

# **Protecting Drinking Water Through Septic Infrastructure Management in Northwood, NH**

Presentation to Select Board

May 13, 2025

# **WELCOME AND INTRODUCTIONS**

Northwood Septic Study

# BACKGROUND - CYANOBACTERIA

- Cyanobacteria blooms have become more frequent across New Hampshire. In Northwood, the following Lakes provide drinking water and have experienced Cyanobacteria Blooms recently (last 5 years)
- Harvey Lake - 8 Events for 208 days duration
- Northwood Lake – 12 events for 98 days duration
- In NH advisories for cyanobacteria were issued for over 120 waterbodies statewide with the number increasing each year.

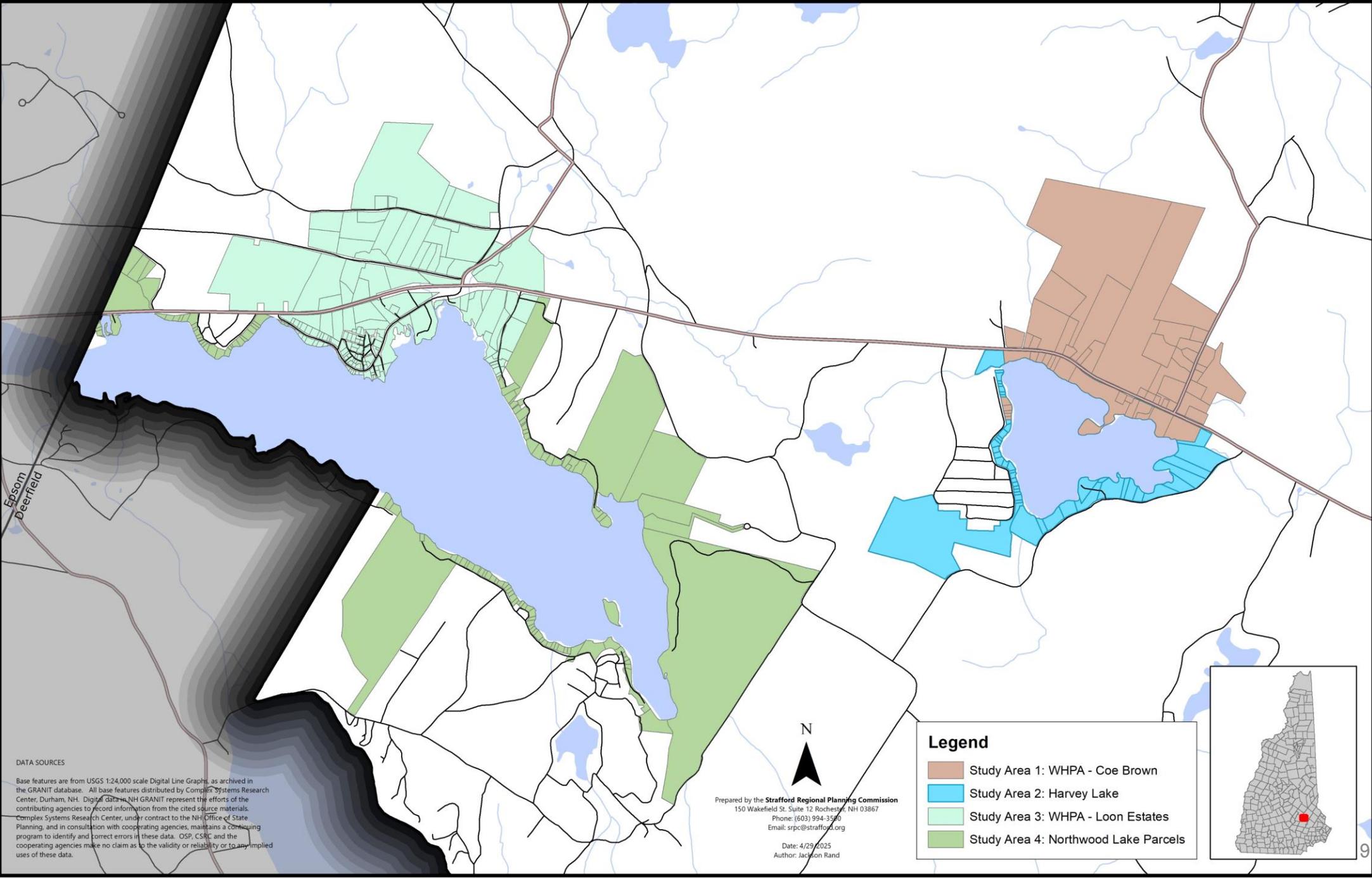
Data from New Hampshire Department of Environmental Sciences (NHDES)

