

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 Committee on Environmental Preservation and Conservation

BILL: CS/SB 648

INTRODUCER: Environmental Preservation and Conservation Committee and Senator Evers

SUBJECT: Land Application of Septage

DATE: April 1, 2015 **REVISED:** _____

	ANALYST	STAFF DIRECTOR	REFERENCE	ACTION
1.	Gudeman	Uchino	EP	Fav/CS
2.	_____	_____	CA	_____
3.	_____	_____	FP	_____

Please see Section IX. for Additional Information:
COMMITTEE SUBSTITUTE - Substantial Changes

I. Summary:

CS/SB 648 removes the prohibition of the land application of septage which is set to take effect January 1, 2016. The bill requires the Department of Health (DOH) to conduct monthly inspections of land application sites. The bill also requires the DOH to conduct specific soil sampling and septage sampling of the sites, metered receiving at treatment facilities, and the use of a digital pH meter. The bill requires the DOH to adopt rules to implement the requirements.

II. Present Situation:

The DOH oversees the administration of onsite sewage treatment and disposal systems (OSTDSs, septic systems) in order to detect and prevent disease caused by natural and manmade factors in the environment.¹ The DOH estimates there are approximately 2.6 million septic tanks in use statewide. An “onsite sewage treatment and disposal system” is “a system that contains a standard subsurface, filled, or mound drainfield system; an aerobic treatment unit; a graywater system tank; a laundry wastewater system tank; a septic tank; a grease interceptor; a pump tank; a solids or effluent pump; a waterless, incinerating, or organic waste-composting toilet; or a sanitary pit privy that is installed or proposed to be installed beyond the building sewer on land of the owner or on other land to which the owner has the legal right to install a system. The term includes any item placed within, or intended to be used as a part of, or in conjunction with, the

¹ See s. 381.006, F.S.

system. The term does not include package sewage treatment facilities and other treatment works regulated under ch. 403, F.S.”²

The systems operate by allowing sewage to flow from a home or business through a pipe into the first chamber, where solids settle out. The liquid then flows into the second chamber where anaerobic bacteria, which do not require oxygen, to break down the organic matter, allowing cleaner water to flow out of the second chamber into a drainfield.³

The DOH’s Onsite Sewage Programs, in the Bureau of Environmental Health (bureau), develops statewide rules and provides training and standardization for county health department employees responsible for permitting the installation and repair of OSTDSs. The bureau also licenses septic system contractors, approves continuing education courses, provides courses for septic system contractors, funds a hands-on training center, and mediates septic system contracting complaints. The bureau also manages a state-funded research program, prepares research grants, and reviews and approves innovative products and OSTDS designs.⁴

The majority of septage is regulated by the DOH; however, the Department of Environmental Protection (DEP) permits OSTDSs when the estimated domestic sewage flow from the establishment is over 10,000 gallons per day or the commercial sewage flow is over 5,000 gallons per day. The DEP also has jurisdiction over OSTDSs where there is a likelihood the system will receive toxic, hazardous or industrial wastes, where a sewer system is available, or if any system or flow from the establishment is currently regulated by the DEP. Variances can be granted by either agency as needed.⁵

Land Application of Septage

The land application of septage from OSTDSs is an approved method of disposal in Florida, and is common in rural areas.⁶ Septage is defined as “a mixture of sludge, fatty materials, human feces, and wastewater removed during the pumping of an [OSTDS].”⁷ Approximately 100,000 septic tanks are pumped each year, generating 100 million gallons of septage requiring treatment and disposal.⁸ When used for land application, the septage is stabilized by raising the pH to 12 for at least two hours or to a pH of 12.5 for 30 minutes.⁹ The treated septage is then spread over the land at DOH-regulated land application sites.¹⁰ In addition to septage, OSTDSs serving restaurants include tanks that separate grease from the sewage stream. The grease is collected,

² Section 381.0065(2)(k), F.S.

³ U.S. Environmental Protection Agency, *Primer for Municipal Wastewater Treatment Systems*, 22 (2004), available at http://water.epa.gov/aboutow/owm/upload/2005_08_19_primer.pdf (last visited Mar. 26, 2015).

⁴ DOH, Onsite Sewage Programs, *Onsite Sewage*, <http://www.floridahealth.gov/healthy-environments/onsite-sewage/index.html> (last visited Mar. 26, 2015). See also s. 381.006, F.S., and Fla. Admin. Code R. 64E-6 (2013).

