Dukes County American Rescue Plan Act (ARPA) funding

Nitrogen reducing septic systems installation project

Management document

(approved by DCC 6-18-2023)

PREAMBLE

Dukes County has received a total of $3,666,538 from the ARPA funding approved by the federal government. After months of deliberations and input from a Steering Committee a decision was made to use most of the funding to improve the wastewater infrastructure on Martha's Vineyard. $1.5M was approved to help fund the needed improvements at the Dukes County Airport Wastewater Facility and up to $1,440,000 are to be used for individual septic systems as described in this document.

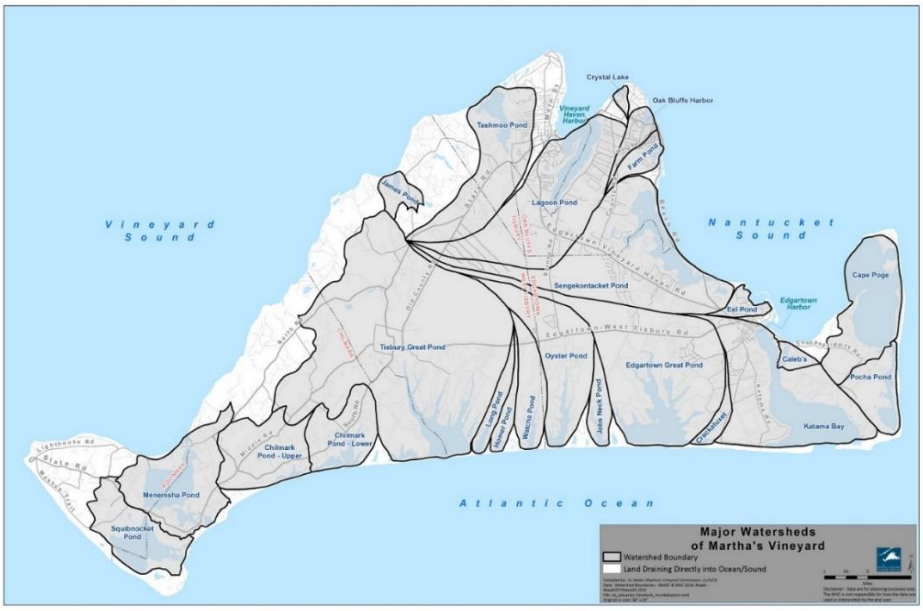
Purpose

The goal of this program is the application of technology to clean up historically impaired island ponds. Untreated nitrogen from septic systems has seeped into island ponds for many years resulting in significantly compromised water quality. This program addresses the task of removing nitrogen from contributing Title 5 septic systems within pond watersheds that will not be sewered because of their rural nature, or where service by sewer is not feasible/likely.

Innovative alternative technology has advanced to a point where nitrogen reducing-systems are increasingly efficient, achieving nitrogen removal levels competitive with wastewater treatment facilities. Retrofits of existing Title 5 systems can achieve nitrogen reduction levels at a lower cost per pound of nitrogen than a typical wastewater treatment plant. Based on the results of Cape and Island installations, the technology has proven to be effective here. Applying resources now to carry out installation and testing of multiple additional systems in Martha's Vineyard's impaired watersheds will greatly advance our capacity to return our island ponds to health.

Ponds are impaired due to factors related to discharge of nitrogen from septic tanks and other man-made causes. Many of the island ponds are impaired.

Map 1



The island's population has grown to the point where the wastewater treatment infrastructure needs to remove nitrogen in quantities that assure that island ponds and other water resources meet applicable water quality standards. Our resources to ensure compliance must expand to meet this need.

Massachusetts Estuaries Project (MEP) reports for island ponds have concluded that combined annual estuarial load of controllable nitrogen coming from properties must be reduced by significant amounts to satisfy the nitrogen standards in the Federal Clean Water Act and remain sustainable water resources. The targeted nitrogen loads (Total Maximum Daily Loads = TMDL) were premised on the assumption that no new nitrogen would be entering these water bodies as a result of further development, which is far from the case. The MEP reports also noted that nitrogen from human wastewater from standard Title 5 septic systems is the primary controllable source of nitrogen contamination contributing to our ponds.

