

Watchic Lake Protection Project, Phase 1

To our members:

The following document is the final work plan accepted by Maine DEP and US EPA for funding various Watchic Lake Watershed Projects.

While this plan document is final, there is flexibility on the specific projects undertaken and the specifics of each project. For example, we might increase one project scope and decrease another. The total funding amount cannot change, and the “match” coming from volunteer time and property owner co-funding cannot change (but may vary in proportion project to project).

Over the coming months the Watchic Lake Association will begin to contact various property owners, road associations, the town, and consultants.

Our DEP and EPA contacts have been supportive and willing to work with us to make these projects successful.

Thank you,

Paul McNulty 12/1/2020

Project Title	#20210007 Watchic Lake Protection Project, Phase I
Organization	Watchic Lake Association
Start Date	January 1, 2021
Completion Date	December 31, 2022

I. Waterbody and Watershed Information

a. Background

Waterbody Name	Watchic Lake
Waterbody Size (e.g., lake acres, stream miles)	Watchic Lake is 448 acres with approximately 6.5 miles of tributaries
Watershed Area (acres or square miles)	4.3 square miles
Watershed Location (town(s), county(s))	Town of Standish, Cumberland County
Title and Date of Existing or Past Watershed-based Management Plan	Watchic Lake Watershed-Based Protection Plan, March 2020
Public Access to Waterbody	Public access and non-motorized watercraft launch available at Kiwanis Beach

b. Waterbody and Watershed Physical Characteristics

Watchic Lake is approximately 0.75 miles wide and 1.4 miles long and has two main inlet tributaries, Page Brook and Paine Brook. The lake outlets at the northwest corner of the lake at Watchic Brook, a dam-controlled outlet, which drains to the Saco River. The Watchic Lake watershed is part of the larger Saco River watershed. Paine Brook enters Watchic Lake at the eastern end of the lake and is approximately three miles long. Page Brook is on the northwest end of the lake and is approximately one mile long. There are two additional small, unnamed tributaries within the watershed, one entering the southern edge of Watchic Lake and a second entering the northwest end of the lake at the same mouth as Page Brook. There are also many wetlands bordering the streams and the lake. The deepest section of the lake, located on the southeastern end, is 41 feet, and the average lake depth is 18 feet. The highest point of the watershed, at 580 feet, is in the northern tip of the watershed.

Development within the Watchic Lake watershed is densest adjacent to the lake. The upper watershed is mostly forested. Watchic Lake has approximately 5.5 miles of shoreline, with moderately dense development on 175 parcels with shoreline frontage. Most shorefront landowners were initially seasonal residents, though in recent years, year-round residency has increased to about half of the shorefront properties. There are two state highways bordering the lake, Route 113 and Route 25, as well as numerous town roads and private roads (some maintained by private road associations) to access shorefront. Other land use within the watershed includes small agricultural areas, and gravel and logging operations.

c. Description of Waterbody Uses and Value

Watchic Lake provides a multitude of recreational opportunities, including motorized and non-motorized boating, fishing, swimming and wildlife viewing. There are no public motorized boat launches on the lake, though public access and non-motorized craft launch is available at Kiwanis Beach. The lake is located in the greater Portland region and as such, receives heavy use from Cumberland County residents.

Watchic Lake is managed for warm water fisheries by the Maine Department of Inland Fisheries and Wildlife (MEDIFW), including small and largemouth bass (introduced in 1956), white and yellow perch, and pumpkinseed sunfish. The lake was managed for brown trout until the 1980s. Coldwater fishery habitat in the lake has been depleted over the last several decades from deteriorating water quality. Other fishes present in Watchic Lake include rainbow smelt, smallmouth bass, largemouth bass, chain pickerel, golden shiner and Fallfish minnows, white sucker, Hornpout, and American eel.

Within the watershed, the organization “Beginning with Habitat” identifies several forested undeveloped land blocks north of the lake that contain deer wintering area and wetland habitat. Two areas of the watershed are identified as State Listed Animal Habitat; the southeastern edge of Watchic Lake is habitat for Lilypad Clubtail (*Arigomphus furcifer*), a dragonfly species of special concern, and the entirety of Watchic Lake and a portion of the watershed is identified as rare species habitat. In addition, the lower portion of the watershed surrounding Watchic Lake is identified as an aquifer, with a public well located on the northern portion of the lake and at the southeastern border of the watershed boundary.

