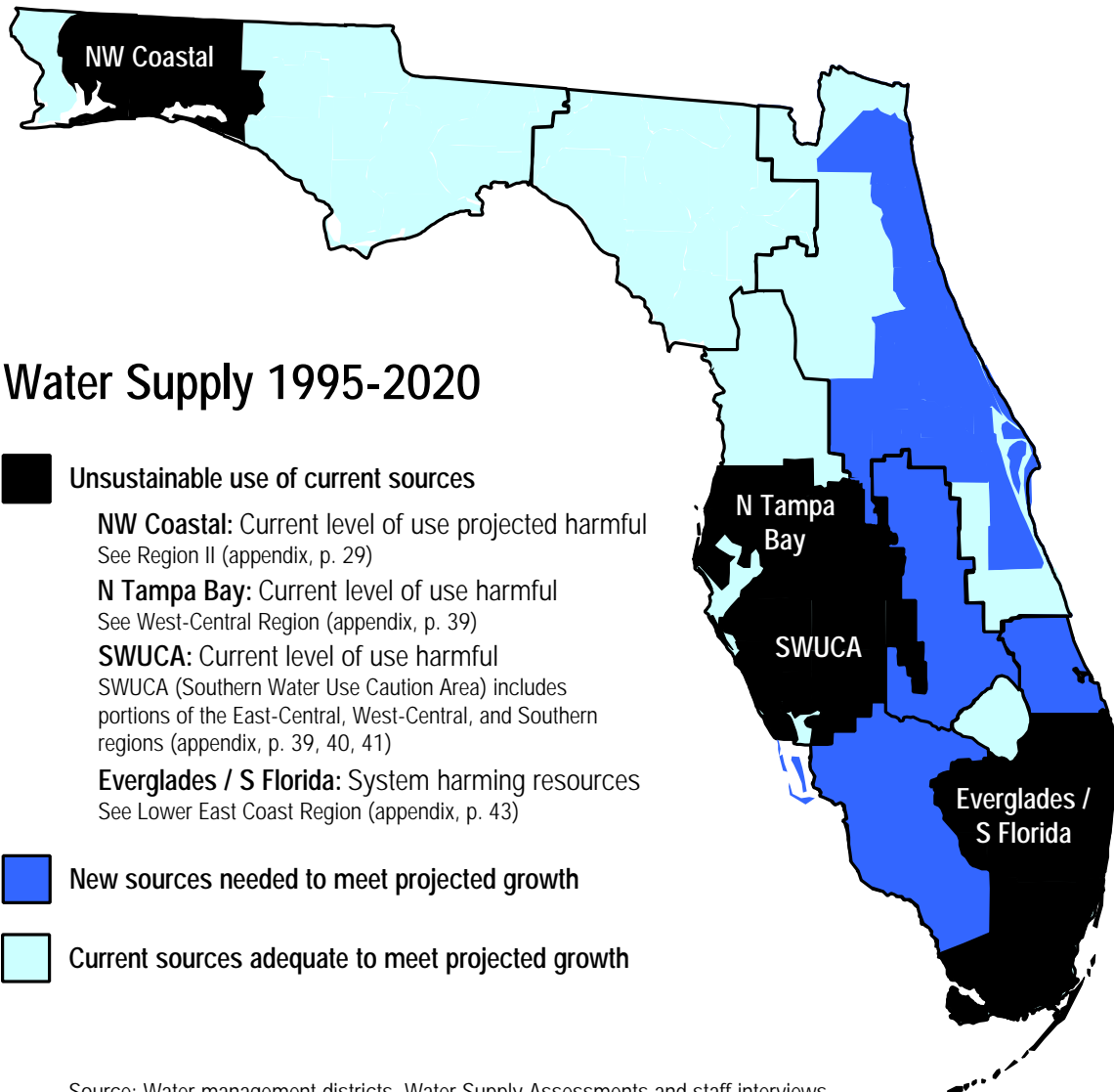
¹⁰ Each water management district has established one or more planning regions as described in the appendix. St. Johns River Water Management District has formally identified the entire district as a single planning region. Without objection from the district, OPPAGA divided the district into six regions and concluded that two regions have adequate supplies based on the district's assessment report and initial regional water supply planning activities.

South Florida has three plans underway and one complete plan (Upper East Coast region). Although only one regional water supply plan is complete, the districts are already taking steps to address the problems that have been identified through water resource development projects and by issuing permits that are consistent with the objectives of the planning process.

- The Southwest Florida Water Management District continues to fund its New Water Source Initiative throughout its district and is working with Tampa Bay Water to implement a number of major resource development projects.

- Public supply permits issued by the South Florida Water Management District are now being issued for terms of 5 years, rather than 10 years, so that they may be modified to conform to the plans at their next renewal date.
- The Northwest Florida Water Management District has issued public supply permits that include conditions requiring development of alternative water supplies.

Further details on conditions in each region and plans for addressing any problems are included in the appendix.



Source: Water management districts, Water Supply Assessments and staff interviews.

Cooperation among public supply utilities important to cost-effective development of regional water projects

Growing water demand is concentrated in public supply utilities. Joint development of new regional water sources is often the most cost-effective means of solving water resource problems.

Although some users, like agriculture, have assumed responsibility for some water supply development, financial support for most large scale water projects will depend on government and public utilities. Other types of users such as golf courses and manufacturing facilities are generally not sufficiently large water users or lack the financial capability to participate. Water development projects include new wellfields, surface water supplies, water reuse facilities, and desalination facilities. Many utilities will implement cost-effective projects on their own, but in areas of the state with difficult problems, some projects will be so large that they need to be implemented on a regional basis to be cost-effective.

Public supply utility cooperation on a regional basis is solving water resource problems in some areas, but ongoing litigation and threats of litigation are still used by utilities to exclude other utilities from preferred water sources. The districts and the state have used planning, financial incentives, and regulatory action to encourage cooperation, but stronger action by the districts may be needed. Although generally successful, recently adopted “local sources first” provision presents a potential complication for some regional solutions.

Ongoing litigation shows limited regional cooperation among utilities

Public utilities and other major water users are planning and implementing cooperative regional water supply projects in many areas of the state. After years of litigation, the partnership led by Tampa Bay Water is

the best example of regional cooperation in public supply development. Enabled by special legislation and the commitment of at least \$183 million in Southwest Florida Water Management District funding assistance for water resource development, the new partnership plans to gradually reduce excessive groundwater withdrawals by about 68 million gallons per day by 2007. This single regional system will be more cost effective than multiple smaller-scale projects and will equitably distribute costs since all of the major regional public supply utilities will be paying the same wholesale price for water.

According to Northwest Florida district staff, utilities in the coastal portion of Santa Rosa County may be another model of regional cooperation in public supply development. In order to reduce coastal withdrawals to sustainable levels, the region's four utilities are gradually moving to inland wellfields. Rather than pursuing four independent solutions, the utilities are cooperating in planning a single project to supply the region. Also, Gulf Breeze's utility has successfully obtained supplies from the ample resources of the neighboring Escambia County Utility Authority.

Nevertheless, utility litigation to secure access to preferred water sources occurred recently in at least one area and could occur in others. Litigation between rival utilities in south Walton County and peninsular Okaloosa County has delayed development of a wellfield that would reduce unsustainable coastal withdrawals. Although the district encouraged the

utilities to cooperate and develop joint projects that would be more cost effective than separate supply facilities, the utilities are involved in litigation over a proposed permit that would serve only two of the six utilities.

District action to encourage cooperation

To end litigation and promote cost-effective regional approaches to water development, the districts use planning, financial incentives, and regulatory action to encourage cooperation. Cooperative regional water utility planning takes place in several institutional settings.

- The districts work with public utilities in areas such as Jacksonville, Orlando, and southern Okaloosa County to plan and coordinate cost-effective solutions to water resource problems, which often means joint development of new water supplies. District-led planning has increased significantly due to the legislative mandate to develop regional water supply plans. Districts are also authorized to finance water resource development projects.
- Utilities may join together to form regional water supply authorities. Currently, two authorities operate water facilities, two help plan and coordinate water development projects, and one provides more general planning and coordination services.
- Utilities may also pursue joint water development projects without creating an authority. For instance, four utilities in Santa Rosa County are working together to develop inland wellfields and reduce coastal withdrawals.

The Southwest Florida Water Management District's New Water Sources Initiative is the most notable example of financial incentives to promote regional approaches to water development. Additional financial resources will soon be available from the

state. The 1999 Legislature authorized state funds for water resource development in the Forever Florida Act. Since the districts are directed by statute to prioritize funding for water resource development on the basis of their regional water supply plans, the new funds should help districts encourage cooperative, regional solutions.¹¹

Although districts prefer to use planning and financial incentives, sometimes the districts may need to take regulatory action to further encourage regional approaches to water development. For example, neither planning nor financial incentives appear to be appropriate solutions to the litigation among utilities in northwest Florida. It is not clear if the districts have the regulatory authority to require utilities to cooperate in regional approaches to water development.

There are two notable examples of agency regulatory action that led to greater cooperation among public utilities. The Northwest Florida Water Management District issued permits with conditions that require the City of Fort Walton Beach and the Okaloosa County Water and Sewer System to cooperate with each other and other coastal utility systems to develop new inland wellfields and reduce withdrawals in coastal areas. The other example of cooperation, Tampa Bay Water, was only included in permit conditions subsequent to a binding partnership agreement that was ratified by the Legislature in 1998. Since the conditions included in the Northwest Florida permits do not cite specific statutory authority for the requirements and have not been reviewed in a legal proceeding, it is not clear whether districts have the authority to require cooperation in water development projects.

¹¹ Section 373.0831(3), F.S.

Multi-county water systems uncertain of status under "local sources first"

So far, relatively few permit reviews have triggered the 1998 "local sources first" provision, but the provision may help ensure that costs of water supply development are not imposed on non-local users.¹² This provision was recommended in OPPAGA's 1997 report.

The local sources first provision protects the future interests of communities in maintaining cost-effective access to their water supply. The districts are required to review applications for inter-county water transfers to determine if a proposed source is the closest technically and economically feasible option.

However, since the provision requires districts to consider whether the transport of water is in the public interest whenever it crosses a county boundary, the provision may require the districts to conduct a local sources first review of any new or renewal permit application for a multi-county water supply system, unless the system qualifies for a statutory exemption. Furthermore, regional water supply projects may also be vulnerable to challenges under the local sources first provision.

The Legislature exempted several multi-county public supply systems from this requirement, including the Central and Southern Florida Flood Control Project, Tampa Bay Water, and a project proposed in northwest Florida.¹³ District staff have indicated that some public utilities, such as the Ormond Beach municipal utility, serve multi-county areas and each of their withdrawals may be considered a non-local source. However, there is no general

exemption for multi-county water supply systems.¹⁴

District staff do not consider the local sources first review to be a significant issue in either of the two permitting decisions that have invoked this provision. In one case, a utility serving an area including portions of Lake and Sumter counties proposed a withdrawal from Lake County. The review noted that "The Floridan Aquifer is the same ground water resource in both Lake and Sumter counties so requiring the applicant to put wells in the Sumter County portion of the service area would not achieve any management benefit." In the second case, a project proposed by WRP, Inc., would serve utilities in the Destin (Okaloosa County) and south Walton County areas. Utilities in Walton County unsuccessfully challenged the permit on a number of grounds including the unconstitutionality of the statutory exemption of the project from local sources first review. Anticipating the possibility of a challenge, the district evaluated the permit application and concluded that it met the local sources first statutory criteria.

