

**KENNEBEC COUNTY SOIL & WATER CONSERVATION DISTRICT  
REQUEST FOR QUALIFICATIONS (RFQ)  
PROJECT MANAGEMENT & PLANNING CONSULTANT SERVICES  
FOR NORTH POND WATERSHED-BASED PLAN DEVELOPMENT**

The Kennebec County Soil & Water Conservation District (District) is requesting Statements of Qualifications from interested and qualified Consultants for Professional Planning Consultant Services in order to assist in the development of an impaired lake watershed-based management plan. The District has been awarded a 604(b) grant under contract with Maine DEP to develop the North Pond Watershed-Based Management Plan. North Pond is designated as a Great Pond Class GPA, and is the second lake in the seven-lake chain known as the Belgrade Lakes watershed, a sub-watershed of the Messalonskee Stream watershed within the larger Kennebec River watershed. The North Pond watershed is located in the towns of Smithfield, Rome, Mercer, and Norridgewock in Kennebec and Somerset counties.

Water quality data has been collected by Maine DEP and Lake Stewards of Maine/Volunteer Lake Monitoring Program in cooperation with the North Pond Association, Colby College, and 7 Lakes Alliance since 1970. The potential for nuisance algal blooms in the lake is moderate to high, and the potential for internal loading (phosphorus leaving bottom sediments and becoming available to algae) is moderate to high. Data collected over time by volunteers, state officials, Colby College, and 7 Lakes Alliance researchers revealed an increase in total phosphorus and chlorophyll-a levels over the past 10 years. North Pond experienced its first severe bloom in 2018, likely due to a combination of increased phosphorus in the lake, ephemeral stratification, and anoxia in July and August that resulted in internal phosphorus loading. North Pond is expected to be added to the State's impaired lakes list in 2022 due to annual culturally-induced algal blooms and a change in trophic state.

**PURPOSE AND SCOPE OF WORK**

The purpose of the project is to assist project partners with the development of a comprehensive watershed-based management plan for North Pond with well-developed implementation strategies that effectively improve the water quality of North Pond over the next 10 years. Items within the scope of work include:

- 1) Serve as the consulting Project Manager to the District to oversee project progress, track grant expenses and match, submit reports (progress reports, final project report), assist with preparation of subgrants, and keep the project on time and schedule.
- 2) Provide oversight and review of the water quality database, secondary data quality assurance guide, historical trend analysis and water quality memo; review and provide feedback on the Sampling and Analysis Plan (SAP); and provide input on bathymetric mapping and sediment analysis.
- 3) Conduct watershed modeling, internal recycling analysis, and management options analysis; complete a land-cover update and prepare phosphorus loading estimates; submit a watershed modeling memo and spreadsheet.
- 4) Work closely with project partners including the District, Somerset County SWCD, Kennebec Valley Council of Governments, North Pond Association, 7 Lakes Alliance, Colby College, Maine DEP, watershed towns, and the public to complete all project tasks as written in the work plan (Attachment 1).
- 5) Provide guidance and follow-up to project partners for watershed assessment tasks including development of a septic system database and septic survey, agricultural survey, sampling implementation plan, NPS assessment, and the municipal ordinance review.

- 6) Coordinate and facilitate three (3) steering committee meetings, three (3) water quality technical advisory committee meetings, and one (1) public meeting; develop and distribute press releases and coordinate with project partners on distribution of project-related newsletter articles.
- 7) Develop the draft and final watershed-based management plan including watershed action plan, future monitoring plan, and GIS watershed maps.

#### PROPOSAL FORMAT

To facilitate review, submissions should conform to the following format:

1. **Experience of the Firm:** Provide a description of your firm's prior experience and qualifications in developing and updating watershed-based/ management plans for impaired or threatened lakes. Also, please reference the experience of the firm in working with the State and EPA regulation and procedure, in particular those specified in the 319 program.
2. **Project Team (Key Staff):** Identify the proposed Project Manager and key project team members and responsibilities. Provide an itemized rate per hour for identified team. Provide a brief resume for each person outlining their credential and experience. Describe your team's experience working in the Belgrade Lakes region, and/or the North Pond watershed.
3. **References:** Provide the name and contact information for at least three (3) references familiar with the quality of work by your team of similar nature as contained in the above Scope of Work.
4. **Project Understanding:** Provide your general understanding of the watershed, project, and issues regarding the identified project(s). Identify any potential challenges or special concerns that may be encountered.
5. **Other Supporting Data:** Include any other information you feel to be relevant to the selection of your firm or the makeup of the project team including sub-consultants.

The entire Statement of Qualifications shall not exceed thirty (30) pages; excluding the front and back covers, dividers, coversheet, table of contents, and letter of introduction (maximum 2 pages).

#### CRITERIA FOR REVIEW OF STATEMENT OF QUALIFICATIONS

The following criteria will be used in screening, ranking and selection of the successful firm:

1. **Qualifications of the Firm (20-30 points):** Preference shall be given to those firms with experience in watershed management planning related to the scope of services.
2. **Qualifications of the Project Team (Key Staff) (30-40 points):** Preference shall be given to those with key staff experience in items listed in the above scope of services and any familiarity with the region.
3. **Experience in Working with State and EPA Regulations and 319 Project Procedures (20-30 points):** Preference shall be given to project teams whose personnel have a demonstrated working relationship with the State and EPA, and possess a thorough understanding of the rules and regulations regarding watershed management planning, particularly impaired lakes.
4. **Project Understanding (25-35 points):** Preference shall be given to those firms which have a comprehensive understanding of the project requirements and environment.