II. Water Quality Problem or Threat

a. Water Quality Listing Status

Is water quality listed as impaired?	No, NPS Priority Waterbody-Threatened List.
If impaired, what is the listed cause(s) and/or impaired use?	Not applicable
Name and date of any DEP TMDL report(s) for the waterbody.	Not applicable

b. Water Quality Overview

Watchic Lake is listed in Chapter 502 of the Maine Stormwater Law as a Nonpoint Source Priority Watershed Most at Risk from New Development. The greatest concern for Watchic Lake is the current and future contribution of phosphorus from stormwater runoff associated with development in the watershed.

Watchic Lake Association, Lakes Stewards of Maine volunteers, and Maine DEP began water quality monitoring in 1974. Secchi disk transparency readings have been taken continually since 1974. Water quality parameters, including temperature, dissolved oxygen, color, alkalinity, specific conductance, pH, phosphorus, and chlorophyll-a were taken intermittently starting in 1974 and ceased in 2006. In 2016, WLA established a long-term monitoring buoy at the deep spot to monitor for continuous temperature and dissolved oxygen. This monitoring buoy is

deployed year-round with temperature loggers and seasonally (May-Oct) with dissolved oxygen loggers recording at 15-minute intervals. Additionally, chemical analyses started again in 2009 and are performed on integrated epilimnetic core samples at the deep spot and from grab samples at Paine and Page Brook. Trophic indicators were within the acceptable range for water quality of a mesotrophic lake for all three years.

Between 1976 and 2018, secchi disk transparency ranged from 3.9 m to 6.6 m, with an average of 5.2 m, epilimnetic core total phosphorus ranged from 6.0 ppb to 18.0 ppb, with mean annual value of 9.6 ppb, and chlorophyll-a ranged from 1.7 ppb to 7.5 ppb, with mean annual value of 3.9 ppb. Low dissolved oxygen (< 5 ppm) in the bottom waters of Watchic Lake during the summer months make the bottom waters of the lake unsuitable habitat for aquatic life that have historically been an important natural and recreational asset to the lake (e.g., smelt).

Nitrogen and phosphorus have been elevated in limited sampling of Page and Paine Brook, indicating possible human pollution from septic systems, fertilizers, surface runoff, etc. Page Brook showed higher nitrogen and phosphorus. In addition, both streams have experienced low oxygen and low pH, which can negatively impact the growth and reproductive health of aquatic life. Low oxygen (particularly in Page Brook) and low pH can be the result of natural or human sources, however, concurrent elevated nutrients indicate that human sources may be present.

Consistent with historical observations of lakes across Maine, recent water quality data in Watchic Lake suggests that the lake is susceptible to changes in total annual precipitation. Recent data collected during a wet year (2017) resulted in low oxygen shallower in the lake profile compared to a drier year (2016), although surface temperature and oxygen are relatively similar across these two years. Fall wind events can play a critical role in the timing of fall turnover, and fall turnover often occurs rapidly over just a few hours. In addition, persistent oxygen depletion in bottom waters can stress organisms and release phosphorus from bottom sediments.

III. Watershed Nonpoint Pollution Sources and NPS Mitigation Activities

a. Summary of Watershed Assessments and Priority Nonpoint Pollution Sources

Watchic Lake is threatened by polluted runoff from both existing and new development as well as from phosphorus enrichment via internal loading and stormwater runoff, which may cause the waterbody to not attain water quality standards in the future. Developed land in the watershed interrupt the natural water flowpaths, which, coupled with impervious surfaces such as roads, driveways, parking lots and roofs, limit the infiltration of water and often cause concentrated flow that incises channels and increases erosion of soils. New development, occurring throughout the watershed, can exacerbate erosion and concentrated flow without proper BMPs. Eroding soils carry sediment and nutrients, including phosphorus, into Page Brook, Paine Brook, the unnamed tributaries, and Watchic Lake. Dense development adjacent to the lake and along state route 25 and 113, as well as unbuffered lake shoreline on lakefront properties, increase the threat of polluted runoff. In addition to the threat caused by erosion, aging or malfunctioning septic systems are a common contributor to nutrient and pathogen delivery to lake systems, and due to the multitude of seasonal homes surrounding Watchic Lake, malfunctioning or overwhelmed septic systems may contribute to NPS pollution. Agriculture can also be a threat

through nutrient transport in stormwater runoff – WLA and the state worked previously with one horse farm to install BMPs. Logging and gravel operations, potential threats to watershed protection, both occur within the watershed and have been addressed outside of this application or already have existing BMPs installed.

