

## 2017 Model Practices

### Applicant Information

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### Model Practice Title

Please provide the name or title of your practice: \*

Lower St. Johns River Septic Tank Enforcement Project

### Practice Categories

Model and Promising Practices are stored in an online searchable database. Applications may align with more than one practice category. Please select all the practice areas that apply.: \*

- |   |   |   |  |   |
|---|---|---|--|---|
| <input type="checkbox"/> Access to Care   | <input type="checkbox"/> Advocacy and Policy Making       | <input type="checkbox"/> Animal Control                 | <input type="checkbox"/> Coalitions and Partnerships     | <input type="checkbox"/> Communications/Public Relations      |
| <input type="checkbox"/> Community Involvement  | <input type="checkbox"/> Cultural Competence              | <input type="checkbox"/> Emergency Preparedness         | <input checked="" type="checkbox"/> Environmental Health | <input type="checkbox"/> Food Safety                          |
| <input type="checkbox"/> Global Climate Change  | <input type="checkbox"/> Health Equity                    | <input type="checkbox"/> HIV/STI                        | <input type="checkbox"/> Immunization                    | <input type="checkbox"/> Infectious Disease                   |
| <input type="checkbox"/> Informatics  | <input type="checkbox"/> Information Technology           | <input type="checkbox"/> Injury and Violence Prevention | <input type="checkbox"/> Marketing and Promotion         | <input type="checkbox"/> Maternal-Child and Adolescent Health |
| <input type="checkbox"/> Organizational Practices   | <input type="checkbox"/> Other Infrastructure and Systems | <input type="checkbox"/> Organizational Practices       | <input type="checkbox"/> Primary Care                    | <input type="checkbox"/> Quality Improvement                  |
| <input type="checkbox"/> Research and Evaluation  | <input type="checkbox"/> Tobacco                          | <input type="checkbox"/> Vector Control                 | <input type="checkbox"/> Water Quality                   | <input type="checkbox"/> Workforce                            |
| <input type="checkbox"/> Conference Theme: Bridging Clinical Medicine and Population Health |   |   |  |   |

Other::

Is this practice evidence based, if so please explain. :

### Winnable Battles

To keep pace with emerging public health challenges and to address the leading causes of death and disability, CDC initiated an effort called Winnable Battles to achieve measurable impact quickly. Winnable Battles are public health priorities with large-scale impact on health and known effective strategies to address them. Does this practice address any CDC's seven Winnable Battles? If so, please choose from the following:: \*

- |   |  |  |                                  |   |
|---|--|--|----------------------------------|---|
| <input type="checkbox"/> Food Safety            | <input type="checkbox"/> HIV in the U.S. | <input type="checkbox"/> Nutrition, Physical Activity, and Obesity | <input type="checkbox"/> Tobacco | <input type="checkbox"/> Healthcare-associated Infections |
| <input type="checkbox"/> Motor Vehicle Injuries | <input type="checkbox"/> Teen Pregnancy  | <input checked="" type="checkbox"/> None                           |                                  |   |

Overview: Provide a brief summary of the practice in this section (750 Word Maximum)

**Your summary must address all the questions below:**

- Brief description of LHD- location, demographics of population served in your community
- Describe public health issue
- Goals and objectives of the proposed practice
- How was the practice implemented/activities
- Results/Outcomes (list process milestones and intended/actual outcomes and impacts.
  - Were all of the objectives met?
  - What specific factors led to the success of this practice?
- Public Health impact of practice
- Website for your program, or LHD.

