

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 Environment and Natural Resources

BILL: SB 406

INTRODUCER: Senator Rodriguez

SUBJECT: Statewide Environmental Resource Permitting Rules

DATE: January 9, 2023

REVISED: _____

	ANALYST	STAFF DIRECTOR	REFERENCE	ACTION
1.	<u>Barriero</u>	<u>Rogers</u>	<u>EN</u>	Favorable
2.	_____	_____	<u>FP</u>	_____
3.	_____	_____	<u>RC</u>	_____

I. Summary:

SB 406 provides that, for purposes of water quality, erosion control, and ease of maintenance, the side slopes of a surface water management system pond must be designed with a horizontal-to-vertical ratio of 4:1, or an equivalent substitute necessary to accommodate onsite conditions.

The bill provides that all side slope rules adopted by the Department of Environmental Protection, water management districts, or delegated local programs as of July 1, 2024, are superseded by this bill and may be repealed without further rulemaking by publication of a notice of repeal in the Florida Administrative Register and subsequent filing of a list of the rules repealed with the Department of State.

II. Present Situation:

Stormwater Runoff

Nationwide, polluted stormwater runoff is considered to be the greatest threat to clean water.¹ Over 40 percent of waters assessed by the states are too polluted for fishing or swimming.² Nonpoint sources associated with stormwater account for over 40 percent of these polluted waters.³ Conversely, traditional point sources (i.e., wastewater treatment plants) account for only

¹ South Florida Water Management District (SFWMD), *Your Impact on the Environment*, <https://www.sfwmd.gov/community-residents/what-can-you-do> (last visited Dec. 12, 2023).

² DEP, *Stormwater Support*, <https://floridadep.gov/water/engineering-hydrology-geology/content/stormwater-support> (last visited Dec. 12, 2023). A recent study examining water quality across the U.S. shows Florida ranks first in the nation for total acres of lakes classified as impaired for swimming and aquatic life (873,340 acres), and second for total lake acres listed as impaired for any use (935,808 acres). Environmental Integrity Project, *The Clean Water Act at 50*, 28 (2022), available at <https://environmentalintegrity.org/wp-content/uploads/2022/03/CWA@50-report-3-17-22.pdf>. Florida also has the second most total square miles of impaired estuaries (2,533 square miles). *Id.* at 29.

³ DEP, *Stormwater Support*, <https://floridadep.gov/water/engineering-hydrology-geology/content/stormwater-support> (last visited Dec. 12, 2023).

about 10 percent of these polluted or “impaired” waters.⁴ Hundreds of impaired water segments in Florida have lost their designated use due, in part, to stormwater pollution.⁵

Florida averages 40–60 inches of rainfall a year, depending on the location, with about two-thirds falling between June and October.⁶ Stormwater runoff generated during these rain events flows over land or impervious surfaces, such as paved streets, parking lots, driveways, sidewalks, and rooftops, and picks up pollutants like trash, chemicals, oils, and sediment along the way. This unfiltered water ends up in streams, ponds, lakes, bays, wetlands, oceans, and groundwater. Construction sites, lawns, improperly stored hazardous wastes, and illegal dumping are all potential sources of stormwater pollutants.⁷

Stormwater runoff can cause a multitude of problems:

- Excess nutrients, primarily nitrogen and phosphorus from lawn fertilizers or natural sources, such as manure, can cause algal and bacterial blooms that proliferate rapidly. Algae will consume oxygen, increase turbidity in the waterbody, and eventually die along with the fish and other aquatic life that need oxygen to live.⁸
- Pathogenic bacteria and microorganisms can be carried by stormwater into a waterbody. This creates health hazards and can cause lakes and beaches to close to the public.⁹
- Sediment can increase the turbidity (a measure of water cloudiness) of a waterbody. Turbidity can block sunlight from reaching aquatic plants, making it impossible for them to grow. Without plants, animals lose a food source, and it is more difficult to filter pollutants from the water. Instead, pollutants collect at the bottom of the waterbody and remain there indefinitely.¹⁰
- Debris such as plastic bags, bottles, and cigarette butts can wash into a waterbody and interfere with aquatic life¹¹ and flood prevention and decrease water quality.¹² When a stormwater drain gets clogged with debris, rainwater that normally would be collected cannot enter into the drainage system. Water will accumulate around the drain, causing flooded sidewalks or streets and increase the chances for flooding buildings.
- Other hazardous wastes, such as insecticides, herbicides, paint, motor oil, and heavy metals, can be carried by stormwater runoff to waterbodies and cause illness to aquatic life and humans alike.¹³