Summary of assessments:

- In 1998, WLA, Cumberland County Soil and Water Conservation District (CCSWCD), and MEDEP completed a **NPS Pollution Survey**, funded in part by the USEPA under Section 604b of the Clean Water Act, and 12 technical assistance visits to shorefront properties; 31 volunteers assisted project staff to identify and prioritize existing sources of polluted runoff, particularly soil erosion sites, in the watershed; identified 135 sites impacting water quality (55% residential, 15% private roads, 15% driveways, 8% State roads, 4% boat access, 2% beach, and 2% town roads).
- In 2015, as part of the Risk Assessment, WLA was assisted by technical staff from FBE to conduct a **targeted NPS pollution survey** around the shoreline of the lake to identify hotspot sources of sediment and phosphorus.
- In 2016, WLA worked with FBE to develop the **Watchic Lake Risk Assessment Report**. This assessment identified risks to the lake that currently or may in the future impact the water quality of the lake and provided recommendations to address those issues.

In 2019, WLA conducted a locally funded **watershed survey** to identify, document, and prioritize potential nonpoint source pollution sites in the Watchic Lake watershed. The 2019 survey served as an update to the 1999 watershed survey. All developed portions of the watershed were surveyed, and NPS pollution sites were documented for location, extent of erosion, runoff problems, and impacts to the lake. Each site was analyzed for recommended maintenance and potential best management practice (BMP) installations. The survey identified 26 sites with NPS pollution potential (44% town road, 22% private road, 13% residential and commercial, 13% state road, 4% logging operation, and 4% boat or beach access). NPS pollution threats identified during the survey were 59% erosion issues (soil, surface, road shoulder, or ditch erosion, and sediment transport), 21% culvert issues (clogged, damaged, unable to handle water volume, or undercut stream banks), 8% buffer issues (poor or lack of buffer), 5% roadside plow/grader berm, 3% new development, and 3% animal/nutrients input.

WLA also completed a locally funded **shoreline survey** to assess shoreline condition and identify potential nonpoint source pollution sites on 175 shorefront residential parcels using a scoring system that evaluates vegetated buffer, presence of bare soil, extent of shoreline erosion, distance of structures to the lake, and slope. The overall shoreline score for each parcel was mapped and compiled into a database which prioritizes areas possibly contributing to polluted runoff. Seventeen parcels scored in the highest bracket, indicating the most likely to be contributing to NPS pollution. The spatial distribution of parcel scores highlights areas possibly contributing to polluted runoff and priority areas for restoration. FB Environmental (FBE) and ME DEP provided technical assistance for the survey.

b. Description of Watershed Activities to Address NPS Pollution

WLA has completed several water quality improvement projects in the watershed:

- In 2019-2020, the **Watchic Lake Watershed-Based Protection Plan** was completed by WLA and FBE and was approved by EPA.
- In 2011, a local **horse farm stormwater runoff retrofit** (on route 113) was completed that diverted water and added riprap at the runoff point to lake, installed overflow measures, and added a settling pond at the outfall.
- In 2000-2004, the **Watchic Lake Demonstration Project** funded in part by USEPA under Section 319 of the Clean Water Act and sponsored by the CCSWCD; installed 13 Best Management Practices (Kiwanis Beach, 1 State road, 2 private roads, 2 driveways, 1 boat launch, 6 residential sites). Sites included Kiwanis Beach with the installation of water-bars, retaining walls, stairs, and plantings by 38 volunteers, as well as Watchic Terrace Road with the installation of several catch basins, curbing, a settling pool, and paving of the entire road. Bonny Eagle High School students helped plant buffers around multiple residences. All projects are estimated to reduce 38 tons/year of sediment from reaching the lake.

It is anticipated that three project phases will be needed to substantially implement the Watchic Lake Watershed-Based Protection Plan and meet the project purpose and environmental outcomes. Following this proposed phase, two additional phases will help address the final three high and six medium priority NPS sites. Future phases of restoration will also include working with the Town of Standish to update shoreland zoning ordinances and addressing the remaining low impact NPS sites identified in the WBP through LakeSmart and WLA's ongoing educational technical assistance opportunities.

IV. Purpose

The purpose of this project is to protect Watchic Lake by significantly reducing the pollutant load into the lake. This phase will address 5 priority NPS road sites (2 town roads and 3 private roads) and at least 6 and up to 10 residential shorefront NPS sites. The project will raise public awareness through press releases, presentations at the lake association's annual meetings, a buffer planting workshop and strengthen local involvement and awareness of watershed protection efforts within the watershed community.

