



**Great East Lake &  
Wilson Lake  
Watershed  
Implementation -  
Phase 1  
2012RR01**

Grantee: Acton Wakefield Watersheds Alliance  
Project Manager: Linda Schier, Executive Director  
Start Date: November 2, 2011  
End Date: February 21, 2014

Funding for this project, in part, was provided by the U.S. Environmental Protection Agency under Section 319 of the Clean Water Act. The funding is administered by the Maine Department of Environmental Protection in partnership with EPA.

## **PROJECT OVERVIEW**

### **PURPOSE**

The purpose of this project was to reduce erosion and polluted runoff sources to Great East Lake, Wilson Lake and therefore the Salmon Falls River by installing BMPs at twenty (20) priority sites and providing technical assistance, education and outreach. Ultimately, the goal was to protect or improve the water quality of Great East Lake, Wilson Lake and the downstream waterbodies.

### **PROJECT HIGHLIGHTS**

The project objectives were met and some exceeded.

- The AWWA Youth Conservation Corps - directed by Program Manager Dustin Johnson and Assistant Program Manager Sam Wilson and staffed by Crew Leaders Anthony Stanton and Jordan Shepherd, and six local high school crew members - installed 73 BMPs on 16 properties in the project area reducing the pollutant load by an estimated 27 tons/year. Technical assistance visits were delivered to 16 YCC project hosts and 27 additional landowners to provide site specific advice for stormwater runoff mitigation.
- Erosion control BMPs were installed on the road sites included in the project plan on Langley Shores, Hawk and Eagle roads plus additional sites on Eagle and Abbott roads due to the planned projects coming in under budget. In addition, funds were available to assist the Lakeside Drive residents in their efforts to form a Road Association with the intention of applying for grant funds in the next grant round. Working partnerships for the road projects included the York County Soil and Water Conservation District, the Abbott Road/Jericho Way Road Association, the Eagle Road Association, the Hawk Road Association and the Langley Shores Road Association. Financial support was provided by the Town of Acton, the Great East Lake Improvement Association and the Wilson Lake Association.
- In partnership with the York County Soil and Water Conservation District, AWWA conducted four neighborhood socials. Two road socials and two road socials were called for in the workplan. However, demand for the septic socials was higher and the project manager and DEP Agreement Administrator agreed with the decisions to instead hold three septic socials and one road social. 27 people attending the two septic socials held in Wilson Lake neighborhoods. 15 attended the septic social and three attended the road social in Great East Lake neighborhoods. The road social held on Lakeside Drive on Great East is leading to the formation of a formal road association.
- Articles about the project progress, successes and outcomes were published in four editions each of the GELIA and WLA newsletters as well as three print editions of the AWWA News and multiple posts on the AWWA website [www.AWwatersheds.org](http://www.AWwatersheds.org).
- Videos of the 2012 and 2013 YCC tours are posted on the AWWA website.

### **KEY PERSONNEL**

Key project personnel included AWWA staff - Linda Schier, Executive Director; Dustin Johnson, Program Director; and Sam Wilson, Program Assistant; and York County Soil & Water Conservation District staff Joe Anderson, Project Manager and Theresa Galvin, Project Manager.

### **CHANGES IN PROJECT SCOPE**

Due to lower than expected project costs we were able to complete additional road projects on Abbott Rd/Jericho Way and Eagle Road. Funds were also available to provide legal assistance to the residents of Lakeside Drive in their efforts to form a formal road association.

## **TASK SUMMARY**

### **Task#1 – Project Management**

All aspects of project management were conducted as required by grant guidelines and completed in a timely manner.

- The grant agreement was signed and adhered to.
- Project costs and match were carefully documented and reported and progress reports submitted.
- Pollutant Controlled Reports were submitted for 2012 and 2013.
- Review of phosphorus and Secchi data from UNHLLMP has not indicated any significant trend during the project period but comprehensive monitoring will continue and results will be analyzed on a regular basis.
- The informal action plan for future implementation is on file at the AWWA office.

