

FLORIDA HOUSE OF REPRESENTATIVES BILL ANALYSIS

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BILL #: [HB 645](#)

TITLE: Distributed Wastewater Treatment System
Permits

SPONSOR(S): Conerly

COMPANION BILL: [SB 796](#) (Bradley)

LINKED BILLS: None

RELATED BILLS: None

Committee References

[Natural Resources & Disasters](#)

17 Y, 0 N



[State Affairs](#)

SUMMARY

Effect of the Bill:

The bill grants a general permit for distributed wastewater treatment systems (DWTs), which authorizes the installation of a DWTS without further action by the Department of Environmental Protection (DEP) if certain requirements are met.

Fiscal or Economic Impact:

The bill may have an indeterminate negative fiscal impact on DEP associated with implementing the new general permit created by the bill.

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ANALYSIS

EFFECT OF THE BILL:

The bill grants a [general permit](#), which is issued by the Department of Environmental Protection (DEP), for [distributed wastewater treatment systems](#). The bill defines a “distributed wastewater treatment system” as a category of domestic wastewater facility that consists of one or more distributed wastewater treatment units (DWTUs). A DWTU is an advanced onsite closed-tank wastewater treatment system that is (1) designed to achieve secondary treatment standards and a minimum of 80 percent total nitrogen removal before discharge to a subsurface application system and (2) remotely operated and controlled by the permittee using an electronic control system. (Section [1](#))

The bill authorizes the installation of a DWTU to proceed without further action by DEP if, at least 30 days before installation of the DWTU, it receives a notification certifying that the DWTU was designed by a professional registered as required by law and that the DWTU will meet all of the following requirements:

- The design capacity of the DWTU will not exceed 10,000 gallons per day of domestic wastewater or 5,000 gallons per day of commercial wastewater.
- The DWTU may discharge without disinfection into a slow-rate subsurface application system that is designed and operated to protect public health and safety and meets the current separation from, and at all times has a minimum of 12 inches of separation from, the seasonal high groundwater.
- Horizontal setback distances from the DWTU and subsurface application system to property lines, surface waterbodies, potable water wells, and utilities are consistent with rules related to septic system permitting and general permits. (Section [1](#))

The bill requires permittees to:

- Have legal access to maintain, operate, and, in the case of termination of service, remove the DWTU;
- Submit a plan for conducting monthly effluent compliance sampling of a representative number of deployed DTWUs, the results of which may be aggregated to determine compliance with performance standards;

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- Conduct monthly reporting, annual inspections, recordkeeping, and [biosolids](#) management requirements; and
- Have staffing and visitation by licensed operators, but allows visitation to be accomplished using an electronic control system. (Section [1](#))

The bill prohibits the operation of any DTWU from (1) creating saturated conditions on the ground surface; (2) adversely impacting wetlands or other surface waters; or (3) causing or contributing to a violation of state water quality standards. (Section [1](#))

The effective date of the bill is July 1, 2025. (Section [2](#))

FISCAL OR ECONOMIC IMPACT:

STATE GOVERNMENT:

The bill may have an indeterminate negative fiscal impact on DEP associated with implementing the new general permit created by the bill.

RELEVANT INFORMATION

SUBJECT OVERVIEW:

Wastewater Treatment

Properly treating and disposing of or reusing domestic wastewater is an important part of protecting Florida’s water resources. A person generates approximately 100 gallons of domestic wastewater¹ per day.² This wastewater must be managed to protect public health, water quality, recreation, fish, wildlife, and the aesthetic appeal of the state’s waterways.³

Domestic Wastewater Treatment Facilities

The majority of the state’s wastewater is controlled and treated by centralized treatment facilities regulated by DEP.⁴ Florida has approximately 2,000 permitted domestic wastewater treatment facilities.⁵

Wastewater treatment facilities are required to provide secondary treatment prior to reuse or disposal.⁶ Such treatment requires that carbonaceous biochemical oxygen demand (CBOD5) and total suspended solids not exceed specific levels based on the method of disposal (i.e., surface water disposal, reuse, land application, or groundwater discharge).⁷ For example, for land application or groundwater discharge, the annual average of CBOD5 and total suspended solids (TSS) may not exceed 20.0 milligrams per liter (mg/L), and the maximum-permissible concentration in any single sample may not exceed 60.0 mg/L.⁸

Advanced waste treatment (AWT) is required before discharging into certain impaired waterbodies.⁹ DEP may also order AWT if deemed necessary.¹⁰ AWT provides a reclaimed water product containing no more than the following concentrations of pollutants:

- 5 mg/L of biochemical oxygen demand;
- 5 mg/L of suspended solids;

¹ Section [367.021\(5\), F.S.](#), defines “domestic wastewater” as wastewater principally from dwellings, business buildings, institutions, and sanitary wastewater or sewage treatment plants.