⁵ DEP, *Septic Systems*, <http://www.dep.state.fl.us/water/wastewater/dom/septic.htm> (last visited Mar. 26, 2015).

⁶ DOH, Bureau of Onsite Sewage Programs, *Report on Alternative Methods for the Treatment and Disposal of Septage*, 1 (Feb. 1, 2011), available at http://pk.b5z.net/i/u/6019781/f/FINAL_REPORT_ON_ALTERNATIVE_METHODS_FOR_THE_TREATMENT_AND_DISPOSAL_OF_SEPTAGE_03282011_2_.pdf (last visited Mar. 25, 2015).

⁷ Section 381.0065(2)(n), F.S.

⁸ *Supra* note 6, at 1.

⁹ Fla. Admin. Code R. 64E-6.010(7)(a), (2013).

¹⁰ Fla. Admin. Code R. 64E-6.010, (2013).

hauled, treated, and land applied similarly to septage. There are 84 land application sites that account for approximately 40 percent of disposal in Florida. The rest is disposed of at wastewater treatment facilities or municipal landfills.¹¹

In 2010, the Legislature passed SB 550, which created a five-year OSTDS inspection program to be fully implemented by the DOH by January 2016 and banned the land application of septage by January 1, 2016.¹² The law required the DOH to adopt rules and begin initial inspections of OSTDSs by January 1, 2011.¹³

During the Special Session in November 2010, the Legislature acted to extend the implementation date of the inspection program to July 1, 2011, so it could take up the issue during the 2011 Regular Session.¹⁴ Several bills were introduced in 2011 to address the inspection program and repeal the ban on the land application of septage. Although none passed, provisions were included in the implementing act for the 2011-2012 General Appropriations Act that prohibited the DOH from expending funds to move forward with an inspection program until it submits a plan for approval by the Legislative Budget Committee.¹⁵

In 2012, the statewide inspection program and the DOH's rulemaking authority for the inspection program were repealed. A county or municipality with a first magnitude spring was required to adopt a local ordinance for an OSTDS evaluation and assessment program, unless the county or municipality opted out. All other counties were given the option to opt in.¹⁶ All counties required to opt out of the inspection program have done so, and no county or municipality has opted in.

Department of Health Requirements

The DOH regulates the land application of septage pursuant to Rule 64E-6.010, F.A.C., which requires land application of septage be applied at least:

- 3,000 feet from a Class I waterbody or Outstanding Florida Waters;
- 300 feet from any surface waterbodies, except canals or waterbodies used for irrigation;
- 500 feet from any public water supply wells;
- 300 feet from any private drinking water supply wells;
- 300 feet from a habitable building; and
- 75 feet from property lines and drainage ditches.

The following provisions are required for the land application site and the timing of land application:

- A minimum of 24 inches of unsaturated soil above the ground water table at the time of septage or sludge application;

¹¹ *Supra* note 6, at 1.

¹² Chapter 2010-205, s. 35, Laws of Fla.

¹³ Section 381.0065(5), F.S.

¹⁴ Chapter 2010-283, Laws of Fla.

¹⁵ Chapter 2011-247, s. 13, Laws of Fla.

¹⁶ Chapter 2012-184, Laws of Fla.

- If the wet season high ground water table is within two feet of the surface or is not determined in the Agricultural Use Plan, then the water table at the time of application must be determined using a monitoring well;
- Land application is prohibited during rain events that are significant enough to cause runoff, or when the soil is saturated;
- The application area must have sufficient buffer areas or stormwater management structures to retain the run-off from a 10-year one-hour storm;
- The topographic grade shall not exceed 8 percent;
- A layer of permeable soil at least two feet thick must cover the surface of the land application area; and
- The land application area and an area 200 feet wide adjacent to the site must not contain:
 - Subsurface fractures,
 - Solution cavities;
 - Sink holes;
 - Excavation core holes;
 - Abandoned holes; or
 - Other natural or manmade conduits.¹⁷

Sufficient storage capacity for the septage or sludge is required during periods of equipment failure. All facilities must be designed, located, and operated to prevent nuisance conditions and runoff.¹⁸

