

UNITY POND (LAKE WINNECOOK) WATERSHED-BASED PLAN UPDATE

Project #20200006

Final Report – December 2022

Grantee: Waldo County Soil & Water Conservation District

Start Date: November 2020

End Date: December 2022

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Waldo County Soil & Water
Conservation District

I. PROJECT OVERVIEW

Project Purpose

The purpose of the Unity Pond Watershed-Based Management Plan (WBMP) Update was to develop an updated WBMP for Unity Pond (aka Lake Winnecook) that includes EPA's nine minimum planning elements using current information about lake water quality and watershed hydrology, an inventory of NPS problems, evaluation of septic systems, assessment of the external and internal phosphorus load, and to bring together a diverse group of watershed stakeholders to develop locally-supported water quality targets and watershed goals, objectives, and action strategies for restoring the pond. The project integrated project findings into an updated WBMP which will be used to guide watershed restoration efforts over the next 10-year planning period (2023-2032).

Major project accomplishments and outputs include: a water quality analysis and watershed modeling, an internal loading and alternative restoration feasibility analysis, future monitoring plan, an updated GIS land-cover layer, P loading estimates for high impact/priority NPS sites; a septic vulnerability analysis and septic brochure/survey, a backflushing study, an assessment of agriculture and forestry; two water quality technical review committee meetings, three steering committee meetings, two press releases, and one public meeting.

Project Highlights

This project was successful and exceeded several of the intended goals. Project highlights include the following:

- ▶ This project brought together multiple project partners to collaborate for a common goal- to improve water quality in Unity Pond. New partnerships were formed, and old partnerships were rekindled through this project.
- ▶ A land-cover update was completed in 2021 that resulted in a more accurate and updated account of land cover in the watershed. The update included a review of active forestry by the Maine Forest Service and review of agricultural land-use types by the Waldo County SWCD and USDA/NRCS.
- ▶ A watershed survey was conducted in 2021 that documented a total of 109 NPS sites across 10 different land uses in the watershed. Soil loss estimates were used to estimate the relative contribution of sediment and nutrient loading from these sites to Unity Pond. US EPA's Region 5 model was used to estimate pollutant reductions from NPS sites and Maine DEP's Relational Method was used to estimate pollutant reductions from other developed land in the watershed. A total of 10 volunteers teamed up with 10 technical leaders to conduct the survey. Follow-up landowner letters were sent by mail to all residential property owners with a documented NPS site.
- ▶ An agricultural survey was completed by Waldo County SWCD in coordination with USDA/NRCS. This included a desktop review of agricultural activities and conservation practices in the watershed. This survey identified 134 NRCS conservation practices installed between 2007 and 2022 representing \$1.2M in funding. The survey memo provided recommendations for increasing participation in future NRCS programming.
- ▶ A Sampling and Analysis Plan (SAP) was prepared by the Center for Wildlife Studies (CWS) and approved by DEP prior to conducting in-lake water quality monitoring. Monitoring was conducted by the CWS between April and October 2021 to collect more intensive phosphorus data from the water column to inform the watershed model and internal loading analysis.

- ▶ A Secondary Data Quality Assurance Guide (SDQAG) was prepared by Ecological Instincts and reviewed by the TAC prior to the water quality analysis and watershed modeling tasks being completed.
- ▶ A water quality analysis was conducted for Unity Pond to examine both long- and short-term trends along with watershed modeling and an analysis of internal phosphorus loading to develop updated water quality goals for Unity Pond.
- ▶ A backflushing study was completed by Maine DEP by deploying an acoustic doppler current profiler (ADCP) in Sandy Stream downstream of the Unity Pond outlet to determine if backflushing from Sandy Stream into Unity Pond is occurring. The study confirmed that backflushing is occurring based on a single storm event in May 2021. The equipment was dislodged early in the study so additional data collection is needed to determine the types of storms that result in backflushing and how much phosphorus is entering the lake when backflushing is occurring.
- ▶ A septic vulnerability analysis was completed by Maine DEP to identify parcels in the watershed located on “at-risk” soils. A total of 156 parcels are located on sensitive soils in the shoreland zone. Friends of Lake Winnecook distributed a septic brochure and an online septic survey to all shoreline property owners.
- ▶ The project steering committee met three times and the water quality technical review committee met two times over the course of the project. In addition, numerous subcommittee meetings were held to plan for the watershed survey, discuss the backflushing study, and to plan the final public meeting. The final steering committee meeting focused on review of the draft WBMP.
- ▶ Project staff gave a presentation on watershed surveys to the Ecology School in May 2021 (local high school) to help recruit volunteers for the watershed survey, presented project information/updates at the Friends of Lake Winnecook (FOLW) 2021 and 2022 annual meetings, and organized a hybrid public meeting in October 2022 attended by 70 people (45 online attendees and 25 in-person attendees). The meeting was sponsored by FOLW and WCSWCD with guest speakers from Ecological Instincts and Water Resource Services. The final presentation was posted to the FOLW website and sent out by email to all registrants and attendees.
- ▶ Two press releases were sent to local newspapers to increase participation in the project and highlight project accomplishments including the watershed survey and final public meeting. Three news articles were published during the project period as well as one FOLW newsletter in 2021 that featured the WBMP update, and six “mini-newsletters” distributed to FOLW members in 2022.
- ▶ The project resulted in an additional \$11,512 in non-federal match than anticipated due to the hard work of local volunteers and project partners.

Difficulties encountered during the project included the following:

- The backflushing study did not provide as much information as planned. The goal was to document flow in and out of Unity Pond from April – October but the equipment was dislodged in early June and only captured one large storm event in early May. This study will need to be rerun, hopefully with some additional data collection (including phosphorus samples corresponding with storm events).
- The water quality analysis required more effort than initially anticipated. This was due to having to manually enter DEP field sheets for more recent data that was not available in the state database

(2019-2021). QA/QC of older data in the state database resulted in removal of some data points following discussion with DEP staff to ensure consistency of data for the statistical analysis.