#### SELECTION OF THE CONSULTANT

It is the intent of the District to appoint a committee to review the Statements of Qualifications submitted and rank the qualified firms. All unsuccessful firms will be notified in writing no later than 10 days after selection of the Consultant. The District reserves the right to reject any and all submissions to this RFQ, request clarification, or waive informalities/technicalities, if it is deemed in the best interest of the project. The District assumes no responsibility for costs incurred in responding to the RFQ.

**SUBMISSION OF QUALIFICATIONS STATEMENT AND CONTACT PERSON**

An electronic copy of Qualifications Statement must be submitted no later than 4 p.m. on October 15, 2021 to [dale@kcswcd.org](mailto:dale@kcswcd.org).

For questions related to the RFQ, please contact:

**Dale Finseth**

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(207) 480-3927

Project Title	<b>#20210010 North Pond Watershed-Based Management Plan Project</b>
Organization	Kennebec County Soil & Water Conservation District
Project Start Date	October 2021
Completion Date	December 2023

## I. Waterbody and Watershed Information

### a. Background

Waterbody Name	North Pond (MIDAS #5344)
Waterbody Size (e.g., lake acres, stream miles)	2,531 acres
Watershed Area (in acres or square miles)	22 square miles
Watershed Location (town(s), county(s))	Smithfield (56%), Rome (14%), Mercer (28%), and Norridgewock (1%) - Kennebec and Somerset Counties
Title and Date of Existing or Past Watershed-based Management Plan	<i>North Pond Watershed-Based Protection Plan, May 2017</i>
Public Access to Waterbody	<i>1 public boat launch- North Shore Drive (Smithfield)</i>

### b. Waterbody and Watershed Physical Characteristics

North Pond is a relatively shallow lake located at 254 feet above sea-level, with a surface area of 4 square miles including both North and Little (North) Pond, a maximum depth of 20 feet (6 meters), an average depth of 13 feet (4 meters), and a low flushing rate of once/year. North Pond is the second lake in the seven-lake Belgrade Chain of Lakes, receiving inflow from East Pond (impaired) to the east via Serpentine Stream in Smithfield Village. The Serpentine watershed, known for being an agriculturally productive area in the past, includes a large area of freshwater wetlands of statewide significance between East and North ponds. North Pond also receives water from three other major tributaries in the watershed: Bog Stream, Leech Brook and Pattee Brook, all of which flow into the north end of the lake (see map in Section 5). Water leaving North Pond flows through Great Meadow Stream to Great Pond<sup>1</sup> (impaired), which flows into Long Pond (impaired), then on to Messalonskee Lake (threatened) and eventually into the Kennebec River via Messalonskee Stream.

North Pond's shoreline is surrounded by a network of state, town and private roads including two scenic state roads that run along the east shore: Lake View Drive (Rt. 137) and Village Road (Rt. 8/137). North Shore Drive, a town-owned road, splits off Lake View Drive to the west along the north end of the lake. Many unimproved gravel roads and private roads run perpendicular to the shoreline servicing areas of high-density residential shoreline development on the north end of the lake. Shoreline development is estimated to include 351 residential properties, with 90% of homes within 100 feet of the lake. Historically, only 1/3 of these homes are year-round<sup>2</sup>, but due to the

<sup>1</sup> The 2021 Great Pond WBMP reported North Pond contributes 11% of the total phosphorus load to Great Pond. The WBMP calls for a reduction in phosphorus from upstream lakes, including North Pond, to improve water quality so that Great Pond meets State water quality standards over the next 10 years.

<sup>2</sup> Email communication, Linda Rice and Jodie Mosher-Towle, North Pond Association for Great Pond WBMP.

pandemic this number has risen sharply in the last year and is expected to grow, adding stress to already aging septic systems. Fifteen families around the lake use their private boat launches to access the lake, creating an added threat from NPS pollution and introduction of invasive plants.

Roads and their counterparts, including unpaved road shoulders, winter sanding, ditches and culverts, flow directly into North Pond. Commercial development includes a short stretch of land in downtown Smithfield, two gravel extraction operations. A Dude Ranch with riding horses is in the permitting process close to the shoreline. Pine Tree Camp is located on the south end of the lake in Rome and has been a prominent feature of the watershed since 1936, providing outdoor opportunities from spring through fall for children and adults with disabilities.

