

Final Report**Task #1 Deliverable #2**

Maine DEP 319 Program:China Lake NPS Reduction Project

Project #2003R-37 March 1, 2008

Agreement #: G206159



Finished Project:Tarybelu Lane Photo By: J.Fredenberg

Grantee: China Region Lakes Alliance

Grantee Contact: David Landry, president
571 Lakeview Drive
China, ME 04358
Tel: 207-968-2856

Project Duration: March 2006-March 1, 2008

Acknowledgements:

Funding for this project was provided, in part, by the U.S. Environmental Protection Agency (EPA) under Section 319 of the Clean Water Act. Section 319 grants are administered by the Maine Department of Environmental Protection (DEP) in partnership with EPA. This Final Plan was prepared by David Landry of the China Region Lakes Alliance. The plan was reviewed by Norm Marcotte of the Maine DEP. Norm Marcotte administered the project for DEP and Jeff Fredenberg directed the construction portion of the project for KCSWCD.

I. Project Overview

China Lake is a 3,937 acre lake that is the focal point, culturally and economically in the Town of China, Maine. In addition the lake is the water source for the Kennebec Water District which supplies drinking water to over 35,000 customers in Central Maine. China Lake was once a crystal clear water body known for its cold water fishery of salmon and trout. In 1983 the lake suffered a rapid decline in water quality due to cultural eutrophication with the onset of marked seasonal algae blooms, loss of its cold water fishery, and a decline in property values. Since 1989 NPS remediation has been taking place in China Lake's watershed. In 1996 the China Region Lakes Alliance (CRLA), a not for profit organization, was incorporated by area towns and lake associations to "protect and improve the water quality in China Lake, Three Cornered Pond, Webber Pond, and Three Mile Pond." It was through the CRLA that project work was accomplished. Ongoing financial support of the CRLA comes from the area towns of China, Vassalboro, Windsor, respective lake associations, and the Kennebec Water District.

The purpose of this project has been to reduce the amount of phosphorus entering China Lake by implementing actions proposed in the 2001 TMDL the 1998 CRLA Watershed Management Plan, and by addressing NPS sites that are identified as part of the yearly watershed surveys. Every attempt was made to prioritize and address the most significant NPS sites in the China Lake Watershed. Community education and involvement in remediation efforts in China Lake was additionally a major goal of the project.

The 2003R-37 NPS Reduction Project was a resounding success across all metrics. All tasks were met or exceeded and are discussed in detail in this report. The CRLA was successful in addressing significant chronic erosion problems on a scale never done in central Maine. This project's successes resulted in recorded stakeholder participation, widespread community support, record non-federal match, and the commitment from member towns and organizations for increased future funding.

During the course of the project the Board of Director of the CRLA changed its model of operation. The executive director position was eliminated and in place a partnership with the nearby Kennebec County Soil and Water Conservation District (KS&W) was formalized. This partnership gave the CRLA direct access to a wide range of technical expertise that had not been available before and lowered the cost of operations. The CRLA is now able to offer a wider range of services to property owners and put more resources directly into the NPS projects. During the transition period the CRLA directors significantly increased their volunteer time to ensure all tasks were accomplished. Board President David Landry has 20 years experience in nonprofit organizations doing NPS work while board member Jim Hart employed his engineering background to assist in the tasks at hand

II. Task Summary

Task 1. Project Management- Representatives of the CRLA signed the grant agreement with the Maine D.E.P. for this project and sought frequent input from the D.E.P. grant manager Norman Marcotte and support staff of the Maine D.E.P. as this project progressed. All scheduled reports were filed in a timely manner, care was taken to adequately document the progress and work under this grant through the deliverables presented to the MDEP and EPA. The Town of China was a valuable partner in the management of this project since all money flowed through the town in segregated accounts giving the CRLA and the grantor assurance of appropriate financial oversight.

