REQUEST FOR QUALIFICATIONS

Issued by the Town of Derry

for

Hoods Pond Watershed-Based Management Plan and Lake Phosphorus Control Plan Development

Posted Date: February 15, 2023

Due Date: March 15 2023

Hoods Pond

Contents

REQUEST FOR QUALIFICATIONS

Hoods Pond Watershed-Based Management Plan and Lake Phosphorus Control Plan Development

February 15, 2023

I. REQUIRED QUALIFICATIONS SUBMISSIONS

Each consultant will submit a qualifications package to the Town of Derry (the Town) that will include the following components as described in detail below:

- Cover letter indicating a primary contact for the qualifications package and that person's title, address, phone number, and email address. The cover letter should include relevant professional certifications (e.g., Professional Engineer, Certified Lake Manager, Certified Wetland Scientist, etc.).
- Description of the respondent's general approach (i.e., "philosophy") to watershed planning, skills and specialties for which the respondent is qualified, and a summary of directly relevant work experience of the respondent. Responses must address how the respondent meets the desired qualifications; please consult Section V - SELECTION CRITERIA (below) for additional guidance.
- List of references including names, titles, contact information. These will preferably be clients for whom similar work has been performed within the past five (5) years.
- The project team, including project team organization, team member qualifications and the anticipated level of involvement of key team members in each phase of the project as described in the project approach and scope of work.
- A technical proposal that describes the team's project approach and scope of work (do not include budget, fee schedule, or any type of cost estimate).

Complete and timely submittal of all required documents is mandatory for the qualifications package to be considered.

Electronic copies of your Statement of Qualification should be emailed in PDF format and received no later than Wednesday March 15, 2023 at 4pm to Craig Durrett at: craigdurrett@derrynh.org. Include "**Hoods Pond RFQ**" in the subject line. Alternatively, if unable to submit electronically, two (2) hardcopies must be submitted by the closing date and time to the Town of Derry, 14 Manning Street, Derry, NH 03038, Attention: Craig Durrett and include "**Hoods Pond RFQ**" on the outside of the package/envelope.

Representatives from the Town of Derry and the New Hampshire Department of

Environmental Services (NHDES) will review qualification packages. After the qualifications-based ranking is complete, the top two to three ranked consultants may be invited for an interview if desired by the review committee. After the interview process, the top ranked consultant will be asked to provide a task-based cost proposal, and the Town of Derry will proceed with contract negotiations with that consultant. If these negotiations are not successful, the Town will negotiate with the second-ranked, qualified consultant, etc. until a contract has been successfully negotiated. **The contract will be between the Town of Derry and the consultant.**

This project will be funded by the New Hampshire Department of Environmental Services (NHDES) Clean Water State Revolving Fund through a loan to be awarded to the Town of Derry. Contractor selection will be through this Qualification Based Selection (QBS) process.

II. PROJECT TEAM AND LEVEL OF PARTICIPATION

The qualifications package will identify the individuals responsible for managing the project and conducting specific project tasks. The qualifications package will also include an estimate for the expected level of participation in the project tasks and in the overall project. An organization chart showing lines of communication and decision-making hierarchy will be included in the qualifications package.

III. PROJECT APPROACH/SCOPE OF WORK

Attachment I provides guidance to assist in the development of the project approach, scope of work, and demonstration of qualifications. It must be clear how the United States Environmental Protection Agency (EPA) elements 'a – i' for watershed-based planning and the lake phosphorus control planning will be addressed and also how public participation and interaction with the various stakeholders will occur.

IV. PROJECT SCHEDULE

The respondents will provide a schedule to conduct and complete the project. The schedule will include project tasks as identified in the Scope of Work. Project tasks will be laid out in a flow chart identifying the anticipated dates to complete each task and the interrelationship of conducting and completing these tasks. It is desired that this project will be completed by December 30, 2024 although an alternative expected completion date will be considered.

V. SELECTION CRITERIA

Selection will be based on the qualifications package. Respondents will be assessed based on the following criteria.

1. Specialized Experience of the Project Team (30 Percent)

The respondent will be rated on:

(a) overall experience directly related to the successful implementation of similar projects that include planning, data analysis, watershed and in-lake modeling, engineering, outreach, and working with diverse stakeholders to achieve project goals;

(b) direct experience incorporating the EPA nine key elements (a-i) to develop watershed management and/or restoration plans;

(c) demonstrated ability to work with municipal government (town boards, public works officials, etc.), state government (NHDES, etc.), local residents, nonprofit groups, universities, and other stakeholders in New England;

(d) experience and willingness to work with existing data, such as from municipal GIS layers, LIDAR, University of New Hampshire, Plymouth State University, and the NHDES Environmental Monitoring Database, etc.;

(e) demonstrated ability to complete the work within the required schedule;

(f) demonstrated ability to effectively solicit, assess, and use comments and suggestions from stakeholders during project development;

(g) demonstrated success in developing and implementing innovative approaches to facilitating public and project team meetings across in-person, virtual, and hybrid settings;

(h) experience in lake quality, limnology, and environmental monitoring, modeling and data interpretation;

(i) demonstrated ability to conduct watershed and lake modeling to achieve project goals (including build-out analyses and water quality goal setting);

(j) experience interpreting and applying New Hampshire water quality standards;

(k) demonstrated ability to identify structural and non-structural Best Management Practices (BMPs)/ Stormwater Control Measures (SCMs), and generate pollutant load and cost/benefit analyses for BMPs/SCMs;

(l) proven ability to evaluate and propose solutions to address pollution from septic systems;

(m) experience designing and providing construction oversight for SCMs/BMPs;

(n) experience working with municipal officials and stakeholders on public policy review and recommendations; and

(o) demonstrated ability to conduct effective public outreach and generate measurable results.

