Tab 1	**SB 1552** by **Gruters (CO-INTRODUCERS) Hooper**; (Identical to H 01135) Florida Red Tide Mitigation and Technology Development Initiative

Tab 2	**SB 1758** by **Mayfield (CO-INTRODUCERS) Simmons, Harrell**; (Identical to H 01395) Water Quality Improvements

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Tab 3	**SB 1100** by **Montford**; Water Testing for Pollution

The Florida Senate

COMMITTEE MEETING EXPANDED AGENDA

ENVIRONMENT AND NATURAL RESOURCES
Senator Montford, Chair
Senator Albritton, Vice Chair

MEETING DATE: Wednesday, March 20, 2019
TIME: 4:00—6:00 p.m.
PLACE: *Mallory Horne Committee Room,* 37 Senate Building

MEMBERS: Senator Montford, Chair; Senator Albritton, Vice Chair; Senators Berman, Mayfield, and Wright

TAB	BILL NO. and INTRODUCER	BILL DESCRIPTION and SENATE COMMITTEE ACTIONS	COMMITTEE ACTION
1	**SB 1552** Gruters (Identical H 1135)	Florida Red Tide Mitigation and Technology Development Initiative; Establishing the Florida Red Tide Mitigation and Technology Development Initiative; requiring the initiative to submit an annual report by a specified date to the Governor, the Legislature, the Secretary of Environmental Protection, and the executive director of the Fish and Wildlife Conservation Commission; establishing the Initiative Technology Advisory Council, etc. EN 03/20/2019 Favorable AEG AP	Favorable Yeas 5 Nays 0
2	**SB 1758** Mayfield (Identical H 1395, Compare CS/H 141, CS/H 973, CS/S 216, S 1022)	Water Quality Improvements; Citing this act as the "Clean Waterways Act"; transferring the onsite sewage program of the Department of Health to the Department of Environmental Protection by a type two transfer; establishing a wastewater grant program within the Department of Environmental Protection; revising requirements for a basin management action plan; requiring a wastewater treatment plant to notify customers of unlawful discharges of raw or partially treated sewage into any waterway or aquifer within a specified timeframe, etc. EN 03/20/2019 Fav/CS AEG AP	Fav/CS Yeas 5 Nays 0
3	**SB 1100** Montford	Water Testing for Pollution; Authorizing specified persons or businesses that suspect contamination of their private water system or multifamily water system or certain public water systems to request that the Department of Health or its agents test such system for pollution, under certain circumstances, etc. EN 03/20/2019 Favorable AHS AP	Favorable Yeas 5 Nays 0

Workshop - Discussion and testimony only on the following (no vote to be taken):

TAB	BILL NO. and INTRODUCER	BILL DESCRIPTION and SENATE COMMITTEE ACTIONS	COMMITTEE ACTION
	Valdosta Sewage Spills:		Presented
	Presentations		
	Public Testimony		
	Other Related Meeting Documents		

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 1552
INTRODUCER:	Senators Gruters and Hooper
SUBJECT:	Florida Red Tide Mitigation and Technology Development Initiative
DATE:	March 19, 2019 REVISED:

	ANALYST	STAFF DIRECTOR	REFERENCE	ACTION
1.	Schreiber	Rogers	EN	**Favorable**
2.			AEG	
3.			AP	

I. Summary:

SB 1552 establishes the Florida Red Tide Mitigation and Technology Development Initiative as a partnership between the Fish and Wildlife Conservation Commission's Fish and Wildlife Research Institute and Mote Marine Laboratory. The purpose of the initiative is to develop technologies and approaches needed to address the control and mitigation of red tide and its impacts. The bill requires funds specifically appropriated by the Legislature for the initiative to be awarded by the Fish and Wildlife Research Institute to Mote Marine Laboratory to achieve the goals of the initiative. The bill establishes within the initiative the Initiative Technology Advisory Council.

The bill requires the Florida Red Tide Mitigation and Technology Development Initiative to submit an annual report, beginning January 15, 2021, containing an overview of the initiative's accomplishments and priorities to the Governor, the President of the Senate, and Speaker of the House of Representatives, the Secretary of Environmental Protection, and the executive director of the Fish and Wildlife Conservation Commission. The section authorizing the initiative expires on June 30, 2025.

The bill appropriates $3 million for each fiscal year beginning in the 2019-2020 fiscal year and going through the 2024-2025 fiscal year from the General Revenue Fund to the Fish and Wildlife Conservation Commission for the purpose of implementing the bill.

II. Present Situation:

Red Tide

Algae is a diverse group of plant-like organisms that produce oxygen and form the base of aquatic food webs, and they range from microscopic, single-celled organisms to large seaweeds.[1] When algae reproduce or accumulate far beyond their normal levels for a specific geographic area it is known as a bloom.[2] When blooms occur they can have harmful effects such as smothering other marine life or blocking the sun, producing dangerous toxins, and depleting oxygen levels as the algae decays.[3] These events are known as harmful algal blooms.[4] In the waters around Florida, particularly in the Gulf of Mexico, such high concentrations of algae occur that the water turns red or brown.[5] These harmful algal blooms are known as "red tide," and have been observed for centuries.[6] In the Gulf of Mexico and around Florida, the species that causes most red tide is *Karenia brevis* (*K. brevis*).[7]

K. brevis is a single-celled algae that occurs in marine and estuarine waters in Florida.[8] *K. brevis* is always present in low concentrations in the Gulf of Mexico with no apparent adverse effects.[9] However, when it blooms, typically in the late summer or early fall, this species can cause large-scale harmful algal blooms.[10] *K. brevis* produces neurotoxins called brevetoxins that can sicken or kill fish, seabirds, turtles, and marine mammals.[11] Wave action can break open *K. brevis* cells and release the brevetoxins into the air, and with winds blowing onshore this can lead to respiratory irritation in humans, and potentially serious illness for people with severe or chronic respiratory conditions.[12] The red tide toxins can also accumulate in animals such as oysters and clams, which can lead to Neurotoxic Shellfish Poisoning in people who consume contaminated

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[1] NOAA, *What is a Harmful Algal Bloom?*, https://www.noaa.gov/what-is-harmful-algal-bloom (last visited Mar. 15, 2019); FWC, *What Is a Harmful Algal Bloom*, https://myfwc.com/research/redtide/general/harmful-algal-bloom/ (last visited Mar. 2019). Microscopic algae produce around half of the oxygen we breathe.

[2] FWC, *What Is a Harmful Algal Bloom?*, https://myfwc.com/research/redtide/general/harmful-algal-bloom/ (last visited Mar. 2019).

[3] *Id.*; NOAA, *What is a Harmful Algal Bloom?*, https://www.noaa.gov/what-is-harmful-algal-bloom (last visited Mar. 15, 2019).

[4] Gulf of Mexico Alliance, *A Primer on Gulf of Mexico Harmful Algal Blooms*, 2-5 (2013), *available at* https://myfwc.com/media/15902/habprimer.pdf (last visited Mar. 17, 2019). The term "harmful algal bloom" is sometimes abbreviated as "HAB."

[5] FWC, *Red Tide FAQ*, https://myfwc.com/research/redtide/faq/ (last visited Mar. 15, 2019).

[6] *Id.*

[7] *Id.*

[8] FWC, *Karenia Brevis: Fact Sheet*, https://myfwc.com/media/12422/karenia-brevis-factsheet.pdf (last visited Mar. 15, 2019); Mote Marine Laboratory, *Phytoplankton Ecology*, https://mote.org/research/program/phytoplankton-ecology (last visited Mar. 15, 2019). *K. brevis* is a "phytoplankton" because it does photosynthesis like a plant.

[9] R. H. Pierce and M. S. Henry, *Harmful Algal Toxins of the Florida Red Tide (Karenia brevis): Natural Chemical Stressors In South Florida Coastal Ecosystems*, ECOTOXICOLOGY, vol. 17, 7 (2008): 623-631, 2 (2008), *available at* https://www.ncbi.nlm.nih.gov/pmc/articles/PMC2683401/pdf/nihms101414.pdf (last visited Mar. 15, 2019).

[10] FWC, *Karenia Brevis: Fact Sheet*, https://myfwc.com/media/12422/karenia-brevis-factsheet.pdf (last visited Mar. 15, 2019); FWC, *Red Tide Current Status*, https://myfwc.com/research/redtide/statewide/ (last visited Mar. 15, 2019). FWC reports the current status of red tide using the concentration of *K. brevis* cells per liter of water.

[11] FWC, *Karenia Brevis: Fact Sheet*, https://myfwc.com/media/12422/karenia-brevis-factsheet.pdf (last visited Mar. 15, 2019)

[12] Mote Marine Laboratory, *Florida Red Tide FAQ's*, https://mote.org/news/florida-red-tide (last visited Mar. 15, 2019).

shellfish.[13] Though this is less common, blooms of *K. brevis* can also contribute to fish kills by depleting the water of dissolved oxygen.[14]

K. brevis cannot tolerate low-salinity waters for very long, so while red tide is found in bays and estuaries, it is not found in freshwater systems such as lakes or rivers.[15] The algae causing red tide is different from the cyanobacteria (often called "blue-green algae") found in freshwater systems such as Lake Okeechobee.[16] Cyanobacteria is found in lakes, rivers, and estuaries, and it too is toxic and harmful.[17]

Red tides can last as little as a few weeks or longer than a year.[18] The duration of a *K. brevis* bloom depends on the conditions that influence its growth and persistence, including sunlight, nutrients, and salinity, as well as the speed and direction of wind and water currents.[19] *K. brevis* is found almost exclusively in the Gulf of Mexico from Mexico to Florida. However, it is transported as coastal waters move with winds and currents. Florida's red tides can reach the Atlantic Ocean and be transported along the eastern coast of the United States.[20] Florida's red tides develop 10-40 miles offshore.[21] There is no demonstrated direct link between nutrient pollution and *K. brevis* red tide formation or frequency, and red tide has been observed since before Florida's coastlines were heavily developed.[22] However, once red tides are transported to shore, they are capable of using human-caused nutrient pollution for their growth.[23] Currently, there is no practical and acceptable way to control or kill red tide blooms.[24]

An unusually persistent red tide affected portions of the coast of Florida between 2017 and 2018.[25] In 2018, the Governor issued executive orders declaring a state of emergency in 14 counties for red tide algae blooms.[26] The Department of Environmental Protection established a grant funding program for targeted algal bloom cleanup and took other measures to respond to the situation.[27] In addition to threatening public safety and harming the environment, red tide can

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[13] FWC, *Karenia Brevis: Fact Sheet*, https://myfwc.com/media/12422/karenia-brevis-factsheet.pdf (last visited Mar. 15, 2019).
[14] *Id.*
[15] FWC, *Red Tide FAQ*, https://myfwc.com/research/redtide/faq/ (last visited Mar. 15, 2019).
[16] *Id.*
[17] FWC, *Cyanobacteria in Florida's Waters*, https://myfwc.com/research/redtide/general/cyanobacteria/ (last visited Mar. 15, 2019); U.S. EPA, *Harmful Algal Blooms & Cyanobacteria Research*, https://www.epa.gov/water-research/harmful-algal-blooms-cyanobacteria-research (last visited Mar. 15, 2019). Although they are often called "blue-green algae" and exhibit characteristics of algae, cyanobacteria are classified as bacteria.
[18] FWC, *Red Tide FAQ*, https://myfwc.com/research/redtide/faq/ (last visited Mar. 15, 2019).
[19] *Id.*
[20] *Id.*
[21] Mote Marine Laboratory, *Florida Red Tide FAQ's*, https://mote.org/news/florida-red-tide (last visited Mar. 15, 2019).
[22] *Id.*
[23] *Id.*
[24] FWC, *Red Tide FAQ*, https://myfwc.com/research/redtide/faq/ (last visited Mar. 15, 2019).
[25] NOAA, *Red Tide in Florida and Texas*, https://oceanservice.noaa.gov/news/redtide-florida/ (last visited Mar. 15, 2019).
[26] Office of Economic & Demographic Research, *Annual Assessment of Florida's Water Resources and Conservation Lands, 2019 Edition*, 154 (2019) *available at* http://edr.state.fl.us/Content/natural-resources/LandandWaterAnnualAssessment_2019Edition.pdf (available at Mar. 16, 2019).
[27] DEP, *Emergency Authorizations Implement Measures To Address South Florida Algal Blooms*, https://floridadep.gov/dear/algal-bloom/content/emergency-authorizations-implement-measures-address-south-florida-algal (last visited Mar. 15, 2019).

have a variety of economic consequences.[28] Harmful algal blooms can result in significant costs associated with public health, commercial fishery reduction, decreases in recreation and tourism, and management and monitoring.[29]

Fish and Wildlife Research Institute

The Fish and Wildlife Conservation Commission (FWC) derives its authority from the State Constitution and chapter 379 of the Florida Statutes.[30] FWC is authorized to exercise regulatory and executive powers of the state with respect to wild animal life, fresh water aquatic life, and marine life, and in these areas FWC's staff is authorized to conduct management, research, and enforcement.[31] The Fish and Wildlife Research Institute (Institute) is the principal unit for research services within FWC.[32]

Over half of the Institute's more than 600 staff work at its headquarters in St. Petersburg, Florida.[33] The groups comprising it have been generating quality science for over 50 years.[34] The Institute's annual operating budget of approximately $50 million supports around 300 research projects.[35] FWC is authorized to expend money through grants and contracts to fund research with the Institute.[36]

FWC assigns to the Institute all of the following responsibilities and functions:
- Serve as the primary source of research and technical information and expertise on the status of marine life, freshwater aquatic life, and wild animal life resources in this state.
- Monitor the status and health of marine life, freshwater aquatic life, and wild animal life species and their habitat.
- Develop restoration and management techniques for habitat and enhancement of plant and animal populations.
- Respond to and provide critical technical support for catastrophes including oil spills, ship groundings, major species die-offs, hazardous spills, and natural disasters.
- Identify and monitor harmful algal blooms including red tides, evaluate their impacts, and provide technical support concerning state and local public health concerns.
- Provide state and local governments with technical information and research results concerning fish and wild animal life.[37]

In 1999, the Legislature established a Harmful Algal Bloom Task Force for the purpose of determining research, monitoring, control, and mitigation strategies for red tide and other

[28] Office of Economic & Demographic Research, *Annual Assessment of Florida's Water Resources and Conservation Lands, 2019 Edition*, 156 (2019) *available at* http://edr.state.fl.us/Content/natural-resources/LandandWaterAnnualAssessment_2019Edition.pdf (available at Mar. 16, 2019).
[29] *Id.*
[30] FLA CONST. art. IV, s. 9; *see* chapter 379, F.S.; *see also* s. 20.331, F.S.
[31] FLA CONST. art. IV, s. 9.
[32] Section 20.331(4)(b), F.S.; FWC, *Fish and Wildlife Research Institute*, https://myfwc.com/about/inside-fwc/fwri/ (last visited Mar. 15, 2019).
[33] FWC, *Fish and Wildlife Research Institute*, https://myfwc.com/about/inside-fwc/fwri/ (last visited Mar. 15, 2019).
[34] *Id.*
[35] *Id.*
[36] Section 379.2202, F.S.; *see* s. 379.2201(1)(c), F.S.
[37] Section 20.331(7)(a), F.S.

harmful algal blooms in Florida waters.[38] The Institute appointed the members of the group.[39] The task force was required to develop priorities and strategies for mitigation and control of harmful algal blooms and to make recommendations to the Institute regarding harmful algal blooms.[40] The Legislature also required the Institute to implement a program designed to improve understanding and allow for early detection of harmful algal blooms, including red tide, to facilitate accurate predictions and successful efforts to control and mitigate the effects of harmful algal blooms.[41] The Harmful Algal Bloom Task Force is not currently active, but reconvening the task force has been suggested.[42]

The Institute provides many services and resources pertaining to red tide. It publishes detailed information every day on the status of red tide in the state.[43] The Institute's teams of experts conduct cutting-edge ecological research and analysis on the organisms in Florida's waters, advancing the collective understanding of red tide and its impacts on the state.[44] FWC scientists combine field sampling with tools maintained by state and federal partners to track red tide and its effects.[45] The Institute's Harmful Algal Bloom Monitoring Database contains detailed scientific information and continually recorded datasets on red tide from 1954 to the present.[46] Through its webpages on FWC's website, the Institute provides comprehensive information and resources to the public relating to red tide.[47] This includes resources for learning what causes red tide, tools for tracking red tide, and information for reporting on red tide and its effects.[48]

Mote Marine Laboratory

Mote Marine Laboratory is a Florida nonprofit organization that was founded in 1955.[49] Today, Mote Marine Laboratory includes a 10.5-acre campus and aquarium in Sarasota, Florida, with various facilities known as field stations in Key West, eastern Sarasota County, Summerland Key, and Charlotte Harbor.[50] It has over 200 employees, including more than 30 Ph.D. scientists, working in numerous research programs involving marine biology, marine ecology, environmental health, and technology.[51] Mote Marine Laboratory's mission statement is: "[t]he

[38] Section 379.2271(1), F.S.
[39] *Id.*
[40] Section 379.2271, F.S.
[41] Section 379.2272, (1)(a), F.S.
[42] *Letter from Governor Rick Scott to Chairman of the Florida Fish and Wildlife Conservation Bo Rivard*, 2 (Sept. 20, 2018), *available at* https://www.flgov.com/wp-content/uploads/2018/09/SGS-BIZHUB18092014370.pdf (last visited Mar. 15, 2019).
[43] FWC, *Red Tide Current Status*, https://myfwc.com/research/redtide/statewide/ (last visited Mar. 15, 2019).
[44] FWC, *Labs and People: About*, https://myfwc.com/research/redtide/labs-people/about/ (last visited Mar. 15, 2019).
[45] FWC, *Tools For Tracking Red Tides*, https://myfwc.com/research/redtide/tools/ (last visited Mar. 15, 2019).
[46] FWC, *HAB Monitoring Database*, https://myfwc.com/research/redtide/monitoring/database/ (last visited Mar. 15, 2019).
[47] FWC, *Research: Red Tide*, https://myfwc.com/research/redtide/ (last visited Mar. 15, 2019).
[48] FWC, *Red Tide-Related Hotlines and Information Sources*, https://myfwc.com/research/redtide/contact/ (last visited Mar. 15, 2019).
[49] Mote Marine Laboratory, *2020 Vision & Strategic Plan, Version 2.0*, 7, 11, 28 (2016) *available at* https://mote.org/about-us#2020 (last visited Mar. 15, 2019) (download the document by scrolling to the box where it appears and clicking the "Download" arrow in the top left corner). The laboratory was created by Dr. Eugenie Clark in 1955, and it was originally known as the Cape Haze Marine Laboratory, until it was later renamed Mote Marine Laboratory.
[50] Mote Marine Laboratory, *Mote Marine Laboratory and Aquarium*, https://mote.org/locations/details/mote-marine-laboratory-aquarium (last visited Mar. 15, 2019); Mote Marine Laboratory, *Mote Field Stations*, https://mote.org/locations (last visited Mar. 15, 2019).
[51] Mote Marine Laboratory, *Research Programs*, https://mote.org/research (last visited Mar. 15, 2019).

advancement of marine and environmental sciences through scientific research, education and public outreach, leading to new discoveries, revitalization and sustainability of our oceans and greater public understanding of our marine resources."[52]

The nonprofit organization is funded through federal, state, and local grants and through individual donors and foundations.[53] FWC is authorized to expend certain money through grants and contracts to fund research with Mote Marine Laboratory.[54] The proceeds of the annual use fee for the "Protect Our Reefs" license plates are distributed to Mote Marine Laboratory.[55]

Since early on in its development, Mote Marine Laboratory has been conducting research on red tide.[56] Its experts are conducting research on red tide with the goal of understanding how the blooms form, how they dissipate into the environment, and what effects it has on humans and marine animals.[57] Mote Marine Laboratory monitors red tide by taking samples, including with the use of technology such as detectors specially developed by the laboratory and autonomous underwater vehicles, providing continuous data that is communicated back to the laboratory for analysis.[58] The laboratory's Beach Conditions Report provides detailed information, updated twice daily by trained observers, on the conditions of 26 Florida beaches along the Gulf of Mexico.[59] Several of the laboratory's research programs cover areas of science related to red tide, such as the effects of toxins on aquatic organisms, the environmental health aspects of airborne toxins in coastal areas, and phytoplankton ecology.[60]

In 2018, the laboratory announced that its establishing the Red Tide Institute at Mote Marine Laboratory.[61] The Red Tide Institute will apply the knowledge gained on the ecological dynamics of red tide blooms to develop and test innovative, science-based technologies for attacking red tide blooms and reducing their impacts.[62] Also in 2018, the state invested over $2 million in the testing and development of innovative red tide mitigation technologies, including technologies being developed by Mote Marine Laboratory.[63]

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[52] Mote Marine Laboratory, *Annual Report 2017*, 1 (2018), *available at* https://mote.org/about-us#Annual (last visited Mar. 15, 2019).
[53] Mote Marine Laboratory, *Mote Marine Laboratory and Aquarium*, https://mote.org/locations/details/mote-marine-laboratory-aquarium (last visited Mar. 15, 2019).
[54] Section 379.2202, F.S.; Section 379.2201(1)(c), F.S. The section authorizes money from saltwater license and permit fees to be used for marine research and management; *see* s. 379.354, F.S.
[55] Section 320.08058(39), F.S.
[56] Kumar Mahadevan, Mote Marine Laboratory, *Exploring the Secrets of the Sea Since 1955*, 3 (Nov. 19, 2010) *available at* https://mote.org/media/uploads/files/MoteMarineLaboratory-history.pdf (last visited Mar. 15, 2019).
[57] Mote Marine Laboratory, *Red Tide Research*, https://mote.org/news/red-tide-research (last visited Mar. 15, 2019).
[58] *Id.*
[59] Mote Marine Laboratory, Sarasota Operations Coastal Oceans Observation Lab, *Beach Conditions Reporting System*, https://visitbeaches.org/# (last visited Mar. 15, 2019).
[60] Mote Marine Laboratory, *Red Tide Research*, https://mote.org/news/red-tide-research (last visited Mar. 15, 2019).
[61] Mote Marine Laboratory, *Mote Launches Red Tide Institute for Mitigation and Control, Thanks to Founding Donor* (Oct. 23, 2018), https://mote.org/news/article/mote-launches-red-tide-institute-for-mitigation-and-control-thanks-to-found (last visited Mar. 16, 2019).
[62] Mote Marine Laboratory, *Mote's Red Tide Institute Welcomes Renowned Scientific Director* (Nov. 13, 2018), https://mote.org/news/article/motes-red-tide-institute-welcomes-renowned-scientific-director (last visited Mar. 16, 2019).
[63] Mote Marine Laboratory, *Scientists, Resource Managers Share Major Updates on Tackling Florida Red Tide* (Sept. 26, 2018), https://mote.org/news/article/scientists-resource-managers-share-major-updates-on-tackling-florida-red-ti (last visited Mar. 17, 2019).

Mote Marine Laboratory and the Institute have been collaborating in the area of harmful algal blooms for years. Previously, both institutions participated in the five year, federally-funded "Ecology and Oceanography of Harmful Algal Blooms" program.[64] This collaborative research led to new scientific understanding of how coastal pollution and nutrients affect red tide.[65] Today, Mote Marine Laboratory and the Institute work together continuously to monitor waters around southwestern Florida for the organisms that cause red tide, often in collaboration with county government partners.[66] The sampling done through this collaboration is combined with satellite imagery and modeling of water currents in the Gulf of Mexico to develop the constant updates that the Institute provides to the public.[67]

The laboratory's website describes the "Mote-FWRI Cooperative Red Tide Program."[68] The goals of the program include the following:

- Protecting public health, the economy and living natural resources through increased education and outreach.
- Mitigating the effects of red tide by monitoring and tracking *Karenia brevis*.
- Supporting bloom modeling and forecast efforts by providing information on the environmental factors that influence *K. brevis*.
- Investigating toxin persistence in recreationally harvested shellfish.[69]

III. Effect of Proposed Changes:

Section 1 creates s. 379.2273, F.S., which establishes the Florida Red Tide Mitigation and Technology Development Initiative (Initiative) and Initiative Technology Advisory Council. The section expires on June 30, 2025.

The bill states that it is the intent of the Legislature to establish an independent and coordinated effort among public and private research entities to develop prevention, control, and mitigation technologies and approaches to address the impacts of red tide on coastal environmental and communities in the state.

The bill establishes the Initiative as a partnership between the Fish and Wildlife Conservation Commission's Fish and Wildlife Research Institute and Mote Marine Laboratory. The purpose of the Initiative is to lead the development of innovative technologies and approaches that are critically needed to address the control and mitigation of red tide and its impacts by building upon the ongoing cooperative red tide research and monitoring program between the Fish and Wildlife Research Institute and Mote Marine Laboratory. The goal of the Initiative is to develop,

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[64] FWC, *ECOHAB: Florida*, https://myfwc.com/research/redtide/research/scientific-products/ecohab-florida/ (last visited Mar. 15, 2019); *see* s. 379.2272(1)(c); *see also* NOAA, *Harmful Algal Bloom and Hypoxia Research and Control Act*, https://coastalscience.noaa.gov/research/stressor-impacts-mitigation/habhrca/ (last visited Mar. 15, 2019). Federal legislation exists for harmful algal blooms and programs that address them.
[65] Mote Marine Laboratory, *News & Press: Nutrients that Feed Red Tide "Under the Microscope" in Major Study*, https://mote.org/news/article/nutrients-that-feed-red-tide-under-the-microscope-in-major-study (last visited Mar. 15, 2019).
[66] Mote Marine Laboratory and Aquarium, *Red Tide Research*, https://mote.org/news/red-tide-research (last visited Mar. 15, 2019).
[67] Mote Marine Laboratory, *Mote-FWRI Cooperative Red Tide Program*, https://mote.org/pages/mote-fwri-cooperative-red-tide-program (last visited Mar. 15, 2019).
[68] *Id.*
[69] *Id.*

test, and implement innovative, effective, and environmentally sustainable technologies and approaches for controlling and mitigating the impacts of red tide.

The bill states that funds which the Legislature specifically appropriates for the Initiative's red tide mitigation technology development projects must be awarded by the Fish and Wildlife Research Institute to Mote Marine Laboratory. The bill authorizes Mote Marine Laboratory, with the agreement of the Fish and Wildlife Research Institute, to use a portion of the awarded funds to facilitate additional engagement with other pertinent marine science and technology development organizations in Florida and around the world to pursue applied research and technology for the control and mitigation of the impacts of red tide. The bill prohibits Mote Marine Laboratory from using more than 5 percent of its awarded funds for direct annual initiative administration coordination costs. The bill requires the Initiative to leverage state-appropriated funds with additional funds from private and federal sources.

Beginning on January 15, 2021, and each January thereafter until January 15, 2025, the bill requires the Initiative to submit a report containing an overview of the Initiative's accomplishments up until that date and its priorities for subsequent years. The reports must be submitted to the Governor, the President of the Senate, the Speaker of the House of Representatives, the Secretary of Environmental Protection, and the executive director of the Fish and Wildlife Conservation Commission.

The bill establishes within the Initiative the Initiative Technology Advisory Council (Council). The bill states that the Council will be an advisory council as defined in s. 20.03(7), F.S., which defines "advisory council" as "an advisory body created by specific statutory enactment and appointed to function on a continuing basis for the study of the problems arising in a specified functional or program area of state government and to provide recommendations and policy alternatives."[70] The Council will include marine science, technology development, and natural resource management representatives from governmental entities, private organizations, and public or private research institutions. The bill requires the Council to meet at least twice per year. The bill requires that the Council be chaired by the president and chief executive officer of Mote Marine Laboratory, and consist of the following:

- One member from a private commercial enterprise, appointed by the Governor.
- One member from a public or private university in Florida, appointed by the President of the Senate.
- One member from a non-university public or private marine environmental organization, appointed by the Speaker of the House of Representatives.
- One member from the Department of Environmental Protection who has expertise in red tide, appointed by the Secretary of Environmental Protection.
- One member from the Fish and Wildlife Research Institute who has expertise in red tide, appointed by the executive director of the Fish and Wildlife Research Institute.

The bill requires that the members of the Council serve staggered 2-year terms, and authorizes reappointment. The bill requires that the members of the Council serve without compensation. The bill requires each organization represented by a member on the Council to cover all of the expenses of its respective representatives.

[70] Section 20.03(7), F.S.

Section 2 provides for an appropriation. The bill appropriates $3 million annually, beginning in Fiscal Year 2019-2020 and continuing for each fiscal year thereafter until Fiscal Year 2024-2025, from the General Revenue Fund to the Fish and Wildlife Conservation Commission for the purpose of implementing s. 379.2273, F.S.

Section 3 states that the act shall take effect on July 1, 2019.

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.

E. Other Constitutional Issues:

None.

V. Fiscal Impact Statement:

A. Tax/Fee Issues:

None.

B. Private Sector Impact:

Red tide negatively impacts Florida's economy, by harming industries such as commercial fisheries, recreation, and tourism. If the Initiative and the Council create technologies or approaches that prevent or mitigate Red Tide and its impacts, this could prevent harm to such industries. Therefore, this bill may have an indeterminate, positive fiscal impact on the private sector.

C. Government Sector Impact:

The bill requires an annual appropriation of $3 million for each year from the 2019-2020 fiscal year to the 2024-2025 fiscal year. Therefore, the bill may have an indeterminate, negative fiscal impact on the government sector in the short-term. However, the state of

Florida may incur significant costs in dealing with red tide and its impacts in the future. If the appropriated funds are used by the Initiative to prevent or mitigate red tide then this may avoid related costs in the future. Therefore, the bill may have an indeterminate, positive fiscal impact on the government sector in the long-term.

VI. Technical Deficiencies:

None.

VII. Related Issues:

None.

VIII. Statutes Affected:

This bill creates section 379.2273 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.

By Senator Gruters

23-00549B-19 20191552__

A bill to be entitled

An act relating to the Florida Red Tide Mitigation and Technology Development Initiative; creating s. 379.2273, F.S.; providing legislative intent; establishing the Florida Red Tide Mitigation and Technology Development Initiative; providing the purpose and goal of the initiative; providing for funding; requiring the initiative to submit an annual report by a specified date to the Governor, the Legislature, the Secretary of Environmental Protection, and the executive director of the Fish and Wildlife Conservation Commission; establishing the Initiative Technology Advisory Council; providing for the meetings, membership, terms of office, and compensation of the council; providing for expiration of the initiative; providing appropriations; providing an effective date.

Be It Enacted by the Legislature of the State of Florida:

Section 1. Section 379.2273, Florida Statutes, is created to read:

379.2273 Florida Red Tide Mitigation and Technology Development Initiative; Initiative Technology Advisory Council.—

(1) It is the intent of the Legislature to establish an independent and coordinated effort among public and private research entities to develop prevention, control, and mitigation technologies and approaches to address the impacts of red tide on coastal environments and communities in this state.

(2) The Florida Red Tide Mitigation and Technology Development Initiative is established as a partnership between the Fish and Wildlife Research Institute within the commission and Mote Marine Laboratory.

(a) The purpose of the initiative is to lead the development of innovative technologies and approaches that are critically needed to address the control and mitigation of red tide and its impacts by building upon the ongoing cooperative red tide research and monitoring program between the Fish and Wildlife Research Institute and Mote Marine Laboratory.

(b) The goal of the initiative is to develop, test, and implement innovative, effective, and environmentally sustainable technologies and approaches for controlling and mitigating the impacts of red tide.

(c) Funds specifically appropriated by the Legislature for red tide mitigation technology development projects shall be awarded by the Fish and Wildlife Research Institute to Mote Marine Laboratory to achieve the goals of the initiative.

1. Mote Marine Laboratory may, with the concurrence of the Fish and Wildlife Research Institute, use a portion of the awarded funds to facilitate additional engagement with other pertinent marine science and technology development organizations in this state and around the world to pursue applied research and technology for the control and mitigation of the impacts of red tide.

2. Mote Marine Laboratory may not use more than 5 percent of its awarded funds for direct annual initiative administration coordination costs.

3. The initiative shall leverage state-appropriated funds

with additional funds from private and federal sources.

(d) Beginning January 15, 2021, and each January 15 thereafter until its expiration, the initiative shall submit a report that contains an overview of its accomplishments to date and priorities for subsequent years to the Governor, the President of the Senate, the Speaker of the House of Representatives, the Secretary of Environmental Protection, and the executive director of the Fish and Wildlife Conservation Commission.

(3) There is established within the initiative the Initiative Technology Advisory Council, an advisory council as defined in s. 20.03(7), that includes marine science, technology development, and natural resource management representatives from governmental entities, private organizations, and public or private research institutions. The council shall meet at least twice annually.

(a) The council shall be chaired by the president and chief executive officer of Mote Marine Laboratory and shall consist of the following:

1. One member from a private commercial enterprise, appointed by the Governor.

2. One member from a public or private university in this state, appointed by the President of the Senate.

3. One member from a nonuniversity public or private marine environmental organization, appointed by the Speaker of the House of Representatives.

4. One member from the Department of Environmental Protection who has expertise in red tide, appointed by the Secretary of Environmental Protection.

5. One member from the Fish and Wildlife Research Institute who has expertise in red tide, appointed by the executive director of the Fish and Wildlife Research Institute.

(b) Council members shall serve staggered 2-year terms and may be reappointed.

(c) Council members shall serve without compensation, and each organization represented shall cover all expenses of its respective representative.

(4) This section expires June 30, 2025.

Section 2. Beginning in the 2019-2020 fiscal year, and for each fiscal year thereafter through the 2024-2025 fiscal year, there is appropriated the sum of $3 million from the General Revenue Fund to the Fish and Wildlife Conservation Commission for the purpose of implementing s. 379.2273, Florida Statutes.

Section 3. This act shall take effect July 1, 2019.

Contribution of Wastewater Treatment Plant Effluents to Nutrient Dynamics in Aquatic Systems: A Review

Article *in* Environmental Management · June 2009

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PROFILE

Contribution of Wastewater Treatment Plant Effluents to Nutrient Dynamics in Aquatic Systems: A Review

Richard O. Carey · Kati W. Migliaccio

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Abstract Excessive nutrient loading (considering nitrogen and phosphorus) is a major ongoing threat to water quality and here we review the impact of nutrient discharges from wastewater treatment plants (WWTPs) to United States (U.S.) freshwater systems. While urban and agricultural land uses are significant nonpoint nutrient contributors, effluent from point sources such as WWTPs can overwhelm receiving waters, effectively dominating hydrological characteristics and regulating instream nutrient processes. Population growth, increased wastewater volumes, and sustainability of critical water resources have all been key factors influencing the extent of wastewater treatment. Reducing nutrient concentrations in wastewater is an important aspect of water quality management because excessive nutrient concentrations often prevent water bodies from meeting designated uses. WWTPs employ numerous physical, chemical, and biological methods to improve effluent water quality but nutrient removal requires advanced treatment and infrastructure that may be economically prohibitive. Therefore, effluent nutrient concentrations vary depending on the particular processes used to treat influent wastewater. Increasingly stringent regulations regarding nutrient concentrations in discharged effluent, along with greater freshwater demand in populous areas, have led to the development of extensive water recycling programs within many U.S. regions. Reuse programs provide an opportunity to reduce or eliminate direct nutrient discharges to receiving waters while allowing for the beneficial use of reclaimed water. However, nutrients in reclaimed water can still be a concern for reuse applications, such as agricultural and landscape irrigation.

Keywords Nutrients · Wastewater treatment plant · Effluent · Water reuse · Reclaimed water

R. O. Carey
School of Natural Resources and Environment,
Tropical Research and Education Center, University of Florida,
18905 SW 280th Street, Homestead, FL 33031-3314, USA

K. W. Migliaccio (✉)
Agricultural and Biological Engineering, Tropical Research and Education Center, University of Florida, 18905 SW 280th Street, Homestead, FL 33031-3314, USA
e-mail: klwhite@ifas.ufl.edu; klwhite@ufl.edu

Introduction

Populated areas ranging from small, rural communities to large, urban complexes all require adequate access to freshwater resources, but as populations increase and anthropogenic influences expand, meeting freshwater demands will require a balance between wastewater disposal and water resource protection (Tarr and others 1984; Burian and others 2000). Adequate water resource protection is critical as freshwater systems provide multiple environmental services such as supporting numerous species, supplying water for drinking and irrigation, and assimilating wastes through abiotic/biotic cycling (Naiman and Turner 2000; Jackson and others 2001). Linkages between terrestrial and aquatic systems (Meyer and others 1988; Likens and Bormann 1995) lead to critical changes in freshwater systems that result from population growth and land use modifications. Estimates indicate that 60% of the world will reside in urban areas by 2030 (UN Population Division 2008), with the combined effect of increasing populations and greater water demand (e.g., Postel and others 1996) creating larger volumes of wastewater in

concentrated areas (Fig. 1). Sustainability of critical water resources, particularly in urban centers, will therefore depend upon effective wastewater management.

Wastewater treatment plants (WWTPs) are common worldwide and a necessary step to improve the quality of wastewater before it is discharged to surface or groundwater and re-enters water supplies. Over the last 50 years, many countries have attempted to reduce the volume of untreated wastewater discharges to rivers and streams by carefully monitoring and constantly improving municipal and industrial WWTPs (Tchobanoglous and others 2003). WWTPs are a desired alternative to unregulated discharges but WWTPs do not discharge water of the same quality as that of the receiving water body and also impose physical changes to the receiving system. Effluent discharges have the potential to significantly alter many different aspects of aquatic systems including nutrient uptake efficiency (Haggard and others 2001; Marti and others 2004), organic carbon content (McConnell 1980), bacterial levels (Petersen and others 2005), and hydrologic characteristics (Dennehy and others 1998).

One characteristic of WWTP effluent that often impacts receiving waters is its nutrient content. Although one may assume that WWTPs are regulated (i.e., requiring a discharge permit) and therefore not contributing significantly to pollutant loads, this is not necessarily true for nutrients (Hager and Schemel 1992; Andersen and others 2004; Gibson and Meyer 2007). Many aquatic systems have very low ambient nutrient concentrations and small shifts in the nutrient load can result in dramatic changes in community structure (Miltner and Rankin 1998; Dodds and Welch 2000; Rabalais 2002). Thus, many of the water quality concerns for aquatic systems in the U.S. are directly related to nutrient loading. Researchers investigating nutrient pollution from nonpoint sources have discovered that nutrient loads were often more strongly influenced by WWTP effluent than by nonpoint sources (Ahearn and others 2005; Popova and others 2006; Migliaccio and others 2007). WWTP effluent may become an even more dominant contributor to nutrient inputs into aquatic systems as best management practices (BMPs) are being developed and implemented to abate nonpoint source pollution (Lynch and Corbett 1990; Park and others 1994; Ice 2004).

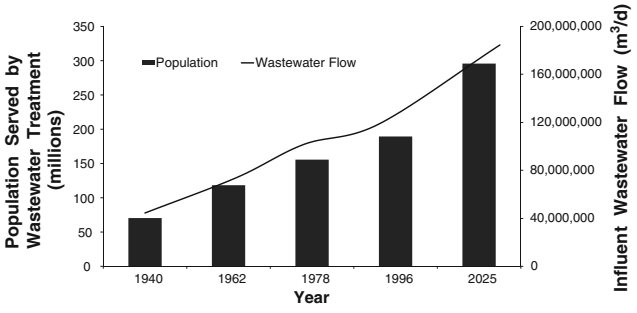

Fig. 1 Historical and projected influent wastewater flow from U.S. population provided with wastewater treatment. Adapted from USEPA (2000a) and USEPA (2004a)

Hence, our goal in this review is focused on WWTP nutrient discharges and their implications for freshwater systems in the U.S. The review includes a discussion of nutrient inputs and their influence on aquatic systems; WWTP treatment processes and nutrient removal; and WWTP effluent discharge impacts in U.S. waterways. We conclude with a summary of U.S. legislation that has been established to lessen the total environmental impact of WWTPs and a discussion of future opportunities and challenges related to water reuse initiatives.

Nutrient Inputs to Aquatic Systems

Early research on nutrient enrichment assumed that rivers and streams were immune to excessive nutrient inputs (e.g., Hynes 1969). This argument derived from the belief that nutrient enrichment effects on algal and aquatic plant growth were restricted by other physical, chemical, and biotic factors. Rivers and streams were thought to be already nutrient saturated because ambient light conditions and reduced hydraulic residence times would tend to limit potential responses to nutrient enrichment (Smith and others 1999). Although the response of primary and secondary consumers to nutrient enrichment—especially in complex temperate warm water streams—can be indirect and unpredictable (Miltner and Rankin 1998), scientific evidence from numerous studies suggest that flowing waters are indeed affected by excess nutrients (Hecky and Kilham 1988; Matlock and others 1998; Carey and others 2007; Ohte and others 2007).

Sustained inputs of phosphorus and/or nitrogen to aquatic environments lead to increased rates of eutrophication, a widespread problem throughout the world affecting the quality of domestic, industrial, agricultural and recreational water resources. Issues associated with eutrophication include increased algal biomass, decreased water transparency, low dissolved oxygen (DO) levels, increased fish mortality and more frequent incidences of toxic phytoplankton (Burkholder and others 1992; Carpenter and others 1998; Smith 1998). Eutrophication is a complex system response and requires understanding of the biology and chemistry of an aquatic system.

The potential eutrophic influence a nutrient will have on an aquatic system is related to its bioavailability. Biologically available forms of nitrogen are nitrate (NO_3–N) and ammonia (NH_3–N) but organic nitrogen (organic–N) can

also be made available through conversion to NH_3–N. Total inorganic nitrogen (NO_3–N + NO_2–N + NH_4–N + NH_3–N) concentrations below 100 μg/L may limit autotrophic production but streams with values above 400 μg/L are unlikely to be nitrogen limited (Horne and Goldman 1994). In rivers receiving nutrient inputs from wastewater, NH_3–N can directly affect DO concentrations as NH_3–N accounted for 60% of the total variation in oxygen demand within the lower San Joaquin River, California (Lehman and others 2004). Passell and others (2007) discussed another aspect of nitrogen loading; wastewater discharges to receiving waters characterized by alkaline pH values could exacerbate NH_3–N toxicity and threaten the viability of various fish species. In addition to discharges from WWTPs (organic–N; NH_3–N + NH_4–N), eroding sediments (NH_4–N), organic matter (organic–N and NH_4–N) and surface runoff (NO_3–N; NH_3–N; organic–N) provide the bulk of nitrogen entering freshwaters (Follett 2001). Atmospheric deposition can also be a significant non-point source of both inorganic and organic nitrogen in surface waters, accounting for up to 40% of nitrogen loading (Paerl and others 2002). Typically, in developed U.S. watersheds, organic nitrogen constitutes about 50% of total nitrogen (Sauer and others 2001).

For phosphorus, soluble orthophosphate (PO_4-P) is the only form that can be assimilated directly by autotrophs (Correll 1998) but phosphorus is lost from soils in both particulate—which is more dominant—and dissolved forms (Bennett and others 2001). To support algal growth, some forms of particulate phosphorus are converted through mineralization reactions and desorption to PO_4-P. Agricultural runoff can contain up to 30% of biologically available particulate phosphorus (DePinto and others 1981; Dorich and others 1985; Uusitalo and others 2000) and saturation levels of phosphorus for algal growth have been reported at concentrations between 3–25 μg/L (Horner and others 1983; Bothwell 1985; Rosemond and others 2002).

The eutrophic impact of nutrients on aquatic systems has also been evaluated from the aspect of ecological function. This was identified by Karr and Dudley (1981) as the "biotic integrity" of a system and defined as "the extent to which a community has a species composition, diversity and functional organization comparable to that expected for the natural habitat of a region." Miltner and Rankin (1998) used this index and found nutrient enrichment—especially increased phosphorus concentrations—to be negatively correlated to biotic integrity.

The link between nutrients and increased eutrophication has been well assessed using chemical as well as biological indicators. To mitigate nutrient related eutrophication, sources of nutrient loading must be identified. One source of nutrients that is inherent in urban areas and often discharged directly into water bodies is WWTP effluent.

Wastewater Treatment Plants (WWTPs)

Treatment Stages

WWTPs are essential to all populated areas and their placement and construction depend on a complex set of factors including financial considerations, incoming wastewater sources, wastewater quantity, and specific management objectives with regard to effluent discharge concentrations (Hanke and Wentworth 1981; McConnell and Schwarz 1992; Tchobanoglous and others 2003). WWTPs utilize different methods to meet or exceed regulatory standards concerning effluent discharges as various biological, physical, and chemical processes are available to maximize efficiency. Regardless of the methods used at any particular WWTP, all treatment processes generally fall into three main categories: (1) primary, (2) secondary, and (3) advanced tertiary treatment. The level of technology utilized within each treatment category influences both the initial capital investment necessary to construct or improve wastewater treatment facilities as well as operation and management costs. Muga and Mihelcic (2008) surveyed secondary treatment processes throughout the U.S. and for WWTPs with capacities up to 3800 m^3/day, construction costs ranged from \$260/m^3/day to \$2770/m^3/day. Estimated costs for additional tertiary treatment—not including expenses for primary or secondary treatment—at a WWTP in Louisiana with a capacity of 3800 m^3/day were \$502/m^3/day for construction and \$120,116 for annual operation and maintenance (Ko and others 2004). Tchobanoglous and others (2003) provide an excellent overview of wastewater treatment and only main processes will be summarized here.

Primary treatment removes large objects from incoming wastewater through floatation, settling, and screening mechanisms. Smaller inorganic solids such as sand are removed through grit chambers and sedimentation basins, or primary clarifiers, remove both inorganic and organic suspended solids. Solids that are collected and removed in sedimentation basins are called sludge and are transported to anaerobic digesters for further processing.

Secondary treatment targets additional organic matter present in wastewater after the primary treatment stage and can include the removal of dissolved nutrients. One method used in secondary treatment utilizes trickling filters, consisting of bacteria-coated stones that digest organic pollutants present in the effluent. Activated sludge, containing significant amounts of bacteria, is also used at the secondary treatment stage to remove organic materials. Exposing primary treatment effluent to the atmosphere enhances the consumption of organic pollutants by bacteria present in the sludge. Secondary clarifiers allow solids and/or activated sludge to settle and be removed from the effluent.

Suspended and dissolved material may still remain in the effluent after typical secondary treatment and advanced tertiary treatment may be required to meet regulatory requirements protecting receiving waters. Nutrients and metals may be targeted during advanced treatment and several chemical and biological nutrient removal (BNR) technologies are available to lower effluent concentrations before discharge (Yeoman and others 1988; Morse and others 1998; Pagilla and others 2006). BNR emerged approximately thirty years ago and because of inherent advantages over traditional chemical methods, it has generally become an integral part of conventional wastewater treatment. Tchobanoglous and others (2003) contrast BNR with chemical treatment and note that BNR technologies, which use microorganisms under aerobic or anaerobic conditions to remove nutrients via suspended and/or attached growth processes, actually consume less energy, produce less waste, and require less chemical input.

Due to public health concerns associated with wastewater (Ongerth and Ongerth 1982), WWTPs use chlorine or ultraviolet (UV) radiation as a final step before discharge to reduce pathogenic microbes that may still be present in the effluent. Nationwide concern about the protection of water resources for reasons that extend beyond public health—such as aesthetics and aquatic health—have led to significant efforts to improve and expand wastewater treatment in the U.S. Between 1972 and 2004, the U.S. population served by WWTPs providing advanced wastewater treatment increased from 7.8 to 108.5 million people; WWTPs that incorporate at least secondary treatment options now serve more than 70% of the U.S.—approximately 220 million people (USEPA 2004a) (Fig. 2).

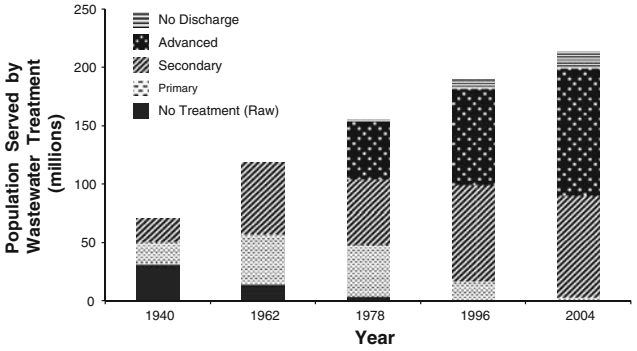

Fig. 2 Relative proportion and extent of processes for U.S. population provided with wastewater treatment. Adapted from USEPA (2000a) and USEPA (2004a)

Nutrient Removal from WWTP Effluent Discharge

WWTPs can have significant impacts on receiving waters despite the extensive treatment of wastewater prior to discharge. The need for greater nutrient removal efficiency at WWTPs is evident (Eggers and others 1991; Zhou and Smith 2002; Pagilla and others 2006) as increased eutrophication due to nutrient inputs is a leading cause of aquatic impairment (Correll 1998; Magnien and others 1992; Rabalais 2002; Walsh and others 2005). Nutrient removal poses a special challenge for WWTPs because of the additional costs associated with complex treatment technology required to produce effluent containing low nutrient concentrations (Ko and others 2004; Olivieri and others 2005; Muga and Mihelcic 2008). Nutrient removal rates at WWTPs (Table 1) vary depending on several factors, including (1) treatment technologies used; (2) influent wastewater; (3) mechanical and operational failures; and (4) technical design limitations of facilities (Asano and others 2007). Although wastewater flows may reflect seasonal trends (Olivieri and others 2005), per capita constituent loadings in wastewater can remain consistent as flowrates fluctuate (Tchobanoglous and others 2003).