Groundwater quality criteria for groundwater and surface water cannot be violated as a result of land application of septage or sludge and the DOH may require water quality testing. The site owner must suspend activities if water quality is violated.¹⁹

Application rates of septage and food establishment sludge are limited by nitrogen content of the waste and not phosphorus content, unless otherwise provided for. For the application rate limited by nitrogen:

- The maximum annual surface application rate is 500 pounds per acre in a 12-month period (equates to six dry tons or 40,000 gallons of typical septage per acre per year);
- Septage must be applied as evenly as possible to ensure maximum uptake of nitrogen;
- The annual application rate (AAR) of nitrogen can be calculated using the following formula: $AAR = N \div 0.0026$, where N is the amount of nitrogen in pounds per acre per 365 day period needed by the crop or vegetation.²⁰

Where the application rate is limited by phosphorus:

- The maximum annual surface application rate is 40 pounds per acre in a 12-month period (equates to two dry tons or 12,000 gallons of typical septage per year);
- The formulas to calculate AAR of phosphorus are:
 - $AAR = P \div 0.0076$ (if crop demand is calculated for P_2O_5); and

¹⁷ *Supra* note 10.

¹⁸ *Supra* note 10.

¹⁹ *Supra* note 10.

²⁰ *Supra* note 10.

- $AAR = P \div 0.0033$ (if crop demand is calculated P).²¹

The rule requires permanent records be kept of the application areas and rates. The records are to be maintained by the site owner, lessee, or the land applicator for five years and must be available for inspection by the DOH. The annual summary of total septage or sludge must be included in the annual update to the Agricultural Use Plan. The records must include the:

- Location of the septage treatment facility where each load of treated septage is obtained;
- Date and time the treated septage was obtained from the treatment facility;
- Dates of septage or sludge land application;
- Weather conditions when applied;
- Location of septage or sludge application site;
- Amounts of septage or sludge applied;
- Specific area of the site where septage or sludge was applied;
- pH of stabilized septage or sludge;
- Soil groundwater table when septage was applied; and
- Vegetational status of application area.²²

Alternatives to Land Application of Septage

There are two current practices in Florida that serve as alternatives to land application of septage. Neither is available in every part of the state. Typically, septage that is not land applied is either treated at wastewater treatment facilities or is dewatered and then disposed of in landfills. There are other alternatives that process small quantities of septage, but they are not yet commercially available in Florida.²³

Wastewater Treatment Facilities

There are approximately 2,000 domestic wastewater treatment facilities in Florida that have a total treatment capacity of over 2.5 billion gallons per day.²⁴ The DOH has determined the capacity of the facility is directly related to its ability to accept septage.²⁵

Disposing septage at a wastewater treatment facility centralizes the waste treatment process, however, the high strength septage from septic tanks leads to increased operational costs. High strength septage is produced from properly functioning OSTDSs, which separate the liquids from the solids, concentrating the solids at the bottom of the tank. The result is septage with a higher concentration of solid to liquid than wastewater treatment plants typically receive.²⁶

There are two current methods facilities use to assimilate septage into the waste stream. The less desirable of the two is allowing septage haulers to discharge the entire load in one “slug” into the main lift station or headworks. This method has the potential to upset the process because of the

²¹ *Supra* note 10.

²² *Supra* note 10.

²³ *Supra* note 6, at 2-4.

²⁴ DEP, *General Facts and Statistics about Wastewater in Florida*, <http://www.dep.state.fl.us/WATER/wastewater/facts.htm> (last visited Mar. 26, 2015).

²⁵ *Supra* note 6, at 2-3.

²⁶ *Supra* note 6, at 2-3.

high concentration of solids entering the system quickly. A more desirable method is to discharge the slug load into a holding tank and then slowly release the septage into any of various treatment points in the system as capacity allows.²⁷ The average rate for this disposal method is 6 to 12 cents per gallon.²⁸

Disposal in Landfills

A second option for septage disposal is at Class I landfills. There are 42 active Class 1 landfills in Florida. Landfills that receive septage benefit from increased microbial activity, decomposition rates, and waste stabilization. However, disposal of dewatered septage can lead to some instability, as well as slick working conditions for compaction equipment. Septage also needs to be covered quickly to avoid health hazards for workers from pathogen exposure and to avoid attracting birds, insects, and rodents.²⁹

