

By Representative Greenstein

1                                   A bill to be entitled  
2           An act relating to aquifer storage and  
3           recovery; creating s. 403.065, F.S.; providing  
4           legislative findings and intent; authorizing  
5           specified demonstration projects; providing for  
6           permitting by the Department of Environmental  
7           Protection; providing for protection of  
8           drinking water sources; providing for a zone of  
9           discharge surrounding aquifer storage and  
10          recovery wells, and providing requirements and  
11          restrictions; requiring written notice to  
12          landowners whose properties overlie the zone of  
13          discharge of a proposed aquifer storage and  
14          recovery project; providing for revocation of  
15          the zone of discharge and withdrawal of  
16          injected water, under specified conditions;  
17          providing site monitoring requirements,  
18          including monitor wells and monitoring  
19          parameters; providing for compliance with  
20          drinking water standards; providing for a  
21          technical advisory committee, and providing  
22          membership and duties; requiring reports to the  
23          Governor and Legislature; authorizing the  
24          department to adopt rules for statewide  
25          implementation of aquifer storage and recovery  
26          projects, under certain conditions; providing  
27          an appropriation; providing an effective date.

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29   Be It Enacted by the Legislature of the State of Florida:  
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1           Section 1. Section 403.065, Florida Statutes, is  
2 created to read:

3           403.065 Research and development of alternative water  
4 supplies.--

5           (1)(a) The Legislature finds that aquifer storage and  
6 recovery projects provide a critical mechanism to further the  
7 legislative intent expressed in s. 373.1502(2) with respect to  
8 the Comprehensive Everglades Restoration Plan and to advance  
9 efficient, cost-effective water supply and water resource  
10 development throughout Florida.

11           (b) Aquifer storage and recovery projects using  
12 partially treated surface and ground water are proposed in the  
13 South Florida Water Management District, the Southwest Florida  
14 Water Management District, and the St. Johns River Water  
15 Management District. These projects could add billions of  
16 gallons of potable water that are currently unavailable and  
17 thus provide relief to existing and traditional sources of  
18 water.

19           (c) The Legislature finds that aquifer storage and  
20 recovery has proven to be a safe and effective technology for  
21 storing treated drinking water.

22           (d) The Legislature declares that it is in the public  
23 interest to evaluate the storage and recovery of untreated or  
24 partially treated surface and ground water through the use of  
25 aquifer storage and recovery wells.

26           (e) Questions have been raised regarding the public  
27 health implications of providing relief from primary drinking  
28 water standards for sodium and total coliform. Most surface  
29 waters do not meet primary drinking water standards for total  
30 coliform, and the interaction of microorganisms in the aquifer  
31 has undergone and continues to undergo study and evaluation.

1       (f) Additional research and development on  
2 microbiological contaminants should be conducted on a limited  
3 and prescribed basis before enacting statewide and general  
4 authorization for injection and storage of partially treated  
5 surface and groundwater. Unless coliform die-off can be  
6 demonstrated in varying salinities and aquifer conditions, the  
7 use of raw water aquifer storage and recovery must be  
8 restricted.

9       (2) It is the intent of the Legislature that,  
10 initially, a limited number of aquifer storage and recovery  
11 projects be implemented to demonstrate whether microbiological  
12 contaminants in stored source water experience die-off under  
13 carefully restricted circumstances that ensure protection of  
14 the public health, safety, and welfare. The Legislature  
15 authorizes implementation of the following demonstration  
16 projects under the conditions set forth in this section:

17       (a) The aquifer storage and recovery pilot projects  
18 authorized by the Congress of the United States in Pub. L. No.  
19 106-541 or Pub. L. No. 106-53.

20       (b) No more than six additional projects not to exceed  
21 three projects in the Southwest Florida and St. Johns River  
22 Water Management Districts. These projects may be proposed by  
23 local governments, regional water supply authorities, or the  
24 applicable water management district. The department, based on  
25 the plan of study, the research value, and the relative risk  
26 associated with the project, may determine whether it is  
27 appropriate for evaluating the safe and effective use of  
28 aquifer storage and recovery wells to store untreated or  
29 partially treated surface water or ground water pursuant to  
30 this section.

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1       (3) The storage of water in aquifer storage and  
2 recovery wells shall not endanger drinking water sources, as  
3 established in the federal Safe Drinking Water Act, 42 U.S.C.,  
4 s. 300h., and the regulations promulgated thereunder.

5       (4) Aquifer storage and recovery wells shall be  
6 classified and permitted according to department rules,  
7 consistent with the federal Safe Drinking Water Act. They  
8 shall be constructed to prevent violation of state groundwater  
9 quality standards at the point of discharge, except as  
10 specifically provided in this section.

