



Shubael Pond Innovative and Alternative Septic System Project

Meeting with Shubael Pond Leadership
October 8, 2020

INTRODUCTIONS

- BCWC - Zee Crocker, Casey Dannhauser, Jennifer Loughran
- US EPA - Tim Gleason, Alexie Rudman (via video)
- Sand Shores - Barbara Erickson, Scott Laurie, Michelle LeBlanc, Pat Uhlman
- Evergreen - Bruce and Pam Gordon, George Bachrach
- Willimantic - Jeanne Oakley

AGENDA

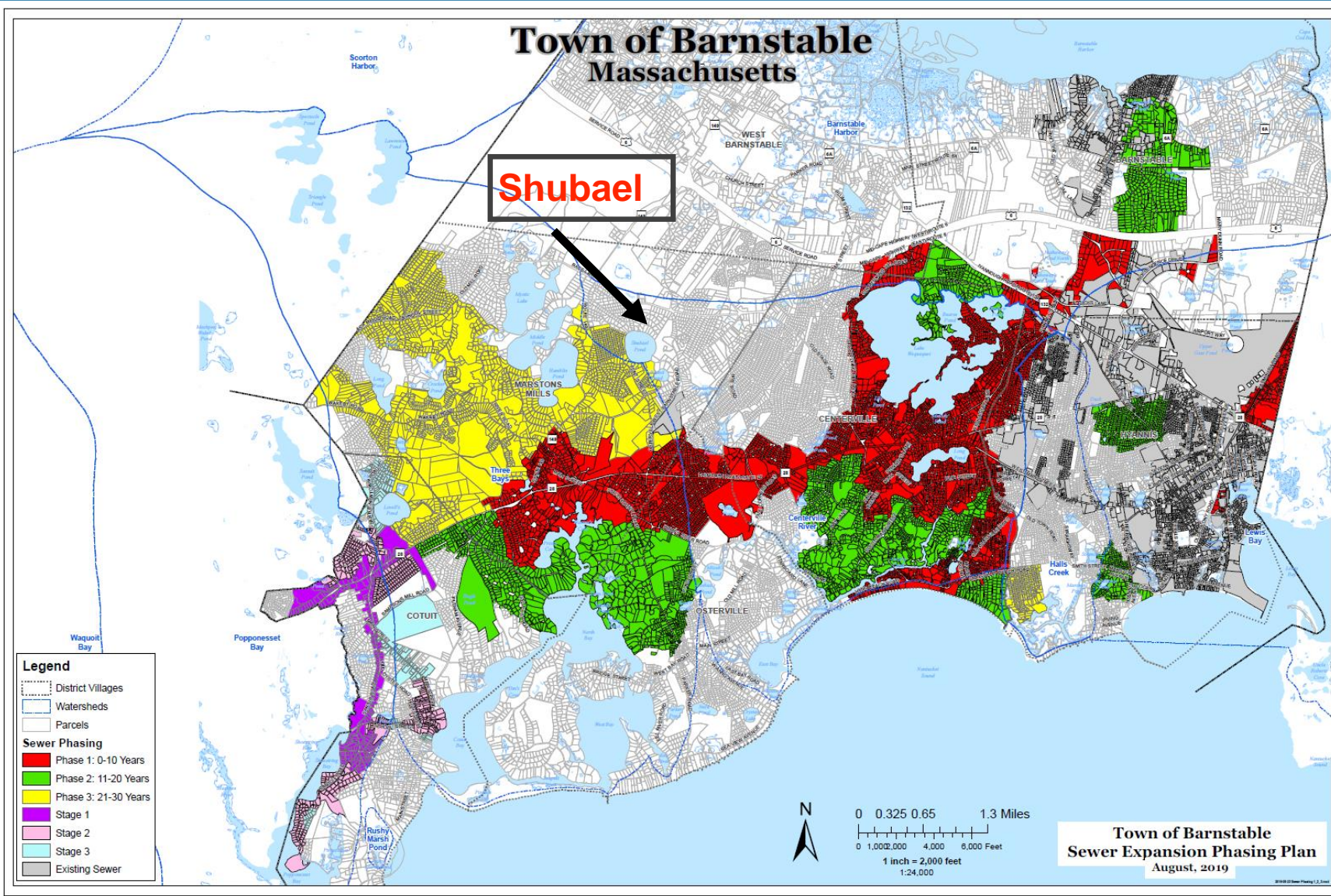
- **Key Activities, Announcements and Discoveries - June to September**
 - Conservation Law Foundation (CLF) Announcement
 - MVP Grant Application and Decision; BCWC Board Decision
 - US EPA Focus Group and Association Meetings
 - USGS Well Drilling and Water Temperature Assessments
 - USGS and US EPA Data Review and Findings
 - Phase 1 and Phase 2
 - Klean Tu NitROE WWTS
- **Next Steps - October and into spring 2021**



