**AGENDA REPORT**
**April 24, 2018**

**SUBJECT:**
Septic system moratorium legal opinion

**FISCAL IMPACT:**
Cost to advertise the ordinance

**DEPT/OFFICE:**
County Attorney Office

**REQUESTED ACTION:**
Board direction regarding moratorium on septic systems. Authorization to advertise will be necessary if the Board chooses to pursue a moratorium. The Board will need to determine area the ad should encompass.

**SUMMARY EXPLANATION and BACKGROUND:**
At the April 10, 2018 meeting, the Board considered the annual update to the SOIRL Plan and heard public comment on the need to address nitrogen loading from septic systems. A question arose whether the permitting of new septic systems in proximity to the Indian River Lagoon should be limited. The Board requested a legal opinion on the County's authority to regulate septic systems and whether a moratorium would be feasible.

The short answer is "yes" a moratorium is possible; however, if a County moratorium prohibits all development of the property, it may result in legal claims that the County has taken private property without compensation. Thus, a complete ban on all septic systems could create legal liability, even for a temporary taking. It is difficult to estimate the amount of liability resulting from a moratorium without an extensive study. However, if restrictions are imposed which also allow development to occur through the use of a sewer system, improved septic systems, or increased setbacks from water bodies, the legal risk of a claim of a taking of private property is no longer significant. In addition, a limited moratorium would not result in a Bert Harris Act claim. A temporary impact on development of less than one year is not an inordinate burden on private property rights. (Section 70.001(3)(e)2, Florida Statutes).

If the Board decides to pursue a moratorium, the Board may want to consider advertising the moratorium ordinance as a County wide ordinance (unincorporated and incorporated portions of the County) as permitted by Section 1.7 of the County Charter. Municipalities can enact an ordinance to opt out of a County-wide ordinance should they disagree. If advertised as a County-wide ordinance, the Board can always choose to restrict the application of the moratorium to the unincorporated area at the public hearing.

The Board should also be aware that while the County has home rule authority to enact septic tank regulations, such regulations cannot be inconsistent with state law regarding septic systems. For example, the County could not prohibit all septic systems, but some limitations will be upheld. Stricter local regulations are permissible as long as they do not conflict with minimum state requirements. If a property owner can comply with both a state and local regulation, the local regulation will be upheld.

See attached memo providing further detail and support.

Fiscal Impact: Cost to advertise the ordinance.

**ATTACHMENTS:**

**Description**

- **Moratorium feasibility Summary**

BREVARD County
BOARD OF COUNTY COMMISSIONERS

FLORIDA'S SPACE COAST

**Tammy Rowe,** Clerk to the Board, 400 South Street • P.O. Box 999, Titusville, Florida 32781-0999

Telephone: (321) 637-2001
Fax: (321) 264-6972
Tammy.Rowe@brevardclerk.us

April 25, 2018

MEMORANDUM

TO: Eden Bentley, County Attorney

RE: Item V.A., Septic System Moratorium Legal Opinion

The Board of County Commissioners, in regular session on April 24, 2018, authorized advertisement of a five-month moratorium Countywide on installation of conventional septic tank systems or any system (new or replacement) which does not provide a minimum of 65 percent total nitrogen reduction for the Barrier Islands and within the 50 meters adjacent to the Indian River Lagoon or any connected waterways; directed staff to come back to the Board with regulations and studies on phosphorus or any other contaminants that need to be removed and how to implement this, and any studies that show what the Board needs to take into consideration; directed staff to come back to the Board with the status within two months; directed staff to look at a program where people can replace their system or hook up to sewer using some of the Indian River Lagoon funding, and to have an application process for residents to see what that looks like; and the moratorium to expire when the land development regulations come forward if staff completes them earlier.

Your continued cooperation is always appreciated.

Sincerely,

BOARD OF COUNTY COMMISSIONERS
SCOTT ELLIS, CLERK

Tammy Rowe

Tammy Rowe, Deputy Clerk

cc: Natural Resources Management Director
Utilities Services Director

**County Attorney's Office**
2725 Judge Fran Jamieson Way
Building C, Room 308
Viera, Florida 32940

**BOARD OF COUNTY COMMISSIONERS**

TO: Honorable Rita Pritchett, Chair, and Members of the Board of County Commissioners

FROM: Eden Bentley, County Attorney

SUBJECT: Feasibility of a septic system moratorium – Summary with exhibits

DATE: April 19, 2018

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The Board inquired whether the County can enact a moratorium on new septic systems also known as on site sewage disposal systems. This question arose in the context of reviewing the annual update to the Save Our Indian River Lagoon Plan (SOIRL Plan). This item has been returned to the Board on a fast track basis in case the Board wishes to take action on a moratorium before June. A moratorium must be advertised prior to adoption and multiple hearings are required. In this case, ads would be needed by the end of April.

Attached is a memo providing a detailed legal analysis and explanation of the grounds for a moratorium. See Legal Memorandum Exhibit "A". Typically, a moratorium requires factual and scientific evidence of the public harm and how the benefit of the moratorium outweighs the potential impact to property owners. While the staff has not had time to conduct or obtain studies addressing all areas of the county and all areas where there may be issues with septic systems, the Natural Resources staff immediately noted the SOIRL Plan included analysis of septic system impacts along the Indian River Lagoon system. In short, there are existing studies which could be used to support a moratorium, however the studies are limited to certain areas. More studies could be obtained later which might provide support for a broader approach at a later date. Today's discussion is in the nature of a Phase 1 response based on existing studies and information.

Tetra Tech provided reports which were incorporated in the SOIRL Plan. Nitrogen and phosphorous were identified as factors contributing to the pollution in the Indian River Lagoon System (IRL). Septic systems were studied to determine if the systems contributed nitrogen to the Lagoon. According to the reports incorporated in the SOIRL Plan, septic systems contribute 18.8% of nitrogen into the IRL. (See Exhibit "B")

The attached information indicates there are several types of septic systems and they have different impacts on nitrogen-loading and phosphorous loading. Conventional septic systems (septic tank and drainfield) provide limited treatment for nitrogen reduction. However, there are other enhanced treatment septic systems available (certain ATUs and performance based) which provide 65% nitrogen reduction. Prohibiting conventional septic systems while allowing the enhanced systems could provide immediate additional protections to the Lagoon. (See attached

reports and SOIRL Plan) Thus, an option for the Board is to temporarily prohibit the permitting and installation of new conventional septic systems while allowing the use of systems achieving 65% nitrogen reduction or greater. The studies available, however, only address the changes to nitrogen loading to the Lagoon within a 50 meter distance from the IRL and its tributaries as described below.

