

August 2013

### **Berlin Water Works**

Water Commissioners for this report period were Paul W. Poulin, Lucien F. Langlois, Michael Caron and David Bertrand; Ex-officio member was Mayor Paul R. Grenier.

The BWW has not increased water rates in sixteen years. The NHDES 2012 Water Rate Survey was published and Berlin Water Works ranks 10th highest in the State for an average of \$595/per year per four person household. BWW has been able to maintain water rates because of cross-training employees and elimination of work through planned improvements and the implementation of BWW “force account” construction. The results of these efforts have been reduced cost through reduced staffing. There have also been continuous improvements reducing other operating cost, most noted this fiscal year are the energy efficiency improvements at the office and garage facilities. Smart Energy installed 90 – 250 watt panels for a total system of 22.5kw. Public Utilities Commission pre-approved the solar photovoltaic incentive application in the amount of \$18,000 to be received in September 2013. Smart Energy also provided the Board with a link so that the BWW Solar System performance can be observed thru the City website under Berlin Water Works. And finally, we have continued “force account” work in order to offset operating cost by performing capital improvement projects with BWW resources.

The 1993, 1994, and 1995 Bonds continue to be a major financial burden on the BWW’s resources. The good news is these 20 year bond(s) term are nearing closure (FY2016). The availability of new low interest system improvement loans and grants has enabled the BWW to perform “Force account” construction work to improve our systems and balance the operation and debt budgets. Berlin Water Works has also been in contact with NHDES about refinancing the seven (7) NH State Revolving loans for additional potential savings. This is expected to be completed in October 2013 with an estimated savings of \$480,000.

BWW continues to offer on line bill paying for customers. Customers can pay their bills by going to the City of Berlin Website [berlin.nh.gov](http://berlin.nh.gov). Invoice Cloud and Northern Data Systems are providing electronic bill presentment and online payment service. The system allows the office clerks to enter credit card payments for customers here at the office or over the phone. The system also allows customers to choose paperless billing. Approximately 11.23% of our customers are registered to use the online billing service. Also, the BWW has an auto-pay option for which 176 customers currently participate.

In October 2012, the Board of Water Commissioners changed from quarterly to monthly billing for four larger water users; the State Correctional Facility, the Hospital and the two Nursing Homes as was done for the Federal Bureau of Prisons. The change

to monthly billing started in January 2013 for these four additional customers. Also Burgess Bio-Power was added to monthly billing in June 2013.

The water usage and revenue from the Federal Prison Facility has been much lower than initially forecast to-date.

BWW has continued to install backflow devices at customer's homes, and have changed to new UFR/dual check valve that will improve meter performance at very low flows. BWW has installed 1038 radio read units to-date. The Board authorized the purchase of a third meter reader with 500 Radio reads during their December 2012 meeting.

During the winter of 2012/2013, we had 17 people running water to prevent service line freeze-up. Some of these customers started running water on January 11, 2013 until shut-off on April 8, 2013. The balance of the 311 running water customers did not have to run the water in winter 2012/2013. We had 6 freeze-up that required thawing and 3 freeze-ups inside thawed by property owner or needed water shut off outside. Efforts continue to reduce the number of running water customers, of which there were 1003 of 3500 customers in the winter of 2000-2001.

	<b>FISCAL 2012</b>	<b>FISCAL 2013</b>
Total Flow	249,556,005*	314,754,178
Difference from previous year	8.52 % decrease	26% increase
Gallons per Day	.684 million gallons*	.862 million gallons
Running Water Customers	70	17
Running Water Start - early	January 19, 2012	January 11, 2013
Running Water Start - regular	—	-
Running Water Finish	March 21, 2012	April 8, 2013
Frozen Water Calls - outside	1	6
Frozen Water Calls - inside	14	1
Hydrant Flushing	9/6/11 to 9/16/11	8/1/12 to 8/10/12
Number of main line breaks	1	5
Number of service line breaks	3	1

\* new record – low

Our lead and copper water sampling program passed the last five rounds of testing in June of 2006, December of 2006, September 2007, September 2008, September 2009 and September 2012. The testing results from September 2012 showed all passed for copper and three failed for lead. The State of NH Department of Environmental Services dropped our tests required from 60 samples to thirty sample sites. The overall average lead and copper sample levels have dropped to new low levels. Please note that the water leaving the Water Treatment Plant is free of lead and copper and that the resulting lead and copper are attributed old portions of the distribution system, customer pipe systems, and/or dead end lines. Water sampling will continue to monitor lead and copper levels. The next round of testing is scheduled for 2015. Water Quality Report for calendar year 2012 was distributed to all water customers as a bill stuffer in the May 2013 Billing.

