The Florida Senate

BILL ANALYSIS AND FISCAL IMPACT STATEMENT

(This document is based on the provisions contained in the legislation as of the latest date listed below.)

Prepared By: The Professional Staff of the Environmental Preservation and Conservation Committee

BILL: CS/SB 708

INTRODUCER: Environmental Preservation and Conservation Committee and Senator Saunders

SUBJECT: Desalination Technology

DATE: March 20, 2008 REVISED: _____ _____ _____ _____

	ANALYST	STAFF DIRECTOR	REFERENCE	ACTION
1.	Feffer	Kiger	EP	**Fav/CS**
2.			GA	
3.				
4.				
5.				
6.				

Please see Section VIII. for Additional Information:

A. COMMITTEE SUBSTITUTE.....	X	Statement of Substantial Changes
B. AMENDMENTS.....		Technical amendments were recommended
		Amendments were recommended
		Significant amendments were recommended

I. Summary:

This committee substitute (CS) directs the Secretary of Environmental Preservation, in coordination with the water management districts, to conduct a study examining all current and available desalination technologies. Included in the study is an analysis of the existing desalination projects in the state and recommendations for a plan to effectively utilize and implement those desalination technologies which are both fiscally and environmentally sound and that will provide sustainability of the current water supply demands of the state, as well as long-term potable water supply demands based on projected population growth. A report including the findings of the study and plan recommendations shall be submitted by June 30, 2009.

The CS also creates the Reclaimed Water Coordination Task Force for the purposes of recommending clear direction as to the relative roles of local governments and water management districts with regard to the regulation of the use of reclaimed water and proposing a statewide uniform approach to the consideration of use of reclaimed water as applied to processes related to water-use permitting and water shortages. The task force is required to submit a report to the Governor, the President of the Senate, and the Speaker of the House of Representatives on or before January 31, 2009.

This act shall take effect July 1, 2008.

II. Present Situation:

As per DEP, desalination is simply the process by which water high in saline is de-salted to produce freshwater, leaving a significant volume of waste effluent, referred to as brine. Desalination of seawater has been around since at least the 4th century B.C.E. Reverse osmosis, electro dialysis, and other membrane processes have become more common, but distillation remains a common thermal process. Thermal methods, involving heat transfer, changing water from liquid into vapor or ice to separate the salts, and membrane methods, using thin sheets of special materials that act as selective barriers separating pure water from salts, both consume considerable energy.[1]

In the same bill analysis by DEP, the *Encyclopaedia Britanica* is cited as stating that as the end of the 20th century more than 2.1 billion gallons of water were being produced each day by several thousand desalination plants throughout the world. DEP's report also recognizes an article by Dr. Allan R. Hoffman, Senior Analyst, U.S. Department of Energy, in *Energy Security* (August 13, 2004) as estimating desalination production at about four times that amount every day, mentioning the following specifics: Saudi Arabia meets 70% of drinking water needs through desalination; North America-16%; Asia-12%; Europe-13%; Africa-4%; Central America-3%; and Australia-0.3%. It is also mentioned that the Pacific Institute, in referencing an article from *Global Water Intelligence, 2004*, also estimates desalination production worldwide at about 8.4 billion gallons per day as of 2004. All of these estimates include desalination of all types of source water, whether seawater, river water, brackish groundwater, or wastewater.

There are many small, brackish water desalination plants throughout Florida. As DEP reports, there are about 130 drinking water systems (out of about 6,000 public water systems in Florida) that use the reverse osmosis process to desalinate brackish groundwater or as an effective means of treating source water.

The largest and most well known desalination plant is the Tampa Bay Seawater Desalination plant. This plant uses the reverse osmosis (RO) process to produce drinking water from seawater. The plant uses water that is already withdrawn from the Tampa Electric's Big Bend Power Station. The power station withdraws and discharges up to 1.4 billion gallons a day of seawater from Tampa Bay, which it uses as cooling water for the power plant. About 44 million gallons per day (mgd) of that warm seawater is picked up by the desalination plant daily; it is then separated in to drinking water and concentrated seawater. This process produces up to 25 mgd of drinking water.[2] According to the plant's website, the unused water is mixed with up to 1.4 billion gallons of water, which will dilute it to a 70-to-1 ratio, before being returned to the bay.

[1] Taken from the Department of Environmental Protection's Senate Bill 708 analysis
[2] Tampa Bay Seawater Desalination website, www.tampabaywater.org/watersupply/tbdesalprocess.aspx

This is a relatively expensive and energy consuming process, and consideration should always be made as to the ability to safely discharge the potentially toxic brine byproduct before employing the technology.

Desalination is an alternative water supply which is typically a component of water supply planning required by s. 373.0361, F.S., for the five water management districts.

The state of Florida has made significant investment in moving toward water reuse as a means for managing domestic wastewater, conserving water, and managing water resources. Reclaimed water has played a significant role in water supply and will continue to do so into the future. Over the past number of years, utilities, local governments, the water management districts, and state agencies have implemented water reuse programs, with the focus on increasing the volumes of reclaimed water used and in promoting public acceptance of reclaimed water. For Florida, implementation of water reuse has proven effective in reducing or avoiding adverse impacts on surface waters associated with surface water discharges.