In each of these cases, a general statutory exemption for sources near to or within the exclusive service areas of multi-county water supply systems could have simplified the permit application and review without significantly reducing the protection provided by the provision.

¹² Sections 373.016(4) and 373.223(3), F.S.

¹³ Sections 373.1962(9) and 373.223(3), F.S.

¹⁴ Section 373.1962(9), F.S., may exempt all regional water supply authorities, or it may exempt only those authorities that are exclusive wholesale water suppliers as described in s. 373.1963(1)(b), F.S. There is no other general exemption for public utilities serving a multi-county area.

Competing applications could occur in areas without a sufficient framework for managing competition

The potential for use of the competing applications provision to circumvent a recovery strategy could disrupt water development and result in other adverse effects.

Although current methods of allocating water are effective when supplies are plentiful, they do not prevent the adverse effects of competition when desirable supplies are scarce. Because the state's policies are generally effective at protecting water resources from harm, competition for scarce supplies does not threaten the districts' primary water permitting responsibilities. Nevertheless, the adverse effects of competition have included litigation, subsidized water development, and unsustainable levels of permitted water use, and could also include competing applications for limited water supplies. Recent changes to state water law and policy innovations by the districts may not prevent the adverse effects of competition because permitting rules lack a sufficient framework for managing competitive forces.

Applicants for water use permits cannot be certain how competition for desirable water resources will be managed under state water law. Although in practice informal means often resolve competition, the two statutory provisions that legally guide allocation of scarce water resources do not provide a sufficient framework for managing competition because the provisions have potentially conflicting purposes.

Recovery strategy provision

The recovery strategy provision, enacted in 1997, guides the district in restoring the water resource to a flow or level at which withdrawals no longer cause significant harm to the water resources or the ecology of the area. The provision protects the

interests of existing and projected water demands by allowing districts to gradually phase in changes to permit conditions and water allocations in order to give users time to develop alternate supplies.

For example, the first proposed recovery strategy, Southwest Florida's northern Tampa Bay rules would discourage competition among existing users and calls for denial of requests for withdrawals of new quantities of water. The proposed rules would allow renewals of existing permits in a manner that is consistent with the recovery strategy, but applications for new withdrawals in overallocated areas "shall not be approved unless they contribute to the attainment of" wetland and lake minimum levels.¹⁵ More recovery strategies are likely to be proposed elsewhere in the Northwest Florida, Southwest Florida, and South Florida water management districts.

Competing applications provision

The competing applications provision, which has not been revised since enacted in 1972, guides districts in comparing otherwise acceptable applications which are in conflict with each other. The districts are to approve or modify the application that best serves the public interest. Under this provision, users have an opportunity to demonstrate that their proposed new use might better serve the public interest than renewal of an existing use. This contrasts with the recovery strategy provision, which tends to protect existing users.

¹⁵ Proposed Rule 40D-80.073(2)(b)7., F.A.C.

Water management districts and permit applicants have successfully resolved all situations that might have otherwise triggered use of the provision. Staff in the districts believe that it would be very difficult, although not impossible, to use the competing applications provision because of the likelihood of controversy and extensive legal challenges.

Thus, although this provision is potentially applicable in any of the several areas where existing supplies are fully allocated, none of the water management districts have ever compared competing applications nor have they developed detailed rules describing how such a determination would be made. Instead of creating detailed rules, the districts expect to handle any competing applications situations on a case-by-case basis under statutory authority.

District staff described numerous informal resolutions of potential competing applications. For instance, in the Indian Prairie area, the South Florida Water Management District has received a permit application in an area where no additional water is available for allocation. The application is formally awaiting an opportunity to compete against the next renewal applications, due in December 2001. However, the district is working with the applicant and other area water users to resolve the problem through a negotiated plan to make additional supplies available, rather than using the competing applications process.

Conflict between recovery strategy and competing applications provisions

These two provisions can come into conflict because recovery strategies are intended to assure existing users of continued access to supplies during their implementation, while

the competing applications provision gives new users an equal opportunity to obtain scarce water resources. As described above, the state's first recovery strategy allows current users to continue use of existing supplies while alternate supplies are developed, but excludes most requests for new withdrawals. Since existing permits may need renewal during the implementation of the recovery strategy, requests for new withdrawals could trigger the competing applications process and thus circumvent the intent of the recovery strategy to gradually phase in changes to permit conditions and water allocations in order to give users time to develop alternate supplies.

Several recent policy innovations have been developed to better manage the allocation and development of water resources.

- Districts encourage public supply utilities to cooperate directly and through regional water supply authorities.
- The department has proposed use of the "preferred use" provision to help discourage competing applications among different types of water uses.
- Southwest Florida proposed use of voluntary reallocation as an alternative to expensive water supply development.
- Institutional approaches have helped some agricultural groups address water issues cooperatively.

However, these innovations may not be adequate to avoid the adverse effects of competition because they do not provide a sufficient framework for managing competition for desirable water resources outside of litigation or the competing applications process.

Encouraging regional water development helps manage public supply allocation

The districts encourage public supply utilities and other water users to cooperate directly and through regional water supply authorities. Although financial incentives were important to bringing together public utilities in the northern Tampa Bay area, water users often cooperate in regional water projects with little need for intervention by the districts. Regional collaboration by public utilities and other major users is a good way to develop water projects cost-effectively (as described above), allocate desirable supplies equitably, and reduce the risk of competing applications and litigation.

Competing applications among different types of users can be discouraged

To discourage use of the competing applications provision, the Department of Environmental Protection encouraged use of district authority to designate "undesirable" or "preferred" uses of supply as a part of recovery strategies.¹⁶ According to department staff, this provision gives the districts clear authority to discourage competition among different types of uses.

Department staff believe that by designating preferred uses of particular supply sources, the districts would define public interest in a manner that is water resource based, region-specific, and linked to the regional water supply plan. Defining the "public interest" is a critical and controversial part of the competing applications process. Other than a consideration of whether or not

development of alternative water supplies is practical, department staff suggest that the criteria used to define "public interest" should not include general economic criteria (whether one use contributes more to the economic health of an area than other uses) as the districts have no expertise in this area.

Using this regulatory provision to discourage competing applications and litigation during implementation of a recovery strategy is needed because it would be difficult to rely on cooperation among users diverse users with varying needs and financial resources. For example, Southwest Florida district staff are more concerned about the potential for competing applications in the Southern Water Use Caution Area (SWUCA) than in the northern Tampa Bay recovery strategy because a single water authority manages most water use in that area. In contrast, permitted users in SWUCA are far more diverse, including thousands of agricultural users as well as public utilities and industry. One way to discourage competition is through district authority to designate preferred uses that would clarify the responsibility of each type of user.

If preferred uses are not designated, users who perceive that challenging the recovery strategies could reduce their water costs might seek to compete against other users for desirable water sources. For instance, a public utility could compete with an existing agricultural user's permit renewal rather than developing a more costly alternative to meet demand growth. Although the utility could save its customers money by obtaining the water previously allocated to the agricultural user, it might be financially infeasible for the agricultural user to develop a more costly alternative supply.

The water management districts have not adopted the preferred use policy as a way of addressing the competing applications problem. In several districts, discussions

¹⁶ Sections 373.036(4) and (5), F.S. Section 373.036(5), F.S., states, "The governing board may designate certain uses in connection with a particular source of supply which, because of the nature of the activity or the amount of water required, would result in an enhancement or improvement of the water resources of the area. Such uses shall be preferred over other uses in the event of competing applications under the permitting systems authorized by this chapter."

about how to implement the competing applications process are either just beginning or are not considered necessary in the near future. South Florida, the only district that has developed specific ideas for a competing applications rule, has suggested an approach that appears to rely primarily on the "public interest" test portion of the competing applications provision and do not mention use of the preferred use provision.

Furthermore, the districts may be cautious about designating preferred uses because of the controversial issues involved in favoring one type of use over another for withdrawals from specific water resources. However, if adopted concurrently with a regional water supply plan, this approach could be understood as a method of clarifying the responsibility for implementing a recovery strategy rather than as a permanent preference.

Voluntary permit reallocation infeasible under current state law

The lack of a sufficient framework for managing competition among agricultural users became evident when an administrative law judge invalidated Southwest Florida's proposal to allow district-approved voluntary reallocation of water supplies in the Southern Water Use Caution Area (SWUCA). The lack of a voluntary reallocation system is a problem for agricultural irrigators and other "self-suppliers" because existing models of cooperation among public utilities cannot be easily transferred to these users.¹⁷ In contrast to the reallocation that can occur among cooperating public utilities, little or no reallocation has occurred when

agricultural users cooperate to obtain water use permits.

Allowing efficient reallocation of water supplies is important to implementing recovery strategies in regions where current water sources are being used at unsustainable levels. Southwest Florida staff are concerned that competition could complicate implementation of a recovery strategy for SWUCA.

Southwest Florida believed that its proposal to allow voluntary reallocation of water (which could include permit marketing) in the SWUCA would be a cost-effective alternative to developing expensive new water supplies. Although the district continues to believe that voluntary reallocation warrants further consideration, the district is not presently considering such a system for its new SWUCA management plan.

Institutional alternatives to permit reallocation for agricultural users

An alternative to market-like management of competition is the institutional model exemplified by regional water supply authorities. However, no comparable approach has been demonstrated among agricultural users. Four factors help explain the difficulty of applying the institutional model to agricultural users.

- There are typically a large number of permitted agricultural users in a region, in comparison to the relatively small number of public supply utilities typically included in a regional system.
- A regional public supply system's expensive, interconnected infrastructure makes cooperative and cost-effective water projects feasible; agricultural users usually build on-site wells or surface water intakes and cannot afford expensive infrastructure.

¹⁷ "Self-suppliers" include agricultural irrigators and other users (e.g., industrial facilities) that do not rely on public supply utilities.

- Agricultural users are independent, competitive businesses and may not wish to share information about irrigation plans with their competitors; public supply utilities, whether publicly or privately operated, already disclose information about rates, supply development, and operations.
- Changes in farm ownership and structure that require formal permit modifications are common; public supply utilities are comparatively stable.

However, agricultural users and public supply utilities share the important characteristic that there is relatively little difference in the public interest served between similar users. For instance, the public interest is probably equally well served between one efficient citrus farm and another, regardless of whether one grows a different variety of fruit. Because agricultural users have so much in common from a public interest perspective, it appears more feasible to manage competition through some sort of institutional structure than through a regulatory process that attempts to distinguish among the agricultural users.

Agricultural users have demonstrated these common interests by working together in both formal and informal institutions to manage water resources. Two water management districts have issued permits to water control districts that authorize water use by the members of those districts, and one district has worked with a growers association to resolve water use conflicts. However, these institutions have rarely, if ever, allocated water among their users in a manner similar to that illustrated by regional water supply authorities.

South Florida has issued 31 master permits to water control districts (also known as Chapter 298 drainage districts) for surface water withdrawals from district canal systems. Southwest Florida has issued 2 similar permits governing groundwater withdrawals from multiple locations. In some cases, the landowners within those districts also hold permits, but in other cases the water control district is responsible for the entire water allocation. However, those familiar with the operation of the districts report that the districts have rarely, if ever, been involved in allocating water among the members because their permits have always been sufficient to fully meet member needs and most districts with permits operate in areas where flood control, not water scarcity, is the main water resource issue.