V. Environmental Outcome

This project will help protect water quality in Watchic Lake by maintaining Class GPA water quality standards and further improve current conditions, through preventing delivery of excess sediment and phosphorus to the lake. A significant reduction of NPS pollution is expected as a result of addressing high priority NPS sites in the watershed. Preliminary estimates indicate this project phase will reduce pollutant loading to the lake 2.5 tons of sediment and 2.3 pounds of phosphorus per year through addressing the NPS Abatement Sites.

VI. Partner Coordination, Roles and Responsibility

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

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

Watchic Lake Association will serve as the grant administrator, participate on the steering committee, assist with NPS abatement project and residential matching grant project tasks, and perform education and outreach tasks. WLA will provide up to \$16,418 in cash match for construction and \$15,995 in volunteer time.

The **Cumberland County Soil and Water Conservation District (CCSWCD)** will serve as a sub-grantee and provide engineering designs and construction oversight for the private road sites.

The **Town of Standish** will support the project through construction for the two town road BMP Installation at NPS sites. The town will provide up to \$5,739 in-kind match through construction labor.

A **consultant** will be hired (following procurement procedures in the DEP's NPS Grant Administrative Guidelines) to provide project and task management, participate on the steering committee, assist with residential matching grant BMP design, assist with education and outreach, and perform pollutant load reduction estimates.

VII. 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 319 of the Clean Water Act. Project staff will consult with DEP on EPA's public awareness terms and conditions for Section 319 grants before the project commences. In addition, project staff will consult with DEP and EPA before project signs are designed. Refer to the Service Contract, Rider A. Section III. D. Acknowledgement.

The project will not use project funds to undertake, complete or maintain work required by existing permits, consent decrees or other orders. Project staff will exercise best professional judgment in the selection, design and installation of BMPs for NPS sites and will design and install BMPs at NPS sites according to design guidance described in Maine BMP guidance manuals or use other BMPs acceptable to the DEP. Project staff will ensure that permits required for construction are secured prior to construction and BMPs are constructed in an acceptable manner, before reimbursing landowners according to applicable Cost Sharing Agreements.

Task 1 – Project Administration

Watchic Lake Association will administer the project according to the service contract with DEP. Watchic Lake Association plans to hire a consultant to oversee this task and all other project tasks. CCSWCD will serve as a subgrantee to provide engineering support for the project. WLA will complete subagreements with both the consultant and CCSWCD and submit to DEP for review and as project deliverables. The consultant and WLA will collaborate to track project progress, expenses, and matching funds, and will submit reports (semi-annual progress reports, final project report) and other deliverables. WLA will continue the use of the DEP NPS Site Tracker spreadsheet tool to efficiently accumulate and record information about NPS sites observed during this project to enable continued activity in future years to maintain existing BMPs and address new NPS sites.

Start and Completion Dates	January 2021 – December 2022	
Grant Cost: \$3,780	Match Cost: \$4,439.04	Total Cost: \$8,219.04
Breakdown of Grant by Cost Category: Contractual (\$3,780.00)		
Breakdown of Match by Cost Category: Donated Services-In Kind (\$4,439.04)		

Task 2 – Steering Committee

A steering committee will be formed to guide project activities and meet three times during the grant period. This committee will include representatives from the Watchic Lake Association, the Town of Standish, technical consultants, watershed residents, local LakeSmart volunteers, and ME DEP. The steering committee’s main functions will be to administer residential matching grants, assist with the public outreach plan and activities, and to provide feedback on key project deliverables.

Start and Completion Dates	January 2021 – December 2022	
Grant Cost: \$3,139.60	Match Cost: \$1,690.80	Total Cost: \$4,830.40
Breakdown of Grant by Cost Category: Contractual (\$3,139.60)		
Breakdown of Match by Cost Category: Donated Services - In-Kind (\$1,402.80) Travel – (\$288)		

Task 3 – BMP Installations at NPS sites

Five priority NPS road sites identified in the 2019 watershed survey will be addressed. The Town of Standish will provide town road crews to address two high impact sites. Private road associations will provide in-kind or cash match to address three road association sites, and Watchic Lake Association will provide cost sharing assistance. Project staff will submit proposed design, specifications, and construction plans to DEP for review and approval before construction commences for projects involving \$5,000 or more in grant funds. ME DEP guidelines “*Using Project Funds for Construction of BMPs at Road-related Sites*” will be used to evaluate road-related NPS sites and determine if NPS project funds can be used to help a landowner pay for construction of road-related BMPs. CCSWCD engineer will be involved with sites that require engineering design and construction oversight. Cost-share partners must provide match through cash, material or labor contributions, and agree to maintain projects for the life of the BMP(s). Cost-share recipients will complete a cost sharing agreement prior to construction, and contribute a minimum of 40% match towards the project.