2. Project Personnel(30 Percent)

The respondent will be rated on the principal team member's role and participation level, project management effectiveness, and the qualifications and experience of key personnel, their communication abilities, and availability during the project.

- Project Manager 20 Percent
- Task Managers 10 Percent

3. Project Approach (20 Percent)

The respondent will be rated on the approach to the project scope outlined in this RFQ, the understanding of the project scope and schedule of work and the interfacing of tasks.

4. Qualifications for SCM/BMP Design Services (20 percent)

The consultant will be rated on their qualifications and experience regarding ability to provide design of structural SCMs/BMPs as described in Attachment I – Scope of Work Guidance, Section IV.

VI. REQUEST FOR QUALIFICATIONS (RFQ) INQUIRIES

The Town will not respond to telephone inquiries about the RFQ. Questions concerning this RFQ must be submitted via email to Craig Durrett of the Town of Derry at: craigdurrett@derrynh.org

Questions must be submitted by 4:00pm ET on March 1, 2023 and must have the Subject Line: "Hoods Pond WMP RFQ Question". If you have a question, please follow this procedure to ensure consistency of answers. Any information obtained by speaking one-on-one with a project partner is not considered an official response for the purposes of this process.

A Question and Answer Digest (Q&A Digest) version of all questions and answers will be emailed to everyone that submits a question. Additional persons wishing to receive the digest version of all questions and answers should request a copy via email by contacting Craig Durrett, craigdurrett@derrynh.org (Subject: "Hoods Pond WMP RFQ Digest Request"). The Town shall distribute the Q&A Digest by March 8, 2023.

Upon completion of ranking qualifications packages, the Town of Derry, in consultation with the project team will negotiate with the top-ranked firm for contract scope and price. The negotiated contract will be based on fair and reasonable compensation for the services required.

VII. TIMELINE

February 15 2023	RFQ Release
March 1, 2023	Deadline for submittal of questions on RFQ (4:00pm ET)
March 8, 2023	Q&A Digest emailed to those requesting a copy
March 15, 2023	Deadline for receipt of proposals to RFQ (4:00pm ET)
April 12, 2023	Final selection of contractor and notification (anticipated) to all firms

VIII. INSURANCE REQUIREMENTS

A certificate of insurance must be on file and approved by the Town before this project can begin. All companies are required to include a Certificate of Insurance with the bid submittal. Contractor, at its own expense, shall procure and maintain during the entire term of this agreement and any extensions thereof, the following insurance to cover all risks which shall arise directly or indirectly from Contractor obligations and activities.

Workers Compensation and Employers Liability Insurance meeting the requirements of the New Hampshire Workers Compensation Law covering all the Contractors employees carrying out the work involved in this contract.

General Liability Insurance with limits of at least $1,000,000 per occurrence for Bodily Injury and Property Damage. As a minimum, coverage for Premises, Operations, Products and Completed Operations shall be included. This coverage shall protect the public or any person from injury or property damage sustained by reason of the Contractor or its employees carrying out the work involved in this contract.

Subcontractors: In the case of any work sublet, the Contractor shall require subcontractors and independent contractors working under the direction of either the Contractor or a subcontractor to carry and maintain the same workers compensation and liability insurance required of the Contractor. All subcontractors must be approved by the Town in advance.

Qualifying Insurance: Policies shall be issued by insures authorized to do business in the State of New Hampshire. If Professional Liability coverage is written on a claims made policy form, the certificate of insurance must clearly state coverage is claims made and coverage must remain in effect for at least two years after final payment with the contractor continuing to furnish the Town certificates of insurance. The Contractor shall be responsible for deductibles and self-insured retentions in the Contractor insurance policies.

IX DISCLAIMER

This Request for Qualifications does not commit the Town of Derry to award a contract or pay any costs incurred during the preparation of the qualifications package. The Town of Derry reserve the right to reject any or all the proposals for completing this work for any reason allowable by law. The Town of Derry also reserve the right to eliminate the need for the selected firm to complete one or more tasks, pending the outcome of preceding related tasks or issues.

To participate in the project and receive payment, the selected firm will be required to enter into a contract which stipulates that the contractor is eligible to receive federal funding and certifies compliance with State and Federal rules related to grant funded projects.

Attachment I – Scope of Work Guidance

Hoods Pond Watershed-Based Management Plan & Lake Phosphorus Control Plan Development

February 15, 2023

INTRODUCTION

The Town of Derry is soliciting Statements of Qualifications (SOQs) from interested consulting firms to develop a watershed-based management plan and a Lake Phosphorus Control Plan for Hoods Pond in Derry, New Hampshire. The watershed-based management plan shall meet the United States Environmental Protection Agency (USEPA) requirements for nine-element (a-i) watershed-based plans and a Lake Phosphorus Control Plan shall meet the requirements of Appendix F, Part III of USEPA's Municipal Separate Storm Sewer System (MS4) General Permit to mitigate phosphorus loading in the watershed of Hoods Pond in Derry, NH. Hoods Pond has TMDL for phosphorus and is subject to a chloride TMDL and bacteria TMDL. Hoods Pond has periodically experienced elevated bacteria resulting in closure of Hoods Park Beach.

Development of an EPA nine key element ('a-I') watershed-based management plan for Hoods Pond will assess the health of the waters in Hoods Pond, result in identification of sources of pollutants, and provide a roadmap for mitigation and protection efforts in the future. The phosphorus control plan will address external and internal phosphorus loading to Hoods Pond and the subwatersheds though development of a management plan that identifies the sources and the necessary steps to reduce loading from each of the subwatersheds within the Town of Derry. The development of a Watershed Management Plan and Lake Phosphorus Control Plan will develop a framework for going forward with an education and outreach component while helping the Town comply with MS4 requirements and identifying and addressing sources of impairments.