Conservation
Law Foundation

- CLF announced in August an intent to sue the State, Town of Barnstable, Town of Mashpee and Willowbend Resort for violating the Clean Water Act
- Passed in 1972 as a U.S. federal law, the CWA regulates the discharge of pollutants in the surface waters, including lakes, rivers, streams, wetlands and coastal areas.
- The CLF suit describes the need to implement proven technology that will reduce nitrogen pollution. Our hope is that we are going from Title 5 to “Title 6” — innovative/alternative septic systems.
- BCWC is not a funder of the CLF, but we recognize that without their efforts there would not be a “208” plan

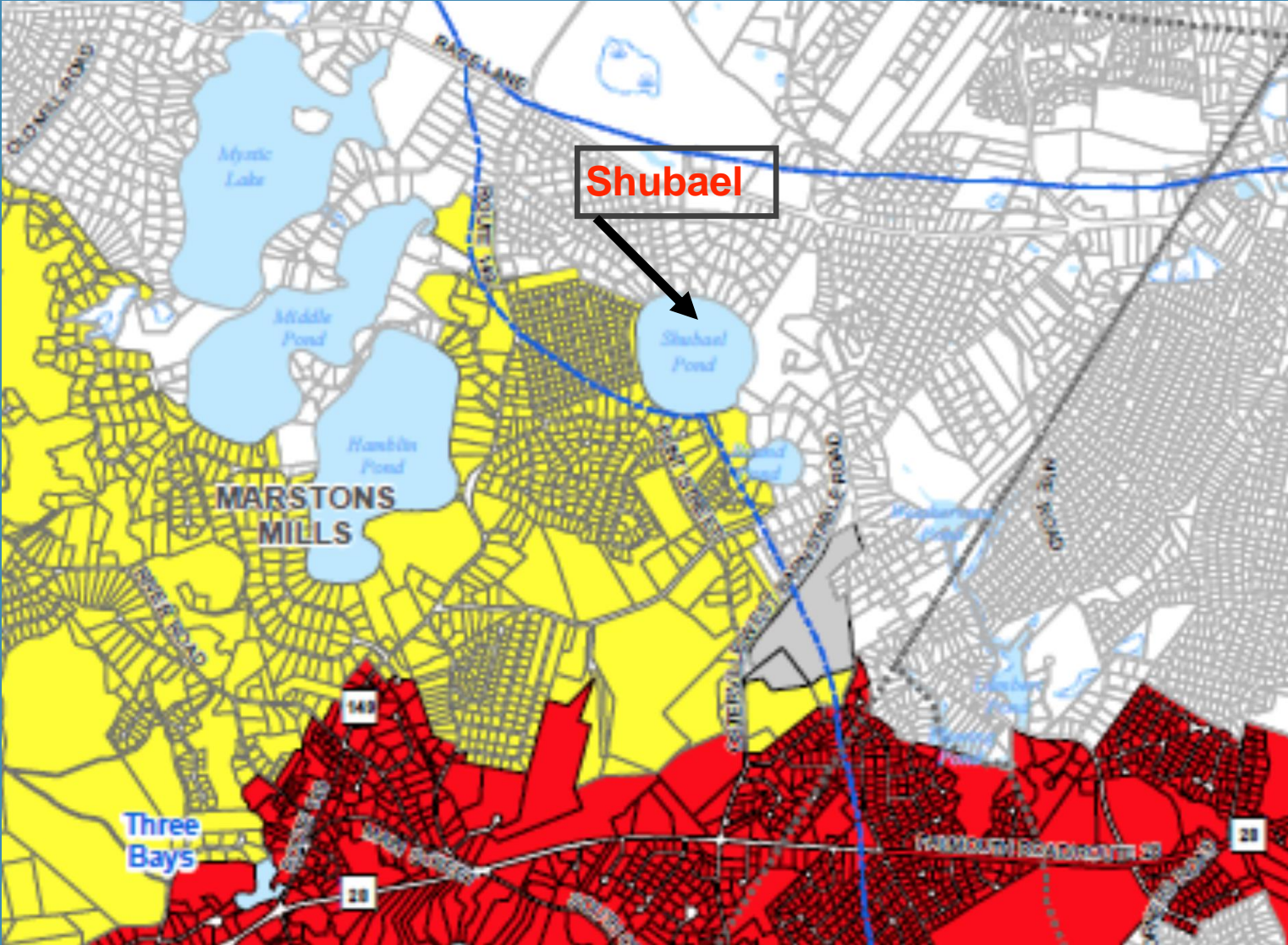
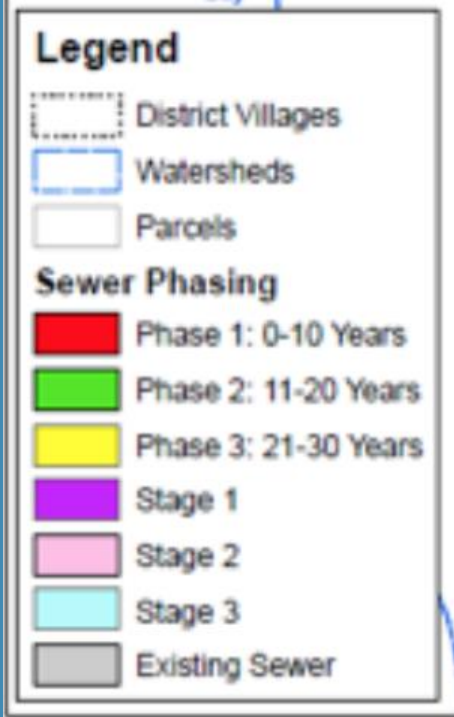
COMPREHENSIVE WASTEWATER TREATMENT PLAN