### c. Description of Waterbody Uses and Value

North Pond is used extensively for swimming, fishing, and boating, and is important to the commercial businesses in the watershed as well as the three primary towns in the watershed that rely on the tax base from shoreline development. The lake provides a picturesque backdrop to downtown Smithfield. The shoreline varies from areas of large rocks and deep water, to sandy and shallow with lots of vegetative growth out 200 feet from the shore in some areas. The shallow water provides excellent habitat for warm-water fish.<sup>3</sup> The Maine Department of Inland Fisheries and Wildlife (MDIFW) reports 14 species of fish in North Pond including small and largemouth bass, white perch, and chain pickerel. Northern pike, an illegally introduced species can also be found in the lake and is the location of the state record for the largest pike while ice fishing.<sup>4</sup> North Pond is home to a population of adult loons, with 14 loons counted in 2020, down from a high of 45 in 2016.<sup>5</sup> North Pond is accessible via a public boat launch on the north end of the lake in Smithfield. Additional wildlife and recreational benefits in the watershed are attributed to the Serpentine Marsh, which is classified by the MDIFW as Inland Wading Bird and Waterfowl Habitat and a Wetland of Special Significance. The marsh is believed to be the original state-wide location of the first nesting pair of Sand Hill Cranes (*Grus canadensis*), with a current population of over 30 cranes.<sup>6</sup> The marsh is used extensively for public recreation such as kayaking, fishing and bird watching. There are no known aquatic invasive plants in the lake. Reducing the probability of algal blooms will protect these natural resources and support ongoing historical uses.

## II. Water Quality Problem or Threat

### a. Water Quality Listing Status

Is water quality listed as impaired?	No. Expected to be listed as impaired in 2022. <sup>7</sup>
If impaired, what is the listed cause(s) and/or impaired use?	Expected to be listed on the impaired lakes list in 2021 due to annual culturally-induced algal blooms and a change in trophic state.
Name and date of any DEP TMDL report(s) for the waterbody.	n/a

<sup>3</sup> North Pond: [https://www1.maine.gov/ifw/fishing/lakesurvey\\_maps/kennebec/north\\_pond.pdf](https://www1.maine.gov/ifw/fishing/lakesurvey_maps/kennebec/north_pond.pdf)

<sup>4</sup> Northern Pike: 31.2 pounds, Lance Bolduc, Skowhegan, ME, 3/25/98, North Pond.

<sup>5</sup> Lakes of Maine, Loons: <https://www.lakesofmaine.org/loons.html?m=5344&grouped=false>

<sup>6</sup> Email communication, Jodie-Mosher Towle. April 26, 2021.

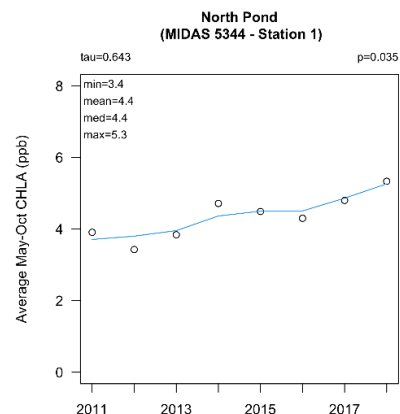
<sup>7</sup> Email communication, Wendy Garland, Maine DEP. January 14, 2021.

## b. Water Quality Overview

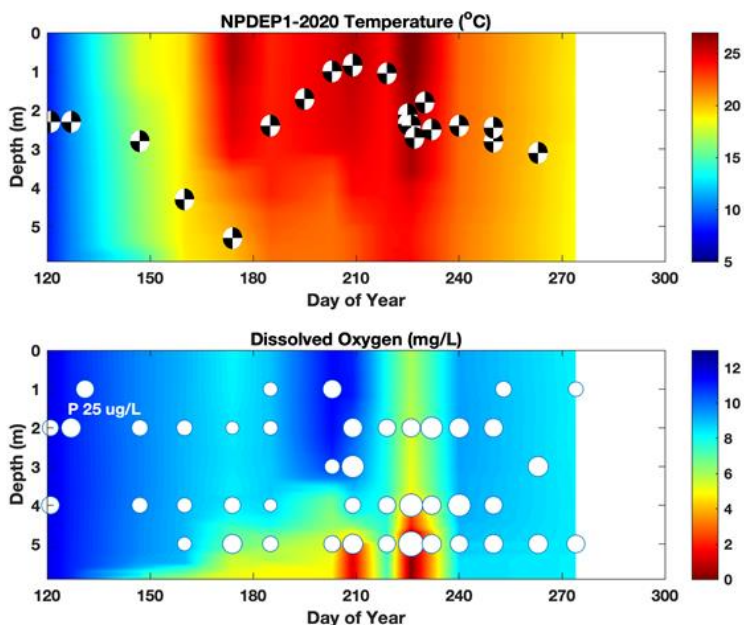
North Pond is listed on the DEP's 2020 Nonpoint Source Priority Watershed List, as "Threatened" with the reason for listing being "Development Threat" and it is now currently on the Watch List. It was originally listed as threatened due to historical agricultural land uses contributing significant nutrient loads to the lake. Agriculture is still present in the watershed, but to a lesser extent. Currently, land uses associated with residential, roads and commercial development are the greatest threat to the lake.

Water quality data has been collected in North Pond since 1970. Based on these historic data, the potential for nuisance algal blooms in the lake is moderate to high, and the potential for internal loading (phosphorus leaving bottom sediments and becoming available to algae) is moderate to high. Maine DEP conducted a classification and condition analysis for Maine lakes, which classified North Pond as an "interior pond" with an "altered" watershed due to the level of human activity it contains.