BACKGROUND

Hoods Pond (NHLAK700061203-03-01) is located in Derry, New Hampshire and is within the Merrimack River Basin (Figure 1). Hoods Pond is a very shallow, unstratified 2.4-hectare (ha) natural lake that is dammed by the Hoods Pond Dam (Dam #063011). It has a maximum depth of 1.8 meters (m) (6.0 ft) and a mean depth of 1.1 m (3.6 ft). The lake volume is 25,691 cubic meters (m3) with a rapid flushing rate of approximately 368 times per year. The watershed area is 1605 ha and is located mostly within the Town of Derry with a smaller portion in the Town of Londonderry. Hoods Pond Watershed has impairments and TMDLs for phosphorus, bacteria, and chloride in one or more of its lakes or tributaries watershed. As an MS4 permitted municipality, the Town of Derry is required to address impairments and develop a Lake Phosphorus Control Plan for Hoods Pond.

Hoods Pond is the location of the Town-owned Hoods Park which includes a public beach and recreational facilities. Hoods Pond and abutting Hoods Park are located downtown along the Derry Rail Trail and features public recreation including swimming, non-motorized boating, and fishing including an

annual kids fishing derby, and the availability for residents to sign-out row boats and kayaks. The park also has courts for basketball, tennis, and street hockey as well as benches, swings, picnic tables, playground, and wooded shoreline trail connecting through toward the commercial district. The public beach was used for swimming lessons but has been closed for the last several years due to a lack of lifeguards.

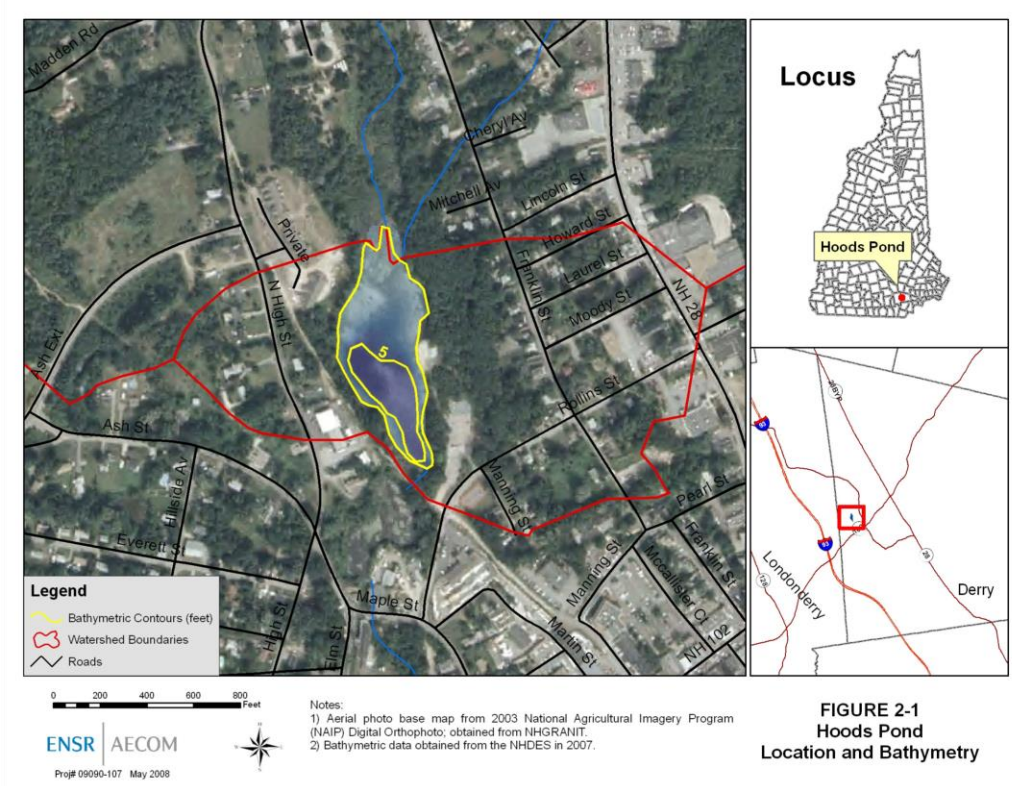
The Town employed a UNH Recreational Needs Assessment which identified Hoods Park as one of the Town's important assets. From 2020 to 2021, the Town held a charrette with a steering committee of community stakeholders with an interest in the revitalization of Hoods Park and Hoods Pond. The input received identified improving Hoods Pond water quality and reopening the beach as the most important priorities followed by improving Hoods Park with terrestrial habitat and trails.

The Town subsequently cohosted a Landscaping for Water Quality Class in November 2021 with NHDES and UNH which used Hoods Park as a classroom project, producing a lot of good suggestions from practitioners (landscapers, non-profits, and municipalities) to make improvements to the park and pond.

Hoods Pond can have a duck and significant Canadian Goose population during summer months. A goose count in 2020 indicated up to 150 geese at one time in and immediately around Hoods Pond. Duck counts were up to 30 at any one time. In the 2020/2022 NH 305(b)/303(d) Assessment of surface waters, the following impairments are listed in the Hoods Pond watershed:

- Hoods Pond – 3PNS aquatic life (potentially not supporting, Phosphorus and Chloride TMDL)
- Hoods Pond Beach – 4A-P swimming (severe, Bacteria TMDL)
- Rainbow Lake – 5P aquatic life use (Severe)
- Rainbow Lake Karen Gena Beach – 4A-P swimming (severe, Bacteria TMDL)

Figure 1 Hoods Pond Location and Bathymetry (Figure 2-1 from Phosphorus TMDL for Hoods Pond 2012)



In 2015-2016, a breach analysis and inundation mapping project were completed by Weston & Sampson for the Hoods Pond Dam. The analysis further updated hydraulic features of the watershed including identifying primary and secondary subbasins (Figure 3).

