



The Florida Senate

Issue Brief 2012-216

September 2011

Committee on Environmental Preservation and Conservation

LAND APPLICATION OF SEPTAGE FROM ONSITE SEWAGE TREATMENT AND DISPOSAL SYSTEMS

Statement of the Issue

Land application of septage from onsite sewage treatment and disposal systems (OSTDSs) is an approved method of disposal in Florida. It is regulated by the Department of Health (DOH), Department of Environmental Protection (DEP) and the U.S. Environmental Protection Agency (EPA). When properly treated, it is often used as a soil amendment (fertilizer). However, there are numerous examples of untreated septage being dumped into sensitive areas and of treated septage being applied as a soil amendment at higher agronomic rates than can be assimilated by crops or soils, resulting in runoff. During the 2010 Regular Session, the Legislature banned land application of septage after January 2016. Two Senate committees heard testimony from rural landowners with septic tank systems who were concerned with inspection and pump out costs and questioned the necessity of the program in general for rural areas. Several bills filed during the 2011 Regular Session sought to repeal the ban on septage spreading, but none passed. If the ban remains, options for proper septage disposal must be developed prior to January 2016.

Discussion

Regulatory Authority

The DOH oversees an environmental health program as part of fulfilling the state's public health mission. The purpose of this program is to detect and prevent disease caused by natural and manmade factors in the environment. One facet of the program is onsite sewage treatment and disposal management.¹ The DOH estimates there are 2.67 million OSTDSs in Florida, serving more than a third of the population.² An OSTDS is a wastewater collection and treatment system that may contain 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 solid 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. The term includes any item placed within, or intended to be used as a part of or in conjunction with, the system.³ The term does not include package sewage treatment facilities and other treatment works regulated under ch. 403, F.S. The DOH estimates that OSTDSs in Florida contain approximately 2.6 billion gallons of septage at any given time.⁴ "Septage" is the material that is removed during the pumping process of an OSTDS.⁵

The Bureau of Onsite Sewage Programs (Bureau) develops statewide rules and provides training and standardization for County Health Department employees responsible for permitting the installation and repair of OSTDSs within the state. The Bureau also licenses septic tank contractors, approves continuing education courses and course providers for septic tank contractors, funds a hands-on training center and mediates OSTDS

¹ Section 381.00(7), F.S.

² DOH, Bureau of Onsite Sewage Programs, <http://www.myfloridaeh.com/ostds/index.html> (last visited July 25, 2011).

³ Section 381.0065(2)(j), F.S.

⁴ DOH, Bureau of Onsite Sewage Programs, *Report on Alternative Methods for the Treatment and Disposal of Septage* (Feb. 2011), http://www.myfloridaeh.com/ostds/pdffiles/forms/Septage_Alternatives.pdf (last visited July 25, 2011).

⁵ Section 381.0065(2)(m), F.S.

contracting complaints. The Bureau manages a state-funded research program, prepares research grants, and reviews and approves innovative products and septic tank designs.⁶ The majority of septage is regulated by the DOH. However, the DEP permits OSTDSs where 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 that 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.⁷ The DOH maintains authority over land application sites that receive treated septage from DOH-regulated treatment facilities.⁸ There are 92 land application sites receiving septage from 108 treatment facilities. Not all septage from OSTDSs is land applied, only about 40 percent. The rest is either disposed of at wastewater treatment facilities or municipal landfills. Land application is common in rural areas, while the alternative methods are used more frequently in densely populated areas.⁹ Wastewater treatment facilities often cannot accept septage because of its high concentration of solids or the inclusion of grease. In some areas land application may be the only option for a hundred miles. While there are emerging technologies for the disposal of waste solids, none are widely commercially available yet.¹⁰