Private Road Association Sites (see photos in Section XI.)

Site A9 Watchic Road 3: This site is a private road located on the northeastern side of the lake, the road lacks proper ditching and surface runoff has caused rills and sheet erosion, resulting in sediment transport to the lake. This project proposes ditching, turnouts, and addition road BMPs as deemed fit in installation.

Site A9(b) Hartford Lane: This site is off Watchic Road 3, the road crosses a wetland, which in heavy flows experiences overtopping, ponding and rutting on the road surface. This project proposes a rock sandwich underneath the road to allow water to move through the wetland and underneath the road.

Site A11 on Watchic Road 15: This site is experiencing stormwater runoff down Watchic Rd 15, the road lacks proper ditching resulting in rill erosion on the road surface, and sediment transport to the lake. This project proposes the use of road BMPs like resurfacing, re-crowning, ditching, and turn-outs.

Site A6 on Hi Vu Drive: This site experiences road surface and severe roadside erosion where a clogged culvert forces water to run directly across the road, forming a large eroded hole on the lake side of the road. Install a ditch on the west side of the road, enlarge the culvert, install inlet and outlet plunge pools, and a level lip spreader at the top of the woodland buffer.

Town Road Sites

Site B1 on Oak Hill Road: The Oak Hill Road Paine Brook crossing in the upper watershed has a hanging culvert which allows erosion. Cut the hanging culvert and address erosion via slope stabilization and/or a constructed plunge pool. Site design subject to change based on permitting requirements.

Sites B2 and B3 on Dolloff Road: The Dolloff Road and Paine Brook crossing in the upper watershed experiences winter sanding and erosion down the bank to the stream and wetland area. Stabilize the bank at the culvert inlet and outlet and install a sediment/winter sand trap on the bank.

Candidate sites have been identified based on severity of impact specified in the 2019 watershed survey and probability of road association, landowner, and town interest and cooperation. A list of candidate sites is attached. Final site selection may change pending completion of the cost-sharing agreement, engineering design and permit approval.

NPS Site Report form, including before and after photographs, prepared for each completed site will be submitted as a deliverable

Start and Completion Dates	April 1, 2021 – November 15, 2022	
Grant Cost: \$48,007.00	Match Cost: \$29,063.65	Total Cost: \$77,070.65
Breakdown of Grant Cost by Cost Category: Contractual (\$11,525.00), Construction		

(\$25,182.00) Subgrantee (\$11,300)
Breakdown of Match by Cost Category: Construction- Cash (\$21,418.00), Construction- In-Kind (\$7,645.65)

Task 4 – Residential Matching Grants for BMP Installation

The 2019 Shoreline Survey, in conjunction with the watershed survey, highlighted 17 parcels that are highly likely to contribute NPS pollution to Watchic Lake and 113 parcels that are moderately likely to contribute NPS pollution. Due to the high impact of shorefront properties on shoreline condition and possible NPS pollution, we propose a special outreach effort and cost-sharing program to address and correct residential NPS problems.

The steering committee will offer residential matching grants for BMP installation on a cost-share basis to at least six residential properties. These sites will be chosen based on severity of impact and probability of landowner cooperation. The hired consultant will provide technical assistance. The grant will cover at least 50% of the cost for all sites completed during a calendar year. A cost sharing agreement will be prepared for each recipient. WLA, through the grant, will provide up to \$600 per site, to be matched by a \$400 minimum contribution from the landowner (in cash, in-kind labor, equipment, or supplies). WLA can provide additional matching funds for sites in need of further funds, up to 50% of the landowner cost. A summary of Residential Matching Grant BMP installation projects and the updated NPS Site Tracker will be submitted as a task deliverable.