Task 2. Steering Committee-The project steering committee was a sub-committee of the CRLA board of directors and for the duration of the grant consisted of the president of the CRLA, Kennebec Water District representative, president of the China Lake Association, manager from the Town of China and the executive director of the CRLA. After the CRLA board eliminated the executive director position in December of 2006 a representative from the Kennebec County Soil and Water Conservation Department was added to the steering committee. The steering committee was scheduled to meet monthly during the grant period. Three regular meetings were cancelled due to bad weather or scheduling conflicts but three special meeting were held during the early planning period for the largest undertaking the Tarybelu Lane Project.

Task 3. Watershed Property Consultations/Technical Assistance-The number of property consultations done significantly exceeded the number put forth in the grant work plan. It was proposed that 40 consultations be done during the 26 month grant period while 91 consults were actually done. This is a reflection of the general public's awareness of the wide range of services that the CRLA provides and the ongoing watershed surveys that are useful in bringing erosion problems to property owner's attention. The consultations proved to be a useful tool used to heighten property owners awareness about NPS issues and to bring problems to light that might be future NPS projects. It has been found that property owners who sought consultations and received technical advice regarding remediation of NPS issues are then better stewards of the watershed. The consultations were done first by the executive director of the CRLA, Rebecca Manthey and then by Peter Wilkens of the CRLA with oversight by Jeff Freddenberg of the KCSWCD.

Task 4. Design and Installation of BMP's on Selected Sites-The most significant NPS work in the history of the CRLA was accomplished during this grant cycle. It is not the fact that more BMP's were installed than proposed, 23 versus 20, that makes the work done noteworthy. Rather, it the scope of the challenges faced during 2007 and the coalition assembled to address the significant problems in one China subdivision that makes the work noteworthy. Tarybelu Lane, a 22 lot subdivision on the east shore of China Lake, was

identified in a 2000 watershed survey as a significant NPS of pollution to China Lake. While the subdivision met all MDEP codes at the time of construction in 1987; time, steeply sloped gravel roads, and now inadequate erosion control measures all contributed to the tons of annual sediment runoff into nearby China Lake. Attempts to address the wide ranging problems in the subdivision had never advanced beyond the early planning stages in the past due to property owner squabbles, lack of funding, and lack of a clear technical plan for what needed to be done. With the 2007 partnership between the CRLA and KCSWCD the groundwork was in place to tackle larger projects than had been done in the past. In the late winter of 2007 the CRLA, KCSWCD, and our grant advisor at the MDEP met to discuss the logistics of doing a large project within the framework of the current 319 grant, the technical challenges the project would pose, and permitting concerns. The CRLA board then voted additional funds to supplement the 319 grant money. Armed with a plan to address the multitude of NPS issues on Tarybelu Lane and funding to offset up to 1/3 of the cost of the project a meeting took place between the CRLA Steering Committee and the Tarybelu Lane board. The results were overwhelmingly positive. All 22 lot owners agreed to and ultimately contributed \$5,000.00 each towards the construction costs. Jeff Freddenberg of the KCSWCD design the 14 BMP's on this project and coordinated the competitive bidding process. With the assistance from the Town of China we were able to couple the CRLA's bid to the town's annual paving and road work ensuring that the CRLA would get the lowest materials cost. We all held our breath during the final planning meetings and in the end NPS/BMP work went smoothly, much to the credit of all involved. The total construction cost was \$156,000 with design and project oversight cost of an additional \$10,000. Of this amount the current grant funded \$32,479, property owners funded \$110,000, with the CRLA funding \$23,520. In 2006 nine additional NPS were addressed that were gravel roads with erosion issues that had been previously identified.

In the 26 month grant period more money was put into actual BMP construction than promised \$47,200 versus \$30,000 and significantly more match was generated \$147,945 versus \$31,960 for BMP design and installation.

Task 5. Pollution Reduction Estimates- The yearly estimates for NPS pollution load reduction were submitted as required using accepted methods. At the time of grant award it was estimated that the pollution load reduction over the life of the grant would be in the range of 10-15 tons of sediment. Actual load reduction estimates for the grant period were 61 tons demonstrating the significant scope of the projects completed.