Projected Cost: Grant: \$4,980                      Match: \$0                      Total: \$4,980

ACTUAL COST: Grant: \$6,420                      Match: \$1,607                      Total: \$8,027

### **Task #2 – Steering Committee Meetings**

The project steering committee only met four times during the project period, in the spring and fall of 2012 and 2013. Although six meetings were originally planned, all project partners agreed this was sufficient as communication between partners was regular and informative via email and as needed to see the successful completion of the project goals.

Steering Committee members:

Jeanne	Achille	Wilson Lake Association	Ken	Paul	Acton Code Enforcement Officer
Joe	Anderson	YCSWCD	Al	Peterson	Hawk Road Association
Bob	Berlan	Langley Shores Road Association	John	Roy	Hawk Road Association
Wendy	Garland	ME DEP	Linda	Schier	AWWA
Theresa	Galvin	YCSWCD	Jim	Sera	Eagle Road Association
Cindy	Hart	Acton Road Committee, Abbott Rd	Bill	Shields	Acton Selectman
Dustin	Johnson	AWWA	Sally	Soule	NH DES
Jack	Kelley	Acton Road Committee	Peter	White	Abbott Road Association
Bud	Morin	Eagle Road Association	Glenn	Wildes	AWWA, YCSWCD, Wilson Lake
Arnie	Murray	Langley Shores Road Association	Sam	Wilson	AWWA
Dan	Orino	Eagle Road Association			

Agendas and minutes of the meetings are on file at the AWWA office.

Projected Cost: Grant: \$3,148                      Match: \$2,834                      Total: \$5,982

ACTUAL COST: Grant: \$1,496                      Match: \$ 622                      Total: \$2,119

### **Task #3- Landowner Technical Assistance**

A total of 42 landowners received site specific recommendations for conservation practices on their lakefront properties. See Deliverable #2 for a summary table of the TA sites.

Projected Cost: Grant \$7,028                      Match \$ 982                      Total: \$8,010

ACTUAL COST: Grant: \$4,010                      Match: \$ 981                      Total: \$4,991

### **Task #4- NPS Abatement Projects**

Erosion and runoff problems were corrected on seven road sites, which exceeded the five sites planned. This included one site on Abbott Road/Jericho Way and two sites on Langley Shores Drive on Great East Lake and on two sites each on Eagle Road and Hawk Road on Wilson Lake. AWWA partnered with the York County Soil & Water Conservation District for design and oversight on all the project sites except for the final Eagle Road project. Acorn Engineering was

contracted to develop plans for that site that were incorporated into the final project design.

The road association members involved with the projects were dedicated and involved partners and did an excellent job reaching out to their memberships with detailed project information and outreach about how important road maintenance is to the health of their lakes.