Attached at Exhibit "C" is a GIS map prepared by Natural Resources showing the areas in blue that would be within a 50 meter overlay zone; the area that could be subject to a moratorium on conventional septic systems as described above. The mapped area is county-wide. If the Board decides to pursue a moratorium, it may want to consider advertising the moratorium ordinance as a county-wide ordinance (unincorporated and incorporated portions of the county) as permitted by Section 1.7 of the County Charter. Municipalities can enact an ordinance to opt out of a county-wide ordinance should they disagree. If advertised as a county-wide ordinance, the Board can always choose to restrict the application of the moratorium to the unincorporated area at the public hearing.

Costs impacts for different types of septic systems were provided by the Department of Health and are attached at Exhibit "D"

Exhibit "E" provides discussion of different types of Onsite Sewage Treatment and Disposal Systems.

Exhibit "F" provided Ordinance Titles.

Options:

1. Authorize advertisement of a five month moratorium on conventional septic systems or any system which does not provide a minimum of 65% total nitrogen reduction within the 50 meters adjacent to the Indian River Lagoon and connected waterways in the unincorporated area.

2. Authorize advertisement of a five month moratorium on conventional septic systems or any system which does not provide a minimum of 65% total nitrogen reduction within the 50 meters adjacent to the Indian River Lagoon and connected waterways countywide.

3. Direct staff to conduct further studies regarding the impact of septic systems.

4. Take no action.

5. Table for further discussion.

**County Attorney's Office**
2725 Judge Fran Jamieson Way
Building C, Room 308
Viera, Florida 32940

**BOARD OF COUNTY COMMISSIONERS**

EXHIBIT A

To: Honorable Rita Pritchett, Chair, and Members of the Board of County Commissioners

Through: Eden Bentley, County Attorney

From: Diana Yuan, Assistant County Attorney

Subject: Septic tank moratorium research

Date: April 19, 2018

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**Question**: Can the County enact a moratorium on septic tanks?

There are two main legal issues involving a moratorium on septic tanks: What is the likelihood the moratorium will trigger a taking claim? Is the County preempted by the State from enacting a moratorium on septic systems and tanks? These questions are addressed in turn. The last question is: What enactment procedures must be followed to enact a moratorium on septic tanks?

**I.** What is the likelihood a moratorium will trigger a taking claim?

The Florida Constitution and the United States Constitution prohibit the government from taking private property for public use without just compensation. Art. X, § 6(a), Fla. Const.; U.S. Const. art. V. Typically, a taking occurs through eminent domain or a physical invasion of private property. *Lingle v. Chevron U.S.A. Inc.*, 544 U.S. 528 (2005). That is not the case here because a moratorium is not a physical invasion.

Instead, the concern is a taking or inverse condemnation claim which is "a cause of action by a property owner to recover the value of property that has been de facto taken by an agency having the power of eminent domain where no formal exercise of that power has been undertaken." *Ocean Palm Golf Club P'ship v. City of Flagler Beach*, 139 So.3d 463, 471 (Fla. 5th DCA 2014). This is also known as a regulatory taking and can be total or partial. *Town of Ponce Inlet v. Pacetta, LLC*, 226 So. 3d 303, 312 (Fla. 5th DCA 2017). In a total taking (also referred to as a per se taking), the government's regulations "effectively deny *all* economically beneficial or productive use of the property." *Town of Ponce Inlet*, 226 So.3d at 312. In a partial taking (also called an as-applied taking), the Court must evaluate three factors: "(1) the economic impact of the regulation on the claimant; (2) the extent to which the regulation has interfered with distinct investment-backed expectations; and (3) the character of the governmental action." *See Penn Cent.*

*Transp. Co. v. City of New York*, 438 U.S. 104, 124 (1978). A moratorium on septic tanks could trigger an argument that the County has caused a total or partial taking. If a claim for taking is made against the County, a plaintiff would most likely assert both a partial and a total taking in the alternative. The analysis for each follows.

**a.** What is the likelihood that a moratorium on septic tanks would be vulnerable to a claim for a total taking?

A total taking denies all economically beneficial or productive use of the property. *Town of Ponce Inlet*, 226 So.3d at 312. A total taking must consider both the temporal and physical aspects of a property interest. *Tahoe-Sierra Pres. Council, Inc. v. Tahoe Reg'l Planning Agency*, 535 U.S. 302, 303 (2002). "[A] temporary land use regulation could rarely, if ever, completely deprive the landowner of all economically beneficial use." *Leon Cty. v. Gluesenkamp*, 873 So. 2d 460, 466 (Fla. 1st DCA 2004) (*citing Bradfordville Phipps Ltd. P'ship v. Leon Cty.*, 804 So. 2d 464, 471 (Fla. 1st DCA 2001)). "A truly temporary land use injunction or moratorium looks more like a permitting delay than a compensable regulatory taking."*Id.* Therefore, the length of a moratorium can mitigate the likelihood of a total taking.

In Tahoe-Sierra, the Supreme Court held that a 32-month moratorium that denied the property owner of all economically beneficial use of the property did not constitute a compensable total taking. *Tahoe-Sierra*, 535 U.S. at 303. However, the Supreme Court did not set specific guidelines on how long a moratorium could be before it constituted a compensable taking. The Supreme Court did recognize the importance of moratoria as an essential tool of the planning process, suggesting that the more complex the planning decision is – i.e., developing a regional plan – the more reasonable a longer moratorium. *Tahoe-Sierra*, 535 U.S. at 304.

Here, the County wants to enact a moratorium on septic tanks so that it can research and develop a plan to protect the Indian River Lagoon. The County may want the moratorium to apply only to installation of conventional septic tanks or it may want the ban to apply to all septic systems, thereby requiring developers to connect to sewer systems. A moratorium on all septic systems is more likely to be considered a total take. It is not clear if requiring developers to connect to sewer systems would deny all economically beneficial use of the property. That analysis would depend on the location, size, zoning, etc. of the parcel. However, even if such a moratorium did deny all economically beneficial use of the property, limiting the duration of the moratorium can eliminate the likelihood of a total take. A five-month moratorium is almost certainly safe under *Tahoe-Sierra*. Since the County's moratorium is intended to maintain the status quo while County staff researches the best way to mitigate the impact septic systems have on the Indian River Lagoon, it could justify a longer moratorium. As long as the moratorium is temporary, it is not likely to be considered a total take. The potential for a preemption challenge is analyzed in a subsequent section.

**b.** What is the likelihood that a moratorium on septic tanks would be vulnerable to a claim for a partial taking?

A partial taking denies some but not all economically beneficial use of the property. *Town of Ponce Inlet*, 226 So.3d at 312. If the County's moratorium only applies to conventional septic tanks, a developer may argue that this is a partial taking because it denies some economically beneficial use of the property. In a partial taking (also called an as-applied taking), the Court must evaluate three factors: "(1) the economic impact of the regulation on the claimant; (2) the extent to which the regulation has interfered with distinct investment-backed expectations; and (3) the character of the governmental action." *See Penn Cent.*, 438 U.S. at 124.