Nitrogen Removal

Nitrogen can be removed from influent wastewater through the biochemical processes of nitrification (oxidation of NH_4–N and organic-nitrogen to NO_3–N within an aerobic

Table 1 Typical nutrient concentration ranges in untreated wastewater and achievable in treated effluent considering secondary and advanced tertiary processes[a]

Constituent (mg/L)	Untreated wastewater	Conventional activated sludge[b]	Activated sludge with BNR[c]	Activated sludge with BNR, microfiltration, and Reverse osmosis[d]
Total Nitrogen	20–70	15–35	3–8	≤1
NH_3–N	12–45	1–10	1–3	≤0.1
NO_3–N	0–trace	10–30	2–8	≤1
Total Phosphorus	4–12	4–10	1–2	≤0.5

[a] Adapted from Tchobanoglous and others (2003) and Asano and others (2007)

[b] Secondary treatment: activated sludge including a nitrification step

[c] Tertiary treatment: activated sludge and biological nutrient removal of nitrogen and phosphorus

[d] Tertiary treatment: activated sludge and biological nutrient removal combined with advanced treatment

zone) and denitrification (reduction of NO_3–N to gaseous nitrogen in an anoxic environment). These reactions can take place using suspended or attached growth processes to achieve sufficient nitrogen removal. Nitrogen removal can be integrated with the removal of other target constituents, such as the removal of materials increasing the biological oxygen demand (BOD) of wastewater. Heterotrophic bacteria are used for BOD removal but operational adjustments can be made to accommodate autotrophic bacteria required for the first step of nitrogen removal, nitrification. *Nitrosomonas* and *Nitrobacter* are used extensively for nitrification during wastewater treatment, although other bacteria have been identified for this purpose (Painter 1970; Teske and others 1994; Tchobanoglous and others 2003). Denitrification processes complete biological nitrogen removal and Payne (1981) and Gayle and others (1989) identify a broad range of denitrifying autotrophic and heterotrophic bacteria available for use at WWTPs.

Phosphorus Removal

Yeoman and others (1988), Bowker and Stensel (1990), and Morse and others (1998) provide extensive reviews of several chemical and biological processes that have been used to reduce phosphorus concentrations during wastewater treatment. Chemical precipitation of phosphorus is a common method used to effectively reduce effluent concentrations released to surface waters. The fundamental concept of chemical precipitation is that certain salts, when added to wastewater, produce insoluble phosphates that can be separated from discharged effluent through sedimentation processes. Common salt precipitants include aluminum, iron (Fe^{3+} and Fe^{2+}) and calcium (lime). Aluminum sulphate and iron (III) chloride are compounds widely used during primary and secondary wastewater treatment as the sludge produced contains chemically-bound phosphorus.

Biological phosphorus removal (BPR) from wastewater utilizes activated sludge with specific microorganisms, categorized as phosphorus accumulating bacteria, which can assimilate excess phosphorous as polyphosphates (Wentzel and others 1991). BPR methods at WWTPs began to gain focus when Srinath (1959) discovered phosphorus uptake by activated sludge that far exceeded levels necessary for biomass accrual. Barnard (1974) expanded on the concept of BPR by suggesting the required use of activated sludge in anaerobic and then aerobic zones to effectively achieve phosphorus removal. Yeoman and others (1988) describe several additional operational procedures at WWTPs required to maximize BPR such as adequate anaerobic retention times (Wells 1969; Fuhs and Chen 1975; Gerber and Winter 1985), optimal pH and DO levels in the aerobic zone (Levin and Shapiro 1965; Milbury and others 1971), and temperature considerations (Boughton and others 1971; Fuhs and Chen 1975). Anaerobic contact time is a key component of BPR (Wells 1969) as secondary phosphorus release can occur if contact times are too long (Barnard 1984; Stephens and Stensel 1998). Microorganisms that are crucial to BPR have optimal pH, DO, and temperature ranges and therefore WWTP operators must ensure that these conditions are satisfied to maximize BPR.

Impacts of Wastewater Effluent

Discharge Volume

Effluent discharges from WWTPs can influence both water quality and overall hydrologic characteristics of receiving waters. The South Platte River Basin (62,937 km^2) in northeastern Colorado, for example, contains over 100 municipal WWTPs with effluent discharges at each facility ranging from 38 to 568 m^3/day (Pocernich and Litke 1997). Wastewater effluent to the South Platte River accounts for 69% of the total annual discharge and at times, constitutes the entire discharge (Dennehy and others 1998). In naturally intermittent streams, seasonal or event-driven surface water inputs dominate flows but in areas downstream of WWTPs, these streams are transformed as they become primarily effluent-dominated. Andersen and others (2004) examined the impact of effluent discharges in the Bush River, South Carolina, during extremely low-flow drought years (1998–2002) and found flows downstream of two WWTPs characterized by at least 70% effluent by volume. Ekka and others (2006) conducted a study on Ozark headwater streams and reported mean discharge rates up to 57 times greater downstream from WWTPs, which translated to effluent discharges responsible for 90% of streamflow. In an urbanized watershed within Texas containing two municipal plants and a smaller community plant, up to 75,000 m^3/day of effluent was discharged to a third order stream and this accounted for 70 to 100% of seasonally-independent base flow stream discharge (Murdock and others 2004).

Discharge volume is important because WWTP effluent can dominate streamflow while providing a relatively constant source of nutrients. In addition, effluent containing low nutrient concentrations can still deliver large nutrient loads because of the total volume released from WWTPs. Depending on the relative proportion of effluent in downstream flow, WWTPs can effectively control water chemistry and nutrient dynamics (Dyer and Wang 2002; Ekka and others 2006; Lewis and others 2007). The effect of WWTP discharges consequently has the potential to be more pronounced during low-flow or drought periods (e.g., Andersen and others 2004; Passell and others 2005) when effluent

constitutes the majority of base flow (Popova and others 2006). To lessen the potential environmental impact of effluent discharges, local hydrological conditions should be a critical factor influencing management decisions at WWTPs, especially regarding nutrient impacts downstream.

Nutrient Impacts

Rivers and streams draining populated areas typically have elevated levels of many solutes, including nitrogen and phosphorus (Marti and others 2004; Lewis and others 2007). Nonpoint sources of nutrients dominate streams within agricultural areas (NRC 1992; Carpenter and others 1998) but in urban areas, point sources of pollution, such as municipal and industrial WWTPs, contribute significant nutrient loads to receiving waters (Haggard and others 2005; Ekka and others 2006; Migliaccio and others 2007). Point sources generally account for >50% of nutrient inputs to rivers and streams draining urban areas in the U.S. (Carpenter and others 1998) and the overwhelming influence of WWTPs may interfere with statistical assessment of water quality data (Ahearn and others 2005; Lewis and others 2007). In studies evaluating relationships between land use and water quality, large effluent loads can be a confounding factor for other land uses. For example, WWTP impacts in Ohio streams were unrelated to watershed urban density and this obscured the effect of urbanization on stream biotic integrity (Miltner and others 2004).

The chemical composition of WWTP effluents often differ from ambient conditions in receiving waters and both nutrient concentrations and nutrient ratios can be significantly altered in rivers and streams exposed to effluent discharges. Water samples collected in tributary and head water areas from Bush River in South Carolina revealed average NO_3–N and SRP concentrations of 1.6 mg/L and 0.3 mg/L respectively while downstream of two different WWTPs in the watershed, NO_3–N (72 mg/L and 29 mg/L) and SRP (2.9 mg/L and 4.4 mg/L) concentrations increased significantly (Andersen and others 2004). Other studies have reported similar trends comparing upstream and downstream water quality (Ekka and others 2006; Popova and others 2006; Migliaccio and others 2007). Although nutrient concentrations are greater in the immediate vicinity of WWTPs, they decline with increasing distance from effluent discharges, albeit incrementally (e.g., Murdock and others 2004). Elevated effluent nutrient concentrations that far exceed algal and aquatic plant growth requirements may persist downstream—even with instream mixing, dilution and denitrification—because concentrations can still be well above background levels.

Nutrient impact on aquatic systems can also be evaluated in terms of nutrient uptake length, which is the average distance nutrient molecules travel downstream before being transformed and immobilized through biotic or abiotic processes (Newbold and others 1981). This systematic response can be very important in controlling downstream nutrient concentrations (Peterson and others 2001). Haggard and others (2005) explored nutrient retention in a third order Arkansas stream receiving WWTP effluent and reported soluble reactive phosphorus (SRP) concentrations (9.9 mg/L) that were up to 50 times greater downstream of the plant; SRP concentrations declined with increasing distance from the WWTP but the furthest downstream site (2.7 km) had concentrations (>6 mg/L) that were still 30 times greater than an upstream reference site (0.06–0.17 mg/L). In the same study, stream SRP concentrations remained above saturation levels for algal growth 9 km downstream (Haggard and others 2005). Nutrient retention efficiency is consequently depressed in receiving waters exposed to effluent discharges and the distance required to retain >63% of WWTP nutrients can extend 30 km downstream (Haggard and others 2001; Marti and others 2004). Discharge fluctuations influence nutrient uptake lengths as nutrient exports increase under high flow conditions (Meyer and Likens 1979) and in urban rivers receiving WWTP effluent, nutrient impacts can have significant impacts at even further distances because small streams have greater nutrient retention efficiency than large rivers (Allan 1995). Gibson and Meyer (2007) measured net nutrient uptake in two reaches of the Chattahoochee River (downstream of Atlanta, Georgia) that received 725,000 m^3/day of effluent discharges from nine upstream municipal WWTPs and SRP uptake lengths were between 11 and 85 km.

Nutrients in WWTP effluents are therefore stored in receiving waters at distances that extend beyond local discharge areas. It has been well documented that benthic and suspended sediments can bind and release biologically available phosphorus into the water column through equilibrium reactions (Wetzel 2001; Ekka and others 2006). Sediments can therefore supplement declining nutrient concentrations by mobilizing phosphorus reservoirs (Gibson and Meyer 2007). This characteristic of nutrients in natural aquatic systems should be considered when evaluating any management strategy to reduce nutrient concentrations.

As a result of the nutrient buffering capacity of sediments, legislative initiatives to control nutrient inputs may not produce the desired effect of improving water quality initially. Considering nutrient release from sediments is therefore a critical component of water quality management strategies as chemical, physical, and hydrological characteristics of receiving waters determine the possible extent of nutrient-sediment interactions. Sediments with high aluminum content enhance phosphorus sorption, large sediment particle sizes decrease sorption, and silty sediments have a greater phosphorus buffering capacity than

sandy sediments (Meyer 1979). Furthermore, receiving waters with both sluggish flow and silty sediments retain phosphorus-rich particulates and have a significant capacity to adsorb SRP from the water column (Mainstone and Parr 2002). Organic matter content is another factor because organic anions compete with phosphorus for sorption sites (Hue 1991); however, organic compounds can also increase phosphorus sorption by reducing amorphous oxide crystallization and increasing specific surfaces (Sharpley 2000). Methods to measure the equilibrium phosphate concentration (SRP concentration that limits transformation between particulate and dissolved phases) and redox potential of sediments can be used to determine the potential contribution of sediments to internal nutrient loading (Froelich 1988; Klotz 1991; Mainstone and Parr 2002). Improving water quality in impaired streams by targeting nutrient loads requires an understanding of both external and internal factors influencing nutrient dynamics so that realistic expectations can be identified and achieved. The primary factor driving industry to improve water quality is regulatory although some groups have taken the initiative on a more voluntary basis.

U.S. Legislation and WWTPs

In the U.S., the 1948 Federal Water Pollution Control Act (FWPCA) was the first legislation aimed at confronting the emerging issue of wastewater management. The primary impetus to establish a nationwide set of standards was to protect the public from waterborne pathogens (Burian and others 2000; Deason and others 2001). A series of important amendments, beginning in 1956, gradually incorporated different aspects of water resource protection including aesthetics, aquatic life, and wastewater discharges. Specific objectives in the 1972 FWCPA amendments required public WWTPs to utilize secondary treatment by 1977, implement "best treatment economically achievable" by 1983, and eliminate pollutant discharges by 1985. Although subsequent revisions placed less emphasis on specific deadlines and removed the unrealistic goal of "zero discharge," the 1972 amendments were instrumental in continuing efforts to protect water resources in the U.S.

As a result of major amendments in 1977 and 1987, the FWPCA is now commonly referred to as the Clean Water Act (CWA). A central tenet of the CWA was to "restore and maintain the physical, chemical, and biological integrity of the Nation's waters" through programs such as the National Pollutant Discharge Elimination System (NPDES). The CWA, with an initial focus on point source discharges, included both technology and water quality-based standards to protect water quality. NPDES permits served to regulate point source dischargers through mandatory effluent requirements and regular monitoring programs to ensure compliance with permit stipulations. The permitting system contributed to the ultimate goal of improving U.S. water quality but a critical weakness on nonpoint pollutant sources (Knopman and Smith 1993) hampered the initial overall success of the CWA. Scientists and legislators realized that nonpoint sources from agricultural, urban, and sivilcultural areas posed a significant threat to water quality and in the 1987 CWA amendments, Total Maximum Daily Loads (TMDLs) for various water bodies were introduced to account for pollutants from both point and nonpoint sources. TMDLs are the total of a specific pollutant that a river or stream can receive and still meet water quality standards. Under the TMDL program, individual U.S. states must develop and implement water quality management plans for watersheds that are drained by impaired streams in order to bring them back into compliance. Nutrient TMDLs are commonly developed because of the prevalence of nutrient loading to freshwater systems (USEPA 1999; Stow and Borsuk 2003; Litwack and others 2006).

The evolution of the CWA, including gradual enforcement of its provisions (e.g., TMDLs), has led to widespread use of various nutrient removal processes at WWTPs to improve downstream water quality (Leo and others 1984; Carter and Rybicki 1986; Freeman 1990; Crawford and Wangsness 1991). Proposed nutrient criteria guidelines by the U.S. Environmental Protection Agency (USEPA) have been another key factor influencing continuing strategies to reduce effluent nutrient concentrations. USEPA, concerned with increasing nutrient concentrations within various aquatic systems, developed water quality criteria for nutrients across 14 nationwide ecoregions. Overall ecoregion-specific concentration ranges for total nitrogen (0.12–2.18 mg/L) and total phosphorus (0.076–0.1 mg/L) (USEPA 2001; Pagilla and others 2006) placed a greater burden on WWTPs to reduce effluent nutrient concentrations. Individual states are ultimately responsible for refining broad ecoregion criteria to address local nutrient issues; WWTPs therefore have an incentive to keep total nitrogen and total phosphorus concentrations at the lowest levels possible as new regulatory limits are established.

USEPA also suggested two separate methods to determine nutrient criteria as an alternative to the ecosystem approach: (1) identifying reference or minimally disturbed streams and using 75th percentile concentrations; or (2) using 25th percentile median concentrations from all streams within an ecoregion (USEPA 2000b; Migliaccio and others 2007). Although using ambient nutrient criteria developed from reference streams is generally preferred, using median concentrations from all streams is an acceptable alternative when data from minimally impacted sites are limited. Nutrient limits complement TMDL programs aimed at protecting water resources but the nutrient

criteria methods have different implications for WWTPs. Under the guidelines for option 1, WWTPs would be forced to significantly reduce their nutrient loads because reference streams typically have dramatically lower nutrient concentrations than effluent-dominated streams. Option 2 could include nutrient concentrations from many streams receiving effluent and thus nutrient limits may potentially be higher than option 1. However, both nutrient criteria methods increase the need for greater nutrient removal efficiency at WWTPs and/or the development of water reuse programs.

Water Reuse Implications for Nutrients

The Clean Water Act, containing provisions to improve the quality of wastewater discharged from WWTPs, and the Safe Drinking Water Act (1974), which set standards for contaminants in potable water supplies, have both been important to the expansion of water reuse initiatives in the U.S. The arid and semi-arid southwestern U.S. climate spurred the development of early water reuse programs in areas such as California, where water reclamation for agriculture began in 1890 (Asano and others 2007) and laws regulating water reuse were enacted in 1918 (Asano and Levine 1996). More recently, water reclamation and reuse programs have been implemented in numerous states because of increasing freshwater demand and the difficulty of complying with nutrient discharge standards (USEPA 2004b). Expanding populations and continued water withdrawals threaten the long-term prospects of sustainable water use in many areas and although technological advancements in wastewater treatment enable WWTPs to produce high quality effluent (Zhou and Smith 2002; Pagilla and others 2006), economic considerations can be prohibitive (Ko and others 2004; Olivieri and others 2005; Muga and Mihelcic 2008). Water reclamation and reuse projects that provide beneficial uses of treated effluent have therefore become integral aspects of U.S. water management strategies (Sheikh 1991; Sheng 2005). U.S. federal policy allows individual states to develop water reclamation and reuse standards and currently twenty-five states have enacted reuse regulations (Fig. 3). Water demand is strong in Florida, California, and Texas as these states are responsible for 25% of all surface and groundwater withdrawals that are used for a wide variety of applications in the U.S. (Asano and others 2007). These three states, along with Arizona, constitute the majority of U.S. water reuse (USEPA 2004b).

Reclaimed water has multiple potential applications. The main reuse categories of reclaimed water are agricultural and landscape irrigation, industrial processing, groundwater recharge, environmental and recreational uses, nonpotable urban uses, and indirect potable reuse (Tchobanoglous and others 2003). The type of water reuse application dictates the necessary level of wastewater treatment required because each category has particular constraints regarding water quality. In the U.S., as in most of the world, agricultural irrigation uses the majority of reclaimed water; agricultural irrigation in California, for example, accounts for

Fig. 3 States with reuse regulations (enacted laws), reuse guidelines (unenforceable rules), and case-by-case evaluation of potential reuse programs (USEPA 2004b)

48% of the total volume of reclaimed water (California State Water Resources Control Board 2002). Landscape irrigation of residential areas, golf courses, and public recreational facilities is the second largest category for reclaimed water in the U.S. and Florida is the national leader, using an estimated 4.8×10^8 m^3 of reclaimed water in 2006 (State of Florida 2008). The benefits of using reclaimed water include providing a reliable water source, supplying nutrients for irrigation applications, and completely or partially eliminating effluent discharges to receiving waters (Toze 2006; USEPA 2004b). Risk assessment of water reuse includes public health concerns due to direct or indirect exposure to pathogens (Ongerth and Ongerth 1982) and irrigation issues such as salinity, sodium adsorption ratios, and metal content in soils (Pettygrove and Asano 1985; Qian and Mecham 2005). However, our interests are in the long term effects of continued application on soils as related to nutrients (Fig. 4).

Depending on the level of treatment and the intended water reuse application, typical nutrient concentrations in reclaimed water vary (Table 1). Irrigation applications for reclaimed water require less stringent nutrient removal processes than effluent discharged to receiving waters and as a result, treatment costs at WWTPs and artificial fertilizer requirements on reuse irrigated areas are lower. Crops irrigated with reclaimed water have been shown to benefit from its high nutrient composition (Day and others 1974; Sheikh and others 1987; Davies and Maurer 1993).

However, questions on the long term effects of using reclaimed water for irrigation remain. For example, wastewater containing a high carbon to nitrogen ratio has the potential to increase soil microbial activity, which can eventually lead to the biological clogging of pores and reduced hydraulic conductivity (Baveye and others 1998; Magesan and others 2000). Phosphorus inputs from reclaimed water may also exceed plant nutrient requirements and lead to phosphorus accumulation in soils (Sims and others 1998). As nutrients, such as phosphorus, accumulate and are not assimilated by crops, the potential for leaching increases and this poses a water quality threat (Sommers and others 1979; Latterell and others 1982) (Fig. 4). Groundwater recharge via percolation or direct injection using reclaimed water poses a contamination risk from ammonia and nitrate as well, although regulatory overview limits nitrogen concentrations in effluent used for recharge (Asano and Cotruvo 2004). Continual monitoring of groundwater recharge systems using treated effluent, however, is required because of the potential contamination of potable groundwater reservoirs (Fryar and others 2000).

Protection of surface and/or groundwater resources is an important challenge for water recycling systems and an interesting aspect of wastewater reuse is the use of wetlands to improve the quality of treated effluent. Both natural and artificial wetlands that receive secondary effluent from conventional treatment plants can provide nutrient removal services equivalent to tertiary treatment processes (Kadlec and Knight 1996; Day and others 2006). Furthermore, constructed wetlands can be designed to reduce nutrients from incoming effluent discharges while providing suitable wildlife habitat (Knight and others 2001; Andersen and others 2003). Nutrient removal efficiency in treatment wetlands provide direct ecosystem benefits and often supplement additional programs elsewhere. For example, total nitrogen (79%) and total phosphorus concentrations (88%) declined as secondary effluent flowed through a forested Louisiana wetland and overall system productivity increased as a result of long-term effluent discharges (Day and others 2006). In Missouri, water outflow from an artificial wetland receiving effluent from a conventional treatment plant helps to maintain a public recreational area (Knowlton and others 2002). Efficiency rates in treatment wetlands decrease over time as phosphorus becomes saturated, however, and to maintain the benefits of these systems, periodic

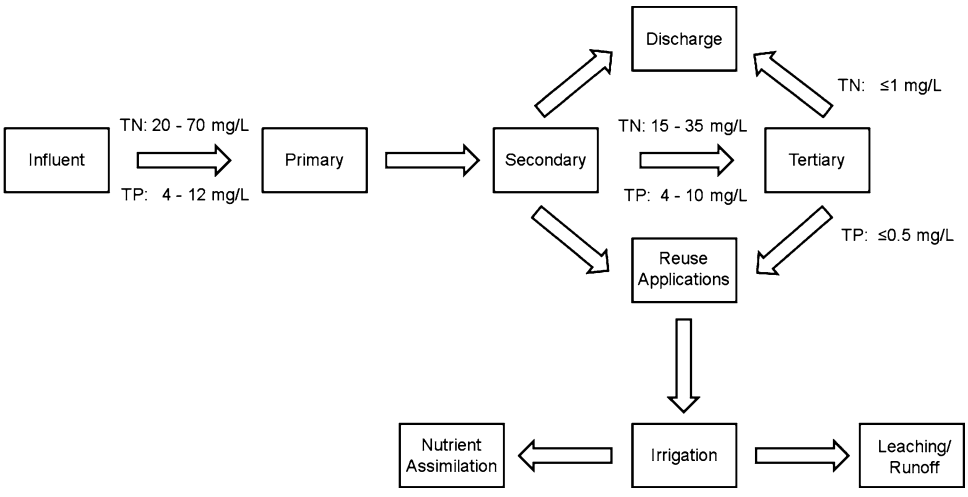

Fig. 4 Nutrient concentration ranges for untreated wastewater through to advanced tertiary treatment. Effluent can be discharged or reclaimed for several reuse applications, such as irrigation, but additional problems may occur if nutrients are not assimilated

removal of vegetation is often necessary (Nichols 1983; Thullen and others 2005).

As population growth accelerates across the U.S., sustainable water management strategies at various levels will need to continue balancing increased freshwater demand with efficient wastewater recycling. Combining wastewater treatment plants with water reclamation and reuse systems has the potential to reduce the negative effects of effluents in receiving waters but careful planning, monitoring, and evaluation of these integrated systems are required to prevent unanticipated nutrient problems in the future.

Summary

Excessive nitrogen and/or phosphorus loading to aquatic ecosystems from both nonpoint and point sources leads to detrimental effects (such as nuisance algal growth and reduced DO levels) that hinder the ability of water bodies to meet designated uses (Carpenter and others 1998; Smith 1998). Wastewater treatment plants are categorized as point sources of both nitrogen and phosphorus. Numerous treatment options are available at these plants to improve the quality of wastewater and as a result, the treatment processes selected strongly influence nutrient concentrations in discharged effluent (Zhou and Smith 2002; Tchobanoglous and others 2003; Asano and others 2007).

Elevated nutrient concentrations from WWTPs can dominate nutrient dynamics in receiving waters and the impact can continue to be significant outside of the local discharge area (Haggard and others 2001; Marti and others 2004; Gibson and Meyer 2007). In addition, release of nutrients bound in sediments can result in elevated nutrient concentrations even if WWTP inputs have been minimized (Haggard and others 2005). Interactions between sediments and nutrients can therefore complicate short-term management objectives to improve water quality.

The 1972 Clean Water Act provides a uniform set of standards and restrictions to improve water quality throughout the U.S. Compliance with the CWA requires increasingly efficient nutrient removal processes at WWTPs but the relevant infrastructure needed to produce effluent with low concentrations can be economically burdensome. Water reuse initiatives are therefore being expanded throughout the U.S. to recycle water by creating beneficial uses for treated effluent. However, reclaimed water has environmental risks that should be considered before implementation such as the potential for reduced soil porosity, increased salinity, and metal accumulation in irrigated soils (Pettygrove and Asano 1985; Wang and others 2003; Qian and Mecham 2005) and nutrient leaching to groundwater (Fryar and others 2000).

Compared to nonpoint sources, effluent discharges from WWTPs are relatively easier to regulate and monitor. Effluent from WWTPs can nonetheless dominate receiving waters by delivering significant nutrient loads and controlling overall aquatic productivity. As more WWTPs are constructed to prevent untreated discharges to waterways, efforts to minimize nitrogen and phosphorus concentrations released from these facilities will be crucial to protect aquatic systems from excessive nutrient loading and subsequent accelerated eutrophication.

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References

Ahearn DS, Sheibley RW, Dahlgren RA, Anderson M, Johnson J, Tate KW (2005) Land use and land cover influence on water quality in the last free-flowing river draining the western Sierra Nevada, California. Journal of Hydrology 312:234–247

Allan JD (1995) Stream ecology: structure and function of running waters. Chapman & Hall, London, UK

Andersen CB, Lewis GP, Sargent KA, Sarkar D (2004) Influence of wastewater-treatment effluent on concentrations and fluxes of solutes in the Bush River, South Carolina, during extreme drought conditions. Environmental Geosciences 11:28–41

Andersen DC, Sartoris JJ, Thullen JS, Reusch PG (2003) The effects of bird use on nutrient removal in a constructed wastewater-treatment wetland. Wetlands 23:423–435

Asano T, Burton FL, Leverenz HL, Tsuchihashi R, Tchobanoglous G (2007) Water reuse: issues, technologies, and applications. McGraw-Hill, New York USA

Asano T, Cotruvo JA (2004) Groundwater recharge with reclaimed municipal wastewater: health and regulatory considerations. Water Research 38:1941–1951

Asano T, Levine AD (1996) Wastewater reclamation, recycling and reuse: past, present, and future. Water Science & Technology 33:1–14

Barnard JL (1974) Cut P and N without chemicals. Water and Wastes Engineering 11:41–44

Barnard JL (1984) Activated primary tanks for phosphate removal. Water SA 10:121–126

Baveye P, Vandevivere P, Hoyle BL, DeLeo PC, Sanchez de Lozada D (1998) Environmental impact and mechanisms of the biological clogging of saturated soils and aquifer materials. Critical Reviews in Environmental Science and Technology 28:123–191

Bennett EM, Carpenter SR, Caraco NF (2001) Human impact on erodable phosphorus and eutrophication: a global perspective. Bioscience 51:227–234

Bothwell ML (1985) Phosphorus limitation of lotic periphyton growth rates: an intersite comparison using continuous-flow troughs (Thompson River system, British Columbia). Limnology and Oceanography 30:527–542

Boughton WH, Gottfried RJ, Sinclair NA, Yall I (1971) Metabolic factors affecting enhanced phosphorus uptake by activated sludge. Applied and Environmental Microbiology 22:571–577

Bowker RPG, Stensel HD (1990) Phosphorus removal from wastewater. Noyes Data Corporation, New Jersey, USA

Burian SJ, Nix SJ, Pitt RE, Durrans SR (2000) Urban wastewater management in the United States: past, present, and future. Journal of Urban Technology 7:33–62

Burkholder JM, Noga EJ, Hobbs CW, Glasgow HB, Smith SA (1992) New "phantom" dinoflagellate is the causative agent of major estuarine fish kills. Nature 358:407–410

California State Water Resources Control Board (2002) Statewide recycled water survey. Office of Water Recycling, Sacramento, California

Carey RO, Vellidis G, Lowrance R, Pringle CM (2007) Do nutrients limit algal periphyton in small blackwater coastal plain streams? Journal of the American Water Resources Association 43:1183–1193

Carpenter SR, Caraco NF, Correll DL, Howarth RW, Sharpley AN, Smith VH (1998) Nonpoint pollution of surface waters with phosphorus and nitrogen. Ecological Applications 8:559–568

Carter V, Rybicki N (1986) Resurgence of submersed aquatic macrophytes in the tidal Potomac River, Maryland, Virginia, and the District of Columbia. Estuaries 9:368–375

Correll DL (1998) The role of phosphorus in the eutrophication of receiving waters: a review. Journal of Environmental Quality 27:261–266

Crawford CG, Wangsness DJ (1991) Effects of advanced wastewater treatment on the quality of White River, Indiana. Journal of the American Water Resources Association 27:769–779

Davies FS, Maurer MA (1993) Reclaimed wastewater for irrigation of citrus in Florida. HortTechnology 3:163–167

Day AD, Rahman A, Katterman FRH, Jensen V (1974) Effects of treated municipal wastewater and commercial fertilizer on growth, fiber, acid-soluble nucleotides, protein, and amino acid content in wheat hay. Journal of Environmental Quality 3:17–19

Day J, Westphal A, Pratt R, Hyfield E, Rybczyk J, Paul Kemp G, Day JN, Marx B (2006) Effects of long-term municipal effluent discharge on the nutrient dynamics, productivity, and benthic community structure of a tidal freshwater forested wetland in Louisiana. Ecological Engineering 27:242–257

Deason JP, Schad TM, Sherk GW (2001) Water policy in the United States: a perspective. Water Policy 3:175–192

Dennehy KF, Litke DW, Tate CM, Qi SL, McMahon PB, Bruce BW, Kimbrough RA, Heiny JS (1998) Water quality in the South Platte River basin, Colorado, Nebraska, and Wyoming, 1992–95. USGS Circular 1167

DePinto JV, Young TC, Martin SC (1981) Algal-available phosphorus in suspended sediments from lower Great Lakes tributaries. Journal of Great Lakes Research 7:311–325

Dodds WK, Welch EB (2000) Establishing nutrient criteria in streams. Journal of the North American Benthological Society 19:186–196

Dorich RA, Nelson DW, Sommers LE (1985) Estimating algal available phosphorus in suspended sediments by chemical extraction. Journal of Environmental Quality 14:400–404

Dyer SD, Wang X (2002) A comparison of stream biological responses to discharge from wastewater treatment plants in high and low population density areas. Environmental Toxicology and Chemistry 21:1065–1075

Eggers E, Dirkzwager AH, van der Honing H (1991) Full-scale experiences with phosphate crystallization in a crystalactor. Water Science & Technology 23:819–824

Ekka SA, Haggard BE, Matlock MD, Chaubey I (2006) Dissolved phosphorus concentrations and sediment interactions in effluent-dominated Ozark streams. Ecological Engineering 26:375–391

Follett RF (2001) Nitrogen transformation and transport processes. In: Follett RF, Hatfield JL (eds) Nitrogen in the Environment: Sources, Problemsand Management. Elsevier, The Netherlands, pp 17–44

Freeman A (1990) Water pollution policy. In: Portney PR (ed) Public policies for environmental protection. Resources for the Future, Washington, DC, USA

Froelich PN (1988) Kinetic control of dissolved phosphate in natural rivers and estuaries: a primer on the phosphate buffer mechanism. Limnology and Oceanography 33:649–668

Fryar AE, Macko SA, Mullican WF, Romanak KD, Bennett PC (2000) Nitrate reduction during ground-water recharge, southern High Plains, Texas. Journal of Contaminant Hydrology 40:335–363

Fuhs GW, Chen M (1975) Microbiological basis of phosphate removal in the activated sludge process for the treatment of wastewater. Microbial Ecology 2:119–138

Gayle BP, Boardman GD, Sherrard JH, Benoit RE (1989) Biological denitrification of water. Journal of Environmental Engineering 115:930–943

Gerber A, Winter CT (1985) Influence of extended anaerobic retention time on the performance of phoredox nutrient removal plants. Water Science & Technology 17:81–92

Gibson CA, Meyer JL (2007) Nutrient uptake in a large urban river. Journal of the American Water Resources Association 43:576–587

Hager SW, Schemel LE (1992) Sources of nitrogen and phosphorus to northern San Francisco Bay. Estuaries 15:40–52

Haggard BE, Stanley EH, Storm DE (2005) Nutrient retention in a point-source-enriched stream. Journal of the North American Benthological Society 24:29–47

Haggard BE, Storm DE, Stanley EH (2001) Effect of a point source input on stream nutrient retention. Journal of the American Water Resources Association 37:1291–1301

Hanke SH, Wentworth RW (1981) On the marginal cost of wastewater services. Land Economics 57:558–567

Hecky RE, Kilham P (1988) Nutrient limitation of phytoplankton in freshwater and marine environments: a review of recent evidence on the effects of enrichment. Limnology and Oceanography 33:796–822

Horne AJ, Goldman CR (1994) Limnology. McGraw-Hill, New York, USA

Horner R, Welch E, Veenstra R (1983) Development of nuisance periphytic algae in laboratory streams in relation to enrichment and velocity. In: Wetzel R (ed) Periphyton of freshwater ecosystems. Dr. W. Junk Publishers, The Netherlands, pp 121–133

Hue NV (1991) Effects of organic acids/anions on P sorption and phytoavailability in soils with different mineralogies. Soil Science 152:463–471

Hynes H (1969) The enrichment of streams. Eutrophication: causes, consequences, correctives. National Academy of Sciences, Washington, DC, USA, pp 188–196

Ice G (2004) History of innovative best management practice development and its role in addressing water quality limited waterbodies. Journal of Environmental Engineering 130:684–689

Jackson RB, Carpenter SR, Dahm CN, McKnight DM, Naiman RJ, Postel SL, Running SW (2001) Water in a changing world. Ecological Applications 11:1027–1045

Kadlec RH, Knight RL (1996) Treatment wetlands. Lewis Publishers, Boca Raton, USA

Karr JR, Dudley DR (1981) Ecological perspective on water quality goals. Environmental Management 5:55–68

Klotz RL (1991) Temporal relation between soluble reactive phosphorus and factors in stream water and sediments in Hoxie Gorge Creek, New York. Canadian Journal of Fisheries and Aquatic Sciences 48:84–90

Knight RL, Clarke RA, Bastian RK (2001) Surface flow (SF) treatment wetlands as a habitat for wildlife and humans. Water Science & Technology 44:27–37

Knopman DS, Smith RA (1993) 20 years of the Clean Water Act: has U.S. water quality improved? Environment 35:16–20

Knowlton MF, Cuvellier C, Jones JR (2002) Initial performance of a high capacity surface-flow treatment wetland. Wetlands 22:522–527

Ko J, Day JW, Lane RR, Day JN (2004) A comparative evaluation of money-based and energy-based cost-benefit analyses of tertiary municipal wastewater treatment using forested wetlands vs. sand filtration in Louisiana. Ecological Economics 49:331–347

Latterell JJ, Dowdy RH, Clapp CE, Larson WE, Linden DR (1982) Distribution of phosphorus in soils irrigated with municipal waste-water effluent: a 5-year study. Journal of Environmental Quality 11:124–128

Leo WM, Thomann RV, Gallagher TW (1984) Before and after case studies: comparisons of water quality following municipal treatment plant improvements. USEPA, EPA-430-9-83-007, Washington, DC, USA

Lehman PW, Sevier J, Giulianotti J, Johnson M (2004) Sources of oxygen demand in the lower San Joaquin River, California. Estuaries 27:405–418

Levin G, Shapiro J (1965) Metabolic uptake of phosphorus by wastewater organisms. Journal Water Pollution Control Federation 37:800–821

Lewis GP, Mitchell JD, Andersen CB, Haney DC, Liao M, Sargent KA (2007) Urban influences on stream chemistry and biology in the Big Brushy Creek Watershed, South Carolina. Water, Air, & Soil Pollution 182:303–323

Likens GE, Bormann FH (1995) Biogeochemistry of a forested ecosystem. Springer-Verlag, New York, USA

Litwack HS, DiLorenzo JL, Huang P, Najarian TO (2006) Development of a simple phosphorus model for a large urban watershed: a case study. Journal of Environmental Engineering 132:538–546

Lynch JA, Corbett ES (1990) Evaluation of best management practices for controlling nonpoint pollution from silvicultural operations. Water Resources Bulletin 26:41–52

Magesan GN, Williamson JC, Yeates GW, Lloyd-Jones AR (2000) Wastewater C:N ratio effects on soil hydraulic conductivity and potential mechanisms for recovery. Bioresource Technology 71:21–27

Magnien RE, Summers RM, Sellner KG (1992) External nutrient sources, internal nutrient pools, and phytoplankton production in Chesapeake Bay. Estuaries 15:497–516

Mainstone CP, Parr W (2002) Phosphorus in rivers - ecology and management. Science of the Total Environment 282–283:25–47

Marti E, Aumatell J, Gode L (2004) Nutrient retention efficiency in streams receiving inputs from wastewater treatment plants. Journal of Environmental Quality 33:285–293

Matlock MD, Matlock ME, Storm DE, Smolen MD, Henley WJ (1998) Limiting nutrient determination in lotic ecosystems using a quantitative nutrient enrichment periphytometer. Journal of the American Water Resources Association 34:1141–1148

McConnell JB (1980) Impact of urban storm runoff on stream quality near Atlanta, Georgia. USEPA, EPA-600/2-80-094, Washington, DC, USA

McConnell VD, Schwarz GE (1992) The supply and demand for pollution control: evidence from wastewater treatment. Journal of Environmental Economics and Management 23:54–77

Meyer JL (1979) The role of sediments and bryophytes in phosphorus dynamics in a headwater stream ecosystem. Limnology and Oceanography 24:365–375

Meyer JL, Likens GE (1979) Transport and transformation of phosphorus in a forest stream ecosystem. Ecology 60:1255–1269

Meyer JL, McDowell WH, Bott TL, Elwood JW, Ishizaki C, Melack JM, Peckarsky BL, Peterson BJ, Rublee PA (1988) Elemental dynamics in streams. Journal of the North American Benthological Society 7:410–432

Migliaccio KW, Haggard BE, Chaubey I, Matlock MD (2007) Linking watershed subbasin characteristics to water quality parameters in War Eagle Creek watershed. Transactions of the ASAE 50:2007–2016

Milbury WF, McCauley D, Hawthorne CH (1971) Operation of conventional activated sludge for maximum phosphorus removal. Journal Water Pollution Control Federation 43:1890–1901

Miltner RJ, Rankin ET (1998) Primary nutrients and the biotic integrity of rivers and streams. Freshwater Biology 40:145–158

Miltner RJ, White D, Yoder C (2004) The biotic integrity of streams in urban and suburbanizing landscapes. Landscape and Urban Planning 69:87–100

Morse GK, Brett SW, Guy JA, Lester JN (1998) Review; phosphorus removal and recovery technologies. The Science of the Total Environment 212:69–81

Muga HE, Mihelcic JR (2008) Sustainability of wastewater treatment technologies. Journal of Environmental Management 88:437–447

Murdock J, Roelke D, Gelwick F (2004) Interactions between flow, periphyton, and nutrients in a heavily impacted urban stream: implications for stream restoration effectiveness. Ecological Engineering 22:197–207

Naiman RJ, Turner MG (2000) A future perspective on North America's freshwater ecosystems. Ecological Applications 10:958–970

National Research Council (NRC) (1992) Restoration of aquatic ecosystems: science, technology and public policy. National Academy Press, Washington, DC, USA

Newbold JD, Elwood JW, O'Neill RV, Van Winkle W (1981) Measuring nutrient spiralling in streams. Canadian Journal of Fisheries and Aquatic Sciences 38:860–863

Nichols DS (1983) Capacity of natural wetlands to remove nutrients from wastewater. Journal Water Pollution Control Federation 55:495–505

Olivieri AW, Soller JA, Olivieri KJ, Goebel RP, Tchobanoglous G (2005) Seasonal tertiary wastewater treatment in California: an analysis of public health benefits and costs. Water Research 39:3035–3043

Ongerth HJ, Ongerth JE (1982) Health consequences of wastewater reuse. Annual Review of Public Health 3:419–444

Ohte N, Dahlgren RA, Silva SR, Kendall C, Kratzer CR, Doctor DH (2007) Sources and transport of algae and nutrients in a California river in a semi-arid climate. Freshwater Biology 52:2476–2493

Paerl HW, Dennis RL, Whitall DR (2002) Atmospheric deposition of nitrogen: implications for nutrient over-enrichment of coastal waters. Estuaries 25:677–693

Pagilla KR, Urgun-Demirtas M, Ramani R (2006) Low effluent nutrient technologies for wastewater treatment. Water Science & Technology 53:165–172

Painter HA (1970) A review of literature on inorganic nitrogen metabolism in microorganisms. Water Research 4:393–450

Park SW, Mostaghimi S, Cooke RA, McClellan PW (1994) BMP impacts on watershed runoff, sediment, and nutrient yields. Water Resources Bulletin 30:1011–1023

Passell HD, Dahm CN, Bedrick EJ (2007) Ammonia modeling for assessing potential toxicity to fish species in the Rio Grande, 1989–2002. Ecological Applications 17:2087–2099

Passell HD, Dahm CN, Bedrick EJ (2005) Nutrient and organic carbon trends and patterns in the upper Rio Grande, 1975–1999. Science of the Total Environment 345:239–260

Payne WJ (1981) Denitrification. John Wiley and Sons, New York, USA

Petersen TM, Rifai HS, Suarez MP, Stein AR (2005) Bacteria loads from point and nonpoint sources in an urban watershed. Journal of Environmental Engineering 131:1414–1425

Peterson BJ, Wollheim WM, Mulholland PJ, Webster JR, Meyer JL, Tank JL, Marti E, Bowden WB, Valett HM, Hershey AE, McDowell WH, Dodds WK, Hamilton SK, Gregory S, Morrall DD (2001) Control of nitrogen export from watersheds by headwater streams. Science 292:86–90

Pettygrove GS, Asano T (1985) Irrigation with reclaimed municipal wastewater, a guidance manual. Report No. 84-1 wr. California State Water Resources Control Board, Sacramento, California. Lewis Publishers, Chelsea, MI

Pocernich M, Litke DW (1997) Nutrient concentrations in wastewater treatment plant effluents, South Platte River Basin. Journal of the American Water Resources Association 33:205–214

Popova YA, Keyworth VG, Haggard BE, Storm DE, Lynch RA, Payton ME (2006) Stream nutrient limitation and sediment interactions in the Eucha-Spavinaw Basin. Journal of Soil and Water Conservation 61:105–115

Postel SL, Daily GC, Ehrlich PR (1996) Human appropriation of renewable fresh water. Science 271:785–788

Qian YL, Mecham B (2005) Long-term effects of recycled wastewater irrigation on soil chemical properties on golf course fairways. Agronomy Journal 97:717–721

Rabalais NN (2002) Nitrogen in aquatic ecosystems. Ambio 31:102–112

Rosemond AD, Pringle CM, Ramirez A, Paul MJ, Meyer JL (2002) Landscape variation in phosphorus concentration and effects on detritus-based tropical streams. Limnology and Oceanography 47:278–289

Sauer TJ, Alexander RB, Brahana JV, Smith RA (2001) The importance and role of watersheds in the transport of nitrogen. In: Follett RF, Hatfield JL (eds) Nitrogen in the environment: sources, problems and management. Elsevier, The Netherlands, pp 147–181

Sharpley A (2000) Phosphorus availability. In: Sumner ME (ed) Handbook of soil science. CRC Press, New York, pp D18–D37

Sheikh B (1991) Long-range planning for water reuse in the city of Los Angeles. Water Science & Technology 24:11–17

Sheikh B, Jaques R, Cort R (1987) Reuse of tertiary municipal wastewater effluent for irrigation of raw-eaten food crops: a five year field study. Desalination 67:245–254

Sheng Z (2005) An aquifer storage and recovery system with reclaimed wastewater to preserve native groundwater resources in El Paso, Texas. Journal of Environmental Management 75:367–377

Sims JT, Simard RR, Joern BC (1998) Phosphorus loss in agricultural drainage: historical perspective and current research. Journal of Environmental Quality 27:277–293

Smith VH (1998) Cultural eutrophication of inland, estuarine, and coastal waters. In: Pace ML, Groffman PM (eds) Successes, limitations and frontiers in ecosystem science. Springer-Verlag, New York, New York, USA, pp 7–49

Smith VH, Tilman GD, Nekola JC (1999) Eutrophication: Impacts of excess nutrient inputs on freshwater, marine, and terrestrial ecosystems. Environmental Pollution 100:179–196

Srinath EG (1959) Rapid removal of phosphorus from sewage by activated sludge. Experientia 15:339–345

Sommers LE, Nelson DW, Owens LB (1979) Status of inorganic phosphorus in soils irrigated with municipal wastewater. Soil Science 127:340–350

Stephens HL, Stensel HD (1998) Effect of operating conditions on biological phosphorus removal. Water Environment Research 70:362–369

State of Florida (2008) 2006 Reuse inventory. Florida Department of Environmental Protection, Tallahassee, Florida

Stow CA, Borsuk ME (2003) Assessing TMDL effectiveness using flow-adjusted concentrations: a case study of the Neuse River, North Carolina. Environmental Science and Technology 37:2043–2050

Tarr JA, McCurley JM III, McMichael FC, Yosie T (1984) Water and wastes: a retrospective assessment of wastewater technology in the United States, 1800–1932. Technology and Culture 25:226–263

Tchobanoglous G, Burton FL, Stensel HD (2003) Wastewater engineering: treatment and reuse, 4th edn. McGraw-Hill, New York, USA

Teske A, Alm E, Regan JM, Toze S, Rittmann BE, Stahl DA (1994) Evolutionary relationships among ammonia- and nitrite-oxidizing bacteria. The Journal of Bacteriology 176:6623–6630

Thullen JS, Sartoris JJ, Nelson SM (2005) Managing vegetation in surface-flow wastewater-treatment wetlands for optimal treatment performance. Ecological Engineering 25:583–593

Toze S (2006) Reuse of effluent water-benefits and risks. Agricultural Water Management 80:147–159

United Nations (2008) World urbanization prospects: the 2007 revision. United Nations Population Division, New York, USA

USEPA (1999) Protocol for developing nutrient TMDLs. EPA 841-B-99-007, Washington, DC, USA

USEPA (2000a) Progress in water quality: an evaluation of the national investment in municipal wastewater treatment. EPA-832-R-00-008, Washington, DC, USA

USEPA (2000b) Nutrient criteria technical guidance manual. EPA-822-B-00-002, Washington, DC, USA

USEPA (2001) Integrated water quality monitoring and assessment report guidance memorandum. USEPA, Washington, DC, USA

USEPA (2004a) Clean watersheds needs survey 2004—report to congress. USEPA, Washington, DC, USA

USEPA (2004b) Guidelines for water reuse. EPA-625-R-04-108, Washington, DC, USA

Uusitalo R, Yli-Halla M, Turtola E (2000) Suspended soil as a source of potentially bioavailable phosphorus in surface runoff waters from clay soils. Water Research (Oxford) 34:2477–2482

Walsh CJ, Roy AH, Feminella JW, Cottingham PD, Groffman PM, Morgan RP (2005) The urban stream syndrome: current knowledge and the search for a cure. Journal of the North American Benthological Society 24:706–723

Wang Z, Chang AC, Wu L, Crowley D (2003) Assessing the soil quality of long-term reclaimed wastewater-irrigated cropland. Geoderma 114:261–278

Wells WN (1969) Differences in phosphate uptake rates exhibited by activated sludges. Journal Water Pollution Control Federation 41:765–771

Wentzel MC, Lotter LH, Ekama GA, Loewenthal RE, Marais G (1991) Evaluation of biochemical models for biological excess phosphorus removal. Water Science & Technology 23:567–576

Wetzel R (2001) Limnology. Lake and River Ecosystems, 3rd edn. Academic Press, San Diego, USA

Yeoman S, Stephenson T, Lester JN, Perry R (1988) The removal of phosphorus during wastewater treatment: a review. Environmental Pollution 49:183–233

Zhou H, Smith DW (2002) Advanced technologies in water and wastewater treatment. Journal of Environmental Engineering and Science 1:247–264

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:	CS/SB 1758
INTRODUCER:	Environment and Natural Resources Committee; Senator Mayfield and others
SUBJECT:	Water Quality Improvements
DATE:	March 21, 2019 REVISED:

	ANALYST	STAFF DIRECTOR	REFERENCE	ACTION
1.	Anderson	Rogers	EN	**Fav/CS**
2.			AEG	
3.			AP	

Please see Section IX. for Additional Information:

COMMITTEE SUBSTITUTE - Substantial Changes

I. Summary:

CS/SB 1758 creates the "Clean Waterways Act," including a grant program, subject to appropriation, for wastewater treatment facility or onsite sewage treatment and disposal system (OSTDS) improvements or connections within a basin management action plan (BMAP) or alternative restoration plan. The bill requires the Department of Environmental Protection (DEP) and the Department of Health (DOH) to develop a report on the impacts of a type two transfer of the OSTDS program.

The bill revises the requirements for all BMAPs. The bill:

- Requires that each BMAP include a plan, with specific timelines, to be submitted by each local government within the BMAP area for each wastewater treatment plant project and each OSTDS remediation plan.
- Expands and revises the OSTDS remediation plans required for the Outstanding Florida Springs to apply to all BMAPs.
- Imposes penalties for a local government's failure to meet the deadlines required under the plan, including a moratorium on local government approval of building permits for new construction, a moratorium on DOH approval of new OSTDSs, and existing civil and criminal penalties for pollution. However, the bill authorizes DEP to grant an extension of time upon a showing of good cause or to reduce penalties based on expenditures for improvements and upgrades.
- Requires local governments within a BMAP or with impaired waters to adopt the Model Ordinance for Florida-Friendly Fertilizer Use on Urban Landscapes.

