HOUSE OF REPRESENTATIVES STAFF ANALYSIS

BILL #: HB 755 Aquifer Replenishment
SPONSOR(S): Albritton
TIED BILLS: **IDEN./SIM. BILLS:** SB 1438

REFERENCE	ACTION	ANALYST	STAFF DIRECTOR or BUDGET/POLICY CHIEF
1) Natural Resources & Public Lands Subcommittee	14 Y, 0 N	Moore	Shugar
2) Appropriations Committee			
3) Government Accountability Committee			

SUMMARY ANALYSIS

Underground injection is one of a variety of methods for wastewater disposal or reuse used in Florida. Aquifer storage and recovery (ASR) is the injection of surface water, ground water, or reclaimed water for storage and recovery for beneficial purposes at a later date. Aquifer recharge is similar to ASR, but the water is used to recharge the aquifer and will not be withdrawn from the same facility at a later date.

A zone of discharge (ZOD) is a volume underlying or surrounding the site and extending to the base of a specifically designated aquifer, within which an opportunity for the treatment, mixture, or dispersion of wastes into ground water is allowed. Institutional controls are intended to affect human activities in such a way as to prevent or reduce exposure to contamination.

Currently, there are no requirements for advanced water treatment for reclaimed water, stormwater, or other water sources (e.g., excess surface water).

The bill requires underground injection control permits that are intended to protect, augment, or replenish the state's ground water resources to include additional conditions, including the establishment of a ZOD for ground water standards and any associated institutional controls necessary to promote the conservation, reclamation, and sustainability of the state's ground water resources.

The bill creates criteria for sustainable water resources and provides that:

- The Legislature recognizes communities are providing advanced water treatment for reclaimed water, stormwater, and other water resources that promote the availability of sufficient water for existing and future reasonable-beneficial uses and natural systems.
- In order to acknowledge and provide incentives for such facilities, the DEP may develop rule criteria for operation permits for such advanced water treatment facilities, which must consider, at a minimum:
    - The intended water use or uses;
    - Conditions that may be specifically applicable to the treatment of reclaimed water, stormwater, or excess surface water, as applicable; and
    - Requirements for providing monitoring, protection, augmentation, or replenishment of the state's water resources.

The bill provides that the authorized use of reclaimed water by an advanced water treatment facility satisfies any requirement to implement a reuse project as part of a reuse program and must be given significant consideration by the water management district in an analysis of the economic, environmental, and technical feasibility of providing reclaimed water for reuse.

The bill authorizes the DEP to develop rules for any necessary additional permit conditions for the construction of advanced water treatment facilities and underground injection, for the purposes of monitoring, protecting, augmenting, or replenishing the state's water resources.

The bill does not appear to have a fiscal impact on state government, local governments, or the private sector.

FULL ANALYSIS

I. SUBSTANTIVE ANALYSIS

A. EFFECT OF PROPOSED CHANGES:

Aquifer Replenishment

Present Situation

The purpose of the underground injection control (UIC) program within the Department of Environmental Protection (DEP) is to protect Florida's underground sources of drinking water[1] (USDW) while maintaining the lawful option to dispose of appropriately treated fluids by underground injection wells. Underground injection is one of a variety methods for wastewater disposal or reuse used in Florida.[2]

Class V Injection Well

Class V injection wells are used to inject non-hazardous fluids into or above a USDW for storage or disposal.[3] This would include Class F-I,[4] Class G-1,[5] and Class G-II[6] ground water.[7] The fluid injected must meet appropriate criteria as determined by the classification of the receiving aquifer. Common types of Class V wells include air conditioning return flow[8] wells, swimming pool drainage[9] wells, stormwater drainage[10] wells, aquifer recharge (AR)[11] wells, domestic waste[12] wells, and aquifer storage and recovery (ASR)[13] wells.[14]

Aquifer Storage and Recovery

ASR is the injection of surface water,[15] ground water or reclaimed water[16] for storage and recovery for beneficial purposes at a later date.[17] ASR is a cost-effective, viable option to address drinking water