**i.** What is the economic impact of a moratorium on septic tanks?

In order to satisfy this prong of the analysis, "a plaintiff must establish a serious financial loss from the regulatory imposition." *Gluesenkamp*, 873 So.2d at 467, *citing Bass Enters. Prod. Co. v. United States*, 54 Fed. Cl. 400, 403 (Fed.Cl.2002) (internal citations omitted). Specifically, a plaintiff must present evidence that the fair market value of the property has decreased as a result of the regulation. *Gluesenkamp*, 873 So.2d at 467; *see also Cane Tenn., Inc. v. United States*, 57 Fed. Cl. 115, 123 (Fed.Cl.2003) (holding that the proper measure of economic impact is a comparison of the market value of the property immediately before the governmental action with the market value of that same property immediately after the action). In *Tahoe-Sierra*, the Supreme Court reasoned that "a temporary restriction causing a diminution in value is not, for the property will recover value when the prohibition is lifted." 535 U.S. at 303.

Similar to the analysis of a total take, the temporary nature of a moratorium can prevent it from being a partial take.

**c.** What is the extent to which the moratorium might interfere with distinct investment-backed expectations?

In order to establish an interference with distinct investment-backed expectations, a plaintiff must establish that he or she purchased the property "in reliance on a state of affairs that did not include the challenged regulatory regime." *Loveladies Harbor, Inc. v. United States*, 28 F.3d 1171, 1176 (Fed. Cir. 1994); *Penn Cent.*, 438 U.S. at 124; *Gluesenkamp*, 873 So.2d at 467-468. In *Gluesenkamp*, the County's refusal to issue building permits came after Gluesenkamp purchased the property, but the development of a stormwater management plan had been ongoing for many years. 873 So.2d at 466. Therefore, the Court concluded that, "under the existing regulatory regime, in 1998, any reasonable real estate investor or developer should have anticipated that future restrictive regulations were likely to be imposed and that such

governmental actions might adversely affect development plans." *Gluesenkamp*, 873 So.2d at 467-468.

In our case, plans to improve groundwater and surface water especially those that impact the Indian River Lagoon have been ongoing since the fish kill in 2016. The County has adopted a "Save Our Indian River Lagoon" Ordinance and project plans to "meet water quality targets and improve the health, productivity, aesthetic appeal, and economic value of the lagoon."[1] Management of septic tanks and construction of sewer facilities has been an ongoing topic of discussion before the Board. Under the reasoning in *Gluesenkamp,* it is arguable a reasonable real estate investor or developer should be anticipating a moratorium on septic tanks followed by restrictive regulations that might adversely affect development plans. Since the fish kill and the subsequent establishment of SOIRL and the Indian River Lagoon Council, it may no longer be reasonable for developers and investors to purchase property expecting that the regulatory regime will not change. Additional evidence of these discussions and plans, specifically as they relate to septic tanks, would further bolster the argument that developers should have expected these changes.

**d.** What is the character of the moratorium?

The final prong of a taking action is the character of the government action, which refers to whether the taking is a physical invasion or "some public program adjusting the benefits and burdens of economic life to promote the common good." *Penn Cent.*, 438 U.S. at 124. A taking is more easily established when there is a physical invasion by the government. *Id.* When a public program is alleged to be a taking, Courts weigh the "purpose and importance of the public interest reflected in the regulatory imposition and balance appellees' interests against the County's needs to protect the public." *Gluesenkamp*, 873 So.2d at 468 (internal citations omitted).

A moratorium is not a physical invasion of property. Therefore, the public interest that the moratorium promotes will be balanced against a property owner's interests. In *Gluesenkamp,* the Court held that it was reasonable for the County to refuse to issue building permits because it ordered by a court to comply with the Comprehensive Plan in dealing with developmental impacts on stormwater and it reasonably responded by refusing to issue building permits. *Id.* The County's situation is different and does not involve court-ordered compliance with the Comprehensive Plan. To support the County's moratorium on septic tanks, there would need to be factual and scientific evidence of the public harm caused by septic tanks and how the benefit of a moratorium outweighs the potential impact to property owners and development.

[1] http://www.brevardfl.gov/SaveOurLagoon/Home

**Conclusion**

Thus, a taking claim – partial or total – is less probable the shorter the moratorium is. Five months is almost certainly reasonable, while one year is less certain. The complexity of the proposed development plan may justify a longer moratorium.

**II.** Preemption

The County has broad powers to enact local ordinances that are not inconsistent with general laws. Art. VIII, §1(g), Fla. Const. A local regulation may be deemed inconsistent with state statutes if the state legislature has preempted a particular subject area or if the local regulation conflicts with state statute. *Sarasota All. For Fair Elections, Inc. v. Browning*, 28 So. 3d 880, 886 (Fla. 2010). "Express preemption of a field by the Legislature must be accomplished by clear language stating that intent." *Id* (internal citations omitted).

Section 381.0065, Florida Statutes, regulates use of onsite sewage treatment and disposal systems (OSTDS). This section does not contain clear preemption language. In fact, Section 381.0065(4)(r), Florida Statutes, specifically provides that "[n]othing in this section limits the power of a municipality or county to enforce other laws for the protection of the public health and safety." This supports the argument that the state did not preempt the County from regulating OSTDS and the County can pass reasonable regulations to protect the public health and safety. However, any regulation or moratorium the County enacts cannot conflict with state statute, otherwise it will be preempted.

**a.** Will a moratorium on septic tanks conflict with state statute?

A Septic tank is a type of onsite sewage treatment and disposal system (OSTDS). OSTDS is defined in §381.0065(1)(k), Florida Statutes, 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.
>
> This definition includes many types of onsite sewage treatment systems. The most common and the most affordable system is a

> conventional septic tank. A common alternative to conventional septic tanks is an aerobic treatment unit.

§ 381.0065(1)(b) provides that:

> It is the intent of the Legislature that where a publicly owned or investor-owned sewerage system is not available, the [Department of Health] shall issue permits for the construction, installation, modification, abandonment, or repair of onsite sewage treatment and disposal systems under conditions as described in this section and rules adopted under this section. It is further the intent of the Legislature that the installation and use of onsite sewage treatment and disposal systems not adversely affect the public health or significantly degrade the groundwater or surface water.