- 3,100 currently served by sewer
- 9,870 to be served by \$1.1 Billion, 30 year plan
- There are 26,834 parcels in Barnstable

**LESS THAN 50%
OF THE TOWN
WILL BE SERVED**

COMPREHENSIVE WASTEWATER TREATMENT PLAN



PROJECT FUNDING DECISIONS

Municipal Vulnerability Program (MVP)

- Grant program administered by the state to support towns with climate change resiliency projects
- The town of Barnstable submitted an application for \$1.2 million to support the Shubael Pond project and the installation of 20 I/A septic systems
- Grant application submitted in June; grant was denied in September

Barnstable Clean Water Coalition Board Decision

- Funding for installation of 15 to 20 homes to support Phase 1
- Funding to support grants of \$2,500 to \$10,00 to support Phase 2 locations and other critical locations



Shubael Project

What Are We Hearing From Neighbors

- Association Meetings
 - Sand Shores
 - Evergreen
- Site Visits



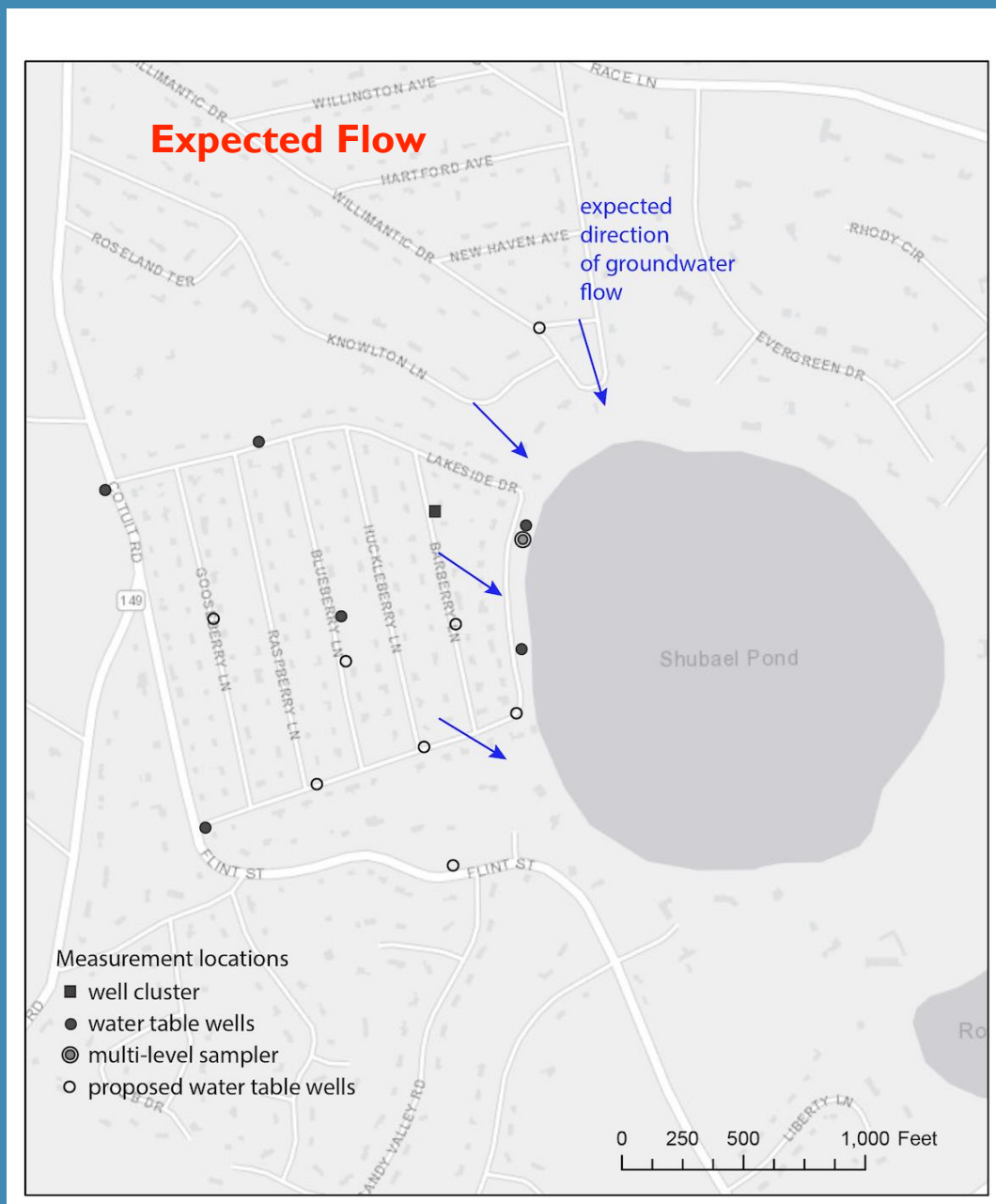
- Focus Group Meeting
 - 11 participants; 8 households