North Pond exhibits high levels of total phosphorus (TP) compared to other lakes of its type. Due to the shallow depth of this lake (average 13 ft), it does not stratify often. This means that the temperature and dissolved oxygen levels in the lake remain constant from top to bottom, and sunlight has the potential to reach the bottom over most of the lake. A statistical analysis of the available water quality data from the DEP (up to 2018) showed that TP in North Pond has been increasing slightly over the past 10 years but is not significant through 2018. However, the average TP in 2018 was 33 ppb, compared with the average from 2011 – 2017 of 18 ppb. Chl-a however is showing a statistically significant increasing trend over the past decade (File #3). Increases in TP from the watershed could be driving increases in Chl-a.



*Evidence of a statistically significant increase in Chl-a in North Pond over the past decade (does not include data from 2019-2020).*



*Water temperature and Secchi disk transparency (top), and dissolved oxygen and total phosphorus (bottom) for North Pond in 2020. North Pond experienced two periods of anoxia (bottom, red) followed by increased levels of phosphorus (size of white circles indicates concentration of TP). The dramatic loss of oxygen in the whole water column around day 230 (following the algal bloom) resulted in a fish kill. Source: 7 Lakes Alliance*

Recent data collected by 7 Lakes and Colby shows steady increases in TP since 2015. North Pond experienced a severe bloom in 2018 likely due to the elevated phosphorus concentrations documented, and thermal stratification of the water column in late July and August. Stratification

of the water column and resulting anoxic conditions (DO < 2 ppm) within 1 meter of the lake bottom were likely to have caused internal loading – resulting in a year-average volume-averaged TP concentration of 28 ppb and a severe algal bloom that lasted from the end of July to mid-September 2018 (reflected in the year-average Secchi depth of 2.5 m- Figure 2, Attachment 1). Prior to summer 2018, the lake had not experienced a significant algal bloom since 2010. Though the lake experienced near-bed anoxia in 2019 and Secchi depth was low, it never reached the bloom condition of Secchi depth < 2 m. Because of the polymictic nature of the lake, it is difficult to determine how often and for how long the sediments are anoxic with weekly or bi-weekly profiles.

In 2020, the hot June weather caused the 2018 bloom pattern to repeat, and the year-average Secchi depth was 2.6 m and the year-average volume-averaged TP reached 24 ppb. Additionally, a fish kill was observed after oxygen concentrations dropped substantially throughout the water column as the bloom died off. **Recent data shows a significant decrease in water quality and an increase in the frequency of nuisance algal blooms -an indicator that North Pond has reached its tipping point.** Protecting water quality in North Pond is more important now than ever. It is imperative that the watershed stakeholders continue to identify and address NPS sources to decrease phosphorus loading, improve water quality, and reduce the probability of blooms like those documented in 2018 and 2020.

### **III. Watershed Nonpoint Pollution Sources and NPS Mitigation Activities**

#### **a. Summary of Watershed Assessments and Priority Nonpoint Pollution Sources**

Due to declining water quality trends in recent years, several assessments and surveys have been completed to examine potential sources of NPS pollution to North Pond:

2014 East Pond Watershed Survey- This survey included a portion of the Serpentine Stream watershed and identified 23 NPS sites contributing NPS pollution to North Pond. Eighteen of the 23 sites were located on residential properties, while the remaining five sites were on private roads (2 sites), a state road site, a driveway, and an agricultural site.

2016 North Pond Watershed Survey- Resulted in an additional 135 NPS sites (21 high impact, 63 medium impact, 50 low impact, and 1 unknown impact site). The number of residential properties far outweighed the other land-use types (82 sites, 61%), followed by beach access sites (13 sites, 10%). Road sites including state roads (10 sites, 7%), town roads (8 sites, 6%), and private roads (3 sites, 3%) accounted for 16% (21 sites) of sites. The remaining 19 sites include driveways, commercial properties, and boat access sites. High-impact state and town road sites were prioritized for having the greatest effect on water quality, followed by high/medium-impact residential sites. In addition to roads and large commercial developments such as downtown Smithfield, Pine Tree Camp, and gravel pits, the proximity of residential shoreline development (and associated risks to water quality from aging septic systems and systems installed in sandy soils), clearing of the vegetation on the shoreline, and agricultural runoff is of particular concern in the watershed.

#### **b. Description of Watershed Activities to Address NPS Pollution**

Watershed partners have worked diligently to make significant progress on implementing actions outlined in the 2018 WBPP (see below). However, a higher level of assessment and planning is needed to fully understand the complicated factors that has led to algal blooms in North Pond over the past three years.

The watershed community has demonstrated a strong commitment to watershed protection. Public and private partnerships are strong, especially between local non-profits such as 7 Lakes and NPA, the District, local towns, and landowners. The towns contribute annual funding to support lake protection projects such as the YCC, and Courtesy Boat Inspection (CBI) Program. The proven track record coupled with the increased awareness of local stakeholders indicates this effort has a very high probability for success.