Standard Title 5 septic systems were designed and are effective at removing bacteria harmful to human health. They have been widely used in Massachusetts for residential and commercial sanitation. They were not designed – nor do they have the potential – to address the ever-growing nitrification of our Island waterbodies. The installation of on-site Innovative Alternative Enhanced Systems (IA) as an addition to septic tanks makes these systems capable of addressing both sanitation and de-nitrification needs, both key components of a single-family residential water quality system. Currently the best available

technology is capable of removing up to 90% of the nitrogen from household sanitary waste in the right conditions.

This program seeks primarily to protect the public health by mitigating nitrogen toxicity in island ponds, while moving toward compliance with applicable water quality standards relating to controllable nitrogen. Accordingly, the program is based on the finding that, in specified circumstances new on-site wastewater treatment systems that employ best available de-nitrification technology, will achieve removal of significantly more wastewater nitrogen than standard Title 5 septic systems and will significantly improve water quality in island towns at a cost lower than sewer collection and treatment system. This project will monitor:

1. Performance measures and cost effectiveness information for the deployed IA septic systems.

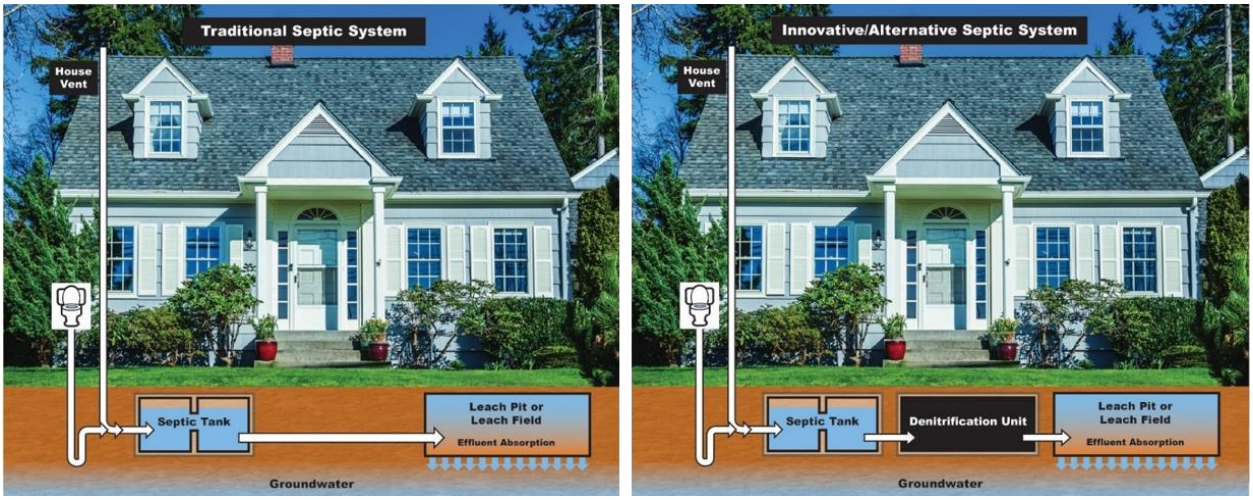
2. An impact evaluation of the systems on groundwater nitrogen levels.

Standards and definitions

Innovative Alternative Enhanced System – (IA) on-site wastewater technology capable of removing nitrogen in wastewater before it enters surrounding groundwater, estuaries, and ponds. IA systems are capable of removing up to 90% of the nitrogen from household sanitary waste.

Only a limited number of these systems have been fully field-tested. Additional installations and testing are needed to evaluate performance of the latest IA septic systems before they're considered for broader use.