- The land-cover update required more effort than anticipated due to large discrepancies in the older MELCD GIS data and current watershed conditions plus the large size of the watershed.
- Timing of the ag/forestry survey was delayed due to staffing difficulties at WCSWCD. Though completed on time, the review of the agricultural land cover in the land-cover update did not get the thorough review it needed in time for the watershed modeling effort. As a result, some "idle" farmland was categorized as hay which was noted in the WBMP.
- Watershed modeling was adjusted to account for preliminary backflushing results from Sandy Stream into Unity Pond. This required altering the draft watershed model to account for backflushing by treating the Sandy Stream/Halfmoon Stream as a point source rather than an indirect watershed. Updated modeling should be completed following further assessment of the influence of backflushing from Sandy Stream.
- The internal loading analysis was limited by available sediment data. The Unity College data was not made available to the project consultants until the end of the project, which did not include all the type of data needed by WRS to complete the analysis, and by then it was too late for collecting and analyzing additional sediment data for the project. As a result, P release rates are based on two DEP samples collected at Station 1. Additional sediment sampling is needed to better inform the dosing and cost needed to inactivate P in the sediment.

Key Personnel

Key project personnel included Tom Mullen, Medea Steinman, Andy Reed, Gene Randall, and Aleta McKeage of Waldo County SWCD (WCSWCD), Brian Levesque and Steve Krautkremer of Friends of Lake Winnecook (FOLW), Amanda Pratt, Jeff Dennis, and Linda Bacon of Maine DEP, Jim Killarney of Center for Wildlife Studies (CWS), Ron Desrosiers of USDA/NRCS, Jennifer Jespersen and Katie Goodwin of Ecological Instincts, and Ken Wagner of Water Resource Services (WRS). Ecological Instincts served as the Consulting Project Manager for the Waldo County SWCD.

Changes in Scope of Project

There were no formal changes in the scope of the project. Informal changes included:

- Bathymetric mapping was added to the project as in-kind match by FOLW. Survey results were used for watershed modeling. A portion of grant funds left over from the water quality sampling task (\$440) was used to cover the cost of Lakes Environmental Association finalizing the data and preparing the bathymetric map. The work completed by FOLW added ~24 hours of in-kind match to the project.
- Funds left over in the CWS monitoring budget (sub-grant to CWS from WCSWCD) were used to cover the cost of printing postcards to invite all watershed residents to the final public meeting.
- Maine DEP completed the watershed survey report due to staffing limitations at WCSWCD.

II. TASK SUMMARY

Task 1. Project Management

- ▶ WCSWCD and Maine DEP signed a grant agreement outlining project roles, responsibilities, and funding arrangements in October 2020.
- ▶ WCSWCD submitted a copy of the CWS sub-grantee agreement, Ecological Instincts consulting agreement, and related subcontract agreement between Ecological Instincts and Water Resource Services to Maine DEP at the start of the project.
- ▶ WCSWCD issued a Request for Qualifications (RFQ) in December 2020 for a consultant to oversee the project. Ecological Instincts was selected to serve this role
- ▶ Ecological Instincts (and WCSWCD) tracked project progress, expenses and local match and completed semi-annual progress reports and the final project report.

Task 2. Water Quality Analysis

- ▶ A Secondary Data Quality Assurance Guide was prepared for Unity Pond prior to the water quality analysis and watershed modeling and submitted to Maine DEP in February 2022.
- ▶ A water quality analysis was conducted by Ecological Instincts (EI) to examine both long- and short-term trends in water quality. A summary memo that included future monitoring recommendations was submitted to Maine DEP in June 2022.

Task 3. Water Quality Monitoring & In-Lake Assessment

- ▶ A Sampling and Analysis Plan (SAP) was prepared by CWS in May 2021 and signed by DEP in June 2021. In-lake monitoring was conducted by CWS between May and October 2021 to collect phosphorus profile data among other parameters to inform the watershed model and the internal loading analysis. Maine DEP provided on-the-water training and certification for CWS and FOLW volunteers.
- ▶ Bathymetric mapping was conducted by FOLW between June and August 2021 with training and technical assistance provided by Lakes Environmental Association.
- ▶ A summary of the in-lake monitoring and assessment work was provided by CWS and submitted to Maine DEP with a copy of an Excel spreadsheet in June 2022.

Task 4. Watershed Modeling & Internal Recycling Analysis

- ▶ A land-cover update was completed by Ecological Instincts in 2021 that resulted in a more accurate accounting of land cover in the watershed. The update included a review of active forestry by the Maine Forest Service and review of agricultural land-use types by WCSWCD and USDA/NRCS. An updated GIS land-cover layer was prepared by Ecological Instincts and provided to Maine DEP electronically which included a GIS log and .kml file.
- ▶ A watershed modeling memo and model spreadsheet was prepared by Ecological Instincts along with an NPS P loading estimates. The model spreadsheet included the P loading estimates (R5, DEP Relational Method, and empirical modeling using the LLRM were used for helping set the water quality goal). A summary of P load reduction methods was provided as a project deliverable.

- ▶ The Internal Recycling and Alternative Restoration Feasibility Analysis (aka Internal Loading Analysis) was prepared by WRS in June 2022 and submitted as a project deliverable in September 2022.

Task 5. Septic Systems

- ▶ A Septic Vulnerability Analysis and Septic Vulnerability Map were created by Maine DEP in November 2021. The analysis indicates a total of 156 parcels are located on sensitive soils at risk for short-circuiting in the shoreland zone of Unity Pond. The results of this analysis were published on the FOLW website and presented at the final public meeting.
- ▶ An online Septic Survey was developed by FOLW and Maine DEP. A copy of the survey was submitted as a deliverable in October 2021. The survey was advertised in the 2021 FOLW newsletter sent to 300 shoreline property owners. Two follow-up reminder emails were sent to 196 FOLW members to increase participation in the survey in 2021/2022. A total of 60 responses to the online survey were received and will be added to the FOLW septic system database.