⁴ *Id.*

⁵ *Id.*

⁶ University of Florida Institute of Food and Agricultural Sciences (UF/IFAS), *Florida Rainfall Data Sources and Types*, 1 (2023), available at <https://edis.ifas.ufl.edu/publication/AE517>.

⁷ EPA, *Urbanization and Stormwater Runoff*, <https://www.epa.gov/sourcewaterprotection/urbanization-and-stormwater-runoff> (last visited Dec. 12, 2023).

⁸ Southwest Florida Water Management District (SWFWMD), *Stormwater Runoff*, <https://www.swfwmd.state.fl.us/residents/education/kids/stormwater-runoff> (last visited Dec. 12, 2023).

⁹ *Id.*

¹⁰ *Id.*

¹¹ *Id.*

¹² SWFWMD, *Your Impact on the Environment*, <https://www.swfwmd.gov/community-residents/what-can-you-do> (last visited Nov. 27, 2023).

¹³ SWFWMD, *Stormwater Runoff*, <https://www.swfwmd.state.fl.us/residents/education/kids/stormwater-runoff> (last visited Jan. 3, 2024).

In addition, inadequate stormwater management increases stormwater flows and velocities, contributes to erosion, overtaxes the carrying capacity of streams and other conveyances, reduces ground water recharge, threatens public health and safety, and is the primary source of pollutant loading entering Florida's rivers, lakes, and estuaries.¹⁴

Stormwater Management Ponds

Stormwater ponds mitigate flooding and stormwater runoff by catching excessive precipitation running off buildings, roads, parking lots, sidewalks, and other impervious surfaces.¹⁵

Stormwater ponds are defined as either retention or detention ponds. Retention ponds retain all the water within them, allowing the water to percolate into the soil and preventing it from moving downstream. In contrast, detention ponds capture stormwater runoff and temporarily store it before slowly releasing the water downstream.¹⁶

While a best management practice for pollutant removal, stormwater ponds may create safety hazards, including the risk of drowning.¹⁷ Steep sides and slippery slopes can make it difficult for a person to climb back out if they happen to fall in.¹⁸ In addition, retention ponds are often deep because they are designed for maximum rainwater collection.¹⁹ Strong currents at inlet and outlet areas of a pond can also pose a danger.²⁰

Wet Detention Ponds

Wet detention ponds are one of the most common types of detention systems and consist of constructed basins that have a permanent pool of water into which stormwater runoff is directed.²¹ The runoff is detained in the pond until it is released downstream or displaced by runoff from subsequent rain events.²² By capturing and detaining runoff, wet detention ponds control both stormwater quantity and quality.²³ Sedimentation processes remove particulates, organic matter, and metals, while dissolved metals and nutrients are removed through biological uptake.²⁴

¹⁴ Fla. Admin. Code R. 62-40.431(2)(b).

¹⁵ UF/IFAS, *Stormwater Pond Management; What you need to know about aeration*, 2 (2021), available at <https://edis.ifas.ufl.edu/publication/SS695>.

¹⁶ *Id.*

¹⁷ City of Jacksonville, *Retention Pond Safety*, <https://www.jacksonville.gov/welcome/welcome-news/retention-pond-safety> (last visited Jan. 3, 2024); see also U.S. Environmental Protection Agency (EPA), *Stormwater Best Management Practice: Wet Ponds*, 4 (2021), available at <https://www.epa.gov/system/files/documents/2021-11/bmp-wet-ponds.pdf>.

¹⁸ City of Jacksonville, *Retention Pond Safety*.