Melanson, Heath & Co PC was accepted by the Board to perform the Water Works financial report for period ending June 30, 2012 as well as FY 2013, and FY 2014. Our FY 2014 budget of \$4,108,407 as presented at the Commissioners May 29, 2013 budget hearing providing \$2,702,071 for operations and \$1,406,336 for water bond and loan debt payments, was approved June 12, 2013. This budget represents the sixteenth consecutive year with no water rate increase for its customers.

BWW purchased two Chlorine Analyzers Hach Model #Cl17 and a new stream & current Monitor for the Ammonoosuc Treatment Plant Facility. A new repeater was approved for purchase at the Forbush Water Tank after a failure with the present system. A flat screen television was installed in the Customer entrance of the office to display current photos of BWW project work. Garage maintenance safety concerns were addressed by the purchase of six (6) new hydraulic column lifts for the new garage facility.

A new ten thousand pound Magnum hammer attachment was purchased for the Komatsu excavator; the old hammer was used in trade. This equipment is used for “force account” water main installation rock and ledge removal.

The FCC Narrow banding mandate that went into effect January 1, 2013 required radio frequencies to be changed from 25 kHz to 12.5 kHz. In October 2012, the new Berlin Water Works radio system was completed. Following the installation, the telecommunication manager for the Berlin Police Department contacted Berlin Water Works to request that we pay a portion of their bill to have the new radio system reprogrammed so that it would work with their radio system.

### **IMPROVEMENT PROJECTS:**

Superintendent Viens and Craig Carrigan went to inspect the Godfrey Dam after Hurricane Sandy and the found that the work that was completed as a result of Tropical Storm Irene withstood the high waters very nicely. The BWW installed 12,429 feet of water main with 2,323 feet of services during the calendar year of 2012. At years end there was approximately 210 feet of Galvanized line, approximately 6.8 miles of Cast Iron Water line, as well as 5 miles of transmission line to be replaced. Berlin Water

Works received the Summary Report Water CAD Distribution System Model Update as prepared by Provan & Lorber Engineers & Planners dated April 2013.

BWW 12-1 NHSRL #10 – On October 1, 2012 Superintendent Viens attended a Council meeting to request permission to install a water main under the Androscoggin River between Riverside Drive @ Woodward Street and Hutchins Street, the Council granted permission for the new line. The water line was installed in early November the length of the crossing was 690 feet. In June 2013, main line work started on Riverside Drive from Noury Street to Woodward Street, this project will tie in the river crossing from Riverside Dr to Hutchins Street in 2013.

BWW 11-3 NHSRL #9 –BWW applied and was approved for a “Green” Energy Grant in the amount of \$1,000,000. This loan funded the 22.5kw – 90 panel solar systems and all the energy improvements at the new BWW 55 Willow Street facilities. Work is ongoing for a solar system at Godfrey Dam and a Hydro project at the Ammonoosuc Treatment Plant facility.

BWW 11-2 NHSRL #8 – Work completed this Fiscal Year includes planning for the High Pressure Line work on Jericho Road from Lessard Farm Road to the PRV Vault, and repair to the 16 Inch River Crossing from Community Field to Mason Street. The total project includes the carryover streets from BWW 09-2 NHSRL #7 as well as Summer Street from Elm Street to Spruce Street, and NHDOT project on Route 110.

BWW 07-1 EPA #8 – The first pay request on this grant was submitted in January of 2012. The work completed this fiscal year included some service line work and water main replacement on Main Street from Eighth St to Twelfth Street. The 13 services on Main Street were bored under the pavement to prevent replacement of asphalt at each service line location. The Final Pay Request on this project was completed on October 1, 2012. This grant is now closed.

BWW 10-1 EPA #9 – The street completed through this grant was Main Street from Eighth Street to Eleventh Street. Other Scope work included Pleasant Street sections from Mechanic Street to High Street, NH DOT Route 110 Project from First Ave to Wight Street and Phase 1 of the Brown Farm Well improvements. Provan and Lorber have been working on the Brown Farm Well improvements. The Engineering Report was completed and final design with bid documents for Phase I have been completed. The balance of this project was spent on the Brown Farm Well Upgrade Project. The Final pay request on this project was submitted on January 23, 2013 and the grant closed.

BWW 11-1 EPA #10 –The grant scope of projects includes the carry over streets from BWW 10-1 as well as completion of Brown Farm Well Improvements Phase II. Berlin Water Works has completed the installation of the new pump and motor at the well and new connections for natural gas as well as several electrical upgrades for the Brown Farm well. Testing of the new well pump all of the punch list items will be completed in FY 2014.