The bill requires a wastewater treatment facility that unlawfully discharges raw or partially treated sewage into a waterway or aquifer to provide notification to its customers within 24 hours after discovering the discharge. Effective July 1, 2024, the bill prohibits sanitary sewage disposal into Indian River Lagoon without providing advanced waste treatment.

II. Present Situation:

Water Quality and Nutrients

Phosphorus and nitrogen are naturally present in water and are essential nutrients for the healthy growth of plant and animal life. The correct balance of both nutrients is necessary for a healthy ecosystem; however, excessive nitrogen and phosphorus can cause significant water quality problems.

Phosphorus and nitrogen are derived from natural and human-made sources. Natural inputs include the atmosphere, soils, and the decay of plants and animals. Human-made sources include sewage disposal systems (wastewater treatment facilities and septic systems), overflows of storm and sanitary sewers (untreated sewage), agricultural production and irrigation practices, and stormwater runoff.[1]

Excessive nutrient loads may result in harmful algal blooms, nuisance aquatic weeds, and the alteration of the natural community of plants and animals. Dense, harmful algal blooms can also cause human health problems, fish kills, problems for water treatment plants, and impairment of the aesthetics and taste of waters. Growth of nuisance aquatic weeds tends to increase in nutrient-enriched waters, which can impact recreational activities.[2]

Total Maximum Daily Loads

A total maximum daily load (TMDL), which must be adopted by rule, is a scientific determination of the maximum amount of a given pollutant that can be absorbed by a waterbody and still meet water quality standards.[3] Waterbodies or sections of waterbodies that do not meet the established water quality standards are deemed impaired. Pursuant to the federal Clean Water Act, DEP is required to establish a TMDL for impaired waterbodies.[4] A TMDL for an impaired waterbody is defined as the sum of the individual waste load allocations for point sources and the load allocations for nonpoint sources and natural background.[5] Waste load allocations are pollutant loads attributable to existing and future point sources. Load allocations are pollutant loads attributable to existing and future nonpoint sources. Point sources are discernible, confined, and discrete conveyances including pipes, ditches, and tunnels. Nonpoint sources are unconfined sources that include runoff from agricultural lands or residential areas.[6]

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[1] U.S. Environmental Protection Agency (EPA), *Sources and Solutions*, https://www.epa.gov/nutrientpollution/sources-and-solutions (last visited Mar. 15, 2019).
[2] EPA, *The Problem*, https://www.epa.gov/nutrientpollution/problem (last visited Mar. 15, 2019).
[3] DEP, *Total Maximum Daily Loads Program*, https://floridadep.gov/dear/water-quality-evaluation-tmdl/content/total-maximum-daily-loads-tmdl-program (last visited Mar. 15, 2019).
[4] Section 403.067(1), F.S.
[5] Section 403.031(21), F.S.
[6] Fla. Admin. Code R. 62-620.200(37). "Point source" is defined as "any discernible, confined, and discrete conveyance, including any pipe, ditch, channel, tunnel, conduit, well, discrete fissure, container, rolling stock, concentrated animal feeding

Basin Management Action Plans and Best Management Practices

DEP is the lead agency in coordinating the development and implementation of TMDLs.[7] Basin management action plans (BMAPs) are one of the primary mechanisms DEP uses to achieve TMDLs. BMAPs are plans that use existing planning tools to address the entire pollution load, including point and nonpoint discharges, for a watershed. BMAPs generally include:

- Permitting and other existing regulatory programs, including water quality based effluent limitations;
- Best management practices (BMPs) and non-regulatory and incentive-based programs, including cost sharing, waste minimization, pollution prevention, agreements, and public education;
- Public works projects, including capital facilities; and
- Land acquisition.[8]

DEP may establish a BMAP as part of the development and implementation of a TMDL for a specific waterbody. First, the BMAP equitably allocates pollutant reductions to individual basins, to all basins as a whole, or to each identified point source or category of nonpoint sources.[9] Then, the BMAP establishes the schedule for implementing projects and activities to meet the pollution reduction allocations. The BMAP development process provides an opportunity for local stakeholders, local government and community leaders, and the public to collectively determine and share water quality clean-up responsibilities.[10]

BMAPs must include milestones for implementation and water quality improvement. They must also include an associated water quality monitoring component sufficient to evaluate whether reasonable progress in pollutant load reductions is being achieved over time. An assessment of progress toward these milestones must be conducted every five years and revisions to the BMAP must be made as appropriate.[11]

Producers of nonpoint source pollution included in a BMAP must comply with the established pollutant reductions by either implementing the appropriate BMPs or by conducting water quality monitoring.[12] A nonpoint source discharger may be subject to enforcement action by DEP or a water management district based on a failure to implement these requirements.[13] BMPs are designed to reduce the amount of nutrients, sediments, and pesticides that enter the water

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operation, landfill leachate collection system, vessel or other floating craft from which pollutants are or may be discharged." Nonpoint sources of pollution are sources of pollution that are not point sources. Nonpoint sources can include runoff from agricultural lands or residential areas; oil, grease and toxic materials from urban runoff; and sediment from improperly managed construction sites.

[7] Section 403.061, F.S. DEP has the power and the duty to control and prohibit pollution of air and water in accordance with the law and rules adopted and promulgated by it. Furthermore, s. 403.061(21), F.S., allows DEP to advise, consult, cooperate, and enter into agreements with other state agencies, the federal government, other states, interstate agencies, etc.

[8] Section 403.067(7), F.S.

[9] *Id*.

[10] DEP, *Basin Management Action Plans (BMAPs)*, https://floridadep.gov/dear/water-quality-restoration/content/basin-management-action-plans-bmaps (last visited Mar. 15, 2019).

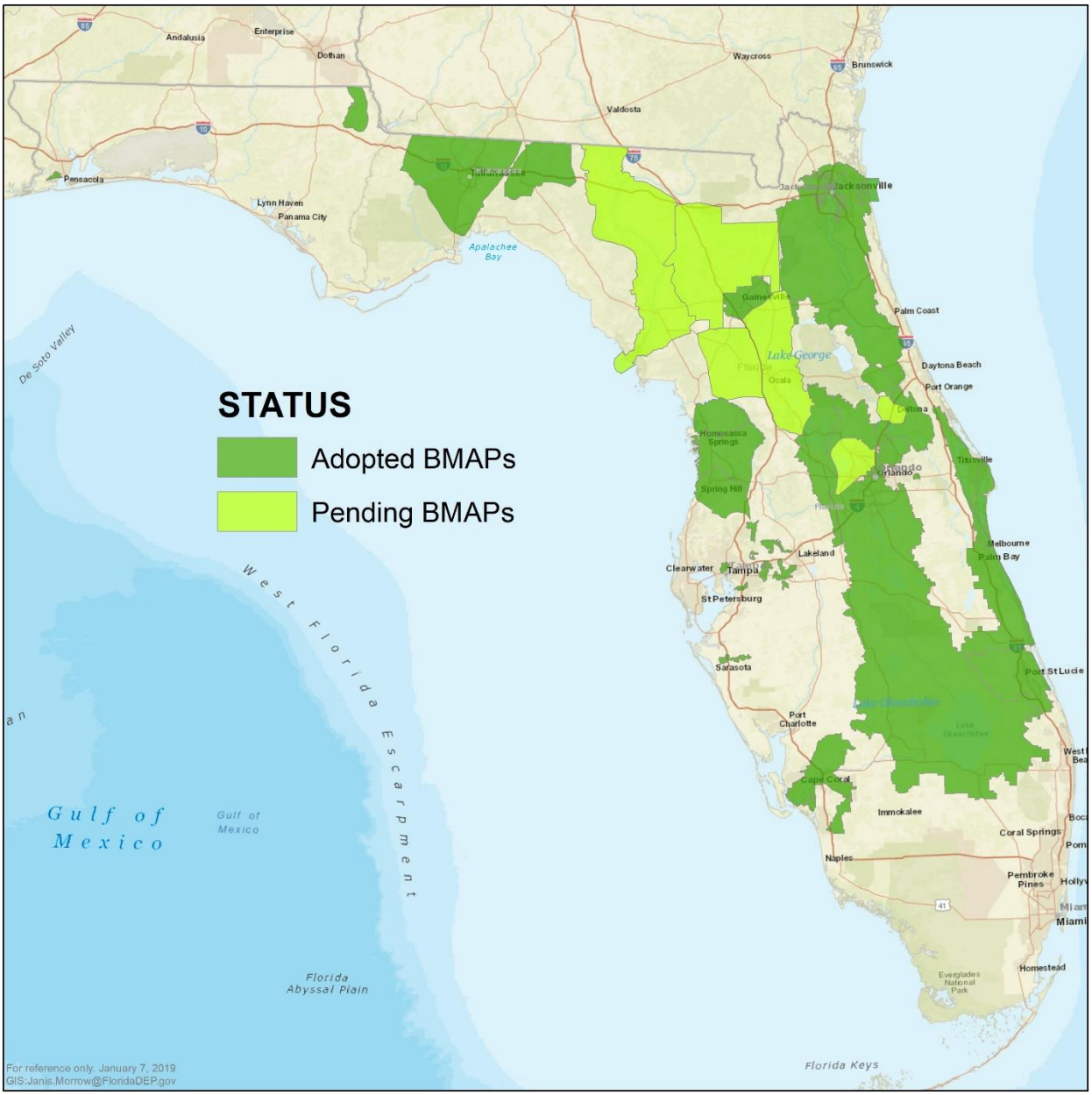
[11] Section 403.067(7)(a)6., F.S.

[12] Section 403.067(7)(b)2.g., F.S. For example, BMPs for agriculture include activities such as managing irrigation water to minimize losses, limiting the use of fertilizers, and waste management.

[13] Section 403.067(7)(b)2.h., F.S.

system and to help reduce water use. BMPs are developed for agricultural operations as well as for other activities, such as nutrient management on golf courses, forestry operations, and stormwater management.[14]

Currently, BMAPs are adopted or pending for a significant portion of the state and will continue to be developed as necessary to address water quality impairments. The graphic below shows the state's adopted and pending BMAPs.



[14] DEP, *NPDES Stormwater Program*, https://floridadep.gov/Water/Stormwater (last visited Mar. 15, 2019).

BMAPs for Outstanding Florida Springs

In 2016, the Florida Legislature passed the Florida Springs and Aquifer Protection Act, which identified 30 "Outstanding Florida Springs" (OFS) that have additional statutory protections and requirements.[15] Key aspects of the Springs and Aquifer Protection Act relating to water quality include:

- The development of an onsite sewage treatment and disposal system (OSTDS) remediation plan if it has been determined that OSTDSs within a priority focus area contribute at least 20 percent of nonpoint source nitrogen pollution or that remediation is necessary to achieve the TMDL;
- A 20-year timeline for implementation of the TMDL, including 5-, 10-, and 15-year targets; and
- The prohibition against new OSTDSs on parcels of less than 1 acre, unless the system complies with the OSTDS remediation plan.

The OSTDS remediation plan must include options for repair, upgrade, replacement, drainfield modification, addition of effective nitrogen reducing features, connection to a central sewerage system, or other action for a sewage system or group of systems.[16] The options must be cost-effective and financially feasible projects necessary to reduce the nutrient impacts from OSTDSs within the area.[17]

In June 2018, DEP adopted 13 restoration plans, addressing all 24 nitrogen-impaired OFS.[18] Eight of these plans are currently effective, while five others are pending the outcome of legal challenges on various alleged deficiencies in the BMAP.[19] These deficiencies include lack of specificity in the required list of projects and programs identified to implement a TMDL, lack of detail in cost estimates, incomplete or unclear strategies for nutrient reduction, and failure to account for population growth and agricultural activity.

The Wakulla Springs BMAP serves as a successful example of BMAP implementation with respect to its approach to wastewater and OSTDSs. The nitrogen loading for Wakulla Springs was allocated as described in the table below. The table includes the following acronyms: UTF (Urban Turfgrass Fertilizer), FF (Farm Fertilizer), and LW (Livestock Waste). [20]

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[15] Ch. 2016-1, Laws of Fla.; *see* s. 373.802, F.S., Outstanding Florida Springs include all historic first magnitude springs, including their associated spring runs, as determined by DEP using the most recent Florida Geological Survey springs bulletin, and De Leon Springs, Peacock Springs, Poe Springs, Rock Springs, Wekiwa Springs, and Gemini Springs, and their associated spring runs.
[16] Section 373.807(3), F.S.
[17] *Id*.
[18] *Id*.
[19] *Our Santa Fe River, Inc., et. al. v. DEP*, No. 18-1601, DEP No. 18-2013; *Sierra Club v. DEP*, No. 17-1175, DEP No. 18-0204; *Friends of Wekiva River, Inc. v. DEP*, No. 18-1065, DEP No. 18-0217; *Thomas Greenhalgh v. DEP*, No. 17-1165, DEP No. 18-0204; *Paul Still v. DEP*, No. 18-1061; *Save the Manatee Club, Inc. v. DEP*, No. 17-1167, DEP No. 18-0206; *Silver Springs Alliance, Inc. and Rainbow River Conservation, Inc. v. DEP*, No. 18-1060, DEP No. 18-0211.
[20] DEP, *Upper Wakulla River and Wakulla Springs Basin Management Action Plan* (October 2015), *available at* https://floridadep.gov/dear/water-quality-restoration/documents/upper-wakulla-river-and-wakulla-springs-basin-management-0 (last visited Mar. 16, 2019).

Table 3. Estimated nitrogen load to groundwater by source in the BMAP area

Nitrogen Source	Total Nitrogen Load to Groundwater in Pounds of Nitrogen Per Year (lb-N/yr)	% Contribution
OSTDS	272,313	34
UTF	77,282	10
Atmospheric Deposition	212,134	27
FF	161,985	21
Sports Turfgrass Fertilizer (STF)	15,398	2
LW	23,840	3
Wastewater Treatment Facility (WWTF)	26,697	3
Total	**795,386**	**100**

A priority focus area of an OFS means the area or areas of a basin where the Floridan Aquifer is generally most vulnerable to pollutant inputs where there is a known connectivity between groundwater pathways and an Outstanding Florida Spring, as determined by DEP in consultation with the appropriate water management districts, and delineated in a BMAP.[21] Wastewater treatment facilities within the priority focus areas are subject to wastewater effluent standards based on the size of the facility, with the largest facilities being required to meet the strictest requirements and the smallest plants being authorized to have slightly more relaxed standards. For reference, untreated wastewater generally has a total nitrogen (TN) concentration of 20-70 mg/L, secondary treatment yields 15-30 mg/L, and tertiary treatment yields 3-8 mg/L.[22]

Table 13. Wastewater effluent standards for PFA1 and PFA2

95% of the Permitted Capacity (gpd)	TN Concentration Limits for RIBs and Absorption Fields (mg/L)	TN Concentration Limits for All Other Land Disposal Methods (mg/L)
Greater than 100,000	3	3
20,000 to 100,000	3	6
Less than 20,000	6	6

Appendix D of the Wakulla BMAP sets forth the OSTDS remediation plan, which is still under development. The remediation plan prohibits new conventional systems on lots of less than one acre within the priority focus areas, unless the OSTDS includes enhanced treatment of nitrogen or the OSTDS permit applicant demonstrates that sewer connections will be available within five

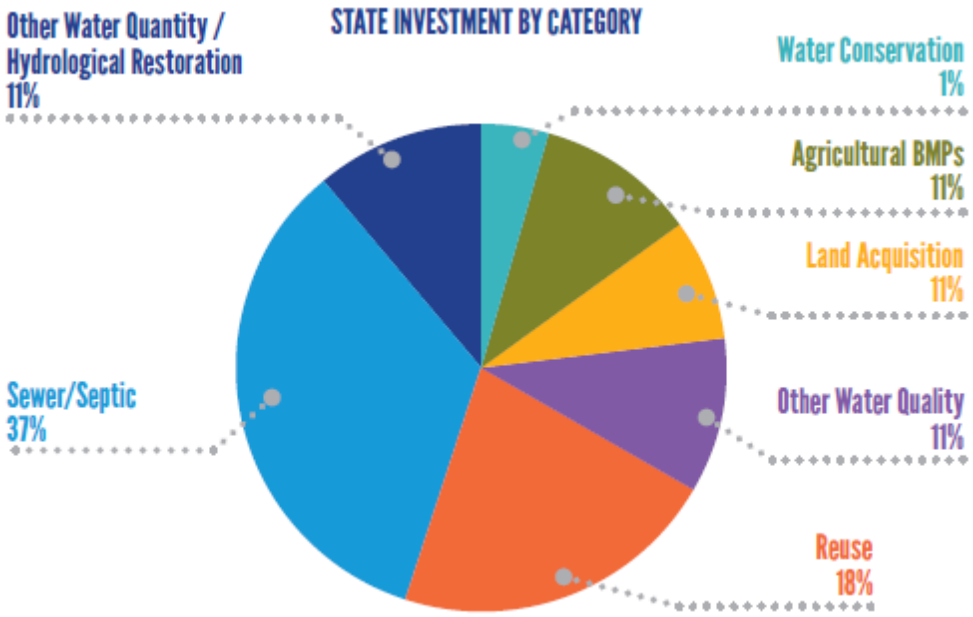
[21] Section 373.802(5), F.S.
[22] Richard O. Carey, Kati W. Migliaccio, *Contribution of Wastewater Treatment Plant Effluents to Nutrient Dynamics in Aquatic Systems: A Review*, Environmental Management (2009) (on file with the Environment and Natural Resources Committee).

years. Local governments and utilities are expected to develop master wastewater treatment feasibility analyses to identify specific areas to be sewered within 20 years of BMAP adoption.

For existing OSTDSs, the remediation policy for existing systems does not go into effect upon BMAP adoption, but rather following completion of the master wastewater treatment feasibility analyses, DOH rulemaking, and creation of a funding program to help offset the costs to homeowners. Regardless, the policy must go into effect no later than five years after BMAP adoption. Existing systems must include nitrogen-reducing enhancements. The OSTDS remediation plan includes a planning tool created by DEP to provide credible scientific information, OSTDS remediation options in the area, and a public education plan.

Funding for Outstanding Florida Springs

The Legislature created a carveout to allocate $50 million annually in funding for Florida springs in 2016.[23] This funding has enabled DEP to assist local governments and other stakeholders to identify and construct projects that are targeted to the springs' nutrient sources and that are imperative to achieving restoration goals. Specifically, DEP's efforts have emphasized land acquisition for conservation, and implementation of enhanced best management practices for agriculture, including innovative cost-share programs and addressing wastewater issues by wastewater treatment upgrades and sewering efforts.[24]



Decisions for the selection of springs projects that will receive state funding in any given year is based upon DEP's consideration of the following factors:

- Nutrient reductions or measurable improvements in water quality;

[23] Ch. 2016-201, Laws of Fla.; s. 375.401, F.S.
[24] DEP, *Springs Restoration Project Plan for the Legislative Budget Commission* (Fiscal Year 2018-2019), *available at* https://floridadep.gov/sites/default/files/LBC%20Report%20FY2018-2019.pdf (last visited Mar. 16, 2019).

- Water savings or measurable water quantity improvements;
- Cost sharing and leveraging opportunities referred to as "match;"
- Readiness to proceed in a timely manner;
- Proximity to priority focus areas or springs; and
- Cost effectiveness.[25]

Restoration Plans as Alternatives to TMDLS

DEP encourages local stakeholders to develop restoration plans[26] at the earliest practicable time to restore waters not meeting state water quality standards.[27] The restoration plans are designed to be a more streamlined process than the BMAP process and can help focus local and state resources directly on measures to improve water quality.[28] Under the Florida Watershed Restoration Act,[29] DEP can forgo establishing a TMDL for a waterbody if DEP can document that there is reasonable assurance existing or proposed pollution control mechanisms or programs that will effectively address the impairment.[30] These restoration plans depend on local stakeholders to gather necessary documentation to demonstrate reasonable assurance that the proposed control mechanisms will restore the particular waterbody.[31]

The following information must be documented in a restoration plan:
- Description of the impaired waterbody;
- Description of water quality or aquatic ecological goals;
- Description of proposed management actions to be undertaken;
- Description of procedures for monitoring and reporting results; and
- Description of and commitment to proposed corrective actions.[32]

Wastewater Treatment Facilities

The proper treatment and disposal or reuse of domestic wastewater is an important part of protecting Florida's water resources. The majority of Florida's domestic wastewater is controlled and treated by centralized treatment facilities regulated by DEP. Florida has approximately 2,000 permitted domestic wastewater treatment facilities.[33]

Chapter 403, F.S., requires that any facility or activity which discharges wastes into waters of the state or which will reasonably be expected to be a source of water pollution must obtain a permit

[25] DEP, *Springs Funding Guidance* (2017), *available at* https://floridadep.gov/sites/default/files/Spring%20Guidance%20Document%202017.pdf (last visited Mar. 16, 2019).
[26] Fla. Admin. Code R. 62-303.600.
[27] DEP, *Guidance on Developing Restoration Plans as Alternatives to TMDLs – Assessment Category 4b and 4e Plans*, 1 (June 2015), *available at* https://floridadep.gov/sites/default/files/4b4ePlansGuidance.pdf (last visited Mar. 13, 2019).
[28] *Id*. at 1-2.
[29] Ch. 99-223, Laws of Fla.
[30] DEP, *Guidance on Developing Restoration Plans as Alternatives to TMDLs – Assessment Category 4b and 4e Plans*, 2 (June 2015), *available at* https://floridadep.gov/sites/default/files/4b4ePlansGuidance.pdf (last visited Mar. 13, 2019).
[31] *Id*.
[32] *Id*. at 6-7.
[33] 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. 15, 2019).

from DEP.[34] Generally, persons who intend to collect, transmit, treat, dispose, or reuse wastewater are required to obtain a wastewater permit. A wastewater permit issued by DEP is required for both operation and certain construction activities associated with domestic or industrial wastewater facilities or activities. A DEP permit must also be obtained prior to construction of a domestic wastewater collection and transmission system.[35]

The National Pollution Discharge Elimination System (NPDES) Program is a federal program established by the Clean Water Act (CWA) to control point source and stormwater discharges.[36] Under section 402 of the CWA, any discharge of a pollutant from a point source to surface waters (i.e., the navigable waters of the United States or beyond) must obtain an NPDES permit. NPDES permit requirements for most wastewater facilities or activities (domestic or industrial) that discharge to surface waters are incorporated into a state-issued permit, thus giving the permittee one set of permitting requirements rather than one state and one federal permit.[37] DEP issues operation permits for a period of 5 years for facilities regulated under the NPDES program and up to 10 years for other domestic wastewater treatment facilities.[38]

In its 2016 Report Card for Florida's infrastructure, the American Society of Civil Engineers reported that the state's wastewater system is increasing in age and the condition of installed treatment and conveyance systems is declining.[39] As existing infrastructure ages, Florida utilities are placing greater emphasis on asset management systems to maintain service to customers. Population growth, aging infrastructure, and sensitive ecological environments are increasing the need to invest in Florida's wastewater infrastructure.

Advanced Waste Treatment

Under Florida law, facilities for sanitary sewage disposal are required to provide for advanced waste treatment, as deemed necessary by DEP.[40] The standard for advanced waste treatment is defined in statute using the maximum concentrations of nutrients or contaminants that a reclaimed water product may contain.[41] The reclaimed water product must also have received high level disinfection, which is a standard of disinfection defined by DEP rule.[42]

Nutrient or Contaminant	Maximum concentration annually
Biochemical Oxygen Demand	5 mg/L
Suspended Solids	5 mg/L
Total Nitrogen	3 mg/L
Total Phosphorus	1 mg/L

[34] Section 403.087, F.S.
[35] DEP, *Wastewater Permitting*, https://floridadep.gov/water/domestic-wastewater/content/wastewater-permitting (last visited Mar. 15, 2019).
[36] 33 U.S.C s. 1342.
[37] Sections 403.061 and 403.087, F.S.
[38] Section 403.087(3), F.S.
[39] American Society of Civil Engineers, *Report Card for Florida's Infrastructure* (2016), *available at* https://www.infrastructurereportcard.org/wp-content/uploads/2017/01/2016_RC_Final_screen.pdf (last visited Mar. 19, 2019).
[40] Section 403.086(2), F.S.
[41] Section 403.086(4), F.S.
[42] Section 403.086(4)(b), F.S.; Fla. Admin. Code R. 62-600.440(6).

Facilities for sanitary sewage disposal are prohibited from disposing of waste into certain waters in the state without providing advanced waste treatment approved by DEP.[43] Specifically, Tampa Bay is viewed as a success story for this type of prohibition.

> [Tampa Bay is] one of the few estuaries in the U.S. that has shown evidence of improving environmental conditions. These water-quality improvements have been due, in large part, to upgrades in wastewater treatment practices at municipal wastewater-treatment plants in the region. Since 1980, all wastewater treatment plants that discharge to the bay or its tributaries have been required by state legislation to meet advanced wastewater treatment standards, a step that has reduced the annual nutrient loads from these sources by about 90 percent.[44]

Sanitary Sewer Overflows

Although domestic wastewater treatment facilities are permitted and designed to safely and properly collect and manage a specified wastewater capacity, obstructions or extreme conditions can cause a sanitary sewer overflow (SSO). Any overflow, spill, release, discharge, or diversion of untreated or partially treated wastewater from a sanitary sewer system is a SSO.[45] A SSO may subject the owner or operator of a facility to civil penalties of not more than $10,000 for each offense (each day during the period in which a violation occurs constitutes a separate offense), a criminal conviction or fines, and additional administrative penalties.[46]

A key concern with SSOs entering rivers, lakes, or streams is their negative effect on water quality. In addition, because SSOs contain partially treated or potentially untreated domestic wastewater, ingestion or similar contact may cause illness. People can be exposed through direct contact in areas of high public access, food that has been contaminated, inhalation, and skin absorption. The Department of Health issues health advisories when bacteria levels present a risk to human health, and may post warning signs when bacteria affect public beaches or other areas where there is a risk of human exposure.[47]

Reduction of SSOs can be achieved through:
- Cleaning and maintaining the sewer system;
- Reducing infiltration and inflow through rehabilitation and repairing broken or leaking lines;
- Enlarging or upgrading sewer pump station or sewage treatment plant capacity and/or reliability; and

[43] Section 403.086(1)(c), F.S. Facilities for sanitary sewage disposal may not dispose of any wastes into Old Tampa Bay, Tampa Bay, Hillsborough Bay, Boca Ciega Bay, St. Joseph Sound, Clearwater Bay, Sarasota Bay, Little Sarasota Bay, Roberts Bay, Lemon Bay, or Charlotte Harbor Bay, or into any river, stream, channel, canal, bay, bayou, sound, or other water tributary thereto, without providing advanced waste treatment approved by DEP. This prohibition does not apply to facilities permitted by February 1, 1987, and which discharge secondary treated effluent, followed by water hyacinth treatment, to tributaries of the named waters; or to facilities permitted to discharge to the nontidally influenced portions of the Peace River.
[44] U.S. Department of the Interior and U.S. Geological Survey, *Integrating Science and Resource Management in Tampa Bay, Florida* (2011), *available at* https://pubs.usgs.gov/circ/1348/pdf/Chapter%205_105-156.pdf (last visited Mar. 16, 2019).
[45] DEP, *Sanitary Sewer Overflows (SSOs), available at* https://floridadep.gov/sites/default/files/sanitary-sewer-overflows.pdf (last visited Mar. 15, 2019).
[46] Sections 403.121 and 403.141, F.S.
[47] DEP, *SSOs, available at* https://floridadep.gov/sites/default/files/sanitary-sewer-overflows.pdf (last visited Mar. 15, 2019).

- Constructing wet weather storage and treatment facilities to treat excess flows.[48]

Onsite Sewage Treatment and Disposal Systems

Onsite sewage treatment and disposal systems (OSTDS), commonly referred to as "septic systems," can contain any one or more of the following components: a septic tank; a subsurface drainfield; an aerobic treatment unit; a graywater tank; a laundry wastewater tank; a grease interceptor; a pump tank; a waterless incinerating or organic waste-composting toilet; and a sanitary pit privy.[49] OSTDSs generally consist of two basic parts: the septic tank and the drainfield.[50] Waste from toilets, sinks, washing machines and showers flows 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. The drainfield also provides filtration of the wastewater, as gravity draws the water down through the soil layers.[51]

The Department of Health (DOH) administers OSTDS programs, develops statewide rules, and provides training and standardization for county health department employees responsible for issuing permits for the installation and repair of septic systems within the state.[52] There are an estimated 2.6 million OSTDSs in Florida, providing wastewater disposal for 30 percent of the state's population.[53]

In Florida, development in some areas is dependent on OSTDSs due to the cost and time it takes to install central sewer systems.[54] For example, in rural areas and low-density developments, central sewer systems are not cost effective. Less than one percent of OSTDS in Florida are actively managed under operating permits and maintenance agreements.[55] The remainder of systems are generally serviced only when they fail, often leading to costly repairs that could have been avoided with routine maintenance.[56] In Florida, approximately 30-40 percent of the

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[48] *Id*.
[49] DEP, *Septic Systems*, https://floridadep.gov/water/domestic-wastewater/content/septic-systems (last visited Mar. 15, 2019); *see* s. 381.0065(2)(k), F.S. "Onsite sewage treatment and disposal system" is defined as "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 system. This term does not include package sewage treatment facilities and other treatment works regulated under chapter 403."
[50] DOH, *Septic System Information and Care*, http://columbia.floridahealth.gov/programs-and-services/environmental-health/onsite-sewage-disposal/septic-information-and-care.html (last visited Mar. 15, 2019).
[51] *Id*.
[52] Section 381.0065(3), F.S.
[53] DOH, *Onsite Sewage*, http://www.floridahealth.gov/environmental-health/onsite-sewage/index.html (last visited Mar. 15, 2019).
[54] DOH, *Report on Range of Costs to Implement a Mandatory Statewide 5-Year Septic Tank Inspection Program*, Executive Summary (Oct. 1, 2008), *available at* http://www.floridahealth.gov/environmental-health/onsite-sewage/research/_documents/rrac/2008-11-06.pdf (last visited Mar. 15, 2019). The report begins on page 56 of the PDF.
[55] *Id*.
[56] *Id*.

nitrogen levels are reduced in a system that is installed 24 inches or more from groundwater.[57] This still leaves a significant amount of nitrogen to percolate into the groundwater, which makes nitrogen from OSTDSs a potential contaminant in groundwater.[58]

The owner of a properly functioning OSTDS must connect to a sewer system within one year of receiving notification that a sewer system is available for connection.[59] Owners of an OSTDS in need of repair or modification must connect within 90 days of notification from DOH.[60]

Water Quality Monitoring

One of DEP's goals is to determine the quality of the state's surface and ground water resources. This goal is primarily accomplished through several water quality monitoring strategies that are administered through the Water Quality Assessment Program. Responsibilities of the program include: monitoring and assessing how water quality is changing over time; the overall water quality and impairment status of the state's water resources; and the effectiveness of water resource management, protection, and restoration programs.[61]

Within the Water Quality Assessment Program, DEP administers the Watershed Monitoring Program. This program is responsible for collecting reliable data through water samples from rivers, streams, lakes, canals, and wells around the state.[62] This information is used by DEP to determine which waters are impaired and what restoration efforts are needed.

Urban Fertilizer Usage and Florida's Model Ordinance

The Legislature passed the Protection of Urban and Residential Environments and Water Act in 1999.[63] The law encourages county and municipal governments to adopt and enforce the Model Ordinance for Florida-Friendly Fertilizer Use on Urban Landscapes or an equivalent requirement to protect local surface and groundwater quality.[64] The law requires each local government located within the watershed of a water body or water segment that is listed as impaired by nutrients to adopt, at minimum, the ordinance, unless the county or municipal government already had a fertilizer use ordinance before July 1, 2009.[65] As part of the Florida Springs and Aquifer Protection Act, the Legislature required each local government that includes an OFS or any part of a springshed or OFS priority focus area and had not adopted a fertilizer ordinance, to

[57] DOH, *Florida Onsite Sewage Nitrogen Reduction Strategies Study*, *Final Report 2008-2015*, 21 (Dec. 2015), *available at* http://www.floridahealth.gov/environmental-health/onsite-sewage/research/draftlegreportsm.pdf (last visited Mar. 15, 2019).
[58] University of Florida Institute of Food and Agricultural Sciences (IFAS), *Onsite Sewage Treatment and Disposal Systems: Nitrogen*, 3 (Feb. 2014), *available at* http://edis.ifas.ufl.edu/pdffiles/SS/SS55000.pdf (last visited Mar. 15, 2019).
[59] Section 381.00655, F.S.
[60] *Id*.
[61] DEP, *Water Quality Assessment Program*, https://floridadep.gov/dear/water-quality-assessment (last visited Mar. 21, 2019).
[62] DEP, *Watershed Monitoring*, https://floridadep.gov/dear/watershed-monitoring-section (last visited Mar. 21, 2019).
[63] Ch. 1999-199, ss. 2-5, Laws of Fla.
[64] Section 403.9337(1), F.S.
[65] Section 403.9337(2), (3), F.S.

develop, enact, and implement an ordinance by July 1, 2017.[66] Currently, 32 counties have adopted a fertilizer ordinance.[67]

Application of fertilizer in urban areas can impact watersheds when it runs off lawns and impervious surfaces into stormwater collection systems or directly into the surface water. DEP has provided guidelines to minimize the impact of urban fertilizer use and adopted the Model Ordinance for Florida-Friendly Fertilizer Use on Urban Landscapes.[68] The model ordinance provides counties and municipalities with a range of options to help minimize fertilizer inputs from urban applications. Some of the suggestions contained in the model ordinance are:

- Restricting the times fertilizer may be applied, such as restricting its application during the rainy season;
- Creating fertilizer free zones around sensitive waterbodies such as ponds, streams, watercourses, lakes, canals, or wetlands;
- Controlling application practices by, for example, restricting fertilizer application on impervious surfaces and requiring prompt cleanup of any fertilizer that is spilled on impervious surfaces; and
- Managing grass clipping and vegetative matter by disposing of such materials properly rather than simply blowing them into the street, ditches, stormwater drains, or waterbodies.[69]

Indian River Lagoon

The Indian River Lagoon (IRL) system is an estuary[70] that runs along 156 miles of Florida's east coast and connects Volusia, Brevard, Indian River, St. Lucie, and Martin counties.[71] The IRL system is composed of three main waterbodies: Mosquito Lagoon, Banana River, and the Indian River Lagoon.[72] There are four Basin Management Action Plans (BMAP) that have been adopted for the IRL.[73]

The IRL is one of the most biologically diverse estuaries in North America and is home to more than 2,000 species of plants, 600 species of fish, 300 species of birds, and 53 endangered or threatened species.[74] The estimated economic value received from the IRL in 2014 was

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[66] Section 373.807(2), F.S.
[67] UF/IFAS Florida-Friendly Landscaping Program, *Florida Fertilizer Ordinances* (updated Jan. 10, 2019), *available at* https://ffl.ifas.ufl.edu/pdf/FloridaFertilizerOrdinances.pdf?v=20190219 (last visited Mar. 15, 2019).
[68] DEP, *Model Ordinance for Florida-Friendly Fertilizer Use on Urban Landscapes* (2015), *available at* https://ffl.ifas.ufl.edu/pdf/dep-fert-modelord.pdf (last visited Mar. 15, 2019).
[69] *Id*. at 6-9.
[70] An estuary is a partially enclosed, coastal waterbody where freshwater from rivers and streams mixes with saltwater from the ocean. Estuaries are among the most productive ecosystems on earth, home to unique plant and animal communities that have adapted to brackish water: freshwater mixed with saltwater. U.S. EPA, *What Is An Estuary?*, https://www.epa.gov/nep/basic-information-about-estuaries (last visited Mar. 15, 2019); NOAA, *What Is An Estuary?*, https://oceanservice.noaa.gov/facts/estuary.html (last visited Mar. 15, 2019).
[71] IRL National Estuary Program, *About the Indian River Lagoon*, http://www.irlcouncil.com/ (last visited Mar. 15, 2019).
[72] *Id*.
[73] East Central Florida Regional Planning Council and the Treasure Coast Regional Planning Council, *Indian River Lagoon Economic Valuation Update*, x (Aug. 26, 2016), *available at* http://tcrpc.org/special_projects/IRL_Econ_Valu/FinalReportIRL08_26_2016.pdf (last visited Mar. 15, 2019); DEP, *Basin Management Action Plans (BMAPs)*, https://floridadep.gov/dear/water-quality-restoration/content/basin-management-action-plans-bmaps (last visited Mar. 15, 2019).
[74] IRL National Estuary Program, *About the Indian River Lagoon*, http://www.irlcouncil.com/ (last visited Mar. 15, 2019).

approximately $7.6 billion.[75] Industry groups that are directly influenced by the IRL support nearly 72,000 jobs, collecting wages totaling more than $1.2 billion annually.[76]

The balance of the IRL's delicate ecosystem has been disturbed by increased development in the area. Development has led to harmful levels of nutrients and sediments entering the lagoon as a result of stormwater runoff from urban and agricultural areas, wastewater treatment facility discharges, septic systems, and excess fertilizer applications.[77] In the last decade, as a result of the pollution, there have been algae blooms; unusual mortalities of dolphins, manatees, and shorebirds; and large fish kills due to low dissolved oxygen from decomposing algae.[78] Additionally, thick layers of muck have built up at the bottom of waterbodies and now cover an estimated 15,900 acres of the lagoon bottom in Brevard County, in some areas measuring more than 6 feet thick.[79]

Type Two Transfer

Section 20.06(2), F.S., defines a type two transfer as the merging of an existing department, program, or activity into another department. Any program or activity transferred by a type two transfer retains all the statutory powers, duties, and functions it held previous to the transfer. The program or activity also retains its records, personnel, property, and unexpended balances of appropriations, allocations, or other funds, unless otherwise provided by law. The transfer of segregated funds must be made in such a manner that the relation between the program and the revenue source is retained.[80]

III. Effect of Proposed Changes:

Section 1 provides a short title for the act, "Clean Waterways Act."

Section 2 requires the Department of Environmental Protection (DEP), in coordination with the Department of Health (DOH), to develop a report for presentation to the Legislature which addresses the impacts of a type two transfer of the onsite sewage treatment and disposal system (OSTDS) program. The report must include revisions to state law, including budgetary changes, which would need to be addressed. If DEP is authorized to develop a memorandum of agreement with DOH describing how a type two transfer would be implemented if the Legislature authorized such a transfer, the report would not be required.

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[75] East Central Florida Regional Planning Council and the Treasure Coast Regional Planning Council, *Indian River Lagoon Economic Valuation Update*, vi (Aug. 26, 2016), *available at* http://tcrpc.org/special_projects/IRL_Econ_Valu/FinalReportIRL08_26_2016.pdf (last visited Mar. 15, 2019).
[76] *Id.* at ix. The main IRL-related industry groups are categorized as: Living Resources; Marine Industries; Recreation and Visitor-related; Resource Management; and Defense & Aerospace.
[77] Tetra Tech, Inc. & Closewaters, LLC, *Draft Save Our Indian River Lagoon Project Plan 2019 Update for Brevard County, Florida*, xii (Jan. 2019), *available at* https://www.dropbox.com/sh/59riiyz9eevvdq0/AACc4Rq3SJqiO-ZOYUA3TJMsa?dl=0&preview=Draft+2019+Save+Our+Indian+River+Lagoon+Project+Plan+Update+012919.pdf (last visited Mar. 15, 2019).
[78] *Id*. at 1.
[79] *Id*. at 52.
[80] Section 20.06(2), F.S.

Section 3 revises basin management action plan (BMAP) requirements for Outstanding Florida Springs (OFS). The bill:

- Requires that the priority ranking for each listed project be based on nutrient load per project, project readiness, cost effectiveness, overall environmental benefit, location within the plan area, local matching funds, and water savings or quantity improvements;
- Requires that each BMAP include, as set out in section 7 of the bill, a plan submitted by each local government within the plan area for each wastewater treatment plant project and each OSTDS remediation plan, and adopts the penalties set out in that section;
- Requires local governments that include an OFS or any part of a springshed or priority focus area of an OFS to:
  - Adopt, enact, and implement a fertilizer use ordinance by July 1, 2020;
  - Conduct educational campaigns, enforcement programs, and notification of property owners subject to the ordinance; and
  - Submit a report on its efforts to DEP for publication on DEP's website;
- Imposes penalties and a moratorium on approval of building permits for new construction on local governments that fail to implement an ordinance;
- Transfers the requirement for an OSTDS remediation plan to the general BMAP provisions to require a revised version of the plans for all BMAPs; and
- Requires that agricultural operations located within the associated Water Body Identification Number sign a notice of intent to implement agricultural best management practices or conduct water quality monitoring if a BMAP or alternative restoration plan has not been adopted within 90 days of the adoption of a total maximum daily load (TMDL).

Section 4 corrects a cross-reference.

Section 5 defines the term:

- "Wastewater facilities" or "wastewater treatment facilities" to mean any of the following: the collection and transmission system, the wastewater treatment plant, and the reuse or disposal system.
- "Wastewater plant" or "wastewater treatment plant" to mean any plant or other works used for the purpose of treating, stabilizing, or holding wastewater.

Section 6 requires DEP, subject to appropriation, to establish a real-time water quality monitoring program to assist in the restoration, preservation, and enhancement of impaired waterbodies and coastal resources. The bill encourages DEP to form public-private partnerships with established scientific entities with existing, proven real-time water quality monitoring equipment and experience deploying such equipment.

Section 7 revises general BMAP requirements. The bill:

- Requires that agricultural operations located within the associated Water Body Identification Number sign a notice of intent to implement agricultural best management practices or conduct water quality monitoring if a BMAP or alternative restoration plan has not been adopted within 90 days of the adoption of a TMDL; and
- Requires that the priority ranking for each listed project be based on nutrient load per project, project readiness, cost effectiveness, overall environmental benefit, location within the plan area, local matching funds, and water savings or quantity improvements.

The bill creates a wastewater treatment plan, which:

- Requires a local government, in cooperation with DEP, the relevant water management district, and the relevant local public and private wastewater utilities, to develop a plan to implement improvements that provide, at minimum, advanced waste treatment;
- Requires that each plan provide for construction, expansion, or upgrades necessary to achieve a total maximum daily load, consistent with an OSTDS remediation plan;
- Clarifies that a local government that does not have a wastewater treatment plant in its jurisdiction is not required to develop a wastewater treatment plan;
- Provides that a local public or private wastewater utility that implements a waste treatment program that meets or exceeds advanced waste treatment may be deemed to comply with the requirements for a wastewater treatment plan;
- Creates a grandfather provision for certain wastewater treatment plants that have met the requirements for a TMDL by July 1, 2019;
- Requires owners or operators of existing wastewater treatment plants to provide certain information for each plant with a plan to implement upgrades, including:
  - The permitted capacity of the plant;
  - The average nutrient concentration; and
  - The estimated average nutrient load;
- Requires local governments to provide certain information in the plan:
  - The timeline of dates required for beginning construction, completing each stage of construction, and beginning operations;
  - A detailed planning and design report setting forth the plan for construction of improvements and operations; and
  - A certification that the local government, in agreement with the owner or operator of the wastewater treatment plant, has improved the method of implementing upgrades and method of financing or funding construction and operation;
- Authorizes DEP to amend the plan and requires DEP to approve a final plan;
- Requires DEP to provide technical support to a local government upon request;
- Requires existing wastewater treatment plants to incorporate the wastewater treatment plan into its next NPDES permit renewal;
- Provides that failure to meet deadlines and comply with the plan will result in a moratorium on local government approval of building permits for new construction, a moratorium on DOH approval of new OSTDSs, and penalties; and
- Authorizes DEP to grant an extension of time to a local government to reach compliance with the schedule upon a showing of good cause and to reduce penalties based on expenditures for improvements and upgrades to the wastewater treatment plant.

The bill revises and expands the OSTDS remediation plans, currently required only for OFSs, to:

- Apply to all BMAPs and revise the provisions to shift primary responsibility to local governments;
- Authorize DEP to identify OSTDS remediation plan priority focus areas;
- Require a local government, in cooperation with DEP, the relevant water management district, and the relevant local public and private wastewater utilities, to develop an OSTDS remediation plan if DEP has identified OSTDSs as contributors of at least 20 percent of nonpoint source nutrient pollution or if DEP determines that remediation is necessary to achieve a TMDL.

- Require the plan to be completed and adopted as part of a BMAP no later than the first 5-year milestone assessment for the BMAP;
- Require that each plan provide for connecting each OSTDS to a central wastewater treatment plant or replacing the current system with a new system so the nutrient load meets or exceeds current water quality standards;
- Require each plan to include water quality monitoring provisions;
- Require local governments to submit a plan with:
  - The timeline of dates required for beginning construction, completing each stage of construction, and mandatory upgrades of OSTDSs or applicable ordinances;
  - A detailed planning and design report setting forth the plan for construction of improvements and operations; and
  - A certification that the local government, in agreement with the owner/operator, has improved the method of remediation and method of financing or funding construction and operation;
- Require local governments to hold publicly noticed meetings on OSTDS plans.
- Authorize DEP to amend the plan and require DEP to approve a final plan;
- Require DEP to provide technical support to a local government upon request;
- Provide that failure to meet deadlines and comply with the plan will result in a moratorium on local government approval of building permits for new construction, a moratorium on DOH approval of new OSTDSs, and penalties;
- Authorize DEP to grant an extension of time to a local government to reach compliance with the schedule upon a showing of good cause and to reduce penalties based on expenditures designed to achieve compliance with the remediation plan; and
- Require the installation, repair, modification, or upgrade of OSTDSs within the BMAP area with an OSTDS remediation plan to conform to the requirements of the remediation plan.

The bill requires local stakeholders to consider in an alternative restoration plan:
- Implementation of BMPs or monitoring for nonpoint sources, which then become enforceable upon adoption of the restoration plan;
- Implementation of OSTDS remediation plans needed to restore the water body;
- Adoption of advanced waste treatment levels for wastewater treatment plants; and
- Any other pollution control mechanisms being implemented to demonstrate a reasonable assurance that existing or proposed pollution control mechanisms or programs will effectively address the impairment.

Section 8 establishes a grant program within DEP, subject to appropriation, to provide grants for projects that will individually or collectively reduce excess nutrient pollution in a BMAP or alternative restoration plan that will:
- Retrofit OSTDSs;
- Construct, upgrade, or expand wastewater facilities to provide advanced waste treatment; and
- Connect OSTDSs to central sewer facilities.

The bill directs DEP to give priority for projects that subsidize the connection of OSTDSs to a wastewater treatment plant or that subsidize inspections and assessments of OSTDSs. The bill requires DEP to consider a list of factors in determining priorities.

The bill requires 50% matching funds from local governments but authorizes DEP to waive the matching requirement for rural areas of opportunity.

The bill authorizes DEP to coordinate with water management districts to identify grant recipients. The bill requires DEP to submit an annual report on funded projects to the Governor and the Legislature every January 1, beginning in 2020.

Section 9 requires a wastewater treatment facility that discharges raw or partially treated sewage into a waterway or aquifer to provide notification to its customers within 24 hours after discovering the discharge.

The bill imposes a moratorium on local government approval of building permits for new construction, a moratorium on DOH approval of new OSTDSs, and existing civil and criminal penalties on the wastewater treatment facility until the required maintenance, repair, or improvement has been implemented. The bill authorizes DEP to reduce penalties based on the wastewater treatment facility's investment in assessment and maintenance activities.

The bill requires DEP to maintain a publicly accessible website that includes current consent orders applicable to and reports filed by a wastewater treatment facility that has had sanitary sewer overflows.

Section 10 adds Indian River Lagoon, effective July 1, 2024, to a list of waterbodies with a prohibition against any sanitary sewage disposal into the waterbody without providing advanced waste treatment approved by DEP.

Section 11 imposes a moratorium and daily fines on local governments located within the watershed of a water body that is listed as impaired that fails to adopt, enact, and implement the Model Ordinance for Florida-Friendly Fertilizer Use on Urban Landscapes. In implementing the ordinance, the bill requires local governments to conduct educational campaigns, enforcement programs, and notification of property owners subject to the ordinance, and submit a report on its efforts to DEP for publication on DEP's website.

Section 12 requires DEP to revise all BMAPs that were adopted and approved by the Secretary of Environmental Protection or prepared by DEP before July 1, 2019:

- By July 1, 2021, for the Indian River Lagoon, waterbodies with a direct hydrological connection to the Indian River Lagoon, and Outstanding Florida Springs. Authorizes DEP to grant a 6-month extension, upon a showing of good cause, to a local government on the deadlines for its wastewater treatment or OSTDS remediation plan.
- Beginning July 1, 2021, for all other BMAPs. Authorizes DEP to grant a 6-month extension, upon a showing of good cause, to a local government on the deadlines for its wastewater treatment or OSTDS remediation plan.

Section 13 provides a finding of important state interest.

Section 14 provides that except as otherwise expressly provided in the act, the effective date is July 1, 2019.

IV. Constitutional Issues:

A. Municipality/County Mandates Restrictions:

The county and municipality mandate provisions of Article VII, section 18 of the Florida Constitution may apply because the bill requires local governments to develop and implement plans for wastewater treatment facility improvements and OSTDS improvements and connections, which may require the expenditure of funds. Article VII, section 18(a) of the Florida Constitution provides in part that a county or municipality may not be bound by a general law requiring a county or municipality to spend funds or take an action that requires the expenditure of funds unless certain specified exemptions or exceptions are met.