[1] An "underground source of drinking water" is an aquifer or portion thereof which supplies drinking water for human consumption or contains a total dissolved solids concentration of less than 10,000 mg/L, and is not an exempted aquifer; r. 62-528.200(66), F.A.C.
[2] DEP. *Underground Injection Control*, http://www.dep.state.fl.us/Water/uic/index.htm (last visited Feb. 28, 2017).
[3] r. 62-528.600(1)(a), F.A.C.
[4] A Class F-I ground water is for potable water use; ground water in a single source aquifer in rule 62-520.460, F.A.C., with a total dissolved solids content of less than 3,000 mg/L; r. 62-520.410(1), F.A.C.
[5] A Class G- I ground water is for potable water use; ground water in a single source aquifer that has a total dissolved solids content of less than 3,000 mg/L; r. 62-520.410(1), F.A.C.
[6] A Class G-II ground water is for potable water use; ground water in aquifers with a total dissolved solids content of less than 10,000 mg/L; r. 62-520.410(1), F.A.C.
[7] "Ground water" is water beneath the surface of the ground within a zone of saturation, whether or not flowing through known and definite channels; s. 373.019(9), F.S.; r. 62-520.200(12), F.A.C.
[8] r. 62-528.300(1)(e)1., F.A.C.; r. 62-528.600(2)(a), F.A.C.
[9] r. 62-528.300(1)(e)9., F.A.C.; r. 62-528.600(2)(i), F.A.C.
[10] r. 62-528.300(1)(e)6., F.A.C.; r. 62-528.600(2)(f), F.A.C.
[11] r. 62-528.300(1)(e)2., F.A.C.; r. 62-528.600(2)(b), F.A.C.
[12] r. 62-528.300(1)(e)3., F.A.C.; r. 62-528.600(2)(c), F.A.C.
[13] r. 62-528.300(1)(e)7., F.A.C.; r. 62-528.600(2)(g), F.A.C.
[14] DEP. *Underground Injection Control*, http://www.dep.state.fl.us/Water/uic/index.htm (last visited Feb. 28, 2017).
[15] "Surface water" is water upon the surface of the earth, whether contained in bounds created naturally or artificially or diffused. Water from natural springs is classified as surface water when it exits from the spring onto the earth's surface; s. 373.019(21), F.S.; r. 62-520.200(21), F.A.C.
[16] "Reclaimed water" is water that has received at least secondary treatment and basic disinfection and is reused after flowing out of a domestic wastewater treatment facility; r. 373.019(17), F.S.; r. 62-520.200(16), F.A.C.; r. 62-600.200(54), F.A.C.
[17] r. 62-528.300(1)(e)7., F.A.C.; r. 62-610.466(1)(a)-(b), F.A.C.

shortages in Florida. There are 26 ASR facilities in operation in Florida, and more than 15 sites are under development.[18]

Water withdrawn from an ASR well must be treated to the level of treatment required for the intended use (e.g., public consumption, surface water augmentation, wetlands enhancement, irrigation). ASR represents a useful water supply management strategy in storing water that may otherwise be lost (e.g., tidal discharge, evaporation from reservoirs).[19]

Aquifer Recharge

AR is similar to ASR, but the water used to recharge the aquifer is not being stored for withdrawal from the same facility at a later date. AR is primarily considered a water resource development and conservation strategy used to preserve and enhance water resources and natural systems (e.g., sustain water levels, meet minimum flows and levels) and to attenuate flooding.[20]

Zone of Discharge

Water quality standards are designed to protect public health or welfare and to enhance the quality of waters of the state. They take into consideration the use and value of waters of the state for public water supply, agricultural, industrial, and other purposes and are based on the best scientific knowledge related to the protection of the various designated uses of waters of the state.[21] However, social, economic, and environmental costs may, under certain circumstances, outweigh the social, economic, and environmental benefits if the numerical criteria are enforced statewide. Therefore, a zone of discharge (ZOD), exemptions, and other provisions are allowed under certain circumstances.[22]

A ZOD is a volume underlying or surrounding the site and extending to the base of a specifically designated aquifer, within which an opportunity for the treatment, mixture or dispersion of wastes[23] into ground water is allowed.[24] Unless exempted, an installation is prohibited from directly or indirectly discharging into ground water any contaminant that causes a violation of the water quality standards or minimum criteria for the receiving ground water, except within a ZOD established by DEP permit.[25]

A ZOD is allowed for projects or facilities that allow direct contact with ground water and that provide beneficial discharges through wells to ground water for:

- Projects designed for AR with surface water of comparable quality;
- Projects designed to transfer water across or between aquifers of comparable quality for the purpose of storage or conservation;
- Facilities permitted for ASR of reclaimed water;[26]
- Facilities permitted for AR by injection of reclaimed water;[27]
- Facilities permitted for creation of salinity barrier systems by injection of reclaimed water;[28] and

