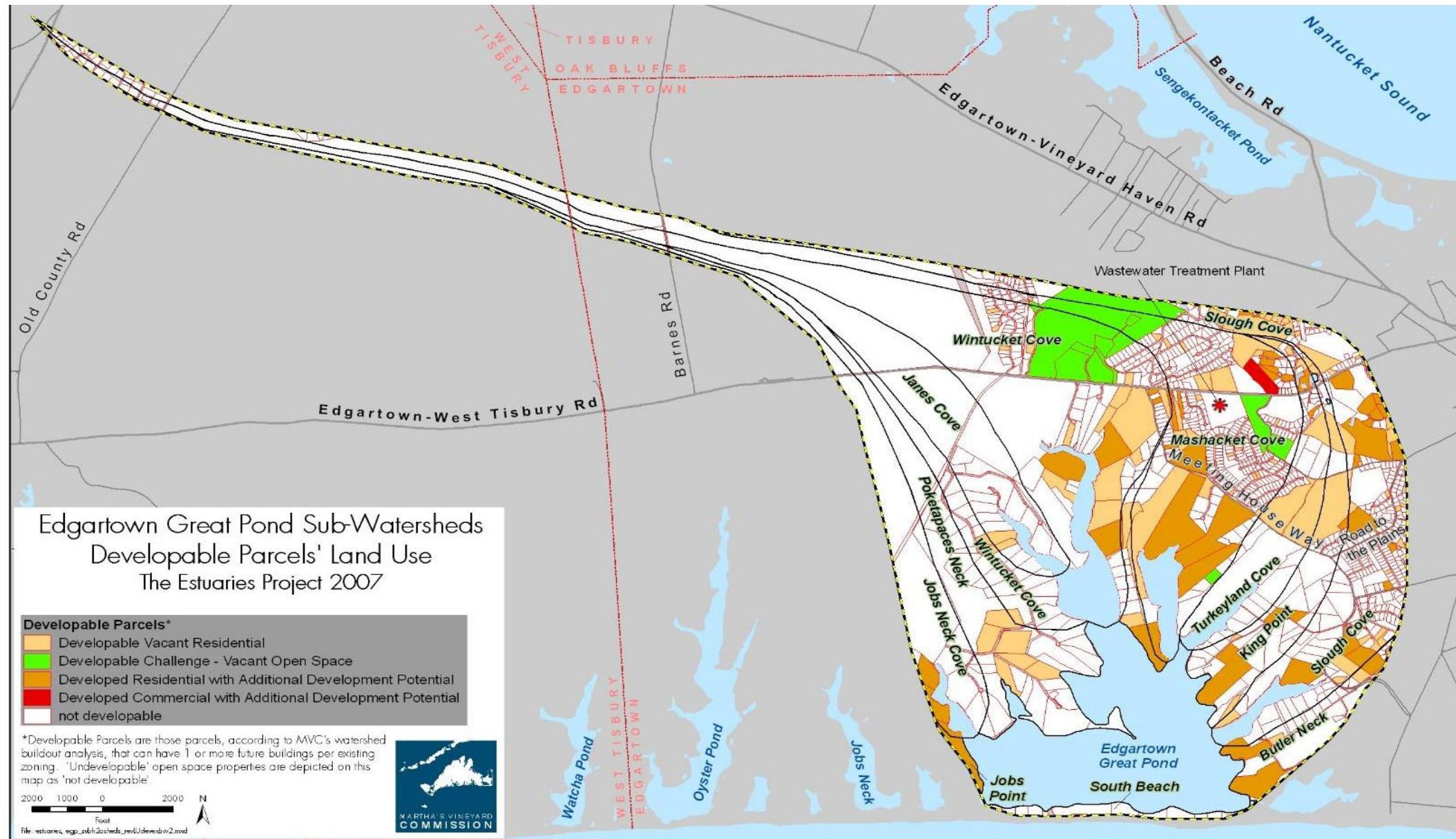


A Watershed Nitrogen Mitigation Plan

Implementation to Meet a TMDL



Edgartown Great Pond and Watershed



