



Nassau County Soil & Water Conservation District
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NASSAU S.E.P.T.I.C. GUIDANCE MEMO # 2

TO: Nassau County North Shore Municipalities
IA OWTS Manufacturers
Septic System Design Professionals

FROM: Derek Betts, District Manager
Nassau County Soil and Water Conservation District

SUBJECT: **Draft** Guidelines for the Acceptance, Use, and Management of Innovative and Alternative Onsite Wastewater Treatment Systems (IA OWTS) in Nassau County

DATE: Rev. 5.17.2022

I. Findings:

- A. Local bays, harbors, and surface waters are plagued by nitrogen pollution, in-part from antiquated cesspools and conventional septic systems that were simply not designed to remove nutrients from wastewater.
- B. Over 35,000 homes and small businesses in Nassau County are currently served by cesspools and septic systems and are not able to connect to public sewers.
- C. Innovative and Alternative Onsite Wastewater Treatment Systems (IA OWTS) have been in use in other regions for decades and have shown the ability to significantly reduce biochemical oxygen demand and total suspended solids, and systems designed to remove nitrogen have shown the ability to consistently reduce nitrogen in effluent by over 70%.
- D. The use of IA OWTS are be considered a viable nutrient mitigation measure in Nassau County, as when properly designed, sited, installed, managed, and maintained, these new septic systems provide a cost-effective and environmentally sound alternative to sewers in areas that are outside designated sewer areas.

II. Purpose:

- A. Under these guidelines, IA OWTS are to be properly installed, operated, regularly inspected, and routinely maintained in order to ensure maximum performance and system longevity. This guidance document establishes a process for the acceptance, use and management of nitrogen-reducing Innovative and Alternative Onsite Wastewater Treatment Systems (IA OWTS) as recommended by the New York State Department of Health (NYSDOH).
- B. Nassau County has designated the Nassau County Soil and Water Conservation District (the District) to implement, administer, and manage the IA OWTS S.E.P.T.I.C. grant program on behalf of Nassau County.
- C. The Nassau County Department of Health has jurisdiction only over septic systems for developments (realty subdivisions) of 5 lots or more. For properties not part of a realty subdivision, or for repairs and retrofits of existing systems, the local city, town, or village has permitting jurisdiction.
- D. These guidelines were developed by the District (reviewed by Nassau County Department of Health and New York State Department of Environmental Conservation) to provide a framework to cities, towns, and villages looking to utilize IA OWTS to achieve water quality management goals as well as system manufacturers looking to get into the Nassau County market.

III. Definitions

Conventional Septic System or Conventional Onsite Wastewater Treatment System (OWTS) mean, for the purposes of this Article, an onsite sanitary system consisting of a septic tank and/or a cesspool, and any associated interconnecting piping, a leaching structure(s) and any associated interconnecting piping that does not have any active or mechanical means of treatment or any supplemental filtration components.

District means the Nassau County Soil and Water Conservation District.

Design Professional means a Professional Engineer or Architect licensed or registered in the State of New York and authorized by the State Education Law to design IA OWTS.

Field-Built System means non-prefabricated units that are constructed on-site such as sand/gravel filters, constructed wetlands, and soil based treatment systems.

Innovative and Alternative Onsite Wastewater Treatment System(s) (IA OWTS) means an onsite decentralized wastewater treatment system(s) that, at a minimum, is designed to reduce total nitrogen in treated effluent to 19 mg/l or less.

Installer means a company approved by the District and the Nassau County Department of Consumer Affairs to install an IA OWTS in Nassau County. Installers must possess a current and active Nassau County Home Improvement License and be properly ensured to install septic systems.

Maintenance means the act of performing tasks specified by the District and/or the manufacturer of the IA OWTS including, but not limited to, cleaning, inspection, and adjustment of control settings to ensure proper operation of IA OWTS and related components.

Maintenance Contract means a signed contract between the Property Owner and the Service Provider setting forth all required inspection and maintenance procedures and monitoring schedules along with effective dates of the contract.

Property Owner(s) means the owner(s) of the real property upon which such IA OWTS is installed or proposed for installation.

Service Provider(s) means a private entity hired by a Property Owner to provide inspection, operation, maintenance and contractual service of an IA OWTS.

Manufacturer means the patent holder, manufacturer, distributor or creator of an IA OWTS.

Written Notification means the act or instance of notifying, making known or giving notice either through a written or printed notice, or electronic submission of written notice.