The Florida Fern Growers Association resolved conflicts between its members and nearby domestic users in Putnam and Volusia counties. The association collected a voluntary assessment to fund mitigation of the impacts of their collective withdrawals on existing legal users. This cooperative effort helped avoid unnecessary litigation or competing applications.

A model for moving beyond these examples of cooperation to allow agricultural users to reallocate supplies is demonstrated by a consolidated permit issued to IMC-Agrico, a phosphate mining and fertilizer manufacturing company. The permit replaced 12 industrial water use permits for deep well pumping and mine-pit dewatering. It includes an overall limit on deep well water withdrawals, but allows the company to allocate those withdrawals among approximately 200 wells within individual withdrawal limits. The district's permit also

allows the company to drill small wells (for "sealing" water) and adjust its landholdings; these changes are reported annually and do not require a permit modification. IMC-Agrico staff report that administrative costs to the company and the district have been dramatically reduced while simultaneously improving water management.

However, IMC-Agrico staff reports that the company has not been able to consolidate their substantial agricultural lands into a single water use permit. The staff reports that because the crop type and leaseholders can change fairly often, they have not been able to devise a administratively simple permit that does not require frequent modifications.

Recommendations

To help clarify the importance of cooperation among public utilities and other large water users in developing alternative supplies, regional water supply plans should evaluate the costs of supply options using scenarios of cooperative development and independent development.

The regional water supply development plans established by the water management districts should include analysis that will help clarify the importance of cooperation among public utilities and other large water users. In those areas where the district believes that the cost of water resource and supply development could be affected by the number of public utilities and other large water users that participate in the

project, the analysis should clearly identify the potential impact of these independent decisions on the ultimate cost of implementing the regional water supply plan, as directed in ss. 373.0361(2)(a)3. and (2)(e), F.S. This could be done by providing two cost scenarios, one demonstrating the cost including maximum cooperation and the other with no cooperation among utilities.

To help encourage public utilities to adopt a more regional approach to water development, district governing boards should consider certain regional economic impacts in permit deliberations.

When public utilities are required to develop new supplies in order to address a water resource problem, it may be more cost effective for the area's utilities to adopt a regional approach to water development. However, some large utilities may not perceive a significant cost savings and may prefer to avoid the complexity of cooperating with smaller utilities.

governing boards should consider these negative economic impacts as a significant factor in permit deliberations because it affects the public interest in affordable water supplies. Such a consideration would make it more difficult for applicants to obtain permits when a proposed project significantly raises the overall cost of water development options for other entities.

Although the districts use planning and financial incentives to encourage cooperation, regulatory action to ensure that other water users have access to cost-effective supply options may be necessary at times. One district permit suggests a policy of using the regulatory process to encourage a regional approach to water development. However, the district has not demonstrated a clear statutory basis for this policy.

By considering these regional economic impacts as part of the public interest test for permit applications, the districts would be avoiding greater future water development expenditures as called for in s. 373.0361(2)(e), F.S. Although a permit applicant is not required to choose a source included in the regional water supply plan (s. 373.0361(6), F.S.), applicants should be deterred from choosing water development options that increase regional expenditures, particularly in areas with water resource problems.

When a utility does not join a regional strategy and its proposed projects would cause significantly greater overall regional water development expenditures, district

The Legislature should clarify the "local sources first" provision by making existing exemptions of multi-county water supply systems more general.

The 1998 "local sources first" provision (s. 373.223(3), F.S.) defines any transfer of water across county boundaries as a non-local source, except where specifically excluded. As a result, any new or renewal permit application for a multi-county water supply system must be reviewed under the local sources first provision, regardless of the location of the source, unless the system qualifies for a statutory exemption.

A local sources first review is clearly unnecessary for sources that are near to or within the exclusive service area of a multi-county water supply system. For example,

any water source used by the Ormond Beach municipal water system could technically be a "non-local source" since it would be used in both Volusia and Flagler counties. To reduce unnecessary paperwork and avoid routine challenges to multi-county water supply system permit applications, the Legislature should exempt multi-county systems from local sources first review for proposed water sources located

- within the counties and
- near to or within the system's exclusive service area.

To avoid competing applications litigation and maximize the reasonable and beneficial use of water resources, the districts should use their authority to establish preferred uses of water resources.

Competing applications is a potential obstacle to the smooth implementation of regional water supply plans and particularly to recovery strategies in areas where water is overallocated. The 1997 Legislature directed the districts to develop financially feasible recovery strategies that ensure that all reasonable and beneficial water demands can be met. The recovery strategy provision will help districts avoid use of the competing applications process in areas where new users are not likely to apply for permits in competition with existing users.

However, because new users have the right to compete against existing users during a permit renewal, water development called for in recovery strategies may be difficult to finance. Users who fear that their renewal applications could be denied due to a competing application might be unwilling to financially support development projects.

Although new applicants have the right to compete against existing users, the districts have the authority to establish a resource-specific preference for a type of water use.

Water management districts should use this existing statutory authority to designate "undesirable" or "preferred" types of uses or sources of supply (ss. 373.036(4) and (5), F.S.) if it would improve the districts' ability to implement recovery strategies by discouraging use of the competing applications provision.

Designating a use or source preference does not prevent new users from obtaining water supplies. Districts are required to meet present and projected demands through their regional water supply plans and should be able to integrate new demands into those plans in a reasonable manner.

Furthermore, use or source preferences will not create a property right in water for existing users, since a preference confers benefits solely through the competing applications provision (s. 373.036(5), F.S.). A preference should be established for a type of use when it is evident that the type of use (for example, vegetable irrigation) is not financially feasible using more costly alternative sources.

To avoid the adverse effects of competition, institutional approaches should be used to manage the allocation of scarce water resources. An "agricultural water permit cooperative" should be pilot tested to help users manage changes in water demand without unnecessary regulatory procedures.

An "agricultural water permit cooperative" system could allow voluntary water reallocation in a manner that is consistent with the principles of existing state law. Such a system could address concerns about competition among agricultural users in areas with water scarcity and might include market-like behavior to encourage more efficient allocation, pricing, and use of water among agricultural users.

Cooperatives would build on existing models of institutional cooperation by giving users limited flexibility to reallocate water permit allocations. Limiting membership to similar agricultural users ensures that reallocations would not affect the public interest or other existing legal users. Models for managing such resource protection standards are provided by the IMC-Agrico consolidated permit and the operations of regional water supply authorities. A permit issued to a cooperative would allow its members to reallocate water based on terms negotiated between the users and the districts.

Agricultural water permit cooperatives would

- be created through voluntary negotiation between districts and agricultural water users;
- allow voluntary reallocation among farms;
- assure an agricultural community of a secure water supply without granting water rights to any individual;

- simplify and streamline the permitting process for both district staff and agricultural water users; and
- maintain the permit conditions and resource protection standards that are required by current law.

Since a cooperative could be a mechanism that would allow agricultural water users to adjust their water use without becoming involved in the permitting process, it should help reduce the potential for competing applications among agricultural water users. However, all exemptions from permit modification procedures should be consistent with the principles of existing state law (Ch. 373, F.S.) in order to maintain equity between cooperatives and other water users.

To clarify the flexibility offered to cooperatives, new statutory authority and rules may be needed. However, the existence of master permits for water control districts that include many agricultural users suggests that existing authority may be sufficient for testing the concept. Eventually, the districts may need revised rules that establish permit modification thresholds similar to those included in the IMC-Agrico permit.

Any necessary legislation should be proposed by the Department of Agriculture and Consumer Services, the Department of Environmental Protection, and affected water management districts after consultation with interested users.

Agricultural Water Permit Cooperative Guidelines

An agricultural water permit cooperative would be a non-profit organization that would apply for and have responsibility for consumptive use permits, serving many users within a specific area.

Multiple users, single permit	All of a cooperative's users would use water under a single, large permit. The number of users would not be restricted by the permit, although the nature of the water use would be restricted, as described below.
Specific water resource	Each permit held by a cooperative would be for water from a single water resource, or a set of related water resources. A cooperative could obtain a permit for water resources financed and developed by the cooperative.
Restricted use	The permit would include restrictions on the nature of use, similar to efficiency restrictions found in existing permits. Thus, each cooperative should be restricted to crop types with similar irrigation patterns and technologies. Several cooperatives, each serving a different type of crop, might have overlapping service areas.
Unrestricted membership	Within the constraints outlined above, the cooperative should have unrestricted membership without district review. Members would be free to enter and exit and voluntarily reallocate water to other members of the cooperative as permitted by the cooperative's rules.
Unrestricted allocation systems	The district should not regulate the means by which a cooperative allocates water among its members. However, the district could consider whether the cooperative acts in a fair manner when determining whether the public interest is served by the cooperative's permit. A cooperative that excludes members or allocates water on an unreasonable basis could lose its permit.

How the preferred use policy and cooperatives work together

In this hypothetical situation, district policy is to maximize reasonable and beneficial water use. A likely location for a pilot cooperative is the SWUCA region in southwest Florida, which would be a more complex situation.

Hypothetical Problem. Water from the Nearby River water is fully allocated in 1995, but there is plenty of water available in the Farther River. Five public utilities currently use 50% of the water, and 1,000 farms growing tomatoes, rice, and citrus use the rest. Public utility demand is projected to grow 25% by 2020. If the public utilities use water from the Farther River, water rates would increase by 20%. A study of the agricultural users has determined that it is not financially feasible for them to use water from the Farther River.

Solution Using Preferred Use Policy and Cooperatives. The district establishes agriculture as the preferred use for the Nearby River and determines that it is reasonable and beneficial to allocate 10% of the water to the new tomato water permit cooperative, 20% to the new rice water permit cooperative, and 20% to the new citrus water permit cooperative. By establishing agriculture as the preferred use for the Nearby River, the public supply utilities are dissuaded from competing against applications for permit renewals from the agricultural water permit cooperatives. The public utilities continue to use the other 50% of water from the Nearby River, and form a regional water supply authority to obtain water from the Farther River. New agricultural users in the area join the cooperatives. Each cooperative determines how to meet the needs of new members without exceeding the terms of its permit.

Although the 1999 Legislature authorized the use of state funds for water resource development, criteria for allocating state funds are needed. A review of the demand for state funds and advice on criteria for allocating funds could help implement state policy in an equitable manner.

The Legislature's intent for prioritizing water resource development funding needs is described in s. 373.0831(4), F.S., and various provisions of the 1999 Forever Florida Act. However, as funding for water resource development becomes available, the Department of Environmental Protection, the five water management districts and other agencies will need to establish detailed allocation criteria. Furthermore, a complete estimate of specific funding needs is necessary to target those funds to the highest priority needs.

Most district funds for water resource development are currently drawn from district ad valorem tax revenues rather than from state funds. Most notably, the Southwest Florida Water Management District provides grant funding for water resource development through its New Water Source Initiative. Although state law provides some guidance for allocating those funds, the lack of proven criteria for allocating state funds to water development projects presents challenges to the department and the districts.

The districts are directed by statute to prioritize funding for water resource development on the basis of their regional water supply plans (s. 373.0831(3), F.S.). At this time, the districts have not completed estimates of water resource development needs or of the costs of projects to meet those needs. When those data are available, an independent analysis of those plans would help the Legislature ensure that allocation of Forever Florida funds are based on fair, need-based allocation criteria.

The review could be conducted by the Governor's Office, the Department of Environmental Protection, or OPPAGA.