Start and Completion Dates	April 1, 2021 – November 15, 2022	
Grant Cost: \$14,870.75	Match Cost: \$5,000.00	Total Cost: \$19,870.75
Breakdown of Grant Cost by Cost Category: Contractual (\$9,870.75), Construction (\$5,000)		
Breakdown of Match by Cost Category: Construction - In-Kind or Cash Match (\$5,000.00)		

Task 5 – Education and Outreach

Education and outreach will be key components of the proposed project’s success. Task goals are to (1) inform Watchic Lake watershed residents about watershed protection and lake stewardship, (2) provide project updates, and (3) encourage the watershed residents to implement BMPs to control NPS pollution (including publicizing the availability of residential matching grants). The following activities will be conducted:

- Updates and educational information will be posted on a project-specific webpage on the WLA website, through two paper mailings to 240 watershed residents and four emails to WLA members and lake residents.
- Three press releases will be written and distributed to local new outlets
- LakeSmart volunteers will evaluate 2-3 properties per year, which will help identify landowners who may be interested in the residential matching grant opportunity. The volunteers will share a brochure that summarizes the opportunity.
- Two public presentations on the grant at the WLA annual meeting each year, which will provide project updates and promote outreach messages.
- WLA will host one buffer planting workshop to inform shoreline residents on techniques and benefits of using vegetated buffers to filter stormwater.
- WLA will host a Lakes Alive Event, which is a hands-on lake learning event run by

Maine Lakes Society.

Start and Completion Dates	January 2021 – December 2022	
Grant Cost: \$4,258.00	Match Cost: \$9,608.78	Total Cost: \$13,866.78
Breakdown of Grant Cost by Cost Category: Contractual (\$4,258.00)		
Breakdown of Match by Cost Category: Donated Services In-Kind (\$7,121.28), Supplies (\$2,217.50), Travel (\$270).		

Task 6 – Pollutant Load Reduction Estimates

Project staff will estimate NPS pollutant load reductions and resources anticipated under this project. Estimates will provide updates to pollutant load reductions estimated during the development of the Watchic Lake Watershed-Based Protection Plan. During design or installation of conservation practices at NPS sites, appropriate field measurements will be recorded to prepare estimates of pollutant load reductions. Estimates will be prepared for all NPS sites, unless there is not an applicable estimation method. Methods to be used are the EPA Region 5 Load Estimation Model <http://it.tetrattech-ffx.com/steplweb/> and/or the U. S. Forest Service WEPP Road Model at <http://forest.moscowfsl.wsu.edu/fswepp/> using the EPA Region 5 Estimation Model. Results will be provided using DEP’s "Pollutants Controlled Report" (PCR), which will be submitted to the MDEP, by December 31st of each project year.

Start and Completion Dates	April 1, 2021 – December 31, 2022	
Grant Cost: \$577.00	Match Cost: \$0	Total Cost: \$577.00
Breakdown of Grant Cost by Cost Category: Contractual (\$577.00)		
Breakdown of Match by Cost Category: \$0		

VIII. Deliverables

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

1. Sub-agreements, semi-annual progress reports, Final Project Report, and an updated NPS Site Tracker spreadsheet (Task 1).
2. NPS Site Report for each NPS sites (Task 3).
3. Summary of residential matching grants, including pre & post-construction photos (Task 4).
4. Copies of all web postings, mailings and emails, press releases (Task 5)
5. Pollutants Controlled Report each year until project completion (Task 6)

IX. Project Coordinator

Name	Paul McNulty
Organization	Watchic Lake Association
Mailing Address	P.O. Box 319, Standish, Maine 04084
Telephone Number	978-337-1246
Email Address	p3mcnulty@gmail.com
DUNS #	041995299

X. Project Budget

Federal Funds:	\$74,632
Non-Federal Match:	\$49,802
Proposed Total Cost:	\$124,434

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

Position Name & Title	Hourly Rate	Number of Hours	Salary & Fringe	Total Applicant Personnel Expenses
NA fr				
Totals				

Part 2. Budget Estimates by Cost Category

Cost Category	Federal Funds	Non-Federal Match	Total Cost
Subgrant	\$11,300	-	\$11,300
Contractual ¹	\$33,150	-	\$33,150
Donated Services – Labor ³		\$12,963	\$12,963
Construction ²	\$30,182	\$34,064	\$64,246
Travel ⁴	-	\$558	\$558
Supplies ⁵	-	\$2,217	\$2,217
Totals	\$74,632	\$49,802	\$124,434

Part 2 Notes:

¹ Contractual Services will include environmental consulting assistance on all project tasks listed in workplan. Total cost of contractual services will be \$33,150.35. This amount will include \$3,780 for Project Management and Reporting for Task 1; \$3,139.60 for facilitating and participating on the Steering Committee for Task 2; \$11,525.00 for coordination and engineering for NPS Abatement Projects for Task 3 ; \$9,870.75 for coordination and design assistance for residential matching grant for Task 4; \$4,258 for assistance with outreach and education for Task 5, and \$577 for calculation of pollutants controlled and pollutant load reduction estimates for Task 6.