IV. **Financial Incentives:**

- A. Nassau County has initiated a septic system replacement program for residents, not-for-profit organizations, and small businesses known as the Septic Environmental Program to Improve Cleanliness or S.E.P.T.I.C.
- B. The S.E.P.T.I.C. program will provide grant funding to eligible property owners to replace conventional septic systems and cesspools with an IA OWTS.
- C. The S.E.P.T.I.C. Program is currently administered by the Nassau County Soil and Water Conservation District (the District), which was authorized and directed to administer the Program on behalf of Nassau County.
- D. Nassau County residents, small businesses, and not-for-profit organizations with a daily sanitary **design flow of less than 1,000 gallons per day** (generally a 9 bedroom

home or less) are eligible for grants to install these new septic systems, provided all other eligibility criteria are met.

- E. Current version of the S.E.P.T.I.C. Program guidance documents will available at this link [NassauCountyNY.gov/SepticReplace](https://www.nassaucountyny.gov/SepticReplace)

V. General Conditions

- A. The District may revise these guidelines or remove an IA OWTS technology from approved use in Nassau County if the technology fails to meet treatment performance goals as outlined in these Guidelines.
- B. The District will maintain a list of applicable technologies that have demonstrated the ability to comply with the conditions of this guidance document.
- C. Any technology that fails to consistently comply with the provisions of Program will be removed from the applicability list subject to this guidance. The District will advise any affected manufacturer prior to taking this action.
- D. The District reserves the right to hire a third-party to review technical documents such as technology submissions for Acceptance into the S.E.P.T.I.C. Program and Remedial Action Plans.

- VI. **Performance Standards for Total Nitrogen:** Systems of a specific accepted technology must maintain effluent total nitrogen concentrations averaging 19 mg/l or less or the technology will be subject to the Major and Minor Violation provisions in Section X of these Guidelines.

- VII. **Technology Acceptance Process in Nassau County:** All Manufacturers must submit a written request to have their technology Accepted for use in Nassau County as outlined in VII.B, VII.C and VII.D below

- A. **General Requirements for all systems accepted for use in Nassau County:**

- 1. Manufacturer agreement to hire a third party, acceptable to the District, to analyze samples from the systems.
- 2. The manufacturer agrees to report and submit all samples taken from sites in Nassau County to the District.
- 3. If the manufacturer intends to submit sampling data from Suffolk County or the State of Massachusetts to comply with these guidelines, the data provided must have been also reported to those regulatory jurisdictions.
- 4. By submitting a request for a technology to be considered for acceptance in Nassau County, the Manufacturer grants the District and/or County permission to share and publish all reported sampling data.

5. Due to the District's reciprocity regarding the acceptance of Suffolk County's data in Nassau County, if technology is deemed to be in Major or Minor Violation in Suffolk County, the District intends to also deem that technology as being in Major or Minor Violation in Nassau County.
- B. General Acceptance (no limit on the number of systems installed for Generally Accepted Technologies): the District may accept an IA OWTS for General Acceptance if the Manufacturer submits and demonstrates the following:
1. a verification report that shows a minimum of a fifty percent (50%) reduction in the total nitrogen concentration (average influent and effluent total nitrogen concentrations and the actual percentage of removal SHALL be provided). Verification shall be ANSI/NSF Standard 245, EPA Environmental Technology Verification Program ("ETV), BNQ Standard NQ 3680-910; and
 2. At least twelve (12) consecutive samples (12 samples taken at either monthly, bi-monthly, or quarterly intervals) of third-party performance data where the average TN is equal to or less than 19 mg/L, for no fewer than twenty (20) installations, in a jurisdiction where the technology is approved for nitrogen-removal and the temperature conditions are comparable to, or colder than, those in Nassau County, NY; and
 3. A minimum of 20 installations on Long Island (Suffolk County or Nassau County). However, there are no minimum restrictions in Nassau County, for example, a manufacturer could in theory comply with these requirements by submitting a list of installation from 20 systems located only in Nassau or Suffolk County); and
 4. The manufacturer or their designated representative agrees to sample all systems of a technology for TKN (as N), Nitrite-N (as N), Nitrate-N (as N) at a minimum of every thirty-six (36) months. Manufacturers should begin general use sampling within 12 months of receiving general use approval.
 5. The District reserves the right to assign specific sites to be sampled.
 6. The rolling average of all systems sampled of technology must maintain an effluent total nitrogen concentration of 19 mg/l or less or the technology will be subject to the Major and Minor Violation provisions in Section X of these Guidelines.
 7. Technologies with General Use Acceptance are accepted for funding through the County's S.E.P.T.I.C. grant program.