Edgartown Great Pond

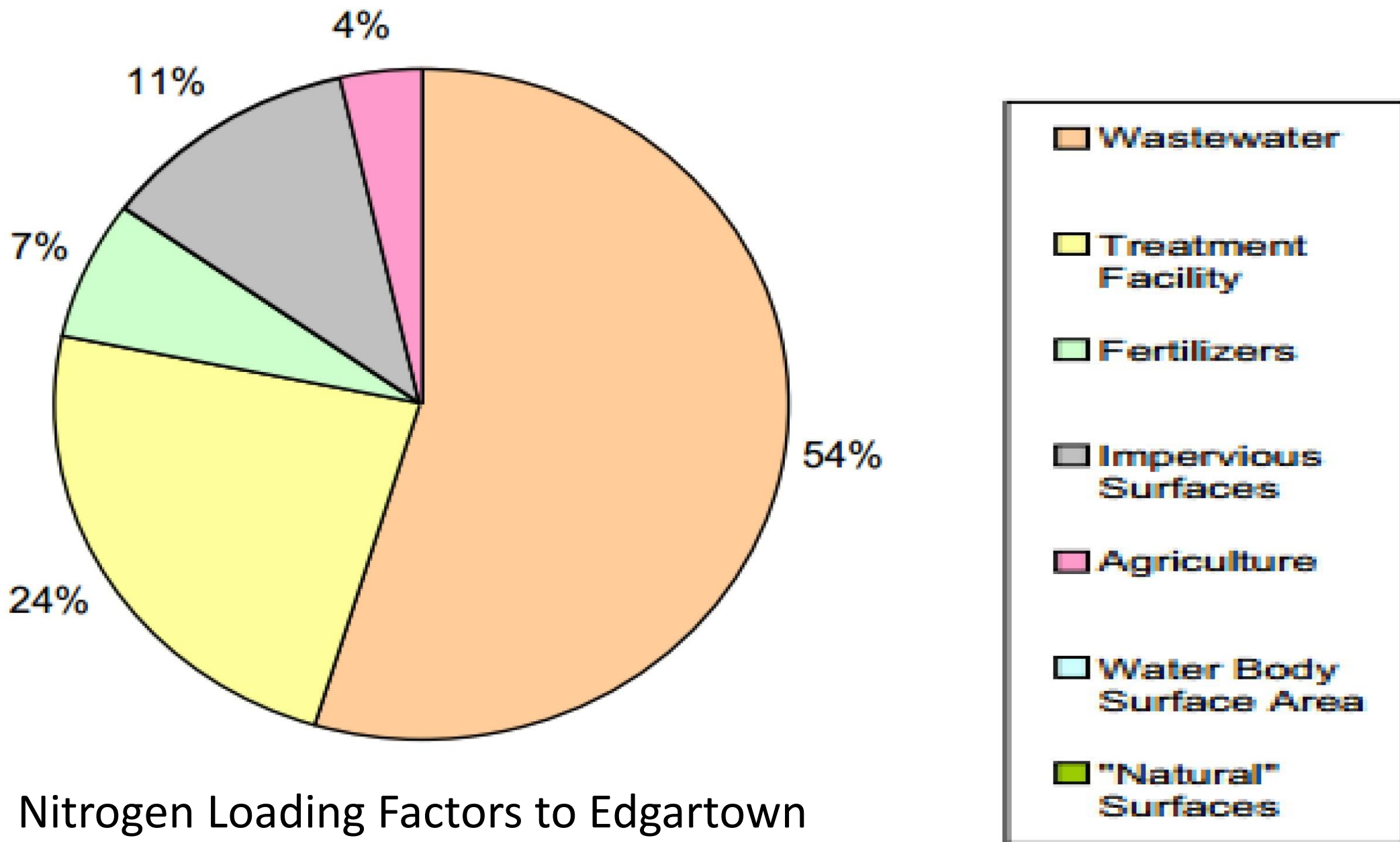
Pond impacted by development-
algae and loss of eelgrass,
decline of shellfish.