Let's Hear From Alexie Rudman, Focus Group Facilitator

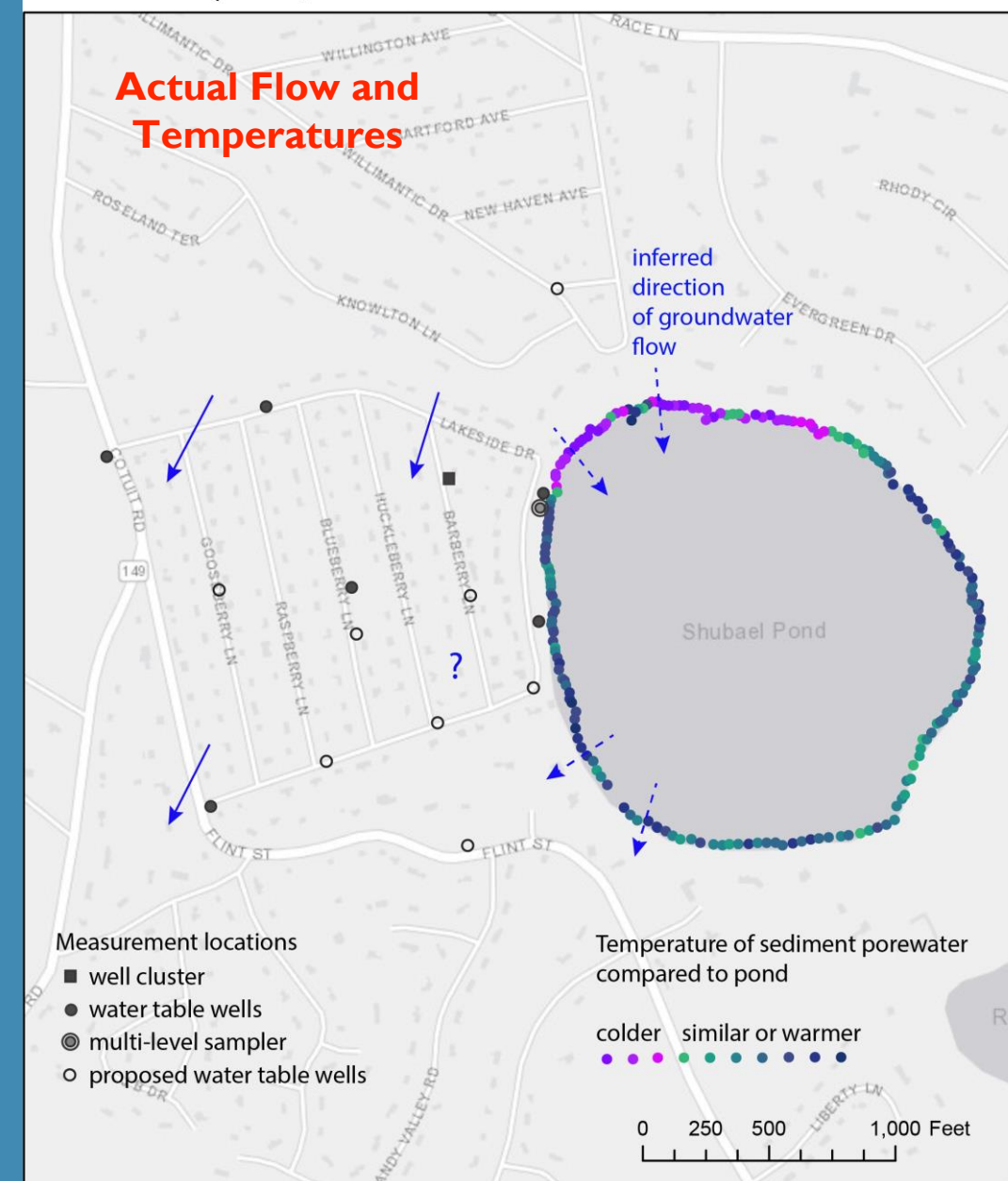
https://vimeo.com/465833512?utm_source=email&utm_medium=vimeo-cliptranscode-201504&utm_campaign=29220