- C. Provisional Acceptance (no limit on the number of systems installed of a Provisionally Accepted Technology): In order to be considered for Provisional Acceptance the Manufacturer's written request for consideration by the District must include the following:
1. a verification report that demonstrates a minimum of a fifty percent (50%) reduction in the total nitrogen concentration (average influent and effluent total nitrogen concentrations and the actual percentage of removal SHALL be provided). Verification shall be ANSI/NSF Standard 245, EPA Environmental Technology Verification Program ("ETV), BNQ Standard NQ 3680-910, CEN Standard EN 12566-3 report or equivalent; and
 2. One of the following:
 - a) Current Provisional Approval in Suffolk County, NY or State of Massachusetts unless the Annual 12-month rolling average effluent TN concentration of technology at equilibrium:
 - (1) Is between 19 mg/L and 30 mg/L. in which case the manufacturer shall submit a remedial action plan to be accepted by the District prior to receiving Provisional Acceptance; or
 - (2) Exceeds 30 mg/L. In which case the District shall withhold Provisional Acceptance for that technology.
 - b) At least twelve (12) consecutive samples (12 samples taken at either monthly, bi-monthly, or quarterly intervals) of third party performance data where the average TN is equal to or less than 19 mg/L, for no fewer than twelve (12) installations, in a jurisdiction where the technology is approved for nitrogen-removal and the temperature conditions are comparable to, or colder than, those in Nassau County, NY.
 3. The District will allow a technology to move from Provisional to General Use Acceptance provided the manufacturer submits a written report demonstrating that the technology complies with the requirements set forth in Section VII.B above. The report must include all sampling data for the following parameters: TKN (as N), Nitrite-N (as N), Nitrate-N (as N) at a minimum of every thirty-six (36) months. Manufacturers should begin general use sampling within 12 months of receiving general use approval.

4. Technologies with Provisional Acceptance are accepted for funding through the County's S.E.P.T.I.C. grant program.

D. Piloting Acceptance (limited to 12 installations)

1. The District may accept an IA OWTS for Piloting Acceptance if the manufacturer submits and demonstrates the following:
 - a) Current Piloting Approval in Suffolk County, NY or the State of Massachusetts unless the:
 - (1) annual 12-month rolling average effluent TN concentration of a technology's systems at equilibrium is between 19 mg/L and 30 mg/L, then the manufacturer shall submit a remedial action plan to be accepted by the District prior to receiving Piloting Acceptance.
 - (2) annual 12-month rolling average effluent TN concentration of a technology's systems at equilibrium exceeds 30 mg/L, the District shall withhold Piloting Acceptance for that technology; or
 - b) A verification report that shows a minimum of fifty percent (50%) reduction in the total nitrogen concentration (average influent and effluent total nitrogen concentrations and the actual percentage of removal SHALL be provided). Verification shall be either ANSI/NSF Standard 245, EPA Environmental Technology Verification Program ("ETV), or BNQ Standard NQ 3680-910.
 - c) The District will allow a technology to move from Piloting to Provisional Use Acceptance provided the manufacturer submits a written report demonstrating that the technology complies with the requirements set forth in Section VII.C above. The report must include all sampling data for the following parameters: TKN (as N), Nitrite-N (as N), Nitrate-N (as N) at a minimum of every thirty-six (36) months.
2. Technologies with Provisional Acceptance are accepted for funding through the County's S.E.P.T.I.C. grant program.

E. Experimental Acceptance (limited to 3 installations):

1. The intent of Experimental acceptance is to evaluate, under actual field conditions, technologies that appear technically capable of meeting total nitrogen effluent concentrations of at least 19 mg/l. The District may entertain submissions for Experimental Acceptance if such application includes the following:

- a) Experimental Approval in Suffolk County, NY; or
 - b) An Evaluation Report from a Septic System Test Center, Research Institution, or Demonstration Project such as the New York State Center for Clean Water Technology, Suffolk County Department of Health Services, Massachusetts Alternative Septic System Test Center, the New England Onsite Wastewater Training Center, or equivalent approved by the District, that satisfactorily demonstrates:
 - (1) The system is technically capable of meeting total nitrogen effluent concentrations averaging at least 19 mg/l; and
 - (2) The system is technically capable of functioning as a, or reverting to, a gravity-flow conventional system.
 - c) The systems must be sampled monthly for the following parameters: BOD5, Total suspended solids (TSS), pH, wastewater temperature, ambient air temperature, effluent alkalinity (as CaCO3), TKN (as N), ammonia-N (as N), nitrite-N (as N), and nitrate-N (as N).
2. After one year of consecutive monthly performance data of a minimum of two systems where the average is equal to or less than 19 mg/L the technology may be Accepted for Piloting use in Nassau County, NY.
 3. Technologies with Experimental Acceptance are accepted for funding through the County's S.E.P.T.I.C. grant program.