Present Situation

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 at the same time.¹¹ The law required the DOH to adopt rules and begin initial inspections by January 1, 2011.¹² Although pumping out OSTDSs was not required in the law, many interested parties believed the vast majority of OSTDSs would require pump outs during the initial round of inspections given how infrequently OSTDSs in Florida are pumped out. The DOH estimates that only 100,000 OSTDSs are pumped out each year of the 2.67 million, yielding an estimated 100 million gallons of septage per year.¹³ In comparison, the DEP regulates domestic wastewater treatment plants, which actually process about 1.5 billion gallons of wastewater *per day*.¹⁴

During stakeholder meetings in early 2010, concerns arose that the inspection program would increase the amount of septage needing disposal on a year-to-year basis by at least 500 percent. In fact, the Committee on Environmental Preservation and Conservation heard testimony from many homeowners of 20, 30 and even 40 year old systems who had never pumped out their septic tanks. Conversely, the EPA recommends pump outs of septic tanks every three to five years as determined by an inspector.¹⁵ The primary intent for the ban on land application of septage contained in SB 550 was concern about the increase in septage that would be generated by a five-year inspection program. However, additional testimony from interested parties also provided anecdotal evidence of a lack of oversight at some land application sites and operators who were illegally dumping septage.¹⁶

⁶ DOH, Bureau of Onsite Sewage Programs, *OSTDS Description*, <http://www.doh.state.fl.us/environment/ostds/OSTDSdescription.html> (last visited July 25, 2011).

⁷ DEP, *Septic Systems*, <http://www.dep.state.fl.us/water/wastewater/dom/septic.htm> (last visited July 27, 2011).

⁸ Septage is treated with lime for pathogen removal before it is spread. The method involves increasing the pH of the septage and holding for a specified time depending on the pH that is achieved. Septage is not treated to remove nutrients from the solids.

⁹ *Supra* note 4, at 1.

¹⁰ *Supra* note 4, at 2.

¹¹ Chapter 2010-205, s. 35, Laws of Fla.

¹² Section 381.0065(5), F.S.

¹³ *Supra* note 4, at 1.

¹⁴ DEP, *Wastewater, General Facts and Statistics about Wastewater in Florida*, <http://www.dep.state.fl.us/water/wastewater/facts.htm> (last visited July 27, 2011).

¹⁵ EPA, *A Homeowner's Guide to Septic Systems*, http://www.epa.gov/owm/septic/pubs/homeowner_guide_long.pdf (last visited July 25, 2011).

¹⁶ Some examples included pictures of septage dumped on sites in concentrations far higher than could be naturally assimilated and people arrested for improperly discharging untreated septage. See http://www.dep.state.fl.us/secretary/news/2009/05/0505_02.htm (last visited July 26, 2011), and see http://www.dep.state.fl.us/secretary/news/2010/03/0304_01.htm (last visited July 26, 2011).

The Governor signed SB 550 into law in June 2010, and almost immediately Legislators across the state began fielding comments from concerned citizens. A consensus among the citizens emerged that the law requiring inspections and banning land application of septage was too far reaching during the current economic downturn and was unnecessary in general. 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.¹⁷ Several bills were introduced in 2011 to address the inspection program and repeal the ban on land application of septage. Although none passed, language was 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 (LBC).¹⁸ This effectively stops the DOH from conducting any activities to implement an inspection program until the LBC approves the DOH's plan. When and if the DOH resumes rulemaking and adopts a rule for the inspection program, the rule will require legislative ratification.¹⁹

Alternatives

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.