Article VII, section 18(d) provides eight exemptions, which, if any single one is met, exempts the law from the limitations on mandates. If no exemption or exception applies, the bill may require a finding of important state interest and a two-thirds vote of the membership of each house.

B. Public Records/Open Meetings Issues:

None.

C. Trust Funds Restrictions:

None.

D. State Tax or Fee Increases:

None.

E. Other Constitutional Issues:

None.

V. Fiscal Impact Statement:

A. Tax/Fee Issues:

None.

B. Private Sector Impact:

There may be a negative fiscal impact on builders who are unable to secure building permits for new construction or permits for new OSTDSs or who experience delays in a local jurisdiction that is subject to a moratorium imposed under the bill.

Wastewater treatment facilities may incur a negative fiscal impact due to costs associated with notifying customers of a sanitary sewage overflow. Additionally, if a wastewater

treatment facility makes an unlawful discharge, it may incur penalties until it implements required maintenance, repairs, or improvements.

C. Government Sector Impact:

There may be a significant negative fiscal impact on local governments that are required to develop and implement wastewater treatment facility improvements and OSTDS improvements and connections. There may be an additional negative fiscal impact on a local government that does not comply with the requirements under the bill, leading to a moratorium on issuing building permits for new construction or an assessment of penalties.

However, there may be a positive fiscal impact on a local government that receives a grant for wastewater or OSTDS projects. There may also be a positive fiscal impact on government expenditures if the revisions to BMAPs improve water quality, resulting in decreased expenditures on water cleanup efforts.

There may be negative fiscal impacts on DEP if staff time and department resources are necessary to administer the wastewater grant program and to provide technical support to local governments that request assistance.

VI. Technical Deficiencies:

None.

VII. Related Issues:

None.

VIII. Statutes Affected:

This bill substantially amends the following sections of the Florida Statutes: 373.807, 373.811, 403.031, 403.067, 403.086, and 403.9337.

This bill creates the following sections of the Florida Statutes: 403.0616, 403.0673, and 403.0771.

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 Environment and Natural Resources Committee on March 20, 2019:

- Deletes the type two transfer of the onsite sewage program from DOH to DEP and instead, requires DEP, in coordination with DOH, to develop a report for presentation to the Legislature which addresses the impacts of a type two transfer. If DEP is authorized to develop a memorandum of agreement with DOH describing how a type two transfer would be implemented, the report would not be required.

- Deletes language requiring the nutrient load reductions in each BMAP to exceed the total nutrient load reductions needed to meet the TMDL.
- Requires a local government that implements the Model Ordinance for Florida-Friendly Fertilizer Use on Urban Landscapes to, as part of implementation, conduct education, enforcement, and notification, and requires the local government to submit a report on its efforts to DEP for publication on DEP's website.
- Deletes the agriculture remediation plan, and instead, if a BMAP or alternative restoration plan has not been adopted within 90 days of the adoption of a TMDL, requires that agricultural operations sign a notice of intent to implement best management practices or conduct water quality monitoring.
- Defines the terms "wastewater facilities" and "wastewater plant" for chapter 403.
- Requires DEP to establish a water quality monitoring program and encourages DEP to form public-private partnerships with entities with established monitoring equipment.
- Provides that a local public or private wastewater utility that implements a waste treatment program that meets or exceeds advanced waste treatment may be deemed to comply with the requirements for a wastewater treatment plan.
- Creates a grandfather provision for certain wastewater treatment plants that have met the requirements for a TMDL by July 1, 2019.
- Requires local governments to hold publicly noticed meetings on OSTDS plans.
- Requires OSTDS plans to include water quality monitoring provisions.
- Requires DEP to maintain a public website that includes current consent orders and reports for a wastewater treatment facility that has had sanitary sewer overflows.
- Revises the moratorium provisions in the bill to apply only to new building permits and new OSTDS permits.
- Delays the deadlines for DEP's BMAPs to July 1, 2021.
- Adds a statement of important state interest.
- Makes other technical and clarifying changes.

B. Amendments:

None.

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LEGISLATIVE ACTION

Senate	.	House
Comm: RCS	.	
03/20/2019	.	
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The Committee on Environment and Natural Resources (Mayfield) recommended the following:

Senate Amendment (with title amendment)

Delete everything after the enacting clause and insert:

Section 1. This act may be cited as the "Clean Waterways Act."

Section 2. The Department of Environmental Protection, in coordination with the Department of Health, shall develop a report for presentation to the Legislature by July 1, 2020, which addresses the impacts of a type two transfer of the

Department of Health's onsite sewage program to the Department of Environmental Protection for the regulation of onsite sewage treatment and disposal systems. The report must include revisions to state law, including budgetary changes, which would need to be addressed to complete the type two transfer. If the Department of Environmental Protection is authorized to develop a memorandum of agreement with the Department of Health describing how the type two transfer would be implemented if the Legislature authorized such a transfer, this report is not required.

Section 3. Section 373.807, Florida Statutes, is amended to read:

373.807 Protection of water quality in Outstanding Florida Springs.—By July 1, 2016, the department shall initiate assessment, pursuant to s. 403.067(3), of Outstanding Florida Springs or spring systems for which an impairment determination has not been made under the numeric nutrient standards in effect for spring vents. Assessments must be completed by July 1, 2018.

(1)(a) Concurrent with the adoption of a nutrient total maximum daily load for an Outstanding Florida Spring, the department, or the department in conjunction with a water management district, shall initiate development of a basin management action plan, as specified in s. 403.067. For an Outstanding Florida Spring with a nutrient total maximum daily load adopted before July 1, 2016, the department, or the department in conjunction with a water management district, shall initiate development of a basin management action plan by July 1, 2016. During the development of a basin management action plan, if the department identifies onsite sewage

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treatment and disposal systems as contributors of at least 20 percent of nonpoint source nutrient ~~nitrogen~~ pollution or if the department determines remediation is necessary to achieve the total maximum daily load, the basin management action plan shall include an onsite sewage treatment and disposal system remediation plan pursuant to s. 403.067(7)(e) ~~subsection (3)~~ for those systems identified as requiring remediation.

(b) A basin management action plan for an Outstanding Florida Spring shall be adopted within 2 years after its initiation and must include, at a minimum:

1. A list of all specific projects and programs identified to implement a nutrient total maximum daily load;

2. A list of all specific projects identified in any incorporated onsite sewage treatment and disposal system remediation plan, if applicable;

3. A priority rank for each listed project. The priority ranking shall be based on the estimated reduction in nutrient load per project, project readiness, cost effectiveness, overall environmental benefit, location within the plan area, local matching funds, and water savings or quantity improvements;

4. For each listed project, a planning level cost estimate, ~~and~~ the estimated date of completion, and a plan submitted by each local government within the plan area and approved by the department for each wastewater treatment plant project as specified in s. 403.067(7)(d) and onsite sewage treatment and disposal system remediation plan as specified in s. 403.067(7)(e). Each plan must include deadlines and is subject to penalties required under s. 403.067;

5. The source and amount of financial assistance to be made

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available by the department, a water management district, or other entity for each listed project;

6. An estimate of each listed project's nutrient load reduction;

7. Identification of each point source or category of nonpoint sources, including, but not limited to, urban turf fertilizer, sports turf fertilizer, agricultural fertilizer, onsite sewage treatment and disposal systems, wastewater treatment facilities, animal wastes, and stormwater facilities. An estimated allocation of the pollutant load must be provided for each point source or category of nonpoint sources; and

8. An implementation plan designed with a target to achieve the nutrient total maximum daily load no more than 20 years after the adoption of a basin management action plan.

The department shall develop a schedule establishing 5-year, 10-year, and 15-year targets for achieving the nutrient total maximum daily load. The schedule shall be used to provide guidance for planning and funding purposes and is exempt from chapter 120.

(c) For a basin management action plan adopted before July 1, 2016, which addresses an Outstanding Florida Spring, the department or the department in conjunction with a water management district must revise the plan if necessary to comply with this section by July 1, 2018.

(d) A local government may apply to the department for a single extension of up to 5 years for any project in an adopted basin management action plan. A local government in a rural area of opportunity, as defined in s. 288.0656, may apply for a

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single extension of up to 10 years for such a project. The department may grant the extension if the local government provides to the department sufficient evidence that an extension is in the best interest of the public.

(2) By July 1, 2020 ~~2017~~, each local government, as defined in s. 373.802(2), that has not adopted an ordinance pursuant to s. 403.9337, shall develop, enact, and implement an ordinance pursuant to that section. It is the intent of the Legislature that ordinances required to be adopted under this subsection reflect the latest scientific information, advancements, and technological improvements in the industry. A local government that fails to adopt, enact, and implement this ordinance is subject to a daily fine as provided in ss. 403.121, 403.141, and 403.161 and may not approve any building permit for new construction within the plan area until such time as the ordinance has been adopted, enacted, and implemented. In implementing the ordinance, a local government shall conduct educational campaigns, enforcement programs, and mandatory notification of property owners subject to the ordinance, and shall submit a report on its implementation efforts to the department for publication on the department's website.

(3) If a basin management action plan or an alternative restoration plan has not been adopted within 90 days after the adoption of a nutrient total maximum daily load for an Outstanding Florida Spring, agricultural operations located within the associated Water Body Identification Number shall sign a notice of intent to implement the applicable agricultural best management practices or other measures adopted by the Department of Agriculture and Consumer Services pursuant to s.

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403.067(7)(c) or conduct water quality monitoring as prescribed by the department or a water management district. Such agricultural operations may be subject to enforcement action by the department or a water management district based upon a failure to comply with this subsection.

~~(3) As part of a basin management action plan that includes an Outstanding Florida Spring, the department, the Department of Health, relevant local governments, and relevant local public and private wastewater utilities shall develop an onsite sewage treatment and disposal system remediation plan for a spring if the department determines onsite sewage treatment and disposal systems within a priority focus area contribute at least 20 percent of nonpoint source nitrogen pollution or if the department determines remediation is necessary to achieve the total maximum daily load. The plan shall identify cost-effective and financially feasible projects necessary to reduce the nutrient impacts from onsite sewage treatment and disposal systems and shall be completed and adopted as part of the basin management action plan no later than the first 5-year milestone required by subparagraph (1)(b)8. The department is the lead agency in coordinating the preparation of and the adoption of the plan. The department shall:~~

~~(a) Collect and evaluate credible scientific information on the effect of nutrients, particularly forms of nitrogen, on springs and springs systems; and~~

~~(b) Develop a public education plan to provide area residents with reliable, understandable information about onsite sewage treatment and disposal systems and springs.~~

~~In addition to the requirements in s. 403.067, the plan shall include options for repair, upgrade, replacement, drainfield modification, addition of effective nitrogen reducing features, connection to a central sewerage system, or other action for an onsite sewage treatment and disposal system or group of systems within a priority focus area that contribute at least 20 percent of nonpoint source nitrogen pollution or if the department determines remediation is necessary to achieve a total maximum daily load. For these systems, the department shall include in the plan a priority ranking for each system or group of systems that requires remediation and shall award funds to implement the remediation projects contingent on an appropriation in the General Appropriations Act, which may include all or part of the costs necessary for repair, upgrade, replacement, drainfield modification, addition of effective nitrogen reducing features, initial connection to a central sewerage system, or other action. In awarding funds, the department may consider expected nutrient reduction benefit per unit cost, size and scope of project, relative local financial contribution to the project, and the financial impact on property owners and the community. The department may waive matching funding requirements for proposed projects within an area designated as a rural area of opportunity under s. 288.0656.~~

(4) The department shall provide notice to a local government of all permit applicants under s. 403.814(12) in a priority focus area of an Outstanding Florida Spring over which the local government has full or partial jurisdiction.

Section 4. Subsection (2) of section 373.811, Florida Statutes, is amended to read:

373.811 Prohibited activities within a priority focus area.—The following activities are prohibited within a priority focus area in effect for an Outstanding Florida Spring:

(2) New onsite sewage treatment and disposal systems on lots of less than 1 acre, if the addition of the specific systems conflicts with an onsite treatment and disposal system remediation plan incorporated into a basin management action plan in accordance with s. 403.067(7)(e) ~~s. 373.807(3).~~

Section 5. Subsections (22) and (23) are added to section 403.031, Florida Statutes, to read:

403.031 Definitions.—In construing this chapter, or rules and regulations adopted pursuant hereto, the following words, phrases, or terms, unless the context otherwise indicates, have the following meanings:

(22) "Wastewater facilities" or "wastewater treatment facilities" means any of the following: the collection and transmission system, the wastewater treatment plant, and the reuse or disposal system.

(23) "Wastewater plant" or "wastewater treatment plant" means any plant or other works used for the purpose of treating, stabilizing, or holding wastewater.

Section 6. Section 403.0616, Florida Statutes, is created to read:

403.0616 Real-time water quality monitoring program.-

(1) Subject to appropriation, the department shall establish a real-time water quality monitoring program to assist in the restoration, preservation, and enhancement of impaired waterbodies and coastal resources.

(2) In order to expedite the creation and implementation of

the program, the department is encouraged to form public-private partnerships with established scientific entities with existing, proven real-time water quality monitoring equipment and experience in deploying such equipment.

Section 7. Present paragraph (d) of subsection (7) of section 403.067, Florida Statutes, is redesignated as paragraph (f), a new paragraph (d) and paragraphs (e) and (g) are added to that subsection, paragraph (a) of that subsection is amended, and paragraph (d) is added to subsection (3) of that section, to read:

403.067 Establishment and implementation of total maximum daily loads.—

(3) ASSESSMENT.—

(d) If a basin management action plan or an alternative restoration plan has not been adopted within 90 days after the adoption of a total maximum daily load for a water body or water body segment, agricultural operations located within the associated Water Body Identification Number shall sign a notice of intent to implement the applicable agricultural best management practices or other measures adopted by the Department of Agriculture and Consumer Services pursuant to s. 403.067(7)(c) or conduct water quality monitoring as prescribed by the department or a water management district. Such agricultural operations may be subject to enforcement action by the department or a water management district based upon a failure to comply with this paragraph.

(7) DEVELOPMENT OF BASIN MANAGEMENT PLANS AND IMPLEMENTATION OF TOTAL MAXIMUM DAILY LOADS.—

(a) *Basin management action plans.*—

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1. In developing and implementing the total maximum daily load for a water body, the department, or the department in conjunction with a water management district, may develop a basin management action plan that addresses some or all of the watersheds and basins tributary to the water body. Such plan must integrate the appropriate management strategies available to the state through existing water quality protection programs to achieve the total maximum daily loads and may provide for phased implementation of these management strategies to promote timely, cost-effective actions as provided for in s. 403.151. The plan must establish a schedule implementing the management strategies, provide detailed information for improvement projects including descriptions and timelines for completion, establish a basis for evaluating the plan's effectiveness, and identify feasible funding strategies for implementing the plan's management strategies. The management strategies may include regional treatment systems or other public works, where appropriate, and voluntary trading of water quality credits to achieve the needed pollutant load reductions.

2. A basin management action plan must equitably allocate, pursuant to paragraph (6)(b), pollutant reductions to individual basins, as a whole to all basins, or to each identified point source or category of nonpoint sources, as appropriate. For nonpoint sources for which best management practices have been adopted, the initial requirement specified by the plan must be those practices developed pursuant to paragraph (c). Where appropriate, the plan may take into account the benefits of pollutant load reduction achieved by point or nonpoint sources that have implemented management strategies to reduce pollutant

loads, including best management practices, before the development of the basin management action plan. The plan must also identify the mechanisms that will address potential future increases in pollutant loading.

3. The basin management action planning process is intended to involve the broadest possible range of interested parties, with the objective of encouraging the greatest amount of cooperation and consensus possible. In developing a basin management action plan, the department shall assure that key stakeholders, including, but not limited to, applicable local governments, water management districts, the Department of Agriculture and Consumer Services, other appropriate state agencies, local soil and water conservation districts, environmental groups, regulated interests, and affected pollution sources, are invited to participate in the process. The department shall hold at least one public meeting in the vicinity of the watershed or basin to discuss and receive comments during the planning process and shall otherwise encourage public participation to the greatest practicable extent. Notice of the public meeting must be published in a newspaper of general circulation in each county in which the watershed or basin lies not less than 5 days nor more than 15 days before the public meeting. A basin management action plan does not supplant or otherwise alter any assessment made under subsection (3) or subsection (4) or any calculation or initial allocation.

4. Each new or revised basin management action plan shall include:

a. The appropriate management strategies available through

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existing water quality protection programs to achieve total maximum daily loads, which may provide for phased implementation to promote timely, cost-effective actions as provided for in s. 403.151;

b. A description of best management practices adopted by rule;

c. A list of projects in priority ranking with a planning-level cost estimate and estimated date of completion for each listed project. The priority ranking shall be based on the estimated reduction in nutrient load per project, project readiness, cost effectiveness, overall environmental benefit, location within the plan area, local matching funds, and water savings or quantity improvements;

d. The source and amount of financial assistance to be made available by the department, a water management district, or other entity for each listed project, if applicable; and

e. A planning-level estimate of each listed project's expected load reduction, if applicable.

5. The department shall adopt all or any part of a basin management action plan and any amendment to such plan by secretarial order pursuant to chapter 120 to implement the provisions of this section.

6. The basin management action plan must include milestones for implementation and water quality improvement, and an associated water quality monitoring component sufficient to evaluate whether reasonable progress in pollutant load reductions is being achieved over time. An assessment of progress toward these milestones shall be conducted every 5 years, and revisions to the plan shall be made as appropriate.

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Revisions to the basin management action plan shall be made by the department in cooperation with basin stakeholders. Revisions to the management strategies required for nonpoint sources must follow the procedures set forth in subparagraph (c)4. Revised basin management action plans must be adopted pursuant to subparagraph 5.

7. In accordance with procedures adopted by rule under paragraph (9)(c), basin management action plans, and other pollution control programs under local, state, or federal authority as provided in subsection (4), may allow point or nonpoint sources that will achieve greater pollutant reductions than required by an adopted total maximum daily load or wasteload allocation to generate, register, and trade water quality credits for the excess reductions to enable other sources to achieve their allocation; however, the generation of water quality credits does not remove the obligation of a source or activity to meet applicable technology requirements or adopted best management practices. Such plans must allow trading between NPDES permittees, and trading that may or may not involve NPDES permittees, where the generation or use of the credits involve an entity or activity not subject to department water discharge permits whose owner voluntarily elects to obtain department authorization for the generation and sale of credits.

8. The provisions of the department's rule relating to the equitable abatement of pollutants into surface waters do not apply to water bodies or water body segments for which a basin management plan that takes into account future new or expanded activities or discharges has been adopted under this section.

(d) *Wastewater treatment plan.*—

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1. As part of a basin management action plan, each local government, in cooperation with the department, the relevant water management district, and the relevant local public and private wastewater utilities, shall develop a plan to implement improvements that provide, at a minimum, advanced waste treatment, as defined in s. 403.086(4). The plan must provide for construction, expansion, or upgrades necessary to achieve a total maximum daily load, consistent with an onsite sewage treatment and disposal system remediation plan under paragraph (e). A local government that does not have a wastewater treatment plant in its jurisdiction is not required to develop a wastewater treatment plan unless the department determines that the creation of such a plant within the jurisdiction is necessary to meet the total maximum daily load. If advanced waste treatment standards are met or exceeded as part of a broader waste treatment program implemented by the local public or private wastewater treatment utility, such a program may be deemed to comply with the requirements of this paragraph with the approval of the department. Wastewater treatment plants that are directly addressed in a basin management action plan and do not meet or exceed advanced waste treatment standards but that have been determined to meet the requirements for the total maximum daily load before July 1, 2019, are grandfathered unless and until the department determines that higher levels of treatment are required to meet the total maximum daily load.

2. Each owner or operator of an existing wastewater treatment plant shall provide certain information for each plant that has a plan to implement upgrades that meet or exceed advanced waste treatment, as defined in s. 403.086(4). This

information must include the following as it relates to existing conditions and estimated conditions after upgrades are implemented:

a. The permitted capacity of the plant, in gallons per day;

b. The average nutrient concentration; and

c. The estimated average nutrient load.

3.a. The local government shall submit to the department for approval a detailed plan that includes:

(I) A timeline that specifies the dates by which the construction of any improvements must commence, each stage of construction must be completed, and operations must commence;

(II) A detailed planning and design report setting forth the plan for construction of improvements and operations; and

(III) A certification that the local government, in agreement with the owner or operator, has approved the method of implementing upgrades and method of financing or funding construction and operation.

b. The department may amend the plan and shall approve a final plan. The department shall provide technical support upon request by a local government. An existing wastewater treatment plant must also incorporate the plan into its next NPDES or wastewater operating permit renewal.

c. Each new wastewater treatment plant located within the plan area shall comply with the requirements and approved dates in the basin management action plan. Each existing wastewater treatment plant located within the plan area must be in compliance with the timeline set out in the basin management action plan to receive a renewal of its NPDES or wastewater operating permit. Upon a showing of good cause, the department

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may grant an extension of time to the local government to comply with the timeline.

d. If the deadlines for the initiation of construction of improvements, completion of construction, and commencement of operations which were approved pursuant to this subparagraph are not satisfied, each local government with a wastewater treatment plant that does not meet the requirements in this subparagraph may not approve any building permits for new construction within its jurisdiction, and the Department of Health may not approve any new onsite sewage treatment and disposal systems within the local government jurisdiction where the wastewater treatment plant is located until such time as the plant is brought into compliance. In addition, the department shall, unless good cause is shown, assess penalties pursuant to ss. 403.121, 403.141, and 403.161 until such time as the plant is brought into compliance. The department may reduce penalties based on expenditures for improvements and upgrades to the wastewater treatment facility.

(e) *Onsite sewage treatment and disposal systems.*—

1. For purposes of this paragraph, the term "onsite sewage treatment and disposal system" has the same meaning as in s. 381.0065.

2.a. As part of a basin management action plan, each local government, in cooperation with the department, the Department of Health, the relevant water management district, and relevant local public and private wastewater utilities, shall develop an onsite sewage treatment and disposal system remediation plan if the department identifies onsite sewage treatment and disposal systems as contributors of at least 20 percent of nonpoint source nutrient pollution or if the department determines that

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remediation is necessary to achieve a total maximum daily load. In order to promote cost-effective remediation, the department may identify one or more onsite sewage treatment and disposal system priority focus areas. The department shall identify these areas by considering soil conditions; groundwater or surface water travel time; proximity to surface waters, including predominantly marine waters as defined by department rule; hydrogeology; onsite system density; nutrient load; and other factors that may lead to water quality degradation. The remediation plan must identify cost-effective and financially feasible projects necessary to reduce the nutrient impacts from onsite sewage treatment and disposal systems. The plan shall be completed and adopted as part of the basin management action plan no later than the first 5-year milestone assessment identified in subparagraph (a)6., for basin management action plans generally, or as required in s. 373.807(1)(b)8., for Outstanding Florida Springs. Before adopting the plan, the local government shall hold one or more publicly noticed meetings to receive input on the plan from the general public. The department is responsible for timely approval and adoption of the plan. For basin management action plans not governed by part VIII of chapter 373, an onsite sewage treatment and disposal system priority focus area means the area or areas of a basin where the groundwater is generally most vulnerable to pollutant inputs where there is a known connectivity between groundwater pathways and an impaired water body, as determined by the department in consultation with the appropriate water management districts and delineated in a basin management action plan.

b.(I) Each local government within the plan area, or the

local government's designee, shall prepare a plan, by the first 5-year milestone assessment required under subparagraph (a)6., for basin management action plans generally, or as required in s. 373.807(1)(b)8. for Outstanding Florida Springs. Within its jurisdiction, the local government plan must provide for either connecting each onsite sewage treatment and disposal system to a central wastewater treatment plant or replacing the current system with a new system within the onsite sewage treatment and disposal system priority focus area so that a nutrient load from onsite sewage treatment and disposal systems meets or exceeds applicable water quality standards. The plan must include water quality monitoring provisions to ensure that waterbodies within the plan area do not continue to be further degraded by onsite sewage treatment and disposal systems. The local government shall submit to the department for approval, a detailed plan, which includes:

(A) A timeline that specifies the dates by which the construction of any improvements must commence, each stage of construction must be completed, and mandatory upgrades of onsite sewage treatment disposal systems within the plan area must be implemented or any ordinances that must be adopted to implement the plan;

(B) A detailed planning and design report setting forth the plan for construction of improvements to and implementation of onsite sewage treatment and disposal system upgrades;

(C) A certification that the local government, in agreement with the owner or operator, has approved the method of remediation and method of financing or funding construction and operation.

(II) The department may amend the plan and shall approve a final plan. The department shall provide technical support upon request by a local government. Upon a showing of good cause, the department may grant an extension of time to reach compliance with the schedule.

(III) If the deadlines in sub-sub-sub-subparagraph (I)(A) are not satisfied, the local government may not approve any building permits for new construction within the plan area, and the Department of Health may not approve any new onsite sewage treatment and disposal system within the plan area until the actions in the remediation plan have been completed. In addition, the department shall, unless good cause is shown, assess penalties pursuant to ss. 403.121, 403.141, and 403.161 until the actions in the remediation plan have been completed. The department may reduce penalties based on expenditures designed to achieve compliance with the remediation plan.

c. In developing and adopting the plan, the department shall:

(I) Collect and evaluate credible scientific information on the effect of nutrients on surface waters and groundwater;

(II) Work with local stakeholders to develop a public education plan to provide area residents with reliable, understandable information about onsite sewage treatment and disposal systems and surface and groundwater pollution;

(III) In addition to sub-subparagraph 2.b., the department may include in the plan, if appropriate, options for system repair, upgrade, or replacement; drainfield modification; the addition of effective nutrient-reducing features; or other actions addressing onsite sewage treatment and disposal system

issues. The department shall include in the plan a priority ranking for each onsite system, or group of systems, that requires remediation. The priority ranking shall be used to ensure the most effective, efficient use of the funding provided for onsite system remediation. In awarding any such funds, the department may consider expected nutrient reduction benefit per unit cost, the size and scope of the project, local financial contribution to the project relative to the overall cost, and the financial impact on property owners and the community. For the purpose of awarding funds, the department may, at its discretion, totally or partially waive this consideration of the local contribution for proposed projects within an area designated as a rural area of opportunity under s. 288.0656; and

(IV) The installation, repair, modification, or upgrade of onsite sewage treatment and disposal systems within the boundaries of a basin management action plan with an onsite sewage treatment and disposal system remediation plan must conform to the requirements of the remediation plan.

(g) *Alternative restoration plan.*—

1. As part of its alternative restoration plan for a water body, the local stakeholders proposing the plan must consider:

a. The implementation of agricultural best management practices or monitoring for nonpoint sources of pollution in accordance with paragraph (c);

b. The implementation of an onsite sewage treatment and disposal system remediation plan where such remediation is necessary to restore the water body in accordance with paragraph (e); and

c. The adoption of advanced waste treatment levels or

higher water quality effluent standards for wastewater treatment plants.

2. In addition, the restoration plan must include any other pollution control mechanisms that are being implemented to demonstrate a reasonable assurance that existing or proposed pollution control mechanisms or programs will effectively address the impairment. Upon adoption of such a restoration plan, the requirement that best management practices or monitoring be conducted within the watershed impacting the water body is enforceable pursuant to this section and ss. 403.121, 403.141, and 403.161.

Section 8. Section 403.0673, Florida Statutes, is created to read:

403.0673 Wastewater grant program.—A wastewater grant program is established within the Department of Environmental Protection.

(1) Subject to appropriation, the department may provide grants for projects that will individually or collectively reduce excess nutrient pollution for projects within a basin management action plan or an alternative restoration plan adopted by final order for all of the following:

(a) Projects to retrofit onsite sewage treatment and disposal systems.

(b) Projects to construct, upgrade, or expand facilities to provide advanced waste treatment, as defined in ss. 403.086(4).

(c) Projects to connect onsite sewage treatment and disposal systems to central sewer facilities.

(2) In allocating such funds, priority must be given for projects that subsidize the connection of onsite sewage

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treatment and disposal systems to a wastewater treatment plant or that subsidize inspections and assessments of onsite sewage treatment and disposal systems. In determining priorities, the department shall consider the estimated reduction in nutrient load per project; project readiness; cost effectiveness of the project; overall environmental benefit of a project; the location of a project within the plan area; the availability of local matching funds; and projected water savings or quantity improvements associated with a project.

(3) Each grant for a project described in subsection (1) must require a minimum of a 50 percent local match of funds. However, the department may, at its discretion, waive, in whole or in part, this consideration of the local contribution for proposed projects within an area designated as a rural area of opportunity under s. 288.0656.

(4) The department shall coordinate with each water management district, as necessary, to identify grant recipients in each district.

(5) Beginning January 1, 2020, and each January 1 thereafter, the department shall submit a report regarding the projects funded pursuant to this section to the Governor, the President of the Senate, and the Speaker of the House of Representatives.

Section 9. Section 403.0771, Florida Statutes, is created to read:

403.0771 Sewage spill notification; moratorium.—

(1) In addition to the public notification requirements of s. 403.077, a wastewater treatment facility that unlawfully discharges raw or partially treated sewage into any waterway or

aquifer must, within 24 hours after discovering the discharge, notify its customers that the discharge has occurred.

(2) If a wastewater treatment facility owned by a local government unlawfully discharges raw or partially treated sewage into any waterway or aquifer, the local government may not approve any building permits for new construction and the Department of Health may not approve any new onsite sewage treatment and disposal system in the local government's jurisdiction until any required maintenance, repair, or improvement has been implemented to reduce or eliminate sanitary sewage overflows, as determined by the department. In addition, the department shall assess a daily penalty pursuant to ss. 403.121, 403.141, and 403.161 against a public or private wastewater facility that unlawfully discharges raw or partially treated sewage into any waterway or aquifer until the required maintenance, repair, or improvement has been implemented. The department may reduce a penalty based on the wastewater treatment facility's investment in assessment and maintenance activities to identify and address conditions that may cause sanitary sewage overflows.

(3) The department shall maintain a publicly accessible website that includes any current consent orders applicable to a wastewater treatment facility entered into as a result of sanitary sewer overflows, as well as any reports filed by the facility in accordance with open consent orders.

Section 10. Effective July 1, 2024, paragraph (c) of subsection (1) of section 403.086, Florida Statutes, is amended to read:

403.086 Sewage disposal facilities; advanced and secondary

waste treatment.—

(1)

(c) Notwithstanding any other provisions of this chapter or chapter 373, facilities for sanitary sewage disposal may not dispose of any wastes into Old Tampa Bay, Tampa Bay, Hillsborough Bay, Boca Ciega Bay, St. Joseph Sound, Clearwater Bay, Sarasota Bay, Little Sarasota Bay, Roberts Bay, Lemon Bay, or Charlotte Harbor Bay, Indian River Lagoon, or into any river, stream, channel, canal, bay, bayou, sound, or other water tributary thereto, without providing advanced waste treatment, as defined in subsection (4), approved by the department. This paragraph shall not apply to facilities which were permitted by February 1, 1987, and which discharge secondary treated effluent, followed by water hyacinth treatment, to tributaries of tributaries of the named waters; or to facilities permitted to discharge to the nontidally influenced portions of the Peace River.

Section 11. Present subsection (4) of section 403.9337, Florida Statutes, is redesignated as subsection (5), and a new subsection (4) is added to that section, to read:

403.9337 Model Ordinance for Florida-Friendly Fertilizer Use on Urban Landscapes.—

(4) A local government that fails to adopt, enact, and implement an ordinance required by subsection (2) by January 1, 2020, is subject to a daily fine as provided in ss. 403.121, 403.141, and 403.161 and may not approve any building permits for new construction until the ordinance has been adopted, enacted, and implemented. In implementing the ordinance, a local government shall conduct educational campaigns, enforcement

programs, and mandatory notification of property owners subject to the ordinance, and shall submit a report on its efforts to the department for publication on the department's website.

Section 12. (1) The Department of Environmental Protection shall revise the basin management action plans for the Indian River Lagoon, basin management action plans for waterbodies with a direct hydrological connection to the Indian River Lagoon, and the basin management action plans that were adopted pursuant to s. 373.807, Florida Statutes, and approved by the Secretary of Environmental Protection or prepared by the department before July 1, 2019, to conform existing plans to changes made by this act. Revisions to such basin management action plans made pursuant to this act must be completed by July 1, 2021. The department may grant a 6-month extension, upon a showing of good cause, to a local government on the deadlines for its wastewater treatment project plan or onsite sewage treatment and disposal system remediation plans submitted as part of a basin management action plan.

(2) The department shall revise all basin management action plans not included under subsection (1), but adopted pursuant to s. 403.067(7), Florida Statutes, and approved by the Secretary of Environmental Protection or prepared by the department before July 1, 2019, to conform existing plans to changes made by this act. Revisions to such basin management action plans made pursuant to this act must be completed by the next required 5-year milestone assessment for those revisions scheduled for on or after July 1, 2021. The department may grant a 6-month extension, upon a showing of good cause, to a local government on the deadlines for its wastewater treatment project plan or

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onsite sewage treatment and disposal system remediation plans submitted as part of a basin management action plan.

Section 13. The Legislature determines and declares that this act fulfills an important state interest.

Section 14. Except as otherwise expressly provided in this act, this act shall take effect July 1, 2019.

========== T I T L E A M E N D M E N T ==========

And the title is amended as follows:

Delete everything before the enacting clause and insert:

A bill to be entitled

An act relating to water quality improvements; providing a short title; requiring the Department of Environmental Protection, in coordination with the Department of Health, to develop a report to be submitted to the Legislature by a specified date on the impacts of transferring the onsite sewage program of the Department of Health to the Department of Environmental Protection by a type two transfer; providing an exception; amending s. 373.807, F.S.; revising the requirements for a basin management action plan for an Outstanding Florida Spring; prohibiting a local government from approving building permits within the plan area under certain circumstances; providing penalties; requiring certain agricultural operations that fail to adopt a basin management action plan or alternative restoration plan within a specified timeframe to sign a notice of

intent to implement certain practices, measures, or monitoring; amending s. 373.811, F.S.; conforming a cross-reference; amending s. 403.031, F.S.; defining terms; creating s. 403.0616, F.S.; requiring the department, subject to appropriation, to establish a real-time water quality monitoring program; encouraging the formation of public-private partnerships; amending s. 403.067, F.S.; requiring certain agricultural operations that fail to adopt a basin management action plan or alternative restoration plan within a specified timeframe to sign a notice of intent to implement certain practices, measures, or monitoring; revising requirements for a basin management action plan; requiring estimated nutrient load reductions in such plans to exceed a specified amount; requiring each local government to develop a wastewater treatment plan that meets certain requirements; prohibiting a local government that does not meet certain requirements relating to wastewater treatment plant project plans or onsite sewage treatment and disposal system remediation plans from approving any building permits within a specified timeframe; prohibiting the Department of Health from approving any new onsite sewage treatment and disposal system within such an area for a specified timeframe; providing penalties; defining the term “onsite sewage treatment and disposal system”; requiring a local government, in cooperation with specified entities, to develop an onsite sewage treatment and disposal system

remediation plan as part of the basin management action plan under certain circumstances; providing requirements for such plan; providing requirements for a restoration plan for certain water bodies; creating s. 403.0673, F.S.; establishing a wastewater grant program within the Department of Environmental Protection; authorizing the department to distribute appropriated funds for certain projects; providing requirements for the distribution; requiring the department to coordinate with each water management district to identify grant recipients; requiring an annual report to the Governor and the Legislature by a specified date; creating s. 403.0771, F.S.; requiring a wastewater treatment plant to notify customers of unlawful discharges of raw or partially treated sewage into any waterway or aquifer within a specified timeframe; prohibiting a local government that owns such a plant from approving any building permits within a specified timeframe; prohibiting the Department of Health from approving any new onsite sewage treatment and disposal system within such an area for a specified timeframe; providing penalties; requiring the department to maintain a publicly accessible website that contains certain information relating to wastewater treatment facilities; amending s. 403.086, F.S.; prohibiting facilities for sanitary sewage disposal from disposing of any waste in the Indian River Lagoon without first providing advanced waste treatment; amending s. 403.9337, F.S.; providing

penalties for a local government that fails to adopt, enact, and implement a specified ordinance by a specified date; requiring the Department of Environmental Protection to revise the basin management action plan for the Indian River Lagoon and other specified basin management action plans by a specified date; authorizing the department to grant an extension to a local government upon a showing of good cause; providing a declaration of important state interest; providing effective dates.

By Senator Mayfield

17-01347-19 20191758__

A bill to be entitled

An act relating to water quality improvements; providing a short title; transferring the onsite sewage program of the Department of Health to the Department of Environmental Protection by a type two transfer; amending s. 373.807, F.S.; revising the requirements for a basin management action plan for an Outstanding Florida Spring; prohibiting a local government from approving building permits within the plan area under certain circumstances; providing penalties; requiring the Department of Environmental Protection, in consultation with the Department of Agriculture and Consumer Services, to develop an agricultural remediation plan as part of each basin management action plan under certain circumstances; requiring such plans to be adopted by a specified date; creating s. 381.00661, F.S.; establishing a wastewater grant program within the Department of Environmental Protection; authorizing the department to distribute appropriated funds for certain projects; providing requirements for the distribution; requiring the department to coordinate with each water management district to identify grant recipients; requiring an annual report to the Governor and the Legislature by a specified date; amending s. 403.067, F.S.; revising requirements for a basin management action plan; requiring estimated nutrient load reductions in such plans to exceed a specified amount; requiring each local government to develop a

wastewater treatment plan that meets certain requirements; prohibiting a local government that does not meet certain requirements relating to wastewater treatment plant project plans or onsite sewage treatment and disposal system remediation plans from approving any building permits within a specified timeframe; prohibiting the department from approving any onsite sewage treatment and disposal system within such an area for a specified timeframe; providing penalties; defining the term "onsite sewage treatment and disposal system"; requiring a local government to create an onsite sewage treatment and disposal system remediation plan as part of the basin management action plan under certain circumstances; providing requirements for such plan; providing requirements for a restoration plan for certain water bodies; creating s. 403.0771, F.S.; requiring a wastewater treatment plant to notify customers of unlawful discharges of raw or partially treated sewage into any waterway or aquifer within a specified timeframe; prohibiting a local government that owns such a plant from approving any building permits within a specified timeframe; prohibiting the department from approving any onsite sewage treatment and disposal system within such an area for a specified timeframe; providing penalties; amending s. 403.086, F.S.; prohibiting facilities for sanitary sewage disposal from disposing of any waste in the Indian River Lagoon without first providing advanced waste treatment; amending s. 403.9337, F.S.;

providing penalties for a local government that fails to adopt, enact, and implement a specified ordinance; requiring the department to revise the basin management action plan for Indian River Lagoon and other specified basin management action plans by a specified date; authorizing the department to grant an extension to a local government upon a showing of good cause; amending ss. 153.54, 153.73, 163.3180, 373.811, 381.006, 381.0061, 381.0064, 381.0065, 381.00651, and 381.0068, F.S.; conforming provisions and cross-references to changes made by the act; providing effective dates.

Be It Enacted by the Legislature of the State of Florida:

Section 1. This act may be cited as the "Clean Waterways Act."

Section 2. All powers, duties, functions, records, offices, personnel, associated administrative support positions, property, pending issues, existing contracts, administrative authority, administrative rules, and unexpended balances of appropriations, allocations, and other funds for the regulation of onsite sewage treatment and disposal systems and relating to the onsite sewage program of the Department of Health are transferred by a type two transfer, as defined in s. 20.06(2), Florida Statutes, to the Department of Environmental Protection.

Section 3. Section 373.807, Florida Statutes, is amended to read:

373.807 Protection of water quality in Outstanding Florida

Springs.—By July 1, 2016, the department shall initiate assessment, pursuant to s. 403.067(3), of Outstanding Florida Springs or spring systems for which an impairment determination has not been made under the numeric nutrient standards in effect for spring vents. Assessments must be completed by July 1, 2018.

(1)(a) Concurrent with the adoption of a nutrient total maximum daily load for an Outstanding Florida Spring, the department, or the department in conjunction with a water management district, shall initiate development of a basin management action plan, as specified in s. 403.067. For an Outstanding Florida Spring with a nutrient total maximum daily load adopted before July 1, 2016, the department, or the department in conjunction with a water management district, shall initiate development of a basin management action plan by July 1, 2016. During the development of a basin management action plan, if the department identifies onsite sewage treatment and disposal systems as contributors of at least 20 percent of nonpoint source nutrient ~~nitrogen~~ pollution or if the department determines remediation is necessary to achieve the total maximum daily load, the basin management action plan shall include an onsite sewage treatment and disposal system remediation plan pursuant to s. 403.067(7)(e) ~~subsection (3)~~ for those systems identified as requiring remediation.

(b) A basin management action plan for an Outstanding Florida Spring shall be adopted within 2 years after its initiation and must include, at a minimum:

1. A list of all specific projects and programs identified to implement a nutrient total maximum daily load;

2. A list of all specific projects identified in any

incorporated onsite sewage treatment and disposal system remediation plan, if applicable;

3. A priority rank for each listed project. The priority ranking shall be based on the estimated reduction in nutrient load per project, project readiness, cost effectiveness, overall environmental benefit, location within the plan area, local matching funds, and water savings or quantity improvements;

4. For each listed project, a planning level cost estimate, ~~and~~ the estimated date of completion, and a plan submitted by each local government within the plan area and approved by the department for each wastewater treatment plant project as specified in s. 403.067(7)(d) and onsite sewage treatment and disposal system remediation plan as specified in s. 403.067(7)(e). Each plan must include deadlines and is subject to penalties required under s. 403.067;

5. The source and amount of financial assistance to be made available by the department, a water management district, or other entity for each listed project;

6. An estimate of each listed project's nutrient load reduction;

7. Identification of each point source or category of nonpoint sources, including, but not limited to, urban turf fertilizer, sports turf fertilizer, agricultural fertilizer, onsite sewage treatment and disposal systems, wastewater treatment plants ~~facilities~~, animal wastes, and stormwater facilities. An estimated allocation of the pollutant load must be provided for each point source or category of nonpoint sources; and

8. An implementation plan designed with a target to achieve

the nutrient total maximum daily load no more than 20 years after the adoption of a basin management action plan.

The estimated nutrient load reductions in each basin management action plan developed pursuant to this paragraph must exceed the total amount of nutrient load reductions needed to meet the total maximum daily load required under the plan. The department shall develop a schedule establishing 5-year, 10-year, and 15-year targets for achieving the nutrient total maximum daily load. The schedule shall be used to provide guidance for planning and funding purposes and is exempt from chapter 120.

(c) For a basin management action plan adopted before July 1, 2016, which addresses an Outstanding Florida Spring, the department or the department in conjunction with a water management district must revise the plan if necessary to comply with this section by July 1, 2018.

(d) A local government may apply to the department for a single extension of up to 5 years for any project in an adopted basin management action plan. A local government in a rural area of opportunity, as defined in s. 288.0656, may apply for a single extension of up to 10 years for such a project. The department may grant the extension if the local government provides to the department sufficient evidence that an extension is in the best interest of the public.

(2) By July 1, 2020 ~~2017~~, each local government, as defined in s. 373.802(2), that has not adopted an ordinance pursuant to s. 403.9337, shall develop, enact, and implement an ordinance pursuant to that section. It is the intent of the Legislature that ordinances required to be adopted under this subsection

reflect the latest scientific information, advancements, and technological improvements in the industry. A local government that fails to adopt, enact, and implement this ordinance is subject to a daily fine as provided in ss. 403.121, 403.141, and 403.161 and may not approve any building permits within the plan area until such time as the ordinance has been adopted, enacted, and implemented.

(3) As part of each basin management action plan that includes an Outstanding Florida Spring, the department, in coordination with the Department of Agriculture and Consumer Services, shall develop an agricultural remediation plan if the department determines that agricultural nonpoint sources, including, but not limited to, fertilizer and animal wastes, contribute at least 20 percent of nonpoint source nutrient pollution. The plan must identify cost-effective and financially feasible projects, including, if applicable, advanced best management practices and land acquisition projects, including conservation easements, to reduce the nutrient impacts from agricultural operations. The department is the lead agency in coordinating the preparation of and the adoption of the plan. The Department of Agriculture and Consumer Services is the lead agency in developing and adopting advanced best management practices capable of achieving the total maximum daily load and shall develop and adopt such practices for incorporation into the plan. The plan must be adopted as part of the basin management action plan by July 1, 2021.

~~(3) As part of a basin management action plan that includes an Outstanding Florida Spring, the department, the Department of Health, relevant local governments, and relevant local public~~

~~and private wastewater utilities shall develop an onsite sewage treatment and disposal system remediation plan for a spring if the department determines onsite sewage treatment and disposal systems within a priority focus area contribute at least 20 percent of nonpoint source nitrogen pollution or if the department determines remediation is necessary to achieve the total maximum daily load. The plan shall identify cost-effective and financially feasible projects necessary to reduce the nutrient impacts from onsite sewage treatment and disposal systems and shall be completed and adopted as part of the basin management action plan no later than the first 5-year milestone required by subparagraph (1)(b)8. The department is the lead agency in coordinating the preparation of and the adoption of the plan. The department shall:~~

~~(a) Collect and evaluate credible scientific information on the effect of nutrients, particularly forms of nitrogen, on springs and springs systems; and~~

~~(b) Develop a public education plan to provide area residents with reliable, understandable information about onsite sewage treatment and disposal systems and springs.~~

~~In addition to the requirements in s. 403.067, the plan shall include options for repair, upgrade, replacement, drainfield modification, addition of effective nitrogen reducing features, connection to a central sewerage system, or other action for an onsite sewage treatment and disposal system or group of systems within a priority focus area that contribute at least 20 percent of nonpoint source nitrogen pollution or if the department determines remediation is necessary to achieve a total maximum~~

~~daily load. For these systems, the department shall include in the plan a priority ranking for each system or group of systems that requires remediation and shall award funds to implement the remediation projects contingent on an appropriation in the General Appropriations Act, which may include all or part of the costs necessary for repair, upgrade, replacement, drainfield modification, addition of effective nitrogen reducing features, initial connection to a central sewerage system, or other action. In awarding funds, the department may consider expected nutrient reduction benefit per unit cost, size and scope of project, relative local financial contribution to the project, and the financial impact on property owners and the community. The department may waive matching funding requirements for proposed projects within an area designated as a rural area of opportunity under s. 288.0656.~~

(4) The department shall provide notice to a local government of all permit applicants under s. 403.814(12) in a priority focus area of an Outstanding Florida Spring over which the local government has full or partial jurisdiction.

Section 4. Section 381.00661, Florida Statutes, is created to read:

381.00661 Wastewater grant program.—A wastewater grant program is established within the Department of Environmental Protection.

(1) Subject to appropriation, the department may provide grants for projects that will individually or collectively reduce excess nutrient pollution for projects within a basin management action plan or an alternative restoration plan adopted by final order for all of the following:

(a) Projects to retrofit onsite sewage treatment and disposal systems.

(b) Projects to construct, upgrade, or expand facilities to provide advanced waste treatment, as defined in ss. 403.086(4).

(c) Projects to connect onsite sewage treatment and disposal systems to central sewer facilities.

(2) In making an allocation of such funds, priority shall be given for projects that subsidize the connection of onsite sewage treatment and disposal systems to a wastewater treatment plant or that subsidize inspections and assessments of onsite sewage treatment and disposal systems.

(3) Each grant for a project described in subsection (1) must require a minimum of 50 percent local matching funds. However, the department may, at its discretion, totally or partially waive this consideration of the local contribution for proposed projects within an area designated as a rural area of opportunity under s. 288.0656.

(4) The department shall coordinate with each water management district, as necessary, to identify grant recipients in each district.

(5) Beginning January 1, 2020, and each January 1 thereafter, the department shall submit a report regarding the projects funded pursuant to this section to the Governor, the President of the Senate, and the Speaker of the House of Representatives.

Section 5. Present paragraph (d) of subsection (7) of section 403.067, Florida Statutes, is redesignated as paragraph (f), a new paragraph (d) and paragraphs (e) and (g) are added to that subsection, and paragraph (a) of that subsection is

amended, to read:

403.067 Establishment and implementation of total maximum daily loads.—

(7) DEVELOPMENT OF BASIN MANAGEMENT PLANS AND IMPLEMENTATION OF TOTAL MAXIMUM DAILY LOADS.—

(a) *Basin management action plans.*—

1. In developing and implementing the total maximum daily load for a water body, the department, or the department in conjunction with a water management district, may develop a basin management action plan that addresses some or all of the watersheds and basins tributary to the water body. Such plan must integrate the appropriate management strategies available to the state through existing water quality protection programs to achieve the total maximum daily loads and may provide for phased implementation of these management strategies to promote timely, cost-effective actions as provided for in s. 403.151. The plan must establish a schedule implementing the management strategies, <u>provide detailed information for improvement projects including descriptions and timelines for completion,</u> establish a basis for evaluating the plan's effectiveness, and identify feasible funding strategies for implementing the plan's management strategies. The management strategies may include regional treatment systems or other public works, where appropriate, and voluntary trading of water quality credits to achieve the needed pollutant load reductions.

2. A basin management action plan must equitably allocate, pursuant to paragraph (6)(b), pollutant reductions to individual basins, as a whole to all basins, or to each identified point source or category of nonpoint sources, as appropriate. For

nonpoint sources for which best management practices have been adopted, the initial requirement specified by the plan must be those practices developed pursuant to paragraph (c). Where appropriate, the plan may take into account the benefits of pollutant load reduction achieved by point or nonpoint sources that have implemented management strategies to reduce pollutant loads, including best management practices, before the development of the basin management action plan. The plan must also identify the mechanisms that will address potential future increases in pollutant loading.