The purpose of the statute is to allow the Department of Health to issue permits for OSTDS when sewer is not available without harming the public health or groundwater and surface water. The statute goes on to define "available":

> [A]s applied to a publicly owned or investor-owned sewerage system, means that the publicly owned or investor-owned sewerage system is capable of being connected to the plumbing of an establishment or residence, is not under a Department of Environmental Protection moratorium, and has adequate permitted capacity to accept the sewage to be generated by the establishment or residence; and:
>
> 1. For a residential subdivision lot, a single-family residence, or an establishment, any of which has an estimated sewage flow of 1,000 gallons per day or less, a gravity sewer line to maintain gravity flow from the property's drain to the sewer line, or a low pressure or vacuum sewage collection line in those areas approved for low pressure or vacuum sewage collection, exists in a public easement or right-of-way that abuts the property line of the lot, residence, or establishment.
>
> 2. For an establishment with an estimated sewage flow exceeding 1,000 gallons per day, a sewer line, force main, or lift station exists in a public easement or right-of-way that abuts the property of the establishment or is within 50 feet of the property line of the establishment as accessed via existing rights-of-way or easements.
>
> 3. For proposed residential subdivisions with more than 50 lots, for proposed commercial subdivisions with more than 5 lots, and

> for areas zoned or used for an industrial or manufacturing purpose or its equivalent, a sewerage system exists within one-fourth mile of the development as measured and accessed via existing easements or rights-of-way.
>
> 4. For repairs or modifications within areas zoned or used for an industrial or manufacturing purpose or its equivalent, a sewerage system exists within 500 feet of an establishment's or residence's sewer stub-out as measured and accessed via existing rights-of-way or easements.
>
> § 381.0065(2)(a), Fla. Stat.

Read together, § 381.0065(1)(b) and § 381.0065(2)(a) provide that if public sewer is not available, the Department of Health shall issue permits for OSTDS. However, the Department does not have to issue permits for the installation and use of OSTDS if it would adversely affect the public health or significantly degrade the groundwater or surface water. Additional research and evidence about the impact of septic tanks on public health, groundwater, and surface water, would support the County's authority to enact regulations protecting the public health and safety and the Department's ability to refuse to issue permits for septic tanks.

**Conclusion**

There is no express preemption of OSTDS regulation to the state. In fact, the County is specifically allowed to enforce regulations for public health and safety. However, any County moratorium must not conflict with state law. A moratorium on conventional septic tanks – that is supported by research and evidence – would probably not conflict with state statute because there are other types of OSTDS that would still be allowed, specifically, aerobic septic systems could be installed instead of septic tanks. The Department would probably agree that it should not issue permits in that situation. If the County's moratorium applied to all OSTDS, it would effectively require all developments to connect to public sewer regardless of availability. This may not be technically preempted, but the Department may not be willing to stop issuing permits for all OSTDS. However, sufficient evidence may be convincing.

**III.** Bert Harris Claims Private Property Protection

The Bert Harris Act provides a separate cause of action for damages due to an inordinate burden on private property rights. However, a moratorium for less than 1 year is excluded so damages cannot be claimed under Bert Harris for a short term moratorium. Section 70.001(3)(e)(2), Florida Statutes (2017).

**IV.** Advertisement

County ordinances which substantially impair the use of land must be enacted with the formality required under Section 125.66, Florida Statutes, the statute which governs enactment of County zoning ordinances. *City of Sanibel v. Buntrock*, 409 So.2d 1073 (Fla. 2d DCA 1981). The effect on land use "must be something more than merely incidental for the ordinance to be classified as one which affects the use of land." *Galaxy Fireworks, Inc. v. City of Orlando*, 842 So. 2d 160, 165–66 (Fla. 5th DCA 2003) (internal citations omitted). Building codes, construction codes, and impact fees usually are not considered ordinances that affect the use of land. *Fountain v. City of Jacksonville*, 447 So.2d 353, 355 (Fla. 1st DCA 1984).

> Examples of ordinances that substantially affect land use can be found in *Daytona Beach*, 539 So.2d 597 (minimum distance between business selling alcohol and residential area); *Fountain v. City of Jacksonville*, 447 So.2d 353 (Fla. 1st DCA 1984) (prohibiting building of homes in area around air field, despite residential zoning classification); *City of Sanibel*, 409 So.2d 1073 (temporary moratorium on building); *Ellison v. City of Ft. Lauderdale*, 183 So.2d 193 (Fla.1966) (prohibiting the keeping of horses); *City of Miami Beach v. State*, 108 So.2d 614 (Fla. 3d DCA 1959) (changing setback and height restrictions on new buildings). *3299 N. Fed. Highway, Inc. v. Bd. of Cty. Comm'rs of Broward Cty.*, 646 So. 2d 215, 224 (Fla. 4th DCA 1994), opinion clarified (Nov. 29, 1994).

A moratorium on conventional septic tanks is less likely to be considered a substantial impact on use of land than a moratorium on all septic tanks or systems. A moratorium on conventional septic tanks still allows a developer to use a system achieving a 65% reduction in total nitrogen to support the use on his property, whatever it may be. However, a moratorium on all septic tanks or systems could eliminate an owner's use of his/her property – whether commercial or residential – if no sewer line is close enough to connect to. Both commercial and residential uses can require sewerage treatment and if both sewer and septic are unavailable, that would likely be a substantial impact on the use of land.