² DEP, *Domestic Wastewater Program*, <https://floridadep.gov/water/domestic-wastewater> (last visited Mar. 18, 2025).

³ *Id.*

⁴ *Id.*

⁵ DEP, *General Facts and Statistics about Wastewater in Florida*, <https://floridadep.gov/water/domestic-wastewater/content/general-facts-and-statistics-about-wastewater-florida> (last visited Mar. 18, 2025).

⁶ Sections [403.086\(1\)\(a\), F.S.](#) and Rule [62-600.420, F.A.C.](#)

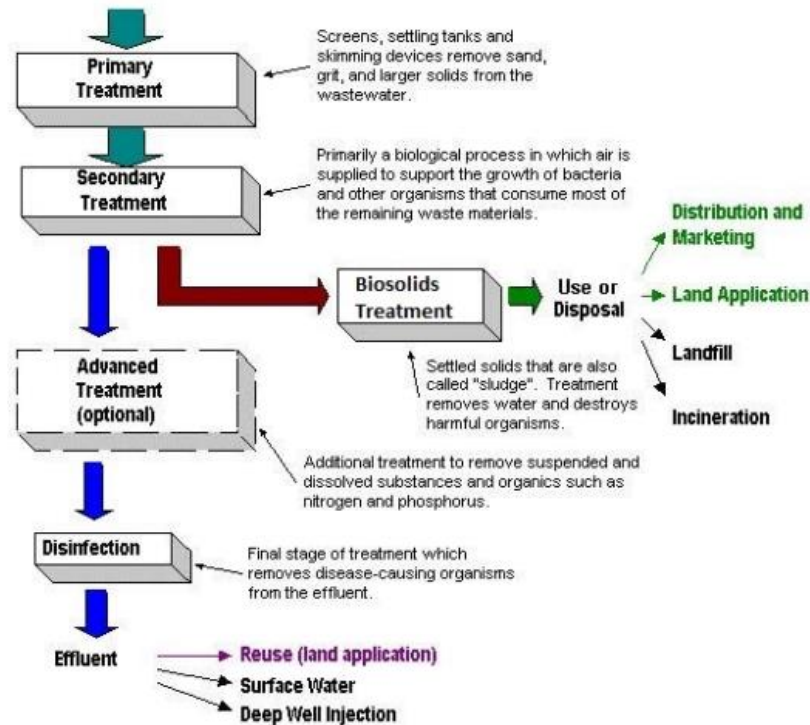
⁷ CBOD5 is the quantity of oxygen utilized in the carbonaceous biochemical oxidation of organic matter present in water or wastewater, reported as a five-day value determined using approved methods. Rule [62-600.200\(8\), F.A.C.](#)

⁸ Rule [62-600.420\(3\), F.A.C.](#)

⁹ Section [403.086\(1\)\(d\), F.S.](#)

¹⁰ Section [403.086\(1\)\(a\), F.S.](#)

- 3 mg/L of total nitrogen; and
- 1 mg/L of total phosphorous.¹¹



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Facilities may be required to provide additional treatment to satisfy water quality standards for receiving surface and ground waters.¹³ Systems within Monroe County are subject to different treatment requirements.¹⁴

Wastewater treatment facilities must monitor the flow, the influent for CBOD5 and TSS, and the effluent for all effluent parameters as required by the permit.¹⁵ The minimum schedule for sampling is based on the facility's permitted capacity. For example, for facilities with a permitted capacity of 2,000-24,999 gallons per day, sampling must be conducted according to the following parameters:¹⁶

- Daily¹⁷ testing for flow, pH, and chlorine residual;¹⁸
- Weekly testing for e. coli or enterococci;
- Monthly testing for TSS, CBOD5, nutrients, chlorine residual, and fecal coliform.