Task 6. Watershed NPS Surveys

- ▶ **Survey Implementation Plan:** A Survey Implementation Plan (SIP) was prepared by FOLW and approved by Maine DEP in May 2021 prior to the watershed survey.
- ▶ **Watershed Survey:** A watershed survey was organized by Maine DEP, FOLW, and WCSWD on May 22, 2021. The survey documented a total of 109 NPS sites across 10 different land uses in the watershed. A total of 10 volunteers teamed up with 10 technical leaders to conduct the survey. A watershed survey report and watershed survey spreadsheet was prepared by Maine DEP in October 2021.
- ▶ **Ag & Forestry Surveys:** An agricultural and forestry survey was completed by WCSWCD in coordination with the Maine Forest Service and USDA/NRCS in 2022. This included a desktop review of forestry and agricultural activities and conservation practices in the Unity Pond watershed. The survey indicates that 10% of forestland in the watershed has been actively harvested in the last five years. There are few remaining active farming operations in the watershed. A total of 134 NRCS practices were installed in the watershed between 2007-2022 with over \$1.2M in federal funding spent on these projects. USDA/NRCS met with seven agricultural producers in the watershed interested in completing projects through NRCS in 2023. The survey memo provided recommendations for increasing participation in future NRCS programming in the Carlton Pond indirect watershed. A memo was prepared by WCSWCD in August 2022.



Task 7. Meetings, Stakeholder Engagement & Public Outreach

- ▶ **Steering Committee Meetings:** The project steering committee met three times over the course of the project. In addition, numerous subcommittee meetings were held to plan for water quality sampling, bathymetric mapping, septic survey, watershed survey, and final public meeting. The final committee meeting focused on review of proposed water quality targets and the 10-year Action Plan.

Copies of meeting notes and meeting materials were provided to Maine DEP for the January 20, 2021, August 31, 2022, and December 2, 2022 Steering Committee meetings.

- ▶ **Water Quality Technical Review Committee Meetings:** The project’s Technical Advisory Committee (TAC) met two times over the course of the project with multiple subcommittee meetings to discuss backflushing. Copies of meeting notes were provided to Maine DEP for meetings held on February 11, 2022, and June 27, 2022. The TAC reviewed the technical components of the project including the water quality analysis, internal loading/alternative restoration analysis, modeling results, backflushing study, in-lake monitoring efforts, and action plan.
- ▶ **Stakeholder Meetings:** Ecological Instincts presentation about the Unity Pond WBMP with a focus on watershed surveys at the Ecology School in Unity on May 19, 2021, project information was presented at the FOLW annual meetings in 2021 and 2022 including a presentation focused on addressing internal loading by Ken Wagner on August 6, 2022. A hybrid public meeting was organized by project on October 27, 2022. A total of 70 people attended the meeting including 25 in-person and 45 online via Zoom webinar. The webinar included interactive poll questions to learn about stakeholder perceptions of water quality and to weigh in on watershed planning priorities. The meeting included a 15 minute public question and answer period which was recorded and added as an appendix in the WBMP. Copies of meeting presentations were provided to Maine DEP via the shared project folder and recordings of the 2022 annual meeting and public meetings were posted to the FOLW website.
- ▶ **Press Releases:** Three separate press releases were issued related to the project including one in November 2020 to announce the grant project, the second in October 2021 to highlight the town beach improvement project, and the third in October 2022 to announce the public meeting. Copies of press releases and news articles were provided to DEP.
- ▶ **Other Outreach:** In addition to featuring the project in their 2021 **newsletter**, FOLW distributed six “**mini-newsletters**” by email to its members in 2022 to provide project updates. FOLW also updated their **website** to include the 9-Elements of the WBMP which includes links to all project deliverables. In addition to a press release for the public meeting, a **postcard** was designed, printed, and mailed to 650 Unity Pond watershed residents to invite them to the meeting, FOLW posted information on their website and **Facebook** page, and WCSWCD sent **emails** to their constituents in Waldo County. **Personal emails and phone calls** were made to municipal officials to invite them to the meeting.



Task 8. Develop Watershed-Based Plan

- ▶ **Draft WBMP:** A draft of the WBMP was developed by Ecological Instincts and sent to the Steering Committee and TAC on November 15, 2022.
- ▶ **Final WBMP:** A final copy of the WBMP which incorporated comments from Maine DEP, the Steering Committee and TAC was submitted to Maine DEP on December 12, 2022.

III. DELIVERABLES SUMMARY

1. WCSWCD and Maine DEP signed a grant agreement outlining project roles, responsibilities, and funding arrangements in October 2020. WCSWCD signed a **consulting services agreement** with Ecological Instincts in December 2020. WCSWCD signed a **sub-agreement** with Center for Wildlife Studies in February 2022. A **subcontract agreement** between Ecological Instincts and Water Resource Services was signed in July 2021. WCSWCD signed a **contract amendment** with Ecological Instincts in November 2022. **Semi-annual Progress Reports** were provided to Maine DEP in November 2021 and May 2022. A **Final Project Report** was provided to Maine DEP in December 2022.
2. A **Water quality analysis memo including future monitoring plan** was submitted by Ecological Instincts in June 2022 and the **Secondary data quality assurance guide** was submitted in February 2022.
3. The **Alternative restoration feasibility analysis, watershed modeling memo and spreadsheet, and NPS P loading estimate spreadsheet** were all submitted in November 2021; the **updated GIS land-cover layer** was completed in May 2021.
4. **Summary of monitoring and assessment work** was completed by CWS in June 2022; **water quality data** collected by CWS in 2021 was incorporated into the master spreadsheet for the EI water quality analysis; a **Sampling & Analysis Plan (SAP)** was submitted by CWS in May 2021 and signed by DEP on June 1, 2021.
5. A **Septic Vulnerability Map and Summary Report** was completed by Maine DEP in November 2021. An online septic system survey was sent out by FOLW in October 2021 with follow-up to FOLW members in the spring of 2022. In lieu of a septic system brochure, FOLW updated the Septic System page on their website to include a Maine Lakes septic system brochure and US EPA Septic Smart material.
6. The Watershed Survey **SIP** was completed by FOLW in May 2021. The Watershed Survey Report and **NPS Site Spreadsheet** were completed by Maine DEP in October and November 2021, respectfully. The **Ag & Forestry Survey Summary Memo** was submitted in August 2022.
7. **Meeting minutes** were submitted for three Steering Committee meetings held on 1/20/21, 8/31/21, and 12/2/22, and two TAC meetings on 2/11/22, and 6/27/22; Two **press releases** were submitted to the local papers during the project period resulting in three published articles. The first press release was published in the Morning Sentinel on 11/29/20. A second article was published in the Morning Sentinel on 10/10/21. The third press release resulted in articles published in the Penobscot Bay Pilot and Republican Journal on October 17, 2022 to announce the public meeting date. Copies of press releases and news articles were provided to DEP.
8. The **Draft WBMP** was submitted in November 2022, and the **final plan** was submitted in December 2022.