Septic Tank - An underground chamber made of concrete, fiberglass, or plastic through which domestic wastewater (sewage) flows for basic sewage treatment. Settling and anaerobic digestion processes reduce solids and organics, but the treatment efficiency is only moderate (referred to as "primary treatment"). The treated liquid effluent is commonly disposed in a septic drain field, which provides further treatment. Nonetheless, groundwater pollution may occur and can be a problem. While Massachusetts law generally limits effluent from septic tanks having a concentration of nitrogen of 26.6 mg/l, however in reality field testing has shown this to be a much larger concentration of nitrogen.



Coordinating Committee (CC) – The group that regulates and administers this project. The CC is made up of eight members: the health officer from each of the six island towns, one representative from Dukes County and one representative from the Marthas Vineyard Commission. The Marthas Vineyard Commission (MVC) will act as the administrator of the CC. The County Manager will be an ex officio non-voting member of the CC.

Impaired pond - Estuarine water basin that has been designated to be impaired as established in the Massachusetts Estuaries Program for various ponds on the island.

Property - means a residential parcel or property.

Property owner (homeowner) – owner of the property on which the IA septic system will be installed. (Per vote of the Dukes County Commissioners on 10-18-2023 currently only individual homeowners can apply to participate in the program - meaning no legal entities as owners of property can apply).

Proposed pond water basin (watershed) - means the pond basin as identified in Map 1 with specified boundaries as approved by the Marthas Vineyard Commission. Pond basins may be in more than one town.

Groundwater Discharge Standard - For the purposes of this program, on-site IA systems that provide de-nitrification wastewater disposal technology must be approved by the Massachusetts Department of Environmental Protection (MassDEP) for general use, provisional use, or piloting use for nitrogen reduction and meet a nitrogen groundwater discharge standard of not more than 10 mg/l of nitrogen from septage waste or removes 80% of septic nitrogen waste.

Procurement and qualifications

The goal of the program is the reduction of contaminants flowing into island ponds by using certain technologies that meet the established standard as specified further. These technologies may be offered by several different companies/operators. The CC will seek to qualify engineers, designers, installers, and operators who wish to participate in this program.

Systems eligible for funding under this program:

1. must be installed, designed/commissioned, monitored, tested, and maintained in accordance with all applicable state and local regulations and any manufacturer instructions.
2. must be designed to achieve a removal standard of releasing no more than 10 mg/l of nitrogen into the ground after treatment. Systems that have provisional certification from MassDEP must provide records and/or other information indicating that they can achieve such standards. Provisional technologies must agree to testing and other requirements imposed by MassDEP.

Other related participating disciplines (engineers, operators, and installers) must demonstrate that they have experience in designing, developing, installing, maintaining and operating eligible technologies.

The CC will solicit firms wishing to provide services for this program. The solicitation will be placed in print and on-line publications that provide wide exposure. The CC will develop a request for qualifications for all disciplines associated with this program.

After the solicitation, the CC will review submitted proposals and decide which firms qualify for inclusion. The CC will notify firms that applied for qualification in this program that they have been accepted.

Distribution of Awards

The CC proposes to award up to $1,440,000 of the ARPA funding in the form of grants to individual homeowners for design and installation of a qualified IA septic system on the island. The funding will be allocated for distribution per town as follows:

$315,000 Edgartown	$135,000 Chilmark
$315,000 Oak Bluffs	$90,000 Aquinnah
$315,000 Tisbury	$45,000 Tribal properties if desired
$180,000 West Tisbury	$45,000 Gosnold

If funds remain unallocated (grant contracts are not signed) by September 1, 2024, the County reserves the right to reallocate the remaining funds as it sees fit.

Process of Awards

1. The CC will notify each town's Board of Health of funding available per town and the general rules for award. Each town will develop and employ its own allocation process provided each funded system is consistent with the criteria outlined in this manual. The CC will provide social justice guidelines for use by the Towns' Boards of Health in developing these processes. The County is requiring that no recipient of the funds will have an income over 240% AMI (Area Median Income as determined by U.S. Department of Housing and Urban Development for Dukes County. Grant recipients will demonstrate compliance with this condition by sharing a copy of their most recent federal tax return.