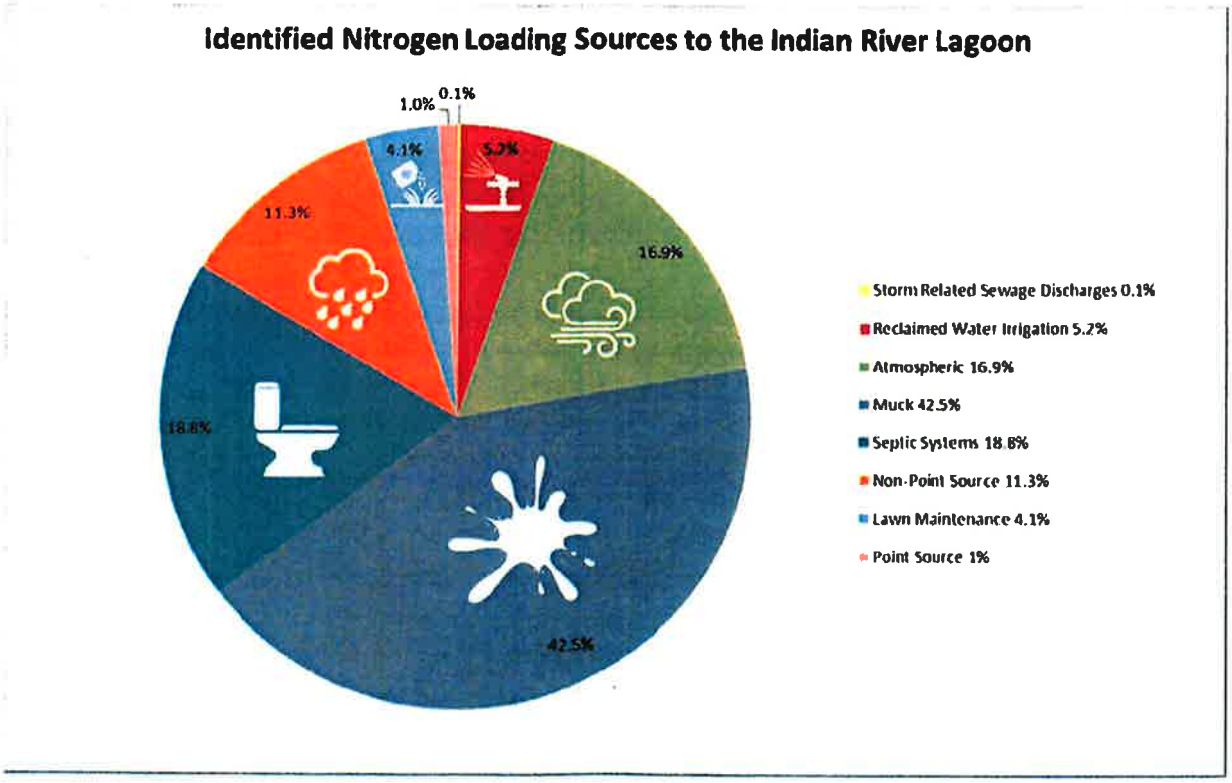
**Conclusion**

Since the case law is not clear about whether a moratorium on septic tanks is a substantial impairment of the use of land, it is better to err on the side of caution and follow the procedures in Section 125.66, Florida Statutes. The slight effort required outweighs the benefit of avoiding the potential for litigation.

**EXHIBIT B**

Summary of Scientific Support

Tetra Tech's conclusions of nitrogen loading sources in the IRL are depicted as:




- Tetra Tech relied on two studies which measured nitrogen loading from 50 meters and 200 meters (55 yards is approximately 50 meters).[1] See section 4.1.4 SOIRL Plan 2018 Update, March 2018. Based on these studies Tetra tech concluded "one septic system within 55 yards of a surface waterbody contributes 27 pounds of TN (total nitrogen) per year."
- There are several types of septic systems and they have different impacts on nitrogen-loading and phosphorous loading. "Conventional" septic systems include a septic tank and subsurface soil dispersal system. Solids are removed from sewage in the septic tank, and the clarified effluent is discharged underground, where natural physical, chemical, and biological processes

[1] Sayemuzzaman, Mohammad and Ming Ye. August 2015. Estimation of Nitrogen Loading from Converted Septic Systems (2013-14 and 2014-15) to Surface Waterbodies in Port St. Lucie, FL. Department of Scientific Computing, Florida State University. Prepared for the Florida Department of Environmental Protection. Tallahassee, Florida; Florida Department of Health (FDOH). 2015. Florida Onsite Sewage Nitrogen Reduction Strategies Study, Final Report.

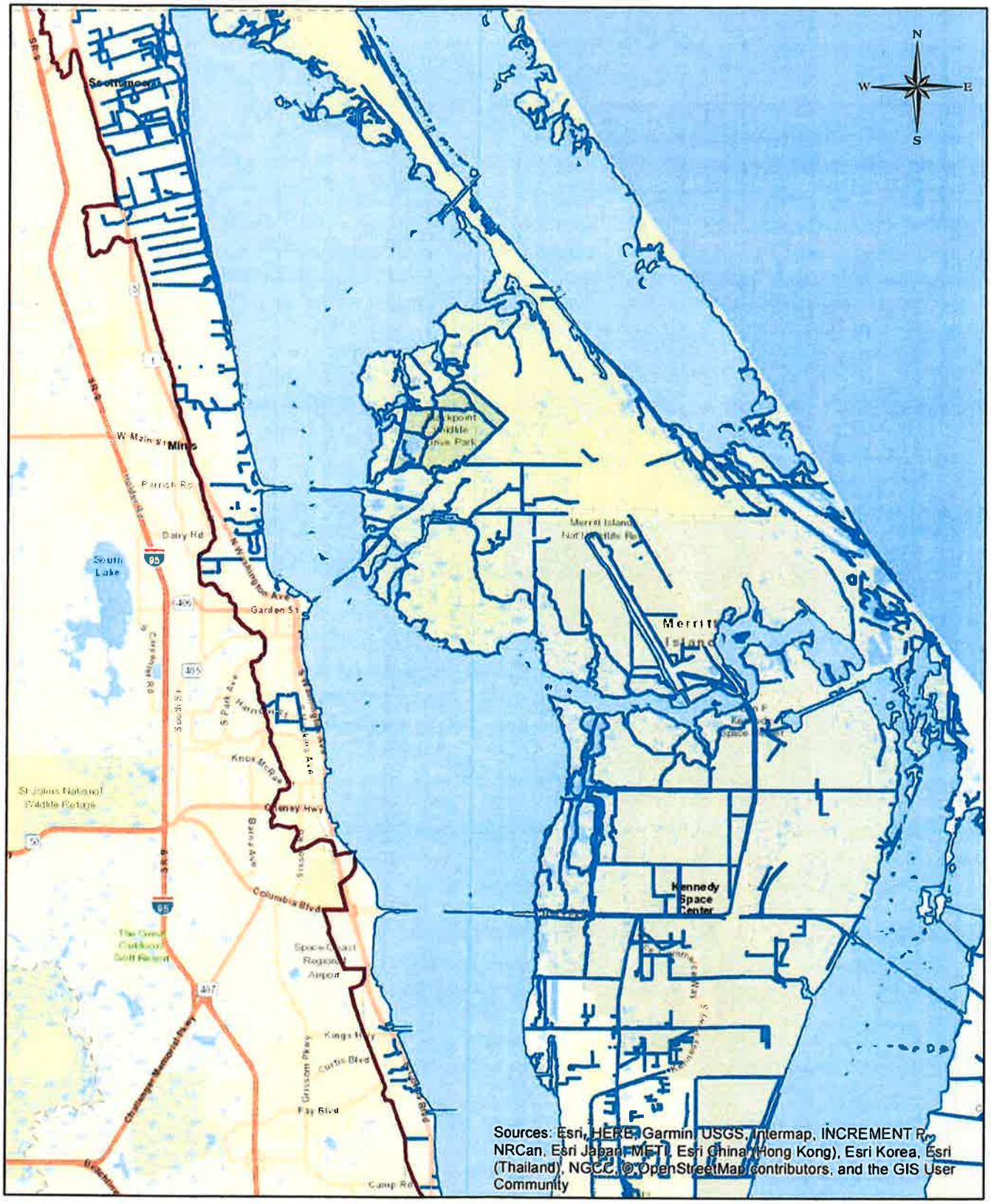
provide additional treatment in the soil. [2] NRM staff indicates that, based on scientific literature, a properly functioning conventional septic system reduces total nitrogen (TN) from 30-40%. In adverse conditions, reduction has been measured at 0-20%. The best available studies estimate a 10% reduction in nitrogen within a properly maintained tank versus an improperly maintained tank. The remaining 20-30% of nitrogen removal occurs in a properly located and functioning drainfield.