**750 Word Maximum**

The Lower St. Johns River Septic Tank Enforcement Project identifies and remedies failing septic systems that may be contributing fecal coliforms to the St. Johns River and its tributaries. The primary goals of this project are: • Improved water quality trends in the tributaries of the Lower St. Johns River that also will help improve water quality in the main stem of the river • Decreased loading (levels) of the target pollutant, fecal coliform • Enhanced public awareness of fecal coliform sources and impacts on water quality • Enhanced effectiveness of corresponding corrective actions by stakeholders • Enhanced understanding of basin hydrology, water quality, and pollutant sources • The ability to evaluate management actions, estimate their benefits, and identify additional pollutant sources The main objectives of this project are: • To protect the surface waters of the Lower St. John's River and its tributaries through the enforcement of the State of Florida statutes, rules, and regulations governing Onsite Sewage Treatment and Disposal Systems (OSTDS) • To protect the public's health In order to accomplish these goals and objectives, nonpoint source pollution issues, especially failing residential and commercial septic tank systems in impaired watersheds, must be resolved. Through the use of door-to-door surveys and public outreach, the Florida Department of Health in Duval County (DOH-Duval) has ensured that all failing septic systems that may be impacting local water quality are brought back into compliance, and owners of septic systems are educated on how to properly use and maintain their systems.

**Demographics** Information for Duval County, Florida: Duval County is located in the northeast region of Florida. It covers 918 square miles including all land and water, is home to 913,010 people, and contains two of the largest Naval Bases in the southeast U.S. The 2015 U.S. Census reports that the population of Duval County is 61.8% White, 30.1% Black, and 8.9% Hispanic. The median household income in Duval County is \$47,582 and 18.2% of the population is below the poverty line. The median age in Duval County is 35 years old. Under Section 303(d) of the federal Clean Water Act, every two years each state must identify its "impaired" waters, including estuaries, lakes, rivers, and streams that do not meet their designated uses and are not expected to improve within the subsequent two years. Florida's 303(d) list identifies hundreds of water segments that fall short of water quality standards. The three most common water quality concerns are fecal coliform, nutrients, and oxygen-demanding substances. In Duval County, 75 local tributaries are considered impaired for fecal coliform. The purpose of this project is to implement load reduction strategies, specific to Onsite Sewage Treatment and Disposal Systems (OSTDS), to reduce the potential for fecal coliform impact in Lower St. Johns River Basin tributaries. OSTDS were deemed, by the environmental engineering firm Post, Buckley, Schuh & Jernigan, to be one of the most probable sources of fecal coliform. Because approximately 1/3 of Duval's residents and commercial properties rely on OSTDS for sewage disposal, this project focuses on the 75 local tributaries that are considered impaired for fecal coliform. Potential contaminants that degrade the quality of surface and groundwater resources as a result of septic system failure include disease causing bacteria, infectious viruses, household chemicals, and nutrients (nitrates and phosphates). These contaminants present a public health threat to the community. This project identifies old and malfunctioning septic systems to enforce their abandonment, repair, modification, replacement or connection to a central sewerage system. The identification process includes the door-to-door inspections of septic systems in communities that have a documented history of septic system failures and the investigation of public complaints regarding septic systems in local impaired watersheds. Chapters 381 and 386, FS, and Chapter 64E-6, FAC, is the basis for taking action in all cases involving malfunctioning systems and the pollution of direct or indirect sewage discharge into the St. Johns River or its tributaries.

**Results and Outcomes** The goals and objectives of this project are achieved by focusing on pollution reduction strategies through OSTDS inspection, enforcement, and education. The water quality impacts are based on several fundamental assumptions about the pollutants targeted, modeling approaches, waterbody responses, and natural processes. However, it is difficult to determine quantitative load reductions expected from the project's management actions to decrease fecal coliform due to a lack of literature values and high variability. Therefore, the benefits of these management actions, such as door-to-door inspections and public outreach initiatives, were evaluated on a qualitative basis matching elimination, reduction, and prevention activities to known or potential sources. Public Health Impacts The effects of public awareness should result in an increased number of homeowners having their septic systems pumped out and inspected on a regular basis, more efficient water usage, a decrease in hazardous chemicals being discarded into septic systems, and better maintenance of OSTDS in general. It is expected that these effects will be observed long after the end of this project which should aid in further reductions of fecal coliform bacteria from OSTDS. Website: <http://duval.floridahealth.gov/>

## Responsiveness and Innovation

A Model Practice must be responsive to a particular local public health problem or concern. An innovative practice must be (1) **new to the field of public health (and not just new to your health department)** OR (2) **a creative use of an existing tool or practice**, including but not limited to use of an Advanced Practice Centers (APC) development tool, The Guide to Community Preventive Services, Healthy People 2020 (HP 2020), Mobilizing for Action through Planning and Partnerships (MAPP), Protocol for Assessing Community Excellence in Environmental Health (PACE EH). Examples of an inventive use of an existing tool or practice are: tailoring to meet the needs of a specific population, adapting from a different discipline, or improving the content.