# PROJECT OVERVIEW

- Task 1 – Develop Quality Assurance Project Plan (QAPP)
- Task 2 – Form and Engage Steering Committee
- Task 3 – Conduct Septic Outreach Survey
- Task 4 – Develop the Data Collection Platform
- Task 5 – Data Collection
- Task 6 – Demographics and Environmental Vulnerability Analyses
- Task 7 – Prepare Septic Risk by Parcel Map and Report
- Task 8 – Conduct Outreach and Education Campaign
- Task 9 – Develop a Septic Ordinance

# PROJECT STUDY AREA

<b>Study Area</b>	<b>Task #</b>	<b># of Parcels</b>	<b>Area Description</b>	<b>Waterbody</b>
Study Area 1	5A	54	Parcels within the two WHPAs adjacent to Harvey Lake	Harvey Lake
Study Area 2	5B	65	All remaining parcels along Harvey Lake	Harvey Lake
Study Area 3	5C	159	Parcels within the WHPA adjacent to Northwood Lake	Northwood Lake
Study Area 4	5D	181	All remaining parcels along Northwood Lake	Northwood Lake



**DATA SOURCES**

Base features are from USGS 1:24,000 scale Digital Line Graphs, as archived in the GRANIT database. All base features distributed by Complex Systems Research Center, Durham, NH. Digital data in NH GRANIT represent the efforts of the contributing agencies to record information from the cited source materials. Complex Systems Research Center, under contract to the NH Office of State Planning, and in consultation with cooperating agencies, maintains a continuing program to identify and correct errors in these data. OSP, CSRC and the cooperating agencies make no claim as to the validity or reliability or to any implied uses of these data.

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**Legend**

- Study Area 1: WHPA - Coe Brown
- Study Area 2: Harvey Lake
- Study Area 3: WHPA - Loon Estates
- Study Area 4: Northwood Lake Parcels



# SEPTIC SURVEY



**Town of Northwood**

818 1<sup>st</sup> New Hampshire Turnpike • Northwood, NH 03281  
phone (603) 942-5586 • www.northwood.org

October 21, 2024

**Re: Protecting Drinking Water Through Septic Infrastructure Management**

Dear Resident:

The Town of Northwood, in partnership with the Strafford Regional Planning Commission (SRPC), has received a grant through the New Hampshire Department of Environmental Services to conduct an inventory of septic systems. The goal of this project is to better understand and preserve drinking water within the Town's existing public water systems. To provide overall leadership and guidance on this project, a local Steering Committee has been established. The Committee is comprised of municipal officials, community water system representatives, volunteer board/commission members, and residents.

An important part of this project includes the development and distribution of an Outreach Survey to landowners within the study areas around Northwood and Harvey Lakes. The results of this survey, in conjunction with an extensive data collection and mapping effort, will be used to determine potential groundwater contamination susceptibility and risk.

Your participation in this survey, while completely voluntary, is essential to the project's success as your responses will be used to help decision-makers prioritize long-term drinking water needs and allocate resources more efficiently. It is important to note that the purpose of this survey is not to target or single out individual property owners. If you are not comfortable with answering specific questions, you may leave them blank.

The Outreach Survey can be filled out and submitted by any of the following three methods:

**By Paper and Mail**

The survey is included on the following pages. Please answer the questions, and mail the survey back to:

Strafford Regional Planning Commission  
150 Wakefield Street  
Suite 12  
Rochester, NH 03867

**On Your Computer**

Enter the URL link below in your computer's web browser.

<https://arcg.is/1iiH480>

**On Your Phone**

Enter the URL link to the left in your phone's web browser or use the QR code below.



**On Your Computer**  
Enter the URL link below in your computer's web browser.  
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**On Your Phone**  
Enter the URL link to the left in your phone's web browser or use the QR code below.

Thank you for your time and consideration! If you choose to participate in this survey, please provide your responses by Friday December 6<sup>th</sup>, 2024.

For more information about this project, please visit: [www.strafford.org](http://www.strafford.org) and navigate to Northwood's Projects web page.