IV. PROJECT OUTCOMES

Major Outcomes

The project resulted in the development of a scientifically-sound community-led WBMP for Unity Pond resulting in a strong commitment and a renewed interest in lake restoration among the many project partners. The project set the stage for addressing NPS pollution in both the direct and indirect watersheds,

increasing education and outreach efforts, re-invigorating the FOLW LakeSmart program, and jumpstarting a fundraising campaign for addressing internal loading. Project partners have a clear plan by which to reduce phosphorus concentrations in the lake and improve water quality in the lake over the next 10 years.

Environmental Results

Numerous assessments were conducted to help develop the 2023 Unity Pond WBMP including in-lake water quality monitoring to better understand phosphorus dynamics and help set water quality targets for the plan; a watershed survey to document the location and impact of NPS sites and the current state of agriculture and forestry in the watershed, a backflushing study to better understand the contribution of phosphorus loading from Sandy Stream, bathymetric mapping to inform watershed modeling and in-lake treatment recommendations, nutrient modeling to estimate phosphorus loads and reduction targets, and a water quality analysis to examine water quality trends.

The project resulted in an updated water quality restoration goal for Unity Pond which includes improving water quality trends and reduced frequency of nuisance algal blooms at the end of the 10-year planning period. This will require reducing the phosphorus load in the direct watershed by 704 kg/yr by addressing both watershed runoff (690 kg/yr) and septic systems (14 kg/yr), reducing the phosphorus load from the indirect watersheds of Carlton Pond (110 kg/yr) and Sandy Stream (11 kg/yr), and reducing the internal P load by 90% (731 kg/yr).

Lessons Learned

- ▶ The WBMP project did a great job of raising community awareness about the causes and sources of ongoing annual algal blooms in Unity Pond through the development of a Steering Committee, volunteer participation for the watershed survey, distribution of press releases, newsletter articles, and presentations at public meetings.
- ▶ The online septic survey was not as successful at returning information needed about the state of septic systems in time for the watershed modeling. Therefore, use of septic system data from the 2014 TMDL was used with some updated assumptions added. A more robust septic system database is needed for Unity Pond given the high number of parcels located on "at-risk" soils and the history of seasonal flooding of residential properties on some portions of the shoreline.
- ▶ A combination of in-person and virtual online meetings was a necessary part of the project due to ongoing concerns about COVID-19 and so that seasonal residents could attend the final public meeting in November 2022. The hybrid approach allowed additional participation from seasonal residents that were not able to attend in-person. The online attendance at the final public meeting was almost twice the in-person attendance rate.
- ▶ Online meetings also allowed project partners to meet virtually for steering committee meetings and sub-committee meetings, which was both time and cost-efficient as it cut down on travel time and mileage at a time when gas prices were at an all-time high in 2022.
- ▶ Additional sediment sampling is needed to finalize recommendations for addressing internal loading. If existing Unity Pond sediment data had been made available to project consultants earlier in the project then there may have been time to collect and analyze the samples as part of the project. However, additional funding would have been needed for this work.

V. SUMMARY OF TOTAL EXPENDITURES

The Unity Pond WBMP Development Project included a combination of cash and in-kind support from numerous project partners. This included \$6,200 in cash match from FOLW (\$3,000), the Town of Unity (\$1,600) and Town of Burnham (\$1,600), and \$26,468 in-kind match from Steering Committee members, watershed survey volunteers, FOLW, CWS, and project consultants. A total of \$29,668 in match was documented for this project, exceeding the project match goal of \$18,156 by \$11,512 (Table 1).

Table 1. Financial Summary for the Unity Pond Watershed-Based Management Plan Update.

	Federal NPS Grant	Local Match	Total
Grant Agreement Amount	\$45,508	\$18,156	\$63,664
Funds Expenses	\$45,508	\$29,668	\$75,176
Funds Balance	\$0	+\$11,512	+\$ 11,512

A full list of matching funds is provided in Appendix A as well as the Match Certification Form (Appendix B).

APPENDIX A- List of Non-Federal Match for the Unity Pond Watershed-Based Management Plan Update