3. The basin management action planning process is intended to involve the broadest possible range of interested parties, with the objective of encouraging the greatest amount of cooperation and consensus possible. In developing a basin management action plan, the department shall assure that key stakeholders, including, but not limited to, applicable local governments, water management districts, the Department of Agriculture and Consumer Services, other appropriate state agencies, local soil and water conservation districts, environmental groups, regulated interests, and affected pollution sources, are invited to participate in the process. The department shall hold at least one public meeting in the vicinity of the watershed or basin to discuss and receive comments during the planning process and shall otherwise encourage public participation to the greatest practicable extent. Notice of the public meeting must be published in a newspaper of general circulation in each county in which the watershed or basin lies not less than 5 days nor more than 15 days before the public meeting. A basin management action plan

does not supplant or otherwise alter any assessment made under subsection (3) or subsection (4) or any calculation or initial allocation.

4. Each new or revised basin management action plan shall include:

a. The appropriate management strategies available through existing water quality protection programs to achieve total maximum daily loads, which may provide for phased implementation to promote timely, cost-effective actions as provided for in s. 403.151;

b. A description of best management practices adopted by rule;

c. A list of projects in priority ranking with a planning-level cost estimate and estimated date of completion for each listed project. The priority ranking shall be based on the estimated reduction in nutrient load per project, project readiness, cost effectiveness, overall environmental benefit, location within the plan area, local matching funds, and water savings or quantity improvements;

d. The source and amount of financial assistance to be made available by the department, a water management district, or other entity for each listed project, if applicable; ~~and~~

e. A planning-level estimate of each listed project's expected nutrient load reduction, if applicable; and

f. Identification of each point source or category of nonpoint sources, including, but not limited to, urban turf fertilizer, sports turf fertilizer, agricultural fertilizer, onsite sewage treatment and disposal systems, wastewater treatment plants, animal wastes, and stormwater facilities. An

estimated allocation of the pollutant load must be provided for each point source or category of nonpoint sources.

The estimated nutrient load reductions in each basin management action plan developed pursuant to this subparagraph must exceed the total amount of nutrient load reductions needed to meet the total maximum daily load required under the plan.

5. The department shall adopt all or any part of a basin management action plan and any amendment to such plan by secretarial order pursuant to chapter 120 to implement the provisions of this section.

6. The basin management action plan must include milestones for implementation and water quality improvement, and an associated water quality monitoring component sufficient to evaluate whether reasonable progress in pollutant load reductions is being achieved over time. An assessment of progress toward these milestones shall be conducted every 5 years, and revisions to the plan shall be made as appropriate. Revisions to the basin management action plan shall be made by the department in cooperation with basin stakeholders. Revisions to the management strategies required for nonpoint sources must follow the procedures set forth in subparagraph (c)4. Revised basin management action plans must be adopted pursuant to subparagraph 5.

7. In accordance with procedures adopted by rule under paragraph (9)(c), basin management action plans, and other pollution control programs under local, state, or federal authority as provided in subsection (4), may allow point or nonpoint sources that will achieve greater pollutant reductions

than required by an adopted total maximum daily load or wasteload allocation to generate, register, and trade water quality credits for the excess reductions to enable other sources to achieve their allocation; however, the generation of water quality credits does not remove the obligation of a source or activity to meet applicable technology requirements or adopted best management practices. Such plans must allow trading between NPDES permittees, and trading that may or may not involve NPDES permittees, where the generation or use of the credits involve an entity or activity not subject to department water discharge permits whose owner voluntarily elects to obtain department authorization for the generation and sale of credits.

8. The provisions of the department's rule relating to the equitable abatement of pollutants into surface waters do not apply to water bodies or water body segments for which a basin management plan that takes into account future new or expanded activities or discharges has been adopted under this section.

(d) *Wastewater treatment plan.*—

1. As part of a basin management action plan, each local government, in cooperation with the department and relevant local public and private wastewater utilities, shall develop a plan to implement improvements that provide, at a minimum, advanced waste treatment, as defined in s. 403.086(4). The plan must provide for construction, expansion, or upgrades necessary to achieve a total maximum daily load, consistent with an onsite sewage treatment and disposal system remediation plan under paragraph (e).

2. Each owner or operator of an existing wastewater treatment plant shall provide certain information for each plant

that has a plan to implement upgrades that meet or exceed advanced waste treatment, as defined in s. 403.086(4). This information must include the following as it relates to existing conditions and estimated conditions after upgrades are implemented:

a. The permitted capacity of the plant, in gallons per day;

b. The average nutrient concentration; and

c. The estimated average nutrient load.

3.a. The local government shall submit to the department for approval a detailed plan, which includes:

(I) The timeline of dates required for the commencement of construction of any improvements, completion of each stage of construction, and the commencement of operations;

(II) A detailed planning and design report setting forth the plan for construction of improvements and operations; and

(III) A certification that the local government, in agreement with the owner or operator, has approved the method of implementing upgrades and method of financing or funding construction and operation.

b. The department may amend the plan and shall approve a final plan. The department shall provide technical support upon request by a local government. An existing wastewater treatment plant must also incorporate the plan into its next NPDES permit renewal.

c. Each new wastewater treatment plant located within the plan area shall comply with the requirements and approved dates in the basin management action plan. Each existing wastewater treatment plant located within the plan area shall comply with the requirements and approved dates in the basin management

action plan no later than the next 5-year renewal date of the NPDES permit. Upon a showing of good cause, the department may grant an extension of time to the local government to reach compliance with the schedule.

d. If the deadlines for the initiation of construction of improvements, completion of construction, and commencement of operations which were approved pursuant to this subparagraph are not satisfied, each local government with a wastewater treatment plant that does not meet the requirements in this subparagraph may not approve any building permits within the plan area, and the department may not approve any onsite sewage treatment and disposal systems in the plan area where the wastewater treatment plant is located until such time as the plant is brought into compliance. In addition, the department shall, unless good cause is shown, assess penalties pursuant to ss. 403.121, 403.141, and 403.161 until such time as the plant is brought into compliance. The department may reduce penalties based on expenditures for improvements and upgrades to the wastewater treatment plant.

(e) *Onsite sewage treatment and disposal systems.*—

1. For purposes of this paragraph, the term "onsite sewage treatment and disposal system" has the same meaning as in s. 381.0065.

2.a. As part of a basin management action plan, each local government, in cooperation with the department and relevant local public and private wastewater utilities, shall develop an onsite sewage treatment and disposal system remediation plan if the department identifies onsite sewage treatment and disposal systems as contributors of at least 20 percent of nonpoint source nutrient pollution or if the department determines that

remediation is necessary to achieve a total maximum daily load. In order to promote cost-effective remediation, the department may identify one or more priority focus areas. The department shall identify these areas by considering soil conditions; groundwater or surface water travel time; proximity to surface waters, including predominantly marine waters as defined by department rule; hydrogeology; onsite system density; nutrient load; and other factors that may lead to water quality degradation. The remediation plan must identify cost-effective and financially feasible projects necessary to reduce the nutrient impacts from onsite sewage treatment and disposal systems. The plan shall be completed and adopted as part of the basin management action plan no later than the first 5-year milestone assessment identified in subparagraph (a)6. or as required in s. 373.807(1)(b)8., for Outstanding Florida Springs. The department is responsible for timely approval and adoption of the plan. For basin management action plans not governed by part VIII of chapter 373, a priority focus area means the area or areas of a basin where the groundwater is generally most vulnerable to pollutant inputs where there is a known connectivity between groundwater pathways and an impaired water body, as determined by the department in consultation with the appropriate water management districts and delineated in a basin management action plan.

b.(I) Each local government within the plan area, or the local government's designee, shall prepare a plan, by the first 5-year milestone assessment required under subparagraph (a)6., or as required in s. 373.807(1)(b)8. for Outstanding Florida Springs, for its jurisdiction that provides for either

connecting each onsite sewage treatment and disposal system to a central wastewater treatment plant or replacing the current system with a new system where the discharge meets current water quality standards and which has a discharge monitoring system. The local government shall submit to the department for approval, a detailed plan, which includes:

(A) The timeline of dates required for the commencement of construction of any improvements, completion of each stage of construction, and the commencement of operations;

(B) A detailed planning and design report setting forth the plan for construction of improvements and operations;

(C) A certification that the local government, in agreement with the owner or operator, has approved the method of remediation and method of financing or funding construction and operation.

(II) The department may amend the plan and shall approve a final plan. The department shall provide technical support upon request by a local government. Upon a showing of good cause, the department may grant an extension of time to reach compliance with the schedule.

(III) If the deadlines for the initiation of construction of improvements, completion of construction, and commencement of operations that were approved pursuant to this subsection are not satisfied, the local government may not approve any building permits within the plan area, and the department may not approve any onsite sewage treatment and disposal system within the plan area until the actions in the remediation plan have been completed. In addition, the department shall, unless good cause is shown, assess penalties pursuant to ss. 403.121, 403.141, and

403.161 until the actions in the remediation plan have been completed. The department may reduce penalties based on expenditures designed to achieve compliance with the remediation plan.

c. In developing and adopting the plan, the department shall:

(I) Collect and evaluate credible scientific information on the effect of nutrients on surface waters and groundwater;

(II) Work with local stakeholders to develop a public education plan to provide area residents with reliable, understandable information about onsite sewage treatment and disposal systems and surface and groundwater pollution;

(III) In addition to sub-subparagraph 2.b., the department may include in the plan, if appropriate, options for system repair, upgrade, or replacement; drainfield modification; the addition of effective nutrient-reducing features; or other actions addressing onsite sewage treatment and disposal system issues. The department shall include in the plan a priority ranking for each onsite system, or group of systems, that requires remediation. The priority ranking shall be used to ensure the most effective, efficient use of the funding provided for onsite system remediation. In awarding any such funds, the department may consider expected nutrient reduction benefit per unit cost, the size and scope of the project, local financial contribution to the project relative to the overall cost, and the financial impact on property owners and the community. For the purpose of awarding funds, the department may, at its discretion, totally or partially waive this consideration of the local contribution for proposed projects within an area designated as a

rural area of opportunity under s. 288.0656; and

(IV) The installation, repair, modification, or upgrade of onsite sewage treatment and disposal systems on lots of 1 acre or less and within the boundaries of a basin management action plan with an onsite sewage treatment and disposal remediation plan must conform to the requirements of the remediation plan.

(g) *Alternative restoration plan.*—

1. To demonstrate that the department can forgo placing a water body on the verified impaired water bodies list and establishing a total maximum daily load, the restoration plan for a water body must establish:

a. The implementation of best management practices or monitoring for nonpoint sources of pollution;

b. The implementation of a septic remediation plan where such remediation is necessary to restore the water body; and

c. Adoption of alternative waste treatment levels for wastewater treatment plants.

2. In addition, the restoration plan must include any other pollution control mechanisms that are being implemented to demonstrate a reasonable assurance that existing or proposed pollution control mechanisms or programs will effectively address the impairment. Upon adoption of such a restoration plan, the requirement that best management practices or monitoring be conducted within the watershed impacting the water body is enforceable pursuant to this section and ss. 403.121, 403.141, and 403.161.

Section 6. Section 403.0771, Florida Statutes, is created to read:

403.0771 Sewage spill notification; moratorium.—

(1) In addition to the public notification requirements of s. 403.077, a wastewater treatment plant that unlawfully discharges raw or partially treated sewage into any waterway or aquifer must, within 24 hours after discovering the discharge, notify its customers that the discharge has occurred.

(2) If a wastewater treatment plant owned by a local government unlawfully discharges raw or partially treated sewage into any waterway or aquifer, the local government may not approve any building permits and the department may not approve any onsite sewage treatment and disposal system in the local government's jurisdiction until any required maintenance, repair, or improvement has been implemented to reduce or eliminate sanitary sewage overflows, as determined by the department. In addition, the department shall assess a daily penalty pursuant to ss. 403.121, 403.141, and 403.161 until the required maintenance, repair, or improvement has been implemented. The department may reduce a penalty based on the wastewater treatment plant's investment in assessment and maintenance activities to identify and address conditions that may cause sanitary sewage overflows.

Section 7. Effective July 1, 2024, paragraph (c) of subsection (1) of section 403.086, Florida Statutes, is amended to read:

403.086 Sewage disposal facilities; advanced and secondary waste treatment.—

(1)

(c) Notwithstanding any other provisions of this chapter or chapter 373, facilities for sanitary sewage disposal may not dispose of any wastes into Old Tampa Bay, Tampa Bay,

Hillsborough Bay, Boca Ciega Bay, St. Joseph Sound, Clearwater Bay, Sarasota Bay, Little Sarasota Bay, Roberts Bay, Lemon Bay, or Charlotte Harbor Bay, Indian River Lagoon, or into any river, stream, channel, canal, bay, bayou, sound, or other water tributary thereto, without providing advanced waste treatment, as defined in subsection (4), approved by the department. This paragraph shall not apply to facilities which were permitted by February 1, 1987, and which discharge secondary treated effluent, followed by water hyacinth treatment, to tributaries of tributaries of the named waters; or to facilities permitted to discharge to the nontidally influenced portions of the Peace River.

Section 8. Present subsection (4) of section 403.9337, Florida Statutes, is redesignated as subsection (5), and a new subsection (4) is added to that section, to read:

403.9337 Model Ordinance for Florida-Friendly Fertilizer Use on Urban Landscapes.—

(4) A local government that fails to adopt, enact, and implement an ordinance pursuant to this section is subject to a daily fine as provided in ss. 403.121, 403.141, and 403.161 and may not approve any building permits until the ordinance has been adopted, enacted, and implemented.

Section 9. (1) The Department of Environmental Protection shall revise the basin management action plans for Indian River Lagoon and the basin management action plans that were adopted pursuant to s. 373.807, Florida Statutes, and approved by the Secretary of Environmental Protection or prepared by the department before July 1, 2019, to conform existing plans to changes made by this act. Revisions to such basin management

action plans made pursuant to this act must be completed by July 1, 2020. The department may grant an extension, upon a showing of good cause, to a local government on the deadlines for its wastewater treatment plan project or onsite sewage treatment and disposal system remediation plans submitted as part of a basin management action plan.

(2) The department shall revise all basin management action plans not included under subsection (1), but adopted pursuant to s. 403.067(7), Florida Statutes, and approved by the Secretary of Environmental Protection or prepared by the department before July 1, 2019, to conform existing plans to changes made by this act. Revisions to such basin management action plans made pursuant to this act must be completed by the next required 5-year milestone assessment for those revisions scheduled for on or after July 1, 2020. The department may grant an extension, upon a showing of good cause, to a local government on the deadlines for its wastewater treatment plan project or onsite sewage treatment and disposal system remediation plans submitted as part of a basin management action plan.

Section 10. Subsection (5) of section 153.54, Florida Statutes, is amended to read:

153.54 Preliminary report by county commissioners with respect to creation of proposed district.—Upon receipt of a petition duly signed by not less than 25 qualified electors who are also freeholders residing within an area proposed to be incorporated into a water and sewer district pursuant to this law and describing in general terms the proposed boundaries of such proposed district, the board of county commissioners if it shall deem it necessary and advisable to create and establish

such proposed district for the purpose of constructing, establishing or acquiring a water system or a sewer system or both in and for such district (herein called "improvements"), shall first cause a preliminary report to be made which such report together with any other relevant or pertinent matters, shall include at least the following:

(5) For the construction of a new proposed sewerage system or the extension of an existing sewerage system that was not previously approved, the report shall include a study that includes the available information from the Department of Environmental Protection ~~Health~~ on the history of onsite sewage treatment and disposal systems currently in use in the area and a comparison of the projected costs to the owner of a typical lot or parcel of connecting to and using the proposed sewerage system versus installing, operating, and properly maintaining an onsite sewage treatment system that is approved by the Department of Environmental Protection ~~Health~~ and that provides for the comparable level of environmental and health protection as the proposed central sewerage system; consideration of the local authority's obligations or reasonably anticipated obligations for water body cleanup and protection under state or federal programs, including requirements for water bodies listed under s. 303(d) of the Clean Water Act, Pub. L. No. 92-500, 33 U.S.C. ss. 1251 et seq.; and other factors deemed relevant by the local authority.

Such report shall be filed in the office of the clerk of the circuit court and shall be open for the inspection of any taxpayer, property owner, qualified elector or any other

interested or affected person.

Section 11. Paragraph (c) of subsection (2) of section 153.73, Florida Statutes, is amended to read:

153.73 Assessable improvements; levy and payment of special assessments.—Any district may provide for the construction or reconstruction of assessable improvements as defined in s. 153.52, and for the levying of special assessments upon benefited property for the payment thereof, under the provisions of this section.

(2)

(c) For the construction of a new proposed sewerage system or the extension of an existing sewerage system that was not previously approved, the report shall include a study that includes the available information from the Department of Environmental Protection ~~Health~~ on the history of onsite sewage treatment and disposal systems currently in use in the area and a comparison of the projected costs to the owner of a typical lot or parcel of connecting to and using the proposed sewerage system versus installing, operating, and properly maintaining an onsite sewage treatment system that is approved by the Department of Environmental Protection ~~Health~~ and that provides for the comparable level of environmental and health protection as the proposed central sewerage system; consideration of the local authority's obligations or reasonably anticipated obligations for water body cleanup and protection under state or federal programs, including requirements for water bodies listed under s. 303(d) of the Clean Water Act, Pub. L. No. 92-500, 33 U.S.C. ss. 1251 et seq.; and other factors deemed relevant by the local authority.

Section 12. Subsection (2) of section 163.3180, Florida Statutes, is amended to read:

163.3180 Concurrency.—

(2) Consistent with public health and safety, sanitary sewer, solid waste, drainage, adequate water supplies, and potable water facilities shall be in place and available to serve new development no later than the issuance by the local government of a certificate of occupancy or its functional equivalent. Prior to approval of a building permit or its functional equivalent, the local government shall consult with the applicable water supplier to determine whether adequate water supplies to serve the new development will be available no later than the anticipated date of issuance by the local government of a certificate of occupancy or its functional equivalent. A local government may meet the concurrency requirement for sanitary sewer through the use of onsite sewage treatment and disposal systems approved by the Department of Environmental Protection ~~Health~~ to serve new development.

Section 13. Subsection (2) of section 373.811, Florida Statutes, is amended to read:

373.811 Prohibited activities within a priority focus area.—The following activities are prohibited within a priority focus area in effect for an Outstanding Florida Spring:

(2) New onsite sewage treatment and disposal systems on lots of less than 1 acre, if the addition of the specific systems conflicts with an onsite treatment and disposal system remediation plan incorporated into a basin management action plan in accordance with s. 403.067(7)(e) ~~s. 373.807(3)~~.

Section 14. Subsections (7) and (18) of section 381.006,

Florida Statutes, are amended to read:

381.006 Environmental health.—The department shall conduct 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. The environmental health program shall include, but not be limited to:

~~(7) An onsite sewage treatment and disposal function.~~

(18) A food service inspection function for domestic violence centers that are certified by the Department of Children and Families and monitored by the Florida Coalition Against Domestic Violence under part XII of chapter 39 and group care homes as described in subsection (15) ~~(16)~~, which shall be conducted annually and be limited to the requirements in department rule applicable to community-based residential facilities with five or fewer residents.

The department may adopt rules to carry out the provisions of this section.

Section 15. Subsection (1) of section 381.0061, Florida Statutes, is amended to read:

381.0061 Administrative fines.—

(1) In addition to any administrative action authorized by chapter 120 or by other law, the department may impose a fine, which shall not exceed $500 for each violation, for a violation of s. 381.006(15) ~~s. 381.006(16)~~, s. 381.0065, s. 381.0066, s. 381.0072, or part III of chapter 489, for a violation of any rule adopted under this chapter, or for a violation of any of the provisions of chapter 386. Notice of intent to impose such

fine shall be given by the department to the alleged violator. Each day that a violation continues may constitute a separate violation.

Section 16. Subsection (1) of section 381.0064, Florida Statutes, is amended to read:

381.0064 Continuing education courses for persons installing or servicing septic tanks.—

(1) The Department of Environmental Protection ~~Health~~ shall establish a program for continuing education which meets the purposes of ss. 381.0101 and 489.554 regarding the public health and environmental effects of onsite sewage treatment and disposal systems and any other matters the department determines desirable for the safe installation and use of onsite sewage treatment and disposal systems. The department may charge a fee to cover the cost of such program.

Section 17. Present paragraphs (d) through (q) of subsection (2) of section 381.0065, Florida Statutes, are redesignated as paragraphs (e) through (r), respectively, a new paragraph (d) is added to that subsection, and subsections (3) and (4) of that section are amended, to read:

381.0065 Onsite sewage treatment and disposal systems; regulation.—

(2) DEFINITIONS.—As used in ss. 381.0065-381.0067, the term:

(d) "Department" means the Department of Environmental Protection.

(3) DUTIES AND POWERS OF THE DEPARTMENT ~~OF HEALTH~~.—The department shall:

(a) Adopt rules to administer ss. 381.0065-381.0067,

including definitions that are consistent with the definitions in this section, decreases to setback requirements where no health hazard exists, increases for the lot-flow allowance for performance-based systems, requirements for separation from water table elevation during the wettest season, requirements for the design and construction of any component part of an onsite sewage treatment and disposal system, application and permit requirements for persons who maintain an onsite sewage treatment and disposal system, requirements for maintenance and service agreements for aerobic treatment units and performance-based treatment systems, and recommended standards, including disclosure requirements, for voluntary system inspections to be performed by individuals who are authorized by law to perform such inspections and who shall inform a person having ownership, control, or use of an onsite sewage treatment and disposal system of the inspection standards and of that person's authority to request an inspection based on all or part of the standards.

(b) Perform application reviews and site evaluations, issue permits, and conduct inspections and complaint investigations associated with the construction, installation, maintenance, modification, abandonment, operation, use, or repair of an onsite sewage treatment and disposal system for a residence or establishment with an estimated domestic sewage flow of 10,000 gallons or less per day, or an estimated commercial sewage flow of 5,000 gallons or less per day, which is not currently regulated under chapter 403.

(c) Develop a comprehensive program to ensure that onsite sewage treatment and disposal systems regulated by the

department are sized, designed, constructed, installed, repaired, modified, abandoned, used, operated, and maintained in compliance with this section and rules adopted under this section to prevent groundwater contamination and surface water contamination and to preserve the public health. The department is the final administrative interpretive authority regarding rule interpretation. In the event of a conflict regarding rule interpretation, the State Surgeon General, or his or her designee, shall timely assign a staff person to resolve the dispute.

(d) Grant variances in hardship cases under the conditions prescribed in this section and rules adopted under this section.

(e) Permit the use of a limited number of innovative systems for a specific period of time, when there is compelling evidence that the system will function properly and reliably to meet the requirements of this section and rules adopted under this section.

(f) Issue annual operating permits under this section.

(g) Establish and collect fees as established under s. 381.0066 for services provided with respect to onsite sewage treatment and disposal systems.

(h) Conduct enforcement activities, including imposing fines, issuing citations, suspensions, revocations, injunctions, and emergency orders for violations of this section, part I of chapter 386, or part III of chapter 489 or for a violation of any rule adopted under this section, part I of chapter 386, or part III of chapter 489.

(i) Provide or conduct education and training of department personnel, service providers, and the public regarding onsite

sewage treatment and disposal systems.

(j) Supervise research on, demonstration of, and training on the performance, environmental impact, and public health impact of onsite sewage treatment and disposal systems within this state. Research fees collected under s. 381.0066(2)(k) must be used to develop and fund hands-on training centers designed to provide practical information about onsite sewage treatment and disposal systems to septic tank contractors, master septic tank contractors, contractors, inspectors, engineers, and the public and must also be used to fund research projects which focus on improvements of onsite sewage treatment and disposal systems, including use of performance-based standards and reduction of environmental impact. Research projects shall be initially approved by the technical review and advisory panel and shall be applicable to and reflect the soil conditions specific to Florida. Such projects shall be awarded through competitive negotiation, using the procedures provided in s. 287.055, to public or private entities that have experience in onsite sewage treatment and disposal systems in Florida and that are principally located in Florida. Research projects shall not be awarded to firms or entities that employ or are associated with persons who serve on either the technical review and advisory panel or the research review and advisory committee.

(k) Approve the installation of individual graywater disposal systems in which blackwater is treated by a central sewerage system.

(l) Regulate and permit the sanitation, handling, treatment, storage, reuse, and disposal of byproducts from any system regulated under this chapter and not regulated by the

Department of Environmental Protection.

(m) Permit and inspect portable or temporary toilet services and holding tanks. The department shall review applications, perform site evaluations, and issue permits for the temporary use of holding tanks, privies, portable toilet services, or any other toilet facility that is intended for use on a permanent or nonpermanent basis, including facilities placed on construction sites when workers are present. The department may specify standards for the construction, maintenance, use, and operation of any such facility for temporary use.

(n) Regulate and permit maintenance entities for performance-based treatment systems and aerobic treatment unit systems. To ensure systems are maintained and operated according to manufacturer's specifications and designs, the department shall establish by rule minimum qualifying criteria for maintenance entities. The criteria shall include: training, access to approved spare parts and components, access to manufacturer's maintenance and operation manuals, and service response time. The maintenance entity shall employ a contractor licensed under s. 489.105(3)(m), or part III of chapter 489, or a state-licensed wastewater plant operator, who is responsible for maintenance and repair of all systems under contract.

(4) PERMITS; INSTALLATION; AND CONDITIONS.—A person may not construct, repair, modify, abandon, or operate an onsite sewage treatment and disposal system without first obtaining a permit approved by the department. The department may issue permits to carry out this section.~~, but shall not make the issuance of such permits contingent upon prior approval by the Department of~~

~~Environmental Protection, except that~~ The issuance of a permit for work seaward of the coastal construction control line established under s. 161.053 shall be contingent upon receipt of any required coastal construction control line permit from the department ~~of Environmental Protection~~. A construction permit is valid for 18 months from the issuance date and may be extended by the department for one 90-day period under rules adopted by the department. A repair permit is valid for 90 days from the date of issuance. An operating permit must be obtained before ~~prior to~~ the use of any aerobic treatment unit or if the establishment generates commercial waste. Buildings or establishments that use an aerobic treatment unit or generate commercial waste shall be inspected by the department at least annually to assure compliance with the terms of the operating permit. The operating permit for a commercial wastewater system is valid for 1 year from the date of issuance and must be renewed annually. The operating permit for an aerobic treatment unit is valid for 2 years from the date of issuance and must be renewed every 2 years. If all information pertaining to the siting, location, and installation conditions or repair of an onsite sewage treatment and disposal system remains the same, a construction or repair permit for the onsite sewage treatment and disposal system may be transferred to another person, if the transferee files, within 60 days after the transfer of ownership, an amended application providing all corrected information and proof of ownership of the property. There is no fee associated with the processing of this supplemental information. A person may not contract to construct, modify, alter, repair, service, abandon, or maintain any portion of an

onsite sewage treatment and disposal system without being registered under part III of chapter 489. A property owner who personally performs construction, maintenance, or repairs to a system serving his or her own owner-occupied single-family residence is exempt from registration requirements for performing such construction, maintenance, or repairs on that residence, but is subject to all permitting requirements. A municipality or political subdivision of the state may not issue a building or plumbing permit for any building that requires the use of an onsite sewage treatment and disposal system unless the owner or builder has received a construction permit for such system from the department. A building or structure may not be occupied and a municipality, political subdivision, or any state or federal agency may not authorize occupancy until the department approves the final installation of the onsite sewage treatment and disposal system. A municipality or political subdivision of the state may not approve any change in occupancy or tenancy of a building that uses an onsite sewage treatment and disposal system until the department has reviewed the use of the system with the proposed change, approved the change, and amended the operating permit.

(a) Subdivisions and lots in which each lot has a minimum area of at least one-half acre and either a minimum dimension of 100 feet or a mean of at least 100 feet of the side bordering the street and the distance formed by a line parallel to the side bordering the street drawn between the two most distant points of the remainder of the lot may be developed with a water system regulated under s. 381.0062 and onsite sewage treatment and disposal systems, provided the projected daily sewage flow

does not exceed an average of 1,500 gallons per acre per day, and provided satisfactory drinking water can be obtained and all distance and setback, soil condition, water table elevation, and other related requirements of this section and rules adopted under this section can be met.

(b) Subdivisions and lots using a public water system as defined in s. 403.852 may use onsite sewage treatment and disposal systems, provided there are no more than four lots per acre, provided the projected daily sewage flow does not exceed an average of 2,500 gallons per acre per day, and provided that all distance and setback, soil condition, water table elevation, and other related requirements that are generally applicable to the use of onsite sewage treatment and disposal systems are met.

(c) Notwithstanding paragraphs (a) and (b), for subdivisions platted of record on or before October 1, 1991, when a developer or other appropriate entity has previously made or makes provisions, including financial assurances or other commitments, acceptable to the department ~~of Health~~, that a central water system will be installed by a regulated public utility based on a density formula, private potable wells may be used with onsite sewage treatment and disposal systems until the agreed-upon densities are reached. In a subdivision regulated by this paragraph, the average daily sewage flow may not exceed 2,500 gallons per acre per day. This section does not affect the validity of existing prior agreements. After October 1, 1991, the exception provided under this paragraph is not available to a developer or other appropriate entity.

(d) Paragraphs (a) and (b) do not apply to any proposed residential subdivision with more than 50 lots or to any

proposed commercial subdivision with more than 5 lots where a publicly owned or investor-owned sewerage system is available. It is the intent of this paragraph not to allow development of additional proposed subdivisions in order to evade the requirements of this paragraph.

(e) Onsite sewage treatment and disposal systems must not be placed closer than:

1. Seventy-five feet from a private potable well.

2. Two hundred feet from a public potable well serving a residential or nonresidential establishment having a total sewage flow of greater than 2,000 gallons per day.

3. One hundred feet from a public potable well serving a residential or nonresidential establishment having a total sewage flow of less than or equal to 2,000 gallons per day.

4. Fifty feet from any nonpotable well.

5. Ten feet from any storm sewer pipe, to the maximum extent possible, but in no instance shall the setback be less than 5 feet.

6. Seventy-five feet from the mean high-water line of a tidally influenced surface water body.

7. Seventy-five feet from the mean annual flood line of a permanent nontidal surface water body.

8. Fifteen feet from the design high-water line of retention areas, detention areas, or swales designed to contain standing or flowing water for less than 72 hours after a rainfall or the design high-water level of normally dry drainage ditches or normally dry individual lot stormwater retention areas.

(f) Except as provided under paragraphs (e) and (t), no

limitations shall be imposed by rule, relating to the distance between an onsite disposal system and any area that either permanently or temporarily has visible surface water.

(g) All provisions of this section and rules adopted under this section relating to soil condition, water table elevation, distance, and other setback requirements must be equally applied to all lots, with the following exceptions:

1. Any residential lot that was platted and recorded on or after January 1, 1972, or that is part of a residential subdivision that was approved by the appropriate permitting agency on or after January 1, 1972, and that was eligible for an onsite sewage treatment and disposal system construction permit on the date of such platting and recording or approval shall be eligible for an onsite sewage treatment and disposal system construction permit, regardless of when the application for a permit is made. If rules in effect at the time the permit application is filed cannot be met, residential lots platted and recorded or approved on or after January 1, 1972, shall, to the maximum extent possible, comply with the rules in effect at the time the permit application is filed. At a minimum, however, those residential lots platted and recorded or approved on or after January 1, 1972, but before January 1, 1983, shall comply with those rules in effect on January 1, 1983, and those residential lots platted and recorded or approved on or after January 1, 1983, shall comply with those rules in effect at the time of such platting and recording or approval. In determining the maximum extent of compliance with current rules that is possible, the department shall allow structures and appurtenances thereto which were authorized at the time such

lots were platted and recorded or approved.

2. Lots platted before 1972 are subject to a 50-foot minimum surface water setback and are not subject to lot size requirements. The projected daily flow for onsite sewage treatment and disposal systems for lots platted before 1972 may not exceed:

a. Two thousand five hundred gallons per acre per day for lots served by public water systems as defined in s. 403.852.

b. One thousand five hundred gallons per acre per day for lots served by water systems regulated under s. 381.0062.

(h)1. The department may grant variances in hardship cases which may be less restrictive than the provisions specified in this section. If a variance is granted and the onsite sewage treatment and disposal system construction permit has been issued, the variance may be transferred with the system construction permit, if the transferee files, within 60 days after the transfer of ownership, an amended construction permit application providing all corrected information and proof of ownership of the property and if the same variance would have been required for the new owner of the property as was originally granted to the original applicant for the variance. There is no fee associated with the processing of this supplemental information. A variance may not be granted under this section until the department is satisfied that:

a. The hardship was not caused intentionally by the action of the applicant;

b. No reasonable alternative, taking into consideration factors such as cost, exists for the treatment of the sewage; and

c. The discharge from the onsite sewage treatment and disposal system will not adversely affect the health of the applicant or the public or significantly degrade the groundwater or surface waters.

Where soil conditions, water table elevation, and setback provisions are determined by the department to be satisfactory, special consideration must be given to those lots platted before 1972.

2. The department shall appoint and staff a variance review and advisory committee, which shall meet monthly to recommend agency action on variance requests. The committee shall make its recommendations on variance requests at the meeting in which the application is scheduled for consideration, except for an extraordinary change in circumstances, the receipt of new information that raises new issues, or when the applicant requests an extension. The committee shall consider the criteria in subparagraph 1. in its recommended agency action on variance requests and shall also strive to allow property owners the full use of their land where possible. The committee consists of the following:

a. The State Surgeon General or his or her designee.

b. A representative from the county health departments.

c. A representative from the home building industry recommended by the Florida Home Builders Association.

d. A representative from the septic tank industry recommended by the Florida Onsite Wastewater Association.

e. A representative from the Department of Environmental Protection.

f. A representative from the real estate industry who is also a developer in this state who develops lots using onsite sewage treatment and disposal systems, recommended by the Florida Association of Realtors.

g. A representative from the engineering profession recommended by the Florida Engineering Society.

Members shall be appointed for a term of 3 years, with such appointments being staggered so that the terms of no more than two members expire in any one year. Members shall serve without remuneration, but if requested, shall be reimbursed for per diem and travel expenses as provided in s. 112.061.

(i) A construction permit may not be issued for an onsite sewage treatment and disposal system in any area zoned or used for industrial or manufacturing purposes, or its equivalent, where a publicly owned or investor-owned sewage treatment system is available, or where a likelihood exists that the system will receive toxic, hazardous, or industrial waste. An existing onsite sewage treatment and disposal system may be repaired if a publicly owned or investor-owned sewerage system is not available within 500 feet of the building sewer stub-out and if system construction and operation standards can be met. This paragraph does not require publicly owned or investor-owned sewerage treatment systems to accept anything other than domestic wastewater.

1. A building located in an area zoned or used for industrial or manufacturing purposes, or its equivalent, when such building is served by an onsite sewage treatment and disposal system, must not be occupied until the owner or tenant

has obtained written approval from the department. The department shall not grant approval when the proposed use of the system is to dispose of toxic, hazardous, or industrial wastewater or toxic or hazardous chemicals.

2. Each person who owns or operates a business or facility in an area zoned or used for industrial or manufacturing purposes, or its equivalent, or who owns or operates a business that has the potential to generate toxic, hazardous, or industrial wastewater or toxic or hazardous chemicals, and uses an onsite sewage treatment and disposal system that is installed on or after July 5, 1989, must obtain an annual system operating permit from the department. A person who owns or operates a business that uses an onsite sewage treatment and disposal system that was installed and approved before July 5, 1989, need not obtain a system operating permit. However, upon change of ownership or tenancy, the new owner or operator must notify the department of the change, and the new owner or operator must obtain an annual system operating permit, regardless of the date that the system was installed or approved.

3. The department shall periodically review and evaluate the continued use of onsite sewage treatment and disposal systems in areas zoned or used for industrial or manufacturing purposes, or its equivalent, and may require the collection and analyses of samples from within and around such systems. If the department finds that toxic or hazardous chemicals or toxic, hazardous, or industrial wastewater have been or are being disposed of through an onsite sewage treatment and disposal system, the department shall initiate enforcement actions against the owner or tenant to ensure adequate cleanup,

treatment, and disposal.

(j) An onsite sewage treatment and disposal system designed by a professional engineer registered in the state and certified by such engineer as complying with performance criteria adopted by the department must be approved by the department subject to the following:

1. The performance criteria applicable to engineer-designed systems must be limited to those necessary to ensure that such systems do not adversely affect the public health or significantly degrade the groundwater or surface water. Such performance criteria shall include consideration of the quality of system effluent, the proposed total sewage flow per acre, wastewater treatment capabilities of the natural or replaced soil, water quality classification of the potential surface-water-receiving body, and the structural and maintenance viability of the system for the treatment of domestic wastewater. However, performance criteria shall address only the performance of a system and not a system’s design.

2. A person electing to utilize an engineer-designed system shall, upon completion of the system design, submit such design, certified by a registered professional engineer, to the county health department. The county health department may utilize an outside consultant to review the engineer-designed system, with the actual cost of such review to be borne by the applicant. Within 5 working days after receiving an engineer-designed system permit application, the county health department shall request additional information if the application is not complete. Within 15 working days after receiving a complete application for an engineer-designed system, the county health

department either shall issue the permit or, if it determines that the system does not comply with the performance criteria, shall notify the applicant of that determination and refer the application to the department for a determination as to whether the system should be approved, disapproved, or approved with modification. The department engineer's determination shall prevail over the action of the county health department. The applicant shall be notified in writing of the department's determination and of the applicant's rights to pursue a variance or seek review under ~~the provisions of~~ chapter 120.

3. The owner of an engineer-designed performance-based system must maintain a current maintenance service agreement with a maintenance entity permitted by the department. The maintenance entity shall inspect each system at least twice each year and shall report quarterly to the department on the number of systems inspected and serviced. The reports may be submitted electronically.

4. The property owner of an owner-occupied, single-family residence may be approved and permitted by the department as a maintenance entity for his or her own performance-based treatment system upon written certification from the system manufacturer's approved representative that the property owner has received training on the proper installation and service of the system. The maintenance service agreement must conspicuously disclose that the property owner has the right to maintain his or her own system and is exempt from contractor registration requirements for performing construction, maintenance, or repairs on the system but is subject to all permitting requirements.

5. The property owner shall obtain a biennial system operating permit from the department for each system. The department shall inspect the system at least annually, or on such periodic basis as the fee collected permits, and may collect system-effluent samples if appropriate to determine compliance with the performance criteria. The fee for the biennial operating permit shall be collected beginning with the second year of system operation.

6. If an engineer-designed system fails to properly function or fails to meet performance standards, the system shall be re-engineered, if necessary, to bring the system into compliance with ~~the provisions of~~ this section.

(k) An innovative system may be approved in conjunction with an engineer-designed site-specific system which is certified by the engineer to meet the performance-based criteria adopted by the department.

(l) For the Florida Keys, the department shall adopt a special rule for the construction, installation, modification, operation, repair, maintenance, and performance of onsite sewage treatment and disposal systems which considers the unique soil conditions and water table elevations, densities, and setback requirements. On lots where a setback distance of 75 feet from surface waters, saltmarsh, and buttonwood association habitat areas cannot be met, an injection well, approved and permitted by the department, may be used for disposal of effluent from onsite sewage treatment and disposal systems. The following additional requirements apply to onsite sewage treatment and disposal systems in Monroe County:

1. The county, each municipality, and those special

districts established for the purpose of the collection, transmission, treatment, or disposal of sewage shall ensure, in accordance with the specific schedules adopted by the Administration Commission under s. 380.0552, the completion of onsite sewage treatment and disposal system upgrades to meet the requirements of this paragraph.

2. Onsite sewage treatment and disposal systems must cease discharge by December 31, 2015, or must comply with department rules and provide the level of treatment which, on a permitted annual average basis, produces an effluent that contains no more than the following concentrations:

a. Biochemical Oxygen Demand (CBOD5) of 10 mg/l.

b. Suspended Solids of 10 mg/l.

c. Total Nitrogen, expressed as N, of 10 mg/l or a reduction in nitrogen of at least 70 percent. A system that has been tested and certified to reduce nitrogen concentrations by at least 70 percent shall be deemed to be in compliance with this standard.

d. Total Phosphorus, expressed as P, of 1 mg/l.

In addition, onsite sewage treatment and disposal systems discharging to an injection well must provide basic disinfection as defined by department rule.

3. In areas not scheduled to be served by a central sewer, onsite sewage treatment and disposal systems must, by December 31, 2015, comply with department rules and provide the level of treatment described in subparagraph 2.

4. In areas scheduled to be served by central sewer by December 31, 2015, if the property owner has paid a connection

fee or assessment for connection to the central sewer system, the property owner may install a holding tank with a high water alarm or an onsite sewage treatment and disposal system that meets the following minimum standards:

a. The existing tanks must be pumped and inspected and certified as being watertight and free of defects in accordance with department rule; and

b. A sand-lined drainfield or injection well in accordance with department rule must be installed.

5. Onsite sewage treatment and disposal systems must be monitored for total nitrogen and total phosphorus concentrations as required by department rule.

6. The department shall enforce proper installation, operation, and maintenance of onsite sewage treatment and disposal systems pursuant to this chapter, including ensuring that the appropriate level of treatment described in subparagraph 2. is met.

7. The authority of a local government, including a special district, to mandate connection of an onsite sewage treatment and disposal system is governed by s. 4, chapter 99-395, Laws of Florida.

8. Notwithstanding any other provision of law, an onsite sewage treatment and disposal system installed after July 1, 2010, in unincorporated Monroe County, excluding special wastewater districts, that complies with the standards in subparagraph 2. is not required to connect to a central sewer system until December 31, 2020.

(m) No product sold in the state for use in onsite sewage treatment and disposal systems may contain any substance in

concentrations or amounts that would interfere with or prevent the successful operation of such system, or that would cause discharges from such systems to violate applicable water quality standards. The department shall publish criteria for products known or expected to meet the conditions of this paragraph. In the event a product does not meet such criteria, such product may be sold if the manufacturer satisfactorily demonstrates to the department that the conditions of this paragraph are met.

(n) Evaluations for determining the seasonal high-water table elevations or the suitability of soils for the use of a new onsite sewage treatment and disposal system shall be performed by department personnel, professional engineers registered in the state, or such other persons with expertise, as defined by rule, in making such evaluations. Evaluations for determining mean annual flood lines shall be performed by those persons identified in paragraph (2)(k) ~~paragraph (2)(j)~~. The department shall accept evaluations submitted by professional engineers and such other persons as meet the expertise established by this section or by rule unless the department has a reasonable scientific basis for questioning the accuracy or completeness of the evaluation.

(o) The department shall appoint a research review and advisory committee, which shall meet at least semiannually. The committee shall advise the department on directions for new research, review and rank proposals for research contracts, and review draft research reports and make comments. The committee is comprised of:

1. A representative of the State Surgeon General, or his or her designee.

2. A representative from the septic tank industry.

3. A representative from the home building industry.

4. A representative from an environmental interest group.

5. A representative from the State University System, from a department knowledgeable about onsite sewage treatment and disposal systems.

6. A professional engineer registered in this state who has work experience in onsite sewage treatment and disposal systems.

7. A representative from local government who is knowledgeable about domestic wastewater treatment.

8. A representative from the real estate profession.

9. A representative from the restaurant industry.

10. A consumer.

Members shall be appointed for a term of 3 years, with the appointments being staggered so that the terms of no more than four members expire in any one year. Members shall serve without remuneration, but are entitled to reimbursement for per diem and travel expenses as provided in s. 112.061.

(p) An application for an onsite sewage treatment and disposal system permit shall be completed in full, signed by the owner or the owner’s authorized representative, or by a contractor licensed under chapter 489, and shall be accompanied by all required exhibits and fees. No specific documentation of property ownership shall be required as a prerequisite to the review of an application or the issuance of a permit. The issuance of a permit does not constitute determination by the department of property ownership.

(q) The department may not require any form of subdivision

analysis of property by an owner, developer, or subdivider before ~~prior to~~ submission of an application for an onsite sewage treatment and disposal system.

(r) Nothing in this section limits the power of a municipality or county to enforce other laws for the protection of the public health and safety.

(s) In the siting of onsite sewage treatment and disposal systems, including drainfields, shoulders, and slopes, guttering shall not be required on single-family residential dwelling units for systems located greater than 5 feet from the roof drip line of the house. If guttering is used on residential dwelling units, the downspouts shall be directed away from the drainfield.

(t) Notwithstanding ~~the provisions of~~ subparagraph (g)1., onsite sewage treatment and disposal systems located in floodways of the Suwannee and Aucilla Rivers must adhere to the following requirements:

1. The absorption surface of the drainfield shall not be subject to flooding based on 10-year flood elevations. Provided, however, for lots or parcels created by the subdivision of land in accordance with applicable local government regulations before ~~prior to~~ January 17, 1990, if an applicant cannot construct a drainfield system with the absorption surface of the drainfield at an elevation equal to or above 10-year flood elevation, the department shall issue a permit for an onsite sewage treatment and disposal system within the 10-year floodplain of rivers, streams, and other bodies of flowing water if all of the following criteria are met:

a. The lot is at least one-half acre in size;

b. The bottom of the drainfield is at least 36 inches above the 2-year flood elevation; and

c. The applicant installs either: a waterless, incinerating, or organic waste composting toilet and a graywater system and drainfield in accordance with department rules; an aerobic treatment unit and drainfield in accordance with department rules; a system approved by the State Health Office that is capable of reducing effluent nitrate by at least 50 percent; or a system approved by the county health department pursuant to department rule other than a system using alternative drainfield materials. The United States Department of Agriculture Soil Conservation Service soil maps, State of Florida Water Management District data, and Federal Emergency Management Agency Flood Insurance maps are resources that shall be used to identify flood-prone areas.

2. The use of fill or mounding to elevate a drainfield system out of the 10-year floodplain of rivers, streams, or other bodies of flowing water shall not be permitted if such a system lies within a regulatory floodway of the Suwannee and Aucilla Rivers. In cases where the 10-year flood elevation does not coincide with the boundaries of the regulatory floodway, the regulatory floodway will be considered for the purposes of this subsection to extend at a minimum to the 10-year flood elevation.

(u)1. The owner of an aerobic treatment unit system shall maintain a current maintenance service agreement with an aerobic treatment unit maintenance entity permitted by the department. The maintenance entity shall inspect each aerobic treatment unit system at least twice each year and shall report quarterly to

the department on the number of aerobic treatment unit systems inspected and serviced. The reports may be submitted electronically.

2. The property owner of an owner-occupied, single-family residence may be approved and permitted by the department as a maintenance entity for his or her own aerobic treatment unit system upon written certification from the system manufacturer's approved representative that the property owner has received training on the proper installation and service of the system. The maintenance entity service agreement must conspicuously disclose that the property owner has the right to maintain his or her own system and is exempt from contractor registration requirements for performing construction, maintenance, or repairs on the system but is subject to all permitting requirements.

3. A septic tank contractor licensed under part III of chapter 489, if approved by the manufacturer, may not be denied access by the manufacturer to aerobic treatment unit system training or spare parts for maintenance entities. After the original warranty period, component parts for an aerobic treatment unit system may be replaced with parts that meet manufacturer's specifications but are manufactured by others. The maintenance entity shall maintain documentation of the substitute part's equivalency for 2 years and shall provide such documentation to the department upon request.

4. The owner of an aerobic treatment unit system shall obtain a system operating permit from the department and allow the department to inspect during reasonable hours each aerobic treatment unit system at least annually, and such inspection may

include collection and analysis of system-effluent samples for performance criteria established by rule of the department.

(v) The department may require the submission of detailed system construction plans that are prepared by a professional engineer registered in this state. The department shall establish by rule criteria for determining when such a submission is required.

(w) Any permit issued and approved by the department for the installation, modification, or repair of an onsite sewage treatment and disposal system shall transfer with the title to the property in a real estate transaction. A title may not be encumbered at the time of transfer by new permit requirements by a governmental entity for an onsite sewage treatment and disposal system which differ from the permitting requirements in effect at the time the system was permitted, modified, or repaired. An inspection of a system may not be mandated by a governmental entity at the point of sale in a real estate transaction. This paragraph does not affect a septic tank phase-out deferral program implemented by a consolidated government as defined in s. 9, Art. VIII of the State Constitution (1885).

(x) A governmental entity, including a municipality, county, or statutorily created commission, may not require an engineer-designed performance-based treatment system, excluding a passive engineer-designed performance-based treatment system, before the completion of the Florida Onsite Sewage Nitrogen Reduction Strategies Project. This paragraph does not apply to a governmental entity, including a municipality, county, or statutorily created commission, which adopted a local law, ordinance, or regulation on or before January 31, 2012.

Notwithstanding this paragraph, an engineer-designed performance-based treatment system may be used to meet the requirements of the variance review and advisory committee recommendations.

(y)1. An onsite sewage treatment and disposal system is not considered abandoned if the system is disconnected from a structure that was made unusable or destroyed following a disaster and if the system was properly functioning at the time of disconnection and was not adversely affected by the disaster. The onsite sewage treatment and disposal system may be reconnected to a rebuilt structure if:

a. The reconnection of the system is to the same type of structure which contains the same number of bedrooms or fewer, if the square footage of the structure is less than or equal to 110 percent of the original square footage of the structure that existed before the disaster;

b. The system is not a sanitary nuisance; and

c. The system has not been altered without prior authorization.

2. An onsite sewage treatment and disposal system that serves a property that is foreclosed upon is not considered abandoned.