Wastewater treatment facilities that are designed so that some or all the effluent may enter groundwaters must also conduct groundwater monitoring.¹⁹

Permits other than general and generic permits require the permittee to allow DEP and the U.S. Environmental Protection Agency (EPA) to sample or monitor any substances or parameters at any location necessary to assure

¹¹ Section [403.086\(4\)\(a\), F.S.](#)

¹² DEP, *Domestic Wastewater Treatment Process* (showing flowchart of wastewater treatment process) (Dec. 13, 2024), available at <https://floridadep.gov/water/domestic-wastewater/documents/domestic-wastewater-treatment-process> (last visited on Mar. 18, 2025).

¹³ Rule [62-600.430, F.A.C.](#)

¹⁴ Section [403.086\(11\), F.S.](#)

¹⁵ Rule [62-600.660\(1\), F.A.C.](#)

¹⁶ *Id.* at Figure 1.

¹⁷ The "daily" frequency is either 2, 3, or 5 days per week consistent with the required operator attendance specified in r. [62-699.310\(2\)\(a\)](#), F.A.C. See also Rule [62-600.660\(1\), F.A.C.](#) at n. 8.

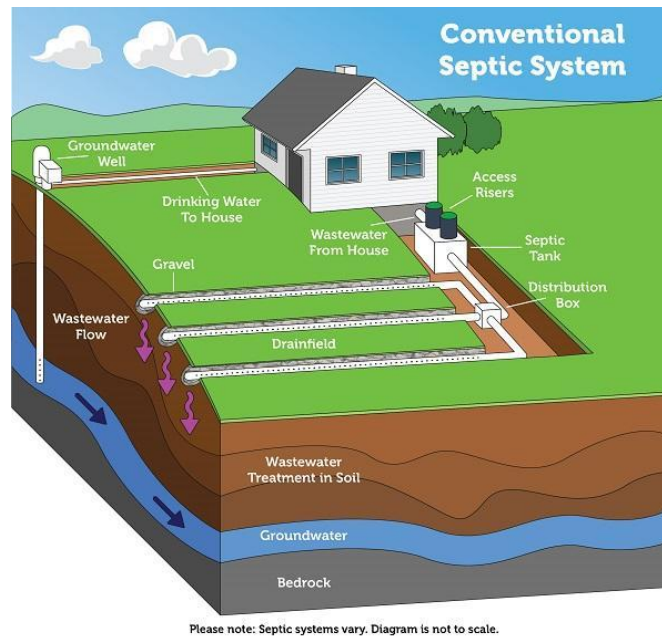
¹⁸ Total chlorine residual measured for disinfection effectiveness. Rule [62-600.660\(1\), F.A.C.](#), n. 2.

¹⁹ Rule [62-600.670\(1\), F.A.C.](#)

compliance.²⁰ Such permittees must also allow DEP and EPA to inspect the facilities, equipment, practices, or operations regulated under the permit.²¹

Onsite Sewage Treatment and Disposal Systems

An onsite sewage treatment and disposal system (OSTDS), commonly referred to as a septic system, generally consists of two basic parts: the septic tank and the drainfield.²² Waste from toilets, sinks, washing machines, and showers flow through a pipe into the septic tank, where anaerobic bacteria break the solids into a liquid form. The liquid portion of the wastewater flows into the drainfield, which is generally a series of perforated pipes or panels surrounded by lightweight materials such as gravel or Styrofoam. The drainfield provides a secondary treatment where aerobic bacteria continue deactivating the germs, and it also filters the wastewater as gravity draws the water down through the layers of soil.²³



There are an estimated 2.6 million OSTDSs in Florida, which represents 12 percent of the OSTDSs septic systems in the United States.²⁴ These 2.6 million OSTDSs provide wastewater disposal for 30 percent of the state's population.²⁵

DEP must inspect OSTDSs before placing a system into service²⁶ and approve the final OSTDS installation before a building or structure may be occupied.²⁷ If certain alterations²⁸ are made, system tanks must be pumped and visually inspected.²⁹ If an existing system was approved within the preceding five years, a new inspection is not required unless there is a record of failure of the system.³⁰ System repairs must be inspected by DEP or a master

²⁰ Rule [62-620.610\(9\)\(d\), F.A.C.](#)

²¹ Rule [62-620.610\(9\)\(c\), F.A.C.](#)

²² Department of Health, *Septic System Information and Care* (last updated Jan. 31, 2025), <http://columbia.floridahealth.gov/programs-and-services/environmental-health/onsite-sewage-disposal/septic-information-and-care.html> (last visited Mar. 4, 2024); EPA, *Types of Septic Systems*, <https://www.epa.gov/septic/types-septic-systems> (last visited Feb. 14, 2025).