11       (5) For the demonstration projects identified in  
12 subsection (2), the department may authorize a zone of  
13 discharge for the storage of surface water or ground water.  
14 The department shall not authorize a zone of discharge for the  
15 storage of wastewater or for stormwater-only discharges.

16       (6) For purposes of this section, "zone of discharge"  
17 means a defined volume surrounding an aquifer storage and  
18 recovery well and extending from the base to the top of a  
19 specifically designated aquifer, aquifers, or portion of an  
20 aquifer within which an opportunity for compliance with  
21 specified water quality standards is afforded.

22       (7) The department may authorize a zone of discharge  
23 for total coliform bacteria and other microbiological  
24 contaminants only if the applicant for an underground  
25 injection control permit demonstrates prior to injection of  
26 source water:

27       (a) That the native groundwater within the proposed  
28 zone of discharge contains no less than 800 milligrams per  
29 liter total dissolved solids.

30       (b) That the injection well is no less than 800 feet  
31 below the surface.

1       (c) That the zone of discharge does not intersect or  
2 include any part of a 500-foot radius surrounding any well  
3 that uses the injection zone to supply drinking water.

4       (d) That the presence of the stored water will not  
5 cause any person other than the permit applicant to treat  
6 water withdrawn from the aquifer in any way that would not  
7 have been required in the absence of the aquifer storage and  
8 recovery well.

9       (e) Based on hydrogeological conditions, the vertical  
10 and lateral limits of the zone of discharge by providing the  
11 department with calculations or the results of modeling that  
12 include, but are not limited to, reasonable assumptions about  
13 the expected volume of water to be stored and recovered and  
14 reasonable assumptions regarding aquifer thickness and  
15 porosity. The department shall specify the vertical and  
16 lateral limits of the approved zone of discharge in the  
17 underground injection control permit for the aquifer storage  
18 and recovery well.

19       (f) A full characterization of the source water to be  
20 stored to identify microbiological contaminants that are  
21 present to ensure that monitoring can reliably detect them at  
22 levels of concern.

23       (g) That total coliform bacteria is the only primary  
24 drinking water standard that will not be met prior to  
25 injection, unless the applicant has obtained an exemption from  
26 the water quality criterion for sodium under this chapter.

27       (h) Directly, or through the use of indicator  
28 organisms approved by the department, that microbiological  
29 contaminants will experience die-off such that primary  
30 drinking water standards will be met at the edge of the zone  
31 of discharge so as not to pose an adverse risk to human

1 health, including compliance with the maximum contaminant  
2 level for total coliform bacteria.

3 (i) That compliance with all primary drinking  
4 standards will be achieved at the edge of the zone of  
5 discharge.

6 (j) That no person, other than the permit applicant,  
7 may in the future withdraw water from the zone of discharge  
8 for use as a public or private drinking water supply because  
9 of legal prohibitions imposed by a water management district,  
10 state agency, local government, or other governmental entity  
11 having jurisdiction over water supply or well construction.

12 (k) That written notice, including specific  
13 information about the proposed aquifer storage and recovery  
14 project, has been provided to each landowner whose property  
15 overlies the zone of discharge.

16 (l) The specific environmental benefits to be derived  
17 from the storage, recovery, and future use of the injected  
18 water and that the use of the recovered water is consistent  
19 with its intended primary purpose.

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21 The department shall revoke the zone of discharge and require  
22 the withdrawal of all injected water upon a demonstration by  
23 any party that the legal restrictions required under paragraph  
24 (j) are no longer in effect.

25 (8) A zone of discharge shall not be authorized under  
26 this section for any primary drinking water standard, except  
27 total coliform bacteria, or for any contaminant which cannot  
28 be demonstrated to experience die-off pursuant to subsection  
29 (7).

30 (9)(a) The department shall require from the permit  
31 applicant a site-specific monitoring plan that specifies the

1 number and location of monitor wells, monitoring parameters,  
2 and frequency of monitoring adequate to make the demonstration  
3 required in subsection (10). In no event shall the department  
4 authorize less than three monitoring locations, including  
5 wells in the underlying and overlying aquifers below and above  
6 the confining layers which encase the zone of discharge. A  
7 minimum of three wells shall be located in the zone of  
8 discharge.

9 (b) Monitor wells shall be sampled at least monthly  
10 for the parameters specified in the permit for the aquifer  
11 storage and recovery well. Continuous monitoring sampled at  
12 least daily for total coliforms shall be required.

13 (c) If drinking water supply wells are present in the  
14 injection zone within 2.5 miles of the edge of the zone of  
15 discharge, additional monitor wells may be required to detect  
16 the possible movement of injected fluids in the direction of  
17 the drinking water wells.