SAND SHORES DRILLING

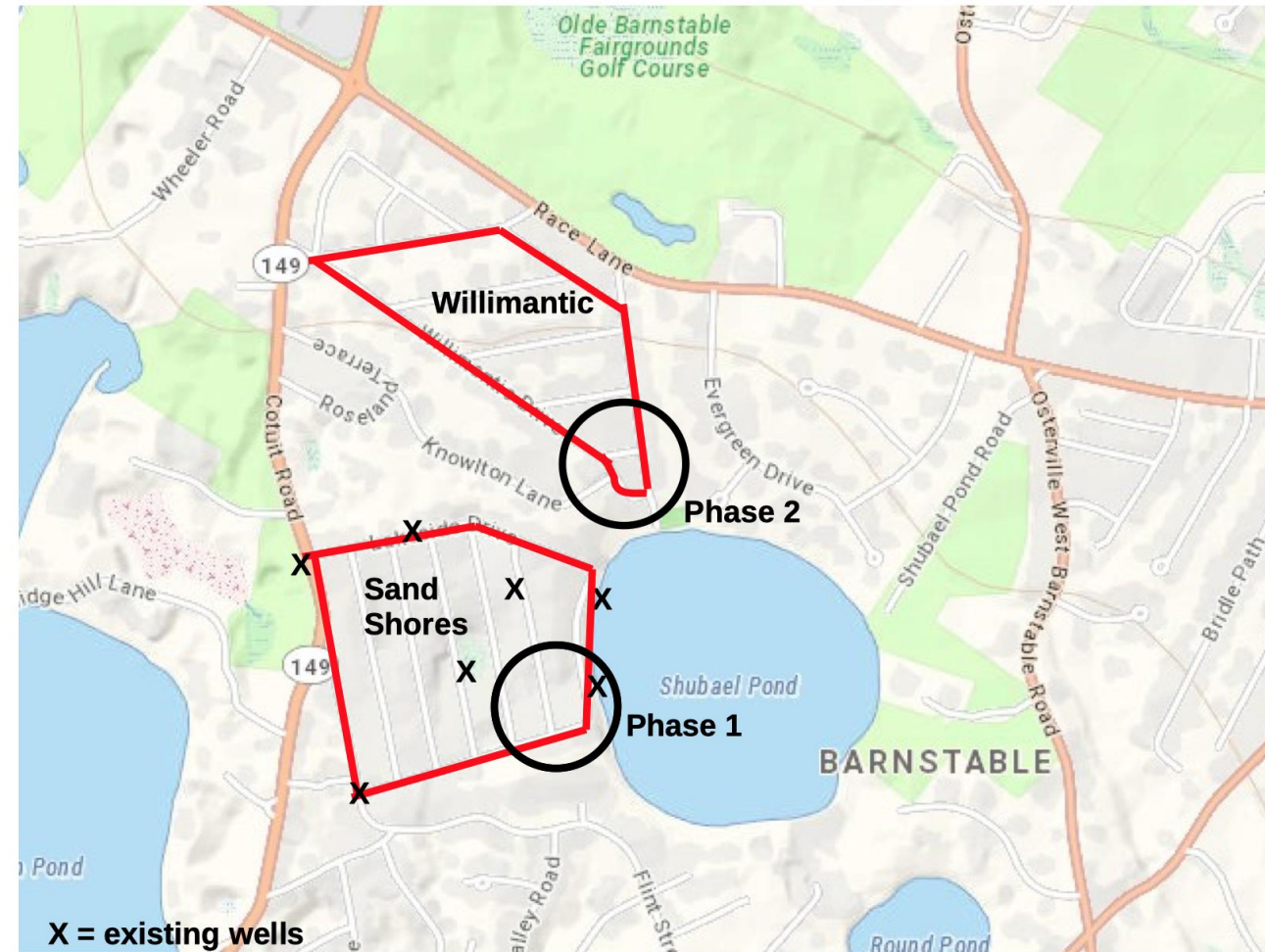




Observations in September, 2020



SEVERAL PHASES PROOF OF PERFORMANCE



One powerful potential solution is Innovative & Alternative Septics Systems

Desirable Characteristics

- Distributed technology vs. centralized
- Resilient
- Low maintenance
- Real time monitoring
- Cost competitive vs. sewer
- Failsafe power loss - gravity operating



KleanTuSM LLC IS

- A group of dedicated folks with 300+ years of experience and expertise
- Bringing low cost and effective wastewater treatment to the Cape and Islands
- An established presence on the Island
- Invested and Committed
- **OPEN FOR BUSINESS!!!!**