VIII. Engineering Report and Manufacturer Guidance Document:

Once a technology is accepted for use, the Manufacturer/ Local Distributor (or Designer in the instance of field-built technologies) shall submit a finalized guidance document detailing all design, installation, and operation and maintenance requirements

- A. Guidance Document shall include but not be limited to the following:
 1. Engineering design drawings and calculations
 2. Installation manual and training documents
 3. O&M specifications
 4. Sample copy of standard 3-year product warranty
 5. Sample copy of O&M Agreement with typical costs
 - a) Estimated repair and replacement costs for system components
 - b) Sample copy of O&M service form
 6. A description of:
 - a) Type and Overview of Technology

- b) Models and NSF rated daily treatment capacity (with number of bedrooms indicated, calculated at 110 gallons per bedroom per day per NYS DOH Appendix 75-A)
 - c) Site construction precautions and notes
- 7. IA OWTS shall be installed, operated, and maintained in accordance with the Manufacturer Guidance Document and comply with all conditions outlined in the approval document for that specific technology. In addition, a Design Professional shall supervise the installation of field-built technologies, certify that the system was built in accordance with the approved plan, and submit as-built plans of the system to the District as well as comply with specific requirements of the local permitting authority.
- 8. The Manufacturer (or Design Professional in the instance of field-built technologies) shall provide training to the Department and Industry with respect to the technology in question.

IX. Inspection and Maintenance

- A. For the life of the system, the owner of the system must have in place a preventative inspection, and maintenance contract with a qualified Service Provider to ensure the system is functioning properly and to optimize treatment performance.
- B. As part of the maintenance contract, the Authorized Service Provider must inspect and maintain the treatment system in accordance with the manufacturer's requirements and provide a report showing proof of service and inspection results to the District.
- C. Service Provider(s) shall maintain a current home improvement license, or subsequent applicable license with Nassau County and must maintain any other license required by local cities, towns, or villages along with appropriate insurance.

X. Revocation or suspension of General, Provisional, or Experimental Acceptance

- A. The District may suspend any Acceptance if:
 - 1. Manufacturer fails to sample, or submit timely samples in accordance with their Acceptance. This includes skipping samples, withholding samples, omitting or substituting sites without prior written authorization.
 - 2. If it is determined the Manufacturer, or a party on the Manufacturer's behalf, altered or withheld reporting sample results.
 - 3. A technology fails to meet performance requirements.
- B. If a technology's Acceptance is suspended, they may reapply in accordance with

Section V.II above.

XI. **Enforcement for Performance Violations**

- A. Minor Violation: If the technology's annual 12-month rolling average effluent TN concentration is between 19 mg/L and 30 mg/L:
 - 1. the Manufacturer MUST submit a remedial action plan and timeline to improve the technology's performance, failure to do so will result in revocation or suspension of the technology's Provisional or General Acceptance.
 - 2. If the implementation of a remedial action plan does not produce a 12-month rolling average of 19 mg/L or less the Technology's Provisional or General Acceptance will be suspended.
 - 3. If the remedial action plan fails to produce a 12-month rolling average of 19 mg/L or less, the technology's Acceptance will be suspended.
- B. Major Violation: If the annual 12-month rolling average effluent TN concentration of a technology's systems at equilibrium exceeds 30 mg/L, the technology's Provisional or General Acceptance may be immediately suspended.
- C. If a technology's Acceptance is suspended, they may reapply in accordance with Section V.II above.

XII. **Clawback of Grant Funds for Property Owners who fail to Operate or Maintain IA OWTS in accordance with Grant Agreement with the District.**

- A. NYS DOH requires jurisdictions that allow the use of IA OWTS to oversee and enforce that O&M is occurring on all systems.
- B. If a Property Owner fails to Inspect or Maintain their IA OWTS in accordance with their grant agreement, Manufacturer Recommendations, or these Guidelines, the Property Owner will be in violation of their grant agreement and may be required to repay the District all S.E.P.T.I.C. Grant funds paid out for the Project.