2017 North Pond Watershed-Based Protection Plan- This plan was developed by a Steering Committee from the NPA and 7 Lakes to help prioritize NPS sites identified during the 2014 and 2016 watershed surveys, and to develop an action plan to protect and improve North Pond over a 10-year period. The committee took significant steps to begin implementing the plan, first by sending post-survey letters and a survey summary flyer to all landowners with an identified NPS site; raising \$2,000 for cost-sharing to the first 20 landowners to sign up for assistance installing conservation practices; meeting with state and town officials; and presenting results to the Pine Tree Camp. As a result, project partners went into the Phase I 319 project with 10 landowners signed up to receive Youth Conservation Corps (YCC) assistance on their properties, and a list of landowners interested in participating in the Phase I grant.

North Pond Watershed Protection Project, Phase I (#20180003) continued to build on the momentum generated by the 2014 (East Pond) & 2016 (North Pond) watershed surveys and the 2017 WBPP to install conservation practices that address the highest priority sites identified in the WBPP. The project aimed to significantly reduce the pollutant load to North Pond by addressing soil erosion and stormwater runoff that delivers excess sediments and nutrients to the pond. Fifty-eight tons/yr of sediment, 49 pounds/yr of phosphorus, and 98 pounds/yr of nitrogen to the lake as a result of installing 89 BMPs at three high-priority road sites, Pine Tree Camp, the Fairview Grange, and 28 residential properties.

North Pond Watershed Protection Project, Phase II (#20200003), in progress, will address at least five high-priority (high and medium-impact) identified NPS sites located on town and private roads; and at a Pine Tree Camp for the disabled located at the south end of the lake in Rome. The project will continue to provide cost-share opportunities and technical assistance to 14 residential landowners to implement conservation practices and will build on the progress made in Phase I to raise awareness about the need for lake protection by utilizing targeted outreach strategies such as direct landowner contact, workshops, meetings with watershed partners, presentations, and multiple news articles. It is estimated that at least 24 BMPs will be installed across at least 19 sites.

Youth Conservation Corps (YCC)- Over the past 20 years, 7 Lakes has installed 185 individual Conservation Practices in the watershed including 55 between 2018-2020.

LakeSmart- NPA coordinates a successful LakeSmart program and also offers a Watershed Financial Award (WFA) providing financial assistance and rewarding property owners for taking steps to address erosion along their shorelines. Between 2014 – 2020, 46 LakeSmart screenings/evaluations were completed and six LakeSmart awards have been issued.

North Pond Watershed Financial Awards- The NPA awards \$150 to eligible property owners who practice lake-friendly landscaping and install BMPs on their shorefront properties. To date \$2,400 has been given to landowners since 2018.

#### **IV. Purpose**

The purpose of the North Pond Watershed-Based Management Plan (WBMP) Project is to develop



a comprehensive WBMP for North Pond with well-developed implementation strategies that effectively improve the water quality of North Pond over the next 10 years. The project will result in the establishment of scientifically-sound water quality thresholds for addressing current sources of NPS in the watershed, and in-lake management strategies that address internal phosphorus recycling. Major project accomplishments and outputs will include: a water quality and sediment analysis, a future monitoring plan, an updated watershed and pollutant load analysis and updated land-cover data layer, an internal loading assessment and management options analysis, a municipal ordinance review and a septic system database and survey. The project will be guided by a technical review committee and steering committee

## **V. Partner Coordination, Roles and Responsibility**

**Kennebec County Soil & Water Conservation District (District):** Grantee and project coordinator. The District will assist project partners with plan implementation, submit project deliverables and invoices, select a project consultant using competitive procurement procedures in the DEP's NPS Grant Administrative Guidelines, and complete subagreements with 7 Lakes, KVCOG, SC-SWCD, and project consultant.

**7 Lakes Alliance (7 Lakes):** As a subgrantee, provide assistance or review for all project tasks with lead roles on the water quality analysis and municipal ordinance review tasks; serve on the Steering Committee and Technical Advisory Committee (TAC), assist with other education and outreach tasks, supervise Colby interns, and serve as the liaison KVCOG. It is anticipated that 7 Lakes will be the entity leading plan implementation with support from other partners. 7 Lakes is contributing \$1,500 cash match to the project as well as \$4,620 in-kind match.

**Kennebec Council of Governments (KVCOG):** As a subgrantee, conduct the municipal ordinance review and present findings at three separate town meetings (Smithfield, Rome, Mercer).

**Somerset County Soil & Water Conservation District (SC-SWCD):** As a subgrantee, conduct an assessment of agricultural land in the watershed of North Pond and the Serpentine Stream watershed. The work will include an evaluation of farming inputs (field management practices and nutrient management) through field assessments and direct communication with active farmers/landowners.

**North Pond Association (NPA):** Lead the bathymetric mapping and septic system survey, assist 7 Lakes with monitoring, serve on the Steering Committee and TAC, assist with outreach for the public meeting, press releases and newsletter articles, and provide \$20,000 in cash, and \$1,162 in-kind match to support the project.