Possible questions for review

- How much additional water resource development is needed?
- What strategies are likely to be pursued and at what cost?
- How are the costs allocated among recovery strategies (costs of remedying past problems), regional water resource development (facilities to help increase the quantity of available supplies), and water supply development (facilities to access available supplies)?
- Will state and district planning procedures and policies ensure that the costs of anticipated water development strategies are less than the estimated benefits of providing those supplies?
- Should the districts incorporate planned competition into water resource plans as an alternative to water development?
- What are current water utility rates and revenues and how much would rates have to be raised to support required water supply development?
- How are water utility revenues spent (capital costs, operational costs, local service options, and other local government functions)?
- Do Public Service Commission rules make it difficult for private utilities to participate in cost-effective regional water development projects?
- Which state water policy goals could be translated into effective criteria for allocating state funds to assist in water resource development? Do such criteria raise any policy concerns?
- Could those criteria be used to select an appropriate level of state funding?

Agency Responses

OPPAGA invited seven agencies to formally comment on this report. Although the Department of Agriculture and Consumer Services provided informal comments and assistance on earlier drafts of this report, the Commissioner declined to provide formal comments. The Suwannee River Water Management District also declined to provide formal comments. The comments of the other four water management districts and the Department of Environmental Protection are reprinted below.

In response to substantive information provided by one water management district in its formal comments, OPPAGA incorporated the new information and subsequently revised the report, including the discussion beginning on page 10 and the explanation of the recommendation on page 18. The comments below were provided prior to these revisions.

Department of Environmental Protection

The Department appreciated the opportunity to work with OPPAGA on developing its report, "Adjustments Needed to Ensure Cost-Effective Development of New Water Supply Sources". In general, the report is an excellent review of the water supply problems facing us in Florida. The report includes insightful discussion and recommendations on the complex issues surrounding water supply development to meet our future needs. We hope to continue the dialogue with the legislature, water management districts and all interested parties on the best approaches and tools for meeting our water supply needs.

We would like to offer a few general comments on the report.

Completion of Regional Water Supply Plans

In 1997, the Legislature made several important changes in the Water Resources Act, including a new requirement that water management districts develop district-wide water supply assessments by July 1, 1998, and that regional water supply plans be prepared for each region that the assessment determines does not have adequate sources to meet needs in the year 2020. All of these tasks are on schedule.

By April of next year, regional water supply plans are scheduled to be completed for the

nine regions identified as needing such plans. The plans represent a major effort of the water management districts and have involved intensive interagency collaboration and much public participation. The Department has worked closely with the water management districts to ensure that the plans meet all the requirements of the Water Resources Act.

Completion of these plans should be the major focus of the Department, water management districts, and water suppliers and users at this time. When the plans are completed, they will give us better information about future potential water supplies, costs, and problem areas. The plans will provide a good foundation for decision-making related to approaches, funding sources, and any need legislative changes related to providing for our future water supply.

Some Specific Changes Might Be Advisable

We concur that at least a few changes to the statute, or current water management district practice, may merit careful consideration. These include:

1. Strengthening the linkage between the regional water supply plans and actual consumptive use permitting. Explicit authority to consider the regional water

supply plans when evaluating the public interest of a withdrawal application would enhance the ability to successfully implement the plans and ensure that all water needs are considered.

2. Clarifying the "Local Sources First" policies. Development of the regional water supply plans to date has shown that regional approaches to supply development will be the key to success in some areas. The existing "Local Sources First" policies may inadvertently hinder cooperation among local governments and utilities to jointly develop supplies. Although we do not favor major changes in the 1998 statutory amendments, it may be desirable to grant an exemption from this policy for true multi-county solutions which are consistent with the regional water supply plans and which withdraw water from within the collective jurisdictions of the cooperating entities.

3. Use or source preferences. The Water Resources Act already grants the water management districts this tool (s. 373.036(4) and (5)), but it has not been used to date. The Report correctly notes that it could be a means to improve water allocations and would assist in successful implementation of both recovery strategies and the regional water supply plans as a whole.

4. Creative alternatives to the competing applications" process. The report proposes a pilot project for an "agricultural permit cooperative" as one such alternative. We certainly agree that imaginative alternatives should be considered. If interest exists in the agricultural community, we would be interested in further exploring how this approach could work.

Further Analyses by OPPAGA Could Be Useful

The report provides a good list of possible further analyses that OPPAGA could perform (p. 18). We agree that many of those topics could benefit from the same kind of informed review evidenced in the current report. We would be pleased to work with OPPAGA on refining such questions for analysis.

Increased Emphasis on Reuse

We understand that OPPAGA is working on a full reuse report, and that may be why reuse is not a major element of this report. We should keep in mind, however, that increased reuse of reclaimed water holds the potential for hundreds of millions of gallons of "new" environmentally sustainable water supply for Florida.

Thank you for the opportunity to work with OPPAGA on development of this report.

Northwest Florida Water Management District

We appreciate the opportunity to comment on the report. If we can be of service in the future, please do not hesitate to call.

1. Local Sources First, Page 9. The District agrees that the structure of the Local Sources First provision of the law could benefit from refinement. The practical aspects of a water use need to be considered (size of the utility, proximity to a county boundary, District preferred water source, etc.). Also, there should

be a mechanism by which cross-county cooperative water supply development projects can go forward with minimal impediments. Without such considerations, the local sources first provision can unnecessarily burden and increase the potential cost to the supplier and end user without any real benefit to the public.

2. Recommendation 2, Page 14. (...*district governing boards should consider certain*

regional economic impacts in permit deliberations). The discussion suggest, that the Districts' governing boards should consider negative economic impacts as a significant factor in permit deliberations. The difficulties associated with such a requirement should be recognized. Assessment of regional economic impacts can be of such complexity as to be beyond the expertise of the water management districts and to be litigious if they are to be a significant factor in making permit decisions. General consistency with the Water Supply Plan developed by the districts would be a more appropriate consideration in permit issuance than

attempting to assess regional economic impacts.

3. Recommendation 3, Page 15. (*...districts should use their authority to establish preferred uses of water resources*). The discussion of this topic appears to place heightened importance on economic considerations in establishing "preferred uses of water." Such contemplation should be tempered with the knowledge that there are other considerations that are in the public interest (e.g., resource protection) that may conflict with directing a user or particular type class to a specific water source due to "affordability" concerns.

St. Johns River Water Management District

Thank you for the opportunity to review and comment on this report. We commend your office for the effort made to present a summary of the wide range of water supply conditions and issues across the state and to put forth recommendations for potential improvements to Florida's existing legislation concerning water supply planning and water use permitting.

We continue to believe that the regional water supply planning process that was created under the provisions of HB 715 provides a workable approach to developing sustainable and cost-effective water supplies for this state. At SJRWMD, we have been working very hard to undertake this effort and have made significant progress in completing a regional water supply plan that we believe will provide acceptable options for development of needed water supplies. As a result, we support consideration of recommendations contained in the report that would serve to further enhance the existing water supply planning and implementation program.

We recognize however, that implementation of the recommendations in this report could have significant ramifications (both intended and unintended? on the current effort being undertaken by the water management districts and water stakeholders to prepare regional water supply plans as directed by HB 715. These plans will provide specific water supply options and implementation plans to address water resource caution areas, including a water resource development plan for the water management districts. For this reason, we recommend that prior to implementing any of these recommendations, further evaluation be made in light of the regional water supply plans that will be completed in the next year.

We look forward to working with your office and others on further evaluation and implementation of additional provisions needed for effective water supply development.

Southwest Florida Water Management District

Thank you for the opportunity to review and comment on the OPPAGA progress report entitled "*Adjustments Needed to Ensure Cost-Effective Development of New Water Supply Sources.*" I am aware that a number of my staff have provided input to OPPAGA in the development of earlier drafts of this report. However, since we did not receive the final

report for review until July 7, 1999, and because the report touches on such far reaching public policy issues, we believe a longer period for a careful review and comment is needed. If it is not possible for us to complete our review before the report is published to the Legislature, we will send our comments, if any, later.

South Florida Water Management District

I first want to recognize all of OPPAGA staff's efforts to consider issues and concerns expressed during this comment period for this Report. SFWMD staff looks forward to working with OPPAGA on these issues in the future.

Our primary emphasis, in light of the 1997 legislative direction on water supply planning ("HB 715"), is to meet existing and future reasonable-beneficial demands and sustain natural systems for the future. We believe that Chapter 373, as it currently exists, provides ample authority and opportunity to implement this goal. Before taking a more active role in driving economic decisions through our water supply planning and regulatory processes, as recommended in the Report, we should carefully evaluate whether this approach will truly assist us in reaching our statutory goals.

There are a few significant points the SFWMD will continue to focus on in relation to the recommendations and supporting documentation in the Report. They are set forth below.

Recognize Report Recommendations May Not Be Applicable in All Regions

One of the fundamental principles recognized by the original framers of the Water Resource Act was the need to allow for flexibility in water management and to create a framework that allowed related regions within Florida to be considered

together. Thus, the state was divided along hydrologic boundaries into sub-regions known as water management districts. Given the hydrologic basin divides, it is quite natural that differences in both water management issues and decisions occur between the five water management districts. We suggest that the Report recognize these differences in regional issues when identifying possible solutions, and suggest that the Report recommendations be couched, further discussed, and implemented based on this understanding.

Some areas of Florida rely on groundwater sources for supplies, while others utilize a diverse collection of surface water canals and multiple aquifers. There are also many different causes of harm to water resources, including flood management, drainage, pollution, or consumptive uses. In addition, harm to an area may be the result of one primary activity listed above, or harm may be assignable to many different activities going on at one time.

For example, in the Southern Water Use Caution Area, SWUCA, where the primary water supply source is being harmed primarily by consumptive uses, recommendations to promote cooperation in regional projects based on economic considerations in the regional water supply plan and regulatory process may be workable. On the other hand, in the Lower East Coast of Florida harm has been caused primarily by flood management and

drainage activities and there are several different natural sources of water supplies available to and being used for water supplies. In this situation, unlike SWUCA, the ability to recommend any one water supply solution, either water resource development or water supply development, based on the suggested economic consideration in the Report, would be extremely difficult, if not impossible.

Although we believe that the Report inherently recognizes this, this point should be more explicitly stated and stressed.

Water Resource Protection Standards Should Not Be Implemented Solely by Economic Considerations

HB 715 spells out responsibilities of the water management districts and consumptive users to ensure that sustainable water supplies for the environment and humans will exist in the future. Water resource development, which is primarily the responsibility of the water management districts, consists of measures to ensure that adequate water supplies are available for both humans and natural systems. It is water resource protection requirements under Chapter 373 that define the availability of water for consumptive use, which in turn dictates the water supply option used by a particular user. The water management districts undertake an extraordinarily difficult task of evaluating many competing, resource related concerns.

Economic Considerations Should Not Outweigh the Current Flexibility to Choose a Water Supply Development Option that Best Suits the Individual Water User's Needs

Water supply development, which consists of projects necessary to access available water supplies for a particular use or uses, is primarily the responsibility of the direct suppliers and consumptive users. Regional water supply plans must lay out a menu of water supply development options for evaluation and implementation by individual consumptive users. The impracticability of

requiring a water management district to reach stakeholder consensus on any one solution was implicitly recognized in HB 715, by preserving for a consumptive user the flexibility to choose the water supply option most viable for its particular needs. We believe that as long as the option chosen by a consumptive users meets the resource protection requirements under the statute, that decision should be left up to the user. Regionalization of Water Supplies for Economic Efficiency

Where regionalization of supplies has occurred, as discussed in the Report, water supply shortfalls and resource protection issues were the driving force behind such moves. Experience has proven in the SFWMD that as long as the resources are protected under the water management district planning and regulatory process, the economic or market implications of choosing a specific source option over another, either local or regional, are more successfully evaluated by the particular party paying for it. The need to regionalize water supplies should be supported by the water management district when it would further the resource protection goals of Chapter 373, not merely to further economic efficiency of the region.