18 NitROE® WWTS Installations to Date

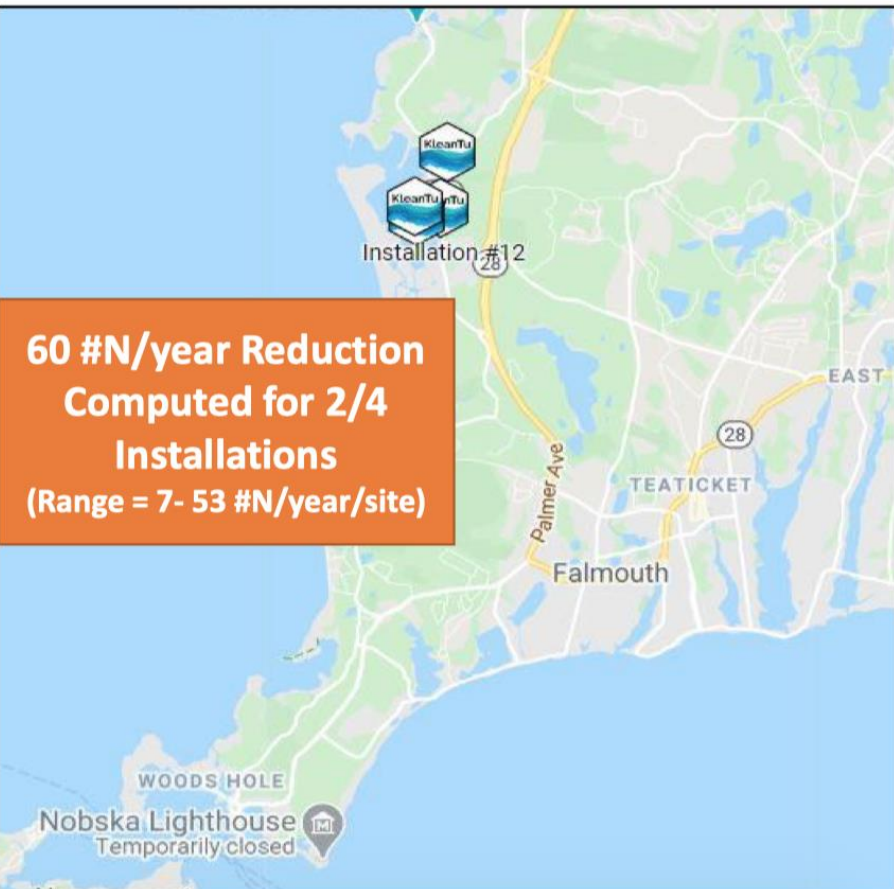


190 #N/year Reduction Computed for 10/14 Installations
(Range = 7 – 45 #N/year/site)



14 NitROE® WWTS Island Installations

4 NitROE® WWTS Cape Installations



60 #N/year Reduction Computed for 2/4 Installations
(Range = 7- 53 #N/year/site)