**Colby College:** Provide student interns to assist with the sediment analysis, septic system database, and water quality monitoring tasks, provide assistance/input on water quality summary and watershed modeling, serve on the Steering Committee and TAC, and provide review of the WBMP. Colby will provide \$6,100 in-kind match to the project

**Towns of Smithfield, Rome, and Mercer:** Serve on the Steering Committee, participate in the municipal ordinance review task, provide support for the septic database task (as needed), assist with outreach for the public meeting. The towns will contribute \$1,525 in-kind match to the project

**USDA/Natural Resources Conservation Service (NRCS):** As a project partner, will support SC-SWCD efforts to conduct an agricultural survey of the Serpentine Stream watershed by providing

GIS maps and other relevant information about existing applied conservation practices in the watershed and provide a review of the agricultural land in the updated land-cover layer for accuracy.

**Maine Department of Environmental Protection** will administer project funding, serve as the project advisor, serve on the steering committee and technical advisory committee and provide project and technical support.

The **US Environmental Protection Agency** will provide project funding and work plan guidance.

An **environmental consultant** will be hired (following procurement procedures in the DEP’s NPS Grant Administration Guidelines) to manage the project. Specific project tasks will include meeting coordination and facilitation, public outreach, water quality analysis, watershed modeling, internal loading assessment and management options analysis, GIS mapping, and technical writing for plan development.

**VI. Tasks, Schedules and Estimated Costs**

All press releases, outreach materials, project signs, and plans will acknowledge that the project is funded in part by the United States Environmental Protection Agency under Section 604(b) of the Clean Water Act. Project staff will consult with DEP on EPA’s public awareness terms and conditions for Section 604(b) grants before the project commences. Refer to the Service Contract, Rider A. Section III. D. Acknowledgement.

**Task 1 – Project Administration**

The District will administer the project according to the service contract with DEP and develop an RFQ for consulting services in order to retain the services of a qualified consulting project manager to oversee project progress, expenses, matching funds, and submit reports (semi-annual progress reports and final project report) and other deliverables. The District will complete subagreements with the project consultant, 7 Lakes, SCSWCD, and KVCOG to help complete specific project tasks.

Start and Completion Dates:	October 2022 – December 2023	
Grant Cost: \$5,057	Match Cost: \$2,500	<b>Total Cost: \$7,557</b>
Breakdown of Grant by Cost Category: \$1,150 (salary & fringe), \$400 (subgrant-7 Lakes), \$3,507 (contractual)		
Breakdown of Match by Cost Category: \$2,500 (contractual)		

**Task 2 – Water Quality Monitoring & In-Lake Assessment**

A comprehensive monitoring effort is needed on North Pond to better understand the reason for the recent algal blooms and to inform plan development. This task includes preparing a Sampling and Analysis Plan (SAP) following DEP’s Quality Assurance Project Plan. Assessment will include bathymetric mapping (NPA), in-lake monitoring (7 Lakes to capture TP, Chl-a, and DO/Temp throughout the water column from April – October), sediment sampling and analysis (Colby), and monthly plankton analyses throughout the monitoring season (7 Lakes).

Start and Completion Dates	April 2022 – February 2023	
Grant Cost: \$6,713	Match Cost: \$9,412	<b>Total Cost: \$16,125</b>

Breakdown of Grant by Cost Category: \$3,800 (subgrant), \$1,538 (contractual), \$1,375 (supplies)
Breakdown of Match by Cost Category: \$2,100 (subgrant), \$2,666 (donated services), \$110 (travel), \$2,215 (supplies), \$1,900 (other), \$420 (equipment)

**Task 3 – Water Quality Analysis**

Water quality data available from the State database for North Pond will be combined with data collected by Colby and 7 Lakes Alliance (2015-2022). Data will be analyzed to determine water quality trends, and any statistically significant changes in water quality over the historical time period. A water quality memo will provide recommendations for addressing the water quality impairment and future monitoring recommendations. The project will make use of secondary (preexisting) data for North Pond that is not in the state database (Colby/7 Lakes). A brief Secondary Data Quality Assurance Guide with selection criteria appropriate for the project will ensure that secondary data will adequately support project conclusions, decisions and/or actions.

Start and Completion Dates	April 2022 – April 2023	
Grant Cost: \$6,468	Match Cost: \$818	<b>Total Cost: \$7,286</b>
Breakdown of Grant Cost by Cost Category: \$1,600 (subgrant), \$4,868 (contractual)		
Breakdown of Match by Cost Category: \$400 (subgrant), \$200 (contractual), \$218 (donated services)		

**Task 4 – Watershed Assessment**

This task will include a septic system vulnerability analysis (led by DEP), development of a septic system database (Colby), and a follow-up septic survey (led by NPA) for properties that were not readily accessible in state or town record searches. 7 Lakes will conduct an NPS assessment to revisit high & medium impact sites identified during the 2017 watershed survey, identify new NPS sites (focus on culverts, driveways and lawns), and visit new development since 2017 based on town records. New sites will be documented using the Survey123 app. In addition to documenting NPS sites the survey will include a survey of agricultural lands in the Serpentine sub-watershed 7 Lakes will prepare a Survey Implementation Plan (SIP), to be approved by DEP prior to commencing survey efforts.