Competition

As stated above, the SFWMD believes the instances of competition will continue to be rare and involve specific users rather than region-wide issues. This is predicated upon the SFWMD water supply planning efforts and the anticipated regional water resource development projects, as required by HB 715.

Nevertheless, the SFWMD began to formulate a conceptual framework for resolution of competing water use permits. These concepts are truly in an embryonic state of development and are difficult to summarize while capturing all of the nuances that pervade this complex subject.

The Report's reference to economic matters that are a component of this conceptual scheme should recognize the limited role economics may play in resolving competing use situations. We believe that the analysis of the economic factors outlined in our draft competition approach should only be considered to resolve competing applications, not to evaluate routine permit applications or to designate preferred uses.

The SFWMD conceptual framework for resolution of competition issues recognizes the staff's role as distinct from the Governing Board's policy setting position. Close examination of the draft proposal will reveal limited consideration of broad, socio-economic issues. The SFWMD recognizes such matters will be inherent in making judgments on competing permit applications, where, all resource considerations equal, some added public interest factor available to tip the balance between competing users must be applied. This is recognized under the common law of water rights which allowed for consideration of economics to make these very difficult decisions in lawsuits between users.

As a result, the conceptual framework developed by SFWMD staff provides competing permit applicants with an opportunity to present information related to a project's economic status to the Governing Board. As mentioned, this opportunity is merely a proposal and, clearly, provides only a narrow window for economic considerations to bear upon water use decisions.

Preference of Uses

The designation of preferred uses under Section 373.036, F.S., should be based on a resource protection need, per the statute, and not solely on economic considerations. The language in Section 373.036 regarding designation of preferred uses is intended to prevent uses of the water resources that cause harm or to encourage uses that benefit the water resources. It is unclear whether the water management districts

would be able to use this statute to prefer uses based on economics.

Although we recognize that a preferred use designation can be used when implementing the competition statute, Section 373.036(5) can also be used to establish a preference for a use class under the three prong test adopted in Section 373.223, F.S. The last paragraph on page 15 should be revised to reflect this.

Cooperative Agricultural Permits

We suggest that the recommendation regarding cooperative agricultural permits emphasize the overriding need to ensure that the water resource will be protected, when trying to add flexibility contemplated in these permits. The flexibility in using water under an "agricultural water permit cooperative" must be balanced with the water management district's ability to track and evaluate the resource implications of changing water use scenarios.

The effects of changing a withdrawal location or increasing a withdrawal to offset reductions in another use of the same source can be very different in a groundwater system versus a surface water system. In surface water systems, effects of withdrawals are readily transferable throughout the system, while moving a well from one property to another to allow for "voluntary reallocation" can have significant repercussions on site specific resources and adjacent existing legal users. As a result, additional discussion needs to occur on how to implement a "agricultural water permit cooperative", with the recommended flexibility, in areas where ground water is used.

The Report does not discuss the successful application of a similar concept by the SFWMD. In a number of cases the SFWMD has issued master permits for the diversion and impoundment of surface water through sub-regional canal systems, to provide

water to meet individual user demands served by the system. Under this type of permit there has been flexibility for individual users to change withdrawal locations and to adjust for changing demands in the area due to agricultural factors. In such situation, the user is required to notify the district of these minor modifications, however, there is no need for a formal permit modification. To insure the cumulative use of water does not pose resource concerns, the master permit places limitations on water usage and availability within the project area through overall operational conditions for main surface water diversion structures.

Conclusion

I hope that the above suggestions and comments will help you finalize the Report. The issue of economic cost effectiveness in water allocation and water supply planning, I suspect, will continue to be debated for the next few years. Hopefully, the water management districts will be allowed to finalize the regional water supply plans, before any legislative action on these implementation issues is taken. Meanwhile, I look forward to working with OPPAGA, the legislature and other policymakers, on these very important issues.

OPPAGA Comment:

OPPAGA takes exception to the inference by the South Florida Water Management District that our report suggests that water resource protection standards should be implemented solely by economic considerations. OPPAGA's findings and recommendations are intended to urge the districts to give some consideration to the economic implications of district water allocation policies. South Florida's comments suggest that its policies do nothing to "merely further economic efficiency."

In response to the comment regarding master permits issued by the district, OPPAGA incorporated this information into our findings and recommendations. While these revisions improved our report, the subsequent delay in publishing the report could have been avoided had the district taken advantage in its earlier opportunities to comment on factual errors and omissions.

Appendix

A region-by-region summary of district water supply assessments and planning activities to date

In 1998, the five water management districts completed regional water supply assessments. The summaries on the pages referenced below describe the districts' findings and outline steps the districts are

taking to address problems. Each summary includes data describing current and projected water use for the region, and data estimating the water sources presently used in the region.

Water Management District	Region	2020 Supply	Planning Efforts Underway	Page
Northwest Florida	I	Adequate		29
	II	Inadequate	Region II Plan	29
	III	Adequate		30
	IV	Adequate		30
	V	Adequate		31
	VI	Adequate		31
	VII	Adequate		32
Suwannee River	Entire District	Adequate		32
St. Johns River ¹⁸	North Inland	Adequate		33
	North Coastal	Inadequate	Districtwide; Work Groups IV and V	34
	Flagler County	Inadequate	Districtwide; Work Group IIII	35
	Volusia County	Inadequate	Districtwide; Work Group III	36
	Central	Inadequate	Districtwide; Work Groups I and Ia	37
	South	Adequate		38
Southwest Florida	Northern	Adequate		38
	West-Central	Inadequate	Northern Tampa Bay and SWUCA	39
	East-Central	Inadequate	SWUCA	40
	Southern	Inadequate	SWUCA	41
South Florida	Lower West Coast	Inadequate	Lower West Coast Plan and Caloosahatchee Plan	42
	Lower East Coast	Inadequate	Lower East Coast Plan, C&SF "Restudy," and several urban region plans	43
	Upper East Coast	Inadequate	Upper East Coast Plan (complete) and Indian River Lagoon Study	44
	Kissimmee Basin	Inadequate	Kissimmee Basin Plan and Chain of Lakes Plan	45

¹⁸ St. Johns River Water Management District has designated its entire district as a single planning region. Without objection from the district, OPPAGA used county-level data provided by the district to illustrate regional trends and issues.

Region I Northwest Florida Water Management District

Adequate Water Supplies and No Use Restrictions

Counties:
Escambia



Uses*	1995	2020
Public	37	48
Agriculture	0	0
Other	48	53
Total	85	101

* Millions of gallons per day (rounded)

The amount of water available from traditional sources within this region is sufficient to meet all of the of the projected and drought condition demands through the year 2020 while sustaining the water resource and related natural resources.

Sources*	1995
Sand-and-Gravel Aquifer	82
Other	3
Total	85

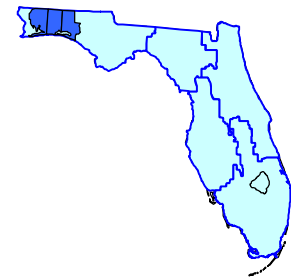
* Millions of gallons per day (rounded)

Source: Northwest Florida Water Management District, *District Water Supply Assessment*, 1998.

Region II Northwest Florida Water Management District

Inadequate Water Supplies at Current Rate of Use and Current Restrictions on New Groundwater Uses

Counties:
Okaloosa Walton Santa Rosa



Uses*	1995	2020
Public	37	62
Com/Ind ⁺	12	16
Other	10	15
Total	59	93

* Millions of gallons per day (rounded)

⁺ Commercial and industrial uses

The existing and reasonably projected water sources are not considered adequate to meet the requirements of existing legal users and reasonably projected future water supply needs of the region through the year 2020 because the hydrologic system has been heavily impacted in the coastal area. Although widespread problems have not developed, saltwater intrusion into the Floridan Aquifer will occur if present use is sustained.

Sources*	1995
Floridan Aquifer	38
Sand-and-Gravel Aquifer	21
Total	59

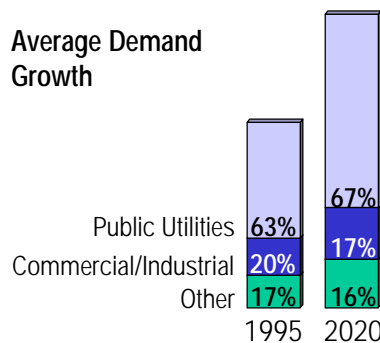
* Millions of gallons per day (rounded)

To address these problems, the district

- designated the southern portion as a water resource caution area;
- prohibited new or expanded use of the Floridan Aquifer for nonpotable purposes; and
- is developing a regional water supply plan for the region.

Avoiding saltwater intrusion will require public utilities to move to alternative supplies because they account for 63% of water demand.

Average Demand Growth



According to district staff, the likely alternative sources for public supply are groundwater resources in the northern portion of the region. Other alternatives include increased surface water use, reverse osmosis treatment of poorer quality groundwater, reuse, and conservation. Cooperation varies among the public supply utilities; some are planning water supply development on a utility-by-utility basis, rather than through cooperation with neighboring utilities.

Source: Northwest Florida Water Management District, *District Water Supply Assessment*, 1998.

Region III Northwest Florida Water Management District

Adequate Water Supplies and No Use Restrictions

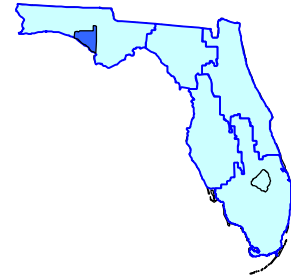
Counties:

Bay

Uses*	1995	2020
Public	24	37
Agriculture	0	0
Other	32	35
Total	57	72

* Millions of gallons per day (rounded)

The amount of water available from traditional sources within this region is sufficient to meet all of the of the projected and drought condition demands through the year 2020 while sustaining the water resource and related natural resources. However, concerns regarding the sustainability of Floridan Aquifer groundwater use along the coastline will require the development of alternative sources such as inland groundwater, increased surface water use, reuse, and conservation.



Sources*	1995
Surface	44
Floridan Aquifer	13
Total	57

* Millions of gallons per day (rounded)

Source: Northwest Florida Water Management District, *District Water Supply Assessment*, 1998.

Region IV Northwest Florida Water Management District

Adequate Water Supplies and No Use Restrictions

Counties:

*Calhoun
Holmes*

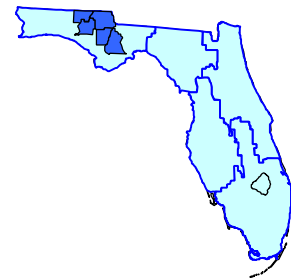
*Jackson
Liberty*

Washington

Uses*	1995	2020
Public	5	8
Agriculture	11	21
Other	15	20
Total	32	48

* Millions of gallons per day (rounded)

The amount of water available from traditional sources within this region is sufficient to meet all of the of the projected and drought condition demands through the year 2020 while sustaining the water resource and related natural resources.