(z) If an onsite sewage treatment and disposal system permittee receives, relies upon, and undertakes construction of a system based upon a validly issued construction permit under rules applicable at the time of construction but a change to a rule occurs within 5 years after the approval of the system for construction but before the final approval of the system, the rules applicable and in effect at the time of construction

approval apply at the time of final approval if fundamental site conditions have not changed between the time of construction approval and final approval.

(aa) An existing-system inspection or evaluation and assessment, or a modification, replacement, or upgrade of an onsite sewage treatment and disposal system is not required for a remodeling addition or modification to a single-family home if a bedroom is not added. However, a remodeling addition or modification to a single-family home may not cover any part of the existing system or encroach upon a required setback or the unobstructed area. To determine if a setback or the unobstructed area is impacted, the local health department shall review and verify a floor plan and site plan of the proposed remodeling addition or modification to the home submitted by a remodeler which shows the location of the system, including the distance of the remodeling addition or modification to the home from the onsite sewage treatment and disposal system. The local health department may visit the site or otherwise determine the best means of verifying the information submitted. A verification of the location of a system is not an inspection or evaluation and assessment of the system. The review and verification must be completed within 7 business days after receipt by the local health department of a floor plan and site plan. If the review and verification is not completed within such time, the remodeling addition or modification to the single-family home, for the purposes of this paragraph, is approved.

Section 18. Paragraph (d) of subsection (7) and subsections (8) and (9) of section 381.00651, Florida Statutes, are amended to read:

381.00651 Periodic evaluation and assessment of onsite sewage treatment and disposal systems.—

(7) The following procedures shall be used for conducting evaluations:

(d) *Assessment procedure.*—All evaluation procedures used by a qualified contractor shall be documented in the environmental health database of the department ~~of Health~~. The qualified contractor shall provide a copy of a written, signed evaluation report to the property owner upon completion of the evaluation and to the county health department within 30 days after the evaluation. The report must ~~shall~~ contain the name and license number of the company providing the report. A copy of the evaluation report shall be retained by the local county health department for a minimum of 5 years and until a subsequent inspection report is filed. The front cover of the report must identify any system failure and include a clear and conspicuous notice to the owner that the owner has a right to have any remediation of the failure performed by a qualified contractor other than the contractor performing the evaluation. The report must further identify any crack, leak, improper fit, or other defect in the tank, manhole, or lid, and any other damaged or missing component; any sewage or effluent visible on the ground or discharging to a ditch or other surface water body; any downspout, stormwater, or other source of water directed onto or toward the system; and any other maintenance need or condition of the system at the time of the evaluation which, in the opinion of the qualified contractor, would possibly interfere with or restrict any future repair or modification to the existing system. The report shall conclude with an overall

assessment of the fundamental operational condition of the system.

(8) The county health department, in coordination with the department, shall administer any evaluation program on behalf of a county, or a municipality within the county, that has adopted an evaluation program pursuant to this section. In order to administer the evaluation program, the county or municipality, in consultation with the county health department, may develop a reasonable fee schedule to be used solely to pay for the costs of administering the evaluation program. Such a fee schedule shall be identified in the ordinance that adopts the evaluation program. When arriving at a reasonable fee schedule, the estimated annual revenues to be derived from fees may not exceed reasonable estimated annual costs of the program. Fees shall be assessed to the system owner during an inspection and separately identified on the invoice of the qualified contractor. Fees shall be remitted by the qualified contractor to the county health department. The county health department's administrative responsibilities include the following:

(a) Providing a notice to the system owner at least 60 days before the system is due for an evaluation. The notice may include information on the proper maintenance of onsite sewage treatment and disposal systems.

(b) In consultation with the department ~~of Health~~, providing uniform disciplinary procedures and penalties for qualified contractors who do not comply with the requirements of the adopted ordinance, including, but not limited to, failure to provide the evaluation report as required in this subsection to the system owner and the county health department. Only the

county health department may assess penalties against system owners for failure to comply with the adopted ordinance, consistent with existing requirements of law.

(9)(a) A county or municipality that adopts an onsite sewage treatment and disposal system evaluation and assessment program pursuant to this section shall notify the Secretary of Environmental Protection, the Department of Health, and the applicable county health department upon the adoption of its ordinance establishing the program.

(b) Upon receipt of the notice under paragraph (a), the department ~~of Environmental Protection~~ shall, within existing resources, notify the county or municipality of the potential use of, and access to, program funds under the Clean Water State Revolving Fund or s. 319 of the Clean Water Act, provide guidance in the application process to receive such moneys, and provide advice and technical assistance to the county or municipality on how to establish a low-interest revolving loan program or how to model a revolving loan program after the low-interest loan program of the Clean Water State Revolving Fund. This paragraph does not obligate the department ~~of Environmental Protection~~ to provide any county or municipality with money to fund such programs.

(c) The department ~~of Health~~ may not adopt any rule that alters the provisions of this section.

(d) The department ~~of Health~~ must allow county health departments and qualified contractors access to the environmental health database to track relevant information and assimilate data from assessment and evaluation reports of the overall condition of onsite sewage treatment and disposal

systems. The environmental health database must be used by contractors to report each service and evaluation event and by a county health department to notify owners of onsite sewage treatment and disposal systems when evaluations are due. Data and information must be recorded and updated as service and evaluations are conducted and reported.

Section 19. Subsection (1) of section 381.0068, Florida Statutes, is amended to read:

381.0068 Technical review and advisory panel.—

(1) The Department of Environmental Protection ~~Health~~ shall establish and staff a technical review and advisory panel to assist the department with rule adoption.

Section 20. Except as otherwise expressly provided in this act, this act shall take effect July 1, 2019.

2019 AGENCY LEGISLATIVE BILL ANALYSIS

2019

AGENCY: Florida Department of Health

BILL INFORMATION	
BILL NUMBER:	SB 1100
BILL TITLE:	Water Testing for Pollution
BILL SPONSOR:	Montford
EFFECTIVE DATE:	July 1, 2019

COMMITTEES OF REFERENCE
1) Environment and Natural Resources
2) Appropriations Subcommittee on Health and Human Services
3) Appropriations
4) Click or tap here to enter text.
5) Click or tap here to enter text.

CURRENT COMMITTEE
Environment and Natural Resources

SIMILAR BILLS	
BILL NUMBER:	Click or tap here to enter text.
SPONSOR:	Click or tap here to enter text.

PREVIOUS LEGISLATION	
BILL NUMBER:	Click or tap here to enter text.
SPONSOR:	Click or tap here to enter text.
YEAR:	Click or tap here to enter text.
LAST ACTION:	Click or tap here to enter text.

IDENTICAL BILLS	
BILL NUMBER:	Click or tap here to enter text.
SPONSOR:	Click or tap here to enter text.

Is this bill part of an agency package?
No

BILL ANALYSIS INFORMATION	
DATE OF ANALYSIS:	Click or tap here to enter text.
LEAD AGENCY ANALYST:	Click or tap here to enter text.
ADDITIONAL ANALYST(S):	Click or tap here to enter text.
LEGAL ANALYST:	Click or tap here to enter text.

could be contracted to private laboratories but would increase the cost of laboratory testing services. A list of certified private laboratories can be found at https://fldeploc.dep.state.fl.us/aams/loc_search.asp.

The 3-day timeframe for collection and analysis in the proposed bill's section 1 (381.00621(2)(b)) is not feasible. Currently, depending on the analytes being tested, turnaround time is greater than 3 days and can be up to 14 days and includes many required steps like sample preparation, analysis, and result verification. In addition, to attempt to meet the turnaround time, appropriate sample bottles and reagents would need to be stored at every local DOH and replaced on a routine basis as reagents expire. This would add a significant cost in time and materials.

In section 2, the unfunded program that the bill creates would siphon funding from seven (7) delegated counties to potentially fund the other 60 counties. The statutory sections cited for funds are 403.860 and 403.861, which are for the small subset of Safe Drinking Water Act permit fees and enforcement actions which DOH is responsible. Currently the revenues for these activities do not cover the expenditures and must be subsidized by other non-discretionary funding.

This bill's reduction of funds for Safe Drinking Water Act implementation and shift to 60 other counties would impair this important public health service in the seven delegated counties. Further, the available funds would only cover a portion of the cost of the bill's newly-created well testing service, if/when the number of eligible wells increases.

DOH cannot predict the number or type of possible increased requests. The ease and rapidity with which tests can be processed depends on the test.

3. DOES THE BILL DIRECT OR ALLOW THE AGENCY/BOARD/COMMISSION/DEPARTMENT TO DEVELOP, ADOPT, OR ELIMINATE RULES, REGULATIONS, POLICIES, OR PROCEDURES? **Y☒ N☐**

If yes, explain:	Department policies and procedures are necessary to implement the bill's requirements, however it does not specifically direct or allow this.
Is the change consistent with the agency's core mission?	**Y☒ N☐**
Rule(s) impacted (provide references to F.A.C., etc.):	

4. WHAT IS THE POSITION OF AFFECTED CITIZENS OR STAKEHOLDER GROUPS?

Proponents and summary of position:	Unknown
Opponents and summary of position:	Unknown

5. ARE THERE ANY REPORTS OR STUDIES REQUIRED BY THIS BILL? **Y☐ N☒**

If yes, provide a description:	N/A
Date Due:	N/A
Bill Section Number(s):	N/A

6. ARE THERE ANY NEW GUBERNATORIAL APPOINTMENTS OR CHANGES TO EXISTING BOARDS, TASK FORCES, COUNCILS, COMMISSIONS, ETC. REQUIRED BY THIS BILL? **Y☐ N☒**

Board:	N/A

Revenues:	Unknown
Expenditures:	Unknown
Other:	Many of the samples that the DOH would be collecting and analyzing currently go to private laboratories. There would be a negative impact on the private labs if DOH performs the required testing.

4. DOES THE BILL INCREASE OR DECREASE TAXES, FEES, OR FINES? Y☐ N☒

If yes, explain impact.	N/A
Bill Section Number:	N/A

	What are the effects of any water testing that identifies the existence of a pollutant in violation of a water quality standard, i.e., required actions by the department, the property owners, or the polluter(s)?

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 1100
INTRODUCER:	Senator Montford
SUBJECT:	Water Testing for Pollution
DATE:	March 19, 2019
REVISED:	

	ANALYST	STAFF DIRECTOR	REFERENCE	ACTION
1.	Schreiber	Rogers	EN	**Favorable**
2.			AHS	
3.			AP	

I. Summary:

SB 1100 provides that if pollution exists that could impact a water system and lead to a violation of water quality standards then any potentially impacted resident, business, or property owner may request that the Department of Health or its agents test the source of the water system for contamination. If the Department of Health receives such a request the bill requires the department or its agents to collect water samples from the water system's source and submit the samples to a certified laboratory for contaminant analysis no later than three business days after receipt of the request.

The bill authorizes certain fees and penalties deposited into the County Health Department Trust Fund to be used by the Department of Health to pay the costs of expenditures for the procedures specified in the bill.

II. Present Situation:

Drinking Water Quality

Groundwater is the primary source of drinking water in Florida.[1] While most groundwater is naturally protected from contaminants, chemicals and microorganisms can reach drinking water sources due to a wide array of pollution from human activities.[2] Consumption of contaminated drinking water results in thousands of cases of illness each year and can even be fatal.[3] Water quality testing is necessary to make people aware of contaminants in their drinking water, protect public health and safety, and take corrective action.

Under Florida law, a "well" is as any excavation that is drilled, dug, or otherwise constructed with the intended use of locating, acquiring, or developing groundwater.[4] The Department of Environmental Protection (DEP) delegates to the water management districts authority for issuing permits for the location, construction, repair, and abandonment of water wells.[5] Under state regulations, a "water system" is the mechanical and electrical assembly of one or more pumps, pipes, storage structures, treatment equipment, and distribution network meant to provide water to the plumbing of a building or premises.[6] In general, Florida regulates drinking water quality by regulating the entire "water system" that provides water to a building for human consumption, and this includes the well. The term "private well" is often used interchangeably with other terms for small, private water systems.

The Safe Drinking Water Act is the federal law that protects public drinking water supplies.[7] It applies to "public water systems," which are defined as having at least 15 service connections or serving at least 25 individuals.[8] The Safe Drinking Water Act is implemented by the United States Environmental Protection Agency (EPA).[9] Federal law does not regulate private wells or

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[1] South Florida Water Management District, *Groundwater Modeling*, https://www.sfwmd.gov/science-data/gw-modeling (last visited Mar. 14, 2019).
[2] Florida Department of Health in Charlotte County, *Private Well Testing*, http://charlotte.floridahealth.gov/programs-and-services/environmental-health/private-well-testing/index.html (last visited Mar. 14, 2019).
[3] *Id.*
[4] Section 373.303(7), F.S. A "well" is defined as "any excavation that is drilled, cored, bored, washed, driven, dug, jetted, or otherwise constructed when the intended use of such excavation is for the location, acquisition, development, or artificial recharge of groundwater, but such term does not include any well for the purpose of obtaining or prospecting for oil, natural gas, minerals, or products of mining or quarrying; for inserting media to dispose of oil brines or to repressure oil-bearing or natural gas-bearing formation; for storing petroleum, natural gas, or other products; or for temporary dewatering of subsurface formations for mining, quarrying, or construction purposes."
[5] Section 373.308, F.S.; Fla. Admin. Code Ch. 40A-3; Fla. Admin. Code Ch. 40B-3; Fla. Admin. Code Ch. 40C-3; Fla. Admin. Code Ch. 40D-3; Fla Admin. Code Ch. 40E-3.
[6] Fla. Admin. Code R. 64E-8.001. A "water system" is defined as "the mechanical and electrical assembly of one or more pumps, pipes, storage structures, treatment equipment, and distribution network meant to provide water to the plumbing of a building or premise. For the purposes of this chapter, except as described in subsection 64E-8.007(8), F.A.C., a water system does not include any connections after a master water meter where the water is obtained from a public water system that is covered or included in the Florida Safe Drinking Water Act, the water is not treated, collected or resold after the master water meter, and the end user is not a carrier which conveys passengers in interstate commerce."
[7] 42 U.S.C. s. 300f, *et seq.*; U.S. EPA, *Safe Drinking Water Act (SDWA)*, https://www.epa.gov/sdwa (last visited Mar. 13, 2019).
[8] 42 U.S.C. s. 300f(4)(A).
[9] U.S. EPA, *Laws and Regulations, Summary of the Safe Drinking Water Act*, https://www.epa.gov/laws-regulations/summary-safe-drinking-water-act (last visited Mar. 13, 2019).

provide recommended criteria or standards for individual wells, and generally states that private well owners are responsible for the safety of their water.[10] The EPA delegates authority to the state of Florida to adopt and enforce Florida's drinking water standards pertaining to public water systems.[11]

Florida Safe Drinking Water Act

The Florida Safe Drinking Water Act (FSDWA) establishes a water supply program implemented by DEP, and the Department of Health (DOH) and its units including county health departments, to assure the availability of safe drinking water.[12] The FSDWA, like the federal law, applies to public water systems that have at least 15 service connections or regularly serve at least 25 individuals.[13] Approximately 88% of Florida's resident are served by public water systems covered by the FSDWA.[14]

DEP adopts and enforces drinking water standards that apply to public water systems.[15] DOH requires county health departments to collect water samples from public water systems for analysis within their respective jurisdictions.[16] DOH implements a certification program for laboratories that perform analyses of drinking water samples.[17] When a public water system in Florida is not in compliance with the requirements of the FSDWA the owner or operator of the system is required to notify DEP, the local public health departments, and the communications media serving the area.[18]

Smaller Water Systems

Many water systems in Florida are too small to fit the FSDWA's definition of a public water system. DOH has general supervision and control over water systems not covered under the FSDWA.[19] These smaller water systems are regulated under the following definitions:

- "Private water system": a water system that provides piped water for one or two residences, one of which may be a rental residence.
- "Multifamily water system": a water system that provides piped water to three or four residences, one of which may be a rental residence.

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[10] U.S. EPA, *Private Drinking Water Wells*, https://www.epa.gov/privatewells (last visited Mar. 15, 2019).
[11] DEP, *Source & Drinking Water Program*, https://floridadep.gov/water/source-drinking-water (last visited Mar. 13, 2019).
[12] Sections 403.850-403.864, F.S.; Fla. Admin. Code Chapters 62-550, 62-555, and 62-560.
[13] Section 403.852(2), F.S. Under Florida law, the term "public water system" is defined as "a system for the provision to the public of water for human consumption through pipes or other constructed conveyances if such system has at least 15 service connections or regularly serves at least 25 individuals daily at least 60 days out of the year. A public water system is either a community water system or a noncommunity water system. The term 'public water system' includes: (a) Any collection, treatment, storage, and distribution facility or facilities under control of the operator of such system and used primarily in connection with such system. (b) Any collection or pretreatment storage facility or facilities not under control of the operator of such system but used primarily in connection with such system."
[14] Florida Department of Health, *Private Well Testing: Private Well Owner's Guide*, http://www.floridahealth.gov/environmental-health/private-well-testing/index.html (last visited Mar. 14, 2019).
[15] Section 403.853, F.S; Fla. Admin. Code Ch. 62-550.
[16] Section 403.862, F.S.
[17] Sections 403.863 and 403.8635, F.S.; *see* Fla. Admin. Code Chapter 64e-1.
[18] Section 403.857, F.S.
[19] Section 381.0062(2), F.S.

- "Limited use commercial public water system": a public water system not covered under the FSDWA, serving one or more nonresidential establishments and providing piped water.
- "Limited use community public water system": a public water system not covered under the FSDWA, serving five or more residences, or two or more rental residences, providing piped water.[20]

Limited use public water systems are subject to monitoring schedules and specific water quality standards, maintained through sampling done by the owner or operator of the water system.[21] When a sample analysis reveals contamination in limited use public water systems, corrective actions must be taken by the owner or operator of the system, including disinfection of the system and public notification to caution consumers.[22] DOH requires water quality testing and the clearance of certain standards during the construction of new multi-family water systems.[23] However, while all public water systems in Florida are required to perform routine testing to maintain state drinking water standards, private well owners are responsible for ensuring that the water in their systems is safe to drink.[24] When owners and operators of existing private, multifamily, and limited use public water systems request testing services from DOH, DOH is required to charge a fee sufficient to cover the costs of sample collection, review of analytical results, health-risk interpretations, and coordination with other agencies.[25]

DEP responds to the escape of pollutants into surface and ground waters, and maintains a program to restore contaminated potable water supplies.[26] This includes paying the reasonable costs of DOH in providing laboratory and field services in the investigation of drinking water contamination complaints.[27] DEP and DOH implement a Well Surveillance Program that monitors and identifies threats to the drinking water supplies, ensures that contaminated sites posing the greatest risk get cleaned up first, and prevents long-term consumption of contaminated drinking water.[28] DEP conducts surveys to identify drinking water wells that are near areas of known or suspected contamination. Wells located during the surveys are tested by DOH for chemical contamination. DOH submits water well samples to DEP for analysis.[29] Since 2005, the program has identified over 4,400 wells with chemical concentrations that exceeded state or federal drinking water standards. Private wells with water sampling results showing certain levels of contamination are eligible for assistance through DEP's Water Supply Restoration Program.[30]

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[20] Section 381.0062(1)(e), (f), (h), and (k), F.S.; *see* DOH, *Limited Use Wells*, http://www.floridahealth.gov/environmental-health/drinking-water/limited-use-wells.html (last visited Mar. 14, 2019).
[21] Fla. Admin. Code R. 64E-8.006.
[22] Fla. Admin. Code R. 64E-8.007 and 64E-8.008.
[23] Fla. Admin. Code R. 64E-8.003.
[24] Florida Department of Health, *Private Well Testing: Private Well Owner's Guide*, http://www.floridahealth.gov/environmental-health/private-well-testing/index.html (last visited Mar. 14, 2019).
[25] Section 381.0062(2)(f), F.S. The fee is required to be no less than $10 and no more than $90.
[26] Section 376.30(3), F.S.
[27] Section 376.30(3)(c)3, F.S.
[28] DOH, *Well Surveillance Program*, http://www.floridahealth.gov/environmental-health/drinking-water/well-surveys.html (last visited Mar. 14, 2019).
[29] DEP, *Private Well Water Sampling*, https://floridadep.gov/wra/water-supply-restoration/content/private-well-water-sampling (last visited Mar. 17, 2019).
[30] DEP, *Water Supply Restoration*, https://floridadep.gov/wra/water-supply-restoration (last visited Mar. 14, 2019).

County Health Departments

County health departments are units of DOH that are located in each of Florida's 67 counties.[31] They are state-local partnerships created to protect and improve public health and safety through "a system of coordinated county health department services."[32] Each county government enters into a contract annually with DOH that specifies the services to be provided and the revenues that will fund the services.[33] The state maintains the County Health Department Trust Fund.[34] This trust fund contains all state and local funds that are expended by county health departments, and these funds are expended in accordance with budgets and plans agreed on by DOH and each county.[35]

DOH receives fees from permitting the construction, alteration, or operation of public water systems.[36] DOH and county health departments assess administrative penalties for violations of the FSDWA.[37] The money from these functions is deposited into the County Health Department Trust Fund.[38] Such money must then be used for carrying out DOH's responsibilities for water systems not covered under the FSDWA and for funding the costs of county health departments for regulating and monitoring public water systems.[39]

DOH strongly recommends that private well owners test their water at least once a year for contaminants such as bacteria, nitrates, and arsenic.[40] County health departments provide private well owners with instructions on how to collect water samples or may test the water at the location of the well for an additional fee.[41] Private laboratories that have been certified by the state are also available to perform water testing.[42] DOH advises well owners to contact county health departments to assess the need for testing their water and to seek help from county health departments to understand test results and respond to findings of contamination.[43]

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[31] Chapter 154, part I, F.S.; DOH, *County Health Departments*, http://www.floridahealth.gov/programs-and-services/county-health-departments/index.html (last visited Mar. 12, 2019).
[32] Section 154.001, F.S.
[33] DOH, *County Health Departments*, http://www.floridahealth.gov/programs-and-services/county-health-departments/index.html (last visited Mar. 12, 2019); s*ee* Contract Between Broward County and State of Florida Department of Health For Operation of The Broward County Health Department, *Contract Year 2017-2018* (2017) available at http://cragenda.broward.org/docs/2017/CCCM/20171212_553/25392_Exhibit%202%20-%20Florida%20Department%20of%20Health%20Agreement.23%20pages.pdf (last visited Mar. 12, 2019).
[34] Section 154.02(2), F.S.
[35] Section 154.02(3), F.S.
[36] Section 403.861(7), F.S.; Fla. Admin. Code R 64E-8.002 and 64E-8.004.
[37] Section 403.860(5), F.S.
[38] Section 381.0063, F.S.
[39] Section 381.0063, F.S.; *see* ss. 381.0062 and 403.862(1)(c), F.S.
[40] DOH, *Is your Well Water Well?*, http://www.floridahealth.gov/environmental-health/private-well-testing/_images/well_water_poster_2015.pdf (last visited Mar. 14, 2019); DOH, *Private Well Testing: How and When To Test*, http://www.floridahealth.gov/environmental-health/private-well-testing/index.html (last visited Mar. 14, 2019).
[41] DOH, *Private Well Testing: How and When To Test*, http://www.floridahealth.gov/environmental-health/private-well-testing/index.html (last visited Mar. 14, 2019); Florida Department of Health Indian River County, *IRCHD Laboratory Collection and Submittal Information*, http://indianriver.floridahealth.gov/programs-and-services/environmental-health/drinking-water-laboratory/_documents/lab-collection-form-rev-aug-2018.pdf (last visited Mar., 14, 2019).
[42] DEP, *Laboratories Certified Under NELAP by the Florida Department of Health*, https://fldeploc.dep.state.fl.us/aams/loc_search.asp (last visited Mar. 14, 2019).
[43] DOH, *Private Well Testing: How and When To Test*, http://www.floridahealth.gov/environmental-health/private-well-testing/index.html (last visited Mar. 14, 2019).

III. Effect of Proposed Changes:

Section 1 creates s. 381.00621, F.S., which involves testing water for contamination.

The bill defines the word "pollution," as used in the section, as "a physical, biological, chemical, or radiological substance or matter in the air, the land, or the waters of the state."

The bill provides that if pollution exists in an area that could impact a private water system and result in a violation of water quality standards then any potentially impacted residents, business owners, or property owners are authorized to request that the Department of Health (DOH) or its agents test the water source of the system for contamination. The applicable water quality standards are those developed by DOH or the Department of Environmental Protection. The bill applies to three groups of water systems: private water systems, which provide piped water to one or two properties; multifamily water systems, which provide piped water to three or four properties; and public water systems that provide piped water to the public but serve less than 25 individuals and have less than 15 service connections.

If DOH receives a request for water testing as described in the bill, DOH or its agents must collect water samples from the system's water source and submit the samples to a laboratory for contaminant analysis. The analysis must be completed no later than three business days after the department's receipt of the request. The laboratory performing the analysis must either be a DOH laboratory or a laboratory certified by DOH.

Section 2 amends s. 381.0063, F.S., to authorize the costs of expenditures for the water quality testing required by s. 381.00621, F.S., to be paid for from the appropriate County Health Department Trust Fund.

Section 3 states that the act shall take effect July 1, 2019.

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.

E. Other Constitutional Issues:

None.

V. Fiscal Impact Statement:

A. Tax/Fee Issues:

None.

B. Private Sector Impact:

Indeterminate.

C. Government Sector Impact:

This bill would require DOH and its agents, in certain situations, to conduct testing of water systems. This may result in DOH and its agents incurring additional costs. The bill likely has an indeterminate, negative fiscal impact on DOH.

The number of wells that would need to be tested as a result of this bill is unknown. DOH indicates that testing 20,000 wells would cost $2.9 million.[44] DOH estimates that implementing the bill would require DOH to hire 25 additional full-time employees.[45] DOH is required under existing law to charge not less than $10 or more than $90 to cover the costs of collecting samples and interpreting results, which may offset the cost to DOH.

VI. Technical Deficiencies:

None.

VII. Related Issues:

DOH's bill analysis for SB 1100 suggests the following definition of pollution be used instead of the definition provided in the bill: "the presence in the outdoor atmosphere or waters of the state of any one or more substances, contaminants, or manmade or human-induced impairment of water or alteration of the chemical, physical, biological, or radiological integrity of the water in quantities which are or may be potentially harmful or injurious to human health or welfare."[46]

DOH's bill analysis suggests it is not clear who will determine whether pollution exists to the extent it would potentially violate a DOH or Department of Environmental Protection water quality standard.[47] Therefore, it may improve clarity to change the language from " [i]f pollution exists in an area" to "[i]f a government entity determines that pollution exists in an area . . ."

---

[44] DOH, 2019 Agency Legislative Bill Analysis, *Bill Number: SB 1100*, 2 (2019)(on file with the Senate Committee on Environment and Natural Resources).
[45] *Id.* at 4.
[46] *Id.* at 6.
[47] *Id.*

DOH's bill analysis states that the bill's 3-day timeframe for collection and analysis of drinking water samples is not feasible, and that depending on the analytes being tested turnaround time is greater than 3 days and can be up to 14 days, involving various steps in the testing process.[48]

VIII. Statutes Affected:

This bill substantially amends section 381.0063 of the Florida Statutes.

This bill creates section 381.00621 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.

[48] *Id.* at 3.

By Senator Montford

3-01635B-19 20191100__

A bill to be entitled

An act relating to water testing for pollution; creating s. 381.00621, F.S.; defining the term "pollution"; authorizing specified persons or businesses that suspect contamination of their private water system or multifamily water system or certain public water systems to request that the Department of Health or its agents test such system for pollution, under certain circumstances; requiring such testing to be done within a specified timeframe; amending s. 381.0063, F.S.; requiring that certain funds be placed into the appropriate County Health Department Trust Fund; providing an effective date.

Be It Enacted by the Legislature of the State of Florida:

Section 1. Section 381.00621, Florida Statutes, is created to read:

381.00621 Testing for contamination.—

(1) DEFINITION.—As used in this section, the term "pollution" means a physical, biological, chemical, or radiological substance or matter in the air, the land, or the waters of the state.

(2) WATER TESTING.—

(a) If pollution exists in an area that could impact a private water system, multifamily water system, or public water system not subject to the Florida Safe Drinking Water Act, and the pollution may impact such water system and result in a violation of water quality standards adopted by the department

or the Department of Environmental Protection, any potentially impacted resident, business, or property owner may request the department or its agents to test the water source for contamination.

(b) If the department receives a request under paragraph (a), the department or its agents must collect water samples from the system's water source and must submit the samples to a department laboratory or a department-certified drinking water laboratory for contaminant analysis. The analysis must be completed as expeditiously as possible, but not later than 3 business days after the department's receipt of the request under paragraph (a).

Section 2. Section 381.0063, Florida Statutes, is amended to read:

381.0063 Drinking water funds.—All fees and penalties received from suppliers of water pursuant to ss. 403.860(5) and 403.861(7)(a) shall be deposited in the appropriate County Health Department Trust Fund to be used by the department to pay the costs of expenditures required pursuant to ss. 381.0062, 381.00621, and 403.862(1)(c).

Section 3. This act shall take effect July 1, 2019.

North Central Florida Regional Planning Council

North Central Florida Regional Planning Council

Middle and Lower Suwannee River and Withlacoochee River Task Force

North Central Florida Regional Planning Council

Valdosta Wastewater

North Central Florida Regional Planning Council

Valdosta Wastewater

- Withlacoochee Plant
- Mud Creek Plant
- National Pollutant Discharge Elimination System Permits
- Permits authorize discharge of treated wastewater per effluent limitations to surface waters

North Central Florida Regional Planning Council

Valdosta Wastewater

- Excessive major raw sewage spills to waters of State - 1/1/08 to 7/31/13
- City meets with U.S. Environmental Protection Agency & requests to be allowed to work with Georgia Environmental Protection Division on corrective action plan - 2/28/13
- Consent Order with State of Georgia requiring implementation of action plan executed by City - 9/23/13

North Central Florida Regional Planning Council

Valdosta Wastewater

City Completes Action Plan

- Relocate/construct 22,500,000-gallon Withlacoochee Plant
- Construct 6.2-mile new force main to Withlacoochee Plant
- Construct 6,000,000-gallon equalization basin
- Construct new headworks at Withlacoochee Plant
- Inspect all manholes & sanitary sewer lines
- Make short-term improvements to Withlacoochee Plant

North Central Florida Regional Planning Council

Valdosta Wastewater

- Infiltration of stormwater into wastewater collection system continues to be an issue
- Raw sewage spills to waters of State have continued - 2013 - 2018
- City adopts Ten-Year Wastewater Capital Improvements Plan

North Central Florida Regional Planning Council

River Task Force

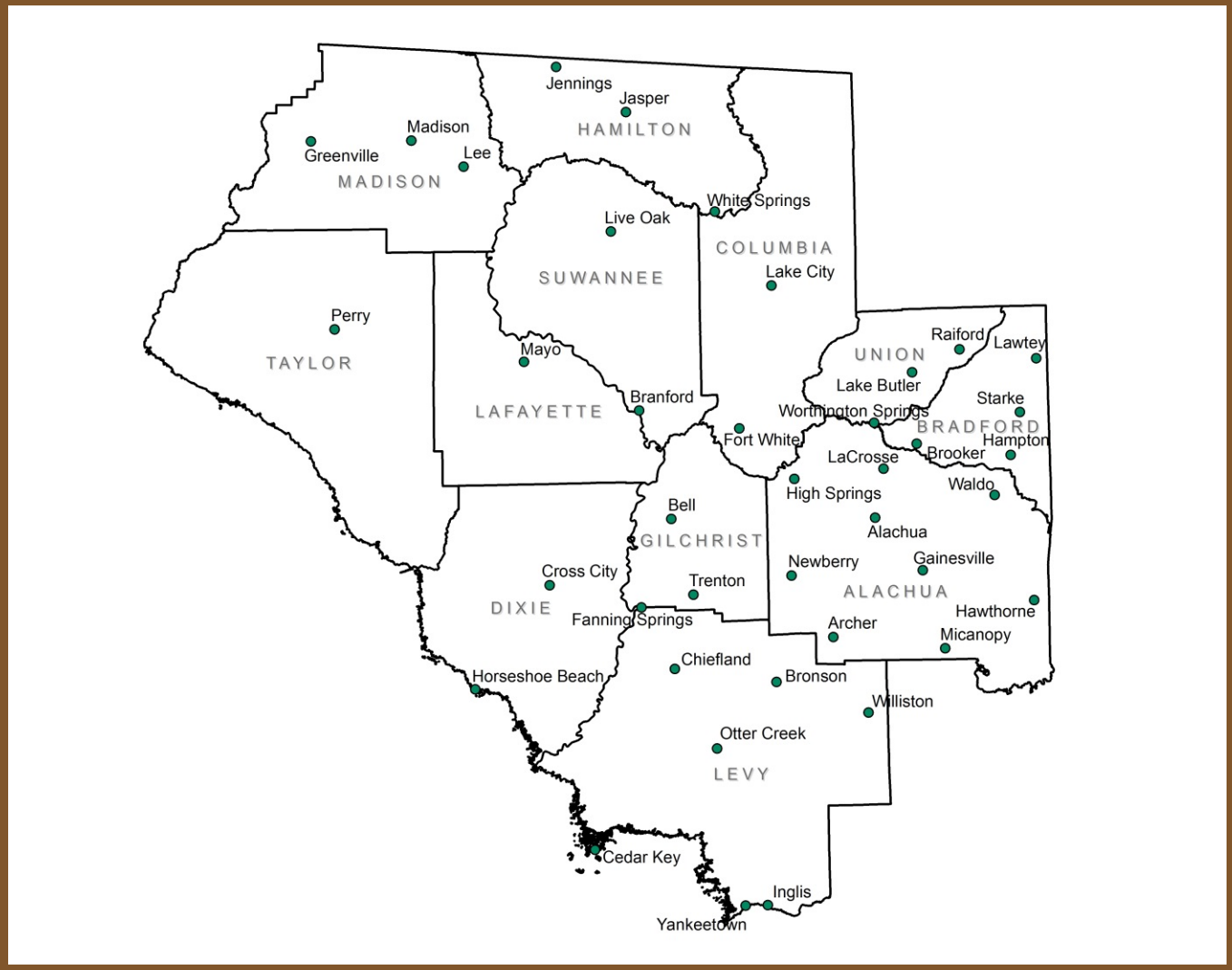
- Madison County Board of County Commissioners requests North Central Florida Regional Planning Council to convene impacted counties - 8/22/18

- Representatives from impacted counties request Council establish Middle and Lower Suwannee River and Withlacoochee River Task Force - 9/19/18

- Council appoints county commissioners from 12 counties in north central Florida region to River Task Force - 10/25/18

North Central Florida Regional Planning Council

River Task Force



North Central Florida Regional Planning Council

River Task Force

Task Force Members

Ken Cornell, Alachua County
Daniel Riddick, Bradford County
Ronald Williams, Columbia County
Gene Higginbotham, Dixie County
Kenrick Thomas, Gilchrist County
Beth Burnam, Hamilton County, Vice-Chair
Anthony Adams, Lafayette County
John Meeks, Levy County
Rick Davis, Madison County, Chair
Don Hale, Suwannee County
Thomas Demps, Taylor County
James Tallman, Union County

North Central Florida Regional Planning Council

River Task Force

Task Force met during past three months

- Identified negative impacts from spills
  - Public health
  - Environmental
  - Economic development - tourism
- Identified strategies to address impacts
- Identified local, state & federal partners/organizations to assist in implementing strategies

North Central Florida Regional Planning Council

River Task Force

- Presents issue at local legislative delegation hearings
- Adopts resolution finding raw sewage spills unacceptable and requesting assistance of federal and state agencies
- Schedules Joint Workshop with City of Valdosta City Council
- Meets with federal and state elected officials and staff

North Central Florida Regional Planning Council

North Central Florida Regional Planning Council

2009 NW 67th Place
Gainesville, FL 32653-1603
352.955.2200
www.ncfrpc.org

North Central Florida Regional Planning Council

To protect, promote and improve the health of all people in Florida through integrated state, county, and community efforts.

Withlacoochee River Sewage Spills

Bureau of Environmental Health
Division of Disease Control and Health Protection
Department of Health
March 20, 2019

Floods and Wells

- **Heavy rainfall can flood areas of the state**
  - **Can cover water wells and the tops of their well casing**
- **Microbial pathogens can contaminate the well if:**
  - ***Sanitary seal not maintained***
  - ***Geology is highly porous (karst, sand/shell, gravel),***
  - ***Wells are very shallow (<65')***
- **Florida Department of Health (DOH) provides guidance for response after floods**
- **Well disinfection and testing is recommended after flood waters subside to assure well water is safe to drink**
- **Testing for coliform bacteria recommended**

DOH response to Sewage Spills

- **Receive notification of spill**
- **Educate the public**
  - ***Issue "no swimming" advisory***
  - ***Provide press release and waterfront signage***
  - ***Remind well owners to test their wells***
  - ***Rescind advisory***
- **Spill is no longer occurring**
- **Sampling/testing from DEP is satisfactory**

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SWIMMING AND FISHING NOT RECOMMENDED
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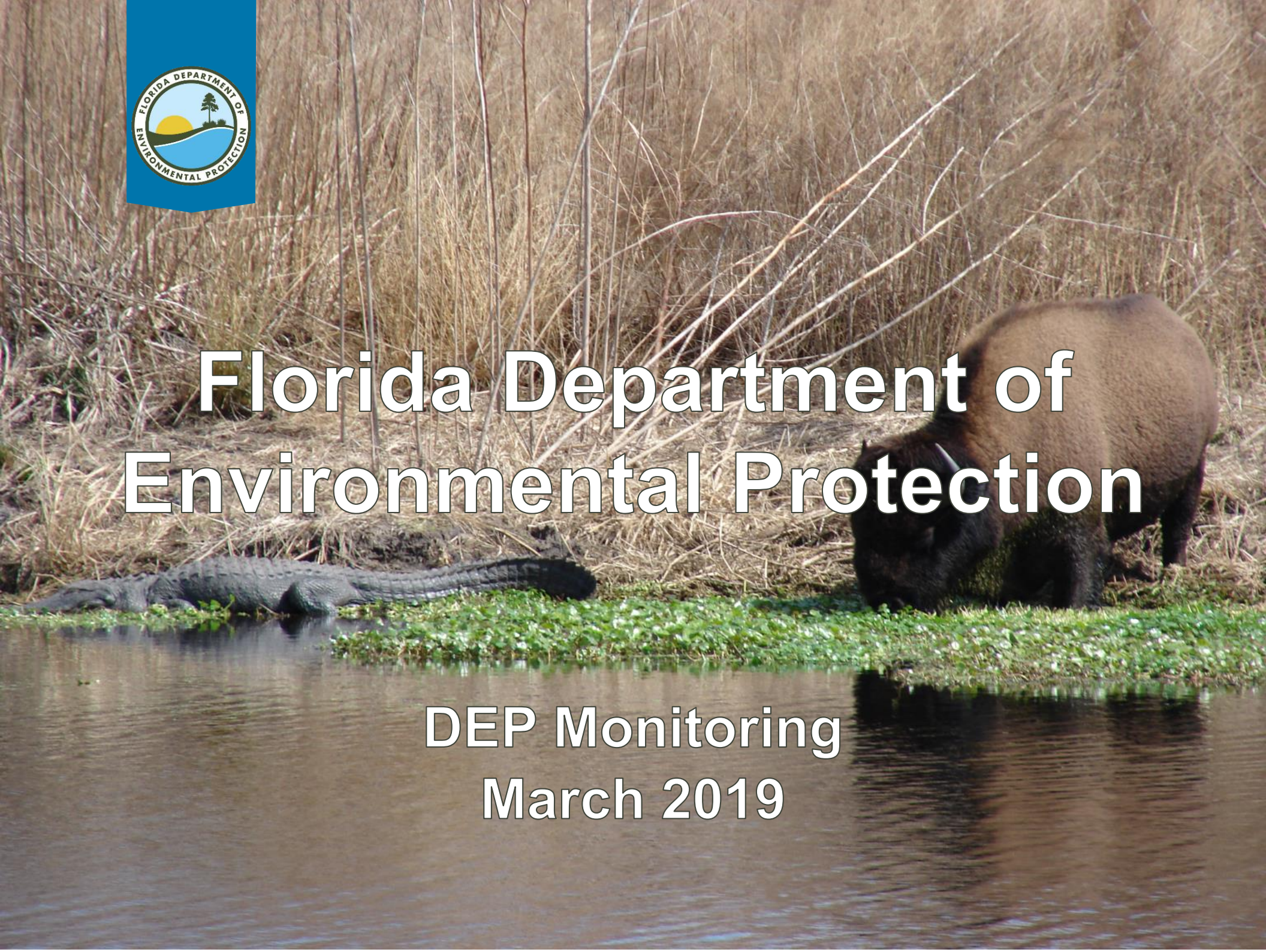
Division of Disease Control and Health Protection



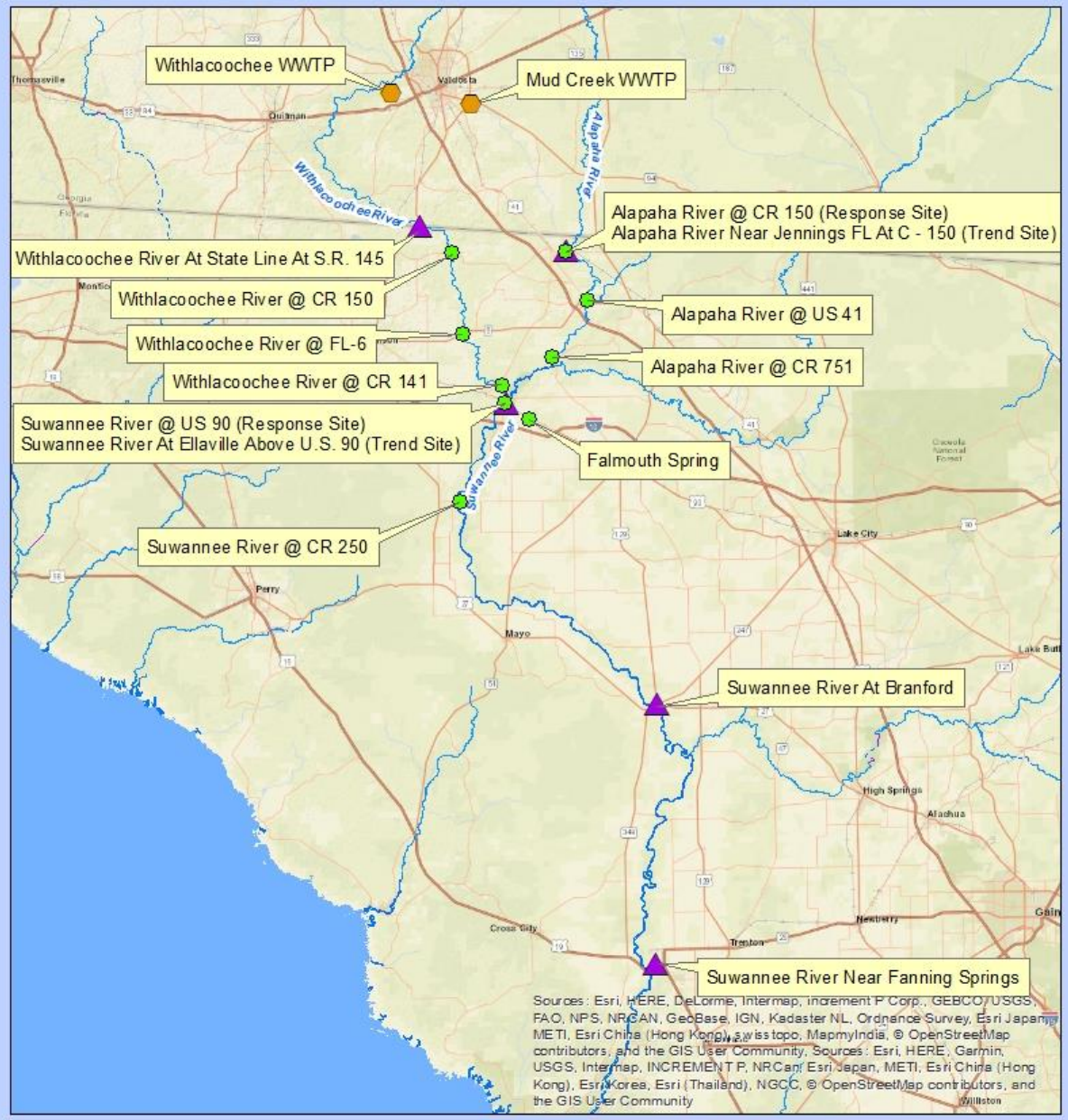
Florida Department of Environmental Protection

DEP Monitoring
March 2019

Monitoring Response to Overflows

- Receive notification of a spill/overflow
- Coordinate with SRWMD and DOH on who can respond
  - Field support
  - Lab support
- Collect bacteria samples in affected areas
  - Alapaha River
  - Withlacoochee River
  - Suwannee River
- Collect samples until acceptable levels are achieved

Valdosta Spill Response: DEP Sampling Sites and Valdosta Wastewater Treatment Facility Locations



Legend

- Surface Water Trend Sites
- Spill Response Sites
- Wastewater Treatment Plants

0 4.5 9 18 27 36 Miles

Prepared by WAS-ky
03/14/2019

Withlacoochee facility upgrades

- Design flow = 12.5 MGD; normal day is 3.5 MGD
  - Upgrades to the facility were completed in mid-2016
- Coming soon
  - Permitting stage and ready to turn dirt on a retention pond to hold 8 to 10 million gallons (2019)
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- Ongoing
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  - Repairing/replacing manholes and infrastructure
  - Providing for backup power during failures to address most lift station issues
- Funding
  - Not receiving any federal assistance via grants
  - Primary funding via special project


FLORIDA DEPARTMENT OF
ENVIRONMENTAL PROTECTION

Environmental and Natural Resources Committee

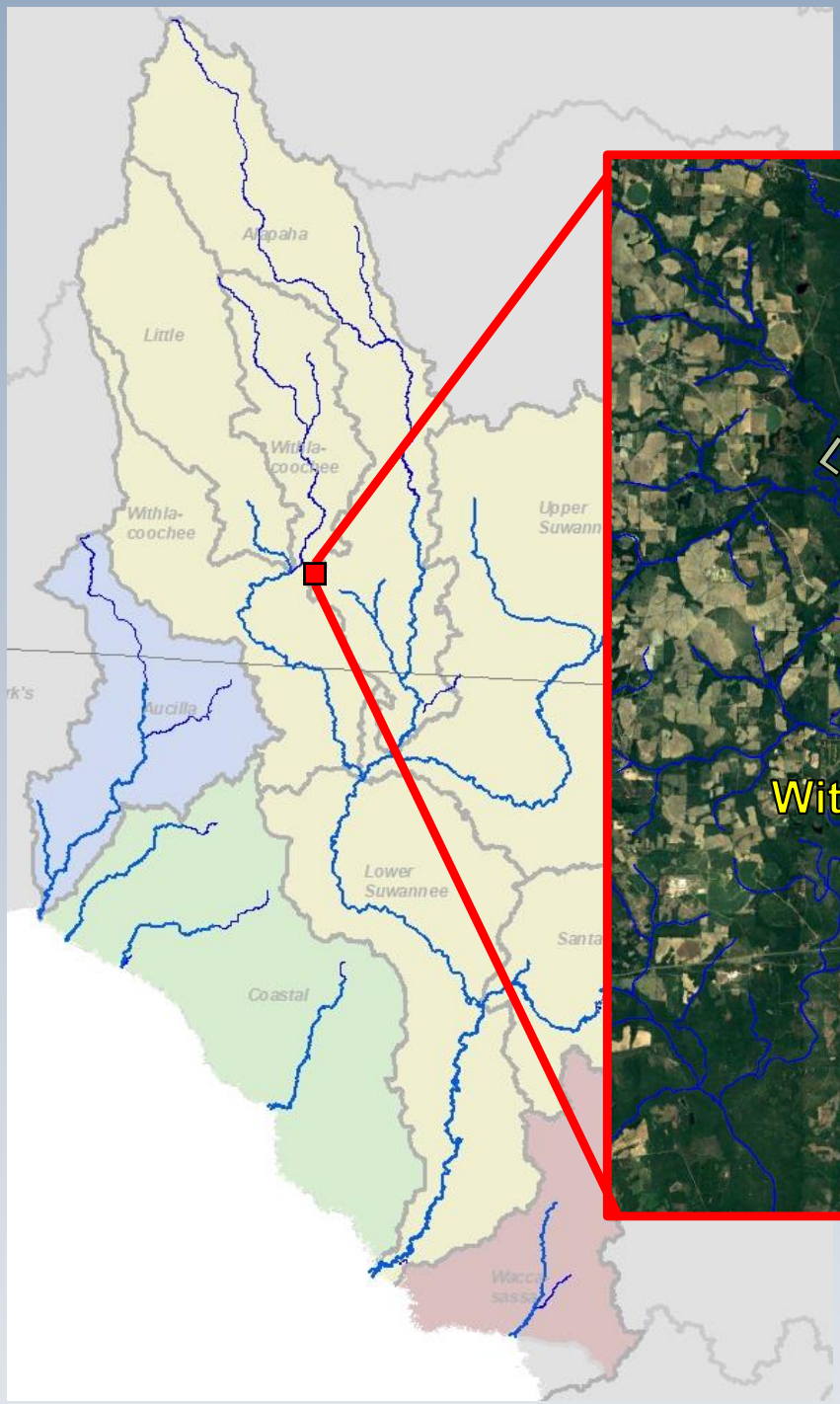
Withlacoochee/Alapaha Effort Update

Hugh Thomas

Suwannee River Water Management District

March 20, 2019

Valdosta, GA


Alapaha
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Moody
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Withlacoochee Plant

Mud Creek Plant

Consent Order/ 5-year Work Plan 2013-2018

- Immediately implement revised Sewer Overflow Response and Reporting Procedures
- Short term improvements to existing Withlacoochee WPCP for meeting permit compliance by November 2014
- $200,000 Supplemental Environmental Project completed by December 2016.
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- Finalizing engineering designs, then will have to go through procurement process
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Water Quality Missions by Agency

- Implements state laws to protect drinking water and environmental water quality
- DEAR Program – monitoring and assessing surface and groundwater quality
- Source and Drinking Water Program – statutory authority to monitor and evaluate public water utilities serving more than 25 people

- Oversight and public education for smaller drinking water systems.
- Jurisdiction to issue public health advisories, but no enforcement.
- Beach WQ, private well testing, onsite sewage programs, public swimming pools.

