

ARLINGTON POND WATER QUALITY INITIATIVES



Public Meeting

April 6, 2024

INTRODUCTIONS

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).



ROY E. SORENSEN
MUNICIPAL SERVICES
DIRECTOR
TOWN OF SALEM

PROJECT LEADS

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

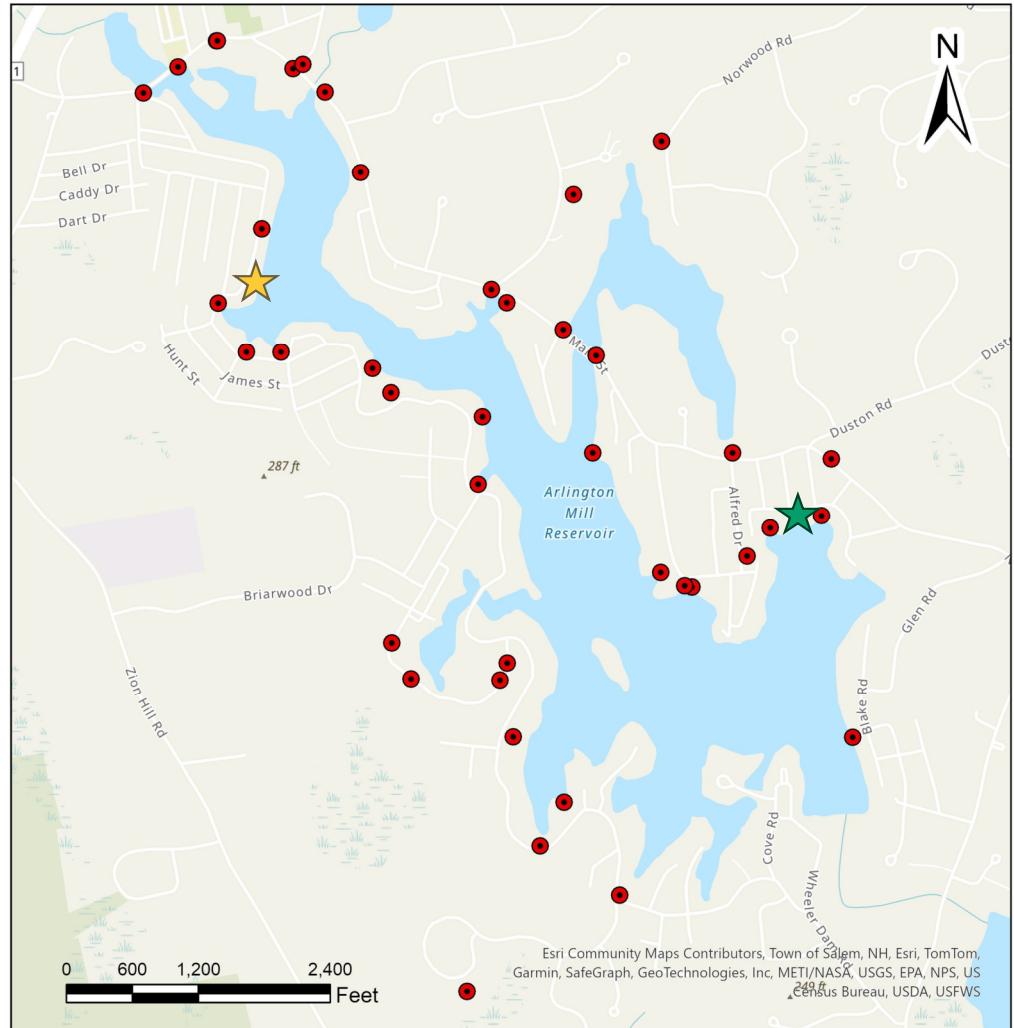
Average depth: 10 feet

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

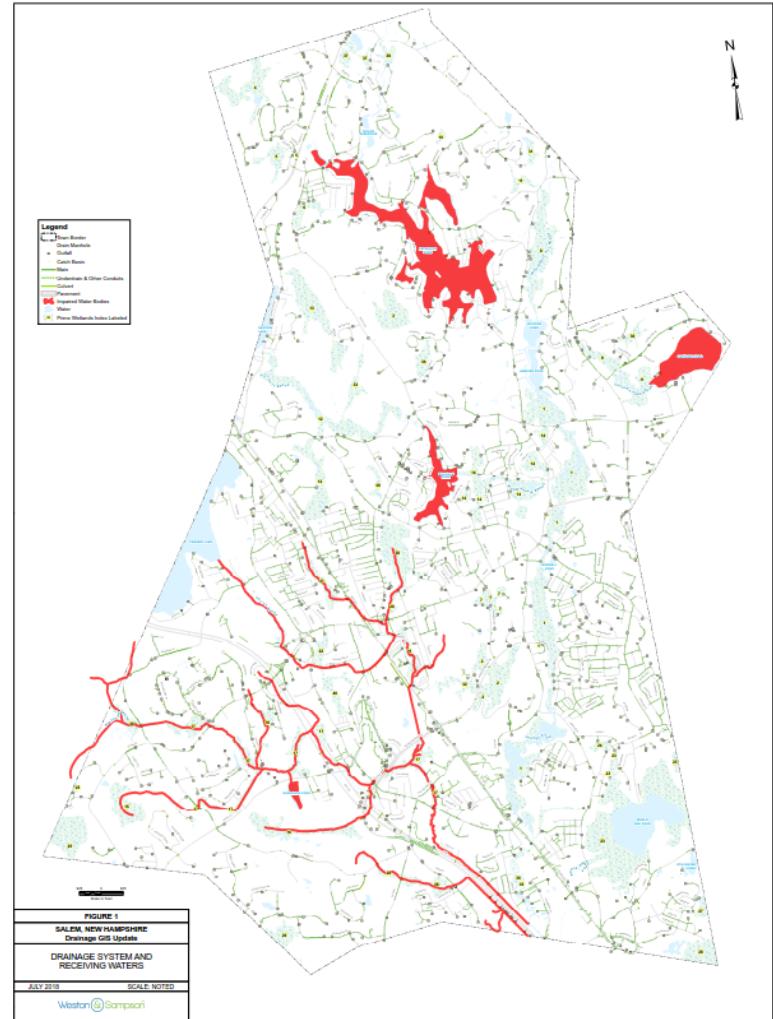
- Stormwater discharges from the Town's drainage system are regulated by EPA's 2017 NH MS4 Permit