- Abbott Road/Jericho Way: During rain events stormwater traveled down the paved upper portion of the road and eroded the lower gravel section through driveways and into Great East Lake. Sediment berms had accumulated and two culverts were blocked or undersized with no armoring. The two culverts were replaced, ditches were reestablished and stabilized, and the gravel portion of the road was regraded and paved.
  - Grant Cost: \$3,500
  - Match Cost: \$19,994
  - Match Source: Abbott Rd/Jericho Way Association cash & In-kind
  - Sediment Reduction (tons/yr): 1.83
- Langley Shores Drive 1: This 280' steep section of road, with highly erodible soils lacked any NPS treatment to address stormwater runoff which flowed directly to Great East Lake. The road was regraded and paved to tip road away from the lake and direct runoff to a catch basin that was installed at the base of the hill.
  - Grant Cost: \$7,344
  - Match Cost: \$4,932
  - Match Source: Langley Shores Road Association
  - Sediment Reduction (tons/yr): 3.81
- Langley Shores Drive 2: This 150' steep section of road eroded to a private driveway and directly into Great East Lake. The road was regraded and paved and a catch basin was installed at the top of the driveway to accept and treat the runoff. An additional cross drain and rip rap was installed under the pavement help channel seepage to the catch basin.
  - Grant Cost: \$4,893
  - Match Cost: \$3,072
  - Match Source: Langley Shores Road Association
  - Sediment Reduction (tons/yr): 2.10
- Hawk Road 1: Sheet flow runoff from the road and occasional overflow of blocked culverts sent runoff across ROW to Wilson Lake. The roadway was excavated, regraded with additional fill to slope inland with ditching and rock shoulder to prevent erosion. Two new plastic culverts replaced existing culverts and inlets and outlets were armored. The road section was paved to stabilize the bed and direct NPS flow to ditching.
  - Grant Cost: \$3,945
  - Match Cost: \$3,059
  - Match Source: Hawk Road Association
  - Sediment Reduction (tons/yr): 1.29
- Hawk Road 2: Road shoulder erosion, winter sand buildup, unstable culvert inlet and outlet and severely eroded undersized ditching contributed polluted runoff into stream and 100' into Wilson Lake. The culvert was improperly sited perpendicular to road rather than in line with the stream channel. A larger culvert was installed to allow for embedding in the original stream path, the inlet and outlet were armored and 100' of the road was ditched and stabilized. The road surface was repaved where the culvert was installed.
  - Grant Cost: \$2,190
  - Match Cost: \$1,460
  - Match Source: Hawk Road Association
  - Sediment Reduction (tons/yr): 0.51
- Eagle Road 1: Runoff flowed directly down the roadway into driveways and directly into Wilson Lake. Road sediment also flowed directly into culvert area and eroded the stream bankings and culvert inlet and outlet. Surface material was added to raise roadbed on shoreline side to direct flow towards new and existing ditching which was stabilized with crushed gravel. A detention basin and plunge pool were installed on the upper section and lined with fabric and rip rap. One additional culvert was installed and one existing culvert replaced and inlets and outlets were armored.
  - Grant Cost: \$5,123



- Match Cost: \$4,348
- Match Source: Eagle Road Association
- Sediment Reduction (tons/yr): 2.20
- Eagle Road 2: Eagle Road experienced nonpoint source (NPS) runoff in the first 1000 ft of the road. Roadbed and ditching were somewhat stable but the road was rutted and had no crown. Runoff gathered on the western side of the road and flowed out at low points, in some cases directly down driveways and lawns and into Wilson Lake. Two concrete speed bumps further diverted water into lake due to their angling. Ditches on eastern side of road were undersized and did not receive enough runoff to be an effective NPS pollution control. Ditching lacked check dams. The road was regraded and 4' of surface material added to crown the road. Concrete speed bumps were removed and ditches were reshaped and stabilized. Curlex fabric and 3 check dams were installed. Recommendations are detailed in "Eagle Road Stormwater, Civil Design-Eagle Road, Acton, ME. Nov 2013."
  - Grant Cost: \$6,840
  - Match Cost: \$4,560
  - Match Source: Eagle Road Association
  - Sediment Reduction (tons/yr): 0.17

Projected Cost: Grant: \$37,155	Match: \$20,731	Total: \$57,885
ACTUAL COST: Grant: \$43,449	Match: \$54,529	Total: \$97,978

**Task #5 – Youth Conservation Corps (YCC)**

In its 8<sup>th</sup> season, the AWWA YCC continued to install effective BMPs on residential properties throughout the AWWA watersheds. The YCC Steering Committee oversaw hiring of YCC staff, project selection and offered regular oversight through monthly board meetings. In the 2012-13 project period the YCC installed 73 BMPs on 16 project sites (15 planned) in the project area on Great East Lake and Wilson Lake resulting in an estimated sediment load reduction of 27.1 tons/yr. Four projects were completed on Wilson Lake and 12 on Great East Lake. Seven of the projects on Great East were in the Langley Shores neighborhood which indicated the buy-in associated with a road project and face-to-face time with the AWWA Program Manager.

BMPs installed on these project sites were 7 infiltration trenches, 8 areas with erosion control mix, 8 drywells, 13 water bars, 2 riprap slope stabilizations, 3 native vegetation plantings, 7 rubber razors, 7 detention basins, 4 sets of infiltration steps, 4 infiltration walkways, 2 rain gardens and 9 dripline trenches. The homeowners reported spending \$4,688 on materials with five not reporting.