Figure 2 – From Watershed 305(b) Assessment Summary Report HUC12 010700061203nAssessment Cycle 2020/2022

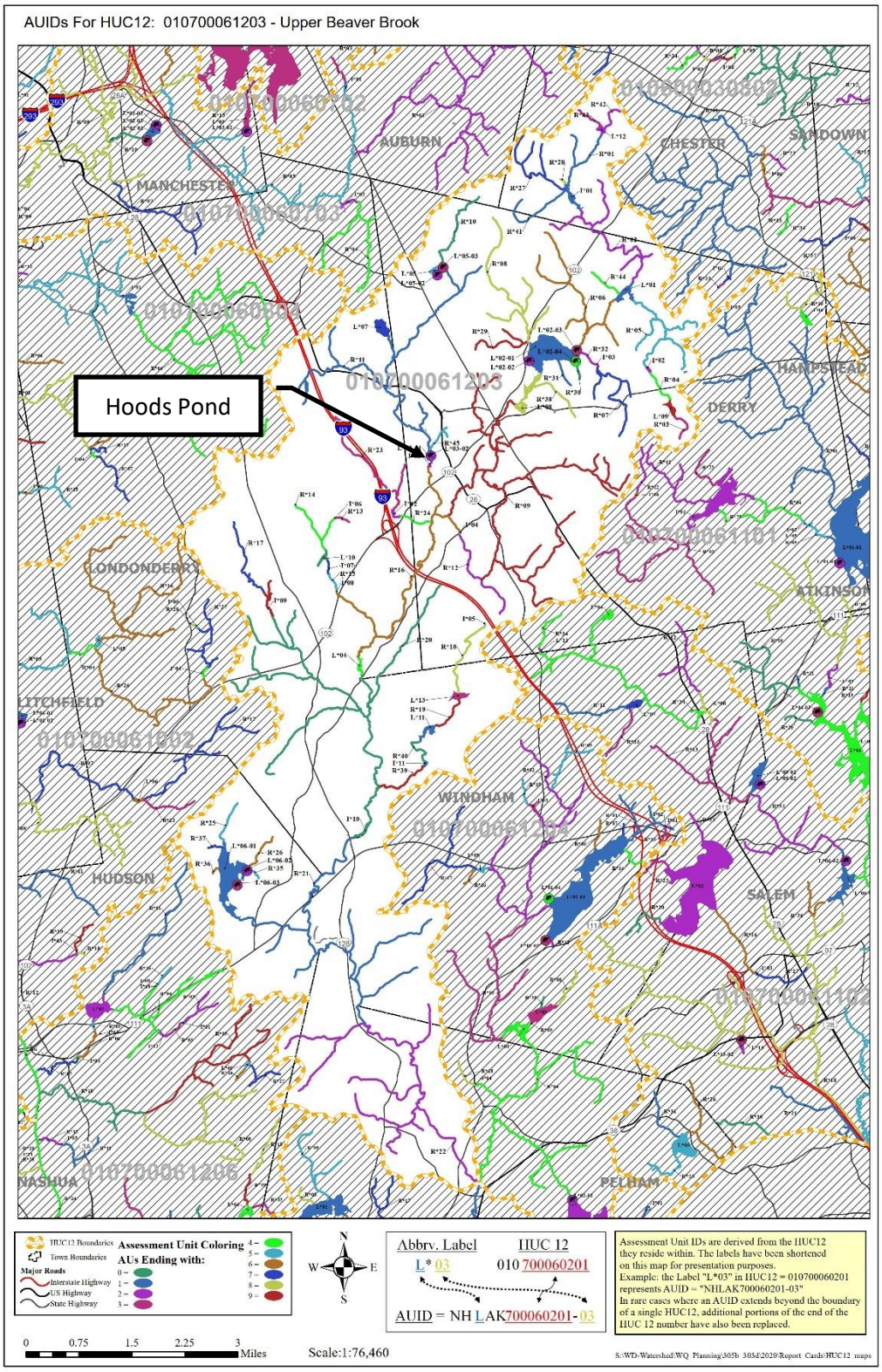
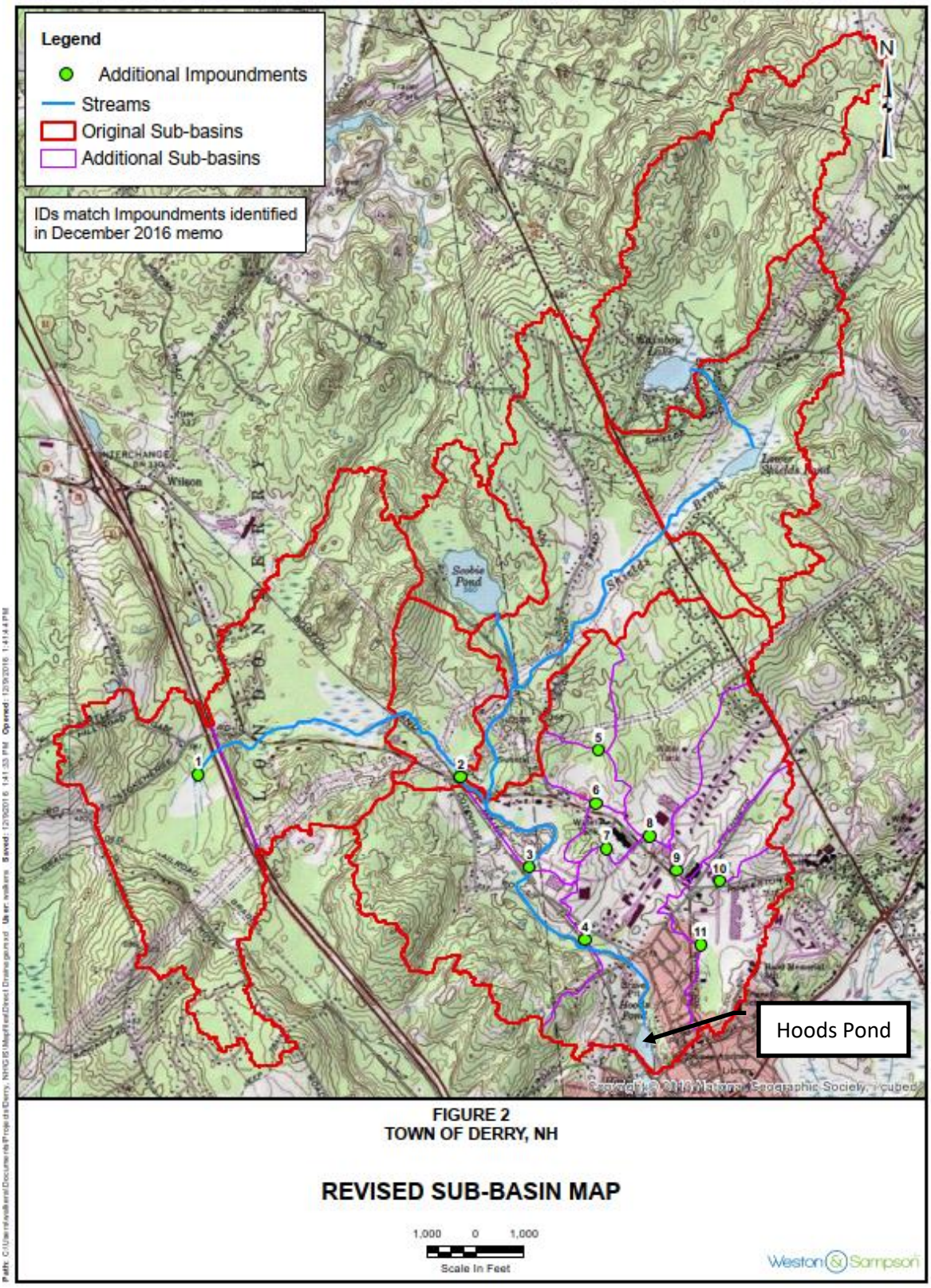