Sections 403.064(1) and 373.250(1), F.S., establish the encouragement and promotion of water reuse as formal state objectives. These sections further conclude that water reuse programs designed and operated in compliance with Florida's rules governing reuse are deemed protective of public health and environmental quality.

III. Effect of Proposed Changes:

This CS directs the Secretary of Environmental Preservation, in coordination with the water management districts, to conduct a study examining all current and available desalination technologies. Included in the study is an analysis of the existing desalination projects in the state and recommendations for a plan to effectively utilize and implement those desalination technologies which are both fiscally and environmentally sound and that will provide sustainability of the current water supply demands of the state, as well as long-term potable water supply demands based on projected population growth. A report including the findings of the study and plan recommendations shall be submitted to the Governor, the President of the Senate, and the Speaker of the House of Representatives by June 30, 2009.

This CS does not make any changes to current Florida law or policy regarding regulation, financing, or implementation of desalination projects.

The CS creates the Reclaimed Water Coordination Task Force for the purposes of evaluating the regulation of the use of reclaimed water and proposing a statewide uniform approach for the use of reclaimed water as applied to processes related to water-use permitting and water shortages.

The task force shall be comprised of the following members:

- The President of the Senate and the Speaker of the House of Representatives shall each appoint one member from their respective chambers, who shall co-chair the task force.
- The Secretary of Environmental Protection, or designee.
- The Commissioner of Agriculture, or designee.

- The executive director of the South Florida Water Management District, or designee.
- The executive director of the Southwest Florida Water Management District, or designee.
- The executive director of the St. Johns River Water Management District, or designee.
- The executive director of the Suwannee River Water Management District, or designee.
- The executive director of the Northwest Florida Water Management District, or designee.
- The executive director of the Florida Nursery Growers and Landscape Association, or designee.
- The executive director of the Florida Sugar Cane League, or designee.
- In addition to the previous appointments, the President of the Senate and the Speaker of the House of Representatives shall each appoint:
  - Three members who are employees of a local government producing reclaimed water for reuse by the public.
  - A representative of a not-for-profit environmental advocacy organization.
  - A representative from a company that is a self-supplier of water.

The CS also provides that the DEP's clerical and professional staff shall provide administrative support to the task force. The task force may also request support from the clerical and professional staff of the standing committees of the Senate and the House of Representatives.

The goals assigned to the task force are as follows:

- Determine the role of the use of reclaimed water as applied to processes related to the water-use permitting and water shortage.
- Assess the appropriate roles of local governments and water management districts in regulating the use of reclaimed water.
- Consider how the use of reclaimed water could be promoted in areas in which new or increased water withdrawals have been limited by law through the use of offsets or other similar incentives.
- Evaluate the most effective means of supplementing reclaimed water supplies during peak demands in order to improve reliability and promote widespread adoption of reclaimed water.
- Consider the most effective means of incorporating any recommended statewide policy changes.

The DEP and each water management district shall encourage the use of pilot projects for the purpose of obtaining data and operating experience regarding various types of reuse and irrigation systems.

A report shall be submitted by the task force to the Governor, the President of the Senate, and the Speaker of the House of Representatives which summarizes the task force's findings and recommendations. The report shall be submitted on or before January 31, 2009.

DEP and the water management districts are directed, and all other agencies and local governments are requested, to render assistance to and cooperate with the task force.

The CS sets the task force to dissolve on January 31, 2009.

IV. Constitutional Issues:

A. Municipality/County Mandates Restrictions:

This CS does not require cities and counties to expend funds or limit their authority to raise revenues or receive state-shared revenues as specified by s. 18, Art. VII, State Constitution.

B. Public Records/Open Meetings Issues:

None.

C. Trust Funds Restrictions:

None.

V. Fiscal Impact Statement:

A. Tax/Fee Issues:

None.

B. Private Sector Impact:

According to the DEP analysis, the information developed for the report and its recommendations could help determine whether water management districts and local governments decide to use desalination in the future. Such projects are technologically advanced, relatively complicated to build, and may require contract operator assistance. The private sector would have to provide the personnel and expertise to build and, potentially, operate facilities.

C. Government Sector Impact:

According to the DEP analysis, the desalination report would require one-half FTE worth of time and effort to produce. It would be, according to DEP, helpful to have $30,000-$40,000 so that DEP could secure a part-time OPS position for the one-time study.

DEP is charged with providing support for the Reclaimed Water Coordination Task Force. The fiscal impact is indeterminate at this time, however, that agency has been asked for data concerning this.

VI. Technical Deficiencies:

The CS does not provide for per diem or travel expenses. If the task force will be operating without reimbursement, then that is not clearly stated.

VII. Related Issues:

None.

VIII. Additional Information:

A. Committee Substitute – Statement of Substantial Changes: (Summarizing differences between the Committee Substitute and the prior version of the bill.)

CS by Environmental Preservation and Conservation Committee on March 27, 2008:

The committee substitute creates the Reclaimed Water Coordination Task Force for the purposes of recommending clear direction as to the relative roles of local governments and water management districts with regard to the regulation of the use of reclaimed water and proposing a statewide uniform approach to the consideration of use of reclaimed water as applied to processes related to water-use permitting and water shortages.

B. Amendments:

None.