- WQ Improvement Projects in support of FDEP TMDLs and BMAPs
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Sewage Spill Response

Notification of spill event from City of Valdosta

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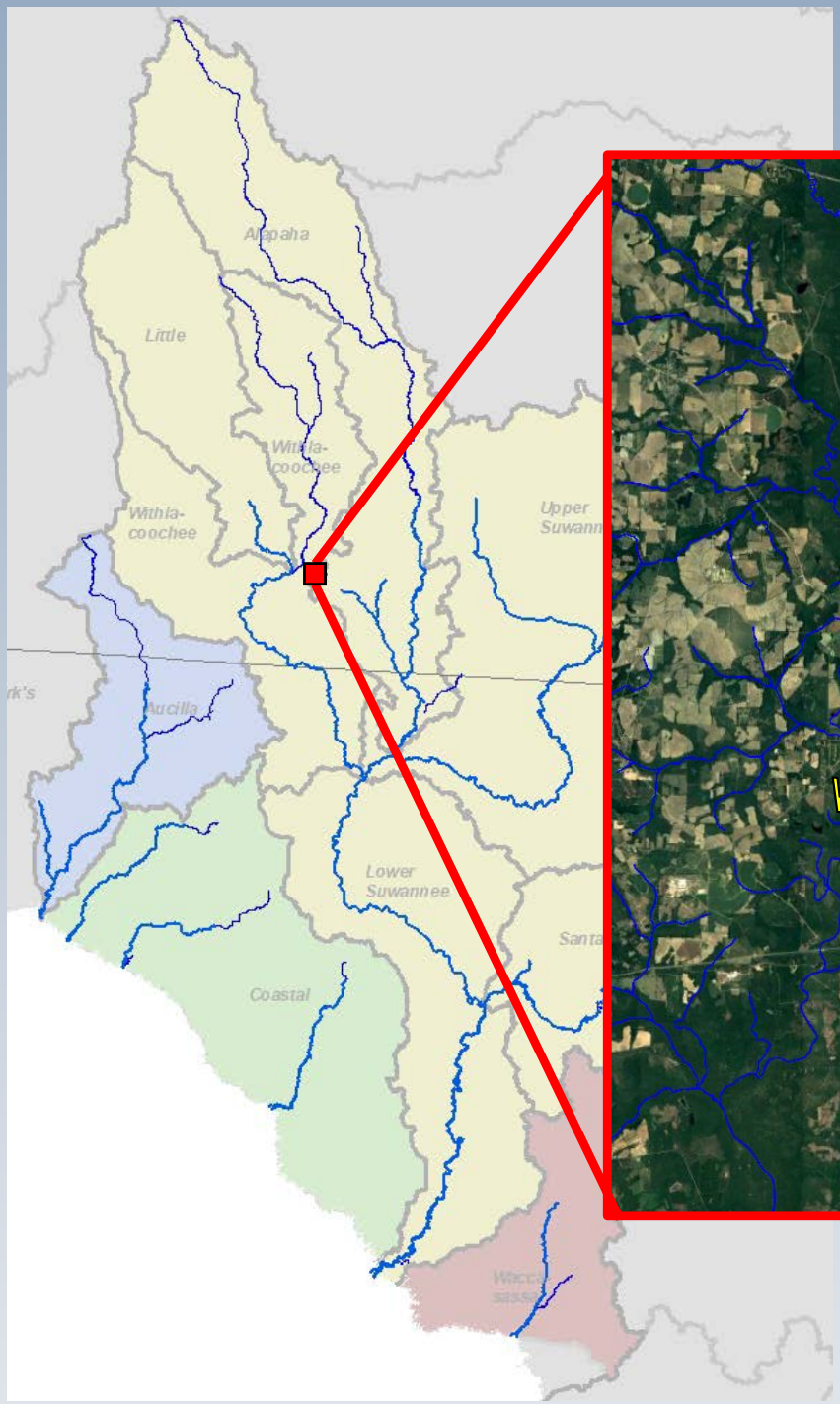
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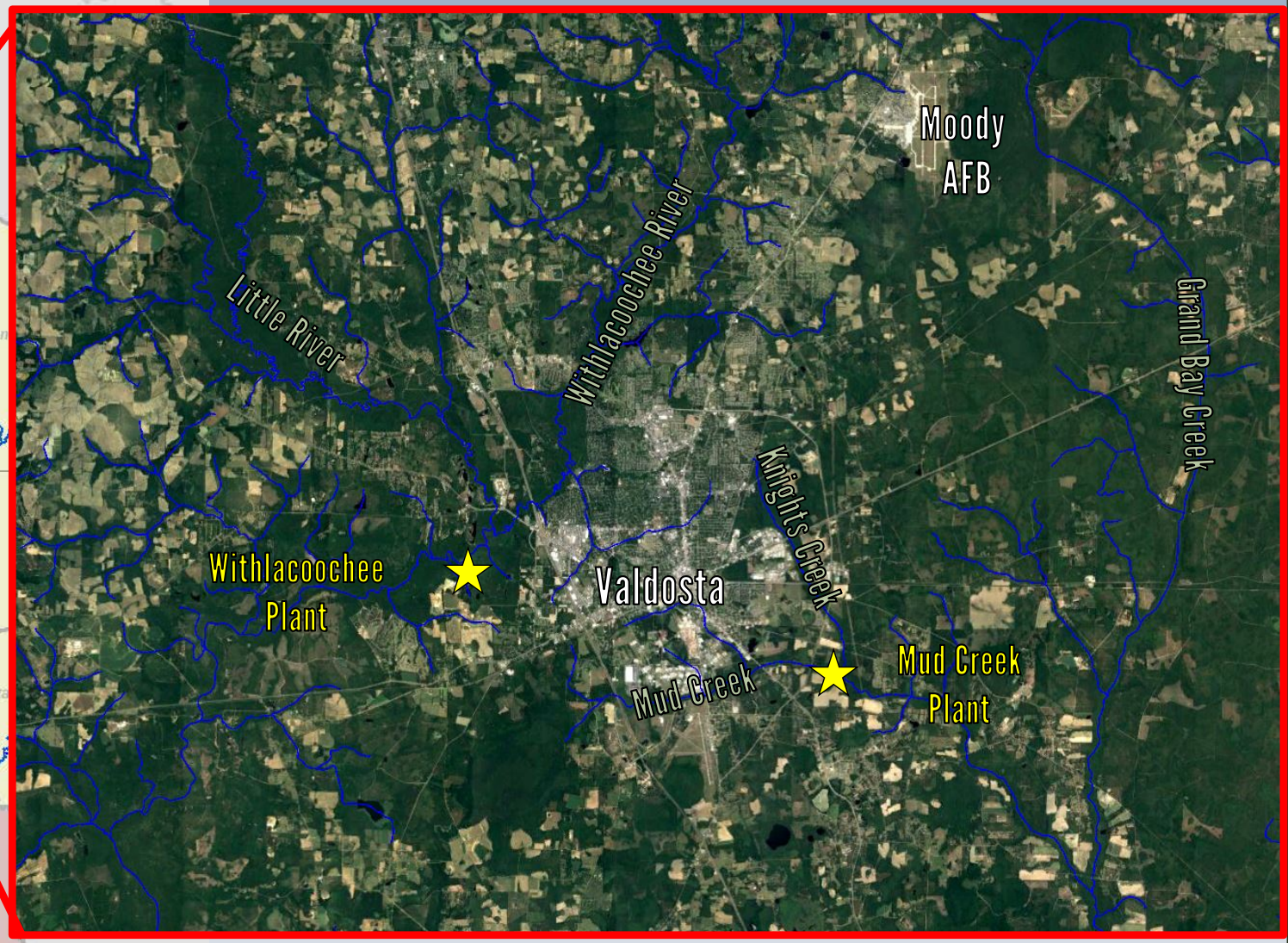
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Withlacoochee River Sewage Spills

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Department of Health
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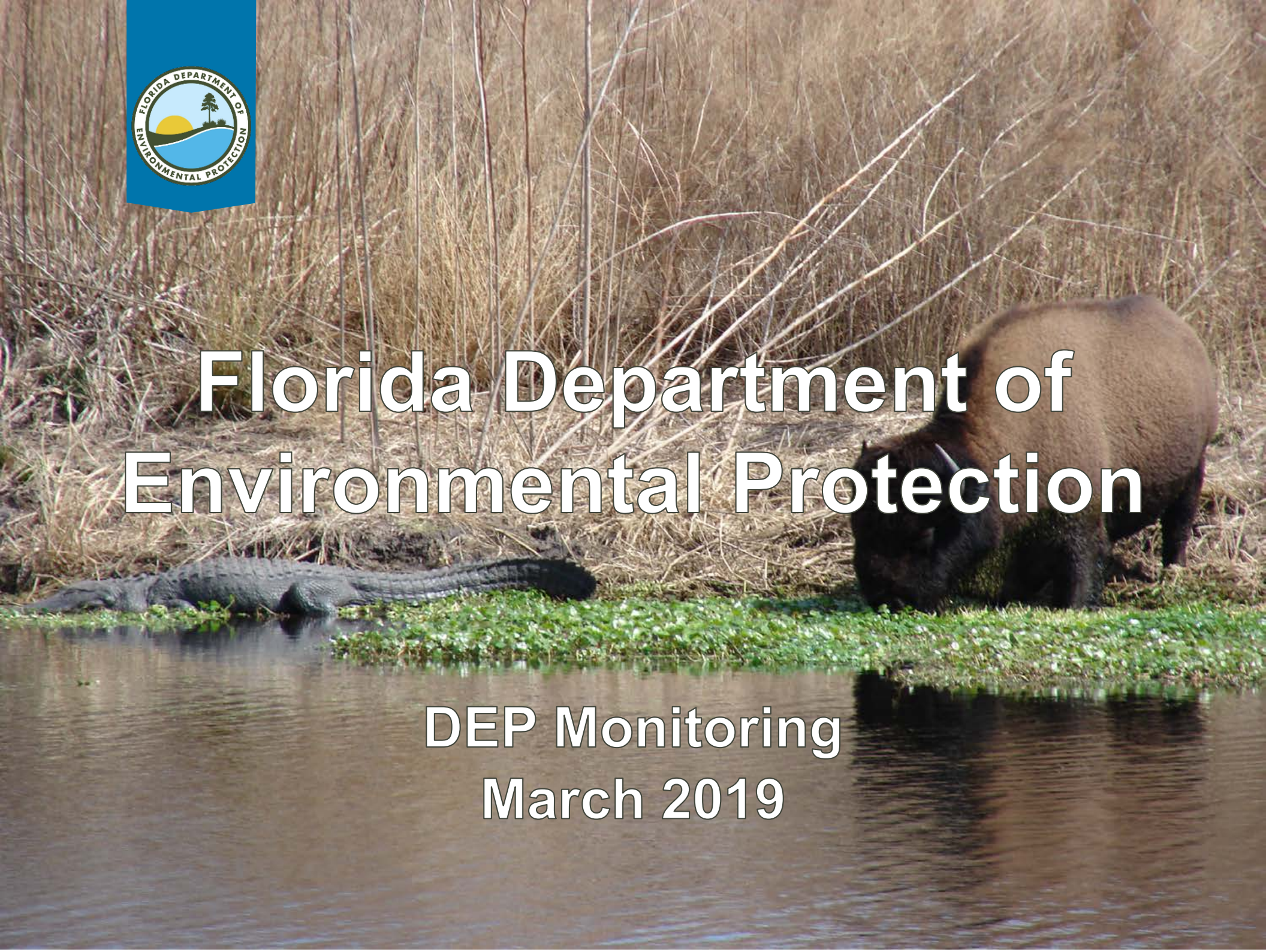

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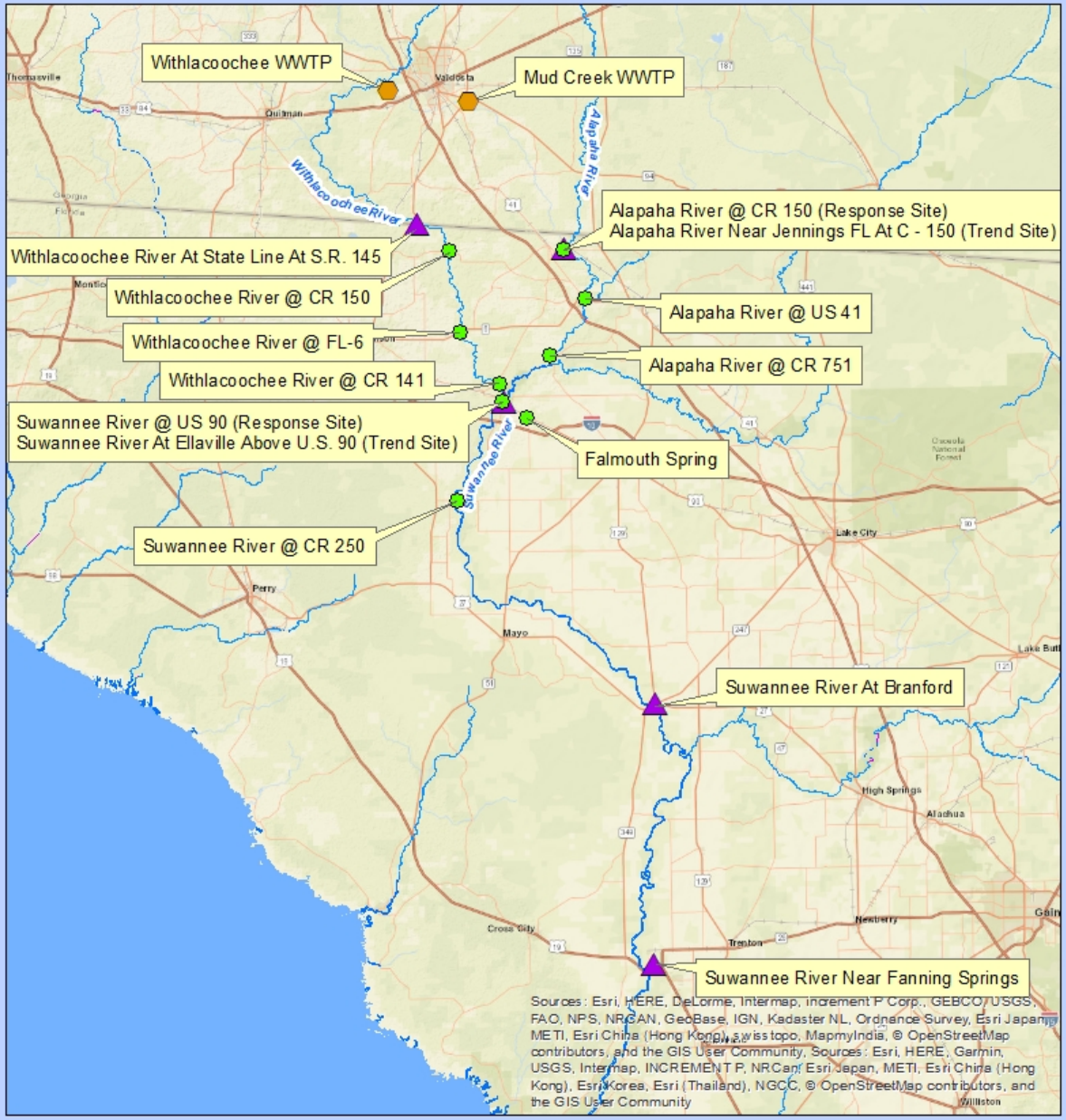

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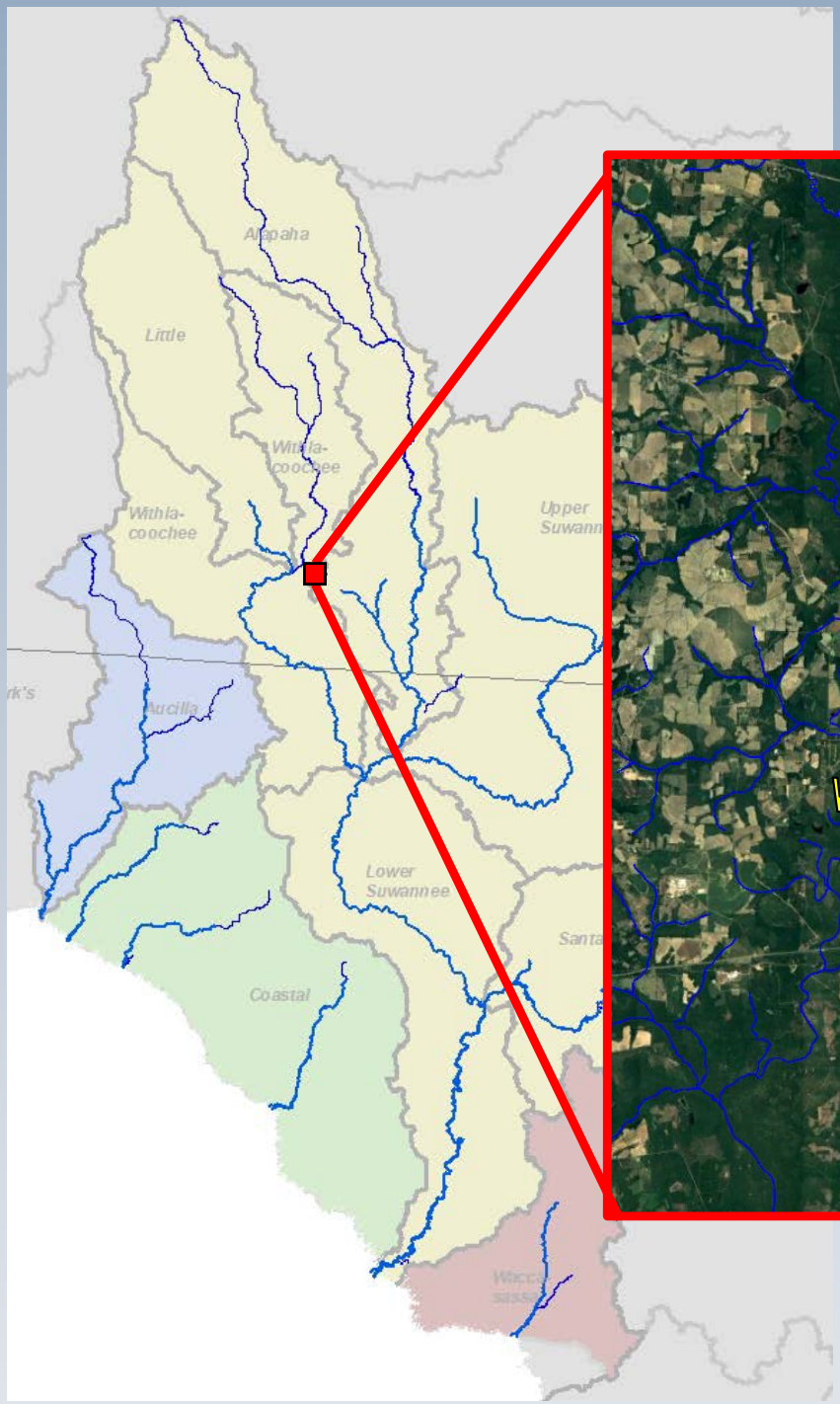
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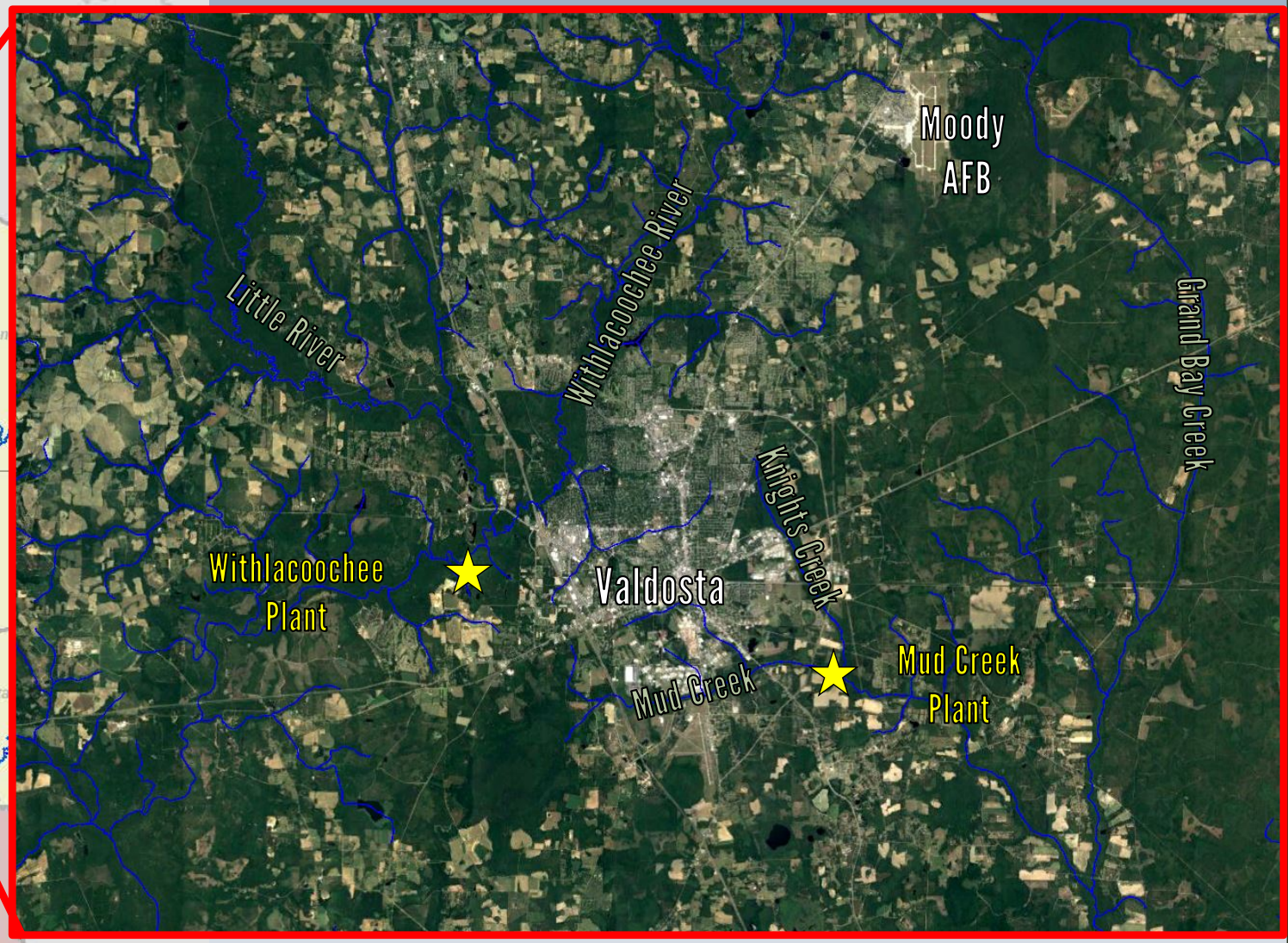
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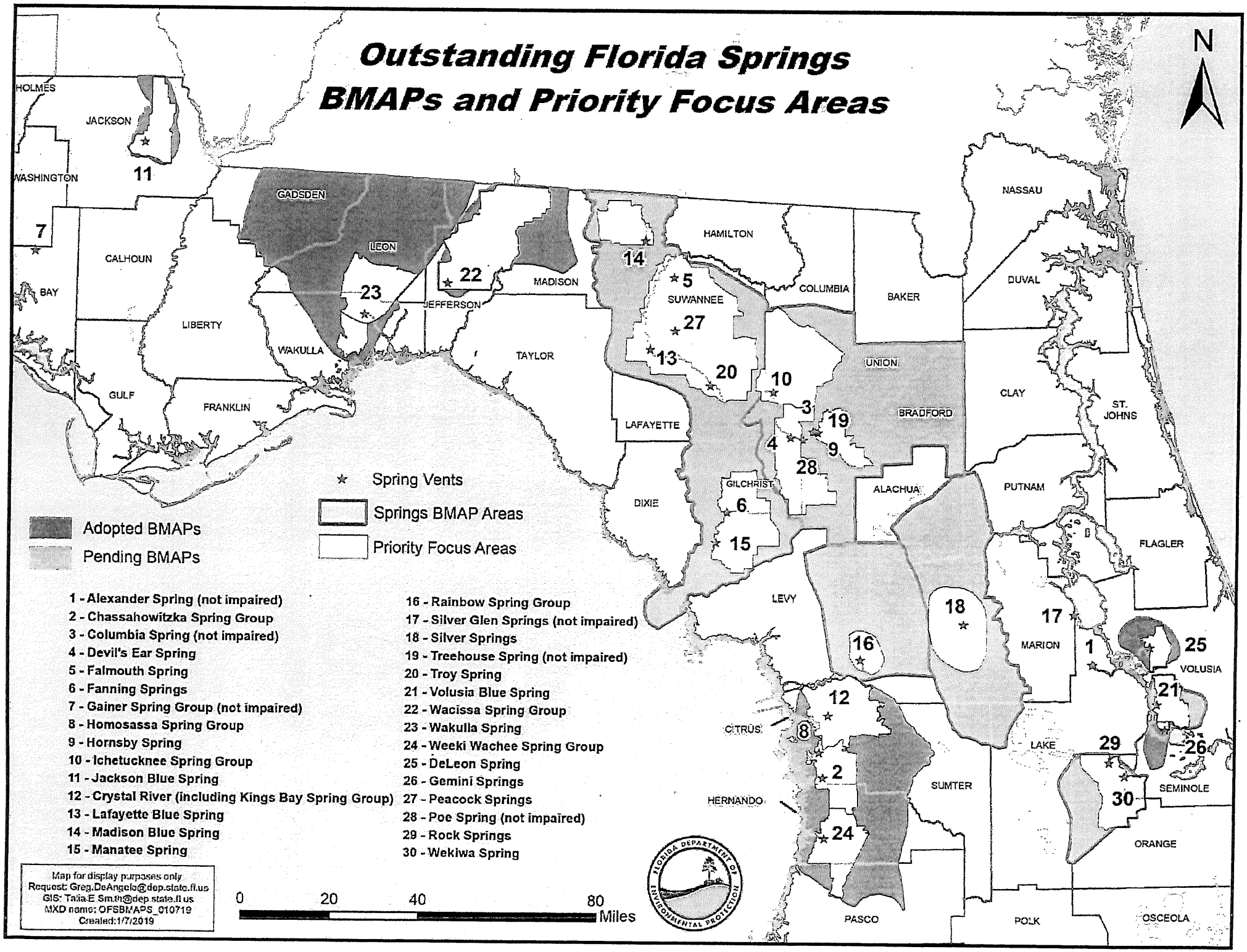
Outstanding Florida Springs
BMAPs and Priority Focus Areas



1 - Alexander Spring (not impaired)
2 - Chassahowitzka Spring Group
3 - Columbia Spring (not impaired)
4 - Devil's Ear Spring
5 - Falmouth Spring
6 - Fanning Springs
7 - Gainer Spring Group (not impaired)
8 - Homosassa Spring Group
9 - Hornsby Spring
10 - Ichetucknee Spring Group
11 - Jackson Blue Spring
12 - Crystal River (including Kings Bay Spring Group)
13 - Lafayette Blue Spring
14 - Madison Blue Spring
15 - Manatee Spring
16 - Rainbow Spring Group
17 - Silver Glen Springs (not impaired)
18 - Silver Springs
19 - Treehouse Spring (not impaired)
20 - Troy Spring
21 - Volusia Blue Spring
22 - Wacissa Spring Group
23 - Wakulla Spring
24 - Weeki Wachee Spring Group
25 - DeLeon Spring
26 - Gemini Springs
27 - Peacock Springs
28 - Poe Spring (not impaired)
29 - Rock Springs
30 - Wekiwa Spring

Map for display purposes only
Request: Greg.DeAngelo@dep.state.fl.us
GIS: Talia.E.Smith@dep.state.fl.us
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FLORIDA DEPARTMENT OF ENVIRONMENTAL PROTECTION

Contact: Ryan Smart (561) 358-7191
Smart@floridaspringscouncil.org

Keep Senate Bill 1758 Strong

Oppose the Strike-All Amendment

The Clean Waterways Act, as filed, gives great hope to people across our state because it benefits all of Florida's waters and addresses all major water pollution sources.

Unfortunately, the strike-all amendment deletes lines 182-200 which instruct DEP and DACS to develop and adopt advanced agricultural best management practices for Outstanding Florida Springs where agriculture is a significant source of nutrient pollution. **If approved, the strike-all amendment leaves behind a dozen impaired Outstanding Florida which will not recover.**

The table below comes straight from the Basin Management Action Plans proposed by the DEP last year. It clearly illustrates that **for the springs of the Suwannee River, Santa Fe River, and Rainbow and Silver Rivers there is no way to achieve water quality goals without advanced agricultural best management practices.**

DEP recommends advanced best management practices as the primary means of achieving additional water quality gains in each BMAP.

Nitrogen (N) Loading and Required Reductions (in lbs/year) for Outstanding Florida Springs Basin Management Action Plans				
Basin Management Action Plan Area	Percent of Total N from Agriculture Sources[1]	Total N reduction necessary to meet TMDL (%)	N reduction achievable from all sources, including existing best management Practices (%)	DEP's Proposal for greater N reduction
Suwannee River	85%	4,075,935 (71%)	1,961,537 (48%)	Advanced Best Mgmt. Practices
Santa Fe River	75%	1,853,372 (65%)	473,889 (25%)	Advanced Best Mgmt. Practices
Rainbow River	54%	1,783,607 (81%)	413,598 (23%)	Advanced Best Mgmt. Practices
Silver Springs	36%	930,138 (72%)	632,159 (68%)	Advanced Best Mgmt. Practices

Additionally, the amendment strikes lines 373-379 and 381-384, which require DEP to develop Basin Management Action Plans which allocate pollutant loads and exceed the nutrient reduction required to meet the total maximum daily load water quality goal. **If we allow DEP to adopt plans that do not meet water quality goals, we are planning for failure.**

[1] Total of farm fertilizer and livestock waste

Amendments to the Committee Substitute for SB 1758

Amendment Requiring Advanced Best Management Practices for Outstanding Florida Springs

Strike Lines 119 – 131 and insert:

(3) As part of each basin management action plan that 183 includes an Outstanding Florida Spring, the department, in coordination with the Department of Agriculture and Consumer Services, shall develop an agricultural remediation plan if the department determines that agricultural nonpoint sources, including, but not limited to, fertilizer and animal wastes, contribute at least 20 percent of nonpoint source nutrient pollution. The plan must identify cost-effective and financially feasible projects, including, if applicable, advanced best management practices and land acquisition projects, including conservation easements, to reduce the nutrient impacts from agricultural operations. The department is the lead agency in coordinating the preparation of and the adoption of the plan. The Department of Agriculture and Consumer Services is the lead agency in developing and adopting advanced best management practices capable of achieving the total maximum daily load and shall develop and adopt such practices for incorporation into the plan. The plan must be adopted as part of the basin 200 management action plan by July 1, 2021.

Amendment to Improve Statewide Basin Management Action Plans

Insert at Line 319:

f. Identification of each point source or category of nonpoint sources, including, but not limited to, urban turf fertilizer, sports turf fertilizer, agricultural fertilizer, onsite sewage treatment and disposal systems, wastewater treatment plants, animal wastes, and stormwater facilities. An estimated allocation of the pollutant load must be provided for each point source or category of nonpoint sources.

The estimated nutrient load reductions in each basin management action plan developed pursuant to this subparagraph must exceed the total amount of nutrient load reductions needed to meet the total maximum daily load required under the plan.

BEGIN_DATE	FACILITY_NAME	COUNTY	CITY	OVERFLOW_LOCATION	QUANTITY	OVERFLOW_TYPE	PERMIT_NUMBER	SPILL_SOURCE	SPILL_PRIMARY_CAUSE	WATERWAY_IMPACTED
2018-12-15	Withlacoochee W	Lowndes	Valdosta	Withlacoochee Equalization P	1814000	Raw Sewage	GA0033235	WWTP	Wet weather	Withlacoochee River
2018-12-14	Withlacoochee W	Lowndes	Valdosta	1208 Wainwright Drive - Valdo	51800	Raw Sewage	GA0033235	Collection System	Wet weather	One Mile Branch
2018-12-14	Withlacoochee W	Lowndes	Valdosta	North Oak Street/Midbriar Dri	41700	Raw Sewage	GA0033235	Collection System	Wet weather	Three Mile Branch
2018-12-14	Withlacoochee W	Lowndes	Valdosta	408 Mildred Street - Valdosta	123375	Raw Sewage	GA0033235	Collection System	Wet weather	Knight's Creek
2018-12-14	Withlacoochee W	Lowndes	Valdosta	817 Gornto Road - Valdosta	27500	Raw Sewage	GA0033235	Collection System	Wet weather	Two Mile Branch
2018-12-14	Withlacoochee W	Lowndes	Valdosta	1603 Azalea Drive - Valdosta	39970	Raw Sewage	GA0033235	Collection System	Wet weather	Two Mile Branch
2018-12-03	Withlacoochee W	Lowndes	Valdosta	Lee Street and E Jane - Vald	64400	Raw Sewage	GA0033235	Collection System	Wet weather	One Mile Branch
2018-12-03	Withlacoochee W	Lowndes	Valdosta	1100 Block of Ponderosa - V	13125	Raw Sewage	GA0033235	Collection System	Wet weather	One Mile Branch
2018-12-03	Withlacoochee W	Lowndes	Valdosta	1200 Block of Waynewright -	166725	Raw Sewage	GA0033235	Collection System	Wet weather	One Mile Branch
2018-12-03	Withlacoochee W	Lowndes	Valdosta	400 Block of Mildred Street -	210000	Raw Sewage	GA0033235	Collection System	Wet weather	Knights Creek
2018-12-03	Withlacoochee W	Lowndes	Valdosta	1400 Block of Lola - Valdosta	56625	Raw Sewage	GA0033235	Collection System	Wet weather	One Mile Branch
2018-12-03	Withlacoochee W	Lowndes	Valdosta	Mack Drive Station - Valdosta	162800	Raw Sewage	GA0033235	Pump Station	Wet weather	Two Mile Branch
2018-12-03	Withlacoochee W	Lowndes	Valdosta	1300 Block of Lee Street - V	290475	Raw Sewage	GA0033235	Collection System	Wet weather	One Mile Branch
2018-12-03	Withlacoochee W	Lowndes	Valdosta	Troup and E Ann Street - Val	31545	Raw Sewage	GA0033235	Collection System	Wet weather	One Mile Branch
2018-12-03	Withlacoochee W	Lowndes	Valdosta	North Forrest and Brookwood	45300	Raw Sewage	GA0033235	Collection System	Wet weather	One Mile Branch
2018-12-03	Withlacoochee W	Lowndes	Valdosta	1200 Block of Ponderosa - V	52500	Raw Sewage	GA0033235	Collection System	Wet weather	One Mile Branch
2018-12-03	Withlacoochee W	Lowndes	Valdosta	Samuel/Holiday - Valdosta	242325	Raw Sewage	GA0033235	Collection System	Wet weather	Duke's Bay Canal
2018-12-03	Withlacoochee W	Lowndes	Valdosta	3600 Block of Lake Laurie R	21500	Raw Sewage	GA0033235	Collection System	Wet weather	Cherry Creek
2018-12-02	Withlacoochee W	Lowndes	Valdosta	William Street and College St	299850	Raw Sewage	GA0033235	Collection System	Wet weather	One Mile Branch
2018-12-02	Withlacoochee W	Lowndes	Valdosta	800 Block of Gornto Road - V	244650	Raw Sewage	GA0033235	Collection System	Wet weather	Two Mile Branch
2018-12-02	Withlacoochee W	Lowndes	Valdosta	1800 Block of East Park Aven	15575	Raw Sewage	GA0033235	Collection System	Wet weather	Knight's Creek
2018-12-02	Withlacoochee W	Lowndes	Valdosta	Withlacoochee Equalization P	2200000	Raw Sewage	GA0033235	WWTP	Wet weather	Spring Creek
2018-12-02	Withlacoochee W	Lowndes	Valdosta	Bay Street and Hines	0	Raw Sewage	GA0033235	Collection System	Wet weather	TBD
2018-12-02	Withlacoochee W	Lowndes	Valdosta	700 Block of Lamar Street - V	54525	Raw Sewage	GA0033235	Collection System	Wet weather	One Mile Branch
2018-08-13	Mud Creek WPC	Lowndes	Valdosta	1638 New Statenville Hwy - N	135000	Undisinfected	GA0020222	WWTP	Hydraulic Overload	Knight's Creek/Pond
2018-06-26	Withlacoochee W	Lowndes	Valdosta	Withlacoochee WWTP - Valdo	300000	Raw Sewage	GA0033235	WWTP	Equipment failure	Unnamed Trib to Withlacoochee R
2018-03-22	Withlacoochee W	Lowndes	Valdosta	4100 Block of Bemiss Road -	1500	Raw Sewage	GA0033235	Lift Station	Contractor	Cherry Creek
2018-03-03	Withlacoochee W	Lowndes	Valdosta	2500 Block of Marathon Drive	2625	Raw Sewage	GA0033235	Collection System	Grease	Knights Creek
2017-10-12	Withlacoochee W	Lowndes	Valdosta	400 Block of Connell Road -	3475	Raw Sewage	GA0033235	Collection System	Debris	Two Mile Branch
2017-09-11	Withlacoochee W	Lowndes	Valdosta	4100 Block of Bemiss Road -	900	Raw Sewage	GA0033235	Pump Station	Power failure	Cherry Creek
2017-01-22	Withlacoochee W	Lowndes	Valdosta	1200 Block of Wainwright Driv	9800	Raw Sewage	GA0033235	Collection System	Wet weather	One Mile Branch
2017-01-22	Withlacoochee W	Lowndes	Valdosta	1600 Block of James P. Rogr	57500	Raw Sewage	GA0033235	Collection System	Wet weather	Mud Creek
2017-01-22	Withlacoochee W	Lowndes	Valdosta	800 Branch of Gornto Road -	9725	Raw Sewage	GA0033235	Collection System	Wet weather	Two Mile Branch
2017-01-22	Withlacoochee W	Lowndes	Valdosta	3180 Wetherington Lane - Val	2200000	Other	GA0033235	WWTP	Wet weather	Withlacoochee River/Little River
2016-10-19	Withlacoochee W	Lowndes	Valdosta	1100 Block of North Lee Stre	1500	Raw Sewage	GA0033235	Collection System	Grease	One Mile Branch
2016-10-11	Withlacoochee W	Lowndes	Valdosta	2200 Block of Park Lane	7360	Raw Sewage	GA0033235	Collection System	Pipe failure	Sugar Creek
2016-09-04	Withlacoochee W	Lowndes	Valdosta	1300 Block of North Ashley St	5675	Raw Sewage	GA0033235	Collection System	Equipment failure	One Mile Branch
2016-09-02	Withlacoochee W	Lowndes	Valdosta	1900 Block of East Park Aven	55000	Raw Sewage	GA0033235	Collection System	Natural Disaster	Mud Creek
2016-09-02	Withlacoochee W	Lowndes	Valdosta	2400 Block of Gornto Road	55800	Raw Sewage	GA0033235	Collection System	Natural Disaster	Withlacoochee River
2016-09-02	Withlacoochee W	Lowndes	Valdosta	3100 Block of Falling Leaf	7380	Raw Sewage	GA0033235	Collection System	Natural Disaster	knights Creek
2016-09-02	Withlacoochee W	Lowndes	Valdosta	1300 Block of North Ashley St	114750	Raw Sewage	GA0033235	Collection System	Natural Disaster	One Mile Branch
2016-09-02	Withlacoochee W	Lowndes	Valdosta	1300 Block of Brookwood and	45000	Raw Sewage	GA0033235	Collection System	Natural Disaster	One Mile Branch
2016-09-02	Withlacoochee W	Lowndes	Valdosta	Hwy 94 Lift Station	1300	Raw Sewage	GA0033235	Collection System	Natural Disaster	Withlacoochee River
2016-09-02	Withlacoochee W	Lowndes	Valdosta	4100 Block of Bemiss Road	2000	Raw Sewage	GA0033235	Collection System	Natural Disaster	Cherry Creek
2016-09-02	Withlacoochee W	Lowndes	Valdosta	800 Block of Gornto Road	1150	Raw Sewage	GA0033235	Collection System	Natural Disaster	Two Mile Branch
2016-09-02	Withlacoochee W	Lowndes	Valdosta	500 Block of Mack Drive	51900	Raw Sewage	GA0033235	Collection System	Natural Disaster	Two Mile Branch
2016-09-02	Withlacoochee W	Lowndes	Valdosta	2400 Block of Gornto Road	117000	Raw Sewage	GA0033235	Collection System	Natural Disaster	Withlacoochee River
2016-09-02	Withlacoochee W	Lowndes	Valdosta	Golf Course	40425	Raw Sewage	GA0033235	Collection System	Natural Disaster	Retention Pond
2016-08-04	Withlacoochee W	Lowndes	Valdosta	900 Block of Madison Avenue	3300	Raw Sewage	GA0033235	Collection System	Grease	Knights Creek
2016-06-06	Withlacoochee W	Lowndes	Valdosta	700 Block of Gil Harbin Blvd	425	Raw Sewage	GA0033235	Collection System	Debris	Dukes Bay
2016-04-02	Withlacoochee W	Lowndes	Valdosta	1600 Block James P Rogers	92150	Raw Sewage	GA0033235	Collection System	Wet weather	Mud Creek
2016-04-02	Withlacoochee W	Lowndes	Valdosta	140 Block of Gornto Road	80650	Raw Sewage	GA0033235	Collection System	Wet weather	Sugar Creek
2016-04-02	Withlacoochee W	Lowndes	Valdosta	1200 Block of Lake Drive	105365	Raw Sewage	GA0033235	Collection System	Wet weather	Two Mile Branch
2016-04-02	Withlacoochee W	Lowndes	Valdosta	500 Block of Rouse Road	3060	Raw Sewage	GA0033235	Collection System	Wet weather	One Mile Branch
2016-04-02	Withlacoochee W	Lowndes	Valdosta	700 Block of Cypress Street	72050	Raw Sewage	GA0033235	Collection System	Wet weather	Knights Creek
2016-04-02	Withlacoochee W	Lowndes	Valdosta	2400 Block of Meadowbrook	44280	Raw Sewage	GA0033235	Collection System	Wet weather	Two Mile Branch
2016-04-02	Withlacoochee W	Lowndes	Valdosta	1300 Block of N. Lee Street	279330	Raw Sewage	GA0033235	Collection System	Wet weather	One Mile Branch
2016-04-02	Withlacoochee W	Lowndes	Valdosta	600 Block of Scott Drive	167475	Raw Sewage	GA0033235	Collection System	Wet weather	Sugar Creek
2016-04-02	Withlacoochee W	Lowndes	Valdosta	1800 Block of Remer Lane	321225	Raw Sewage	GA0033235	Collection System	Wet weather	Sugar Creek
2016-04-02	Withlacoochee W	Lowndes	Valdosta	1400 Gornto	100200	Raw Sewage	GA0033235	Collection System	Wet weather	Sugar Creek
2016-04-02	Withlacoochee W	Lowndes	Valdosta	1100 Block of Joree Street	80800	Raw Sewage	GA0033235	Collection System	Wet weather	One Mile Branch
2016-04-02	Withlacoochee W	Lowndes	Valdosta	1200 Block of Waynewright St	199550	Raw Sewage	GA0033235	Collection System	Wet weather	One Mile Branch
2016-04-02	Withlacoochee W	Lowndes	Valdosta	800 Block of Gornto Road	860	Raw Sewage	GA0033235	Collection System	Wet weather	Sugar Creek
2016-03-27	Withlacoochee W	Lowndes	Valdosta	1800 Block of Remer Lane	84300	Raw Sewage	GA0033235	Collection System	Wet weather	Sugar Creek
2016-03-27	Withlacoochee W	Lowndes	Valdosta	600 Block of Scott Drive	2885	Raw Sewage	GA0033235	Collection System	Wet weather	Sugar Creek
2016-03-27	Withlacoochee W	Lowndes	Valdosta	700 Block of Cypress Street	14725	Raw Sewage	GA0033235	Collection System	Wet weather	Knights Creek
2016-02-20	Withlacoochee W	Lowndes	Valdosta	2400 Block of Gornto Road	2175	Raw Sewage	GA0033235	Collection System	Hydraulic Overload	Sugar Creek
2016-02-17	Withlacoochee W	Lowndes	Valdosta	400 Block of Seymour Street	3700	Raw Sewage	GA0033235	Collection System	Grease	Two Mile Branch
2016-02-15	Withlacoochee W	Lowndes	Valdosta	Bemiss Road	1450	Raw Sewage	GA0033235	Collection System	Debris	Two Mile Branch
2016-02-04	Withlacoochee W	Lowndes	Valdosta	500 Block of Rouse Road	1290	Raw Sewage	GA0033235	Collection System	Wet weather	Sugar Creek
2016-02-04	Withlacoochee W	Lowndes	Valdosta	2000 Block of Meadowbrook	33900	Raw Sewage	GA0033235	Collection System	Wet weather	Two Mile Branch
2016-02-04	Withlacoochee W	Lowndes	Valdosta	1100 Block of Joeree Street	29250	Raw Sewage	GA0033235	Collection System	Wet weather	One Mile Branch
2016-02-04	Withlacoochee W	Lowndes	Valdosta	1200 Block of Lake Drive	33900	Raw Sewage	GA0033235	Collection System	Wet weather	Two Mile Branch
2016-02-04	Withlacoochee W	Lowndes	Valdosta	1200 Block of Wainwright Str	90500	Raw Sewage	GA0033235	Collection System	Wet weather	One Mile Branch
2016-02-04	Withlacoochee W	Lowndes	Valdosta	1400 Block of Gornto Road -	173750	Raw Sewage	GA0033235	Collection System	Wet weather	Sugar Creek
2016-02-04	Withlacoochee W	Lowndes	Valdosta	700 Block of Cypress Street	29500	Raw Sewage	GA0033235	Collection System	Wet weather	Knights Creek
2016-02-04	Withlacoochee W	Lowndes	Valdosta	600 Block of Scott Drive	41000	Raw Sewage	GA0033235	Collection System	Wet weather	Sugar Creek
2016-02-04	Withlacoochee W	Lowndes	Valdosta	1400 Block of Gornto Road	4500	Raw Sewage	GA0033235	Collection System	Wet weather	Sugar Creek
2016-02-04	Withlacoochee W	Lowndes	Valdosta	1400 Block of Gornto Road	47375	Raw Sewage	GA0033235	Collection System	Wet weather	Sugar Creek
2016-02-04	Withlacoochee W	Lowndes	Valdosta	1800 Block of Remer Lane	299125	Raw Sewage	GA0033235	Collection System	Wet weather	Sugar Creek
2016-02-04	Withlacoochee W	Lowndes	Valdosta	700 Block of Jane Street and	15250	Raw Sewage	GA0033235	Collection System	Wet weather	One Mile Branch
2016-02-04	Withlacoochee W	Lowndes	Valdosta	1300 Block of North Lee Stre	38125	Raw Sewage	GA0033235	Collection System	Wet weather	One Mile Branch
2015-11-03	Withlacoochee W	Lowndes	Valdosta	1404 Gornto Road	27000	Raw Sewage	GA0033235	Collection System	Hydraulic Overload	Sugar Creek
2015-10-26	Withlacoochee W	Lowndes	Valdosta	1100 Block of North Lee Stre	600	Raw Sewage	GA0033235	Collection System	Grease	Retention Pond to One Mile Branch
2015-08-29	Withlacoochee W	Lowndes	Valdosta	600 Block of Scott Drive	61100	Raw Sewage	GA0033235	Collection System	Wet weather	Sugar Creek
2015-08-28	Withlacoochee W	Lowndes	Valdosta	2400 Block of Meadowbrook	48000	Raw Sewage	GA0033235	Collection System	Wet weather	Sugar Creek
2015-08-28	Withlacoochee W	Lowndes	Valdosta	Remer Lane	151700	Raw Sewage	GA0033235	Collection System	Wet weather	Sugar Creek
2015-08-28	Withlacoochee W	Lowndes	Valdosta	1400 Block of Gornto Road	177000	Raw Sewage	GA0033235	Collection System	Wet weather	Sugar Creek
2015-08-21	Withlacoochee W	Lowndes	Valdosta	940 Madison Avenue	1350	Raw Sewage	GA0033235	Collection System	Grease	Thoutary to Knights Creek
2015-02-26		Lowndes	Valdosta	Hwy 133	22000	Raw Sewage		Collection System	Wet weather	Withlacoochee
2015-02-26		Lowndes	Valdosta	2426 Meadowbrooke	45750	Raw Sewage		Collection System	Wet weather	Two Mile Branch
2015-02-26		Lowndes	Valdosta	2410 Meadowbrooke	87500	Raw Sewage		Collection System	Wet weather	Two Mile Branch
2015-02-26		Lowndes	Valdosta	1405 Gornto Road	2200	Raw Sewage		Collection System	Wet weather	Sugar Creek
2015-02-25		Lowndes	Valdosta	626 Scott Drive	5250	Raw Sewage		Collection System	Wet weather	Sugar Creek
2015-02-25		Lowndes	Valdosta	Cypress Street and Mystic St	48000	Raw Sewage		Collection System	Wet weather	Tributary to Knights Creek
2015-02-25		Lowndes	Valdosta	Remerton Lane	311250	Raw Sewage		Collection System	Wet weather	One Mile Branch
2015-02-25		Lowndes	Valdosta	1404 Gornto Road	157500	Raw Sewage		Collection System	Wet weather	Sugar Creek
2015-02-16		Lowndes	Valdosta	1110 Old Statenville Road (P	375	Raw Sewage		Collection System	Grease	Dukes Bay Canal
2015-02-06		Lowndes	Valdosta	1900 Block of East Park Aven	96500	Raw Sewage		Collection System	Equipment failure	Knights Creek
2015-01-23		Lowndes	Valdosta	1834 Remer Lane	171000	Raw Sewage		Collection System	Wet weather	One Mile Branch
2015-01-23		Lowndes	Valdosta	1404 Gornto Road	72000	Raw Sewage		Collection System	Wet weather	Sugar Creek
2015-01-23		Lowndes	Valdosta	700 Block of Cypress Street	9000	Raw Sewage		Collection System	Wet weather	Knights Creek
2015-01-23		Lowndes	Valdosta	2400 Block of Meadowbrook	6000	Raw Sewage		Collection System	Wet weather	Sugar Creek
2015-01-23		Lowndes	Valdosta	1194 JoRee Street	4500	Raw Sewage		Collection System	Wet weather	One Mile Branch
2015-01-23		Lowndes	Valdosta	2400 Block of Meadowbrook	6000	Raw Sewage		Collection System	Wet weather	Two Mile Branch
2015-01-12		Lowndes	Valdosta	1834 Remer Lane	3400	Raw Sewage		Collection System	Wet weather	One Mile Branch