Conventional Title 5 Septic System



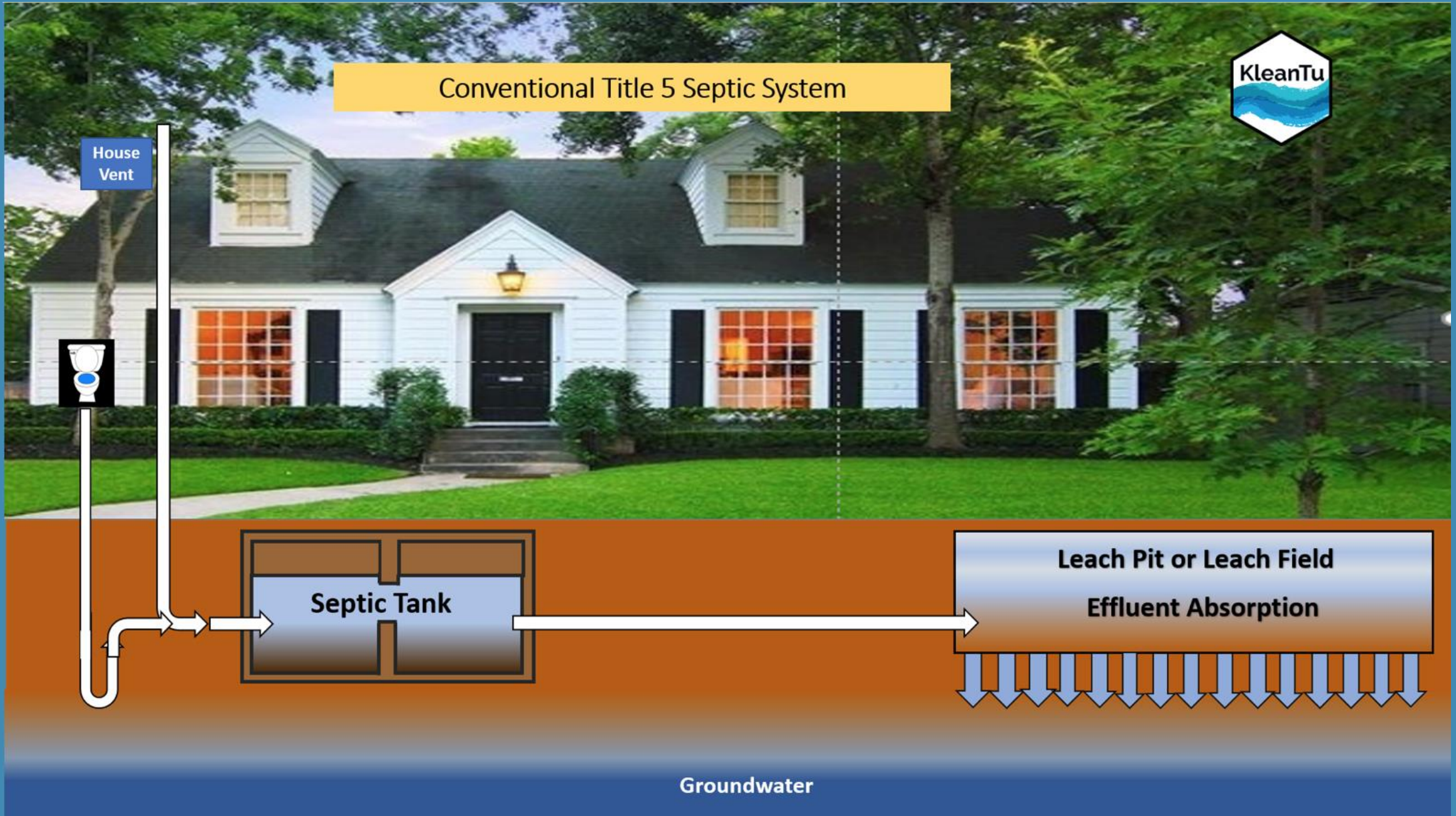
House
Vent



Septic Tank

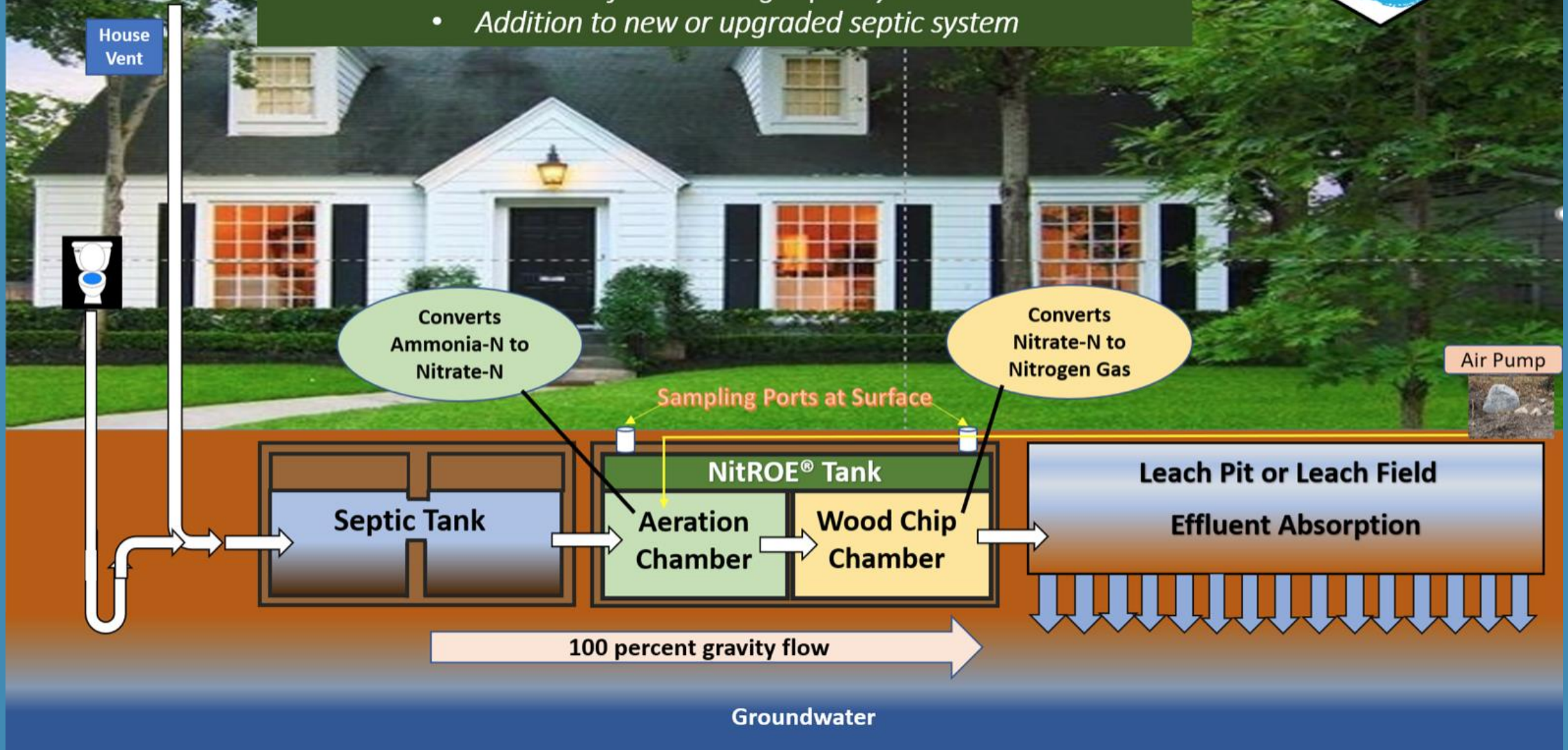
Leach Pit or Leach Field
Effluent Absorption