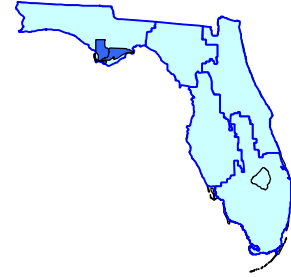


Sources*	1995
Floridan Aquifer	31
Surface	1
Total	32

* Millions of gallons per day (rounded)

Source: Northwest Florida Water Management District, *District Water Supply Assessment*, 1998.

Region V Northwest Florida Water Management District



Adequate Water Supplies and No Use Restrictions, but Localized Concerns

Counties:

Gulf
Franklin

Uses*	1995	2020
Public	3	4
Agriculture	0	0
Other	29	30
Total	32	34

* Millions of gallons per day (rounded)

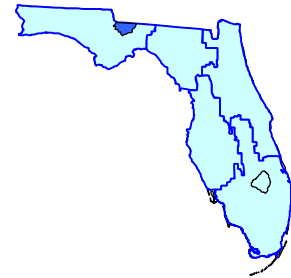
Sources*	1995
Surface	28
Floridan and surficial aquifers	4
Total	32

* Millions of gallons per day (rounded)

The amount of water available from traditional sources within this region is sufficient to meet all of the of the projected and drought condition demands through the year 2020 while sustaining the water resource and related natural resources. However, concerns regarding the sustainability of Floridan Aquifer groundwater use along the coastline will require the development of alternative sources such as other local aquifers, inland groundwater, reuse, and conservation. While the district is not concerned enough to draft a regional water supply plan, water quality concerns are sufficiently high to warrant additional resource monitoring by both the public utilities and the district.

Source: Northwest Florida Water Management District, *District Water Supply Assessment*, 1998.

Region VI Northwest Florida Water Management District



Adequate Water Supplies, but Some Use Restrictions Due to Localized Concerns

Counties:

Gadsden

Uses*	1995	2020
Public	4	4
Agriculture	5	7
Other	4	5
Total	13	16

* Millions of gallons per day (rounded)

Sources*	1995
Surface	7
Floridan Aquifer	6
Total	13

* Millions of gallons per day (rounded)

The amount of water available from traditional sources within this region should be sufficient to meet all of the of the projected and drought condition demands through the year 2020 while sustaining the water resource and related natural resources. However, the district has designated the Telogia Creek basin as a water resource caution area. Although the district applies a higher level of scrutiny to permit applications and does not authorize significant increases in surface water withdrawals, the district concluded that the ground and surface water resources should be able to meet projected increases in water demand. Increased water reuse and projected shifts in crop types should also avoid water resource problems.

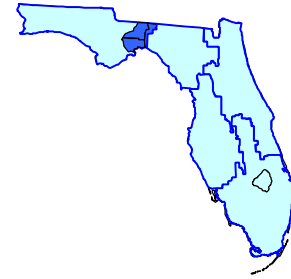
Source: Northwest Florida Water Management District, *District Water Supply Assessment*, 1998.

Region VII *Northwest Florida Water Management District*

Adequate Water Supplies and No Use Restrictions

Counties:

Jefferson (west) *Wakulla* *Leon*



Uses*	1995	2020
Public	29	51
Agriculture	5	6
Other	12	17
Total	47	74

* Millions of gallons per day (rounded)

The amount of water available from traditional sources within this region is sufficient to meet all of the of the projected and drought condition demands through the year 2020 while sustaining the water resource and related natural resources.

Sources*	1995
Floridan Aquifer	47
Surface	0
Total	47

* Millions of gallons per day (rounded)

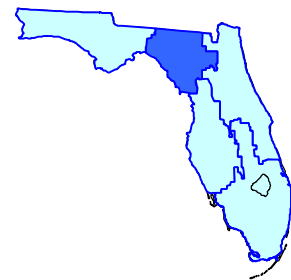
Source: Northwest Florida Water Management District, *District Water Supply Assessment*, 1998.

Entire District *Suwannee River Water Management District*

Adequate Water Supplies and No Use Restrictions

Counties:

Alachua (northwest) *Dixie* *Lafayettee* *Taylor*
Baker (southwest) *Gilchrist* *Levy (northwest)* *Union*
Bradford (most) *Hamilton* *Madison*
Columbia *Jefferson (east)* *Suwannee*



Uses*	1995	2020
Public	14	20
Agriculture	88	109
Other	127	144
Total	229	273

* Millions of gallons per day (rounded)

The amount of water available from traditional sources within this district is sufficient to meet all of the of the projected and drought condition demands through the year 2020 while sustaining the water resource and related natural resources.

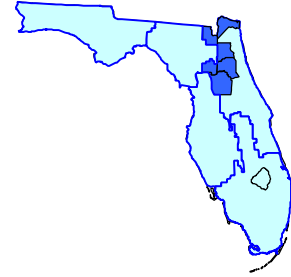
Sources*	1995
Floridan Aquifer	226
Surface	3
Total	229

* Millions of gallons per day (rounded)

Source: Suwannee River Water Management District, *Water Supply Assessment*, 1998.

North Inland Region *St. Johns River Water Management District*

Adequate Water Supplies and No Use Restrictions



Counties:

Alachua (southeast) *Bradford (west)* *Marion (west)* *Putnam*
Baker (most) *Clay* *Nassau*

Uses*	1995	2020
Public	54	91
Agriculture	28	46
Other	160	188
Total	241	326

* Millions of gallons per day (rounded)

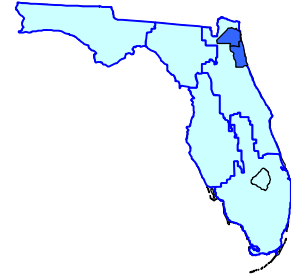
The amount of water available from traditional sources within this region is sufficient to meet all of the of the projected and drought condition demands through the year 2020 while sustaining the water resource and related natural resources. With the exception of a small portion of Putnam County, these counties are not included in the district's water supply planning focus groups and are not designated as priority water resource caution areas.

Sources*	1995
Groundwater	182
Surface	59
Total	241

* Millions of gallons per day (rounded)

Source: St. Johns River Water Management District, *Water Supply Assessment*, 1998, Technical Publication SJ98-2. Up to date information is available on the district's [Water 2020](#) website.

Note: St. Johns River Water Management District has designated its entire district as a single planning region. OPPAGA used county-level data provided by the district to illustrate regional trends and issues.



Inadequate Water Supplies Projected; Lack of Public Utility Planning to Be Addressed

Counties:

Duval *St. Johns*

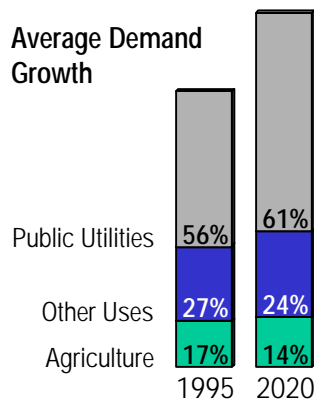
Uses*	1995	2020
Public	109	154
Agriculture	32	36
Other	53	61
Total	195	250

* Millions of gallons per day (rounded)

Sources*	1995
Groundwater	192
Surface	3
Total	195

* Millions of gallons per day (rounded)

Average Demand Growth



The existing and reasonably projected water sources are not considered adequate to meet the requirements of existing legal users and reasonably projected future water supply needs of the region through the year 2020. Current demands have been met, but the district anticipates that demand growth cannot be met from traditional supplies because increased use could draw down the aquifer level. District staff report that public utilities in this region up until this point have failed to plan for projected growth, in contrast to utilities in other areas.

To address these problems, the district

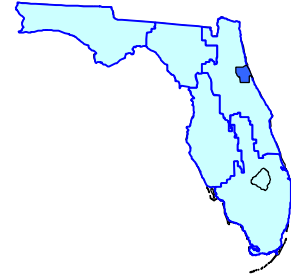
- designated the eastern portion of the region as a priority water resource caution area and
- established a planning focus group to assist in developing the district's regional water supply plan.

Although there have been problems with potato growers in St. Johns and Putnam counties causing interference with other wells, the district's future concern is primarily growing urban demands in St. Johns and Duval counties. To avoid future water resource limitations, public utilities will need to develop alternative water resources because public supply demand accounts for 56% of the area's demand.

The district is now working with utilities in the region to develop alternative water supply options. Since there are no projected environmental or saltwater intrusion problems, it should be feasible for the district and utilities to develop solutions.

Source: St. Johns River Water Management District, *Water Supply Assessment*, 1998, Technical Publication SJ98-2. Up to date information is available on the district's [Water 2020](#) website.

Note: St. Johns River Water Management District has designated its entire district as a single planning region. OPPAGA used county-level data provided by the district to illustrate regional trends and issues.



Inadequate Water Supplies Projected, but Options Being Developed to Meet Demand

Counties:
Flagler

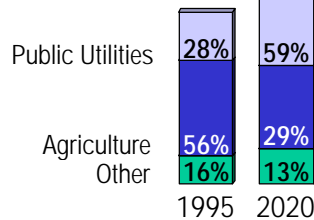
Uses*	1995	2020
Public	4	15
Agriculture	9	8
Other	3	3
Total	16	26

* Millions of gallons per day (rounded)

Sources*	1995
Groundwater	15
Surface	1
Total	16

* Millions of gallons per day (rounded)

Average Demand Growth



The existing and reasonably projected water sources are not considered adequate to meet the requirements of existing legal users and reasonably projected future water supply needs of the region through the year 2020. Current demands have been met, but the district anticipates that demand growth cannot be met from traditional supplies because increased use could cause harm to wetlands.

To address these problems, the district

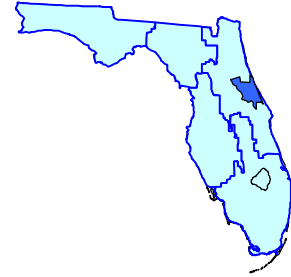
- designated much of the coastal portion of the county as a priority water resource caution area and
- established a planning focus group to assist in developing the district's regional water supply plan.

To avoid future water resource limitations, public utilities will need to develop alternative water resources because public supply accounts for virtually all projected growth in demand.

The district is working with utilities in the region to develop alternative water supply options and anticipates that feasible options can be developed and implemented to avoid any problems.

Source: St. Johns River Water Management District, *Water Supply Assessment*, 1998, Technical Publication SJ98-2. Up to date information is available on the district's [Water 2020](#) website.

Note: St. Johns River Water Management District has designated its entire district as a single planning region. OPPAGA used county-level data provided by the district to illustrate regional trends and issues.



Inadequate Water Supplies Projected; Alternative Sources Needed to Avoid Harm

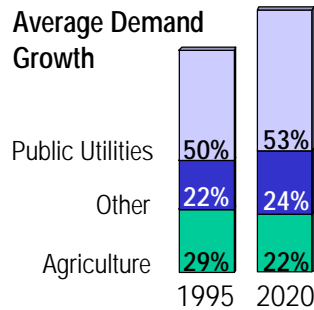
Counties:
Volusia

Uses*	1995	2020
Public	48	60
Agriculture	28	25
Other	21	27
Total	96	113

* Millions of gallons per day (rounded)

Sources*	1995
Groundwater	91
Surface	6
Total	97

* Millions of gallons per day (rounded)



The existing and reasonably projected water sources are not considered adequate to meet the requirements of existing legal users and reasonably projected future water supply needs of the region through the year 2020. Current demands have been met, but the district anticipates that demand growth cannot be met from traditional supplies because increased use could cause harm to wetlands, draw down the aquifer level, and cause saltwater intrusion into the Floridan Aquifer.

