



GREGG LAKE WMP DEVELOPMENT | CONTRACTOR AGREEMENT



DONNA HANSON
Town Administrator
Town of Antrim, New Hampshire
66 Main Street
Antrim, NH 03440

May 1, 2018

Dear Ms. Hanson,

FB Environmental Associates (FBE) is pleased to submit the following contract, scope of work, and budget for development of the Gregg Lake Watershed Management Plan. We will work cooperatively with the Town of Antrim and local stakeholders on this project to protect this important water resource. Forrest Bell will serve as Principal-in-Charge for this project and will ultimately be responsible for the successful completion of all project tasks. Laura Diemer will serve as the Project Manager and will be responsible for day-to-day project task completion and communication with Town staff.

SCOPE OF WORK

The attached table lists the detailed scope of work, schedule, and budget for FBE to assist the Town of Antrim with development of a watershed management plan. These tasks follow the final version of the workplan negotiated between the Town of Antrim and NHDES for use of Section 319 funding. The project will extend from May 2018 to December 2019. The only tasks that FB Environmental will be responsible for completing or assisting with are the ones with associated payment amounts listed on the attached tables.

ESTIMATED COSTS

A summary of estimated project budget costs by task are presented in the attached table. Total grant funds to the contractor (FBE) are estimated at \$23,200. FBE will not exceed this total project cost.

INVOICES/ACCEPTANCE OF CONSULTING SERVICES

By signing below, FB Environmental Associates and the Town of Antrim accept the terms and conditions stated within this scope of work. FBE will submit invoices to pay for completed deliverables to Joan Gorga (Project Manager, Town of Antrim) for review and approval. Joan Gorga will forward approved invoices to Donna Hanson (Town of Antrim) for approval of funding release to FBE. Joan Gorga will be responsible for completing NHDES Payment Request Forms for grant reimbursement to the Town of Antrim.

Forrest Bell ~ FB Environmental Associates

Donna Hanson ~ Town of Antrim, NH

Objectives, Deliverables, and Tasks (Section 9C of the Application)				
Objective 1:	Develop and issue a Request for Qualifications (RFQ) to aid in the development of a Gregg Lake Watershed Management Plan (GLWMP)			
Measures of Success:	A qualified consultant is identified. The Scope of Work, budget and contract agreement are approved by NHDES and signed.			
Deliverable 1:	Draft and final versions of RFQ, Scope of Work, budget and contract agreement.			
Task No.	Task Name	EPA Mandated Element (a - i)	Proposed Dates	Federal EPA 319 Grant Funds to Consultant
1	Complete a State and Federal rules compliant solicitation to identify potential consulting firms to assist with the development of the watershed-based plan. Develop RFQ documents and submit them to NHDES for review and approval.	a	March 2018	\$0
2	Receive and evaluate consultant qualifications submittals in coordination with NHDES and select the most qualified applicant.	a	April 2018	\$0
Task Detail:	Review consultant responses and conduct interviews.			
3	Define contract scope of work and negotiate cost.	a	Apr-May 2018	\$160
Task Detail:	Draft a contract agreement between the Town of Antrim and the consultant for the Scope of Work			
4	Obtain NHDES approval of the draft contract.	a	May 2018	\$0
Task Detail:	Submit a draft contract agreement, Scope of Work, and project budget to NHDES for review and approval.			
5	Execute contract agreement with the selected firm and provide final version to NHDES.	a	May 2018	\$0
6	Hold kick-off Watershed Management Project meeting with stakeholders and the consultant. Assumes one FBE staff person attending.	a	June 2018	\$640
				\$800

Objective 2:	Prepare Site-Specific Project Plan (SSPP).			
Measures of Success:	Completed SSPP.			
Deliverable 2:	Completed SSPP to address assimilative capacity, watershed load modeling and NPS load reduction management measures.			
Task No.	Task Name	EPA Mandated Element (a - i)	Proposed Dates	Federal EPA 319 Grant Funds to Consultant
7	Prepare and submit draft SSPP for watershed plan development work for review and comment.	a	June 2018	\$720
Task Detail:	Prepare draft SSPP for data analysis, modeling and assessment and submit to applicant.			
8	Incorporate applicant comments into draft SSPP.	a	June 2018	\$160
9	Submit SSPP to NHDES for review and comment.	a	June 2018	\$0

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10	Address draft SSPP comments and submit final SSPP to NHDES.	a	July 2018	\$80
				\$960