Septage disposal at a Class I landfill is subject to Rule 62-701.300(10), F.A.C., which requires the septage to pass the EPA Paint Filter Liquids Test.³⁰ Typically, septage is two to three percent solids and must be dewatered to achieve 12 percent solids before it passes the paint filter test. The dewatering process releases effluent that requires a separate disposal process at a wastewater disposal facility. The average cost of landfilling septage is 10 cents per gallon.³¹

Land Application of Septage Study

The DEP is currently conducting a study to determine the leaching potential of land application of septage sites to groundwater. The study examines adjacent land uses and site history, as well as tracer analysis to examine groundwater beneath the application site and the up-gradient locations. The DEP is working with the Florida Onsite Wastewater Association to identify site owners that do not have a history of significant fertilizer use or nearby source contributions and are willing to participate in the study. The DEP expects the study to take 18 to 24 months to complete.³²

III. Effect of Proposed Changes:

The bill amends s. 381.0065, F.S., to remove the ban of land application of septage, which is effective January 1, 2016. The bill requires that the land application of septage is subject to the following requirements:

- Monthly inspections by the DOH;
- Metered receiving at treatment facilities;
- Testing with an electronic pH meter rather than paper strips;
- Stabilized septage sampling;

²⁷ *Supra* note 6, at 2-3.

²⁸ *Supra* note 6, at 3.

²⁹ *Supra* note 6, at 3.

³⁰ EPA method SW-846 for evaluating solid wastes measures the amount of solid waste in a liquid by applying 100 milliliters to a 400 micron paint filter. If liquid passes through the filter in five minutes it is considered a free liquid and fails the paint test. Most septage must be dewatered in order to pass the paint test prior to disposal.

³¹ *Supra* note 6, at 3-4.

³² DEP, *Senate Bill 648 Agency Analysis*, 3 (Feb. 16, 2015) (on file with the Senate Committee on Environmental Preservation and Conservation).

- Annual tracking of nutrient loading based on septage sampling; and
- Annual soil sampling of active application sites.

The bill provides an effective date of July 1, 2015.

IV. Constitutional Issues:

A. Municipality/County Mandates Restrictions:

None.

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:

The land application site permit holder may experience an indeterminate cost increase as a result of the monitoring and sampling requirements in the bill. The cost increase realized by the permit holder will likely be passed on to the consumer.

The cost increase associated with the monthly inspection program will be approximately \$106,260 per year, which is calculated based on the current rate of \$115 charged per site to the permit holder for an annual inspection.³³

C. Government Sector Impact:

The monthly and quarterly inspections will cost approximately \$177,100 per year. The database modifications to collect and track the new data will cost approximately \$82,120 and then \$2,280 annually. The cost of the new sampling requirements and equipment requirements, including the digital pH meters, is unknown.³⁴

There may be a cost associated with the rulemaking process.

³³ DOH, *Senate Bill 648 Agency Analysis*, 3 (Feb. 4, 2015) (on file with the Senate Committee on Environmental Preservation and Conservation).

³⁴ *Id.*

VI. Technical Deficiencies:

None.

VII. Related Issues:

The bill is not clear what “septage sampling” entails and how the DOH will implement this requirement. The DOH currently only tests the pH of septage and the bill does not specify what additional parameters should be analyzed. The bill also requires metered receiving at treatment facilities. Specific metered reading is not currently required under Rule 64E-6.010, F.A.C.; however, the septage haulers, treatment facilities, and land application site operators are all required to document the amount of septage that is processed. It is not clear if the documentation that is required is based on metered receiving, therefore, it is not known if bill the bill requires a duplication of efforts.³⁵

VIII. Statutes Affected:

This bill substantially amends section 381.0065 of the Florida Statutes.

IX. 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 on March 31, 2015:

The bill as filed required stricter regulations if the land application site was located within a spring protection and management zone. The CS removes the definition of “spring protection and management zone” and applies those stricter regulations statewide. The CS also removes the prohibitions on the sale of land application sites and the permitting of new land application sites.

- B. **Amendments:**

None.

This Senate Bill Analysis does not reflect the intent or official position of the bill’s introducer or the Florida Senate.

³⁵ Email from Thomas Joos, DOH, to Stephanie Gudeman, Legislative Analyst, The Florida Senate (Mar. 26, 2015) (on file with the Senate Committee on Environmental Preservation and Conservation).