The actual match was tremendously less than the projected match due to a number of factors. The projection included staff time that far exceeded the actual time needed to complete the task, truck repairs were overestimated, homeowner contributions less than projected and travel time was overestimated.

Projected Cost: Grant: \$7,160	Match: \$55,217	Total: \$62,377
ACTUAL COST: Grant: \$7,659	Match: \$15,448	Total: \$23,107

**Task #6 – Education and Outreach**

All the requirements of the education and outreach task were reached with articles in the Spring and Fall 2012, and Winter and Fall 2013 editions of the GELIA Newichawannock News; and articles in the Spring and Fall 2012 and 2013 editions of the Wilson Lake News. Linda Schier and Dustin Johnson addressed each of the associations' annual meetings and manned the AWWA display booth, handing out informational materials. Regular updates on the AWWA website and Facebook kept the associations and communities apprised of project progress and successes.

Signage for the YCC project sites continues to be a sought after recognition and all 16 project area projects proudly boasted with the eye-catching AWWA signs. Videos of the 2012 and 2013 YCC season end tours are available for viewing on the AWWA website and YouTube.

Projected Cost: Grant: \$4,216	Match: \$5,569	Total: \$ 9,875
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ACTUAL COST: Grant: \$2,555                      Match: \$8,428                      Total: \$10,983

**Task #7 – Road and Septic Socials**

Due to transition in staffing at the YCSWCD the socials did not play out quite as planned. The intent was for the District to recruit participants, plan the events and provide a septic professional for Q&A sessions. AWWA recruited the participants and no professional was engaged to participate. Despite those challenges the socials were useful and effective as participants indicated in a post event survey.

Three neighborhood septic socials were delivered – Abbott Road on Great East Lake and Peacock Road and Hawk Road on Wilson Lake– and were well received but the preparations were not as expected.

The Road Social took the form of a meeting with residents of Lakeside Drive interested in forming a formal road association. There are numerous erosion issues along the roadway and the group is eager to investigate the possibility of grant assistance from DEP when the association is formed.

Projected Cost: Grant: \$3,585                      Match: \$1,244                      Total: \$3,829  
ACTUAL COST: Grant: \$1,872                      Match: \$1,819                      Total: \$3,690

**Task #8 – Pollutant Reduction Estimates**

NPS pollutant load reductions were calculated using the EPA Region 5 Load Estimation Model or the federal WEPP Road Model as appropriate and standard PCR reports were submitted in a timely manner. NPS abatement projects resulted in an estimated pollutant load reduction of 9.87 tons/yr of sediment and 8.26 lbs/yr of phosphorus to Wilson Lake and 29.14 tons/yr of sediment and 24.57 lbs of phosphorus to Great East Lake.

Projected Cost: Grant: \$1,270                      Match: \$0                      Total: \$1,270  
ACTUAL COST: Grant: \$ 180                      Match: \$170                      Total: \$ 350

**DELIVERABLES SUMMARY**

1. Subagreement with YCSWCD, Progress Reports (semi-annual) & Final Project Report. (Task 1): The MOA between YCSWCD and AWWA was signed on May 1, 2012. Progress reports were submitted on 5/22/12, 11/28/12, 5/20/13, and 11/8/13. The final report is submitted on February 17, 2014.
2. Summary table to DEP, listing the outcomes of staff work to prompt landowners to use their own funds to install BMPs. Fields to be used in this table include NPS Site, landowner name, brief description of problem, BMPs recommended, and BMPs implemented if any. (Task 3): The summary table to DEP was submitted to DEP on 2/12/14.
3. NPS Site Report for each NPS Site. (Task 4): 7 NPS site reports were submitted to DEP as projects were completed.
4. Year End YCC Season Report (Task 5): The 2012 and 2013 YCC Season Reports were submitted to DEP at the close of each season and posted on the AWWA website.
5. Copies of all news articles, project newsletters and key outreach materials. (Task 6): Copies of press materials were submitted and posted on the AWWA, GELIA and WLA websites as appropriate.
6. Summary of Road & Septic Social evaluations (Task 7): Responses to the Septic Social Feedback survey are summarized in a report
7. Pollutants Controlled Report each year until project completion. (Task 8); The 2012 and 2013 PCRs were submitted in December of each year.