To address these problems, the district

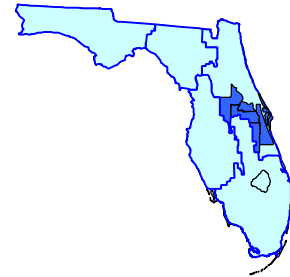
- designated the eastern portion as a priority water resource caution area and
- established a planning focus group to assist in developing the district's regional water supply plan.

Solutions to the projected supply problems in Volusia County will require working with a group of users that is somewhat more complex than those in other areas, including public utilities, fern growers, and recreational facilities (i.e., golf courses).

According to district documents, options include additional locations for groundwater withdrawals, surface supplies from the St. Johns River, and projects to mitigate impacts to vegetation (thus allowing the district to permit higher levels of use from traditional sources).

Source: St. Johns River Water Management District, *Water Supply Assessment*, 1998, Technical Publication SJ98-2. Up to date information is available on the district's [Water 2020](#) website.

Note: St. Johns River Water Management District has designated its entire district as a single planning region. OPPAGA used county-level data provided by the district to illustrate regional trends and issues.



Inadequate Water Supplies Projected; Alternative Sources, Better Utility Planning Needed

Counties:

Brevard *Orange (most)* *Polk (northeast)*
Lake (most) *Osceola (east)* *Seminole*

Uses*	1995	2020
Public	229	370
Agriculture	239	221
Other	79	102
Total	547	693

* Millions of gallons per day (rounded)

Sources*	1995
Groundwater	470
Surface	77
Total	547

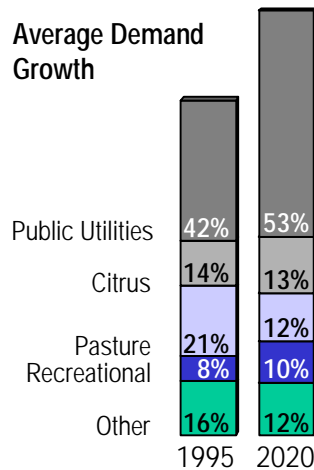
* Millions of gallons per day (rounded)

The existing and reasonably projected water sources are not considered adequate to meet the requirements of existing legal users and reasonably projected future water supply needs of the region through the year 2020. Current demands have been met, but the district anticipates that demand growth cannot be met from traditional supplies because increased use could cause harm to wetlands, draw down the aquifer level, and cause saltwater intrusion into the Floridan Aquifer. District staff report that public utilities in this region have up until this point failed to plan for projected growth, in contrast to utilities in other areas.

To address these problems, the district

- designated most of the region as a priority water resource caution area and
- established two planning focus groups to assist in developing the district's regional water supply plan.

Although public supply demand in the Orlando and Brevard County areas is the largest source of growth, policies to address the region's problems must also consider significant use by agriculture (primarily citrus and pasture) and recreational facilities (i.e., golf courses).



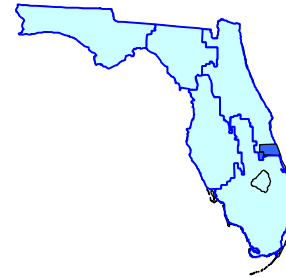
According to district documents and staff comments, potential options include additional locations for groundwater withdrawals, surface supplies, projects to mitigate impacts to vegetation (thus allowing the district to permit higher levels of use from traditional sources), artificial recharge, and desalination. Establishing better cooperation among public utilities is considered critical to smooth and cost-effective implementation of new supply source development.

Source: St. Johns River Water Management District, *Water Supply Assessment*, 1998, Technical Publication SJ98-2. Up to date information is available on the district's [Water 2020](#) website.

Note: St. Johns River Water Management District has designated its entire district as a single planning region. OPPAGA used county-level data provided by the district to illustrate regional trends and issues.

South Region *St. Johns River Water Management District*

Adequate Water Supplies and No Use Restrictions



Counties:

Indian River *Okeechobee*

Uses*	1995	2020
Public	10	29
Agriculture	252	254
Other	12	13
Total	274	295

* Millions of gallons per day (rounded)

The amount of water available from traditional sources within this region is sufficient to meet all of the of the projected and drought condition demands through the year 2020 while sustaining the water resource and related natural resources. These counties are not included in the district's water supply planning focus groups and are not designated as priority water resource caution areas.

Sources*	1995
Groundwater	101
Surface	172
Total	274

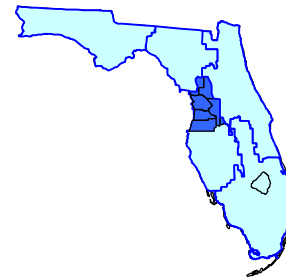
* Millions of gallons per day (rounded)

Source: St. Johns River Water Management District, *Water Supply Assessment*, 1998, Technical Publication SJ98-2. Up to date information is available on the district's [Water 2020](#) website.

Note: St. Johns River Water Management District has designated its entire district as a single planning region. OPPAGA used county-level data provided by the district to illustrate regional trends and issues.

Northern Region *Southwest Florida Water Management District*

Adequate Water Supplies and No Use Restrictions



Counties:

Citrus *Lake (southwest)* *Marion (east)*
Hernando *Levy (southeast)* *Sumter*

Uses*	1995	2020
Public	30	56
Agriculture	41	49
Other	115	133
Total	186	238

* Millions of gallons per day (rounded)

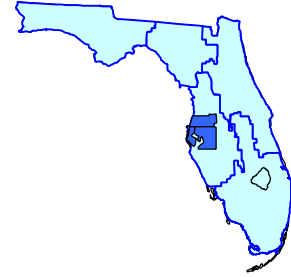
The amount of water available from traditional sources within this region is sufficient to meet all of the of the projected and drought condition demands through the year 2020 while sustaining the water resource and related natural resources.

Sources*	1995
Groundwater	125
Surface	62
Total	186

* Millions of gallons per day (rounded)

Source: Southwest Florida Water Management District, *Water Supply Assessment 1995-2020*, 1998.

Inadequate Water Supplies Addressed through Regional Agreement to Develop Alternative Sources



Counties:

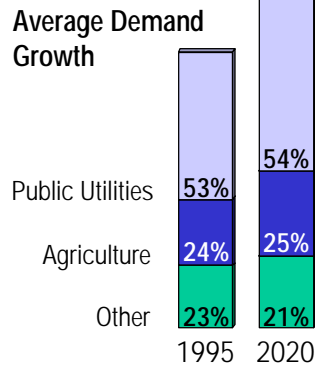
Hillsborough *Pinellas* *Pasco*

Uses*	1995	2020
Public	253	312
Agriculture	114	145
Other	107	124
Total	474	581

* Millions of gallons per day (rounded)

Sources*	1995
Groundwater	381
Surface	93
Total	474

* Millions of gallons per day (rounded)



The existing and reasonably projected water sources are not considered adequate to meet the requirements of existing legal users and reasonably projected future water supply needs of the region through the year 2020 because the hydrologic system has been heavily impacted by overallocation. Overallocation of groundwater resources caused widespread problems, including damage to wetlands, groundwater depletion, and saltwater intrusion into the Floridan Aquifer. These problems developed before the district was given regulatory authority in most of the heavily impacted areas.

To address these problems, the district

- designated most of the region as a water use caution area;
- designated part of Hillsborough and Pasco counties as the Most Impacted Area where new withdrawals are prohibited;
- joined in a partnership agreement with Tampa Bay Water (the regional water supply authority) and public utilities to reduce harmful withdrawals and develop new supply sources;
- proposed recovery strategy rules based on the partnership; and
- is developing a regional water supply plan for the region.

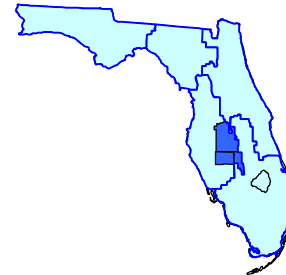
The district is addressing these problems through two regional efforts.

Most of the region's water use is dominated by public supply use and is designated as the Northern Tampa Bay Water Use Caution Area. In 1998, the district, Tampa Bay Water, and its member public utilities signed an agreement to unify water supply development in Tampa Bay Water. The objectives of the agreement are to develop at least 85 million gallons per day (mgd) of new water supply, reduce groundwater withdrawals from certain areas from 158 to 90 mgd, and eliminate or significantly reduce litigation.

Southern Hillsborough County is designated within the Southern Water Use Caution Area (SWUCA) and most withdrawals in this area are used for agriculture. The district is working with affected parties in the region to prepare a SWUCA management plan. The new plan will include water resource development and management options to address the area's problems.

Source: Southwest Florida Water Management District, *Water Supply Assessment 1995-2020*, 1998.

Inadequate Water Supplies; Current Uses Causing Resource Harm and Depletion



Counties:

Hardee

Polk (southwest)

Highlands (northwest)

Uses*	1995	2020
Public	58	107
Agriculture	265	332
Mng/Ind [†]	96	76
Other	38	85
Total	456	599

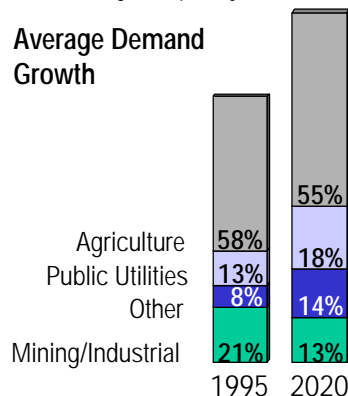
* Millions of gallons per day (rounded)

[†] Mining and industrial uses

Sources*	1995
Groundwater	415
Surface	41
Total	456

* Millions of gallons per day (rounded)

Average Demand Growth



The existing and reasonably projected water sources are not considered adequate to meet the requirements of existing legal users and reasonably projected future water supply needs of the region through the year 2020 because the hydrologic system has been heavily impacted through overallocation. Overallocation of groundwater resources caused widespread problems, including damage to wetlands, groundwater depletion, and saltwater intrusion into the Floridan Aquifer. These problems developed before 1980, when the district was given regulatory authority in most of the heavily impacted areas.

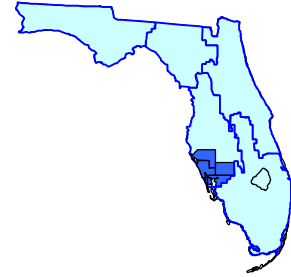
To address these problems, the district

- designated most of the region as a water use caution area;
- is evaluating the possibility of creating a regional water authority for the area; and
- is developing a regional water supply plan for the region.

With the exception of some northern parts of Polk County, the region is included in the Southern Water Use Caution Area (SWUCA). Major water users include agriculture, mining, and industry. Growth in public utility demand is also significant.

The district is working with affected parties in the region to prepare a SWUCA management plan. The district's first SWUCA management plan was adopted by rule in 1994, but after extensive litigation portions of the rules were declared invalid and the district withdrew some rules in 1998. The new plan will include water resource development and management options to address the area's problems, possibly including conservation, reuse of reclaimed wastewater, aquifer storage and recovery, surface water, and desalination.

Source: Southwest Florida Water Management District, *Water Supply Assessment 1995-2020*, 1998.