2018-12-03 Valdosta, City of (Withlacoochee WPCP)	Lowndes	Valdosta	Lee Street and E Jane - Valdosta	64,400	Raw Sewage	GA0033235	Collection System	Wet weather		One Mile Branch
2018-12-03 Tifton, City of (New River WPCP)	Tift	Tifton	Agrirama Lift Station	35,400	Raw Sewage	GA0048470	Lift Station	Hydraulic Overload	Suwannee	Little River Basin
2018-12-03 Valdosta, City of (Withlacoochee WPCP)	Lowndes	Valdosta	1100 Block of Ponderosa - Valdosta (1101 Ponderosa)	13,125	Raw Sewage	GA0033235	Collection System	Wet weather		One Mile Branch
2018-12-03 Valdosta, City of (Withlacoochee WPCP)	Lowndes	Valdosta	1200 Block of Waynewright - Valdosta (1208 Wainwright)	166,725	Raw Sewage	GA0033235	Collection System	Wet weather		One Mile Branch
2018-12-03 Valdosta, City of (Withlacoochee WPCP)	Lowndes	Valdosta	400 Block of Mildred Street - Valdosta	210,000	Raw Sewage	GA0033235	Collection System	Wet weather		Knights Creek
2018-12-03 Valdosta, City of (Withlacoochee WPCP)	Lowndes	Valdosta	1400 Block of Lola - Valdosta (1403 Lola)	56,625	Raw Sewage	GA0033235	Collection System	Wet weather		One Mile Branch
2018-12-03 Valdosta, City of (Withlacoochee WPCP)	Lowndes	Valdosta	Mack Drive Station - Valdosta	162,800	Raw Sewage	GA0033235	Pump Station	Wet weather		Two Mile Branch
2018-12-03 Blakely, City of (Blakely WPCP)	Early	Blakely	Manhole behind hospital	20,000	Raw Sewage	GA0025[illegible]	W.W.T.P.	Wet weather		Baptist Branch
2018-12-03 Valdosta, City of (Withlacoochee WPCP)	Lowndes	Valdosta	1300 Block of Lee Street - Valdosta (1305 Lee Street)	290,475	Raw Sewage	GA0033235	Collection System	Wet weather		One Mile Branch
2018-12-03 Tifton, City of (New River WPCP)	Tift	Tifton	Manhole located at 26th St. & Ridge Ave	51,700	Raw Sewage	GA0048470	Collection System	Hydraulic Overload	Suwannee	New River Basin
2018-12-03 Valdosta, City of (Withlacoochee WPCP)	Lowndes	Valdosta	Troup and E Ann Street - Valdosta	31,545	Raw Sewage	GA0033235	Collection System	Wet weather		One Mile Branch
2018-12-03 Tifton, City of (New River WPCP)	Tift	Tifton	81 TC Gordon Rd.	18,000	Raw Sewage	GA0048470	Collection System	Hydraulic Overload	Suwannee	Little River Basin
2018-12-03 Valdosta, City of (Withlacoochee WPCP)	Lowndes	Valdosta	North Forrest and Brookwood - Valdosta	45,300	Raw Sewage	GA0033235	Collection System	Wet weather		One Mile Branch
2018-12-03 Valdosta, City of (Withlacoochee WPCP)	Lowndes	Valdosta	1200 Block of Ponderosa - Valdosta (1201 Ponderosa)	52,500	Raw Sewage	GA0033235	Collection System	Wet weather		One Mile Branch
2018-12-03 Blakely, City of (Blakely WPCP)	Early	Blakely	Willow Glen manhole	20,000	Raw Sewage	GA00[illegible]	W.W.T.P.	Wet weather		Dry Creek
2018-12-03 Clayton County Water Authority (W.B. Casey WRF & Huie Constructed Wetlands)	Clayton	Ellenwood	3644 Grant Road	3,600	Raw Sewage	GA0001842	Collection System	Other	Ocmulgee	Conley Creek
2018-12-03 Waycross, City of (Waycross WPCP)	Ware	Waycross	Influent to the WWTP headworks at the septic receiving area and the return line manhole.	1,100,000	Raw Sewage	GA0020[illegible]	W.W.T.P.	Wet weather	Satilla	Satilla River
2018-12-03 Thomasville, City of (Oquina Creek WPCP)	Thomas	Thomasville	110 Campbell Street Thomasville, GA	9,000	Raw Sewage	GA00[illegible]	Collection System	Hydraulic Overload	Ochlockonee	Oquina Creek
2018-12-03 Lowndes County (South Regional WPCP)	Lowndes	Valdosta	Madison Highway near Exit 11 - Valdosta	35,000	Raw Sewage	GA0[illegible]094	Collection System	Wet weather		Two Mile Branch Creek
2018-12-03 Valdosta, City of (Withlacoochee WPCP)	Lowndes	Valdosta	Samuel Holiday - Valdosta	242,325	Raw Sewage	GA0033235	Collection System	Wet weather		Dukes Bay Canal
2018-12-03 Valdosta, City of (Withlacoochee WPCP)	Lowndes	Valdosta	3600 Block of Lake Laurie Road - Valdosta	21,500	Raw Sewage	GA0033235	Collection System	Wet weather		Cherry Creek
2018-12-03 Eastman, City of (Sugar Creek WPCP)	Dodge	Eastman	Legion Drive Lift Station	8,000	Raw Sewage	GA0044485	Lift Station	Wet weather	Ocmulgee	Sugar Creek
2018-12-02 Quitman, City of (Quitman WPCP)	Brooks	Quitman	U.S. Highway 84 Quitman GA 31643	80,000	Raw Sewage	GA0020622	Collection System	Wet weather	Ochlockonee	Ragsdale Creek
2018-12-02 Donalsonville, City of (Donalsonville WPCP)	Seminole	Donalsonville	The Manhole at Faulous Drive near Ballpark Lift station in town.	8,100	Raw Sewage	GA0020125	Collection System	Wet weather	Flint	Fish Pond Drain of Spring Creek
2018-12-02 Valdosta, City of (Withlacoochee WPCP)	Lowndes	Valdosta	William Street and College Street Intersection - Valdosta	299,850	Raw Sewage	GA0033235	Collection System	Wet weather		One Mile Branch
2018-12-02 Valdosta, City of (Withlacoochee WPCP)	Lowndes	Valdosta	800 Block of Gornto Road - Valdosta (817 Gornto)	244,650	Raw Sewage	GA0033235	Collection System	Wet weather		Two Mile Branch
2018-12-02 Clayton County Water Authority (W.B. Casey WRF & Huie Constructed Wetlands)	Clayton	Jonesboro	9900 Dixon Industrial Blvd.	45,000	Raw Sewage	GA0038427	Collection System	Equipment failure	Ocmulgee	Pates Creek
2018-12-02 Arlington, City of (Arlington WPCP)	Early	Arlington	Manhole at WPCP	100,000	Raw Sewage	GA0020204	Collection System	Wet weather	Flint	Spring Creek
2018-12-02 Arlington, City of (Arlington WPCP)	Early	Arlington	Highland at Park Street	10,000	Raw Sewage	GA0020204	Collection System	Wet weather	Flint	Spring Creek
2018-12-02 Bainbridge, City of (Bainbridge WPCP)	Decatur	Bainbridge	100 Boat Basin Circle, Bainbridge	7,000	Raw Sewage	GA0024678	W.W.T.P.	Debris	Flint	Flint River
2018-12-02 Valdosta, City of (Withlacoochee WPCP)	Lowndes	Valdosta	1800 Block of East Park Avenue - Valdosta (1818 E Park Avenue)	15,575	Raw Sewage	GA0033235	Collection System	Wet weather		Knight's Creek
2018-12-02 Arlington, City of (Arlington WPCP)	Early	Arlington	Cedar Street and Wood Valley Rd	10,000	Raw Sewage	GA0020204	Collection System	Wet weather	Flint	Spring Creek
2018-12-02 Valdosta, City of (Withlacoochee WPCP)	Lowndes	Valdosta	Withlacoochee Equalization Basin - 3000 Block of Weatherington Lane - Valdosta	2,200,000	Raw Sewage	GA0033235	W.W.T.P.	Wet weather		Spring Creek
2018-12-02 Valdosta, City of (Withlacoochee WPCP)	Lowndes	Valdosta	Bay Street and Hines	3,330	Raw Sewage	GA0033235	Collection System	Wet weather		TBD
2018-12-02 Arlington, City of (Arlington WPCP)	Early	Arlington	Pioneer Rd. and Wood Valley Rd.	10,000	Raw Sewage	GA0020204	Collection System	Wet weather	Flint	Spring Creek
2018-12-02 Stockbridge, City of (Stephen D. Pentifoy WPCP)	Henry	Stockbridge	100 Stapleton Dr Stockbridge GA 30281	207,000	Raw Sewage	GA00[illegible]	Collection System	Wet weather		Brush Creek
2018-12-02 Dekalb County (Snapfinger Creek WPCP)	DeKalb	Chamblee	5434 Peachtree Road Chamblee GA 30341	5,040	Raw Sewage	GA0024147	Collection System	Grease	Ocmulgee	Nancy Creek
2018-12-02 Valdosta, City of (Withlacoochee WPCP)	Lowndes	Valdosta	700 Block of Lamar Street - Valdosta	54,525	Raw Sewage	GA0033235	Collection System	Wet weather		One Mile Branch
2018-12-01 Adairsville, City of (North WPCP)	Bartow	Adairsville	Manhole on Kuhlman Street across from 147 41st Street Adairsville	14,805	Raw Sewage	GA0046035	W.W.T.P.	Debris	Coosa	Unnamed tributary to Oothkalooga Creek
2018-12-01 Atlanta, City of (R.M. Clayton, Utoy Creek, and South River WRCs)	Fulton	Atlanta	761 Woodward Way NW - Atlanta	2,340	Raw Sewage	GA0039012	Collection System	Wet weather		Peachtree Creek
2018-12-01 Dekalb County (Snapfinger Creek WPCP)	DeKalb	Atlanta	2052 Grand Prix Drive Atlanta GA 30345	3,050	Raw Sewage	GA0024147	Collection System	Wet weather	Ocmulgee	North Fork Peachtree Creek
2018-12-01 Cairo, City of (Cairo WPCP)	Grady	Cairo	576 6th St SW Cairo	7,500	Raw Sewage	GA0025770	W.W.T.P.	Wet weather	Ochlockonee	Parkers Mill Creek
2018-12-01 Winder, City of (Cedar Creek WPCP)	Barrow	Winder	Glenwood Lift Station/228 Capital Ave.	2,100	Raw Sewage	GA00[illegible]776	Pump Station	Wet weather		Unnamed Trib. of Beech Creek
2018-12-01 Rome, City of (Rome WRF)	Floyd	Rome	Behind 43 Mountain Chase Road	500	Raw Sewage	GA0024112	W.W.T.P.	Debris	Coosa	Unnamed tributary leading to the Horseleg Creek
2018-12-01 Atlanta, City of (R.M. Clayton, Utoy Creek, and South River WRCs)	Fulton	Atlanta	409 Harlan Rd. SW - Atlanta	1,500	Raw Sewage	GA0039012	Collection System	Debris		Did Not Enter State Waters

CourtSmart Tag Report

Room: LL 37 **Case No.:** **Type:**
Caption: Senate Committee on Environment and National Resources **Judge:**

Started: 3/20/2019 4:05:56 PM
Ends: 3/20/2019 5:58:07 PM Length: 01:52:12

4:05:54 PM	Call to order
4:06:03 PM	Pledge of Allegiance
4:06:32 PM	Chair opening remarks
4:08:18 PM	Take up Tab 2 SB 1758
4:09:18 PM	Senator Mayfield for an explanation
4:09:36 PM	Take up amendment 369274
4:09:59 PM	Senator Mayfield for an overview on the bill and amendment
4:17:26 PM	Questions on the amendment?
4:17:32 PM	appearance forms
4:17:37 PM	Ryan Smart
4:19:59 PM	Merrillee Malwitz-Jipson
4:21:35 PM	Karen Chadwick
4:24:25 PM	Kristin Rubin waives in opposition
4:25:29 PM	Michael Roth
4:28:25 PM	Jim Tatum
4:30:08 PM	Anne Harvey Holbrook
4:30:21 PM	Brenda Wells
4:31:34 PM	Whitey Markle
4:33:12 PM	Bob Palmer
4:35:48 PM	Burt Eno
4:39:10 PM	Rusty Payton
4:41:01 PM	Rene Vaught
4:42:29 PM	Paul Owens
4:43:56 PM	Jonathon Weber waives in opposition
4:44:38 PM	David Cullen waives in opposition
4:44:51 PM	Debate on the amendment?
4:44:56 PM	Senator Berman in debate
4:45:26 PM	Chair Montford in debate
4:46:10 PM	Senator Mayfield to close
4:48:38 PM	Amendment 369274 is adopted
4:48:52 PM	back on the bill as amended
4:48:59 PM	Questions?
4:49:02 PM	Appearance forms
4:49:25 PM	John Quarderman
4:51:05 PM	Kurt Spitzer
4:51:55 PM	David Cullen waives in support
4:52:03 PM	Roxanne Groover
4:53:19 PM	Dan Peterson
4:55:50 PM	Jonathon Webber waives in support
4:55:58 PM	Rebecca O'Hara
4:58:56 PM	Debate?
4:59:04 PM	Senator Mayfied to close
5:02:10 PM	CS/SB 1758 is reported favorably
5:02:43 PM	Senator Mayfield to recognize Senator Simmons
5:03:33 PM	Take up Tab 1 SB 1552
5:03:43 PM	Senator Gruters for an explanation
5:04:56 PM	Questions?
5:04:58 PM	Appearance forms
5:05:03 PM	David Shepp
5:06:00 PM	David Cullen
5:06:14 PM	Jennifer Goen
5:07:08 PM	Debate?

5:07:10 PM Senator Gruters waives close
5:07:17 PM SB 1552 is reported favorably
5:07:30 PM Take up Tab 3 SB 1100
5:07:43 PM Chair Montford relinquishes the chair to Senator Albritton
5:08:02 PM Senator Montford for an explanation
5:09:10 PM Questions?
5:09:17 PM Appearance forms
5:09:21 PM Bob Vincent
5:09:31 PM Merrillee Malwitz-Jipson
5:11:31 PM David Cullen waives in support
5:11:39 PM Debate?
5:11:41 PM Chair Montfor waives close
5:11:48 PM SB 1100 is reported favorably
5:12:07 PM Senator Wright votes favorably on SB 1758
5:12:34 PM Senator Albritton votes favorably on SB 1758
5:12:47 PM Take up Tab 4 workshop on the Valdosta Sewage Spill
5:14:00 PM Rick Davis
5:23:22 PM Hugh Thomas
5:33:12 PM Bob Vincent
5:39:05 PM Tom Frick
5:45:13 PM Chair Montford for a question
5:45:30 PM Rick Davis for an answer
5:47:09 PM Chair Montford for a follow up
5:48:01 PM Rick Davis for answer
5:48:53 PM Ken Cornell
5:51:31 PM Senator Mayfield for a question
5:51:43 PM Ken Cornell for an answer
5:51:48 PM Senator Mayfied for a follow up
5:51:58 PM Rick Davis for an answer
5:53:03 PM Drinda Meilif
5:53:42 PM John Quarterman
5:54:40 PM James Mcbrayer
5:56:37 PM Chris Doolin
5:57:22 PM Chair closing remarks
5:57:36 PM Meeting adjourned

THE FLORIDA SENATE

APPEARANCE RECORD

(Deliver BOTH copies of this form to the Senator or Senate Professional Staff conducting the meeting)

3/20/19
Meeting Date

1100
Bill Number (if applicable)

Topic Withlacoochee River Sewer Spills

Amendment Barcode (if applicable)

Name Bob Vincent

Job Title Environmental Administrator, Dept. of Health

Address 4052 Bald Cypress Way, mailbin A08
Street

Phone 850 245 4578

Tallahassee FL 32399
City *State* *Zip*

Email bob.vincent@FLhealth.gov

Speaking: ☐ For ☐ Against ☒ Information

Waive Speaking: ☐ In Support ☐ Against
(The Chair will read this information into the record.)

Representing Florida Dept of Health

Appearing at request of Chair: ☒ Yes ☐ No

Lobbyist registered with Legislature: ☐ Yes ☐ No

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S-001 (10/14/14)

THE FLORIDA SENATE

APPEARANCE RECORD

(Deliver BOTH copies of this form to the Senator or Senate Professional Staff conducting the meeting)

3-20-19
Meeting Date

1100
Bill Number (if applicable)

Topic Valdosta Spills, Domestic Well testing

Amendment Barcode (if applicable)

Name Merrillee Malwitz-Jipson

Job Title owner Rum 138

Address 2070 SW CR 138
Street

Phone 352-222-8893

Fort White FL 32038
City *State* *Zip*

Email Merrilleeart@gmail.com

Speaking: ☐ For ☐ Against ☒ Information

Waive Speaking: ☐ In Support ☐ Against
(The Chair will read this information into the record.)

Representing my recreational tourism bosiness, riparian owner Santa fe River

Appearing at request of Chair: ☐ Yes ☒ No

Lobbyist registered with Legislature: ☐ Yes ☒ No

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S-001 (10/14/14)

THE FLORIDA SENATE

APPEARANCE RECORD

(Deliver BOTH copies of this form to the Senator or Senate Professional Staff conducting the meeting)

3-20-17
Meeting Date

1100
Bill Number (if applicable)

Topic _____

Amendment Barcode (if applicable)

Name DAVID CULLEN

Job Title _____

Address 1674 UNIV. PKWY #296
Street

SARASOTA FL 34243
City *State* *Zip*

Phone 941-323-2604

Email cullenscat@aol.com

Speaking: ☑ For ☐ Against ☐ Information

Waive Speaking: ☐ In Support ☐ Against
(The Chair will read this information into the record.)

Representing SIERRA CLUB FLORIDA

Appearing at request of Chair: ☐ Yes ☑ No

Lobbyist registered with Legislature: ☑ Yes ☐ No

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S-001 (10/14/14)

THE FLORIDA SENATE

APPEARANCE RECORD

(Deliver BOTH copies of this form to the Senator or Senate Professional Staff conducting the meeting)

3-20-19
Meeting Date

1758
Bill Number (if applicable)

369274
Amendment Barcode (if applicable)

Topic Clean WaterWay Act - Strike-All

Name Ryan Smart

Job Title Executive Director

Address 209 Tallwood Rd.
Street

Jax Beach FL 32250
City *State* *Zip*

Phone 561-358-7191

Email Smart@floridaspringscouncil.org

Speaking: ☐ For ☑ Against ☐ Information

Waive Speaking: ☐ In Support ☐ Against
(The Chair will read this information into the record.)

Representing Florida Springs Council

Appearing at request of Chair: ☐ Yes ☑ No

Lobbyist registered with Legislature: ☑ Yes ☐ No

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S-001 (10/14/14)

THE FLORIDA SENATE

APPEARANCE RECORD

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3-20-19
Meeting Date

1758
Bill Number (if applicable)

369274
Amendment Barcode (if applicable)

Topic Clean Waterways Act - Strike All

Name Merrillee Malwitz-Jipson

Job Title owner Rum 138

Address 2070 SW CR 138
Street

Phone 352-222-8893

Fort White FL 32038
City *State* *Zip*

Email merrilleeart@gmail.com

Speaking: ☐ For ☑ Against ☐ Information

Waive Speaking: ☐ In Support ☐ Against
(The Chair will read this information into the record.)

Representing my recreational tourism business & waters of North central FL

Appearing at request of Chair: ☐ Yes ☑ No

Lobbyist registered with Legislature: ☐ Yes ☑ No

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S-001 (10/14/14)

THE FLORIDA SENATE

APPEARANCE RECORD

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3-20-19
Meeting Date

1758
Bill Number (if applicable)

369274
Amendment Barcode (if applicable)

Topic Clean Waterways Act - Strike-All

Name Karen Chadwick

Job Title North Star Charters Captain

Address Po Box 376
Street

Interlachen fl 32148
City *State* *Zip*

Phone 386-983-1256

Email karenchadwick9@yahoo.com

Speaking: ☐ For ☑ Against ☐ Information

Waive Speaking: ☐ In Support ☐ Against
(The Chair will read this information into the record.)

Representing North Star Charters & Silver Springs Alliance

Appearing at request of Chair: ☐ Yes ☑ No

Lobbyist registered with Legislature: ☐ Yes ☑ No

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S-001 (10/14/14)

THE FLORIDA SENATE

APPEARANCE RECORD

3-20-2019 (Deliver BOTH copies of this form to the Senator or Senate Professional Staff conducting the meeting) 1758

Meeting Date *Bill Number (if applicable)*

Topic Clean Waterway Act - Strike All 369274

Amendment Barcode (if applicable)

Name ~~Michael~~ KRISTIN RUBIN

Job Title Board Member Our Santa Fe Rubin

Address 26280 NW 206 PL Phone 3055823800

Street

HIGH SPRINGS Email rubinka2591@gmail.com

City *State* *Zip*

Speaking: ☐ For ☐ Against ☐ Information Waive Speaking: ☐ In Support ☒ Against

(The Chair will read this information into the record.)

Representing Our Santa Fe River

Appearing at request of Chair: ☐ Yes ☐ No Lobbyist registered with Legislature: ☐ Yes ☒ No

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S-001 (10/14/14)

THE FLORIDA SENATE

APPEARANCE RECORD

(Deliver BOTH copies of this form to the Senator or Senate Professional Staff conducting the meeting)

3-20-19
Meeting Date

1758
Bill Number (if applicable)

369274
Amendment Barcode (if applicable)

Topic Clean Waterways Act - Strike All

Name Michael Roth

Job Title PRESIDENT - OUR SANTA FE RIVER

Address 846 NW 120 TRAIL
Street
BRANFORD FL 32008
City *State* *Zip*

Phone 352-316-4705

Email mikulr01@gmail.com

Speaking: ☐ For ☑ Against ☐ Information

Waive Speaking: ☐ In Support ☐ Against
(The Chair will read this information into the record.)

Representing Our Santa Fe River

Appearing at request of Chair: ☐ Yes ☑ No

Lobbyist registered with Legislature: ☐ Yes ☑ No

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S-001 (10/14/14)

THE FLORIDA SENATE

APPEARANCE RECORD

(Deliver BOTH copies of this form to the Senator or Senate Professional Staff conducting the meeting)

3-20-19
Meeting Date

1758
Bill Number (if applicable)

369274
Amendment Barcode (if applicable)

Topic Clean Waterway Act - Strike All

Name Jim Tatum

Job Title retired

Address 914 SW Riverland Ct
Street
Fort White FL 32038
City *State* *Zip*

Phone 386-454-1916

Email Jim@JimTatum.net

Speaking: ☐ For ☑ Against ☐ Information

Waive Speaking: ☐ In Support ☐ Against
(The Chair will read this information into the record.)

Representing self

Appearing at request of Chair: ☐ Yes ☑ No

Lobbyist registered with Legislature: ☐ Yes ☑ No

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S-001 (10/14/14)

THE FLORIDA SENATE

APPEARANCE RECORD

(Deliver BOTH copies of this form to the Senator or Senate Professional Staff conducting the meeting)

3/20/19
Meeting Date

1758
Bill Number (if applicable)

Topic Clean Waterways Act Strike all Amendment 369274
Amendment Barcode (if applicable)

Name Anne HARVEY HOLBROOK

Job Title Staff Attorney

Address 500 N. Maitland Ave.
Street

Phone

Maitland FL 32571
City *State* *Zip*

Email

Speaking: ☐ For ☑ Against ☐ Information

Waive Speaking: ☐ In Support ☐ Against
(The Chair will read this information into the record.)

Representing Save the Manatee Club

Appearing at request of Chair: ☐ Yes ☑ No

Lobbyist registered with Legislature: ☑ Yes ☐ No

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S-001 (10/14/14)

THE FLORIDA SENATE

APPEARANCE RECORD

(Deliver BOTH copies of this form to the Senator or Senate Professional Staff conducting the meeting)

3-20-19
Meeting Date

1758
Bill Number (if applicable)

Topic Clean Waterways Act - Strike-All

369274
Amendment Barcode (if applicable)

Name Brenda Wells

Job Title

Address 7317 NW 21st Way
Street

Phone 352-281-4255

Gainesville FL 32653
City *State* *Zip*

Email brenda.wellsegmail.com

Speaking: ☐ For ☑ Against ☐ Information

Waive Speaking: ☐ In Support ☐ Against
(The Chair will read this information into the record.)

Representing Ichetucknee Alliance

Appearing at request of Chair: ☐ Yes ☑ No

Lobbyist registered with Legislature: ☐ Yes ☑ No

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S-001 (10/14/14)

THE FLORIDA SENATE

APPEARANCE RECORD

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3-20-19
Meeting Date

1758
Bill Number (if applicable)

369274
Amendment Barcode (if applicable)

Topic Clean Waterways Act - Strike-All

Name Whitey Markle

Job Title Chair, Suwannee St Johns Orerup

Address 1981 NW 186 Pl. Citra, Fla. 32113
Street

Phone 352-595-3012

Citra Florida 32113
City *State* *Zip*

Email whmarkle@gmail.com

Speaking: ☐ For ☑ Against ☐ Information

Waive Speaking: ☐ In Support ☐ Against
(The Chair will read this information into the record.)

Representing Florida Chapter Sierra Club

Appearing at request of Chair: ☐ Yes ☑ No

Lobbyist registered with Legislature: ☐ Yes ☑ No

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S-001 (10/14/14)

THE FLORIDA SENATE

APPEARANCE RECORD

(Deliver BOTH copies of this form to the Senator or Senate Professional Staff conducting the meeting)

3-20-19
Meeting Date

1758
Bill Number (if applicable)

369274
Amendment Barcode (if applicable)

Topic Clean Waterways Act - Strike-All

Name Bob Palmer

Job Title

Address
Street

Phone 352-371-4093

Email rpa711@yahoo.com

City *State* *Zip*

Speaking: ☐ For ☑ Against ☐ Information

Waive Speaking: ☐ In Support ☐ Against
(The Chair will read this information into the record.)

Representing Florida Springs Institute

Appearing at request of Chair: ☐ Yes ☑ No

Lobbyist registered with Legislature: ☐ Yes ☑ No

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S-001 (10/14/14)

THE FLORIDA SENATE

APPEARANCE RECORD

(Deliver BOTH copies of this form to the Senator or Senate Professional Staff conducting the meeting)

3-20-19
Meeting Date

1758
Bill Number (if applicable)

369274
Amendment Barcode (if applicable)

Topic Clean Waterways Act - ~~Strike-All~~

Name Burt Eno

Job Title

Address 6220 SW 193rd Ct.
Street

Phone 352-465-2828

Ocklla FL 34432
City *State* *Zip*

Email beeno1@bellsouth.net

Speaking: ☐ For ☑ Against ☐ Information

Waive Speaking: ☐ In Support ☐ Against
(The Chair will read this information into the record.)

Representing Rainbow River Conservation

Appearing at request of Chair: ☐ Yes ☑ No

Lobbyist registered with Legislature: ☐ Yes ☑ No

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S-001 (10/14/14)

THE FLORIDA SENATE

APPEARANCE RECORD

(Deliver BOTH copies of this form to the Senator or Senate Professional Staff conducting the meeting)

3/20/19
Meeting Date

1758
Bill Number (if applicable)

369274
Amendment Barcode (if applicable)

Topic Water Quality

Name Rusty Payton

Job Title CEO

Address 2600 Centennial Pkwy
Street

Tallahassee FL 32317
City *State* *Zip*

Phone 567-1073

Email rpayton@fhba.com

Speaking: ☐ For ☑ Against ☐ Information

Waive Speaking: ☐ In Support ☐ Against
(The Chair will read this information into the record.)

Representing Florida Home Builders Association

Appearing at request of Chair: ☐ Yes ☑ No

Lobbyist registered with Legislature: ☑ Yes ☐ No

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S-001 (10/14/14)

THE FLORIDA SENATE

APPEARANCE RECORD

(Deliver BOTH copies of this form to the Senator or Senate Professional Staff conducting the meeting)

3-20-19
Meeting Date

1758
Bill Number (if applicable)

Topic Managable Waterways Act Amendments

Strike all amendment
Amendment Barcode (if applicable)

Name Rene Vaught

Job Title Dental lab technician

Address 511 SE 73 terr
Street

Phone 352-226-6495

Gainesville
City *State* *Zip*

Email Sirenofthespring@gmail.com

Speaking: ☐ For ☒ Against ☐ Information

Waive Speaking: ☐ In Support ☐ Against
(The Chair will read this information into the record.)

Representing Myself

Appearing at request of Chair: ☐ Yes ☒ No

Lobbyist registered with Legislature: ☐ Yes ☒ No

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S-001 (10/14/14)

THE FLORIDA SENATE

APPEARANCE RECORD

(Deliver BOTH copies of this form to the Senator or Senate Professional Staff conducting the meeting)

3/20/19
Meeting Date

SB 1758
Bill Number (if applicable)

Topic The Clean Waterways Act - Amendment

369274
Amendment Barcode (if applicable)

Name Paul Owens

Job Title President

Address 308 N. Monroe St.
Street

Tallahassee FL 32301
City *State* *Zip*

Phone 850-222-6277

Email powens@1000fof.org

Speaking: ☐ For ☑ Against ☐ Information

Waive Speaking: ☐ In Support ☐ Against
(The Chair will read this information into the record.)

Representing 1000 Friends of Florida

Appearing at request of Chair: ☐ Yes ☑ No

Lobbyist registered with Legislature: ☑ Yes ☐ No

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S-001 (10/14/14)

THE FLORIDA SENATE

APPEARANCE RECORD

(Deliver BOTH copies of this form to the Senator or Senate Professional Staff conducting the meeting)

3/20/19
Meeting Date

Bill Number (if applicable)

369274
Amendment Barcode (if applicable)

Topic Water Quality Improvements

Name Jonathan Webber

Job Title Deputy Director

Address 1700 N. Monroe St
Street

Phone 954-593-4449

Tallahassee FL 32303
City *State* *Zip*

Email jwebber@fcvoters.org

Speaking: ☐ For ☐ Against ☐ Information

Waive Speaking: ☐ In Support ☒ Against
(The Chair will read this information into the record.)

Representing Florida Conservation Voters

Appearing at request of Chair: ☐ Yes ☐ No

Lobbyist registered with Legislature: ☒ Yes ☐ No

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S-001 (10/14/14)

THE FLORIDA SENATE

APPEARANCE RECORD

(Deliver BOTH copies of this form to the Senator or Senate Professional Staff conducting the meeting)

3-20-19
Meeting Date

1758
Bill Number (if applicable)

369274
Amendment Barcode (if applicable)

Topic _____

Name DAVID CULLEN

Job Title _____

Address 1674 Univ. Pkwy #296
Street

Phone 941-323-2464

Sarasota FL 34243
City *State* *Zip*

Email cullenesq@aol.com

Speaking: ☐ For ☑ Against ☐ Information

Waive Speaking: ☐ In Support ☐ Against
(The Chair will read this information into the record.)

Representing SIERRA CLUB FLORIDA

Appearing at request of Chair: ☐ Yes ☑ No

Lobbyist registered with Legislature: ☑ Yes ☐ No

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S-001 (10/14/14)

THE FLORIDA SENATE

APPEARANCE RECORD

(Deliver BOTH copies of this form to the Senator or Senate Professional Staff conducting the meeting)

3-20-19
Meeting Date

1758
Bill Number (if applicable)

Topic WATER QUALITY

Amendment Barcode (if applicable)

Name KURT SPITZER

Job Title

Address 643 FOREST LNN
Street

T 32312
City *State* *Zip*

Phone 228 6212

Email KURTSPITZER@ICSANET-NET

Speaking: ☐ For ☐ Against ☒ Information

Waive Speaking: ☐ In Support ☐ Against
(The Chair will read this information into the record.)

Representing PLA STORMWATER 1550C

Appearing at request of Chair: ☐ Yes ☒ No

Lobbyist registered with Legislature: ☒ Yes ☐ No

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S-001 (10/14/14)

THE FLORIDA SENATE

APPEARANCE RECORD

(Deliver BOTH copies of this form to the Senator or Senate Professional Staff conducting the meeting)

3-20-14
Meeting Date

1758
Bill Number (if applicable)

Amendment Barcode (if applicable)

Topic _____

Name DAVID COLLEN

Job Title _____

Address 1674 UNIV. PKWY #2K
Street

SARASOTA FL 34243
City *State* *Zip*

Phone 941.323.2464

Email dcollen@earthlink.net

Speaking: ☑ For ☐ Against ☐ Information

Waive Speaking: ☐ In Support ☐ Against
(The Chair will read this information into the record.)

Representing SIERRA CLUB FL

Appearing at request of Chair: ☐ Yes ☑ No

Lobbyist registered with Legislature: ☑ Yes ☐ No

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S-001 (10/14/14)

THE FLORIDA SENATE

APPEARANCE RECORD

20 MARCH 19 (Deliver BOTH copies of this form to the Senator or Senate Professional Staff conducting the meeting) 1758

Meeting Date *Bill Number (if applicable)*

Topic WATER QUALITY IMPROVEMENTS *Amendment Barcode (if applicable)*

Name ROXANNE GROOVER

Job Title EXECUTIVE DIRECTOR

Address 5115 STATE ROAD 567 Phone 813-504-8340

Street

LAKE ALFRED FL 33850 Email rgroover@fowaonsite.com

City *State* *Zip*

Speaking: ☐ For ☐ Against ☒ Information Waive Speaking: ☐ In Support ☐ Against

(The Chair will read this information into the record.)

Representing FLORIDA ONSITE WASTEWATER ASSOCIATION

Appearing at request of Chair: ☐ Yes ☒ No Lobbyist registered with Legislature: ☐ Yes ☒ No

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S-001 (10/14/14)

THE FLORIDA SENATE

APPEARANCE RECORD

(Deliver BOTH copies of this form to the Senator or Senate Professional Staff conducting the meeting)

3/20/19
Meeting Date

1758
Bill Number (if applicable)

Topic Water Quality Improvements

Amendment Barcode (if applicable)

Name Dan Peterson

Job Title President

Address 303 Valley Estates Dr
Street

Phone 407-758-2491

Minneola FL 34715
City *State* *Zip*

Email danpeterson@cpr-fl.org

Speaking: ☑ For ☐ Against ☑ Information

Waive Speaking: ☐ In Support ☐ Against
(The Chair will read this information into the record.)

Representing Coalition for Property Rights

Appearing at request of Chair: ☐ Yes ☑ No

Lobbyist registered with Legislature: ☐ Yes ☑ No

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S-001 (10/14/14)

THE FLORIDA SENATE

APPEARANCE RECORD

(Deliver BOTH copies of this form to the Senator or Senate Professional Staff conducting the meeting)

3/20/19
Meeting Date

1758
Bill Number (if applicable)

Amendment Barcode (if applicable)

Topic Water Quality Improvements

Name Jonathan Webber

Job Title Deputy Director

Address 1700 N. Monroe St.
Street

Tallahassee FL 32303
City *State* *Zip*

Phone 954-593-9999

Email JWebber@FCVOTERS.org

Speaking: ☐ For ☐ Against ☐ Information

Waive Speaking: ☒ In Support ☐ Against
(The Chair will read this information into the record.)

Representing Florida Conservation Voters

Appearing at request of Chair: ☐ Yes ☐ No

Lobbyist registered with Legislature: ☒ Yes ☐ No

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S-001 (10/14/14)

THE FLORIDA SENATE

APPEARANCE RECORD

(Deliver BOTH copies of this form to the Senator or Senate Professional Staff conducting the meeting)

3/20/19
Meeting Date

1758
Bill Number (if applicable)

Amendment Barcode (if applicable)

Topic Water Quality

Name Rebecca O'Hara

Job Title Deputy General Counsel

Address PO Box 1757
Street

Tallahassee FL 32302
City *State* *Zip*

Phone 222 9684

Email rohara@flcities.com

Speaking: ☐ For ☐ Against ☒ Information

Waive Speaking: ☐ In Support ☐ Against
(The Chair will read this information into the record.)

Representing Fla League of Cities

Appearing at request of Chair: ☐ Yes ☒ No

Lobbyist registered with Legislature: ☒ Yes ☐ No

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S-001 (10/14/14)

THE FLORIDA SENATE

APPEARANCE RECORD

(Deliver BOTH copies of this form to the Senator or Senate Professional Staff conducting the meeting)

3/20/19
Meeting Date

SB 1552
Bill Number (if applicable)

Topic Red Tide Mitigation + Technology

Amendment Barcode (if applicable)

Name David Shepp

Job Title Lobbyist

Address P.O. Box 3739
Street

Lakeland FL 33802
City *State* *Zip*

Phone 863 581-4250

Email sheppesostrategy.com

Speaking: ☑ For ☐ Against ☐ Information

Waive Speaking: ☐ In Support ☐ Against
(The Chair will read this information into the record.)

Representing Mote Marine Laboratory

Appearing at request of Chair: ☐ Yes ☑ No

Lobbyist registered with Legislature: ☑ Yes ☐ No

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S-001 (10/14/14)

THE FLORIDA SENATE

APPEARANCE RECORD

(Deliver BOTH copies of this form to the Senator or Senate Professional Staff conducting the meeting)

3-20-19
Meeting Date

1552
Bill Number (if applicable)

Topic _____

Amendment Barcode (if applicable)

Name DAVID CULLEN

Job Title _____

Address 1674 UNIV. PKWY #296
Street

SARASOTA FL 34243
City *State* *Zip*

Phone 941-373-2404

Email culleno5@aol.com

Speaking: ☐ For ☐ Against ☑ Information

Waive Speaking: ☐ In Support ☐ Against
(The Chair will read this information into the record.)

Representing SIERRA CLUB FLORIDA

Appearing at request of Chair: ☐ Yes ☑ No

Lobbyist registered with Legislature: ☑ Yes ☐ No

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S-001 (10/14/14)

THE FLORIDA SENATE

APPEARANCE RECORD

(Deliver BOTH copies of this form to the Senator or Senate Professional Staff conducting the meeting)

3/20/19
Meeting Date

1552
Bill Number (if applicable)

Topic FL Red Tide Mitigation + Technology

Amendment Barcode (if applicable)

Name Jennifer Goen

Job Title Dir. of Gov Relations - Florida Gulf Coast University

Address 10501 FGCU Blvd
Street

Phone 239-590-1020

Ft. Myers FL 33965
City *State* *Zip*

Email jgoen@fgcu.edu

Speaking: ☐ For ☐ Against ☐ Information

Waive Speaking: ☑ In Support ☐ Against
(The Chair will read this information into the record.)

Representing Florida Gulf Coast University

Appearing at request of Chair: ☐ Yes ☑ No

Lobbyist registered with Legislature: ☑ Yes ☐ No

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S-001 (10/14/14)

THE FLORIDA SENATE

APPEARANCE RECORD

(Deliver BOTH copies of this form to the Senator or Senate Professional Staff conducting the meeting)

3/20/2019
Meeting Date

Bill Number (if applicable)

Topic Valdosta Sewage Spills

Amendment Barcode (if applicable)

Name Rick Davis

Job Title County Commissioner, Madison County

Address 229 SW Pinckney Street
Street

Phone 850 973-3179

Madison | Florida | 32340
City | *State* | *Zip*

Email district5@madisoncountyfl.com

Speaking: ☐ For ☐ Against ☑ Information

Waive Speaking: ☐ In Support ☐ Against
(The Chair will read this information into the record.)

Representing Middle and Lower Suwannee River and Withlacoochee River Task Force

Appearing at request of Chair: ☑ Yes ☐ No

Lobbyist registered with Legislature: ☐ Yes ☑ No

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S-001 (10/14/14)

THE FLORIDA SENATE

APPEARANCE RECORD

(Deliver BOTH copies of this form to the Senator or Senate Professional Staff conducting the meeting)

3/20/19
Meeting Date

Bill Number (if applicable)

Topic Valdosta Sewage discussion

Amendment Barcode (if applicable)

Name Hugh Thomas

Job Title Executive Director, SRWMD

Address 9225 CR 49
Street

Live Oak, Fl. 32064
City *State* *Zip*

Phone

Email

Speaking: ☐ For ☐ Against ☑ Information

Waive Speaking: ☐ In Support ☐ Against
(The Chair will read this information into the record.)

Representing SRWMD

Appearing at request of Chair: ☑ Yes ☐ No

Lobbyist registered with Legislature: ☐ Yes ☑ No

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S-001 (10/14/14)

THE FLORIDA SENATE

APPEARANCE RECORD

(Deliver BOTH copies of this form to the Senator or Senate Professional Staff conducting the meeting)

3/20/19
Meeting Date

~~HOO~~
Bill Number (if applicable)

Topic SB 1100

Amendment Barcode (if applicable)

Name Bob Vincent

Job Title Environmental Administrator

Address Dept of Health 4052 Bald Cypress Wy
Street

Phone 850 245-4578

Tally FL 32399
City *State* *Zip*

Email bob.vincent@flhealth.gov

Speaking: ☐ For ☐ Against ☒ Information

Waive Speaking: ☐ In Support ☐ Against
(The Chair will read this information into the record.)

Representing Dept of Health

Appearing at request of Chair: ☐ Yes ☒ No

Lobbyist registered with Legislature: ☐ Yes ☒ No

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S-001 (10/14/14)

THE FLORIDA SENATE

APPEARANCE RECORD

(Deliver BOTH copies of this form to the Senator or Senate Professional Staff conducting the meeting)

3/20/19
Meeting Date

Bill Number (if applicable)

Topic Valdosta Sewage

Amendment Barcode (if applicable)

Name Tom Frick

Job Title

Address
Street

Phone

City *State* *Zip*

Email

Speaking: ☐ For ☐ Against ☑ Information

Waive Speaking: ☐ In Support ☐ Against
(The Chair will read this information into the record.)

Representing DEP

Appearing at request of Chair: ☑ Yes ☐ No

Lobbyist registered with Legislature: ☐ Yes ☑ No

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S-001 (10/14/14)

THE FLORIDA SENATE

APPEARANCE RECORD

(Deliver BOTH copies of this form to the Senator or Senate Professional Staff conducting the meeting)

Meeting Date

Bill Number (if applicable)

Topic VALDOSTA

Amendment Barcode (if applicable)

Name KEN CORNELL

Job Title ALACHUA COUNTY COMMISSIONER

Address 22508 NE 69 AVE (Street)

Phone 352-281-4000

Melrose (City) FL (State) 32666 (Zip)

Email

Speaking: ☐ For ☐ Against ☑ Information

Waive Speaking: ☐ In Support ☐ Against
(The Chair will read this information into the record.)

Representing NORTH CENTRAL FLORIDA WITHLACOOCHEE TASK FORCE

Appearing at request of Chair: ☐ Yes ☑ No

Lobbyist registered with Legislature: ☐ Yes ☑ No

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S-001 (10/14/14)

THE FLORIDA SENATE

APPEARANCE RECORD

(Deliver BOTH copies of this form to the Senator or Senate Professional Staff conducting the meeting)

3/20/17
Meeting Date

Bill Number (if applicable)

Topic Valdosta Sewage Spill

Amendment Barcode (if applicable)

Name Brenda Mellitt

Job Title Mayor

Address 135 Hwy 40 West
Street
Englis, Florida 34449
City *State* *Zip*

Phone 352 229 0477

Email mayorbrendamellitt@gmail.com

Speaking: ☐ For ☐ Against ☒ Information

Waive Speaking: ☐ In Support ☐ Against
(The Chair will read this information into the record.)

Representing Town of Englis

Appearing at request of Chair: ☐ Yes ☒ No

Lobbyist registered with Legislature: ☐ Yes ☒ No

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S-001 (10/14/14)

THE FLORIDA SENATE

APPEARANCE RECORD

(Deliver BOTH copies of this form to the Senator or Senate Professional Staff conducting the meeting)

Meeting Date

SB 1758

Bill Number (if applicable)

& Watershed

Amendment Barcode (if applicable)

Topic SB 1758 & Valdosta Sewage

Name John S. Quarterman

Job Title Suwannee Riverkeeper

Address PO Box 88 *Street*

Phone 229-242-0102

Hilliard FL 32046 *City* *State* *Zip*

Email Contact@SuwanneeRiverkeeper.org

Speaking: ☑ For ☐ Against ☐ Information

Waive Speaking: ☐ In Support ☐ Against

(The Chair will read this information into the record.)

Representing NWAES Watershed Coalition, Inc.

Appearing at request of Chair: ☑ Yes ☐ No

Lobbyist registered with Legislature: ☐ Yes ☐ No

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S-001 (10/14/14)

THE FLORIDA SENATE

APPEARANCE RECORD

(Deliver BOTH copies of this form to the Senator or Senate Professional Staff conducting the meeting)

March 20, 2019
Meeting Date

Waldosta
Bill Number (if applicable)

Amendment Barcode (if applicable)

Topic Waldosta Sewage Bill

Name John S. Quarterman

Job Title Suwannee Riverkeeper

Address PO Box 68
Street

Phone 229-242-0102

Email contact@suwanneeriverkeeper.org

Athens GA 30632
City *State* *Zip*

Speaking: ☑ For ☐ Against ☐ Information

Waive Speaking: ☐ In Support ☐ Against
(The Chair will read this information into the record.)

Representing WWALS Watershed Coalition

Appearing at request of Chair: ☑ Yes ☐ No

Lobbyist registered with Legislature: ☐ Yes ☐ No

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S-001 (10/14/14)

THE FLORIDA SENATE

APPEARANCE RECORD

(Deliver BOTH copies of this form to the Senator or Senate Professional Staff conducting the meeting)

20 MAR 2019
Meeting Date

WORKING GROUP
Bill Number (if applicable)

Topic VALDOSTA SEWAGE SPILLS

VALDOSTA SEWAGE SPILL
Amendment Barcode (if applicable)

Name JAMES H. MCBRAYER

Job Title HAMILTON COUNTY RESIDENT

Address 7354 SW CR 143
Street

JASPER FL 32052
City *State* *Zip*

Phone 386-938-2045

Email JAMESHMCBRAYER@GMAIL.COM

Speaking: ☐ For ☐ Against ☑ Information

Waive Speaking: ☐ In Support ☐ Against
(The Chair will read this information into the record.)

Representing

Appearing at request of Chair: ☐ Yes ☐ No

Lobbyist registered with Legislature: ☐ Yes ☐ No

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S-001 (10/14/14)

THE FLORIDA SENATE

APPEARANCE RECORD

(Deliver BOTH copies of this form to the Senator or Senate Professional Staff conducting the meeting)

3/20/19
Meeting Date

1
Bill Number (if applicable)

Topic Valdosta Sewage Spill

Amendment Barcode (if applicable)

Name Chris Doolin

Job Title Consultant

Address Small County Coalition
Street
Talla FL 32308
City *State* *Zip*

Phone 850-508-5492

Email

Speaking: ☐ For ☐ Against ☑ Information

Waive Speaking: ☐ In Support ☐ Against
(The Chair will read this information into the record.)

Representing Small County Coalition

Appearing at request of Chair: ☐ Yes ☐ No

Lobbyist registered with Legislature: ☑ Yes ☐ No

While it is a Senate tradition to encourage public testimony, time may not permit all persons wishing to speak to be heard at this meeting. Those who do speak may be asked to limit their remarks so that as many persons as possible can be heard.

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S-001 (10/14/14)