Figure 3 Hoods Pond Watershed and sub-basins (Figure 2 from Memorandum: Weston & Sampson to Town of Derry – Hoods Pond Dam Revised Design Flood Analysis - 12/12/2016)



Select characteristics of Hoods Pond and its watershed as presented in the TMDL report are presented in the Table below.

Table 1 - Characteristics of Hoods Pond, Derry (Table from Phosphorus TMDL for Hoods Pond, 2012)

Parameter	Value
Assessment Unit Identification	NHLAK700061203-03-01
Lake Area (ha)	2.4
Lake Volume (m3)	25,691
Watershed Area (ha)	1602
Watershed/Lake Area (ha)	669
Mean Depth (m, ft)	1.1, 3.6
Max Depth (m, ft)	1.8, 6.0
Flushing Rate (yr-1)	368
Surface TP (ug/L, n=1)*	54
Surface TN: TP Ratio	13
Impaired Uses and Causes of Impairment**	Primary Contact Recreation: Hepatotoxic cyanobacteria (5-M); Source Unknown
Lake Bottom Anoxia	No

*Water quality statistics are calculated from 1997 data.
**Source: 2006, 2008 & 2010 NH 303d Lists of Threatened or Impaired Waters that Require a TMDL. Category '5'= TMDL Required, Category 'M'= Marginal Impairment, and Category 'P'= Priority Impairment.

The watershed that includes Hoods Pond, Rainbow Lake, and Scobie Pond totals 1602 hectares. Land cover is divided into the following categories:

Table 2 Land Cover in Hoods Pond Watershed (from Phosphorus TMDL for Hoods Pond 2012)

Land Cover	Area (hectares)				
	Shields Brook Subwatershed	Rainbow Lake Subwatershed	Scobie Pond Subwatershed	Direct Drainage	Total
Urban 1 (Residential)	319.7	56.5	17.3	4.8	**398.3**
Urban 2 (Mixed Urban/Commercial)	41.8	0.0	0.0	7.3	**49.1**
Urban 3 (Roads)	49.6	4.5	1.1	1.4	**56.6**
Urban 4 (Industrial)	138.6	1.7	0.0	0.5	**140.8**
Urban 5 (Parks, Recreation, Institutional)	121.0	0.0	0.0	0.4	**121.4**
Agric 4 (Hayland-Non Manure)	4.1	0.0	0.0	0.0	**4.1**
Forest 1 (Deciduous)	223.6	61.1	34.7	0.0	**319.4**
Forest 2 (Non-Deciduous)	9.4	8.7	0.0	0.0	**18.1**
Forest 3 (Mixed Forest)	263.7	58.0	6.2	0.0	**327.9**
Forest 4 (Wetland)	28.7	13.0	3.3	1.9	**46.9**

Open 1 (Wetland/Pond)	89.7	11.5	11.4	0.0	**112.6**
Open 3 (Bare/Open)	7.2	0.0	0.0	0.0	**7.2**
TOTAL	**1297.1**	**215.0**	**74.0**	**16.3**	**1602.4**

The watershed has a history of mixed use including agricultural land use, residential, industrial, and commercial. The areas immediately adjacent to Hoods Pond include year-round residences while Rainbow Lake is formerly seasonal, now year-round residences.

