



# ARLINGTON POND WATER QUALITY INITIATIVES



Public Meeting

*April 6, 2024*

# INTRODUCTIONS

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Much of the work discussed today has been a joint effort between the Town of Salem and Weston & Sampson with support from the New Hampshire Department of Environmental Services (NHDES).

## PROJECT LEADS

**ROY E. SORENSON**  
**MUNICIPAL SERVICES**  
**DIRECTOR**  
TOWN OF SALEM

**JOHN KLIPFEL, PE**  
**DIRECTOR OF**  
**ENGINEERING**  
TOWN OF SALEM

**JAURICE SCHWARTZ, PE**  
**PROJECT MANAGER**  
WESTON & SAMPSON



# MEETING OUTLINE

- Project Background and Update
  - Pond Facts
  - MS4 Permit Compliance
  - Ongoing and Completed Field Work
- Nutrient Source Identification Report
- Watershed Based Management Plan



Image credit: Ken Gallager via Wikimedia Commons

# POND FACTS

Surface Area: **269** acres

Direct Drainage: **1,095** acres

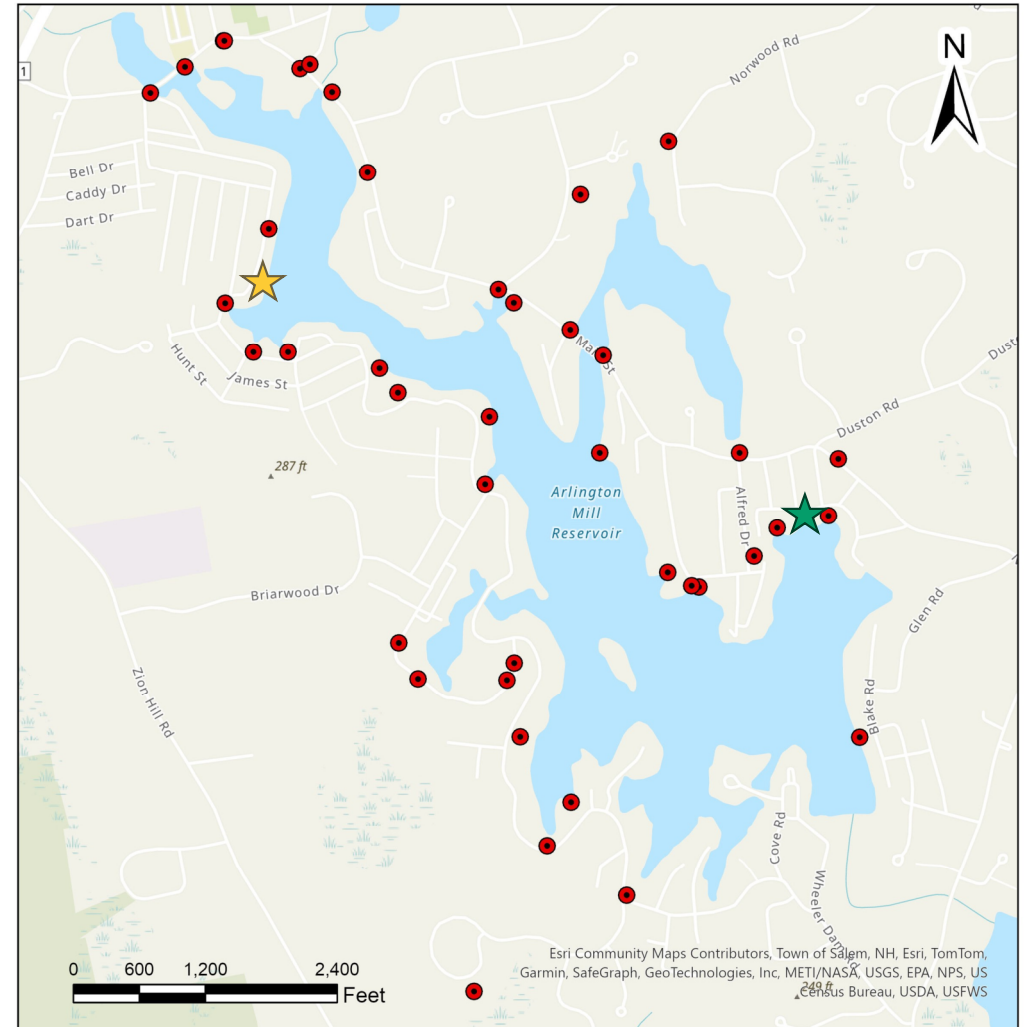
Average depth: **10** feet

Max. depth: **39** feet

**41** stormwater outfalls discharge directly or adjacent to the pond

★ Second Street Beach

★ Arlington Pond Improvement Association





## POND FACTS – WATER QUALITY HISTORY

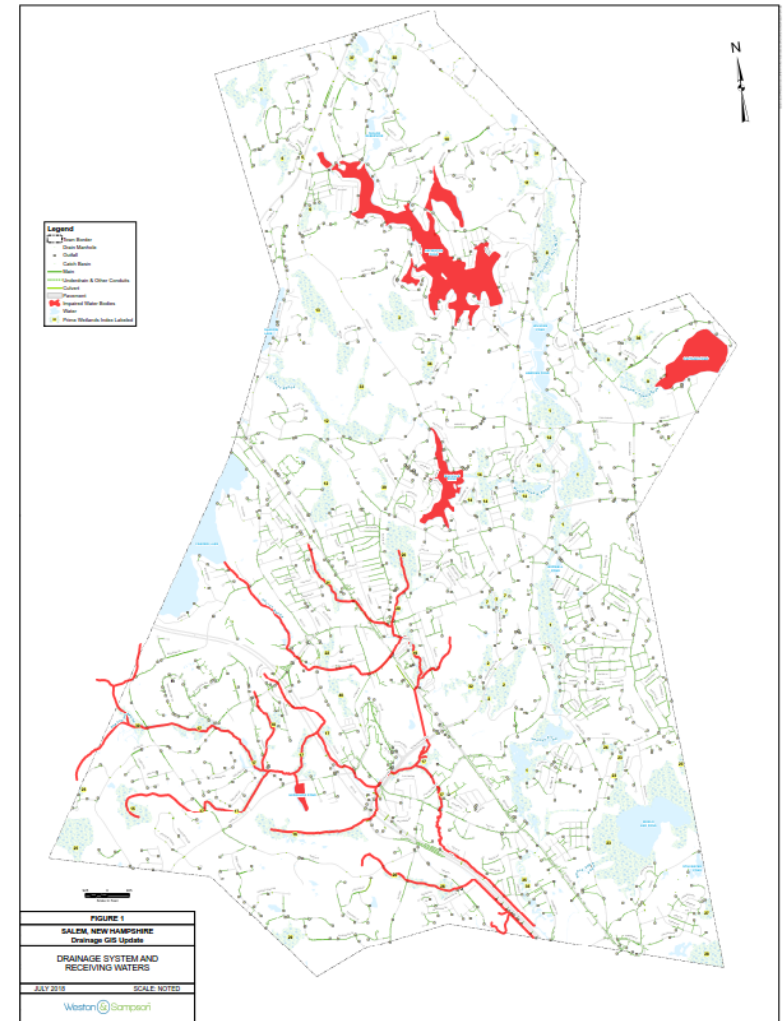
- Stormwater discharges from the Town's drainage system are regulated by EPA's 2017 NH MS4 Permit
- Nutrient pollution has been a concern since the 1986 Town-wide Water Quality Study
- **Elevated Bacteria** counts result in beach closures.