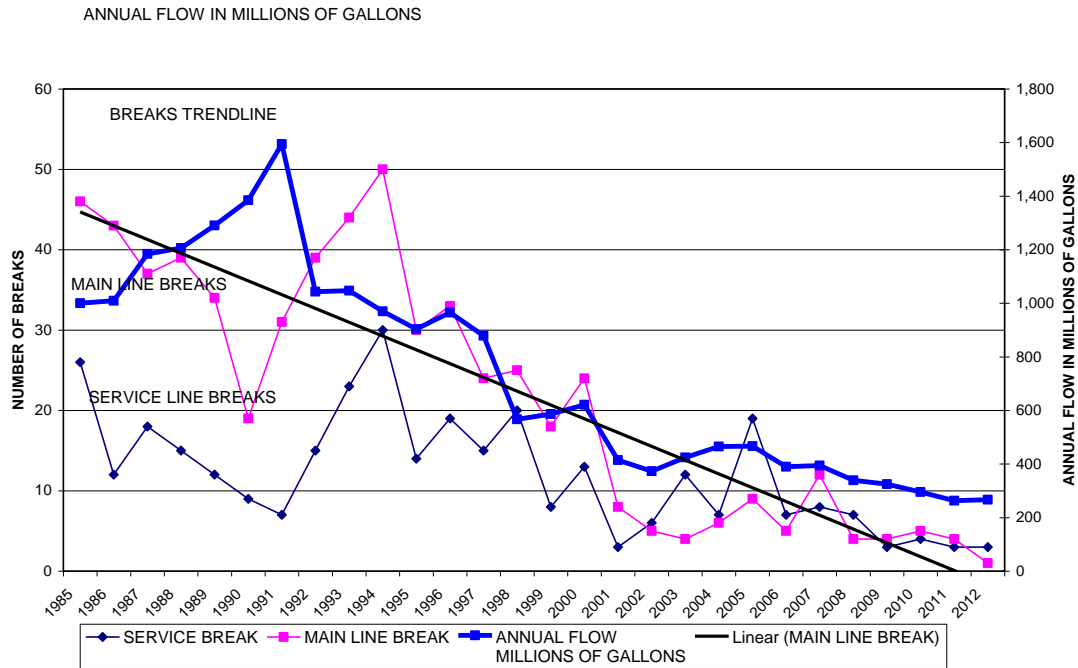
BWW 09-1 Rural Development #3 –The majority of work addressed with this Loan & Grant during FY2013 was the completion of Eighth Street, Norway Street and start of work on East Mason Street, Sunset Street and Sullivan Street.

BWW 12-2 Rural Development Loan #5 – Godfrey Transmission Line Project- BWW was approved for a \$1,000,000 loan from Rural Development. On February 7, 2013, City Manager Patrick MacQueen signed the loan package for the Godfrey Transmission Line Project. Berlin Water Works hired George Pozzuto a former director from the Forest Service to assist with the application to National Forest Service for the necessary permits to repair or replace sections of the Godfrey Transmission line from the Godfrey Dam to the Ammonoosuc Treatment Facility that are located through 2 ½ miles of National Forest. Pipe testing services by Echologics Engineering (A Division of Mueller Company) were hired to evaluate and analyze the condition of transite pipe on the Godfrey Transmission Line. This technology is a way of evaluating/analyzing the condition of transite pipe, showing the integrity, thickness, seams and root growth.

	<b>Total 2013</b>	<b>2012</b>	<b>2013</b>
Curb-to-curb street paving (includes overlay)	10.88	.70	0
Number of New Meters	3584 total in system	11	30
Number of New hydrants	418 total in system	6	10
Number of Replaced services	3500 total in system	31	60
New water main installed – since 1990	2572	2.22	2.35

Improvements to the water distribution in the City of Berlin continue with planned replacement of small diameter galvanized mains (250 feet remaining as of June 2013) and 1890 thru 1990's vintage unlined cast iron mains (35,129 feet remaining as of June 2013) with the highest frequency problems corrected first. Also the replacement of water mains are selected and then designed to improve fire protection flow capabilities. The temporary staffing was also increased to support increased work levels. The results of these increased efforts will be a much improved distribution system.

## WATER LINE BREAK HISTORY



Thanks to all BWW employees, Water Works Commissioners, the Honorable Mayor Paul Grenier, and the City of Berlin for their continued support for the past year. The BWW has completed and is continuing work on significant improvements that will improve our water system and reduce our operating cost for many years into the future.

Roland L. Viens  
Superintendent