Commissioner's Corner
by
Carol A. Murray

Chocorua Lake: Becoming Part of the Resource Protection Solution

It's one of the most scenic views in New Hampshire. You're driving along New Hampshire Route 16 in Tamworth and there, not far from the road, is the beautiful Lake Chocorua in the shadow of Mt. Chocorua.

It's that close proximity to the lake for about a mile that had those trying to protect the quality of the water concerned about the impact of runoff from Route 16. Since 1978, volunteers monitoring the lake had become increasingly concerned about growing levels of phosphorous. Originating from a variety of sources, including fertilizer, detergents, gasoline and oil, phosphorous can accelerate the growth of algae and thus deteriorate water quality. About 75% of the phosphorous entering the lake was traced to the Chocorua River, with 15% attributed to storm run-off from Route 16.

Also discovered near Route 16 were sediment plumes from highway runoff that created new shallow areas where invasive plants were growing.

The Chocorua Lake Watershed Team, made up of state and federal agencies and local interested citizens, approached the NHDOT in search of a solution. Ken Kyle, the Highway Maintenance District 3 Engineer at that time, and his personnel worked with the watershed team on a "Berms and Swales Project".

This "Best Management Practice" approach involved installing a system of berms, swales, settling and filtering basins, to control storm run-off, improve safety and reduce noise.

The results of this cooperative effort have been dramatic. According to researchers from the University of New Hampshire, the amount of phosphorous entering Lake Chocorua along the eastern shore near Route 16 has been reduced by 82 percent!

On the Move

As an indication of its success, the North American Lake Management Society recently recognized this project with a Technical Achievement Award.

On October 31, I joined the Chocorua Lake Association in signing a Memorandum of Understanding that pledges an ongoing cooperative relationship to protect the lake.

Under the historic agreement, the NHDOT pledges to continue "best management practices" in both maintenance and construction activities to be sensitive to water quality issues and to notify the lake association of meetings or projects affecting Route 16.

For its part, the Chocorua Lake Association will monitor the best management practices, provide annual water quality reports and attend any NHDOT meetings related to Route 16.

This success story is a great example of how a cooperative rather than adversarial approach can yield positive results for New Hampshire. It also shows that transportation and environmental challenges and issues involving both the private and public sectors can lead to complementary solutions without compromising one or the other's goals.

Commissioner Murray signs the Memorandum of Understanding on October 31 for Lake Chocorua.

Looking on are Bob Griffin (Chocorua Lake Association) and Ken Kyle, NHDOT Assistant Director of Operations.

Believed to be the first of its kind in New Hampshire, the agreement promises ongoing cooperation between the NHDOT and the Chocorua Lake Association to use best management practices to protect and maintain the quality of the lake near NH Route 16 in Tamworth.

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Post-it Fax Note 7671
Date 2/13/96 # of pages 4
To Joanne Crowe Co/Dept PB&Q
From Bill Hauser Co NHDOT
Phone # Phone #
Fax # 617-482-8487 Fax #
MEMORANDUM OF UNDERSTANDING
BETWEEN THE
NEW HAMPSHIRE DEPARTMENT OF TRANSPORTATION (DOT)
AND THE
CHOCORUA LAKE ASSOCIATION (CLA)

Regarding Storm Water Management in the Route 16 Corridor, Chocorua Lake Watershed in Tamworth and Albany

This Memorandum of Understanding (MOU) describes the responsibilities of the parties relative to management of storm water treatment measures installed to reduce pollution of Chocorua Lake from Route 16 runoff, and in planning and constructing future highway improvements in the Route 16 corridor. The storm water treatment measures were installed through a collaborative project among many local, state, and federal organizations and agencies, including the DOT and CLA, and include all ditches, stone-lined channels, culverts, retention basins, and plunge pools within the Route 16 Right-of-Way from the intersection of Route 16 and Washington Hill Road south to the intersection of Route 16 and Chocorua Lake Road.

The water quality of Chocorua Lake has shown a continued decline over the past twenty years. Increased phosphorus loading from sedimentation has led to a decline in lake clarity and an increase in plant abundance. Increased algae concentrations and weed growth deplete oxygen and result in decreased fish populations. Runoff from Route 16 has also eroded the beach area and moved sediments into the swimming area, which has led to large clusters of lily pads impairing the swimming quality of the lake.

To address these issues, the project partnership described above installed measures to minimize the runoff, erosion, and sediment problems. The measures are expected to result in significant reduction of pollutants discharged into Chocorua Lake, stabilization and protection of a highly popular tourist destination, continued recreational use of Chocorua Lake, and increased enjoyment of Chocorua Lake by area residents.

The success of the project in meeting these goals depends on the measures receiving regular maintenance and monitoring to insure proper function.

Widening of Route 16 in Albany within the Chocorua Lake watershed is included in DOT's ten-year plan for state highway improvements. The parties to this MOU agree that due diligence is required during future construction projects to protect the quality of Chocorua Lake. This will assure that the gains made by the recently constructed storm water treatment measures will not be negated by future construction.

This MOU describes the roles of DOT and CLA in the long-term maintenance of storm water treatment measures in the Route 16 corridor, and in planning and implementing storm water treatment measures for future highway construction in the Route 16 corridor. This document will remain in effect until terminated by consent of both parties.
For the purpose of this Document, the DOT and CLA agree to cooperate as follows:

A. The Chocorua Lake Association agrees to:

1) Provide periodic inspections of the storm water treatment measures in the Route 16 corridor;
2) Document the condition of the measures with respect to build-up of sediment, integrity of vegetative cover, and performance during storm events,
3) Notify DOT, District 3, as soon as practical of anomalous conditions which indicate that the storm water treatment measures are not functioning properly or that pollutants are entering the lake;
4) Provide DOT, District 3, with annual reports of the periodic inspections, and of lake water quality, by April 1 of each year,
5) Attend project planning meetings for Route 16 improvement projects in Albany, Madison, and Tamworth, and provide suggestions for storm water treatment measures for the protection of Chocorua Lake and its watershed,
6) Provide periodic inspections with Department personnel during the construction of improvements to Route 16; and
7) Notify DOT, Project Administrator, of any erosion and sedimentation problems encountered during the construction of improvements to Route 16.

B. The NH Department of Transportation will:

1) Provide regular maintenance of the storm water treatment measures in the Route 16 corridor, including removal of sediment build-up and stabilization of eroded soils,
2) Respond with due diligence to CLA notifications of storm water treatment measures maintenance needs and pollution reports,
3) Notify CLA and the Chocorua Lake Conservation Foundation (CLCF), by U S Mail, of any project planning meetings for Route 16 construction projects and solicit CLA input with respect to storm water treatment measures and Chocorua Lake water quality;
4) Notify CLA and the CLCF, by appropriate means to be determined, of construction schedules for Route 16 improvements,
5) Insure that highway construction practices and maintenance are sensitive to Chocorua Lake and its watershed; and
6) Respond with due diligence to CLA notifications of erosion and sedimentation problems encountered during the construction of improvements to Route 16.
IN WITNESS WHEREOF, the respective parties have hereunto set their hands on the dates indicated

Carol A. Murray, Commissioner  
New Hampshire Department of Transportation  
P.O. Box 483  
Concord, NH 03302-0483

Bob Griffin, CLA Board Member, for

Alex Moot, President  
Chocorua Lake Association  
P.O. Box 105  
Chocorua, NH 03817

Date 10/3/06

Date 10-31-02