- There are enhanced treatment septic systems designed to specifically provide 65% nitrogen reduction through multi-stage treatment processes. Fn. 2. According to the Tetra Tech and Brevard County Health Department, enhanced septic systems, such as aerobic treatment unit model ATU NSF Standard 245 and engineered performance based systems can achieve 65% reduction in total nitrogen and would provide significant nitrogen reduction results in these areas.
- Areas within or beyond these distances were not studied for types of reductions in nitrogen loading but could be studied in the future

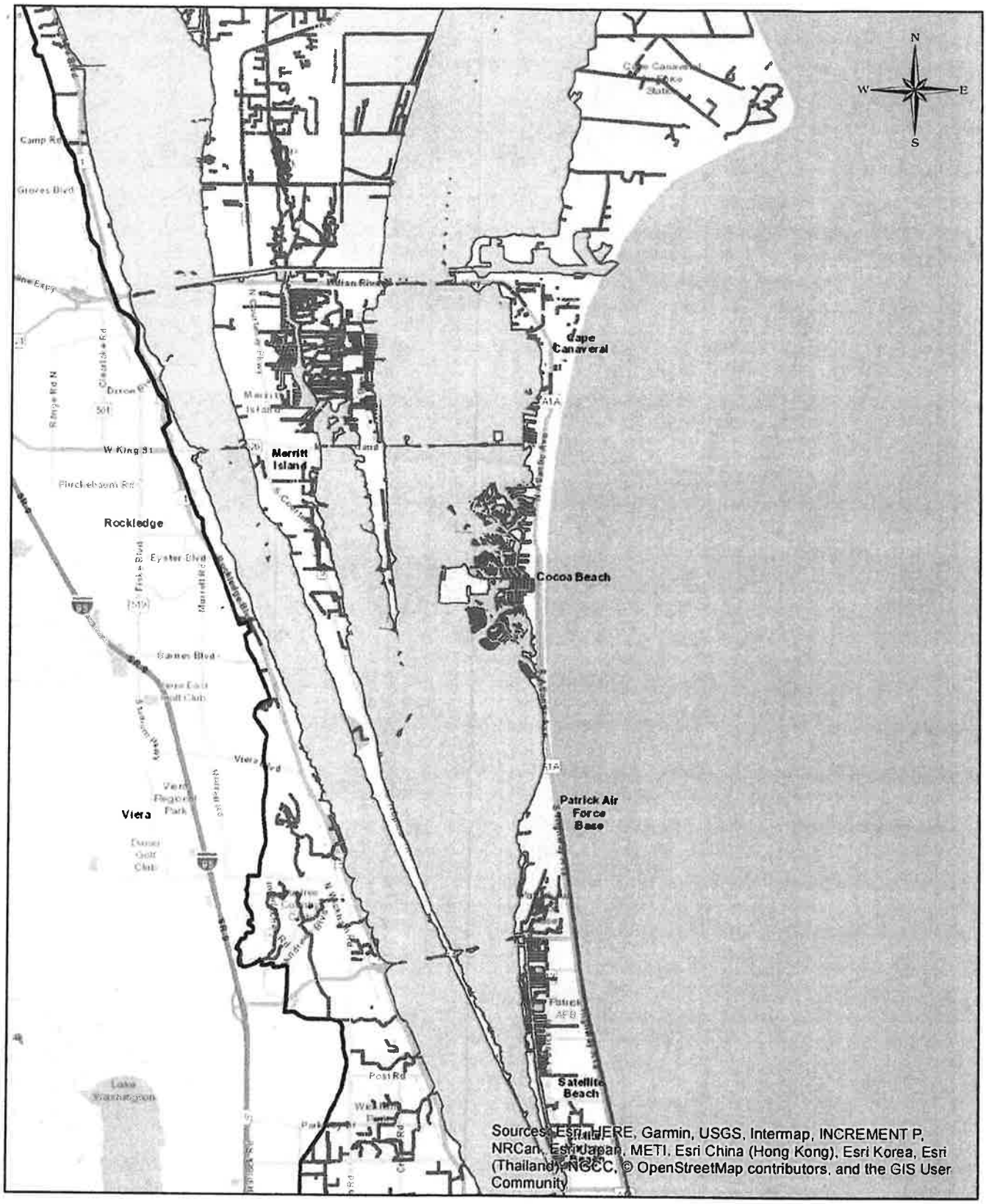
[2] "Achieving Nitrogen Loading Reduction through Onsite Wastewater Treatment Technologies." Florida Onsite Wastewater Association, Inc.