¹⁹ *Id.*

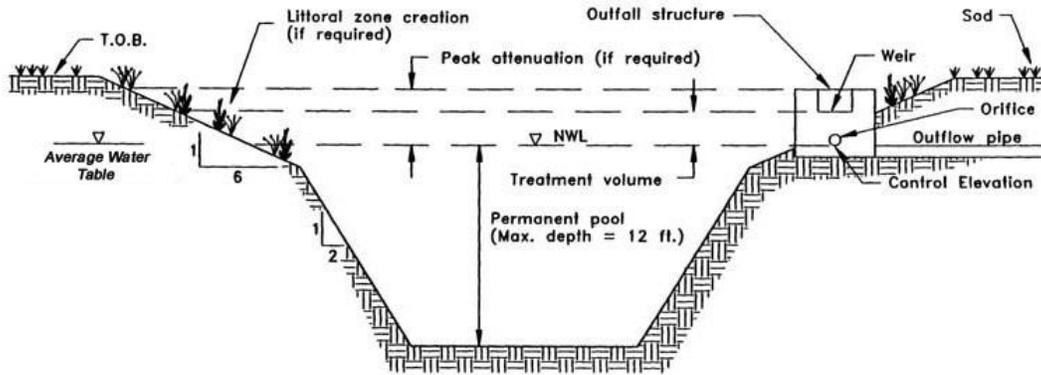
²⁰ *Id.*

²¹ EPA, *Stormwater Best Management Practice: Wet Ponds* at 1.

²² EPA, *Stormwater Technology Fact Sheet: Wet detention ponds*, 1 (1999), available at <https://nepis.epa.gov/Exe/ZyPDF.cgi/200044D0.PDF?Dockey=200044D0.PDF>.

²³ *Id.*

²⁴ *Id.*



Typical wet detention system²⁵

Specific designs may vary considerably, depending on site constraints, local regulations, and preferences of the designer or community.²⁶ However, as shown above and discussed in further detail below, the typical horizontal-to-vertical ratio for side slopes is 6:1 for littoral zones, no steeper than 4:1 to a depth of at least two feet below the control elevation, and 2:1 at greater depths. The littoral zone is that portion of a stormwater pond designed to contain rooted aquatic plants and is usually provided by extending and gently sloping the sides of the pond down to a depth of two to three feet below the normal water level or control elevation.²⁷ Vegetative littoral zones help stabilize the soil around the pond's edge and increase pollutant uptake.²⁸

Dry Retention Ponds

Unlike wet stormwater ponds, dry retention ponds do not have permanent pools of water or discharge to downstream surface waters.²⁹ Instead, these systems remain dry until filled with water during rain events.³⁰ Substantial amounts of suspended solids, heavy metals, bacteria, and some varieties of pesticides and nutrients such as phosphorus are removed as runoff percolates through the vegetation and soil.³¹ Retention systems also promote the recharge of ground water and help prevent saltwater intrusion in coastal areas.³²

²⁵ Northwest Florida Water Management District (NFWFMD), *ERP Applicant's Handbook: Vol. II*, figure 8.1-1 (2013), available at <https://www.flrules.org/Gateway/reference.asp?No=Ref-03172>. "T.O.B." means top of bank.

²⁶ EPA, *Stormwater Best Management Practice: Wet Ponds*, 2 (2021), available at <https://www.epa.gov/system/files/documents/2021-11/bmp-wet-ponds.pdf>.

²⁷ NFWFMD, *ERP Applicant's Handbook: Vol. II* at s. 12.4.

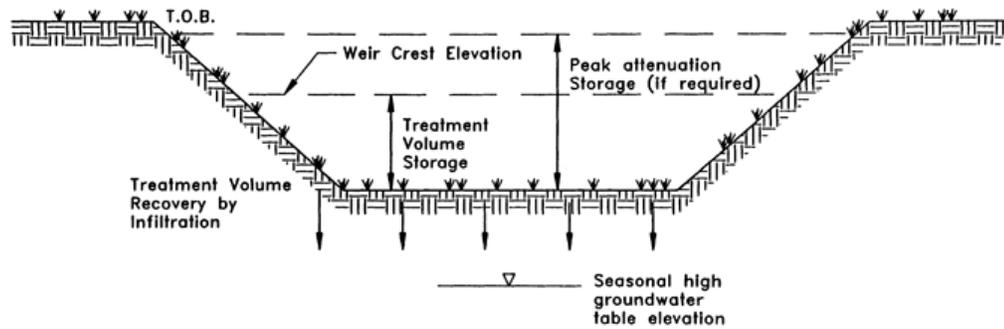
²⁸ EPA, *Stormwater Best Management Practice: Wet Ponds*, 2 (2021), available at <https://www.epa.gov/system/files/documents/2021-11/bmp-wet-ponds.pdf>.