Date	Source	Activity or Item	Hours	Rate/ Value	Subtotal	Mileage	Expenses	Total
1/20/2021	Brian Levesque	Steering Committee Meeting # 1	1.5	\$25.56	\$38.34			\$38.34
1/20/2021	Charles Schaefer	Steering Committee Meeting # 1	1.5	\$25.56	\$38.34			\$38.34
1/20/2021	Lisa Poulin	Steering Committee Meeting # 1	1.5	\$25.56	\$38.34			\$38.34
1/20/2021	Andy Reed	Steering Committee Meeting # 1	1.5	\$25.56	\$38.34			\$38.34
1/20/2021	Gene Randall	Steering Committee Meeting # 1	1.5	\$25.56	\$38.34			\$38.34
1/25/2021	Brian Levesque	Town of Burnham WBMP Funding meeting	3	\$25.56	\$76.68			\$76.68
2/3/2021	Ellen Batchelder	Town of Unity WBMP Funding meeting EDC	1.5	\$25.56	\$38.34			\$38.34
2/3/2021	Charles Schaefer	Town of Unity WBMP Funding meeting EDC	1.5	\$25.56	\$38.34			\$38.34
2/8/2021	Brian Levesque	Watershed Survey meeting	1.5	\$25.56	\$38.34			\$38.34
2/8/2021	Steve Krautkremer	Watershed Survey meeting	1.5	\$25.56	\$38.34			\$38.34
2/8/2021	Andy Reed	Watershed Survey meeting	1.5	\$25.56	\$38.34			\$38.34
2/8/2021	Charles Schaefer	Watershed Survey meeting	1.5	\$25.56	\$38.34			\$38.34
2/8/2021	Carol Litchenbaum	Watershed Survey meeting	1.5	\$25.56	\$38.34			\$38.34
2/8/2021	Pat Kelley	Watershed Survey meeting	1.5	\$25.56	\$38.34			\$38.34
2/8/2021	Katharine Gailard	Watershed Survey meeting	1.5	\$25.56	\$38.34			\$38.34
2/12/2021	Brian Levesque	Watershed Survey/ The Ecology Learning Ctr.	1.5	\$25.56	\$38.34			\$38.34
2/12/2021	Kathrine Gailard	Watershed Survey/ The Ecology Learning Ctr.	1.5	\$25.56	\$38.34			\$38.34
2/12/2021	Charles Schaefer	Watershed Survey/ The Ecology Learning Ctr.	1.5	\$25.56	\$38.34			\$38.34
2/12/2021	Steve Krautkremer	Watershed Survey/ The Ecology Learning Ctr.	1.5	\$25.56	\$38.34			\$38.34
2/12/2021	Andy Reed	Watershed Survey/ The Ecology Learning Ctr.	1.5	\$25.56	\$38.34			\$38.34
2/19/2021	Jim Killarney	Unity Pond Monitoring Meeting	1	\$38.50	\$38.50			\$38.50
2/26/2021	Brian Levesque	Watershed Survey/ The Ecology Learning Ctr. No 2	1	\$25.56	\$25.56			\$25.56
2/26/2021	Katharine Gailard	Watershed Survey/ The Ecology Learning Ctr. No 2	1	\$25.56	\$25.56			\$25.56

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Date	Source	Activity or Item	Hours	Rate/ Value	Subtotal	Mileage	Expenses	Total
2/26/2021	Andy Reed	Watershed Survey/ The Ecology Learning Ctr. No 2	1	\$25.56	\$25.56			\$25.56
2/26/2021	Steve Krautkremer	Watershed Survey/ The Ecology Learning Ctr. No 2	1	\$25.56	\$25.56			\$25.56
2/26/2021	Charles Schaefer	Watershed Survey/ The Ecology Learning Ctr. No 2	1	\$25.56	\$25.56			\$25.56
2/26/2021	Andy Reed	Ecology School meeting	0.5	\$25.56	\$12.78			\$12.78
3/10/2021	Charles Schaefer	Unity EDC meeting (match funds)	2	\$25.56	\$51.12			\$51.12
3/10/2021	Ellen Batchelder	Unity EDC meeting (match funds)	2	\$25.56	\$51.12			\$51.12
3/20/2021	Gene Randall	Development of the internal budget process for the WCSWCD	2	\$25.56	\$51.12			\$51.12
3/20/2022	Brian Levesque	Town Of Burnham Town Meeting (Match Funds)	4	\$25.56	\$102.24			\$102.24
3/22/2021	Brian Levesque	Science advisory meeting	1.5	\$25.56	\$38.34			\$38.34
3/22/2021	Andy Reed	SIP	0.75	\$25.56	\$19.17			\$19.17
3/27/2021	Charles Schaefer	Town of Unity Town Meeting (Match funds)	4	\$25.56	\$102.24			\$102.24
3/30/2021	Andy Reed	SIP	1	\$25.56	\$25.56			\$25.56
4/15/2021	Brian Levesque	Survey mailer prep	3.5	\$25.56	\$89.46			\$89.46
4/15/2021	Jim Killarney	ADP deployment	3	\$38.50	\$115.50			\$115.50
4/15/2021	Brian Levesque	ADP deployment\Boat rental	3	\$25.56	\$76.68		\$150.00	\$226.68
4/17/2021	Jim killarney	SAP draft work	4	\$38.50	\$154.00			\$154.00
4/19/2021	Andy Reed	Meeting regarding the project with WCSWCD	1	\$25.56	\$25.56			\$25.56
4/20/2021	WCSWCS Supervisors	Update for entire board regarding the project	5	\$25.56	\$127.80			\$127.80
5/3/2021	FOLW	Courier Publication/Survey Public Notice					\$142.20	\$142.20
5/6/2021	FOLW	Watershed Survey Ad Rolling Thunder					\$94.23	\$94.23
5/6/2021	Jim killarney	Instrument preparation	3	\$38.50	\$115.50			\$115.50
5/12/2021	Jim Killarney	Instrument Calibration/Maintenance	2	\$38.50	\$77.00			\$77.00
5/13/2021	Jim Killarney	Sampling Day	7	\$38.50	\$269.50			\$269.50
5/13/2021	Brian Levesque	Sampling Day	2.5	\$25.56	\$63.90			\$63.90
5/13/2021	Vince Hathorne	Sampling Day	2.5	\$25.56	\$63.90			\$63.90
5/14/2021	Brian Levesque	Prep for survey	5	\$25.56	\$127.80			\$127.80
5/14/2021	Brian Levesque	EI WBMP Presentation @ ELC	1.5	\$25.56	\$38.34			\$38.34
5/20/2021	Charles Schaefer	Survey prep/ organizing lunch	3	\$25.56	\$76.68			\$76.68

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Unity Pond (Lake Winnecook) WBMP Update