- Nutrient pollution has been a concern since the 1986 Town-wide Water Quality Study
- **Elevated Bacteria** counts result in beach closures.
- Cyanobacteria Bloom History: August 2018, September 2021, May 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

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

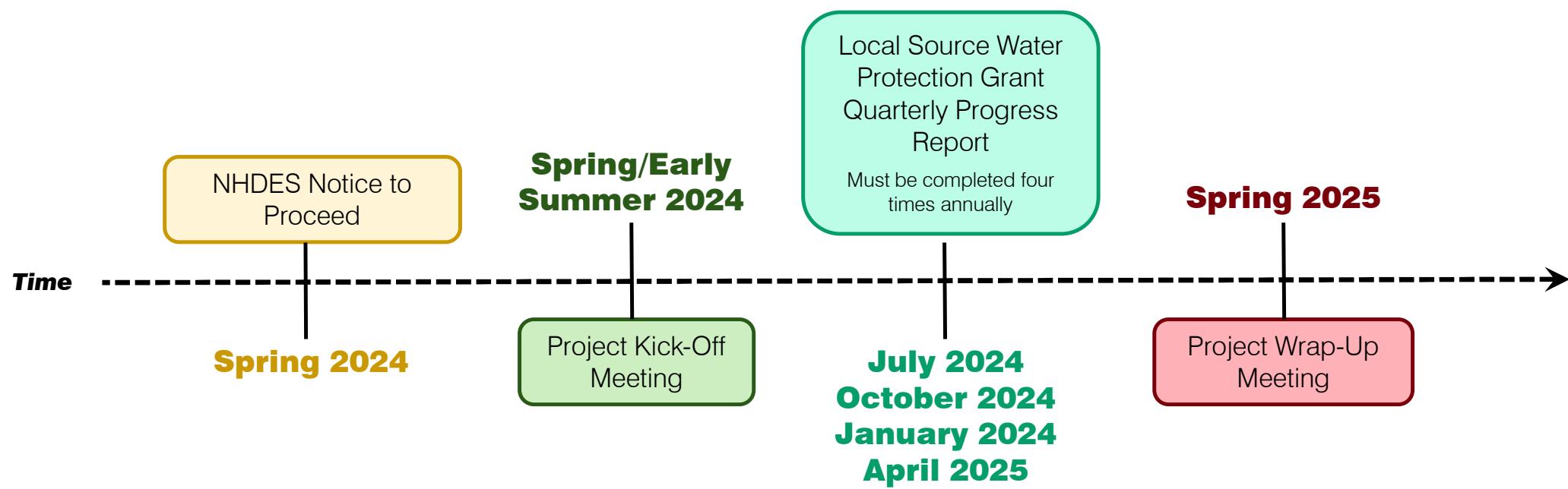
- Drainage Mapping
- Dry Weather Outfall Screening – 600+ Outfalls
 - Completed 2021
- Catchment Investigations
 - Began 2021 – *Ongoing*
- Wet Weather Outfall Screening – 350+ Outfalls
 - Began 2022 – *Ongoing*