²³ *Id.*

²⁴ DEP, *Onsite Sewage Program*, <https://floridadep.gov/water/onsite-sewage> (last visited Mar. 18, 2025).

²⁵ *Id.*

²⁶ Rule [62-6.003\(2\), F.A.C.](#)

²⁷ Section [381.0065\(4\), F.S.](#)

²⁸ This includes alterations that change the conditions under which the system was permitted, sewage characteristics, or increase sewage flow. DEP approval is required prior to such alterations. Rule [62-6.001\(4\), F.A.C.](#).

²⁹ Rule [62-6.001\(4\)\(b\), F.A.C.](#)

³⁰ Rule [62-6.001\(4\)\(c\), F.A.C.](#)

septic tank contractor.³¹ Buildings or establishments that use an aerobic treatment unit or generate commercial waste must be inspected by DEP at least annually.³²

Biosolids

When domestic wastewater is treated, a solid, semisolid, or liquid byproduct known as biosolids³³ accumulates in the wastewater treatment plant and must be removed periodically to keep the plant operating properly.³⁴ The collected residue is high in organic content and contains moderate amounts of nutrients.³⁵ Properly treated biosolids may be used as a fertilizer supplement or soil amendment, subject to regulatory requirements that have been established to protect public health and the environment.³⁶

According to DEP's estimates in 2019, wastewater treatment facilities produce about 340,000 dry tons of biosolids each year.³⁷ Biosolids can be disposed of in several ways: transfer to another facility, placement in a landfill, distribution and marketing as fertilizer, incineration, bioenergy, and land application to pasture or agricultural lands.³⁸ In 2019, about two-thirds of the total amount of biosolids produced was beneficially used and one-third was landfilled.³⁹

Distributed Wastewater Treatment Systems

DWTSS consist of separate DWTUs that are in different geographical locations but are linked to a central system either physically or by management.⁴⁰ The design of DWTUs varies based on manufacturer and setting (i.e., residential, commercial, or industrial).

For residential use, one type of DWTU consists of three separate chambers.⁴¹ The first chamber is used for primary sedimentation (settling) and digestion of biosolids. The wastewater flows via gravity from the first chamber into a flow equalization and dosing chamber. An onboard computer continuously monitors the liquid level in the dosing chamber and determines an appropriate treatment batch volume based on incoming flows (calculated based on the rate of change in liquid level). The computer then pumps a batch of wastewater from the dosing chamber into a reaction chamber, where biological treatment is provided in a sequential, computer-controlled aeration, mixing, and clarification process.⁴²

³¹ Rule [62-6.003\(3\), F.A.C.](#)

³² Section [381.0065\(4\), F.S.](#)

³³ Biosolids are the solid, semisolid, or liquid residue generated during the treatment of domestic wastewater in a domestic wastewater treatment facility and include products and treated material from biosolids treatment facilities and septage management facilities. The term does not include the treated effluent or reclaimed water from a domestic wastewater treatment facility, solids removed from pump stations and lift stations, screenings and grit removed from the preliminary treatment components of domestic wastewater treatment facilities, or ash generated during the incineration of biosolids. Section [373.4595, F.S.](#)

³⁴ DEP, *Domestic Wastewater Biosolids*, <https://floridadep.gov/water/domestic-wastewater/content/domestic-wastewater-biosolids> (last visited Mar. 18, 2025).

³⁵ *Id.*

³⁶ *Id.*

³⁷ DEP, *Biosolids in Florida*, 5 (2019), available at <https://www.florida-stormwater.org/assets/MemberServices/Conference/AC19/02%20-%20Frick%20Tom.pdf> (last visited Mar. 18, 2025).

³⁸ *Id.* at 4.