- Statement of the problem/public health issue
  - What target population is affected by problem (please include relevant demographics)
    - What is the target population size?
    - What percentage did you reach?
  - What has been done in the past to address the problem?
  - Why is the current/proposed practice better?
  - Is current practice innovative? How so/explain?
    - Is it new to the field of public health
- OR**
- Is it a creative use of existing tool or practice:

What tool or practice did you use in an original way to create your practice? (e.g., APC development tool, The Guide to Community Preventive Services, HP 2020, MAPP, PACE EH, a tool from NACCHO's Toolbox etc.)

- Is the current practice evidence-based? If yes, provide references (Examples of evidence-based guidelines include the Guide to Community Preventive Services, MMWR Recommendations and Reports, National Guideline Clearinghouses, and the USPSTF Recommendations.)

## 2000 Word Maximum

Please state the Responsiveness and Innovation of your practice (2000 Word Maximum) : \*

Florida's 303(d) list identifies hundreds of water segments that fall short of water quality standards. The three most common water quality concerns are fecal coliform, nutrients, and oxygen-demanding substances. These listed water segments are candidates for more detailed assessments of water quality to determine whether they are impaired according to state statutory and rule criteria. The Department develops and adopts Total Maximum Daily Loads for the waterbody segments it identifies as impaired. A TMDL is the maximum amount of a specific pollutant that a waterbody can accumulate while still safely maintaining its designated uses. The purpose of this project is to implement load reduction strategies, specific to Onsite Sewage Treatment and Disposal Systems (OSTDS), to achieve the fecal coliform Total Maximum Daily Loads for the Lower St. Johns River Basin tributaries. OSTDS were deemed, by the environmental engineering firm Post, Buckley, Schuh & Jernigan, to be one of the most probable sources of fecal coliform. Because these watershed boundaries have a high number of OSTDS, this project will focus on seven out of the 75 tributaries considered impaired for fecal coliform. The impaired waterbodies to be focused on in this project are listed in the Project Location and Watershed Characteristics section. Potential contaminants that degrade the quality of surface and groundwater resources as a result of septic system failure include disease causing bacteria, infectious viruses, household chemicals, and nutrients (nitrates and phosphates). These contaminants present a public health threat to the community. The project has ongoing enforcement capabilities to reduce the amount of sanitary nuisances that could potentially cause adverse health effects to local residents and impacts to water quality. This project identifies old and malfunctioning septic systems to enforce their abandonment, repair, modification, replacement or connection to a central sewage system. The identification process includes the door-to-door inspections of septic systems in communities that have a documented history of septic system failures and the investigation of public complaints regarding septic systems in the project watershed boundaries. Chapters 381 and 386, FS, and Chapter 64E-6, FAC, is the basis for taking action in all cases involving malfunctioning systems and the pollution of direct or indirect sewage discharge into the St. Johns River or its tributaries. During the most recent project, 4,189 septic systems have been investigated. Prior to this project, DOH-Duval would only look at systems as part of an inspection after an application was received to install a new system or to repair a failing system. This project is much more proactive and allows inspectors work directly in the community and get a better understanding of the condition of all septic systems in an area. Surveying the current condition will allow for preventative maintenance and allow inspectors to provide outreach to concerned citizens.