Groundwater



NitROE® WWTS Tank Supplement

- Retrofit to existing septic system
- Addition to new or upgraded septic system





NitROE[®] 2KS WWTS Tank Installation Steps

(West Falmouth Installation #11 Photos)



DRAMATIC RESULTS

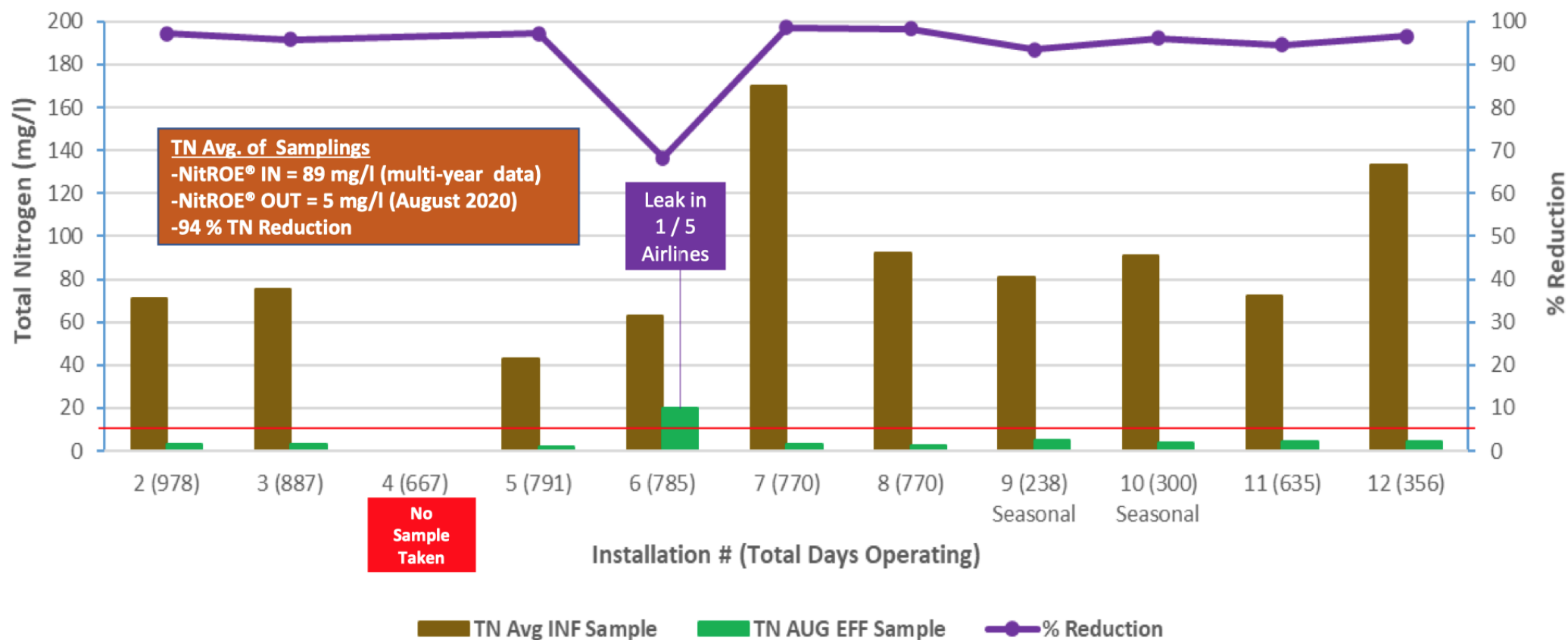
Average reduction: 86%

Median reduction: 90%

Latest results: 95 - 97%



NitROE WWTS Installations - August 2020 Total Nitrogen Sampling Results



STORMWATER DRAINAGE

- George Bachrach from Evergreen has initiated discussions with Amber Unruh, town of Barnstable, DPW
- Multiple steps for the DPW
 - Identify where the issues are around the pond
 - Assessment of the drainage issue
 - Propose a recommendation
 - Work to develop cost estimates for resolving the drainage issues
- Exploring remediation options with George

NEXT STEPS

- Phase 1 Homeowner Communications - week of October 12
 - 15 - 18 homes; site visits and emails
- Neighborhood Communication
 - Email to 100+ and Zoom meeting - week of October 12
- Surveyor Site Visits - start week of October 19
- Installation Schedule — target fall 2020 and spring 2021
- Board of Health Meetings — target winter 2020 and spring 2021