Task 6. Publicity, Education, Outreach- Public outreach and education is a large part of the ongoing work of the CRLA. During the grant period 2 large community educational meeting were hosted to discuss NPS issues and water quality problems in China Lake. These Annual Meetings of the China Lake Association each had 50-75 attendees. The CRLA sponsored 2 invasive plant workshops one each spring in the grant period. As a result of the workshops 20 area high school students became certified "Invasive Plant Inspectors" and went on to do

“Courtesy Boat Inspections”(CBI) during the summer months on member lake boat launch sites. A total of 1200 CBI’s were done during the grant period. Educational activities extended to the China Middle School 5th graders (50 each year) who enjoyed a day on China Lake sponsored by the CRLA and the China Lake Association. The education day included water quality monitoring, invertebrate sampling, and a tour of the water treatment plant. Each summer the CRLA sponsored a summer boat tour of China Lake highlighting NPS/BMP sites, areas of ongoing erosion and discussing the need for ongoing water protection work. In 2006 and 2007 approximately 100 people took the 10 mile lake tour. Frequent educational articles appeared in area newspapers written by CRLA staff and an annual newsletter with CRLA news was published and mailed to over 2100 homes in the China Lake watershed.

III. Deliverable Summary

1. The Grant Agreement was signed on 2/2/06 and delivered as required.
2. Semi-annual progress reports were completed and filed on the following dates:
 - 11/14/06
 - 5/15/07
 - 11/19/07
3. Summary listing of Watershed Property Consultations
 - 2006 consultations (57) submitted 11/14/06
 - 2007 consultations (34) submission 3/1/08
4. NPS Site reports
 - 2006 submitted 12/6/06
 - 2007 submitted 12/20/07
5. Pollutants Controlled Report
 - 2006 report filed 12/3/06
 - 2007 report filed 12/23/07
6. Outreach Materials
 - 2006/2007 material submitted 3/1/08

Summary: All deliverables have been filed. The various filings were clearly worthwhile as an organization tool during the course of the grant and helped as a measure of success of the project when compared to the goals at the beginning of the grant period.

IV. Project Outcome

By every measure outcome for this grant was positive and many of the successes have already been noted. The overriding success over the grant period was the heightening of resident's awareness in the China Lake watershed regarding the threat that NPS pollution poses to water quality. This translates into widespread ongoing support for funding the CRLA through the Town of China budget process and increased funding for the CRLA from the Kennebec Water District. The Town of China has been supportive of a community wide Phosphorus Control Ordinance and continued NPS work. Much of this is due to the ongoing educational efforts of the CRLA.

By the numbers, the 2003R-37 China Lake NPS Reduction Project resulted in the design and installation of 23 BMP's, 91 property owner consults, and an estimated 61 tons of sediment will no longer be reaching China Lake. Over 450 people attended one of the educational activities that was sponsored by the CRLA during the grant period and 2100 year round homes and 400 shorefront property owners received the annual publication done jointly by the China Lake Association and the CRLA. This is in addition to articles sponsored by the CRLA appearing in area newspapers, the Town Line, the Morning Sentinel, and the Kennebec Journal on a regular basis over the grant period.

The desired end result is an end to the seasonal algae blooms. Unfortunately, it cannot be reported that the annual blooms have ended although the water quality in China Lake continues to remain stable while that in nearby Three Mile Pond and Lovejoy Pond declines. The threat to water quality caused by rapid development in the China Lake watershed has been partially offset by the gains that we have achieved during the grant period.

V. Summary of Total Expenditures

	NPS Grant	Non- Fed Match
Grant Agreement	\$60,905	\$48,468.00
Funds Expended	<u>\$60,905</u>	<u>\$165,852.00</u>
Funds Balance	0	+\$117,384.00

VI. Non-Federal Match Documentation/Certification

Match was calculated as follows:

Actual cash payments from landowners to their contractors/suppliers for cost-share site work were verified by receipt of an itemized bill from the contractors/suppliers. The grant contribution was subtracted from the total cost of construction and this amount was recorded as cash match by landowner last name. The notation CSA means cost-share agreement. Volunteer time was assigned the following values: \$10/hour for hand labor and workshop training; \$20/hour for professional time (meetings, etc.). These two rates were chosen as low-end averages for the many types of manual and professional work descriptions listed by the Maine Commission for Community Service. Using these rates ensures that our match reporting is conservative.