Objective 3:	Water quality data will be assembled, and assimilative capacity determined for phosphorus.			
Measures of Success:	Total assimilative capacity, reserve assimilative capacity and remaining assimilative capacity for phosphorus are calculated.			
Deliverable 3:	Memo detailing the calculation of the current water quality criteria for phosphorus and chlorophyll-a and determination of the impaired status of Gregg Lake.			
Task No.	Task Name	EPA Mandated Element (a - i)	Proposed Dates	Federal EPA 319 Grant Funds to Consultant
11	Collect additional water quality data through expansion of the existing New Hampshire Volunteer Lake Assessment Program (VLAP) sampling to include ice-out and 5 sampling rounds completed in compliance with the existing VLAP Quality Assurance Project Plan.	a	Apr-Oct 2018	\$0
Task Detail:	Testing to include temperature/DO profile and TP each meter at the deep spot, to improve statistical analysis. Samples will be analyzed at the NHDES laboratories. If possible, we will also analyze the dominant zooplankton and phytoplankton species.			
12	Gather all available water quality data and determine if acceptable for use in analysis of assimilative capacity. Last sampling Oct; get final data in Nov	a	Nov 2018	\$0
Task Detail:	Obtain the water quality data gathered through VLAP since 1997 for Gregg Lake, as well as Lake Trophic Study data obtained in 1978 and 1994/1995, from NHDES EMD, and results of biological studies on fish and microplankton/algae from NH F&G and NHDES.			
13	Determine the historical and current total phosphorus and chlorophyll-a levels for the inlet, outlet and deep water sites.	a	Dec 2018	\$0
Task Detail:	Analyze the data to determine current median and mean phosphorus and chlorophyll-a concentrations.			
14	Determine the assimilative capacity of Gregg Lake for phosphorus and prepare summary of water quality criteria. Include examination of resulting chlorophyll-a and dissolved oxygen as it relates to existing impairments.	a	Dec 2018	\$0
Task Detail:	Calculate the amount of in-lake total phosphorus reduction needed to meet state nutrient criteria and submit memo detailing calculations.			
				\$0

Objective 4:	Establish the water-quality goal for phosphorus for Gregg Lake.			
Measures of Success:	A water-quality goal for phosphorus will be approved by the water quality advisory committee and NHDES.			
Deliverable 4:	Documentation of the process required for formally arriving at the water-quality goal for phosphorus and its effects on Gregg Lake's water quality impairments.			

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Task No.	Task Name	EPA Mandated Element (a - i)	Proposed Dates	Federal EPA 319 Grant Funds to Consultant
15	Establish a water-quality advisory committee to review existing data and set a water quality goal.	b	June 2019	\$0
Task Detail:	Invite and convene representatives from NHDES, volunteer water-quality monitors for Gregg Lake, the Gregg Lake and White Birch Point Associations, watershed landowners and the Town of Antrim to review water quality data.			
16	Establish the process for determining the water quality goal for phosphorus, which includes consideration of resulting dissolved oxygen, chlorophyll-a and total phosphorus impairments.	b	June 2019	\$640
Task Detail:	Outline the process for determining the water quality goal.			
17	Implement and document the process for establishing the water-quality goal for Gregg Lake.	b	June 2019	\$480
Task Detail:	Hold a facilitated meeting with GLWMPC and NHDES to agree on the water-quality goal. Assumes one FBE staff person attending.			
				\$1,120

Objective 5:	Identify current and future pollution sources.			
Measures of Success:	Individual sources identified with sufficient resolution to begin development of a restoration plan and prioritize action items for implementation.			
Deliverable 5:	Report identifying the current and future pollution source loads by land use type and source group by subwatershed for each parameter, along with refined pollution source loads for each subwatershed based upon site-specific knowledge using field ground-truthing methods.			
Task No.	Task Name	EPA Mandated Element (a - i)	Proposed Dates	Federal EPA 319 Grant Funds to Consultant
18	Determine annual pollution source loads for the watershed using the ENSR-developed Lake Loading Response Model (LLRM) model or other approved method as detailed in the SSPP. Coordinate with the consultant to 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 estimates.	b	Dec 2018-Mar 2019	See Task 20
19	Conduct watershed, land use and septic survey to identify and document potential pollution sources and ground-truth the available imagery. Methodology shall be reviewed and approved by NHDES. FBE to conduct land use, sub-basin delineation, mapping, and modeling. Volunteers to complete septic survey and land use ground-truthing at FBE request.	b	Apr-Nov 2018	\$2,160
Task Detail:	GLWMPC and other volunteers conduct ground-truthing of land use in watershed.			