Start and Completion Dates	January 2022 – August 2022	
Grant Cost: \$6,167	Match Cost: \$1,684	<b>Total Cost: \$7,851</b>
Breakdown of Grant Cost by Cost Category: Subgrant \$4,700 (subgrant- 7 Lakes- \$3,450; SC-SWCD-\$1,250), \$1,080 (contractual), \$87 (travel), \$50 (supplies), \$250 (other)		
Breakdown of Match by Cost Category: \$1,200 (subgrant), \$484 (donated services)		

**Task 5 – Watershed Modeling & Internal Loading Analysis**

Watershed modeling will include a detailed land-cover update in GIS, delineating subwatersheds, phosphorus load modeling using the Lake Loading Response Model (LLRM) and conducting field estimates of phosphorus and sediment loading from the 2017 survey and 2022 NPS assessments (Task 4). The model will utilize the updated land-cover data, the water quality analysis (Task 3), the internal loading analysis (described below), and pollutant loading reduction estimates from recent 319 efforts. Modeling results will be presented to the technical advisory committee (TAC),

calibrated, and revised to update the lake's assimilative capacity analysis, and to set water quality goals. The internal loading analysis will utilize the bathymetric mapping and sediment chemistry results (Task 2), water quality data (Task 3) and the watershed model (above) to quantify internal loading and make specific recommendations for alternative restoration strategies. The project consultant will prepare a watershed modeling spreadsheet and memo and internal loading and management measures memo.

Start and Completion Dates	May 2022 – June 2023	
Grant Cost: \$5,709	Match Cost: \$5,450	<b>Total Cost: \$11,159</b>
Breakdown of Grant Cost by Cost Category: \$850 (subgrant), \$4,859 (contractual)		
Breakdown of Match by Cost Category: \$500 (subgrant), \$4,350 (contractual)		

### **Task 6 – Municipal Ordinance Review**

The municipal ordinance review will include working with the three towns in the watershed (Smithfield, Rome, and Mercer) to identify all relevant ordinances/regulations specific to water quality protection, and an analysis of each ordinance. KVCOG (subgrantee) will provide recommendations for strengthening town regulations, create a simple, easy to follow ordinance report detailing areas for potential changes, create a presentation to each town to review the main findings of the report, and deliver presentations to each community. Follow-up work will be provided to any towns interested in following through with ordinance recommendations.

Start and Completion Dates	January 2022 – August 2022	
Grant Cost: \$4,099	Match Cost: \$3,654	<b>Total Cost: \$7,753</b>
Breakdown of Grant Cost by Cost Category: \$3,700 (subgrant 7 Lakes \$200, KVCOG \$3,500), \$399 (contractual)		
Breakdown of Match by Cost Category: \$3,000 (subgrant), \$654 (donated services)		

### **Task 7 – Meetings, Stakeholder Engagement & Outreach**

Development of the plan will require a strong stakeholder process to be successful, led by a Steering Committee which will convene three times to help guide plan development. The committee will include representatives from the NPA, 7 Lakes, Colby, DEP, watershed towns, and project consultants. The TAC will also meet three times to review the water quality analysis, modeling results, action plan, and help with setting water quality goals. Members will include 7 Lakes, Colby, DEP, and project consultants. Project outcomes will be presented at an interactive public meeting and highlighted in two 7 Lakes newsletters and four NPA newsletters and websites, town websites, and social media (where applicable), and through three press releases in local papers.

Start and Completion Dates	October 2022 – November 2023	
Grant Cost: \$8,965	Match Cost: \$7,022	<b>Total Cost: \$15,987</b>
Breakdown of Grant Cost by Cost Category: \$3,350 (subgrant 7 Lakes), \$5,615 (contractual)		
Breakdown of Match by Cost Category: \$800 (subgrant), \$3,250 (contractual), \$2,972 (donated services)		

**Task 8 – Watershed-based Management Plan**

The North Pond WBMP will be completed using information developed in Tasks 2 - 7 (above). The plan will contain EPAs required 9-elements including a detailed, stakeholder-driven 10-year Action Plan to improve water quality in North Pond, and high-quality maps highlighting important natural resources, monitoring stations, NPS sites and more. A draft plan will be reviewed by both the steering committee and TAC, and a final plan will be reviewed and approved by DEP and US EPA. The draft plan will be provided to DEP and EPA for review at least six weeks prior to the project end date. DEP and EPA will provide comments on the draft and ensure all required elements are met in the final plan.

Start and Completion Dates	January 2023 – December 2023	
Grant Cost: \$6,286	Match Cost: \$4,369	<b>Total Cost: \$10,654</b>
Breakdown of Grant Cost by Cost Category: \$1,000 (subgrant- 7 Lakes), \$5,286 (contractual)		
Breakdown of Match by Cost Category: \$200 (subgrant), \$3,575 (contractual), \$595 (donated services)		

**VII. Deliverables**

An electronic copy of each deliverable will be provided to the DEP Contract Administrator. Each deliverable will be labeled according to procedures described in DEP document *Nonpoint Source Grant Administrative Guidelines*, <http://www.maine.gov/dep/water/grants/319-documents/2016GrantAdminGuidelinesFinal2.docx>.

