Town of Nags Head
Project Scope

Decentralized Wastewater Management Plan

The Town of Nags Head is committed to protecting the environment and public health. Effective care of onsite systems is essential to keeping this commitment. The Town will enhance its oversight of these systems in a fair, reasonable and cost-effective manner to ensure they are well managed and that system owners have the information and tools necessary to protect their private investment and the public good. The Decentralized Wastewater Management Plan will be dynamic and evolving over time so that decentralized systems remain a sustainable component of Nags Head's infrastructure. - Mission Statement

Introduction & Goals

The Town of Nags Head boasts the longest oceanfront shoreline of any municipality in Dare County at 11.29 miles. The Town's 6.6 square miles Town jurisdiction is comprised mostly of single-family residential development, with an equal amount of conservation/open space (Jockey's Ridge State Park and Nags Head Woods). While the Town's year-round population is estimated to be 2,975 (as of July 2019), the seasonal population is estimated to swell to 40,000 during the peak summer visitation periods. Through time, Nags Head's desire to be a family beach community has not deviated. At the core of these desires is a healthy, well-maintained oceanfront beach that is both visually and physically accessible. The Town recognizes the value of our coastal ecosystem and the role it plays in making Nags Head a great place to live, work, and visit.

The Todd Krafft Septic Health Initiative program ("the Initiative"), developed in 2000, is a long-term strategy for protecting water quality while allowing the continued use of on-site wastewater systems in the Town. The Initiative is a voluntary program that is available to property owners consisting of 4 major focus areas. The program offers free services along with financial assistance for septic pumping, repairs, or replacements. Free services from the Town include locating your system, discussing concerns about installation and maintenance, inspections to detect problems early, and a follow-up report that outlines your system location and whether it is in need of pumping or repair. In some cases, the Town will assist as a mediator between the property owner and the contractor, or with necessary permitting. The Initiative is a one of a kind program in the Outer Banks and the State, and is one of a few in the Nation.

As a part of the Initiative, the Decentralized Wastewater Management Plan was created in 2005 ("the 2005 Plan"). The 2005 Plan states that over 85% of all developed properties (4,339 total) were using onsite systems, and of those, 95% of the properties were in residential use. These numbers continue to grow as both commercial and residential properties expand. Most homeowners in the Town of Nags Head rely on septic systems for the safe and effective treatment of their wastewater. Recycled water

from a septic system can help replenish the groundwater supply; however, if a system is not working correctly, it can in turn contaminate nearby waterbodies.

The goals of the 2005 Plan were to assess and monitor potential water quality impacts due to onsite systems and encourage and support operation and maintenance initiatives by property owners. Further, Section 2.7 of the 2005 Plan states

> "The scientific analysis completed in this Technical Report indicated a need for additional review and consideration of the impacts of stormwater on water quality, particularly in the surface water ditches. Developing an integrated approach to looking at the impacts of both stormwater and decentralized wastewater is important in assuring that the Town has developed a defensible management strategy. Much of the data collected and analyzed in this report can also be useful in stormwater management decisions."

A heavy rain event can disproportionately increase the height of the water table, even as much at five inches. Improving water quality in turn provides multiple benefits that enhances community vitality. As the Town faces growth, aging infrastructure, changing weather patterns, and increasingly complex water quality issues, new approaches are needed. Focusing on each issue individually can prove to be constraining; therefore, an integrated planning framework allows for more sustainable and comprehensive solutions.

The intent of this scope is to outline an update of the 2005 Plan, expanding it to become an integrated plan, taking into account the relationship between onsite wastewater and stormwater. This update implements a recommended action of the Town's Comprehensive Plan to "Update the Decentralized Wastewater Management Plan to evaluate the overall effectiveness of the program and recommend additional measures as necessary," (NR-26g) and advances actions recommended in the Town's Vulnerability, Consequences, Adaptation, Planning Scenarios (VCAPS) Report

Funding

$150,000 in capital funds for the update of this project.

Resources

Kylie Shephard, Environmental Planner, will serve as the primary Town Staff assigned to this project, and coordinate management of the project. Michael Zehner, Director of Planning & Development, Andy Garman, Deputy Town Manager, David Ryan, Town Engineer, Kelly Wyatt, Deputy Director of Planning & Development, Holly White, Principal Planner, and Kate Jones, Engineering Technician, will be primary staff resources, providing varying levels of assistance with the project as necessary.

A consultant will be engaged through an RFQ to execute the development of the Plan.

The Board of Commissioners may wish to consider assigning one or more members to serve as a liaison for the project. Additionally, the Board may wish to appoint a steering committee to inform and assist in directing the project.