2. Each town will solicit property owners who are interested in participating in this program. Eligible properties must be in a watershed (within 3 miles of mean high water) that has been classified as impaired.

3. Once approved by the respective Town BOH, a property owner will be recommended to the County for participation in the grant program. Once a grant agreement is finalized and signed by the County and the property owner, the respective BOH will receive a notification of acceptance into the program. The grant agreement will detail the parameters of the award including: the maximum amount the property owner can be reimbursed; whether the grant is for a full replacement system or the addition of nitrogen reducing IA components to the existing system; and all details of the steps necessary to be completed before funds can be released.

4. If there is financial hardship identified by the BOH which would otherwise prevent the property owner from participating in the program, the respective BOH could recommend to the County to work with the owner to allow in the grant agreement for a direct payment to the vendor on behalf of the owner or to amend the grant agreement to increase the maximum allowable distribution amount. If there are other unforeseen circumstances the respective BOH could recommend amending the grant agreement to address the issue (for example to extend the date by which the system must be installed). Financial hardship is defined as having income below 80% AMI.

5. There will be two types of grants offered:

   a. grant for IA septic system design costs

   b. grant for IA septic system installation costs.

6. The owner must choose a qualified technology, engineer, and installer from the list of qualified firms and provide signed contracts with the vendors to the respective BOH within 90 days from grant award.

7. The owner must present the septic plan to the BOH no later than 4 months from the approval of the grant for design costs.

8. The owner must ask for inspection of the installed septic system no later than 6 months from the approval of the grant for installation costs.

9. Expenses eligible for reimbursement under this program include engineering, acquisition of equipment and installation, provided that all costs are incurred and paid, and documentation submitted to the County no later than the respective deadlines in the grant agreement. Final grant disbursements will be made no later than November 1, 2026.

10. At the time of entering into the grant agreement the property owner agrees, at its expense, to enroll in an ongoing maintenance and testing program as recommended by the system designer and as specified by the grant agreement. This obligation will survive the sale or transfer of the property to new owners. A deed restriction to that effect must be filed by the homeowner with the Registry of Deeds and copy of the filed restriction provided to the respective BOH. The cost of maintenance and testing is the responsibility of the property owner.

11. The program is based on reimbursement for expenses to the homeowner by the County. The property owner can submit for reimbursement costs for the following expenses related to the septic installation:

a. Engineering/design
b. Technology/operator
c. installation
d. permitting

The appropriate BOH agent will certify to the County that the step that the owner is asking to be reimbursed for has been approved and signed off by the BOH (the septic installation plan was approved, the system was installed, and permit issued) and send a copy of such documentation to the County. Property owners can request reimbursement for each step by submitting the billing documentation from a contractor and proof of payment to the County. The County will reimburse the property owner for eligible costs within 60 days of receipt of all required documentation to substantiate the release of funds under the ARPA requirements.

Testing

An IA system permitted under this program must be installed, commissioned, monitored, tested and maintained in accordance with all applicable state and local regulations and any manufacturer instructions. If an IA technology has not achieved approval for general use, additional testing and other processes will be required. Copies of test reports must be provided to the respective Board of Health that issued the installation permit within 30 days after completion of the testing and quarterly thereafter for 3 years The Martha's Vineyard Commission shall be responsible for the implementation of the testing program and maintenance of all test results to ensure consistency and compliance with certification requirements and all Mass DEP requirements. The MVC will also report all testing results to the Barnstable County Board of Health for IA monitoring.

Compliance

These IA systems require regular testing and reporting to ensure that results will be considered when assessing the pond's progress toward reaching the TMDL. All systems under this program will be tested quarterly with results being provided to the homeowner, Board of Health, MVC, and technology provider. Results will be aggregated in a database compiled by the MVC and provided to Mass DEP as required.