Rainbow Lake is located near the headwaters of the watershed and includes a single outlet. The water passing through the outlet of Rainbow Lake enters Shields Brook which eventually reaches Hoods Pond.

The water quality of Hoods Pond has been monitored periodically under different programs. The New Hampshire Department of Environmental Services (NHDES) conducted summer water quality monitoring on Hoods Pond in 1997 for Lake Trophic Studies. NHDES collected a second sample additional water quality monitoring in October 2011 based on comments on the draft TMDL report to acquire more current data. Data results are presented in Table 3. The pond is shallow and does not stratify, so an anoxic zone does not form. Secchi disk transparencies (SDT) were low at 0.8 m. Cyanobacteria blooms containing hepatotoxic microcystins in summer have been observed; summer measured chl *a* concentrations were 1.88 µg/L. The average of the measured summer surface TP concentration in 1997 and 2011 was 41 µg/L. The average summer color in 1997 and 2011 was 115 PCUs. These limited data may not represent the entire range of conditions occurring in Hoods Pond but at least provide a relative idea of the range Based on the 1997 trophic survey, Hoods Pond is mesotrophic.

Table 3. Hoods Pond Summer Water Quality Summary Table 1997 and 2011. (Table 2-2 from Phosphorus TMDL for Hoods Pond 2012)

	Surface TP (ug/L)	**SDT (m)**	**Apparent Color (PCU)**	**Chl *a** (ug/L)**	**DO ** (mg/L)**
n	2	2	2	2	19
Value	-	0.8	-	-	-
Min	27	-	90	1.88	7.1
Mean	40	-	115	1.88	7.6
Max	54	-	140	1.88	7.9

n = number of samples; SDT= Secchi Disk Transparency, Chl *a* = Chlorophyll a, DO= Dissolved Oxygen

* Uncorrected for phaeophytin

** DO values are from each discrete observation in the data set regardless of depth

Bacteria testing at Hoods Pond Beach as part of routine beach monitoring was conducted by the Town when the beach was open. This routine testing by the Town periodically indicated elevated bacteria counts resulting in beach closure. The Town also conducted limited additional testing under the MS4 program to assist in developing a more consistent water quality baseline for Hoods Pond and its tributaries. Samples were collected from Hoods Pond and select tributaries during both dry and wet weather events. The results are summarized in the table below:

Table 4 Hoods Pond Water Quality Data 2019-2021 (collected by Town of Derry)

Sample Location	Date	Chloride (mg/l)	E-Coli (MPN/100ml)	Phosphorus (ug/l)
HOODSERD	9/23/2019	170	159.7	10
HP-Beach	11/2/2021	66	201.4	18
HP-Beach	11/17/2021	59		15
HP-Beach	9/22/2022 Wet	140	>2419.6	22
HP-Trib	11/2/2021	180	214.2	23
HP-Trib	11/17/2021	200		17
HP-Trib	9/22/2022 Wet	62	1011.2	97
06-SHB	9/23/2019	210	272.3	<10
06-SHB	11/2/2021	55	161.6	13
06-SHB	11/17/2021	60		10
06-SHB	9/22/2022 Wet	70	>2419.6	57
HP-Inlet	11/2/2021	95	162.4	21

MPN – Most Probable Number
HOODSERD (NHLAK700061203-03-01) - Middle of Hoods Pond at mid depth.
HP-Beach (NHLAK700061203-03-01) - 20 to 25' from shore at Hoods Pond Beach
HP-Trib (NHRIV700061203-45) - Unnamed tributary upstream of Hoods Pond inlet
06-SHB (NHRIV700061203-11) - Shields Brook at North High St, Upstream of Hoods Pond/Wetland
HP-Inlet (NHRIV700061203-11) - At inlet to Hoods Pond from Shields Brook/wetlands

The NH Department of Transportation is currently in the design and construction of a new Exit 4A from Interstate 93. The connector road to the new exit will join existing roads bisecting the Hoods Pond Watershed immediately upstream of Hoods Pond. An environmental Impact Statement was prepared and approved. The segment associated with the location immediately upstream of Hoods Pond is currently in the design phase and will be incorporating stormwater control best management practices.

OVERALL PROJECT DESCRIPTION:

The scope of work for this project is to develop a watershed-based management plan following the U.S. EPA Nine-Element (a-i) Framework further detailed in the *Clean Water Act Section 319 Guidance for Watershed Management Plan.* The overall project and scope of work represents a collaboration of entities working on various tasks and aspects of the project. The secondary goal for this project is to comply with select requirements of the Town's MS4 permit through the development of a broader watershed-based management plan to meet TMDL and impaired waters requirements. The plan development will include some or all of the following tasks:

1) Quantify the mechanisms of phosphorus loading to Hoods Pond by examining tributary and internal lake sources of total phosphorus and land use sources (direct runoff, septic systems, etc.) that may be contributing total phosphorus in direct runoff.
2) Identify land use strategies for mitigating loading from direct runoff to the ponds.
3) Update the 2012 TMDL report on Hoods Pond with measured stream flow measurements to be used in calculating tributary phosphorus loading.
4) Incorporate detailed measurements of dissolved oxygen and total phosphorus in the water columns of Hoods Pond into lake models for calculating phosphorus loading dynamics.
5) Measure total phosphorus content in pond examine sediment storage and release of phosphorus.
6) Calculate the total phosphorus budget for each subwatershed.
7) Complete TMDL calculations for Hoods Pond.