²⁹ Suwannee River Water Management District (SRWMD), *ERP Applicant's Handbook: Vol. II*, s. 5.1.1, available at <https://www.flrules.org/Gateway/reference.asp?No=Ref-03182>.

³⁰ *Id.* UF/IFAS, *Stormwater Pond Management; What you need to know about aeration*, 2 (2021), available at <https://edis.ifas.ufl.edu/publication/SS695>.

³¹ SRWMD, *ERP Applicant's Handbook: Vol. II*, s. 5.1.1, available at <https://www.flrules.org/Gateway/reference.asp?No=Ref-03182>.

³² *Id.*



Typical dry retention system³³

Stormwater Pond Design Criteria

Design criteria for stormwater management systems is regulated by the Department of Environmental Protection (DEP), water management districts (WMDs), and delegated local programs. Requirements vary by type of stormwater management system and regulating authority.

In general, stormwater ponds must be designed with side slopes no steeper than a 4:1 horizontal-to-vertical ratio to a depth of at least two feet below the control elevation.³⁴ However, certain exceptions may apply. For example, the South Florida Water Management District (SFWMD) provides alternative criteria for golf courses,³⁵ while other WMDs include exceptions for fenced ponds³⁶ or ponds with slopes that incorporate erosion and sediment control best management practices.³⁷ In addition, some WMDs require the stabilization of pond side slopes through vegetation³⁸ or the creation of vegetative littoral zones.³⁹ Where necessary, littoral zones are generally required to have slopes with a horizontal-to-vertical ratio of 6:1 or flatter.⁴⁰

Other stormwater management systems have different requirements. For example, swales must have a top width to depth ratio of the cross-section equal to or greater than 6:1 or side slopes equal to or greater than 3:1 horizontal-to-vertical ratio.⁴¹

³³ NFWMD, *ERP Applicant's Handbook: Vol. II*, figure 5.1-1 (2013), available at <https://www.flrules.org/Gateway/reference.asp?No=Ref-03172>.

³⁴ *Id.* at s. 8.11; SFWMD, *ERP Applicant's Handbook: Vol. II*, s. 5.4.2 (2013) available at <https://www.flrules.org/Gateway/reference.asp?No=Ref-02528>; St. Johns River Water Management District (SJRWMD), *ERP Applicant's Handbook: Vol. II*, ss. 2.6.1 and 8.12 (2013) available at <https://www.flrules.org/Gateway/reference.asp?No=Ref-03181>; SRWMD, *ERP Applicant's Handbook: Vol. II*, s. 4.5.1 (2013), available at <https://www.flrules.org/Gateway/reference.asp?No=Ref-03182>; SFWMD, *ERP Applicant's Handbook: Vol. II*, s. 5.4.1 (2013) available at <https://www.flrules.org/Gateway/reference.asp?No=Ref-03176>.

³⁵ SFWMD, *ERP Applicant's Handbook: Vol. II* at s. 5.4.2(e).

³⁶ SJRWMD, *ERP Applicant's Handbook, Vol. II* at s. 2.6.1.

³⁷ SRWMD, *ERP Applicant's Handbook: Vol. II* at s. 4.5.1.

³⁸ SRWMD, *ERP Applicant's Handbook: Vol. II* at s. 4.5.1.

³⁹ SJRWMD, *ERP Applicant's Handbook: Vol. II* at s. 8.6; NFWMD, *ERP Applicant's Handbook: Vol. II* at s. 8.6.

⁴⁰ *Id.*

⁴¹ *Id.* at 34. This is also the statutory definition of "swale." Section 403.803(14)(a), F.S.