² Construction funds inclusive of engineering design, materials, installation costs and operation and maintenance plans. Construction match estimated at \$5,000 in cash or donated labor/supplies from watershed landowners, \$16,418 (cash) from the Watchic Lake Association, \$5,600 (in-kind) from the Town of Standish Public Works Department, \$2,000 from the Town of Standish Stormwater Compensation Fund, \$3,000 cash from three participating road associations, \$1,040.40 in-kind labor from three participating road associations, and \$1,005.25 from the WLA volunteer engineer to review NPS site designs.

³ Donated labor will include project management and administration time for WLA board member at \$1,110 and treasurer at \$3,329; time for four WLA members and 3 road/property owners to attend three project steering committee at \$23.12 for 42 hours total; one WLA volunteer engineer to attend three project steering committee meetings at \$40.12 for six hours total; one town representative to attend three project steering committee meetings at \$31.75 for six hours; 22 hours at \$23.12 for two presentations at the annual meeting (one per year), 72 hours at \$23.12 for email and mail communication with watershed residents during two year grant period, 120 hours at \$23.12 for WLA website updates during two year grant period, 72 hours at \$23.12 for LakeSmart volunteer property evaluations during two year grant period, and \$500 for educational Lakes Alive (hands on lake learning run by Maine Lakes Society) event.

⁴Travel includes travel for WLA members to steering committee meeting at \$287.55 and travel for LakeSmart evaluations, site visits, and education and outreach estimated at \$270.00.

⁵Supplies includes mailings materials (Two paper mailings annually to 240 residents at \$450 per mailing, including No. 10 envelopes at \$0.15 ea., return envelopes at \$0.16 ea., first class stamps at \$0.55 ea, and four color two page letters at \$1.00 ea), and website costs at \$217.50 (hosting and security service at \$45 per year, software and domains at \$13.75 per year, and improvements and updates at \$50 per year).

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

Sources of Non-federal Match	Amount
Watchic Lake Association in-kind volunteer time	\$15,995
Watchic Lake Association in-kind cash match for construction	\$16,418
Watchic Lake Association in-kind travel	\$558
Road Association in-kind cash match (three road associations)	\$3,000
Road Association in-kind labor	\$1,040
Stormwater Compensation Fund	\$2,000
Town of Standish Public Works Department (in-kind labor)	\$5,791
Residential landowners (cash and/or in-kind)	\$5,000

Total	\$49,802
--------------	-----------------

XI. Candidate Site List

NPS Site Name & Location	Describe the NPS Site & Conditions at the Site Causing Polluted Runoff to Reach Surface Waters	BMPs Recommended	Construction Cost Estimates: Grant, Match, Total
<p>Site A9(a) on Watchic Road 3 (43.737001, -70.600473)</p>	<p><i>Watchic Road 3</i> is a private road located on the northeastern side of the lake. Water flows down the sloped dirt road perpendicular to the lake until the road splits into two private roads. <i>Watchic Road 3</i> continues to the left and has been washed out causing rills and sheet erosion, resulting in the sediment transport to the lake. The dirt road does not have ditching, causing runoff in storm events to flow directly down the dirt road. (<i>see site photos in Attachment 1</i>).</p>	<p>Improvements include installing a 310-foot vegetated ditch along the west side of the road, with turnouts and/or check dams to slow the flow, the ditch will flow into a 60-foot long 15-inch N-12 PE culvert under the road, with an armored inlet and outlet.</p> <p>Additional road BMPs will be explored including re-crowning and resurfacing the road.</p>	<p>Total Cost = \$8840.84 Grant = \$4250 Cash Match = \$4250 In-Kind Match = \$340.94</p>
<p>Site A9(b) on Hartford Lane (Off Watchic Rd 3)</p>	<p>Off Watchic Rd 3 to the left is “Hartford Lane,” which immediately crosses a wetland where water overtops the road in heavy rain events, resulting in ponding, rutting, washing out of the road and consequently sediment transport to the lake. This section is approximately 40 feet long and 12 feet wide</p>	<p>Reconstruct the road with a rock sandwich (stone ford) to allow the wetland to flow and filter underneath the road instead of overtopping the road.</p>	<p>Total Cost = \$8840.84 Grant = \$4250 Cash Match = \$4250 In-Kind Match = \$340.94</p>