## LHD and Community Collaboration

The LHD should have a role in the practice's development and/or implementation. Additionally, the practice should demonstrate broad-based involvement and participation of community partners (e.g., government, local residents, business, healthcare, and academia). If the practice is internal to the LHD, it should demonstrate cooperation and participation within the agency (i.e., other LHD staff) and other outside entities, if relevant. An effective implementation strategy includes outlined, actionable steps that are taken to complete the goals and objectives and put the practice into action within the community.

- Goal(s) and objectives of practice
- What did you do to achieve the goals and objectives?
  - Steps taken to implement the program
- Any criteria for who was selected to receive the practice (if applicable)?
- What was the timeframe for the practice
- Were other stakeholders involved? What was their role in the planning and implementation process?
  - What does the LHD do to foster collaboration with community stakeholders? Describe the relationship(s) and how it furthers the practice goal(s)
- Any start up or in-kind costs and funding services associated with this practice? Please provide actual data, if possible. Otherwise, provide an estimate of start-up costs/ budget breakdown.

## 5000 words maximum

Nonpoint source pollution can have far reaching effects on water quality including, but not limited to, contamination of potable water supplies and algal blooms in water bodies. Water quality can have a direct impact on the health and safety of community members. This project is a collaborative effort through multiple local and state agencies to identify and eliminate nonpoint source pollution causes. This project supports the endeavors of a Basin Management Action Plan, adopted by the Florida Department of Environmental Protection (FDEP). This project is part of a statewide watershed management approach to restore and protect Florida's water quality. The DOH-Duval Septic Tank Enforcement Project was established to identify and remedy failing septic systems that may be contributing fecal coliform bacteria to specific waterbodies listed in the Basin Management Action Plan. Working with our local utility provider, DOH-Duval was able to map and cross reference individual parcels of land that were connected to city sewers versus those that were not. Utilizing ArcMap, we were able to pinpoint and map all the properties throughout the county that were not connected to a municipal sewer system, therefore served by an onsite septic system. This project is funded in part by a Section 319 Nonpoint Source Management Program Implementation grant from the U.S. Environmental Protection Agency through an agreement with FDEP in order to allow DOH-Duval to complete all actions required to fully implement load reduction strategies as described within the Basin Management Action Plan. Cooperating organizations include the City of Atlantic Beach, City of Jacksonville, City of Jacksonville Beach, City of Neptune Beach, Florida Department of Transportation, Jacksonville Electric Authority, Naval Station Mayport, and other environmental interest groups. A large interagency effort occurs each year to address impaired tributaries listed within the Basin Management Action Plan. As part of a five year Basin Management Action Plan assessment, "Maps-on-the-Table" exercises and "Walk-the-WBIDs" exercises are conducted on these basins. Led by FDEP, this effort includes all stakeholders. "Maps-on-the-Table" activities include assembling the various agency staff members who have knowledge about actual physical conditions of a drainage area of each impaired waterbody and aspects that may affect water quality and fecal coliform levels. Maps of each basin are reviewed for areas that may require further inspection and investigation. The information that is collected and assimilated includes the following:

- Geographic information system (GIS) data
- Stormwater infrastructure maps showing the locations of inlets and outfalls, ponds, ditches, and underground conveyances
- Stormwater best management practices being implemented
- Maps of private and public sewer infrastructure showing the locations of pump stations and force and gravity mains, as well as the location and number of sanitary sewer overflows
- Locations of septic tanks and repair permits issued
- Locations of specialty farms, kennels, and other animal operations
- Water quality sampling information such as sampling stations, frequency, and results
- Hydrology, including wetlands, streams, and ponds
- Locations of known issues or areas of special concern such as homeless populations, dog parks, landfills, and transfer stations

The team explores the each waterbody while in the field, referring to maps to follow the creeks above and below ground. Team members look along the banks and in the vicinity of each waterbody for potential contamination sources. Canals and ditches that intersect the impaired waterbody are also inspected to ensure that any associated branches are included. Potential contamination sources that are explored include the following:

- Potential illicit connections or discharges
- Public and private sanitary sewer infrastructure (such as manholes and pump stations)
- Package plants
- Signs of areas with recent or multiple sanitary sewer overflows
- Wastewater infrastructure located close to surface waters and/or stormwater inlets, including pump stations, manholes, and air release valves
- Septic tanks located close to surface waters and/or stormwater inlets
- Failing septic tanks (as indicated by ponding and a strong smell of sewage)
- Evidence of homeless populations
- Municipal storm sewer system conveyances requiring cleaning
- Accumulated trash and debris on streets and parking lots
- Accumulated trash and debris near or inside stormwater drains and catch basins
- Clogged or broken stormwater grates
- Stormwater drains undergoing repairs
- Stormwater outfalls discharging from underground conveyances or into ponds
- Sewage smell from stormwater drains, indicating possible cross-connections
- Unusual odors
- Evidence of illegal dumping or discharge of liquids
- Signs of oil and grease
- Excessive sediments and signs of erosion or wash out
- Stagnant water
- Debris in inlets, or inlets located near wastewater infrastructure
- Exposed pipes of unknown origin
- Flood-prone areas
- Pet waste or evidence of high-traffic pet areas
- Presence of horses, cattle, or other ruminants in the water or close to the water
- Evidence of wildlife such as raccoons and waterfowl

## Evaluation

Evaluation assesses the value of the practice and the potential worth it has to other LHDs and the populations they serve. It is also an effective means to assess the credibility of the practice. Evaluation helps public health practice maintain standards and improve practice. Two types of evaluation are **process** and **outcome**. Process evaluation assesses the effectiveness of the steps taken to achieve the desired practice outcomes. Outcome evaluation summarizes the results of the practice efforts. Results may be long-term, such as an improvement in health status, or short-term, such as an improvement in knowledge/awareness, a policy change, an increase in numbers reached, etc. Results may be quantitative (empirical data such as percentages or numerical counts) and/or qualitative (e.g., focus group results, in-depth interviews, or anecdotal evidence).

- What did you find out? To what extent were your objectives achieved? Please re-state your objectives.
- Did you evaluate your practice?
  - List any primary data sources, who collected the data, and how (if applicable)
  - List any secondary data sources used (if applicable)
  - List performance measures used. Include process and outcome measures as appropriate.
  - Describe how results were analyzed
  - Were any modifications made to the practice as a result of the data findings?

**2000 Words Maximum**

Please enter the evaluation results of your practice (2000 Words Maximum): \*

The Lower St. Johns River Septic Tank Enforcement Project identifies and remedies failing septic systems that may be contributing fecal coliforms to the St. Johns River and its tributaries. The primary goals of this project are: • Improved water quality trends in the tributaries of the Lower St. Johns River that also will help improve water quality in the main stem of the river • Decreased loading (levels) of the target pollutant, fecal coliform • Enhanced public awareness of fecal coliform sources and impacts on water quality • Enhanced effectiveness of corresponding corrective actions by stakeholders • Enhanced understanding of basin hydrology, water quality, and pollutant sources • The ability to evaluate management actions, estimate their benefits, and identify additional pollutant sources The main objectives of this project are: • To protect the surface waters of the Lower St. Johns River and its tributaries through the enforcement of the State of Florida statutes, rules, and regulations governing Onsite Sewage Treatment and Disposal Systems (OSTDS) • To protect the public's health DOH-Duval has accomplished its primary task of identifying and remedying failing septic systems that may have been contributing fecal coliform bacteria to impaired watersheds. Through the performance of specific pollution reduction strategies, such as complaint investigations, door-to-door inspections, enforcement, and public outreach, the DOH-Duval Septic Tank Enforcement Project was able to ensure that any violations discovered were brought back into full compliance with applicable Florida Statutes and Florida Administrative Codes. During the most recent project, DOH-Duval provided monthly progress reports to the Florida Department of Environmental Protection (FDEP) that summarized findings from a total of 4,189 sites that were investigated. It was discovered that 349 of the properties inspected were connected to a centralized sewage system and were forwarded to Jacksonville Electric Authority (JEA) for further review. It was also determined that 109 parcels were vacant property and not a contributing factor to fecal coliform. In total, 58 property owners received an official notice due to violations discovered during the project period. Violations included a variety of sanitary nuisance conditions such as direct laundry discharge and sewage on the ground surface, unsealed and broken septic tank lids, damaged drainfields, collapsed septic tanks, plumbing back-up and illicit discharge pipes. Enforcement continued until all sanitary nuisances were corrected. The outreach and education provided as part of this project increased public awareness of the many fecal coliform sources and their impacts on water quality. A new addition to this project was the use of client surveys to obtain feedback on the effectiveness of public outreach and education. A total of 10 questions were asked to each participant and the results demonstrated that the project is very effective in educating people about septic systems and how to properly maintain them. The effects of public awareness should result in an increased number of homeowners having their septic systems pumped out and inspected on a regular basis, more efficient water usage, a decrease in hazardous chemicals being discarded into septic systems, and better maintenance of OSTDS in general. It is expected that these effects will be observed long after the end of this project which should aid in further reductions of fecal coliform bacteria from OSTDS. DOH-Duval continues to support the endeavors of FDEP's Basin Management Action Plans, and has made a conscious effort to look for ways to implement similar strategies in watersheds other than those listed within the Basin Management Action Plans. Through this project and future projects, it is anticipated that the DOH-Duval will continue to work until all septic systems within the 75 impaired watersheds have been investigated.