**By Paper and Mail**  
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**Protecting Drinking Water Through Septic Infrastructure Management in Northwood, NH**

**Septic Outreach Survey**

**General Information**

1. What waterbody do you live on/near?  
 Northwood Lake     Harvey Lake  
 Other: \_\_\_\_\_
2. What street do you live on? (OPTIONAL Question)  
\_\_\_\_\_
3. How long have you lived or owned your property?  
 <1 year     1-5 years     5-10 years     10-25 years     25+ years
4. How old is your residence?  
 <5 years     5-15 years old     15-25 years     25-40 years  
 40+ years     Unsure
5. Do you occupy your residence seasonally or year-round?  
 Year-round     Seasonal
6. If used seasonally, do you rent out your property when you are not living there?  
 Yes     No
7. Approximately how many weeks of the year do you rent your property?  
\_\_\_\_\_

**STRAFFORD REGIONAL PLANNING COMMISSION**

150 Wakefield Street, Suite 12, Rochester, NH 03867

Barrington | Brookfield | Dover | Durham | Farmington | Lee | Madbury | Middleton | Milton | New Durham  
Newmarket | Northwood | Nottingham | Rochester | Rollinsford | Somersworth | Strafford | Wakefield



## **SURVEY RESPONSE RATE & KEY HIGHLIGHTS**

- 341 developed parcels within the study area
- 62 survey responses received
- 18% response rate
  
- Majority of residences are more than 40 years old
- 2/3 of residences are year-round, 1/3 are seasonal
- Only 1 respondent rents their property
- Over 70% of respondents have 1-2 people living there
- Most residences have a septic system w/ leach field
- Over 1/2 of respondents had their wastewater system pumped within the past 3 years, and have had their septic system inspected

# SEPTIC INVENTORY DATA COLLECTION

## Data Collected

For each developed parcel in the study area:

- # of bedrooms
- Septic system type
- Installed by
- Approval for construction date
- Approval for operation date

## Methodology

1. Started by collecting all data that was available from NHDES OneStop Septic System Database
2. Collect all remaining data from Town Hall records.

# DATA AVAILABILITY

<b>How Much Data Was Found</b>	<b># of Properties</b>
All	62
Some	138
None	210

<b>Where Was Data Found</b>	<b># of Properties</b>
All Data Available on NHDES OneStop	37
All Data Available in Town Records at Town Hall	18
All Data Available Between Combination of NHDES OneStop and Town Records	7
Some Data Available on NHDES OneStop	29
Some Data Available in Town Records at Town Hall	81
Some Data Available Between Combination of OneStop and Town Records	25
No Data Available	213