18 (d) The department may require more frequent  
19 monitoring and may modify the monitoring requirements if  
20 necessary to provide reasonable assurance that underground  
21 sources of drinking water are adequately protected.

22 (10) After an aquifer storage and recovery well with  
23 an approved zone of discharge is in operation, groundwater  
24 monitoring must demonstrate that: microbiological die-off is  
25 occurring within the authorized zone of discharge for total  
26 coliform bacteria or other microbiological contaminants  
27 measured on a daily, weekly, and monthly basis and reported in  
28 the number of organisms per 100 milliliters of water; no  
29 exceedances of the primary drinking water standards have  
30 occurred outside the zone of discharge; and there is no  
31 adverse risk to human health from the injection activity. If

1 the permittee fails to make this demonstration, the department  
2 shall require immediate cessation of injection, partial and  
3 full recovery of all injected water, remediation, or other  
4 actions to ensure compliance with drinking water standards at  
5 the edge of the zone of discharge and to protect public  
6 health.

7 (11) Nothing in this section shall be construed to  
8 invalidate any existing department authority relating to  
9 aquifer exemptions or water quality criteria exemptions for  
10 any primary or secondary drinking water standard.

11 (12) The department shall establish a technical  
12 advisory committee to review data from the demonstration  
13 projects authorized under this section and to assist in the  
14 preparation of reports required under subsection (13) and  
15 rulemaking authorized under subsection (14). The committee may  
16 include, but is not limited to, one representative each from  
17 the Florida Department of Health, the United States Geological  
18 Survey, the United States Environmental Protection Agency, an  
19 environmental organization, the Florida League of Cities, the  
20 Florida Association of Counties, and the American Water Works  
21 Association; at least one representative from the water  
22 management districts; and other experts in the fields of  
23 microbiology, epidemiology, engineering, and hydrogeology.

24 (13)(a) By January 31, 2004, the department shall  
25 provide a report to the Governor, President of the Senate,  
26 Speaker of the House of Representatives, chair of the Senate  
27 Committee on Natural Resources and Conservation, and chair of  
28 the House Committee on Natural Resources on the demonstration  
29 projects implemented under this section, including the results  
30 of laboratory and field tests, research, data collection and  
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1 analysis, water quality characterizations and monitoring, and  
2 other activities.

3 (b) By January 31, 2006, the department shall provide  
4 a report to the Governor, President of the Senate, Speaker of  
5 the House of Representatives, chair of the Senate Committee on  
6 Natural Resources and Conservation, and chair of the House  
7 Committee on Natural Resources, evaluating whether similar  
8 aquifer storage and recovery projects elsewhere in the state  
9 can be implemented in a manner that protects the public  
10 health, safety and welfare when properly sited, constructed,  
11 operated, and monitored.

12 (14) Upon submission of the report required under  
13 paragraph (13)(b), and consistent with the information  
14 contained in that report, the department is authorized to  
15 undertake rulemaking to implement the provisions of  
16 subsections (3)-(11) on a statewide basis. Such rules shall  
17 reflect the requirements of this section to ensure that  
18 aquifer storage and recovery projects are authorized only  
19 under circumstances and conditions that protect the public  
20 health, safety, and welfare.

21 Section 2. There is hereby appropriated from the  
22 Trust Fund to the Department of Environmental  
23 Protection for fiscal year 2002-2003 the sum of \$1 million to  
24 pay for monitoring, data collection, research, and other  
25 activities necessary to carry out the provisions of s.  
26 403.065, Florida Statutes.

27 Section 3. This act shall take effect July 1, 2002.  
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HOUSE SUMMARY

Provides legislative findings and intent regarding the use of aquifer storage and recovery to augment traditional water supplies. Provides for implementation of certain federally authorized pilot projects and a limited number of additional demonstration projects using aquifer storage and recovery wells. Provides for permitting by the Department of Environmental Protection. Provides for authorization of a zone of discharge for the demonstration projects, and provides requirements and restrictions designed to protect water quality. Requires that written notice regarding a proposed aquifer storage and recovery project be provided to landowners of property overlying a zone of discharge. Specifies conditions for department revocation of a zone of discharge and withdrawal of injected water. Specifies requirements for site monitoring, including monitor wells and monitoring parameters. Provides for establishment of a technical advisory committee to review demonstration project data and assist with department reports and rulemaking. Requires submission to the Governor and Legislature, in January of 2004 and 2006, of reports evaluating the demonstration projects. Specifies conditions under which the department may adopt rules to implement statewide aquifer storage and recovery projects. Provides an appropriation.