## Sustainability

Sustainability is determined by the availability of adequate resources. In addition, the practice should be designed so that the stakeholders are invested in its maintenance and to ensure it is sustained after initial development (*NACCHO acknowledges that fiscal challenges may limit the feasibility of a practice's continuation.*)

- Lessons learned in relation to practice
- Lessons learned in relation to partner collaboration (if applicable)
- Did you do a cost/benefit analysis? If so, describe.
- Is there sufficient stakeholder commitment to sustain the practice?
  - Describe sustainability plans

## 1500 Words Maximum

Please enter the sustainability of your practice (2000 Words Maximum): \*

The 1987 amendments to the Clean Water Act established the Section 319 Nonpoint Source Management Program. Section 319 addresses the need for greater federal leadership to help focus state and local nonpoint source efforts. Under Section 319, states, territories and tribes receive grant funding that supports a wide variety of activities including technical assistance, financial assistance, education, training, technology transfer, demonstration projects, and monitoring to assess the success of specific nonpoint source implementation projects. Clean Water Act Section 319(h) funds are provided only to designated state and tribal agencies to implement nonpoint source management programs. State and tribal nonpoint source programs include a variety of components, including technical assistance, financial assistance, education, training, technology transfer, demonstration projects, and regulatory programs. Each year, the U.S. Environmental Protection Agency (EPA) awards Section 319(h) funds to states in accordance with a state-by-state allocation formula that the EPA has developed in consultation with the states. Section 319(h) funding decisions are made by the states. States submit their proposed funding plans to the EPA. If a state's funding plan is consistent with grant eligibility requirements and procedures, EPA then awards the funds to the state. In 2016, the EPA awarded states \$163.4 million in grants to address Nonpoint Source Pollution. The Florida Department of Health in Duval County has been awarded Section 319(h) funding for the Lower St. Johns River Septic Tank Enforcement project since 2010. Each year, DOH-Duval applies for project funding and is able to monitor multiple impaired watersheds on an annual basis. As this project has been identified as a model by the Florida Department of Environmental Protection (FDEP) and the EPA, sustainability is secured as long as Section 319(h) funding remains a viable option.

## Additional Information



How did you hear about the Model Practices Program?: \*

☐ I am a previous Model Practices applicant

☐ At a Conference

☐ NACCHO Website

☐ Public Health Dispatch

☒ Colleague in my LHD

☐ Model Practices brochure

☐ NACCHO Exhibit Booth

☐ NACCHO Connect

☐ Colleague from another public health agency

☐ E-Mail from NACCHO

☐ NACCHO Exchange