EXHIBIT C

# 50 Meter Overlay along IRL and Connected Water Bodies



# 50 Meter Overlay along IRL and Connected Water Bodies



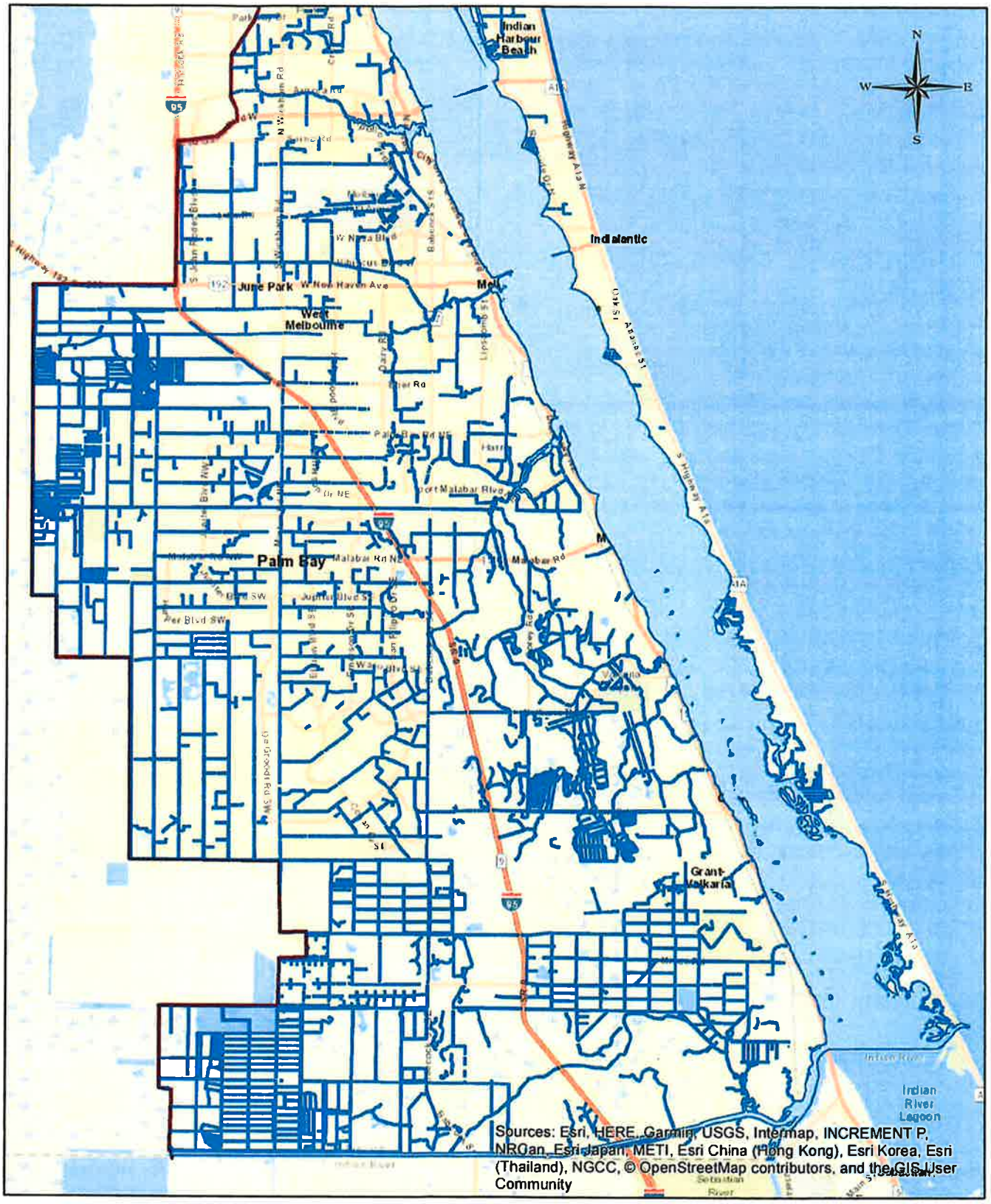

50m Overlay

Watershed Divide

Miles

0 2 4

# 50 Meter Overlay along IRL and Connected Water Bodies




50m Overlay

Watershed Divide

Miles

0 2 4

EXHIBIT D

Septic system costs per the Department of Health.

The Department of Health reports that 201 new septic system permits have been issued in Brevard the first quarter of 2018. The breakdown of the type of system and location is not readily available at this time. Below are installation cost comparisons of available systems:

| | |
|---|---|
| Conventional septic systems: | $7,000 to $8,000 |
| ATU NSF 245: | $10,000 to $12,000 |
| Performance-based: | 12,000+ depending on site conditions |

The Department of Health indicates additional septic systems which can meet a 65% total nitrogen reduction requirement are anticipated to be available on the market in the foreseeable future. The enhanced septic systems typically require biannual maintenance inspection permits and some instances monitoring.

Exhibit E

# Achieving Nitrogen Loading Reduction through Onsite Wastewater Treatment Technologies

*The Florida Onsite Wastewater Association (FOWA) prepared this document to describe the capabilities and benefits of nitrogen-reducing onsite wastewater treatment technologies, which can be a key component of Florida's strategy to reduce nitrogen loading.*

## About FOWA

FOWA is the state's largest organization for the onsite wastewater industry. Its mission is to promote the science and art of manufacturing and installing onsite sewage treatment and disposal systems (OSTDS). Furthermore, FOWA seeks to advance the standards of manufacturing, installing, repairing, and maintaining onsite treatment receptacles by working toward a uniformly enforced state code containing stringent standards for the design, installation, and service of OSTDS. It does so with a commitment to protecting public health, water resources, and the environment, including the reduction in nutrient loading to Florida's waters.

Questions and requests for additional information should be directed to FOWA Executive Director Roxanne Groover, at rgroover@fowaonsite.com or (321) 363-1590.

## Decentralized vs. Centralized Wastewater Treatment Systems

Decentralized wastewater treatment systems, also referred to as "septic" or "onsite" systems, are named based on the location of the system, as they treat wastewater proximal to its generation source. The Florida Legislature and Florida state regulatory agencies refer to these systems collectively as OSTDS. "Onsite" systems are located on the property where a single-family home, apartment, business, or other source of domestic wastewater originates. The term "decentralized" includes wastewater treatment systems serving multiple sources of domestic wastewater, large-capacity septic systems, and small collection and treatment systems (United States Environmental Protection Agency [USEPA], 2005). Like onsite systems, decentralized systems also treat wastewater proximal to the generation source, but not necessarily on the property where it originates, as a localized piped collection system may be present, leading to a single point of treatment. Both onsite and decentralized wastewater treatment systems receive periodic maintenance, but do not require full-time staffing for effective and reliable function.

In contrast with decentralized wastewater treatment systems, centralized wastewater treatment facilities typically collect wastewater from hundreds to thousands of individual sources spread across a far more expansive municipality or urban or suburban area. Collected wastewater is typically processed in a multi-stage industrial-type facility operated by full-time staff. Centralized wastewater treatment systems typically discharge treated wastewater to surface water bodies.

## USEPA Report to Congress

In April 1997, the USEPA developed its "Response to Congress on Use of Decentralized Wastewater Treatment Systems". In this document, the USEPA states "adequately managed decentralized wastewater systems are a cost-effective and long-term option for meeting public health and water quality goals". USEPA also states that decentralized systems can protect public health and the environment, typically have lower capital and maintenance costs for rural communities, are appropriate for varying site conditions, and are suitable for ecologically sensitive areas when adequately managed (USEPAa and b, 2017). USEPA states (2005) that decentralized systems protect human health and water quality when they are properly sited, designed, installed, operated and maintained.

Nationally, decentralized systems serve 25% of the U.S. population, and are used in about one-third of all new housing and commercial development. In Florida, approximately 30% of residents are served by decentralized

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systems. While decentralized systems are typically utilized in rural areas, more than half of the 25 million systems in the United States are found in suburban areas (USEPA, 2005). The Florida Department of Health (FDOH) estimates that over 2.7 million OSTDS are currently operating in the State of Florida (Hazen and Sawyer, 2015a).

**Onsite Nitrogen-Reducing Technologies**

Decentralized wastewater treatment systems can include varying levels of scale and complexity. The simplest design approved by the FDOH, referred to herein as a "conventional" OSTDS, includes a septic tank and subsurface soil dispersal system. Solids are removed from sewage in the septic tank, and the clarified effluent is discharged underground, where natural physical, chemical, and biological processes provide additional treatment in the soil. Conventional OSTDS are capable of 30% to 40% influent total nitrogen reduction (Florida Department of Environmental Protection [FDEP], 2015 and Hazen and Sawyer, 2015a). Various environmental processes transform nitrogen in the subsurface, such as denitrification, nitrification of ammonia, uptake by vegetation, and mineralization of organic nitrogen (FDEP, 2015).

OSTDS designed specifically to convert nitrogen in sewage to nitrogen gas, thereby reducing nitrogen loading, typically include multi-stage treatment processes, as compared to the simplicity of a conventional OSTDS. Nitrogen-reducing wastewater treatment systems convert incoming nitrogen to nitrogen gas in a three-step biological process.