[18] DEP. *ASR Geochemical Studies*, http://www.dep.state.fl.us/geology/programs/hydrogeology/aquifer_storage.htm (last visited Feb. 28, 2017).
[19] DEP. *Underground Injection Control*, http://www.dep.state.fl.us/Water/uic/index.htm (last visited Feb. 28, 2017); DEP. *Report on Expansion of Beneficial Use of Reclaimed Water, Stormwater and Excess Surface Water* (December 2015), pg. 83, http://www.dep.state.fl.us/water/reuse/study.htm (last visited Feb. 28, 2017).
[20] DEP. *Report on Expansion of Beneficial Use of Reclaimed Water, Stormwater and Excess Surface Water* (December 2015), pg. 83, http://www.dep.state.fl.us/water/reuse/study.htm (last visited Feb. 28, 2017).
[21] r. 62-520.300(2)(a)-(b), F.A.C.
[22] s. 403.061(11), F.S; r. 62-520.300(2)(d), F.A.C.
[23] "Wastes" are sewage, industrial wastes, and all other liquid, gaseous, solid, radioactive, or other substances that may pollute or tend to pollute any waters of the state; r. 62-520.200(24), F.A.C.
[24] r. 62-520.200(27), F.A.C.
[25] r. 62-520.310(7), F.A.C.
[26] r. 62-610.466, F.A.C.
[27] r. 62-610.560, F.A.C.
[28] r. 62-610.562(4), F.A.C.

- DEP approved aquifer remediation projects that use Class V, Group 4,[29] UIC wells.[30]

A ZOD is allowed for Class F-I or Class G-I ground water for:

- Domestic effluent[31] or reclaimed water and stormwater[32] discharge sites that are authorized by DEP permit or rule;[33] or
- Other discharge sites if the discharges meet the criteria for domestic effluent or reclaimed water in chemical, physical, and microbiological quality.[34]

The ZOD cannot extend more than 100 feet from the site boundary or to the installation's property boundary, whichever is less, unless a smaller ZOD is necessary to protect the designated use of adjacent waters outside the ZOD.

A ZOD is also allowed for Class G-II ground water.[35]

Institutional Controls

Institutional controls are intended to affect human activities in such a way as to prevent or reduce exposure to contamination. They include land and resource use restrictions or prohibitions (e.g., deed restrictions, restrictive covenants, conservation easements) and well-drilling prohibitions.[36]

Advanced Water Treatment for Reclaimed Water, Stormwater, and Other Water Sources

Currently, there are no requirements for advanced water treatment for reclaimed water, stormwater,[37] or other water sources (e.g., excess surface water[38]). There are requirements for advanced domestic wastewater[39] treatment. To achieve advanced domestic wastewater treatment the domestic wastewater is treated to provide a reclaimed water product that contains no more than a biochemical oxygen demand of 5mg/l, suspended solids of 5mg/l, total nitrogen of 3mg/l, and total phosphorus of 1mg/l, on a permitted annual average basis, and has received high level disinfection.[40] In those waters where the

[29] r. 62-528.600(2)(d), F.A.C.
[30] r. 62-520.310(8)(a)-(c), F.A.C.
[31] "Effluent" is water that is not reused after flowing out of any plant or other works used for the purpose of treating, stabilizing, or holding wastes; r. 62-520.200(8), F.A.C. and r. 62-600.200(22), F.A.C.
[32] *See generally*, s. 373.403(10), F.S., providing that a "stormwater management system" is a system which is designed and constructed or implemented to control discharges which are necessitated by rainfall events, incorporating methods to collect, convey, store, absorb, inhibit, treat, use, or reuse water to prevent or reduce flooding, overdrainage, environmental degradation, and water pollution or otherwise affect the quantity and quality of discharges from the system.
[33] r. 62-520.461(1), F.A.C.; r. 62-520.462(1), F.A.C.
[34] r. 62-520.461(1)-(2); r. 62-520.462(1)-(2), F.A.C.
[35] r. 62-520.465, F.A.C.
[36] DEP. *Institutional Controls Procedures Guidance* (November 2013), http://www.dep.state.fl.us/legal/Enforcement/files/rest_cov/institutional_controls.pdf (last visited Feb. 28, 2017); ss. 376.301(22) and 376.79(11), F.S.
[37] Stormwater is the flow of water, which results from and which occurs immediately following, a rainfall event and which is normally captured in ponds, swales, or similar areas for water quality treatment or flood control; DEP. *Report on Expansion of Beneficial Use of Reclaimed Water, Stormwater and Excess Surface Water* (December 2015), pg. 11, http://www.dep.state.fl.us/water/reuse/study.htm (last visited Feb. 28, 2017).
[38] Excess surface water is water that could be available for withdrawal from rivers, lakes or other water bodies that is in excess of the amount needed to sustain healthy ecological conditions in the water body and downstream waters and that otherwise meets the applicable consumptive use permitting criteria; DEP. *Report on Expansion of Beneficial Use of Reclaimed Water, Stormwater and Excess Surface Water* (December 2015), pg. 11, http://www.dep.state.fl.us/water/reuse/study.htm (last visited Feb. 28, 2017).
[39] "Domestic wastewater" is wastewater derived principally from dwellings, business buildings, institutions, and the like, commonly referred to as sanitary wastewater or sewage. Where industrial wastewater is combined with domestic wastewater for treatment, the determination of whether or not the wastewater treatment plant is designated as "domestic" shall be made by the DEP considering any or all of the following: biosolids classification; whether wastewaters have been pretreated or contain constituents within 50-150 percent, by concentration, of typical domestic wastewater; and whether the permittee, when not required to provide more stringent or otherwise specific levels of treatment, can provide assurance of facility compliance with domestic wastewater treatment standards contained in this chapter; r. 62-600.200(21), F.A.C.
[40] s. 403.086(4)(a)-(b), F.S.; *see* r. 62-600.440(6), F.A.C., high-level disinfection.