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

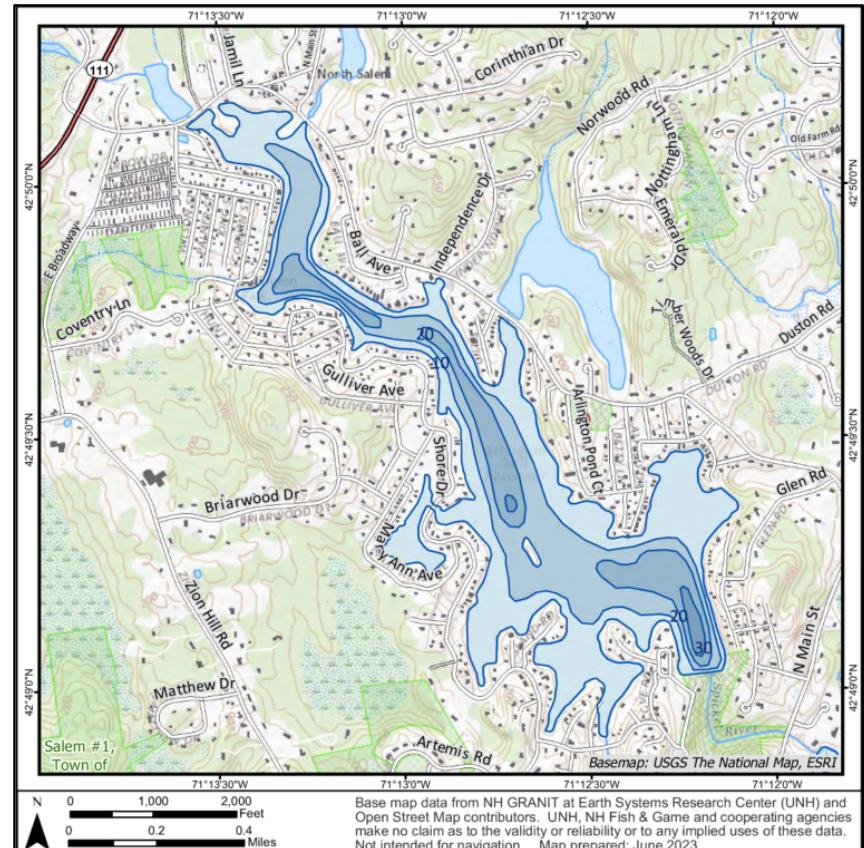


NUTRIENT SOURCE IDENTIFICATION REPORT

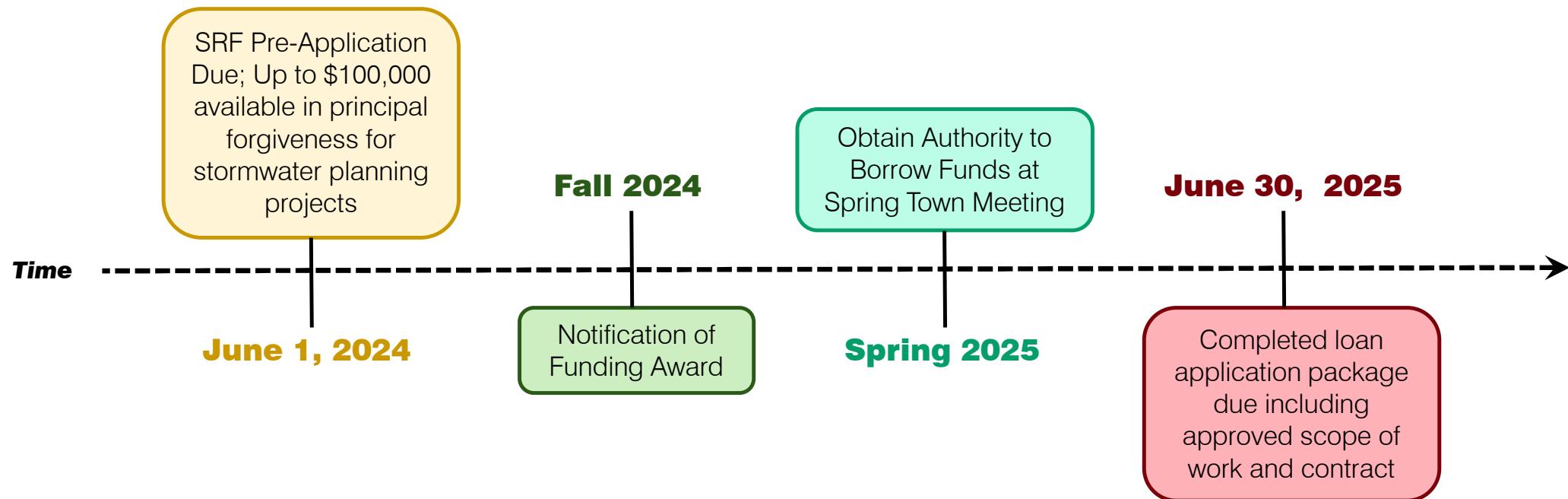


WATERSHED-BASED MANAGEMENT PLAN

- 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 & SampsonSM



Image credit: Ken Gallager via Wikimedia Commons