

## ENVIRONMENTAL REVIEW

I.	WATER SYSTEM NAME	EMERALD LAKE VILLAGE DISTRICT
	ADDRESS	5 WEST MAIN STREET HILLSBOROUGH, NH 03244
	PROJECT TITLE	WATER SYSTEM IMPROVEMENTS
	WATER SYSTEM EPA ID	1141020

### II. INTRODUCTION

The Emerald Lake Village District (ELVD) has applied for funds through the State of New Hampshire Department of Environmental Services Drinking Water State Revolving Loan Fund (DWSRF), in accordance with Chapter Env-Dw 1100. This document addresses the requirements of Env-Dw 1107, the Environmental Review.

### III. BACKGROUND

The ELVD is a lakeside community adjacent to Gould Pond in the Town of Hillsborough, New Hampshire. Currently, there are approximately 550 year-round and seasonal existing homes located on privately owned parcels within the District's boundaries. The ELVD does not provide fire protection to its customers.

The ELVD water system consists of approximately 14 miles of water mains constructed in the 1960's. The system is primarily composed of small diameter water mains ranging in size from two to four inches. There are eight active bedrock wells within the ELVD water system: the Hummingbird Well, the Meetinghouse Well, the Patten Hill Wells No. 6, 7, 8, 9, 11, and the Mary Rowe Well. There are currently four underground steel tanks located in the vicinity of Patten Hill Well No. 6. Each tank is vented and has a dedicated water line to the system. Reportedly, the total combined storage volume for all four tanks is approximately 40,000 gallons. A 180,000 gallon capacity prestressed concrete water tank was constructed in 2008. The tank has a diameter 40 feet and a height of 19 feet. The overflow elevation is approximately 833 feet. In 2005, a new water treatment system was installed in the existing Meetinghouse building in order to address elevated concentrations of fluoride and arsenic that exceed the respective maximum contaminant levels at the Meetinghouse Well and Mary Rowe Well.

The following documents have been developed and are available for public review:

- The Water Supply Master Plan, prepared by Tata & Howard, Inc. April 2009.

### IV. PURPOSE and NEED

#### Meter Installation Program

There are no service meters on the existing connections at this time and it is recommended that the ELVD implement a meter installation. Due to costs, the ELVD is proposing to install dataloggers in the distribution system, an alternative to pursuing a full meter installation program. This will allow better monitoring of water usage verses water pumping to identify potential sources of unaccounted-for water including service line leaks and water main breaks. The ELVD will install service meters in a phase approach in the future.

#### Water Main Improvements

The proposed water main improvements consist of new water mains on Patten Hill Road, Pine Glen Road, Gould Pond Road, Emerald Road, and Hummingbird Lane. The proposed water main replacements will establish a larger diameter transmission grid which will improve flow throughout the system. The existing main on Pine Glen Road has already had multiple breaks and is in need of replacement at this time. There is a gap in the distribution system located along Gould Pond Road resulting in all water mains south of Emerald Lake (Gould Pond) to receive water from a 4-inch diameter pipe on Red Fox Crossing. Looping the system will provide redundancy for users south of the lake in the event of a water main break and will eliminate a gap in the existing distribution system.

## V. DETAILS of PROJECT

### Meter Installation Program

As previously discussed, the ELVD is proposing to purchase and install a minimum of six wireless flow dataloggers at locations within the distribution system.

### Water Main Improvements

The proposed water main improvements include the construction of approximately 400 linear feet of 8-inch water main on Patten Hill Road from the existing 8-inch water main from the water storage tank to Pine Glen Road, approximately 3,150 linear feet of new 8-inch diameter water main on Pine Glen Road from Patten Hill Road to Gould Pond Road, approximately 1,450 linear feet of 8-inch diameter water main on Gould Pond Road from Pine Glen Road to the extremity of the existing 2-inch water main on Gould Pond Road near Hummingbird Well, approximately 1,750 linear feet of new 8-inch diameter water main on Gould Pond Road from Pine Glen Road to Red Fox Crossing, approximately 2,900 linear feet of new 8-inch diameter water main on Emerald Road, and approximately 3,400 linear feet of new 8-inch diameter water main on Hummingbird Lane. Although fire protection is not currently provided in the system, it is recommended that hydrants be installed every five hundred feet for flushing and maintenance purposes.

The total cost of all the proposed improvements is approximately \$1,800,000. The Emerald Lake Village District has applied to borrow up to that amount.

## VI. ENVIRONMENTAL CONCERNS and MITIGATION

The following areas of environmental concern summarize the possible impacts from this project. The primary impacts are short-term and will affect the area only during the period of construction.

Air: Air impacts will be limited to dust and diesel or other fuel exhaust created during the construction of the project. There are no anticipated long-term air impacts.

Noise: Noise from heavy construction machinery is the only noise impact anticipated. There are no anticipated long-term noise impacts.

Surface water, groundwater and wetlands: This project will require a Shoreland Permit. Based on information obtained from NH Granit, the only wetlands located within the proposed project

areas is in the vicinity of the water main replacement on Red Fox Crossing. Haybales, silt fencing, and any additional mitigation measures shall be used during construction to minimize impacts on surrounding wetlands. Please refer to the attached Figure No. 2.

Wildlife: No impacts to wildlife are anticipated from this project.

Social and Economic: The social and economic impacts from the project are favorable. Water customers will benefit from improved water quality and reliability from the infrastructure upgrades. The financial impact on the ratepayer will be reduced through the use of low interest rates and principal forgiveness through the Drinking Water State Revolving Loan Fund. The dataloggers will assist in identifying leaks in the distribution system, which will reduce unaccounted-for water loss and associated costs.

Recreation and Historic: No impacts to recreational or historic sites are anticipated.

Indirect impacts: There are no indirect impacts anticipated from this project.

## VII. PUBLIC REVIEW

The Emerald Lake Village District's Legislative Body, at its Annual Meeting, voted to authorize funding in the amount of \$2,400,000 for this project on March 20, 2010.

A public notice will be published by the Emerald Lake Village District and a 30-day comment period will be held in accordance with the DWSRF rules.