concentrations of phosphorus have been shown not to be a limiting nutrient or a contaminant, the DEP may waive or alter the compliance levels for phosphorus until there is a demonstration that phosphorus is a limiting nutrient or a contaminant.[41]

Effect of Proposed Changes

The bill amends section 403.087, F.S., regarding permit requirements, to require UIC permits that are intended to protect, augment, or replenish the state's ground water resources, to include additional conditions, including the establishment of a ZOD for ground water standards and any associated institutional controls necessary to promote the conservation, reclamation, and sustainability of the state's ground water resources.

The bill creates section 403.0878, F.S., establishing criteria for sustainable water resources. The bill provides that:

- The Legislature recognizes that communities are providing advanced water treatment for reclaimed water, stormwater, and other water resources to promote the availability of sufficient water for existing and future reasonable-beneficial uses and natural systems.
- In order to acknowledge and provide incentives for such facilities, the DEP may develop rule criteria for operation permits for such advanced water treatment facilities, which must consider, at a minimum:
    - The intended water use or uses;
    - Conditions that may be specifically applicable to the treatment of reclaimed water, stormwater, or excess surface water, as applicable; and
    - Requirements for providing monitoring, protection, augmentation, or replenishment of the state's water resources.

The bill provides that the authorized use of reclaimed water by an advanced water treatment facility satisfies any requirement to implement a reuse project as part of a reuse program under s. 403.064, F.S., and must be given significant consideration by the water management district in an analysis of the economic, environmental, and technical feasibility of providing reclaimed water for reuse.

The bill also authorizes the DEP to develop rules for any necessary additional permit conditions for the construction of advanced water treatment facilities and underground injection, for the purposes of monitoring, protecting, augmenting, or replenishing the state's water resources.

B. SECTION DIRECTORY:

Section 1. Amends s. 403.087, F.S., regarding permits for underground injection intended to protect, augment or replenish ground water resources.

Section 2. Creates s. 403.0878, F.S., establishing criteria for sustainable water resources.

Section 3. Provides an effective date.

II. FISCAL ANALYSIS & ECONOMIC IMPACT STATEMENT

A. FISCAL IMPACT ON STATE GOVERNMENT:

1. Revenues:

None.

2. Expenditures:

[41] s. 403.086(4)(a)-(b), F.S.

None.

B. FISCAL IMPACT ON LOCAL GOVERNMENTS:

1. Revenues:

None.

2. Expenditures:

None.

C. DIRECT ECONOMIC IMPACT ON PRIVATE SECTOR:

None.

D. FISCAL COMMENTS:

None.

III. COMMENTS

A. CONSTITUTIONAL ISSUES:

1. Applicability of Municipality/County Mandates Provision:

Not applicable. This bill does not appear to require counties or municipalities to spend funds or take action requiring the expenditures of funds; reduce the authority that counties or municipalities have to raise revenues in the aggregate; or reduce the percentage of state tax shared with counties or municipalities.

2. Other:

None.

B. RULE-MAKING AUTHORITY:

The DEP has rule-making authority to implement the proposed changes in section 1 of the bill.

In section 2, the bill authorizes the DEP to develop rules for operation permits for advanced water treatment for reclaimed water, stormwater, and other water resources, which must consider, at a minimum:

- The intended water use or uses;
- Conditions that may be specifically applicable to the treatment of reclaimed water, stormwater, or excess surface water, as applicable; and
- Requirements for providing monitoring, protection, augmentation, or replenishment of the state's water resources.

The bill also authorizes the DEP to develop rules for any necessary additional permit conditions for the construction of advanced water treatment facilities and underground injection, for the purposes of monitoring, protecting, augmenting, or replenishing the state's water resources.

C. DRAFTING ISSUES OR OTHER COMMENTS:

None.

IV. AMENDMENTS/ COMMITTEE SUBSTITUTE CHANGES

Not applicable.