

HEALTH IMPACT ASSESSMENT (2014-2016) OF PROPOSED CODE CHANGES REGARDING INDIVIDUAL SEWERAGE SYSTEMS IN SUFFOLK COUNTY, NEW YORK



About HIAs

A health impact assessment (HIA) is a systematic process that uses data, analytical methods, and input from stakeholders to determine the potential effects of a proposed policy, plan, program, or project on the health of a population. The HIA examines who will be impacted and provides recommendations for monitoring and managing those effects.

About the Suffolk County HIA

The U.S. Environmental Protection Agency (EPA) conducted an HIA of proposed code changes regarding individual sewerage systems in Suffolk County, New York. Individual sewerage systems can contribute nutrients, such as nitrogen, to ground and surface waters. The Suffolk County Government was considering changes to

the County Sanitary Code for single-family residential individual sewerage systems as one of several efforts to address the growing environmental issues related to nitrogen pollution impacting local waters.

The goal of the HIA was to help inform the County’s decision regarding the proposed sanitary code changes by evaluating the potential for the proposed changes to impact individual and community health. The HIA would also be able to provide evidence-based recommendations for the County to utilize in its decision-making process. The HIA evaluated four decision scenarios – the baseline (should no alternative be implemented) and three alternatives under consideration by the County at the time of the assessment (Table 1).

Table 1. Decision Scenarios Assessed

Scenario	Details
Baseline (No code change)	More than 70% of single-family residences in Suffolk County utilize individual sewerage systems ¹ [i.e., onsite sewerage system (OSDS) ² or conventional onsite wastewater treatment systems (C-OWTS) ³], and of those, over half are assumed to be served by cesspools alone (i.e., have no septic tank) because they were built prior to 1973.
Alternative I	All existing OSDS serving single-family residences must conform to current County Sanitary Code and standards (in place as of September 2016). All existing cesspools must be upgraded to the County-defined C-OWTS.
Alternative II	All existing OSDS serving single-family residences in high priority areas ⁴ must conform to current County Sanitary Code and standards (in place as of September 2016). All existing cesspools must be upgraded to the County-defined C-OWTS in lots located in those areas.
Alternative III	All individual sewage systems (OSDS or C-OWTS) serving single-family residences in high priority areas must be upgraded to County-approved innovative/alternative onsite wastewater treatment systems (I/A OWTS). ⁵

¹ Individual sewerage system describes the overall category of individual (onsite) systems used to treat and/or dispose of wastewater from single-family residences in Suffolk County.

² Onsite sewage disposal system (OSDS) describes the pre-1973 type of individual sewerage system that includes a disposal unit alone (i.e., a cesspool) serving single-family residences in Suffolk County.

³ “Conventional” onsite wastewater treatment system (C-OWTS) describes the post-1973 type of individual sewerage system that includes a septic tank and disposal unit (leaching pool) serving single-family residences in Suffolk County.

⁴ At the time of the HIA, Suffolk County designated “high priority areas” as areas in the 0-50-year groundwater contributing zone to public drinking water wells fields, areas in the 0-25-year groundwater contributing zone to surface waters, areas located in Sea, Lake, and Overland Surges from Hurricanes (SLOSH) zones, and areas located where groundwater is less than 10 feet below grade. Priority area designations have since been revised and can be found in the Subwatersheds Wastewater Plan released by the County (<https://reclaimourwater.info/TheSubwatershedsWastewaterPlan.aspx>).

⁵ Innovative/alternative onsite wastewater treatment system (I/A OWTS) describes the innovative (pending approval) type of individual sewerage system designed for nitrogen reduction/control, used as an alternative to the C-OWTS serving single-family residences in Suffolk County.