Date	Source	Activity or Item	Hours	Rate/ Value	Subtotal	Mileage	Expenses	Total
5/22/2021	Brian Levesque	Deployed transponder (Back flush study)	3	\$25.56	\$76.68			\$76.68
5/22/2021	Shyanne Levesque	Training/Survey	8	\$25.56	\$204.48			\$204.48
5/22/2021	Andy Reed	Training/Survey	7	\$25.56	\$178.92			\$178.92
5/22/2021	Charles Schaefer	Training/Survey	8	\$25.56	\$204.48			\$204.48
5/22/2021	Ellen Batchelder	Training/Survey	8	\$25.56	\$204.48			\$204.48
5/22/2021	Joel Stevens	Training/Survey	8	\$25.56	\$204.48			\$204.48
5/22/2021	Steve Krautkremer	Training/Survey	8	\$25.56	\$204.48			\$204.48
5/22/2021	Fred Newcomb	Training/Survey	8	\$25.56	\$204.48			\$204.48
5/22/2021	Brian Levesque	Training/Survey	8	\$25.56	\$204.48			\$204.48
5/22/2021	Adri Bessenaire	Training/Survey	8	\$25.56	\$204.48			\$204.48
5/22/2021	Ron Waldron	Training/Survey	8	\$25.56	\$204.48			\$204.48
5/26/2021	Jim Killarney	Sampling Day	7	\$38.50	\$269.50			\$269.50
5/26/2021	Steve Krautkremer	Sampling Day	2.5	\$25.56	\$63.90		\$10.00	\$73.90
5/28/2021	Jim Killarney	Data Entry/Analysis	3	\$38.50	\$115.50			\$115.50
6/3/2021	Brian Levesque	Check on transponder (Back flush study)	3	\$25.56	\$76.68		\$150.00	\$226.68
6/3/2021	FOLW	Survey Tech Leader Crossly					\$500.00	\$500.00
6/3/2021	FOLW	Survey Tech Leader Betty Smith					\$450.00	\$450.00
6/3/2021	FOLW	Survey Tech Leader Betty Smith mileage					\$30.06	\$30.06
6/5/2021	Brian Levesque	Survey	4	\$25.56	\$102.24			\$102.24
6/5/2021	Joel Stevens	Survey	4	\$25.56	\$102.24			\$102.24
6/10/2021	Jim Killarney	Data Entry Instrument Calibration	2	\$38.50	\$77.00			\$77.00
6/11/2021	Steve Krautkremer	Sampling Day	4	\$25.56	\$102.24	44	\$5.00	\$131.00
6/11/2021	Jim Killarney	Sampling Day	6	\$38.50	\$231.00			\$231.00
6/12/2021	Brian Levesque	Survey	3	\$25.56	\$76.68			\$76.68
6/12/2021	Fred Newcomb	Survey	3	\$25.56	\$76.68			\$76.68
6/14/2021	Charles Schaefer	Survey Lunch					\$221.41	\$221.41
6/15/2021	Brian Levesque	Survey	4	\$25.56	\$102.24			\$102.24
6/15/2021	Joel Stevens	Survey	4	\$25.56	\$102.24			\$102.24
6/15/2021	Jim killarney	Data Work	2	\$38.50	\$77.00			\$77.00
6/16/2021	FOLW	Survey mailer/printing/SBS					\$515.04	\$515.04
6/18/2021	Town of Unity	Town of Unity WBMP cash match					\$1,600.00	\$1,600.00
6/20/2021	Steve Krautkremer	Bathymetric mapping	2	\$25.56	\$51.12		\$10.00	\$61.12
6/24/2021	Gene Randall	Invoicing and Administration	1	\$25.56	\$25.56			\$25.56
6/25/2021	Jim killarney	Sampling Day	7	\$38.50	\$269.50			\$269.50
6/25/2021	Steve Krautkremer	Sampling Day	2.5	\$25.56	\$63.90		\$5.00	\$68.90

Date	Source	Activity or Item	Hours	Rate/ Value	Subtotal	Mileage	Expenses	Total
6/25/2021	Steve Krautkremer	Bathymetric mapping	2	\$25.56	\$51.12			\$51.12
6/27/2021	Steve Krautkremer	Bathymetric mapping	1	\$25.56	\$25.56			\$25.56
6/30/21	Brian Levesque	EI invoice for Ecology School presentation					\$300.00	\$300.00
7/1/2021	Jim Killarney	Instrument Calibration/Maintenance	3	\$38.50	\$115.50			\$115.50
7/2/2021	Town of Burnham	Watershed Survey cash match					\$1,600.00	\$1,600.00
7/5/2021	Steve Krautkremer	Bathymetric mapping	1	\$25.56	\$25.56		\$5.00	\$30.56
7/8/2021	Gene Randall	Invoicing and Administration	1.5	\$25.56	\$38.34			\$38.34
7/13/2021	Steve Krautkremer	Bathymetric Mapping	1	\$25.56	\$25.56		\$5.00	\$30.56
7/14/2021	FOLW	Watershed Survey (Tech Leader EI)					\$500.00	\$500.00
7/19/2021	Steve Krautkremer	Bathymetric mapping	3	\$25.56	\$76.68		\$15.00	\$91.68
7/20/2021	Steve Krautkremer	Bathymetric mapping	3	\$25.56	\$76.68		\$15.00	\$91.68
7/21/2021	Steve Krautkremer	Bathymetric mapping	4	\$25.56	\$102.24		\$20.00	\$122.24
7/22/2021	Steve Krautkremer	Bathymetric mapping	2	\$25.56	\$51.12		\$10.00	\$61.12
7/22/2021	Steve Krautkremer	Sampling Day	2	\$25.56	\$51.12			\$51.12
7/22/2021	Jim Killarney	Sampling Day	7	\$38.50	\$269.50			\$269.50
7/23/2021	Gene Randall	Invoicing and Administration	1	\$25.56	\$25.56			\$25.56
7/27/2021	Gene Randall	Invoicing and Administration	0.5	\$25.56	\$12.78			\$12.78
7/28/2021	Gene Randall	Invoicing and Administration	2.5	\$25.56	\$63.90			\$63.90
7/30/2021	Gene Randall	Administration and Invoicing	3	\$25.56	\$76.68			\$76.68
8/3/2021	Jim Killarney	Sampling Day	7	\$38.50	\$269.50			\$269.50
8/3/2021	Steve Krautkremer	Sampling Day	2.5	\$25.56	\$63.90		\$5.00	\$68.90
8/3/2021	Steve Krautkremer	Bathymetric mapping	3	\$25.56	\$76.68		\$15.00	\$91.68
8/17/2021	Gene Randall	Invoice processing	1.1	\$25.56	\$28.12			\$28.12
8/17/2021	Brian Levesque	Survey meeting follow up & prep w\Amanda	3	\$25.56	\$76.68			\$76.68
8/17/2021	Andy Reed	Survey meeting follow up w\Amanda Pratt	1.5	\$25.56	\$38.34			\$38.34
8/18/2021	Gene Randall	Administration	0.5	\$25.56	\$12.78			\$12.78
8/20/2021	Gene Randall	Invoice processing	0.5	\$25.56	\$12.78			\$12.78
9/3/2021	Jim Killarney	Sampling Day	7	\$38.50	\$269.50			\$269.50
9/3/2021	Steve Krautkremer	Sampling Day	2.5	\$25.56	\$63.90		\$5.00	\$68.90
9/4/2021	Gene Randall	Reissue lost check	0.5	\$25.56	\$12.78			\$12.78
9/7/2021	Gene Randall	Invoice processing	0.5	\$25.56	\$12.78			\$12.78
9/8/2021	Brian Levesque	Septic Survey\mailer prep	1.5	\$25.56	\$38.34			\$38.34
9/16/2021	Gene Randall	Invoice processing	0.5	\$25.56	\$12.78			\$12.78