Environmental Resource Permitting (ERP)

Part IV of Chapter 373, F.S., and Chapter 62-330 of the Florida Administrative Code regulate the statewide ERP program, which is the primary tool used by DEP and WMDs for preserving natural resources and fish and wildlife, minimizing degradation of water resources caused by stormwater discharges, and providing for the management of water and related land resources. The program governs the construction, alteration, operation, maintenance, repair, abandonment, and removal of stormwater management systems, dams, impoundments, reservoirs, appurtenant works, and other works such as docks, piers, structures, dredging, and filling located in, on, or over wetlands or other surface waters.⁴²

The ERP rules within Chapter 62-330 of the Florida Administrative Code contain:

- Criteria and thresholds for requiring permits;
- Types of permits;
- Procedures governing the review of applications and notices, duration and modification of permits, operational maintenance requirements, transfers of permits, provisions for emergencies, and provisions for abandonment and removal of systems;
- Exemptions and general permits that do not allow significant adverse impacts to occur individually or cumulatively;
- Conditions for issuance;
- General permit conditions, including monitoring, inspection, and reporting requirements;
- Standardized fee categories to promote consistency;
- Application, notice, and reporting forms; and
- An Applicant's Handbook containing general program information, application and review procedures, stormwater quality and quantity criteria, and how environmental criteria are evaluated.⁴³

DEP has proposed revisions to the stormwater rules within Chapter 62-330 of the Florida Administrative Code that require legislative ratification before taking effect. The proposed rules were developed to increase the removal of nutrients from stormwater to protect the state's waterways and contain updated design criteria for stormwater management systems. The proposed rules include some new requirements specifically for stormwater ponds. For example, the revised rules provide that all side slopes and bottom areas of dry retention ponds must be seeded or sodded with water-tolerant grass species grown on sandy soils, and the permanent pool volume of wet detention ponds must meet certain parameters.⁴⁴ While the proposed rules do not include express requirements for the horizontal-to-vertical ratio of stormwater pond side slopes, they do include graphics similar to the ones shown above that depict a typical side slope ratio of 4:1 for dry retention systems, 6:1 for wet detention systems, and 2:1 for wet detention slopes below the control elevation.⁴⁵

⁴² Fla. Admin. Code R. 62-330.010(2).

⁴³ Section 373.4131(1)(a), F.S.

⁴⁴ See DEP, *ERP Applicant's Handbook: Vol. I*, appendices P-5 and P-6 (proposed 2023), available at <https://floridadep.gov/water/engineering-hydrology-geology/documents/erp-applicants-handbook-volume-i-appendixes-rulemaking>.

⁴⁵ *Id.*

III. Effect of Proposed Changes:

Section 1 amends s. 373.4131, F.S., regarding the statewide environmental resource permitting rules. The bill provides that, for purposes of water quality, erosion control, and ease of maintenance, the side slope of a surface water management system pond must be designed with a horizontal-to-vertical ratio of 4:1, or an equivalent substitute necessary to accommodate onsite conditions.

The bill provides that all side slope rules adopted by the Department of Environmental Protection, water management districts, or delegated local programs as of July 1, 2024, are superseded by this subsection and may be repealed without further rulemaking by publication of a notice of repeal in the Florida Administrative Register and subsequent filing of a list of the rules repealed with the Department of State.

Section 2 provides an effective date of July 1, 2024.

IV. Constitutional Issues:

A. Municipality/County Mandates Restrictions:

None.

B. Public Records/Open Meetings Issues:

None.

C. Trust Funds Restrictions:

None.

D. State Tax or Fee Increases:

None.

V. Fiscal Impact Statement:

A. Tax/Fee Issues:

None.

B. Private Sector Impact:

None.

C. Government Sector Impact:

None.

VI. Technical Deficiencies:

None.

VII. Related Issues:

The Department of Environmental Protection has proposed revisions to the stormwater rules within Chapter 62-330 of the Florida Administrative Code. The proposed revisions do not include express requirements for the side slopes of stormwater ponds. The water management districts have existing rules regarding the design of pond side slopes that may be superseded by this bill.

VIII. Statutes Affected:

This bill substantially amends s. 373.4131 of the Florida Statutes.

IX. Additional Information:**A. Committee Substitute – Statement of Changes:**

(Summarizing differences between the Committee Substitute and the prior version of the bill.)

None.

B. Amendments:

None.