- Cyanobacteria Bloom History: August 2018, September 2021, May 2022, May through June 2023, July through November 2023.
- In summer 2023, Cyanobacteria advisories were in effect from 5/16 through 6/6 and from 7/28 through 11/8.
- Number of cyanobacteria advisories is increasing



Image Source: [www.des.nh.gov](http://www.des.nh.gov)

# MS4 PERMIT COMPLIANCE

- Some of the goals of the MS4 Permit are to improve water quality, restore designated uses, and eliminate beach advisories
- **Impaired waters**, or waterbodies not meeting standards for their intended use, have additional requirements
- **Arlington Pond** is one of many impaired waters in Salem. It is impaired for **cyanobacteria**.
- Second Street Beach and Arlington Pond Improvement Association at Arlington Pond are both impaired for **E. coli**.



# MS4 PERMIT COMPLIANCE – PROGRESS TO DATE

- Enhanced Catch Basin Cleaning – *Optimization Plan Development Ongoing*
- Enhanced Sweeping of Streets / Municipal lots – *Ongoing*
- Inspection & Maintenance of BMPs - *Ongoing*
- Regulatory Updates (Chapter 417) – *Adopted Fall 2023*
  - Use of the Public Storm Drain System: Legal authority for Town to prohibit, investigate, and eliminate suspected illicit discharges
  - Construction and post-construction stormwater management requirements
- Post-Construction Stormwater Management Reports – *Developed 2022*
  - Street Design and Parking Lots Report
  - Green Infrastructure Report
  - BMP Retrofit Inventory Report