Appendix A- Project #20200006
Unity Pond (Lake Winnecook) WBMP Update

Date	Source	Activity or Item	Hours	Rate/ Value	Subtotal	Mileage	Expenses	Total
9/16/2021	Brian Levesque	Data Entry	1	\$25.56	\$25.56			\$25.56
9/17/2021	Gene Randall	Administration	0.5	\$25.56	\$12.78			\$12.78
9/17/2021	Gene Randall	Zoom meeting with Jen, Amanda, & Medea	1.75	\$25.56	\$44.73			\$44.73
9/17/2021	Gene Randall	Administration and research	2.5	\$25.56	\$63.90			\$63.90
9/17/2021	Jim Killarney	Sampling Day	7	\$38.50	\$269.50			\$269.50
9/17/2021	Steve Krautkremer	Sampling Day	3.5	\$25.56	\$89.46	44	\$5.00	\$114.26
9/21/2021	Gene Randall	Invoice Processing	0.5	\$25.56	\$12.78			\$12.78
9/22/2021	Gene Randall	Invoice Processing & Research, Lab Report Matching	2.5	\$25.56	\$63.90			\$63.90
9/25/2021	Gene Randall	Invoice Research and Reporting	0.5	\$25.56	\$12.78			\$12.78
10/1/2021	FOLW	Cash match					\$3,000.00	\$3,000.00
10/2/2021	Steve Krautkremer	Sampling Day	4.5	\$25.56	\$115.02	88		\$154.62
10/2/2021	Jim Killarney	Sampling Day	9	\$38.50	\$346.50			\$346.50
10/4/2021	Gene Randall	Invoice Processing & Email	0.5	\$25.56	\$12.78			\$12.78
10/7/2021	Jim Killarney	Data Entry/Analysis	3	\$38.50	\$115.50			\$115.50
10/14/2021	Gene Randall	Invoice Research and Reporting	0.5	\$25.56	\$12.78			\$12.78
10/15/2021	Steve Krautkremer	Sampling day	4.5	\$25.56	\$115.02	88		\$154.62
10/15/2021	Jim Killarney	Sampling day	10	\$38.50	\$385.00			\$385.00
10/25/2021	Gene Randall	Invoice Processing	1	\$25.56	\$63.90			\$63.90
10/26/2021	Gene Randall	Invoice Processing	1.5	\$25.56	\$12.78			\$12.78
10/27/2021	Jim Killarney	Data Analysis	3	\$38.50	\$115.50			\$115.50
11/2/2021	Gene Randall	Invoice Processing	1.2	\$25.56	\$12.78			\$12.78
11/9/2021	Gene Randall	Invoice Processing	0.75	\$25.56	\$12.78			\$12.78
11/10/2021	Gene Randall	Invoice Processing	1.3	\$25.56	\$115.02	88		\$154.62
11/15/2021	Gene Randall	Invoice Processing	0.5	\$25.56	\$385.00			\$385.00
12/11/2021	Gene Randall	Invoice Processing	1	\$25.56	\$115.50			\$115.50
1/27/2022	Gene Randall	Invoice Processing	1.5	\$26.67	\$40.01			\$40.01
2/11/2022	Andy Reed	TAC Mtg #1	1.5	\$26.67	\$40.01			\$40.01
2/11/2022	Brian Levesque	TAC Mtg. #1	1.5	\$26.67	\$40.01			\$40.01
2/28/2022	Gene Randall	Unity Pond Zoom meeting	1.75	\$26.67	\$46.67			\$46.67
2/28/2022	Andy Reed	Unity Pond Zoom Meeting	1.75	\$26.67	\$46.67			\$46.67
2/28/2022	Brian Levesque	Unity Pond Zoom meeting	1.75	\$26.67	\$46.67			\$46.67
3/7/2022	Gene Randall	Invoice Processing	0.5	\$26.67	\$13.34			\$13.34
3/18/2022	Andy Reed	Backflushing follow-up w/Medea and Jen	1	\$26.67	\$26.67			\$26.67