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20	Estimate in-lake phosphorus concentration and associated chlorophyll-a concentration, Secchi transparency and probability of algal blooms using in-lake response models, including Vollenweider (or appropriate in-lake conversion model), in combination with empirical data and following approved QAPP and SSPP. Include determination of internal loading contribution. Submit to NHDES for review/approval.	b	Nov 2018-Mar 2019	\$3,200
21	Complete watershed build-out analysis.	b	Apr-Nov 2018	\$1,920
Task Detail:		Complete a build-out analysis for the watershed or entire town depending upon interest of the town and available funding.		
22	Run modelling scenarios to predict future pollutant loading including natural background and build-out under current zoning to meet water quality goals under those scenarios.	b	Feb 2019	\$960
				\$8,240

Objective 6:	Estimate pollution reduction and determine actions needed to maintain the water quality goal and future watershed conditions.			
Measures of Success:	Actions are identified that are realistically achievable and collectively will maintain the water quality goal.			
Deliverable 6:	Report 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 identifying the critical areas in which those measures will be needed to implement the plan.			
Task No.	Task Name	EPA Mandated Element (a - i)	Proposed Dates	Federal EPA 319 Grant Funds to Consultant
23	Determine pollutant load reductions needed to achieve water quality goals. As part of water quality goal documentation.		June 2019	\$1,280
24	Complete BMP identification including locations needing BMPs, documentation of sites including photos of problem areas as applicable, and rough conceptual BMP design with cost estimate for each location. HWG to complete watershed NPS survey.	c	Oct-Nov 2018	\$4,800
Task Detail:		Determine Best Management Practices or other actions (structural and non-structural) needed to achieve goals. Identification will include locations needing structural BMPs, documentation of sites including photos of problem areas as applicable, and rough conceptual BMP design with cost estimate for each location.		
25	Estimate pollutant load reduction attributable to each site-specific BMP. HWG to provide estimates.	c	Dec 2018	\$1,920
Task Detail:		Estimate the load reductions expected for the management measures described under EPA element c to maintain the water-quality goal.		
26	Assess and compile structural and non-structural BMP implementation options into a prioritized table of actions which includes BMP type, location, cost, responsible parties and load reduction.	c	Sept 2018-Jun 2019	\$0
Task Detail:		Estimate the amounts of technical and financial assistance needed, associated costs, and/or the sources and authorities that will be relied upon to implement the management measures in the watershed management plan. Combine the collected information from T23 through T25 into an action plan or recommendations matrix (priority, location, BMP type, load reduction estimate, cost estimate, authority).		

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27	Communicate the results of BMP identification at a public meeting and provide summary documentation for the Town of Antrim website. Assumes one FBE, HWG, and DK rep attending.	d	June 2019	\$1,920
Task Detail:	Publicize and hold a stakeholder meeting to communicate the results of Objectives #4, #5 & #6 and provide a preliminary overview of the priority areas in the watershed where action is needed.			
				\$9,920

Objective 7:	Develop watershed plan elements f, g, and h to assess and track future implementation of the completed watershed plan.			
Measures of Success:	Determination that the tracking elements of the plan are sufficient to ensure an implementable plan			
Deliverable 7:	Summary memos for each Task or draft watershed management plan chapters, as applicable.			
Task No.	Task Name	EPA Mandated Element (a - i)	Proposed Dates	Federal EPA 319 Grant Funds to Consultant
28	Develop an estimated schedule for the implementation of the prioritized BMP strategies identified in the above Tasks (element f).	f	June 2019	\$0
Task Detail:	Review current strategies in place in Antrim. Compile new strategies and review with GLWMPC members in order to identify feasible schedules and responsible entities for the eventual implementation of the prioritized strategies.			
29	Develop interim measurable milestones to determine whether the identified actions are being implemented in a timely fashion (element g).	g	June 2019	\$0
30	Develop a water quality monitoring and tracking strategy which identifies shortcomings in the existing data and monitoring work to guide future monitoring as used in assessment of plan's success in meeting the established water quality goals (element i).	i	June 2019	\$0
Task Detail:	Develop a tracking mechanism for plan recommendations so that successful implementation of the plan can be evaluated. The NH VLAP monitoring program will be used and adapted to evaluate in-lake phosphorus concentrations; additional monitoring needs will be assessed during plan development.			
31	Assess phosphorus loading targets to determine whether the desired phosphorus loading is being achieved over time and if progress is being made towards attaining water quality standards, and, if not, the criteria for determining whether this watershed-based plan needs to be revised (element h).	h	June 2019	\$0
				\$0

Objective 8:	Develop a watershed outreach strategy and provide multiple opportunities for participatory involvement for watershed residents and education through outreach (element e).			
Measures of Success:	Completed watershed outreach strategy for inclusion in the watershed plan. Participation by 10 residents in calculating their stormwater footprint using "What's your P?" Attendance by residents at seminars held on gravel road BMPs and septic system management.			