Scope

The Scope for the project, including the principal phases and tasks, is as follows.

Phase 1 – Retain Consultant for the Integrated Plan

- Develop and release an RFQ;
- Interview respondents;
- Evaluate submissions; and
- Retain a consultant

Phase 2 – Inventory and Assessment; Establish Goals

- Develop the vision, values, and goals for the Plan;
- Develop engagement strategy for stakeholders;
- Compile existing wastewater and stormwater performance;
- Assess surface and ground water quality and quantity conditions;
- Assess potable water usage data and its impact on groundwater conditions;
- Characterize wastewater and stormwater utility performance, conditions, and programs;
- Review and assess historical changes in the climate and impact on groundwater conditions as well as wastewater and stormwater system performance;
- Develop a range of scenarios for sea level rise and assess the impact of sea level rise on wastewater management technologies; and
- Review academic studies and reports associated with wastewater management, stormwater, and groundwater; assess relevant information and incorporate appropriate findings into the draft integrated plan.

Phase 3 – Drafting of Integrated Plan and Outreach

- Consultant to draft and submit sections of Plan for review by Stakeholders, Staff, Steering Committee and Boards; and
- Consultant to make necessary changes based upon comments

Phase 4 – Adoption of Integrated Plan

Objectives & Consultant Requirements

The objectives of this project and requirements of the Consultant are as follows:

- Identify and create a method in order to ensure input from stakeholders.

- Provide a descriptive narrative of the water quality, human health, and regulatory issues addressed with the Plan, as well as an evaluation of whether The Town is presently meeting human health and water quality goals.
- Summarize and evaluation of the systems' current performances including identifying any hotspots, or problem areas, that may exist throughout the Town. Further document factors influencing problem areas and steps the Town can take to mitigate these problems.
- Review and assess current and historical water quality and quantity data throughout the Town to identify trends and problems and make recommendations for programmatic changes.
- Identify and map groundwater levels. Assess the impact of groundwater on the functionality of septic systems.
- Employ new technologies to improve tracking and management of at-risk areas related to groundwater, stormwater, and wastewater to assist with citizen reporting and for potential future Capital Improvement Project development.
- Identify new technologies, systems and alternative management approaches that could be utilized to improve the overall manage onsite wastewater in the Town.
- Identify any programmatic changes to the Todd Krafft Septic Health Initiative to improve participation in the program including but not limited to modifications to incentives, inspections, the loan program, outreach/education program, permit tracking and reporting, and data collection/analysis.
- Create a holistic and integrated public outreach program, as part of the Plan, for educating stakeholders public and allowing public involvement on water quality, water quantity, groundwater, and relationship between public health, ecosystem health, and public health advisories related to water quality.
- Summarize a process that allows for evaluation of Plan implementation; this includes measures of success for actions identified in the Plan post adoption.
- The Plan will include sufficient data to demonstrate that implementation of the Plan would be expected to achieve water quality goals.

Relevant Documents

The following documents should be studied and utilized in the creation of the updated Plan, providing background information for the consultant in the development of the Plan.

- *Town of Nags Head Comprehensive Plan*
- *Nags Head VCAPS Report*
- *NC DOT Study - Rachel Nobel Report*
- *ECU Department of Anthropology - "Evaluations and suggestions about storm water and septic tank management among residents of Nags Head Acres, Nags Head, NC"*
- *2012 Park Service Report – "Pollutant Impacts to Cape Hatteras National Seashore from urban runoff and septic leachate"*
- *UNC Outer Banks Field Site 2018 Capstone Report - Environmental Change and Septic Systems in Nags Head: Local Perspectives and Impacts on Water Quality and Quantity"*
- *UNC Outer Banks Field Site 2019 Capstone Report – "People, Water, and Septic: A Coastal Case Study"*

- *2018 Outer Banks Field Site Capstone Research Presentation*
- *2019 Outer Banks Field Site Capstone Research Presentation*
- *UNC Outer Banks Field Site – "Flushed"*

These documents can be found on the Town of Nags Head website at:
http://www.nagsheadnc.gov/935/Long-Range-Planning

Timeline

- July 2020 - Present Scope to Board of Commissioners
- August 1, 2020 - Advertise RFQ
- October 2020 to November 2020 - Consultant interviews and selection
- December 2020 - Present consultant decision to Board of Commissioners
- December to mid-January 2021- Project kickoff
- January 2021 to Summer 2021 - Phase 2
- Summer 2021 to December 2021 - Phase 3
- January 2022 - Phase 4, consider Plan adoption
- February 2022 - Implementation; consider budget needs