1. Organic nitrogen is converted to ammonia-nitrogen ($NH_4$) by a mostly anaerobic (absence of oxygen in the wastewater) process called ammonification.
2. Ammonia-nitrogen ($NH_4$) is converted to nitrate-nitrogen ($NO_3$) by an aerobic (presence of dissolved oxygen in wastewater) biological process called nitrification.
3. Nitrate-nitrogen ($NO_3$) is converted to nitrogen gas ($N_2$) biologically in a low-oxygen (anoxic) environment. During denitrification, nitrogen gas bubbles harmlessly out of wastewater into the atmosphere.

This three-step process can be performed using both passive and active treatment technologies. In the process of reducing nitrogen, these systems simultaneously reduce organic matter dissolved and suspended in the wastewater, as measured using to water-quality parameters, biochemical oxygen demand and total suspended solids.

Passive Treatment Technologies

Passive nitrogen-reducing OSTDS are like conventional onsite systems in their operation and maintenance. A passive nitrogen removal system is an OSTDS that reduces effluent nitrogen using no mechanical aeration and only a single liquid pump for energy inputs, and uses reactive media for denitrification. A typical passive OSTDS consists of a layered soil and carbon-containing reactive media, where wastewater flows vertically through the horizontal layers, undergoing the three-step treatment process as it flows to a point of subsurface discharge. This class of OSTDS has been demonstrated to achieve total nitrogen removal rates exceeding 95% (Hazen and Sawyer, 2015a) at the pilot scale and on the order of 50% on an occupied single-family home (FDEP, 2017).

Active Treatment Technologies

Active nitrogen-reducing OSTDS typically include mechanical processing equipment installed in one or more subsurface tanks, where wastewater enters the system, is treated within the tank(s) during a defined residence time, and is discharged, meeting a specified standard. Typical unit processes include solids separation, aeration to increase the dissolved-oxygen concentration of the wastewater, mixing, and recirculation of wastewater within tank compartments. Some systems include the addition of a carbon source to promote microbiological denitrification.

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Active nitrogen-reducing OSTDS include electric pumps and air blowers that can be energized on standard residential electric service. This class of OSTDS has been demonstrated to reliably achieve total nitrogen removal rates in the 50 to 90% range.

**Onsite Nitrogen-Reducing Capabilities**

The degree to which an individual OSTDS can biologically remove nitrogen is subject to multiple factors, including the forms of nitrogen present in wastewater, presence of substrate and carbon sources to support microbial ammonification, nitrification, and denitrification, wastewater alkalinity, residence time in the system, and water temperature. These factors, combined with the specific technology used at an individual site, define the site-specific nitrogen-reduction level. Site-specific requirements for nitrogen reduction in Florida vary according to requirements imposed by Florida regulatory agencies, such as achieving a specified total maximum daily load as part of a Basin Management Action Plan or achieving performance-based treatment system requirements under the Florida Administrative Code (FAC). Effluent discharged from performance-based treatment systems must meet the following treatment standards for total nitrogen concentration:

- Advanced secondary: 20 milligrams per liter (mg/L);
- Advanced wastewater: 3 mg/L; and
- Florida Keys: 10 mg/L.

It must be noted that the aforementioned nitrogen treatment standards are applied at the discharge point of an active treatment system. Upon dispersal of the treated effluent to the native soil, additional nitrogen treatment occurs through plant uptake and soil attenuation. Plant uptake and soil attenuation can be up to 40% of the concentration when dispersed in the subsurface (FDEP, 2015).

In terms of active nitrogen-reducing OSTDS that typically include mechanical processing equipment, the FDOH lists 14 manufacturers of nutrient-reducing performance-based treatment systems on its web site (FDOH, 2017a). While most products are active systems that include mechanical equipment, the list also includes two reactive media- or filter-type technologies. The nitrogen-reducing capability of these systems ranges from 44 to 86%, measured based on the influent and effluent total nitrogen concentration (FDOH, 2017a).

In 2008, the Florida Legislature directed the FDOH to develop a tool box of cost-effective nitrogen-reduction strategies for OSTDS. The project had two main areas of focus: development of passive nitrogen reduction technologies; and evaluation and prediction of the fate and transport of nitrogen from OSTDS (FDOH, 2017b). The passive nitrogen reduction technology development effort began with bench-scale, layered soil and reactive media systems that demonstrated the ability to remove over 95% of influent nitrogen from wastewater. As reported by Hazen and Sawyer, an environmental engineering and consulting firm and the FDOH project contractor, these systems were subsequently transitioned to larger, pilot-scale units designed with various soil and reactive-media combinations (Edeback-Hirst, 2012). The pilot-scale systems achieved total nitrogen removal rates exceeding 95% (Hazen and Sawyer, 2015a). This program continued under an FDEP program where layered reactive media were installed beneath a conventional septic system drainfield (FDEP, 2016). A monitored installation from which nitrogen-reduction data are available has initially demonstrated the ability of the system to reduce total nitrogen concentrations by up to 50% using passive, non-electric technology that does not require more maintenance than a conventional septic system (FDEP, 2017).

Two wastewater treatment standards exist for assessing and certifying the treatment capability of OSTDS. Under 64E-6.026, FAC, a manufacturer applying for approval of a nitrogen-reducing OSTDS must submit compelling evidence that the system will function properly and reliably to meet performance-based treatment system requirements, which may include testing approved through the NSF Environmental Technology Verification Program. The NSF/ANSI 40 standard provides a means of assessing treatment system capabilities for effectively

EXHIBIT F

**Option 1: Unincorporated**

**AN ORDINANCE ESTABLISHING A 150 DAY TEMPORARY MORATORIUM ON THE USE OF ONSITE SEWAGE TREATMENT AND DISPOSAL SYSTEM (OSTDS) OR CONVENTIONAL SEPTIC SYSTEM WITHIN 50 METERS OF THE INDIAN RIVER LAGOON SYSTEM AND TRIBUTARIES THAT IS NOT DESIGNED TO ACHIEVE A 65% REDUCTION OF TOTAL NITROGEN; PROVIDING AN EXPIRATION DATE PROVIDING FOR AREA ENCOMPASSED AS THE UNINCORPORATED AREA; PROVIDING FOR AN EFFECTIVE DATE.**

**Option 2: Countywide**

**AN ORDINANCE ESTABLISHING A 150 DAY TEMPORARY MORATORIUM ON THE USE OF AN ONSITE SEWAGE TREATMENT AND DISPOSAL SYSTEM (OSTDS) OR CONVENTIONAL SEPTIC SYSTEM WITHIN 50 METERS OF THE INDIAN RIVER LAGOON SYSTEM AND TRIBUTARIES THAT IS NOT DESIGNED TO ACHIEVE A 65% REDUCTION OF TOTAL NITROGEN; PROVIDING AN EXPIRATION DATE PROVIDING FOR AREA ENCOMPASSED AS COUNTY WIDE ALL MUNICIPALITIES AND THE UNINCORPORATED AREA; PROVIDING FOR AN EFFECTIVE DATE.**