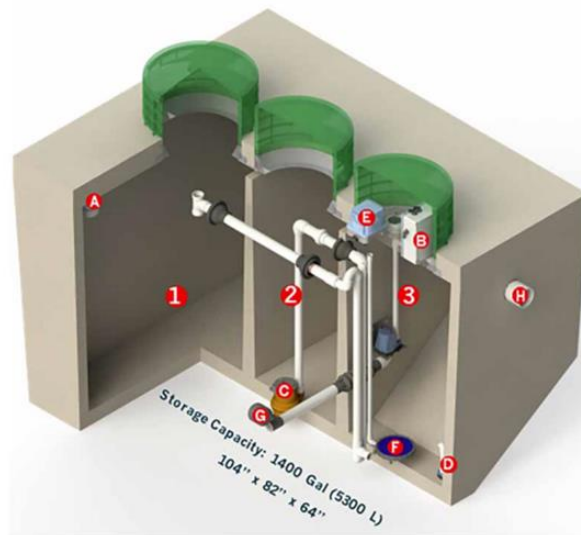
³⁹ *Id.* at 5.

⁴⁰ See EPA, Water Environment Foundation, and The Water Research Foundation, *Distributed Systems Overview*, 1 (2019), available at https://www.wef.org/globalassets/assets-wef/2-resources/topics/a-n/distributed-systems/technical-resources/wsec-2019-fs-012-wef_wrf_distributed_sytems_overview.pdf (last visited Mar. 18, 2025).

⁴¹ Brian E. Lapointe et al., *Distributed wastewater treatment offers an environmentally preferable alternative to conventional septic systems in Central Florida*, *Water Science & Technology*, vol. 86, 433 (2022), available at <https://iwaponline.com/wst/article/86/3/432/89867/Distributed-wastewater-treatment-offers-an> (last visited Mar. 18, 2025).

⁴² *Id.*

Treatment Overview



1. Sewage enters the Separation Chamber (1) from the Inlet (A) – primary treatment occurs.
2. Sewage gravity flows into the Dosing Chamber (2) – secondary settling occurs.
3. The controller (B) determines an appropriate batch size and transfers the selected volume to the Reaction Chamber (3), via a transfer pump (C) – Fill Mix (D) occurs.
4. The air blower (E) initiates aeration via the fine air diffuser (F) – Reaction Occurs
5. Following Settling, Decanting occurs (G) – discharging the supernatant through the outlet (H).

Example of a residential DWTU⁴³

After each batch is completed, the onboard computer selects a variable fraction of the treated batch for additional treatment via internal recycling.⁴⁴ This fraction of fully treated effluent is pumped back to the first (settling) chamber, diluting the incoming wastewater and receiving additional treatment. The remaining fraction of each treated batch of effluent is discharged to the drainfield. Finally, the DWTU utilizes a return activated sludge process to optimize sludge volume in the reaction chamber and minimize accumulation of biosolids in the settling chamber. Activated sludge is periodically returned to the settling chamber where biosolids are broken down via anaerobic digestion. The biosolids residuals must be removed from the DWTU periodically (approximately every 7-10 years) by a licensed contractor for treatment and disposal.⁴⁵

DWTU treatment processes are performed by an onboard computer and remotely monitored.⁴⁶ The remote monitoring system communicates with each DWTU over a wireless data network to:

- Record wastewater treatment volume and flow, component run time and power consumption, and equipment deficiencies;
- Perform diagnostics; and
- Enable remote supervisory control by a licensed wastewater operator.⁴⁷

General Permits

A general permit is a permit issued by DEP that authorizes a person to undertake certain activities, which when performed in accordance with the specific requirements and practices set forth in the general permit, have a minimal adverse environmental effect. A person may proceed with the activity under a general permit 30 days after notifying DEP, without any further action by DEP.⁴⁸

⁴³ *Id.* (showing the graphic of the DWTU).

⁴⁴ *Id.*

⁴⁵ *Id.*

⁴⁶ *Id.*

⁴⁷ *Id.*

⁴⁸ Section [403.814\(1\), F.S.](#)

BILL HISTORY

COMMITTEE REFERENCE	ACTION	DATE	STAFF DIRECTOR/ POLICY CHIEF	ANALYSIS PREPARED BY
Natural Resources & Disasters Subcommittee	17 Y, 0 N	3/18/2025	Moore	Weiss
State Affairs Committee				