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Deliverable 8:		Provide documentation of materials produced for participatory workshops and a summary of outreach efforts.		
Task No.	Task Name	EPA Mandated Element (a - i)	Proposed Dates	Federal EPA 319 Grant Funds to Consultant
32	Develop outreach strategy to support the adoption, and stakeholder involvement in the implementation, of the practices identified in the Watershed Management Plan.	e	Jun 2018-19	\$0
33	Adapt an online tool, such as "What's Your P?" posted by the Winnepesaukee Gateway, for use in the Gregg Lake watershed. Promote and track use by watershed residents to determine their stormwater footprint.			
34	Provide outreach and education to property owners about proper septic maintenance.	e	Jun 2018-19	\$0
35	Hold a Gravel Roads Workshop for residents and road agents.	e	Jun 2018-19	\$0
Task Detail:	Hire an expert to conduct workshop on gravel roads for residents, road agents			
36	Conduct outreach activities regarding adoption and maintenance of stormwater BMPs. Consider partnering with the NHDES Soak Up the Rain program.	e	Jun 2018-19	\$0
Task Detail:	Work with GLA, Town and property owners to identify and recruit property owners and implement stormwater BMP projects			
37	Conduct outreach in support of the Watershed Management Plan for the Gregg Lake watershed. Invite speakers to the annual meetings of Gregg Lake Association and White Birch Point Association.	e	Jun 2018-19	\$0
				\$0

Objective 9:	Publish a Watershed Management Plan for Gregg Lake.			
Measures of Success:	The Gregg Lake Watershed Management Plan is approved by NHDES and posted to the Town of Antrim website at www.antrimnh.org . Public meeting held to publicize results of the plan.			
Deliverable 9:	Completed Gregg Lake Watershed Management Plan.			
Task No.	Task Name	EPA Mandated Element (a - i)	Proposed Dates	Federal EPA 319 Grant Funds to Consultant
38	Compile work completed in the above tasks into a draft Gregg Lake Watershed Management Plan. FBE to provide review only.	c	July 2019	\$1,200
Task Detail:	Submit draft Watershed Management Plan to NHDES and GLWMPC for initial review and comment, along with all supporting materials to be posted on the Town of Antrim website.			
39	Coordinate with stakeholders, NHDES and Gregg Lake Watershed Management Plan Committee to review the draft plan.	c	July 2019	\$0
40	Provide final draft of the Watershed Management Plan to NHDES for review and approval and compile any last changes to finalize the Watershed Management Plan document.	c	August 2019	\$0

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41	Upload Watershed Management Plan to Town of Antrim website.	e	August 2019	\$0
Task Detail:	Integrate the final Gregg Lake Watershed Management Plan into the Town of Antrim website with links on the Gregg Lake Association Facebook page.			
42	Hold a public meeting to publicize final plan. Assumes two FBE staff attend and present.	e	August 2019	\$960
				\$2,160

Objective 10:	The Town of Antrim prepares semi-annual reports and a final project report for NHDES.			
Measures of Success:	Timely semi-annual status reports and final report to NHDES.			
Deliverable 10:	Semi-annual reports and final grant report to NHDES.			
Task No.	Task Name	EPA Mandated Element (a - i)	Proposed Dates	Federal EPA 319 Grant Funds to Consultant
43	Submit electronic semi-annual reports documenting all work performed during the project periods as follows: For work completed April 1 - September 30, report is due by October 31; for work completed October 1 - March 31, report is due by April 30. In the event that the grantee has not completed a timely submittal of the progress reports, all further payments will be suspended until the overdue reports are submitted and approved by NHDES.	c	October 2018- October 2019	\$0
Task Detail:	GLWMPC will submit semi-annual reports to NHDES with supportive deliverables and tasks completed for each reporting period.			
44	Submit a comprehensive final report to NHDES on or before the project completion date. The final report shall comply with the NHDES and U.S. Environmental Protection Agency (EPA) requirements found in the final report guidance document on the NHDES Watershed Assistance Section webpage.	c	December 2019	\$0
Task Detail:	Final reports will be submitted with a list of all completed tasks before the end of the grant period.			
				\$0
Sum of Objective Subtotals				\$23,200