Town agrees to help fund MEP
study to be issued in 2004.

1999 Martha's Vineyard
Commission study leads to
Special condition (g) added to
Discharge Permit of 2004.

MVC Recommendations

1. Sewer in watershed in
suitable areas
2. Regular pond openings and
dredging
3. Re-establishment of
shellfish and historic herring
runs
4. Fertilizer limits, lawn limits,
shoreline setbacks.
5. Alternative systems in
more sparsely settled areas



Nitrogen Loading Factors to Edgartown
Great Pond

Special Condition (g) filed with DEP 1/26/2004

- 1. Wastewater Commission agrees to set an Operational Goal of **<5 mg/L Total Nitrogen**
- 2. Commission agrees to retain the plant capacity to remove 300 septic systems from the watershed.

SEPTICS, SEWER, AND POND: NITROGEN (N) LOADING IN SCALES OF 10.

SEPTIC TITLE V AND CESSPOOLS

INFLUENT COMES IN AT N OF 35 MG/L.

SYSTEM EMITS N AT 35 MG. PER LITER (or 35 parts per million)

(A nitrogen reducing Alternative System may reduce this to 15 MG/L if functioning properly.)

WASTEWATER TREATMENT—INFLUENT COMES IN AT N OF 35 MG/L. The effluent is discharged after treatment to ground sand beds AT <3 MG/L.

THE TARGET N FOR THE EDGARTOWN GREAT POND IS 0.35 MG/L.

Watershed Project

1. Initial mitigation: 60 BR/15 lots/6,600 gpd. These were the A/I systems.

2. Island Grove: 600 BR/150 lots/66,000 gpd.

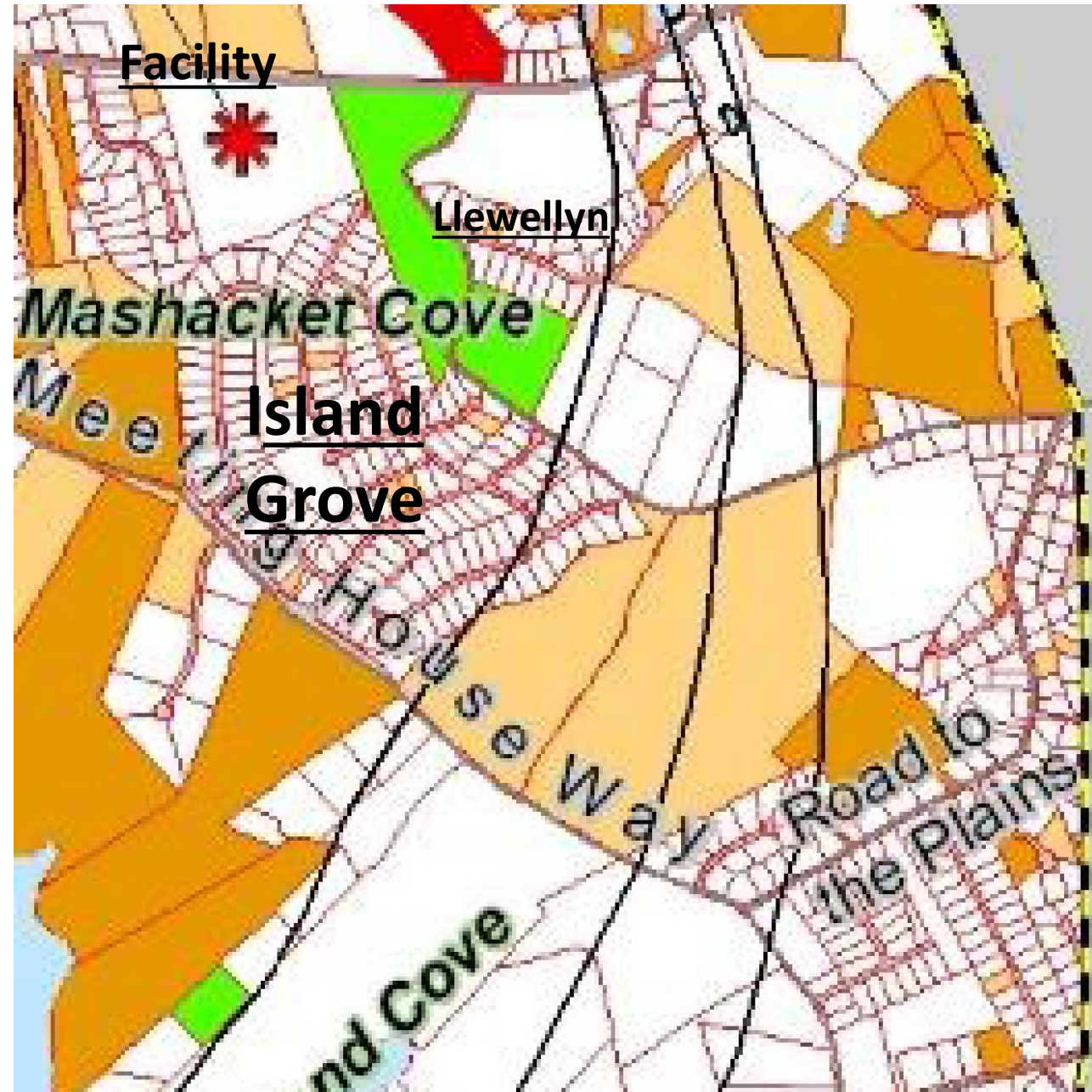
3. Road to the Plains: 540 BR/135 lots/ 59,400 gpd.