## **PROJECT OUTCOMES**

### **Major Outcomes**

73 Best Management Practices erosion control features were installed on 16 YCC project sites. NPS abatement projects corrected chronic road erosion issues on seven road sites. 40 people attended Septic or Road Social events.

### **Environmental Results**

NPS abatement projects resulted in an estimated pollutant load reduction of 9.87 tons/yr of sediment and 8.26 lbs/yr of phosphorus to Wilson Lake and 29.14 tons/yr of sediment and 24.57 lbs of phosphorus to Great East Lake.

### **Lessons Learned**

#### **What made the project more effective?**

The road associations – Langley Shores Road Association, Abbott Road/Jericho Way Associations, Hawk Road Association and Eagle Road Association – were wonderful partners that were highly engaged and took ownership of the projects and long term stewardship. They were eager to learn and on site with shovels as needed.

The lake associations – Great East Lake Improvement Association and Wilson Lake Association supported the projects with significant financial commitments and publicized the projects thoroughly in their newsletters and websites.

#### **What did not work well?**

With a change in personnel at the York County Soil & Water Conservation District, the shared tasks did not quite meet expectations. The assistance with the road projects flowed closely to the plan but the Socials fell through the cracks a bit. No socials were delivered in 2012 and for those in 2013 the preparation was minimal, recruiting had to be done by AWWA, and no professional installers were engaged. In looking forward to subsequent projects our recommendation would be to develop a “neighborhood healthy lake” presentation that would incorporate the key points of the septic social, basic road maintenance tips as well as the basic “laker’s dozen” concepts. We feel it would be more engaging, open the door for more comprehensive lake-friendly discussions and draw a wider audience.

The projected budget was off by quite a bit, particularly in match accumulation. The number of hours required to complete the YCC task was grossly overestimated but the match was made up with additional road projects.

Overall, the project went very smoothly, accomplished all that we had hoped and more with terrific local buy-in. It is clear that those in the road associations are now avid spokes people for lake protection as evidenced by an impassioned speech given by Langley Shores Association president, Arnie Murray to the Great East Lake Improvement Association. Arnie urged all the lakefront residents of Great East Lake to take personal responsibility for their behaviors on their properties and to become “lake-friendly.” Our expectations for continued improvements to the properties around Great East and Wilson lakes are high and hopeful.

## **SUMMARY OF TOTAL EXPENDITURES**

	<u>NPS Grant</u>	<u>Non-Federal Match</u>
Grant agreement Amount	<u>\$67,641</u>	<u>\$86,566</u>
Funds Expended	<u>\$67,641</u>	<u>\$83,616</u>
Funds Balance	<u>\$ 0</u>	<u>\$ 2,950</u>

## **APPENDICES**

Appendix A: Non-Federal Match Documentation / Certification



## APPENDIX A

### Non-Federal Match Documentation / Certification

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, "Non-federal Match Documentation / Certification" as part of the Final Project Report.

The Grantee must certify in writing that match has been documented before closeout of the Grant Agreement. The following information is needed to adequately document match. To efficiently meet documentation requirements, Grantees should accumulate match information as the project proceeds and record information in a table. See Attachment C for an example.

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.

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#### GRANTEE INFORMATION:

Name: Acton Wakefield Watersheds Alliance  
Address: PO Box 235  
Union, NH 03887  
Telephone: (603) 473-2500  
Contact Person: Linda Schier

#### PROJECT INFORMATION:

Project Title: Great East Lake and Wilson Lake Watershed Implementation (Phase 1)  
Project ID# (Example...#2009RR12): 2012RR01

Match Amount planned under the Grant Agreement	\$ <u>86,566</u>
Match Amount Claimed	\$ <u>83,616</u>

#### CERTIFICATION STATEMENT:

I certify that the non-federal match detailed in the attached information were expended in the course of completing work described in the Grant Agreement for the Project referenced above, and that detailed documentation of the match information is on file and available for review at the Grantee address shown above.



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Date 2/18/2014

Signature of Grantee - Authorized Official