NPS Site Name & Location	Describe the NPS Site & Conditions at the Site Causing Polluted Runoff to Reach Surface Waters	BMPs Recommended	Construction Cost Estimates: Grant, Match, Total
Site A11 on Watchic Road 15 (43.748133, -70.609896)	<p><i>Watchic Road 15</i> is a private road located on the north side of the lake that runs perpendicular to the lake until its terminus at the lake. Because the road lacks a ditch, runoff flows down the road causing rill erosion that transports sediment over a steep approach on a private right of way directly into the lake. (<i>see site photos in Attachment 1</i>).</p>	<p>This project proposes the use of road BMPs like resurfacing/regrading, establishing a proper crown, ditching, turn outs and/or water bars to properly allow runoff to flow off the road into vegetation or ditching and allow for infiltration. Additionally, an infiltration walking path and vegetation near the lake will be added to further filter and slow runoff.</p>	<p>Total Cost = \$5,181.88 Grant = \$2,250 Cash Match = \$2,250 In-Kind Match = \$681.88</p>
Site A6 on Hi Vu Road (43.74297, -70.62531) Corrected 12/10/2020	<p><i>Hi Vu Drive</i> is a dirt road on the southwestern side of the lake that runs parallel to the shoreline. At a dip in the road approximately 900-feet south of the boat launch, water runs down the west side of the road's edge before approaching a clogged culvert that forces water to run directly across the road. This forms a large eroded hole on the lake side of the road (<i>see site photos in Attachment 1</i>).</p>	<p>Install a 150-foot lined ditch along the west side of the road and replace the culvert with a 20-foot long 15-inch N-12 PE pipe. Install inlet and outlet plunge pools with riprap protection and a level lip spreader at the top at the outlet of the culvert for further filtration and to decrease the velocity of the runoff before entering a woodland buffer.</p>	<p>Total Cost = \$22,681.88 Grant = \$11,332 Cash Match = \$10,668 In-Kind Match = \$681.88</p>

NPS Site Name & Location	Describe the NPS Site & Conditions at the Site Causing Polluted Runoff to Reach Surface Waters	BMPs Recommended	Construction Cost Estimates: Grant, Match, Total
Site B1 on Oak Hill Road (43.760832, -70.591076)	<i>Oak Hill Road and Paine Brook</i> crossing in the upper watershed has a hanging culvert which allows erosion (<i>see site photos in Attachment 1</i>).	Cut the hanging culvert and address erosion via slope stabilization and/or a constructed plunge pool. Site design subject to change based on permitting requirements.	Total Cost = \$2,900 Grant = \$900 In-Kind Match = \$2,000
Sites B2 and B3 on Dolloff Road (43.764934, -70.588611)	<i>Dolloff Road and Paine Brook</i> crossing in the upper watershed experiences winter sanding and erosion down the bank (<i>see site photos in Attachment 1</i>).	Install sediment basins/ on the road shoulder above the culvert to trap winter sand and riprap protection at culvert inlet and outlet.	Total Cost = 5,800 Grant = \$2,200 In-Kind Match = \$3,600
Ten Residential Matching Grant Sites	Up to ten residential and driveway sites will be addressed using the residential matching grants proposed in Task 4.	Dependent on individual site conditions. Most residential sites require simple erosion control measures.	Total Cost = \$10,000 Grant = \$6,000 Match = \$4,000 (cash or in-kind)

Watchic Road 3 (A9)



Sediment transport towards lake in spring 2020 (left) and ponding and rutting on the Watchic Road 3/Hartford Lane in spring 2019 (right).

Watchic Road 15 (A11)



The timber frame lip overlooking the right of way to the lake in spring 2020 (left) and stormwater runoff and sediment transport evident in Spring 2019 (right).

Hi Vu Drive (A6)



Sloped road approaching site (left), eroded hole at clogged culvert outlet (right).

Oak Hill Road Paine Brook Stream Crossing (B1)



Culvert outlet from downstream (left), culvert outlet from road (right).

Dolloff Road Road Paine Brook Stream Crossing (B2/B3)



Culvert outlet from downstream (left), sediment washing down bank to right of culvert (right).