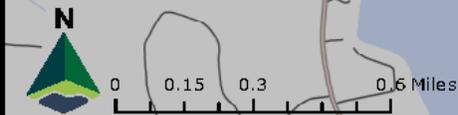
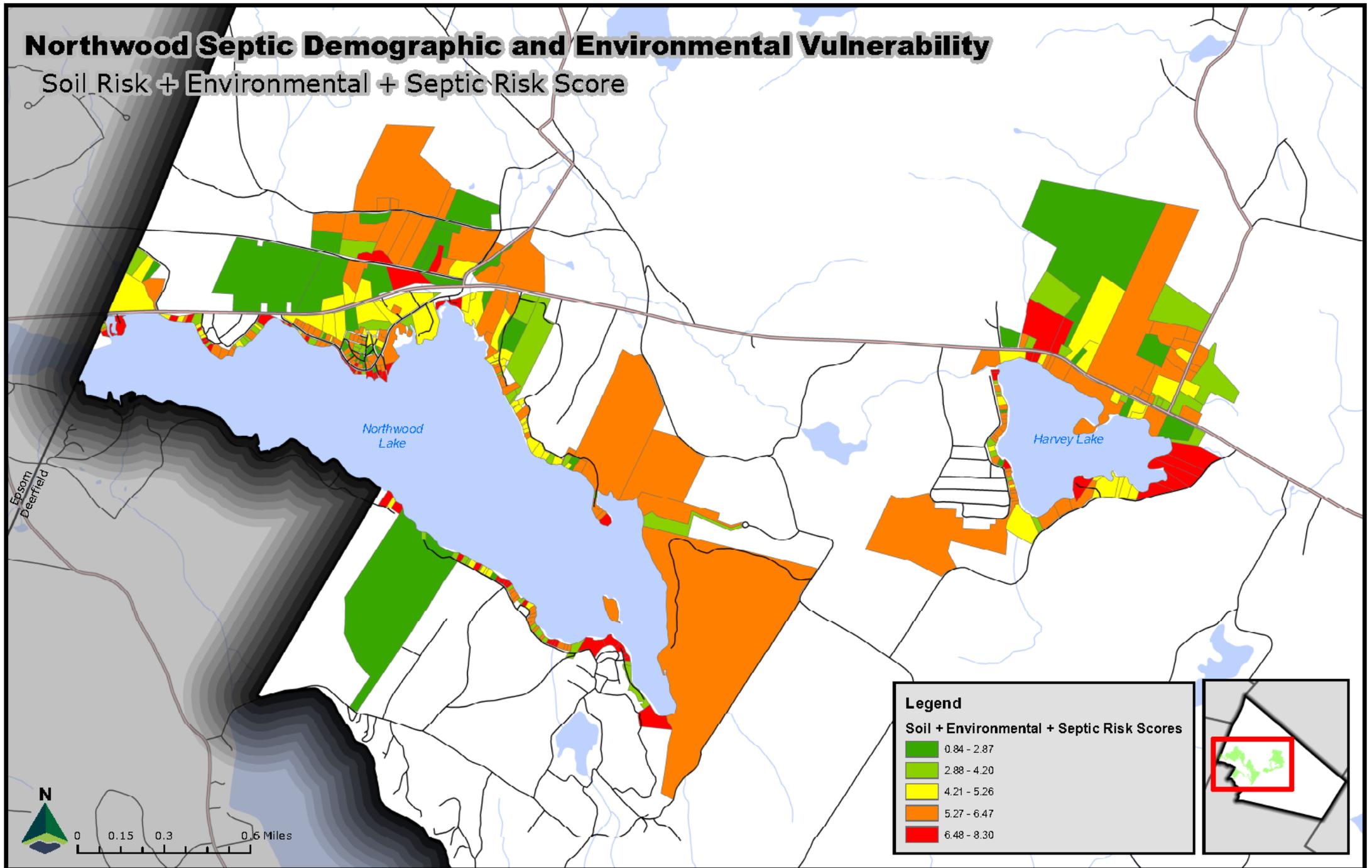
# GIS ANALYSES

To use the septic system inventory to identify the areas of highest risk to septic failure, based on:

- Environmental Risk Factors
  - Proximity to wetlands, streams, waterbodies, and flood zones
  - Soil limitations
- Septic System Infrastructure
  - Age
  - Permit Status

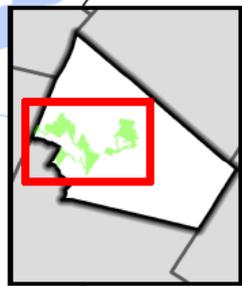
# Northwood Septic Demographic and Environmental Vulnerability

Soil Risk + Environmental + Septic Risk Score



**Legend**  
Soil + Environmental + Septic Risk Scores

- 0.84 - 2.87
- 2.88 - 4.20
- 4.21 - 5.26
- 5.27 - 6.47
- 6.48 - 8.30



# OUTREACH AND EDUCATION

- Educational Materials:
  - Flyers & Infographics
    - Septic System Do's & Don'ts
    - Good Septic Owner Checklist
    - Landscaping Best Practices Around Septic Systems
  - Outreach & Educational Materials available at the Town Hall, as well as on the town website.
- Board & Committee Meetings
  - The iterative review process is itself part of the outreach & education effort.

# **DRAFT SEPTIC ORDINANCE**

Northwood Septic Study

# DRAFT SEPTIC ORDINANCE

- The ordinance was developed using our own internal research, as well as materials and information provided by the Steering Committee.
- The NH Shoreline Water Quality Protection Act (SWQPA) was used as a foundation to require all septic systems within 250' of a reference line of a waterbody to be subject to these regulations.
- The ordinance was drafted in line with the scope of work in the project contract.
- The septic ordinance draft went through several rounds of review and revision via the project Steering Committee and the Planning Board.

# DRAFT SEPTIC ORDINANCE

- Septic Systems to be pumped every 3 years and inspected every 5 years
- Requirements for Replacement are consistent with NH RSA 485-A:2
- New Hampshire RSA 485-A:2 defines failure as “the condition produced when a subsurface sewage or waste disposal system does not properly contain or treat sewage or causes the discharge of sewage on the ground surface or directly into surface waters, or the effluent disposal area is located in the seasonal high groundwater table.”