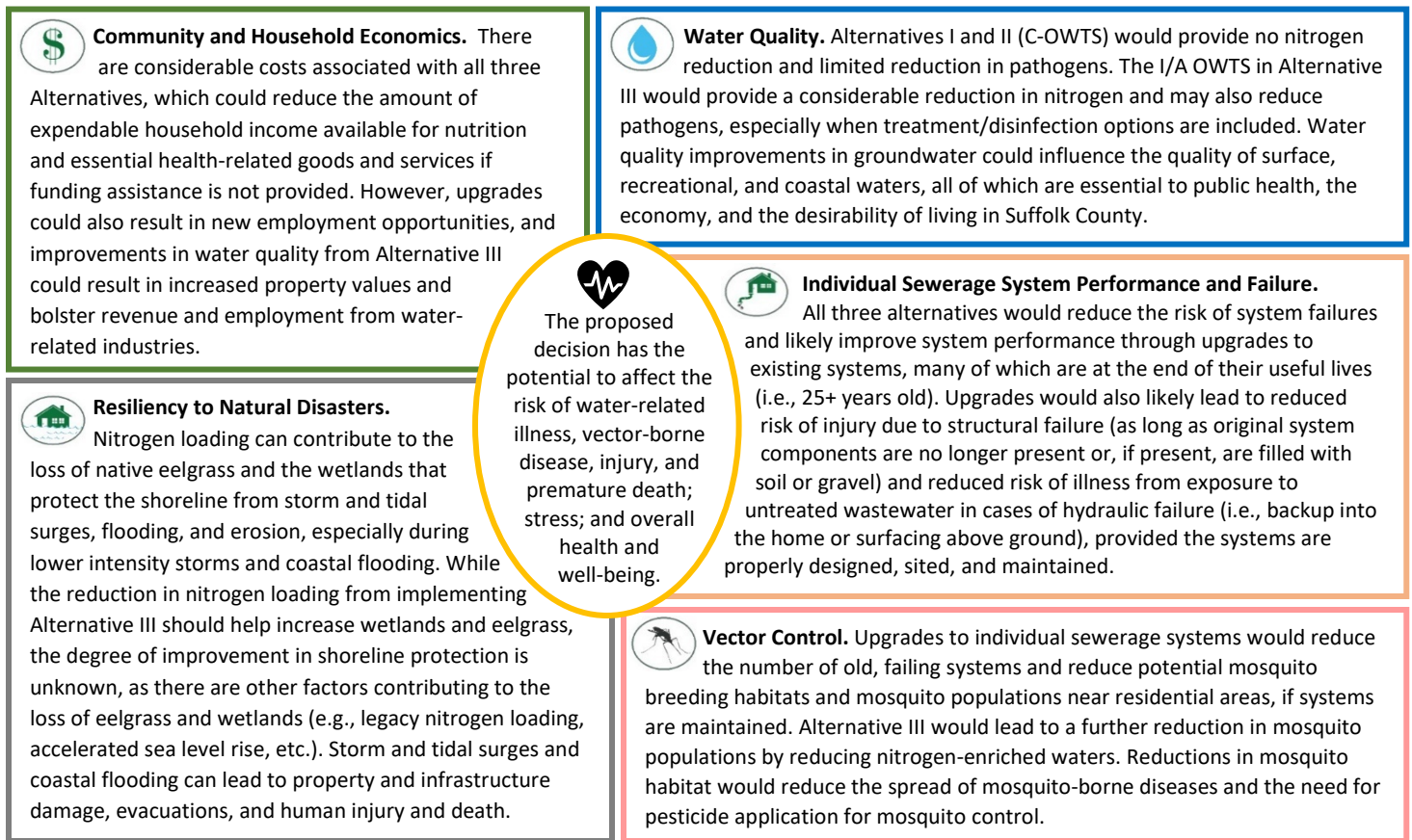


Figure 1. The Five Health Pathways Used to Evaluate the Proposed Code Changes and Associated Health Impacts

The HIA Process

Based on input from stakeholders, including community members, scientific experts, and decision-makers, the HIA Project Team identified pathways through which the proposed code changes could potentially impact health. Five pathways were prioritized for assessment in the HIA (Figure 1).

The HIA assessed each of the five pathways by answering the following questions:

- What are the current conditions?
- How will each decision alternative impact the current conditions?
- What is the connection to health?
- How might health be impacted by each decision alternative?

The HIA Project Team used various methods to conduct the assessment, including different types of data, mapping or geographic information system (GIS) methods, statistical and graphical analysis, and scientific literature review.

Main HIA Findings and Recommendations

The HIA found several connections between the proposed code changes and health (Figure 1). The HIA demonstrated that the proposed sanitary code changes could have both a positive and negative effect on health, but only

Alternative III (I/A OWTS) would result in a net positive public health impact. The HIA’s recommendations not only support the selection of Alternative III, but they also identify ways to maximize potential positive health impacts, minimize or avoid potential negative health impacts, and offer health supportive measures.

The Impact of the HIA

This HIA brought together the community, stakeholders, and decision makers at the local, state, regional, and federal levels to promote health, equity, and sustainability. Since reporting the preliminary HIA findings and recommendations to the decision makers and stakeholders in the fall of 2016, the County undertook a number of activities to address nitrogen pollution. Some of those activities were also recommendations from this HIA. The County acknowledges that implementation of code changes that require individual property owners to upgrade to I/A OWTS would require a stable recurring revenue source to reduce financial impacts to individual households.

Where to Learn More

The HIA Report (EPA/600/R-21/186F) is located at www.epa.gov/healthresearch/health-impact-assessments.

CONTACT: Rabi Kieber, EPA Region 4, kieber.rabi@epa.gov
Shannon Griffin, EPA Office of Research and Development, griffin.shannon@epa.gov