Date	Source	Activity or Item	Hours	Rate/ Value	Subtotal	Mileage	Expenses	Total
3/18/2022	Brian Levesque	Backflushing follow-up w/Medea and Jen	1	\$26.67	\$26.67			\$26.67
3/25/2022	Brian Levesque	Survey Notification letter\ packet	2	\$26.67	\$53.34			\$53.34
3/25/2022	Paul Warburg	Survey Notification letter\ packet	2	\$26.67	\$53.34			\$53.34
3/26/2022	Brian Levesque	FOLW Lake Smart rebate incentive	3.5	\$26.67	\$93.35			\$93.35
3/26/2022	Paul Warburg	FOLW Lake Smart rebate incentive	1	\$26.67	\$26.67			\$26.67
3/30/2022	Gene Randall	Invoice Processing	1	\$26.67	\$26.67			\$26.67
4/2/2022	Brian Levesque	Survey Notification letter\ packet	1.5	\$26.67	\$40.01			\$40.01
4/13/2022	Gene Randall	Review Program Financials	0.5	\$26.67	\$13.34			\$13.34
4/19/2022	Brian Levesque	Survey Notification letter\ packet	1.5	\$26.67	\$40.01			\$40.01
4/20/2022	FOLW	Survey Notification letter\ packet Printing		\$26.67	\$0.00		\$377.31	\$377.31
4/21/2022	Brian Levesque	Survey Notification letter\ packet	3	\$26.67	\$80.01			\$80.01
4/25/2022	Brian Levesque	Sourcing volunteers for Backflushing study	3.5	\$26.67	\$93.35			\$93.35
4/29/2022	Gene Randall	Update in-kind match hours	0.5	\$26.67	\$13.34			\$13.34
5/6/2022	Gene Randall	Invoice Processing	0.5	\$26.77	\$13.39			\$13.39
6/7/2022	Gene Randall	Invoice Processing	1	\$26.77	\$26.77			\$26.77
6/27/2022	Gene Randall	TAC Mtg #2	2.5	\$26.67	\$66.68			\$66.68
6/27/2022	Andy Reed	TAC Mtg #2	2.5	\$26.67	\$66.68			\$66.68
6/27/2022	Ellen Batchelder	TAC Mtg #2	2.5	\$26.67	\$66.68			\$66.68
6/27/2022	Steve Krautkremer	TAC Mtg #2	2.5	\$26.67	\$66.68			\$66.68
6/27/2022	Brian Levesque	TAC Mtg #2	2.5	\$26.67	\$66.68			\$66.68
7/5/2022	Gene Randall	Invoice Processing	0.5	\$26.77	\$13.39			\$13.39
8/11/2022	Gene Randall	Invoice Processing	0.5	\$26.77	\$13.39			\$13.39
8/31/2022	Steve K., Brian L, Gene R. Andy R., Charlie S., Tom W.	Steering Committee Meeting # 2 (does not include Jim K)	12	\$26.77	\$321.24			\$321.24
9/13/2022	Gene Randall	Invoice Processing	0.5	\$26.77	\$13.39			\$13.39
9/15/2022	Brian L & Andy R	Public Outreach Committee # 1 (Zoom)	2.5	\$26.77	\$66.93			\$66.93
9/30/2022	Brian L, Andy R, Marco M.	Public Outreach Committee # 2 (Zoom)	3.5	\$26.77	\$93.70			\$93.70
10/13/2022	Brian L, Andy R.	Public Outreach Committee # 3 (Zoom)	5	\$26.77	\$133.85			\$133.85
10/14/2022	Gene Randall	Invoice Processing	0.5	\$26.77	\$13.39			\$13.39
10/27/2022	Gene Randall	Public Presentation	2	\$26.77	\$53.54			\$53.54
11/22/2022	Gene Randall	Invoice Processing	0.5	\$26.77	\$13.39			\$13.39
11/23/2022	Gene Randall	Contract Review	2	\$26.77	\$53.54			\$53.54

Appendix A- Project #20200006
Unity Pond (Lake Winnecook) WBMP Update

Date	Source	Activity or Item	Hours	Rate/ Value	Subtotal	Mileage	Expenses	Total
11/24/2022	Gene Randall	Contract Review	1.5	\$26.77	\$40.16			\$40.16
11/28/2022	Gene Randall	Contract Review	0.5	\$26.77	\$13.39			\$13.39
11/28/2022	Gene Randall	Administration	1	\$26.77	\$26.77			\$26.77
12/2/2022	Steering Committee	SC Meeting #3 (Andy R., Brian L., Steve L., Gene R.)	5	\$26.77	\$133.85			\$133.85
12/13/2022	Medea Steinman	Zoom Debrief meeting, process polling results, SC meeting #3, review draft WBMP	9.5	\$70.00	\$665.00			\$665.00
12/13/22	Jen Jespersen	Ecolninstincts in-kind match (public meeting, draft & final WBMP)					\$5,131.64	\$5,131.64
12/13/2022	Ken Wagner	WRS In-kind match	1	\$175.00	\$175.00			\$175.00
							Total	\$29,668
							Goal	\$18,156
							Remaining	-\$11,512

APPENDIX B- Match Certification Form

Non-Federal Match Documentation / Certification
NPS Grants Program, Maine Department of Environmental Protection

Grantees need to document matching funds or services contributed to the project. The amount of match required is listed under 'Budget Information' in the project work plan. Grantees must submit this form as part of the Final Project Report to certify that match has been properly documented before closeout of the Grant Agreement.

To efficiently meet documentation requirements, Grantees should accumulate match information as the project proceeds and record information in a table. See *Nonpoint Source Grant Administrative Guidelines* (2016) Appendix A for an example. The following information is needed to adequately document match.

1. Source. Identify the source of the funds or services;
2. Activity. Describe the activity and the amount of activity; and
3. Valuation. Describe the basis for assigning the amount of dollar value to the activity.

Important: This signed certification form must be accompanied by supporting information that documents (source, activity and valuation) the matching funds or services claimed by the Grantee. The Certification Statement alone is not sufficient to document the non-federal match.

GRANTEE INFORMATION:

Grantee Name: Waldo County Soil & Water Conservation District
Address: 46 Little River Drive
Belfast, ME 04915
Telephone: (207) 218-5311
Contact Person: Medea Steinman

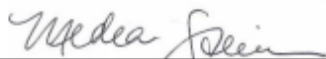
PROJECT INFORMATION:

Project #: #20200006
Project Title: Unity Pond (Lake Winnecook) Watershed-Based Management Plan Update

Match Amount Planned Under the Grant Agreement: \$18,156.00
Match Amount Claimed: \$29,667.70

CERTIFICATION STATEMENT:

I certify that the non-federal match summarized in the attached information was expended in the course of completing work described in the Grant Agreement for the Project referenced above. Supplemental match documentation is available for review in Grantee files.



Signature of Grantee – Authorized Official

12/15/22

Date