It is expected that the proposed work will involve a year-long study of phosphorus loading and cycling in Hoods Pond. This may involve:

Regular periodic measurements of water chemistry for dissolved oxygen, temperature, transparency, and specific conductivity. Water samples will be collected for total phosphorus, pH, turbidity, and chlorophyll-a measurements.

1. Monthly measurements of tributary streamflow, total phosphorus, specific conductivity, pH, and turbidity. Staff gauges will be installed on each tributary.
2. Collection of water chemistry data for wet weather storm events and dry weather storm events.
3. Collect/compile data on phosphorus loading by precipitation.

Recommended mitigation of watershed sources will be achieved through the development of a watershed management plan and Lake Phosphorus Control Plan that prioritizes phosphorus sources for treatments with best management practices that will achieve the water quality goals established for Hoods Pond in the completed plans. The plan will meet the criteria for the USEPA Clean Water Act Section 319 Guidance for Watershed Management Plans and Appendix F Part III of the EPA MS4GP.

SCOPE OF REQUIRED SERVICES:

Development of a watershed-based management plan that meets the criteria for the Clean Water Act Section 319 Guidance for Watershed Management Plans and lake phosphorus control plan that meets Appendix F Part III of the EPA MS4GP will include the following:

1) Compile historical water quality data, and determine what additional data is necessary to determine assimilative capacity (phosphorus) in Hoods Pond and the subwatersheds.
2) Establish in-pond water quality goals for Hoods Pond.
3) Quantifying the sources and potential sources of phosphorus loading in the total watershed and each sub-watershed that will be accounted for and addressed. This will include calculating loading from each source and the recommended management practices. The fieldwork for this project will be done in collaboration with the Town of Derry. This may include periodic collection of water samples (stream and pond) along with streamflow measurements.
4) Determination of estimated load reductions by implementing recommended management practices for each subwatershed.
5) NPS management measures (BMPs) will be recommended for addressing loading sources in each subwatershed focusing on critical areas where mitigation will provide the greatest phosphorus load reductions and progress toward achieving the in-pond water quality goals established for Hoods Pond.
6) Expected costs of technical assistance required to implement the management plan recommendations along with potential funding sources.
7) A public outreach plan will be developed for working with landowners and stakeholders.
8) An implementation schedule will be created for implementing recommended management practices.
9) A detailed description of milestones for each stage of the management plan implementation.
10) The criteria to be used for assessing phosphorus loading reductions along with plans for updating the TMDL calculations for Hoods Pond and calculating TMDL values for its tributaries.
11) A detailed monitoring plan will be completed for measuring the effectiveness of the management plan using stream and pond water chemistry in subsequent years.

It is expected the consultant(s) will incorporate each of the components listed above into the final plans.

The consultant will work collaboratively with the Town of Derry and its partners to coordinate the development of the watershed management plan and phosphorus control plan and to complete the selected tasks in the table below. Alternative or modified approaches within each objective and task may be proposed by the consultant. Some tasks may be shared responsibility with the Town or other stakeholders.

Proposed Consultant Tasks	Project Partner (Town of Derry, Derry Conservation Commission, NHDES, and shoreland owner associations) Roles
Objective 1: Project Management and Site Specific Project Plan (SSPP)	
Deliverable 1*: Completed SSPP that will include compiling data necessary to determine assimilative capacity, watershed load, and to perform in-lake response modeling, and expected NPS load reduction management measures.*	
Task 1: The consultant in collaboration with the Town shall hold a planning project kick-off meeting with the project stakeholders and NHDES.	The consultant, Town of Derry, NHDES, and interested stakeholders. The Town will publicize the meeting, invite stakeholders to join in the planning process, and introduce selected consultant.
Task 2: Prepare and submit draft SSPP for watershed- based plan development work for review and comment. Address draft SSPP comments and submit final SSPP to NHDES.	Project partners review and comment. Send mark-up back to consultant. Signatures on SSPP cover page
Objective 2: Compile historical water quality data, and determine what additional data is necessary to determine assimilative capacity (phosphorus) in Hoods Pond and the respective watersheds.	
Deliverable 2: *Memo detailing the data and review of previous studies and the any additional data needed to complete the watershed-based plan for Hoods Pond and the calculation of the current assimilative capacity for phosphorus.*	
Task 3: Compile historical water quality data and determine what is needed to determine phosphorus assimilative capacity.	Town of Derry and NHDES to acquire historical water quality data and collect new data in collaboration with the Town of Derry.
Task 4: Determine the historical and current total phosphorus and chlorophyll-a levels for Hoods Pond.	Provide historical water quality monitoring studies and reports and additional data that will be collected.
Task 5: Determine the assimilative capacity of Hoods Pond for phosphorus and prepare summary of water quality criteria. Include examination of resulting chlorophyll-a and dissolved oxygen as it relates to existing impairments.	
Objective 3: Established water-quality goal for phosphorus in Hoods Pond.	
Deliverable 3*: Documentation and technical guidance for the process required for formally arriving at the water-quality goal for phosphorus and setting the goal through cooperation with project partners.*	
Task 6: Establish process for determining the water quality goal for phosphorus. Guide project partners to collect ice-out and sediment samples to inform this process and modeling efforts.	Establish Water Quality Goal Committee and work with consultant to develop current goal-setting process and final phosphorus goal. Collect in-lake and sediment samples.
Task 7: Facilitate meeting among project partners to formally adopt the water quality goals for Hoods Pond.	Provide support for meeting planning, hosting, and facilitation.

Objective 4: Confirmed historical pollution sources, identification of current and future sources, and incorporation of internal phosphorus loading as a quantified pollution source.