Wastewater Treatment Facilities

There are approximately 2,300 domestic wastewater treatment facilities in Florida.²⁰ Only 60 have permitted capacities greater than 10 million gallons per day, resulting in less than 30 percent of counties that have a facility this large. The DOH has determined the capacity of the facility is directly related to its ability to accept septage.²¹

One of the main benefits of this disposal method is that it centralizes septage processing from OSTDSs. However, this method also has drawbacks. The primary drawback for managers of wastewater treatment facilities in accepting septage is that it is considered "high strength" waste. Properly functioning OSTDSs are effective in separating much of the water from the solids. The solids remain in the tank while the liquid effluent flows into the drainfield for natural assimilation by the environment. The resulting solids at the bottom of the tank yield a higher concentration of solid to liquid than wastewater treatment plants typically receive.²² 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 has the potential to upset the process because of the 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.²³ The average rate for this disposal method is six to 12 cents per gallon.²⁴

Disposal in Landfills

A second option for septage disposal is landfilling at Class I landfills. There are 48 active Class 1 landfills in Florida. This method also has benefits and drawbacks. The main benefits are:

- It increases microbial activity within the landfill resulting in faster decomposition and waste stabilization;
- It requires less acreage than land application sites; and

¹⁷ Chapter 2010-283, Laws of Fla.

¹⁸ Chapter 2011-247, s. 13, Laws of Fla.

¹⁹ DOH, Bureau of Onsite Sewage, *What's New*, <http://www.myfloridaeh.com/ostds/SepticEvaluation.htm> (last visited July 25, 2011).

²⁰ *Supra* note 14.

²¹ *Supra* note 4, at 3.

²² Central sewer pipes convey all solid and liquid waste to the wastewater treatment facility. Separating liquids and solids occurs at the plant under carefully monitored processes.

²³ *Supra* note 4, at 2.

²⁴ *Supra* note 4, at 3.

- Purchasing additional land is not required for disposal at existing Class I landfills.

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.²⁵

Landfills follow state rules based on an EPA Paint Filter test when accepting septage. 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 must be disposed of properly. Alternatively, some landfill operators add dry solids to septage to meet the paint filter test requirements. In either scenario, septage must be processed before it can be landfilled. The average cost of landfilling septage is 10 cents per gallon.

Conclusions

Land application, landfilling and treatment at wastewater treatment facilities are the dominant methods of septage disposal in Florida. Other methods and technologies are not yet commercially available for septage disposal. Though investment and interest in creating renewable energy from biosolids is increasing, it is not a viable treatment alternative thus far.

When land application of septage is conducted properly, it is an effective disposal method. Problems arise when operators apply septage in larger quantities than the land or crops can assimilate. This results in nutrient runoff into adjoining water bodies or into the groundwater. In addition, when violators are caught breaking laws, many are given probation coupled with minor fines that may not serve to curtail the behavior. To limit future violations, the Legislature may want to revise penalties related to illegal dumping of septage and require additional regulatory oversight by DOH staff for compliance with existing rules.

The ban on land spreading of septage will disproportionately affect smaller operators in rural areas. Hauling expenses to either a wastewater treatment facility or Class I landfill may be cost prohibitive in such areas. Industry representatives have estimated that costs could double or even triple in rural areas if the ban is enforced.²⁶ However, every effort should be made to increase the amount of septage processed by wastewater treatment facilities and Class I landfills in fragile ecosystems; e.g., near springs or over particularly porous ground formations.

The DOH should evaluate whether additional soil and compliance monitoring is needed for active land application sites. In its report, the DOH lists several potential changes to operational procedures that it could implement within its current rulemaking authority. The Legislature may direct the DOH to implement any of the following changes:²⁷

- Metered receiving at treatment facilities;
- Require larger stabilization and holding tanks at treatment facilities;
- Require longer treatment exposure times and post-treatment holding times;
- Require electronic pH meters instead of paper strips;
- Require sampling of stabilized septage;
- Tracking yearly nutrient loading based on septage sampling; and
- Require annual soil sampling of active application sites.

If the ban is not repealed, capital improvements must occur at many wastewater treatment facilities and Class I landfills that do not have existing equipment to treat septage. In rural areas, smaller wastewater treatment facilities may need to construct separate septage treatment facilities if the existing facilities do not have the capacity or infrastructure to handle septage.

²⁵ *Supra* note 4, at 3.

²⁶ *Supra* note 4, at 3-4.

²⁷ *Supra* note 4, at 5.