1. Sub-agreements, semi-annual progress reports, final project report (Task 1)
2. Sampling and Analysis Plan, bathymetric map, and spreadsheet (Task 2)
3. Secondary data evaluation table, water quality analysis spreadsheet and summary memo (Task 3)
4. Septic system database, Survey Implementation Plan, survey summary (Task 4)
5. Watershed model spreadsheet and memo, internal loading and management measures memo (Task 5)
6. Municipal ordinance review report (Task 6)
7. Copies of press releases, newsletter articles (Task 7)
8. Draft and final Watershed-based Management Plan (Task 8)

**VIII. Project Coordinator**

Name	Dale Finseth
Organization	Kennebec County Soil & Water Conservation District
Mailing Address	2305 North Belfast Ave., Augusta, ME 04330
Telephone Number	(207) 622-7847 x 3
Email Address	<a href="mailto:dale@kcswcd.org">dale@kcswcd.org</a>
Federal DUNS	612139688

**IX. Project Budget**

<b>Federal Funds:</b>	<b>\$49,600</b>
<b>Non-Federal Match:</b>	<b>\$34,908</b>
<b>Proposed Total Cost:</b>	<b>\$84,508</b>

**Part 1. Estimated Personnel Expenses: (Applicant staff only)**

<b>Position Name &amp; Title</b>	<b>Hourly Rate</b>	<b>Number of Hours</b>	<b>Salary &amp; Fringe</b>	<b>Total Applicant Personnel Expenses</b>
Dale Finseth	\$50.00	23	\$50.00	\$1,150.00
<b>Totals</b>	<b>\$50.00</b>	<b>23</b>	<b>\$50.00</b>	<b>\$1,150.00</b>

**Part 2. Budget Estimates by Cost Category**

<b>Cost Category</b>	<b>Federal Funds</b>	<b>Non-Federal Match</b>	<b>Total Cost</b>
Salary & Fringe (from Part 1)	\$1,150	\$0	\$1,150
Subgrant	\$19,400	\$8,200	\$27,600
Contractual	\$27,288	\$13,875	\$41,163
Donated Services – Labor		\$8,187	\$8,187
Travel	\$87	\$110	\$197
Supplies	\$1,425	\$2,215	\$3,640
Other	\$250	\$1,900	\$2,150
Equipment	\$0	\$420	\$420
<b>Totals</b>	<b>\$49,600</b>	<b>\$34,908</b>	<b>\$80,507</b>

**Part 2 Notes:**

**Subgrant** – 7 Lakes (139 hrs. @ \$50/hr. -all tasks); KVCOG (\$3,500 flat rate-Task 6; Colby interns (180 hrs. @ \$15/hr.- Tasks 2 & 4); SCSWCD (\$1,250-Task 4) **Subgrant match-** 7 Lakes in-kind (84 hrs. @ \$50/hr. Tasks 2, 3, 5-8); NPA cash match (7 Lakes labor \$300, \$1,200 Colby intern-Task 4, \$2,500 KVCOG-Task 6)

**Contractual** – Project Manager (\$78/hr), GIS/Modeler (\$68/hr), Project Scientist (\$45/hr)- Total hrs.= 344 @ \$68.84 (average rate); Senior Modeler (18.5 hrs @ \$175/hr) **Contractual Match-** NPA cash match (\$8,875 Project Manager/GIS/Project Scientist (~130 hrs); \$5,000 Senior Modeler (~ 18.5 hrs)); Supplies- \$100, Travel (300 miles @ \$0.45/hr)

**Donated Services-Labor** – NPA (48 hrs.@ \$24.21/hr), Towns (63 hrs.@ \$24.21/hr), Colby (55 hrs.@ \$100/hr)

**Travel-** 7 Lakes (193 miles @ 0.45 for NPS assessment) **Travel Match-** 7 Lakes (245 miles, or 7 trips to HETL @ 35 miles/trip @ 0.45/mi)

**Supplies** – 7 Lakes (\$125/week x 3 weeks for rental of bathymetric mapping equipment), \$500 for plankton analysis, \$500 HETL TP duplicates and Chl-a (@ \$45/sample); \$50 supplies for NPS assessment **Supplies Match-**7 Lakes (\$600 cash match sediment analysis), Colby (\$600 in-kind TP analysis), NPA (\$570 cash match plankton analysis, \$445 cash match HETL lab fees)

**Other** – \$250 (estimated cost of printing and mailing septic survey) **Other Match**-7 Lakes (\$900 cash match Colby sediment intern), NPA (\$1,000 cash match bathymetric mapping)  
**Equipment Match** – 7 Lakes in-kind match (\$35 equipment fee/in-lake monitoring trip x 12 trips)

**Part 3. Sources of Non-federal Match and Estimated Amounts**

<b>Sources of Non-federal Match</b>	<b>Amount</b>
7 Lakes Alliance (cash)	\$ 1,500
7 Lakes Alliance (In-Kind)	\$ 4,620
North Pond Association (Cash)	\$20,000
North Pond Association (In-Kind)	\$ 1,162
Colby College (In-Kind)	\$ 6,100
Towns of Smithfield, Rome & Mercer (In-Kind)	\$ 1,525
<b>Total</b>	<b>\$34,908</b>