Inadequate Water Supplies; Current Uses Causing Resource Harm and Depletion

Counties:

Charlotte (northwest) *Manatee*
DeSoto *Sarasota*

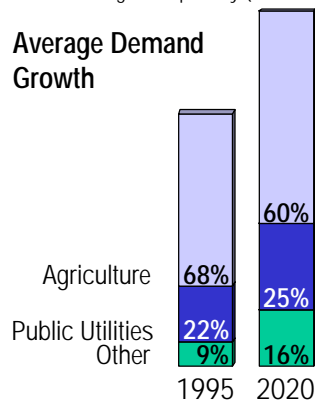
Uses*	1995	2020
Public	87	135
Agriculture	265	326
Other	36	85
Total	389	546

* Millions of gallons per day (rounded)

Sources*	1995
Groundwater	332
Surface	57
Total	389

* Millions of gallons per day (rounded)

Average Demand Growth



The existing and reasonably projected water sources are not considered adequate to meet the requirements of existing legal users and reasonably projected future water supply needs of the region through the year 2020 because the hydrologic system has been heavily impacted by overallocation. Overallocation of groundwater resources caused widespread problems, including damage to wetlands, groundwater depletion, and saltwater intrusion into the Floridan Aquifer. These problems developed before 1980, when the district was given regulatory authority in most of the heavily impacted areas.

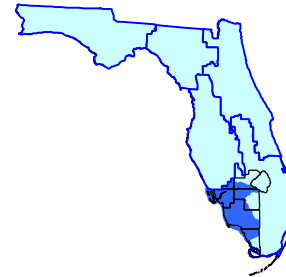
To address these problems, the district

- designated the region as part of the Southern Water Use Caution Area (SWUCA);
- designated part of Manatee and Sarasota counties as the Most Impacted Area where new withdrawals are prohibited; and
- is developing a regional water supply plan for the region.

Most withdrawals in this area are for agricultural use, although public supply demand is growing.

The district is working with affected parties in the region to prepare a SWUCA management plan. The district's first SWUCA management plan was adopted by rule in 1994, but after extensive litigation portions of the rules were declared invalid and the district withdrew some rules in 1998. The new plan will include water resource development and management options to address the area's problems, possibly including conservation, reuse of reclaimed wastewater, aquifer storage and recovery, surface water, and desalination.

Source: Southwest Florida Water Management District, *Water Supply Assessment 1995-2020*, 1998.



Inadequate Water Supplies Projected, but Planning Underway to Meet Demand

Counties:

Charlotte (southeast) *Glades (south)* *Lee*
Collier *Hendry (west)*

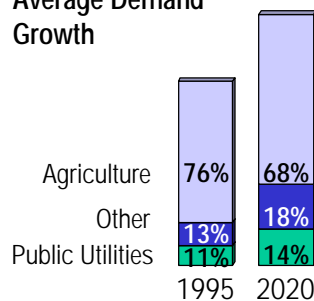
Uses*	1995	2020
Public	83	155
Agriculture	602	726
Other	104	191
Total	790	1,072

* Millions of gallons per day (rounded)

Sources*	1995
Groundwater	616
Surface	174
Total	790

* Millions of gallons per day (rounded)

Average Demand Growth



The existing and reasonably projected water sources are not considered adequate to meet the requirements of existing legal users and reasonably projected future water supply needs of the region through the year 2020. Current demands have been met, but the district anticipates that demand growth cannot be met from traditional supplies because increased use would harm wetlands, cause saltwater intrusion, and draw down the aquifer level.

To address these problems, the district

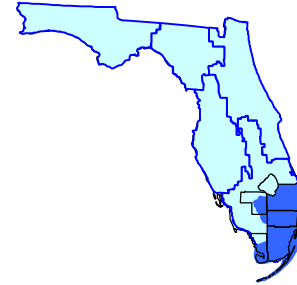
- designated most of the region as a water resource caution area;
- published a water supply plan in 1994; and
- is developing a regional water supply plan for the region.

In the northern part of the region, the Caloosahatchee River and the surficial aquifer are heavily allocated, although district staff report that some allocations have never been used. Without alternative supplies, the area could face competition among citrus, field crops, and growing demands from public utilities and recreational uses. To address these water supply problems, and concerns about freshwater discharges to the Caloosahatchee Estuary, the district is developing a Caloosahatchee Water Management Plan. The district has already identified \$121 million in water resource projects over the next 20 years, including \$83 million in water resource development for the Caloosahatchee River.

In the Collier County area, district reports describe prospects for alternative supplies, and new resource development for public utilities should address the problems.

Source: South Florida Water Management District, *Districtwide Water Supply Assessment*, 1998 and [Comparison of SFWMD Water Supply Planning Areas](#).

Inadequate Water Supplies in Everglades Region; Extensive Projects and Planning Underway



Counties:

Broward *Hendry (east)* *Palm Beach*
Dade *Monroe*

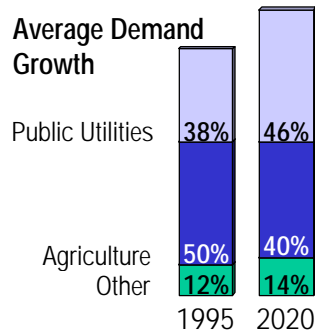
Uses*	1995	2020
Public	796	1,132
Agriculture	1,055	977
Other	259	330
Total	2,110	2,439

* Millions of gallons per day (rounded)

Sources*	1995
Surface	1,414
Groundwater	696
Total	2,110

* Millions of gallons per day (rounded)

**Average Demand
Growth**



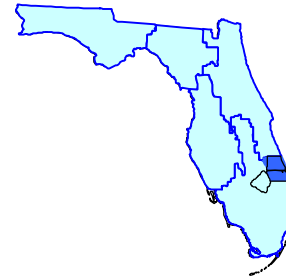
The existing and reasonably projected water sources are not considered adequate to meet the requirements of existing legal users and reasonably projected future water supply needs of the region through the year 2020 because natural systems have been heavily impacted by the current water supply and flood control system. Although the human needs for water are met fairly well, there are restrictions on surface water withdrawal permits in a portion of Hendry County and there have been a number of mild shortages of water for irrigation and major public supply service areas. The major water supply problem is restoring an adequate flow of water to meet the environmental needs in a large portion of the Everglades.

To address these problems, federal and state agencies are implementing and planning a number of projects under special federal and state legislation. The largest is the so-called "Restudy" being planned by the U.S. Army Corps of Engineers and the district. Including projects proposed in the Restudy, the district has already identified \$6.1 billion in water resource projects over the next 20 years, including \$5.3 billion in water resource development.

A complete analysis of whether state water policy is adequate to ensure that water supplies are provided for this region in a manner consistent with the principles of state water law would also include due consideration of the additional and unique Everglades restoration policies affecting this region.

Source: South Florida Water Management District, *Districtwide Water Supply Assessment*, 1998 and [Comparison of SFWMD Water Supply Planning Areas](#).

Inadequate Water Supplies, but Plan Indicates Readily Available Alternative Water Sources



Counties:

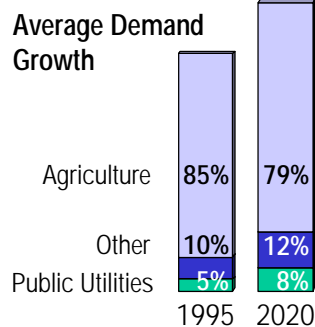
Martin *St. Lucie* *Okeechobee (east)*

Uses*	1995	2020
Public	27	54
Agriculture	462	525
Other	53	81
Total	542	660

* Millions of gallons per day (rounded)

Sources*	1995
Surface	412
Groundwater	130
Total	542

* Millions of gallons per day (rounded)



The existing and reasonably projected water sources are not considered adequate to meet the requirements of existing legal users and reasonably projected future water supply needs of the region through the year 2020. In the western portion, existing surface water supplies are inadequate to meet existing demands (predominately agricultural). For public water supplies that use the surficial aquifer, current demands have been met, but the district anticipates that demand growth cannot be met from traditional supplies because increased use could harm wetlands and cause saltwater intrusion.

To address these problems, the district

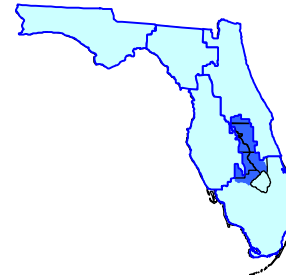
- is not allocating additional supplies from several surface sources;
- designated the region as a water resource caution area (but has recommended reducing the designation to the coastal area); and
- is implementing a water supply plan completed in 1998.

Preliminary evaluations indicate that the Floridan Aquifer has sufficient supplies to meet both existing and future urban and agricultural demands. According to the regional water supply plan, the cost of implementing water supply development projects in the region is about \$21 million to the district and local governments, with the U.S. Army Corps of Engineers expected to contribute about \$18 million. However, more recent estimates by the district include \$1.2 billion in water resource projects over the next 20 years, primarily for storage reservoirs.

Several additional options are being explored to assure adequate supplies throughout the region. Proposed increased withdrawals from the Floridan Aquifer will require some users to use moderate levels of desalination. Aquifer storage and recovery, in conjunction with reservoirs, could be used to capture excess flows during wet seasons. In addition, the district and the US Army Corps of Engineers are drafting the Indian River Lagoon Restoration Feasibility Study to address management of excessive freshwater inflows. When complete, the district may require additional funds to implement proposed solutions.

Source: South Florida Water Management District, *Districtwide Water Supply Assessment*, 1998; *Upper East Coast Water Supply Plan*, 1998; and [Comparison of SFWMD Water Supply Planning Areas](#).

Inadequate Water Supplies at Present, but Planning Underway to Meet Demand



Counties:

Glades (north) *Okeechobee (west)* *Osceola (west)*
Highlands (east) *Orange (south)* *Polk (east)*

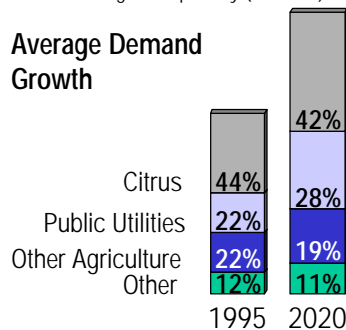
Uses*	1995	2020
Public	69	134
Agriculture	203	295
Other	36	54
Total	308	482

* Millions of gallons per day (rounded)

Sources*	1995
Groundwater	253
Surface	55
Total	308

* Millions of gallons per day (rounded)

Average Demand Growth



The existing and reasonably projected water sources are not considered adequate to meet the requirements of existing legal users and reasonably projected future water supply needs of the region through the year 2020. In the Indian Prairie/Lake Isotopoga area, existing surface water supplies are inadequate to meet existing demands. For public water supplies in the Orlando metropolitan area, current demands have been met, but the district anticipates that demand growth may not be met from traditional supplies because increased use could harm wetlands.

To address these problems, the district

- is not allocating additional supplies from several surface sources;
- designated the Indian Prairie/Lake Isotopoga region as a water resource caution area (but is evaluating proposed revisions to the area of designation); and
- is developing a regional water supply plan for the region.

In the Orlando area, the district is working with the St. Johns River Water Management District to develop a common understanding of the regional water resource conditions. In the Indian Prairie/Lake Isotopoga area, the district is working with users and potential applicants to identify solutions to limited water resources. The district has already identified \$862 million in water resource projects over the next 20 years, including \$378 million in water resource development and \$415 million for restoration of the Kissimmee River.

Specific options to address water resource concerns are being developed as a part of the regional water supply planning process. District staff comments suggest that the situation is not serious enough to warrant major resource development projects.

Source: South Florida Water Management District, *Districtwide Water Supply Assessment*, 1998 and [Comparison of SFWMD Water Supply Planning Areas](#).