4. Llewellyn Way: 100 BR/25 lots/11,000 gpd

5. Town project: 40 BR/10 lots/4,400 gpd.

Total: 1340 BR/335 lots/147,400 gpd.

THESE ARE ALL LOW PRESSURE GRINDER PUMPS.....



The Low Pressure Sewer Option in Retrospect

- 1. The Good: initial cost, minimal disruption, gravity issues in flat glacial outwash plain avoided
- 2. The Problematic: the case for the Continuity of Service argument.
- 3. The Bad: eventual Capital Replacement cost of pumps.

Implementation

- 1. Dredging to increase circulation, and regular pond openings.
- 2. Oyster program, restoration of Crackatuxet herring run.
- 3. New Fertilizer Regulations.
- **4. the Alternative systems option:**

These systems have not proven themselves effective in seasonally occupied residences. Well maintained A/I systems presently reduce N from 35 mg/L to 15 mg/L

“Parcels in thinly settled areas should be contemplated for Alternative Systems, as much to have "skin in the game" with other residents as for their more limited mitigation potential.”

Plan feature

Pressure Sewer:

Low cost and flexibility.

Basic maintenance by wastewater staff should be contemplated and reflected in overall rates-the Continuity of Service Argument.

Rates for sewer users to encompass Capital Replacement-or fair warning to owners of the consequences of substantial replacement cost in the future.

Effects

Initial low cost.

Otherwise, maintenance, service and eventual Capital Replacement Cost-to be borne by who?

The Continuity of Service Argument:

Sewer customers, gravity and pressure, are all paying at similar rates and pump customers should be able to expect the same Continuity of Service as gravity customers. If your pump fails, the Wastewater Dept. will replace it with a working one immediately, no charge.

Sources:

- "Edgartown Great Pond: Nutrient Loading and Recommended Management Program, 1996-1998" Martha's Vineyard Commission, William M. Wilcox et al. 1999
- "Nutrient Management Study Report Pursuant to Special Condition I(A)(g) of Groundwater Discharge Permit SE #2-24" Edgartown Wastewater Commission. 1999
- "Linked Watershed-Embayment Model to Determine Critical Nitrogen Loading Threshold for the Edgartown Great Pond System, Edgartown, MA." Mass. Estuaries Project, SMAST, MADEP. Final Report, December 2008.
- "Ownership of Pressure Sewer Systems "the only thing we have to fear is fear itself" Henry S. Albro, NEWEA, January 29, 2014

QUESTIONS???