Detention Basin DET-3, located at 109 E Broadway





## ONGOING AND COMPLETED FIELD WORK TOWN-WIDE

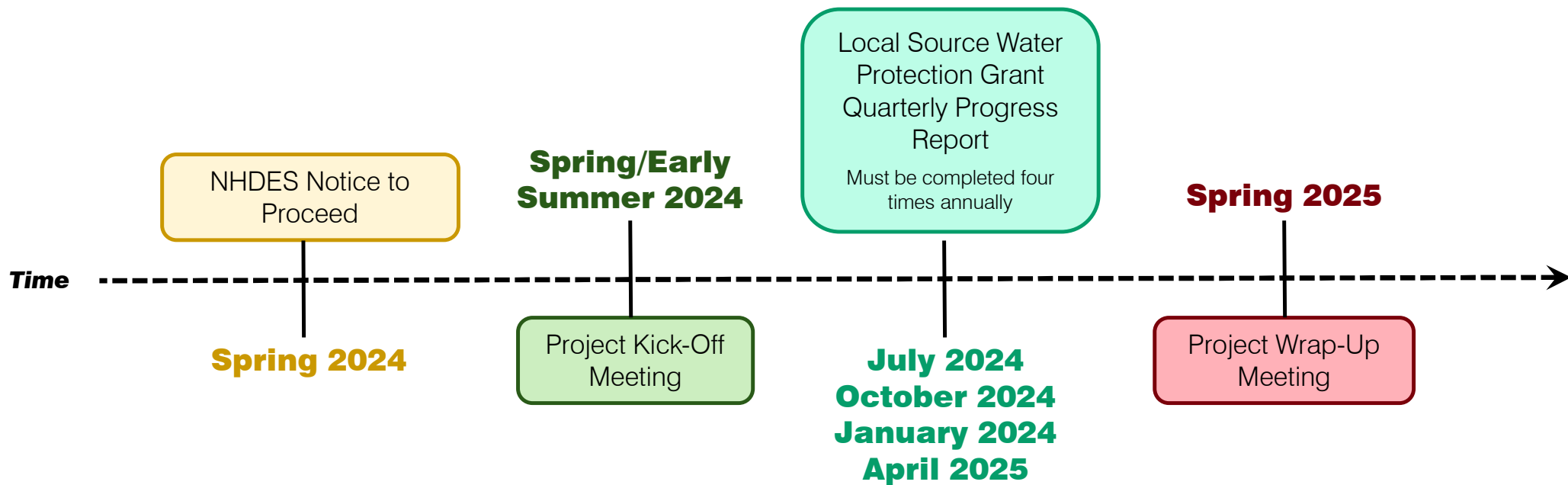
- Drainage Mapping
- Dry Weather Outfall Screening – 600+ Outfalls
  - Completed 2021
- Catchment Investigations
  - Began 2021 – *Ongoing*
- Wet Weather Outfall Screening – 350+ Outfalls
  - Began 2022 – *Ongoing*

# NUTRIENT SOURCE IDENTIFICATION REPORT

- Local Source Water Protection Grant
  - Town of Salem received \$29,283 grant award
- Project Scope
  - Calculate nutrient load & rank catchments based on contributions
    - Based on land use, soil type, impervious area data
  - Septic System Inventory
    - Septic systems within 250-feet and more than 25 years old – Town and NHDES records
  - Develop structural and non-structural best management practices
  - Engage with Arlington Pond Protective Association
  - Develop public education and outreach strategies