Deliverable 4: *Technical memo identifying historical, current (including in-lake internal loading) and future pollution source loads by land use type and source group by subwatershed for each parameter. Refined/revised pollution source loads for each subwatershed based upon site-specific knowledge using field, ground-truthing methods.*	
Task 8: Determine annual pollution source loads for the watershed using an appropriate approved lake loading response model or method as detailed in the SSPP. Use aerial photography and Landsat imagery to characterize the watershed (NOAA; C-CAP; NH GRANIT mapper, etc.). Submit summary memo of current annual pollution source load.	
Task 9: Determine what additional data is needed to update the Hoods Pond 2012 TMDL Report.	
Task 10: Conduct watershed pollutant source, land use and septic survey to identify and document potential pollution sources in the watershed for each pond and ground-truth the available imagery.	Town of Derry will acquire historical data and resources.
Task 11: Estimate in-lake phosphorus concentration and associated chlorophyll-a concentration, Secchi transparency and probability of algal blooms using in-lake response model(s) reference in the approved SSPP. Include determination of internal loading contribution.	
Task 12: Complete watershed build-out analysis.	Town of Derry will assist with data acquisition.
Task 13: Run modeling scenarios to predict future pollutant loading, including natural background, build-out under current zoning, near-term development, future development, and others to meet water quality goals under those scenarios.	

Objective 5: Estimated pollution reductions and actions needed to maintain the water quality goal and future watershed conditions for Hoods Pond.

Deliverable 5: *Technical memo describing and prioritizing the NPS management measures that will be used to achieve the load reduction estimated, as well as other watershed goals identified in the watershed-based plan, and identification of the critical areas where those measures will be needed to implement the plan.*	
Task 14: Determine pollutant load reductions needed in order to achieve water quality goals.	
Task 15: Identify locations needing BMPs and recommend technologies to achieve pollutant load reductions sufficient to achieve goals.	Work with project partners for consideration of recommended BMPs.

Task 16: Provide conceptual BMP designs and costs for each identified watershed NPS pollutant reduction site.	Provide information relative to property ownership and potential for letters of commitment to have BMPs installed on private properties
Task 17: Identify and evaluate in-lake treatment options relative to phosphorus inactivation/sequestration/ filtration etc. that includes costs estimates needed to achieve water quality goal.	NHDES representatives will work with consultant relative to in-lake treatment policies and procedures within the agency.
Task 18: Estimate pollutant load reduction attributable to each site specific, watershed-based BMP and in-lake treatment method(s).	

Objective 6: A sustainable information/education strategy (ADA compliant) that will be used to enhance stakeholder understanding of Watershed-Based Management Plan and encourage early and continued participation in selecting, designing, and implementing the NPS management measures that will be implemented.

Deliverable 6: An education/outreach and social media plan that runs concurrently with development of the Watershed-based Management Plan.	
Task 19: Work with Project Partners and NHDES Education/Outreach Coordinator to build education and outreach strategy for Watershed-Based Management Plan.	

Objective 7: Publish the Hoods Pond Watershed-Based Management Plan and Lake Phosphorus Control Plan - Derry, NH

Deliverable 7: An updated, revised, and fully, USEPA-compliant (a-i) watershed-based plan that incorporates watershed and in-lake nutrient sources and measures, costs, and resources to control them has been developed, submitted to, and subsequently approved by NHDES.	
Task 20: Compile work completed in above tasks into a draft Watershed Management Plan and distribute to project partners for review and comment.	Project partners perform a timely review and provide comments by requested deadlines.
Task 21: Incorporate comments from project partners on DRAFT WMP, make revisions, and prepare for public meeting to present the Hoods Pond Watershed-Based Management Plan.	
Task 22: Participate in public meeting to present DRAFT Watershed-Based Management Plan, incorporate public comments into DRAFT, and develop final WMP.	Logistical management and co-facilitation of meeting by project partners.
Task 23: Submit final Watershed-Based Management Plan to Town of Derry, the Derry Conservation Commission, NHDES, and other interested members of the Derry Community.	

GEOGRAPHIC SCOPE

The primary project area is the Hoods Pond Watershed located within the Town of Derry and shall consider overall input and phosphorus loading from subwatersheds and tributaries contributing to the Hoods Pond Watershed outside of the Town of Derry boundaries.

RESOURCES

Watershed 305(b) Assessment Summary Report: Assessment Cycle: 2020/2022 HUC 12-010700061203 Upper Beaver Brook: https://www4.des.state.nh.us/onestoppub/SWQA/010700061203_2020.pdf

Total Maximum Daily Load for Phosphorus in Hoods Pond, Derry, NH, AECOM, May, 2012: https://www.des.nh.gov/sites/g/files/ehbemt341/files/documents/2020-01/final-phosphorous-tmdl-report-Hoods-pond.pdf

I-93 Exit 4A Final Environmental Impact Statement And Record Of Decision, Volume I: Main Text, February 2020; FHWA, NHDOT, Derry, Londonderry - EIS # FHWA-NH-EIS-07-01-F: https://static1.squarespace.com/static/60f97037eae4fd6ad2a35aa3/t/61324482fe0f752c45ed7a5d/1630684301712/I-93_Exit_4A_FEIS_Volume_I_-_Complete.pdf

Engineering Report 13065 Derry-Londonderry I-93 Exit 4A, February 5, 2020, Fuss & O'Neil: https://www.nh.gov/dot/projects/derrylondonderry13065/documents/13065-engrep-051920.pdf

Federal Highway Administration Record of Decision FHWA-NH-EIS-07-01-F Derry-Londonderry IM-0931(201) 13065 I-93 Exit 4A, February 3, 2020: https://www.nh.gov/dot/projects/derrylondonderry13065/documents/13065-engrep-051920.pdf

Hoods Park Charrette, Outreach and Engagement Report December 2020: https://Hoodspark-derrynh.hub.arcgis.com/