National Decentralized Water Resources Capacity Development Project

Application of a Risk-Based Approach to Community Wastewater Management

Tisbury, Massachusetts

August 2002

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Submitted by the Town of Tisbury, Massachusetts

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DISCLAIMER

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REPORT SUMMARY

The Town of Tisbury, Massachusetts is situated south of Cape Cod on the island of Martha's Vineyard. It provides an example of decentralized wastewater management in progress in a coastal island community with nutrient-sensitive resources, a sole source aquifer (only one aquifer available for drinking water), combined with growth concerns. The goals and key elements of their management program, coupled with the process the town has gone through, provide a case history for other communities to adapt to their own circumstances. This overview of the management program includes critical decision-making points, barriers to implementation, status of the implementation effort, and the next steps.

Tisbury is located on the northwestern tip of the island and is largely rural with a population center in the village of Vineyard Haven. Wastewater is treated onsite or in cluster systems. The town voted in October 1998 to adopt a community wastewater management plan for these decentralized systems. In July 1999, the town finalized the community wastewater management plan and made it compatible with the town's previously-planned Vineyard Haven Wastewater Project. In August 2000, the town received a grant from the National Decentralized Water Resources Capacity Development Project (NDWRCDP) to assist with implementation of the wastewater management program. Between August 2000 and July 2001, Stone Environmental, Inc. (SEI) assisted the town with program implementation. Six steps were taken to implement this program:

1. Perform a risk assessment through delineation of environmentally sensitive areas in the community, conduct nitrogen-loading studies, and develop growth projections.

2. Develop a risk-based water quality protection matrix through public workshops and information sessions.

3. Define risk-based wastewater management districts in Tisbury.

4. Install and use a computer database to track on-site system installations, upgrades, and maintenance.

5. Institute a long-term maintenance program for on-site systems. For each system, the program will include a schedule for initial inspection, regularly scheduled follow-up inspections, function checks, and pumpouts.

6. Expand availability of loans to system owners for wastewater treatment system upgrades.

SEI collected the data and performed the analyses that enabled the town to identify environmentally sensitive areas. The wastewater management districts were defined by the risk assessment/risk management approach. Tisbury's Board of Health has entered their paper on-site system permit documents into a computer database designed to facilitate the management of on-site systems, and a system for inspections and function checks of on-site systems has been set up.