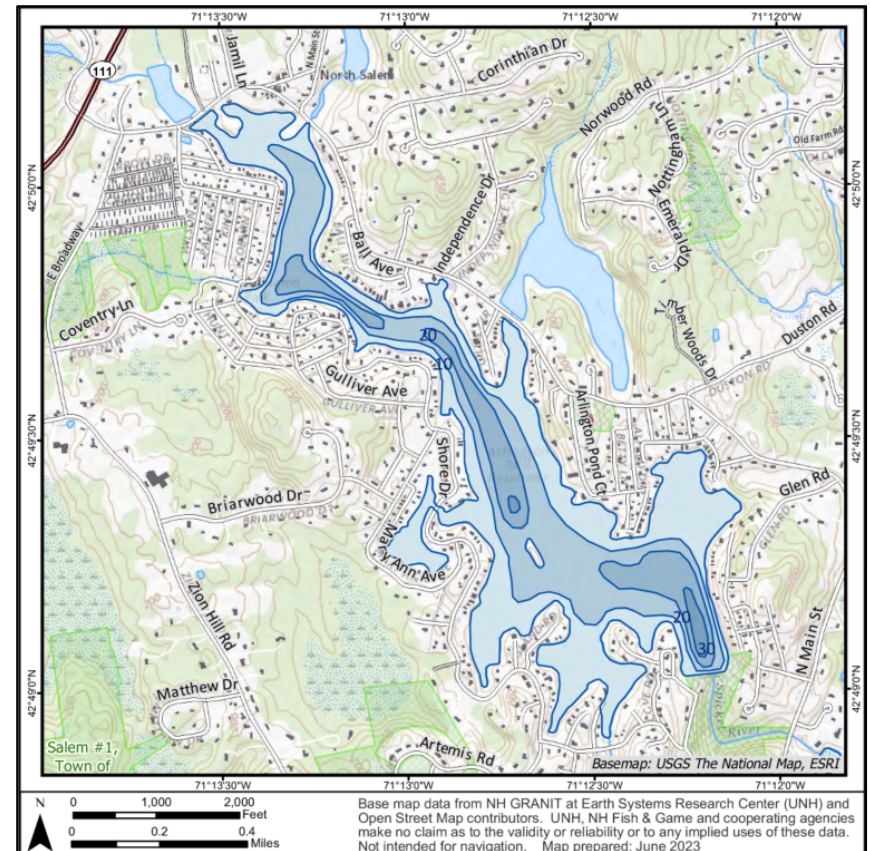
# NUTRIENT SOURCE IDENTIFICATION REPORT



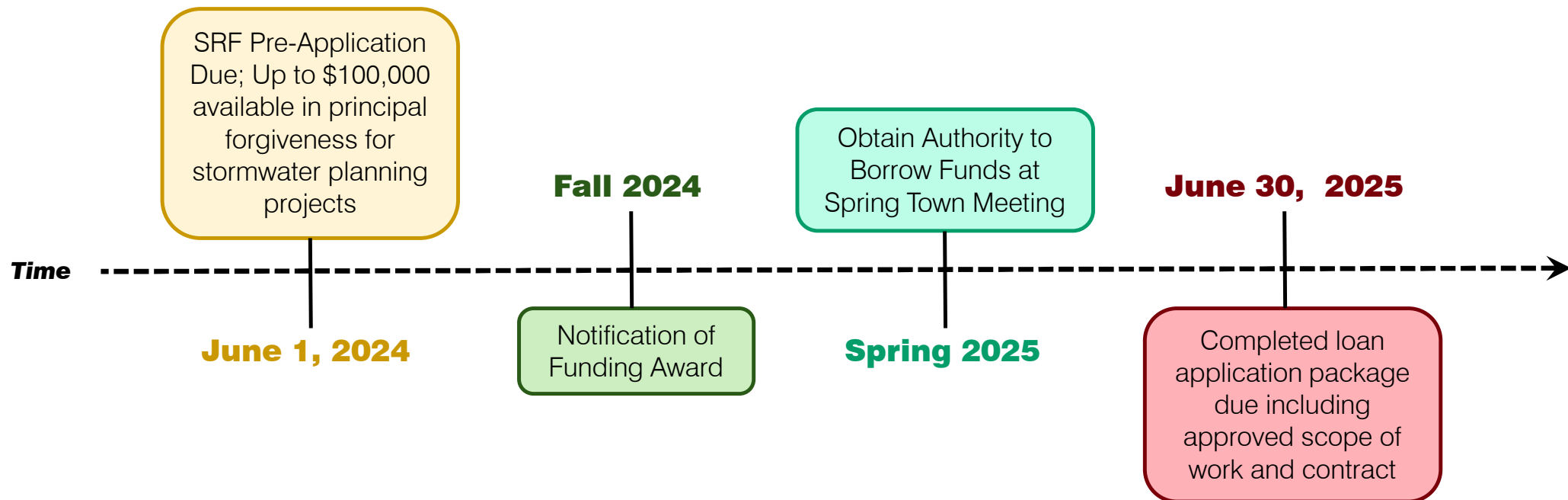


# WATERSHED-BASED MANAGEMENT PLAN

- Pursue 2024 Clean Water State Revolving Fund (CWSRF) Grant
- Scope to Build Off Nutrient Source Identification Report
- Scope of work to include preliminary watershed-based management plan, including:
  - Pollutant source identification
  - Estimate of required pollutant reduction
  - Proposed management measures
  - Public participation plan
  - Implementation plan and cost estimate
  - Water quality monitoring
- OnPoint Aquatic Consulting, LLC – Bree Arvidson
  - Vegetation Survey
  - Sediment Testing
  - In-Lake Water Quality Monitoring
- Provides the Town with opportunities to secure additional funding through other grant programs



# WATERSHED-BASED MANAGEMENT PLAN



# THANK YOU!



Weston & Sampson<sup>SM</sup>



Image credit: Ken Gallager via Wikimedia Commons