

Florida Protects Natural Springs with Passive Onsite Sewage Systems

The Florida Department of Health, in collaboration with other Florida state and local agencies, researchers, and industry partners, led an effort to implement innovative onsite nitrogen reduction systems to protect Florida groundwater.

In an effort to protect the state's groundwater resources, Florida's state legislature passed the [Florida Springs and Aquifer Protection Act](#) in 2016. This legislation protects 30 outstanding springshed areas that are vulnerable to nitrogen pollution. Springs in these areas are important not only for the ecosystems they support, but also because they provide areas for recreation and drive the local economy. The springs are also a window into the health of Florida's groundwater, which is the source of 90 percent of drinking water for Floridians. Although nitrogen is naturally present in the water, excess nitrogen loading from fertilizer, stormwater runoff, and inadequate wastewater treatment can be harmful to plant and animal life. The legislation required identification of impaired springs, which then needed basin management action plans (BMAPs) that focused on reducing nitrogen pollution. To mitigate nitrogen pollution, the Florida Department of Health (FDOH) focused its efforts on improving septic systems and worked closely with the Florida Department of Environmental Protection (FDEP), local jurisdictions, researchers, and expert contractors to develop cost-effective nitrogen reduction strategies for onsite sewage treatment and disposal systems (OSTDS).

- FDOH successfully implemented low-cost onsite sewage treatment and disposal systems ([OSTDS](#)) for passive nitrogen removal.
- FDOH's contractor received a national award for engineering excellence.

Steps Taken

- In 2007, FDOH's [Research Review and Advisory Committee](#) made it a priority to study and review passive, cost-effective options for remediating nitrogen from OSTDS. The study's contractor shared its [promising findings](#) and recommended further research on passive OSTDS technologies. In 2008, the legislature provided funding for FDOH to contract a multi-year study to pilot OSTDS technologies and to make recommendations for strategies to reduce nitrogen from OSTDS.
- In 2016, following the [final report](#) by FDOH's contractor, Hazen and Sawyer, the Florida Springs and Aquifer Protection Act was passed. This legislation created a plan for protecting the state's water resources and outlined an implementation strategy. This new law required basin management action plans (BMAPs) that would address OSTDS. This included an update to the FDOH OSTDS permitting process for new homes and businesses within BMAP springsheds. Under the new process, any lots less than one acre in the most vulnerable springshed areas were now required to have septic systems with enhanced nitrogen removal as defined in the springshed's BMAP. July 1st, 2018 was the deadline for compliance with the new permitting process. Eventually, old septic systems in need of repairs would also need to be upgraded.

- Prior to this deadline, FDOH, with input from FDEP and other stakeholders, revised onsite sewage regulations to allow for installation of new types of nitrogen-reducing OSTDS. FDEP, with FDOH participation, conducted public meetings throughout impacted areas to publicize the state's new permitting requirements. As systems are being rolled out, FDOH is establishing a project to monitor new technology by conducting an ongoing evaluation of the previously piloted systems.

Results

- Although the springs are not direct sources of drinking water, improving onsite sewage systems will reduce nitrogen pollution and enhance protection of groundwater. In addition to safeguarding the state's environmental assets, these systems also improve protections for the millions of tourists who visit Florida's springs each year.
- The low-cost OSTDS allows for greater accessibility and improved compliance with the state's new permitting requirements. Cost-effective options reduce the financial burden for new homeowners and businesses. Additionally, the FDEP allocated additional funding to assist with the cost of voluntarily upgrading older conventional septic systems to new ones that are compliant.
- The [work](#) of FDOH and its partners on nitrogen-reducing strategies has been nationally recognized, and in 2016, FDOH's contractor, Hazen and Sawyer, received state and national awards for engineering excellence.

Lessons Learned

- When beginning research on treatment technologies, the legislature and the advisory committee had high hopes for a system that was both inexpensive and highly effective. However, they quickly realized that nitrogen reduction is a complex process and that there was no perfect silver bullet. Thanks to policy decisions made by state legislators, FDOH received the funding necessary to pilot low-cost passive treatment systems and identify viable alternatives to more expensive advanced treatment systems.
- The flat topography in several parts of the state proved to be a challenge for truly passive OSTDS systems that rely on gravity for drainage. While engineers try to minimize energy inputs, systems installed on flat elevation usually required addition of a dosing pump that activated only when needed to move water along. In general, installation costs of a nitrogen-reducing OSTDS are more expensive than conventional septic systems. FDEP decided to provide financial assistance for voluntary upgrades to account for the differential cost.
- The research advisory committee made a point to solicit and address input from the public, which enhanced feedback and credibility of the implementation plan. FDEP has been monitoring nitrogen levels in springs areas and will also conduct assessments every 5 years to evaluate BMAP impacts and progress on water quality.

For additional information, visit:

- [FDOH's nitrogen reduction page](#)
- [FDOH's final nitrogen legislative report](#)
- [Florida Springs and Aquifer Protection Act document](#)
- [FDEP's Springs and Aquifer Protection Act page](#)
- [FDOH's letter to home builders on OSTDS permitting in springs areas](#)

Acknowledgements

Thank you to Dr. Kendra F. Goff, Elke Ursin, and Dr. Eberhard Roeder at the Florida Department of Health for providing the information used to write this success story.

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This publication was supported by the grant or cooperative agreement number, 6 NU38OT000290-01-01, funded by the Centers for Disease Control and Prevention. Its contents are solely the responsibility of the authors and do not necessarily represent the official views of the Centers for Disease Control and Prevention or the Department of Health and Human Services.