



## **BERLIN WATER WORKS**

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

The BWW has not increased water rates in eighteen 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 to offset operating cost by performing capital improvement projects with BWW resources. The 55 Willow Street Office solar system has produced a 50% savings on electric bills. We received a check dated May 12, 2015 in the amount of \$950.00 from Revolution Energy LLC for carbon credits. We pay about \$30,000 for yearly electricity at the Treatment Plant. The new Hydro will soon begin to generate enough power to supply the plant and generate carbon credits.

The 1995 Bond continues to be a major financial burden on the BWW’s resources. The 1993 Bond was paid off in July of 2013. The 1994 Bond was paid off in August 2014 and the 1995 bond will close in FY 2016, the payment was approved at the June 17, 2015 Board Meeting. 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.

BWW has sold two of our original “Force Account” dump trucks and plan to sell more equipment as the work load decreases. A sewer camera was purchased for “Force Account” work and repair work and will be charged out at \$100.00 per day. The final payment on the CAT 420C was paid in FY 2015, and there is only one more payment due on the magnum hammer in FY 2017.

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 599 or 17% 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.

There are 3400 BWW accounts requiring metering and protective devices. BWW has installed 1843 backflow devices to-date at customer’s homes. BWW has installed 1150 radio read units to-date. BWW is currently upgrading old brass meters by replacing them with poly Sensus Iperl meters. FY 2015 BWW replaced 67 meters of the total replaced 63 were Sensus Iperl meters.

BWW celebrated Drinking Water Week from May 3, 2015 to May 9, 2015 with open house at the Ammonoosuc Treatment Plant Monday through Friday. Mayor Grenier signed a proclamation for Drinking Water Week. The turnout was strong for National Water Week, 180 students and a few residents visited the plant for the tour.

During the severely cold and long winter of 2014/2015, we had 258 people running

water to prevent service line freeze-up. Some of these customers started running water on February 4, 2015 until shut-off on April 24, 2015, the first in ground freeze-up was on January 9, 2015 because of frost in the ground and lack of early snow. The balance of the 167 running water customers did not have to run the water in winter 2013/2014.. We had 230 freeze-ups that required thawing. Of the 230 thaws, 171 froze curb to main, and 59 froze curb to house. We recorded 17 freeze-up inside thawed by property owner. Gorham Water Works, AD Excavating and temporary help were used in our efforts to keep up with the frozen water pipe customers Berlin Water Works had 11 Customers on Temporary Water lines this past winter due to frozen mains and services that could not be thawed. The last frozen water main on Jericho Road thawed on May 8, 2015. Efforts continue to reduce the number of running water customers, of which there were 1003 of 3500 customers in the winter of 2000-2001. Berlin Water Works had a major water break that occurred Sunday night February 15<sup>th</sup>, 2015 on Jericho Road; the cost for the break has been determined to be \$26,000 for labor and outside services and approximately \$172k for 5.5mm gallons of water using our quarterly rates. Craig said that we followed our city isolation procedures in trying to locate the break. The leak was finally located off the road. The cracked water main was about eighteen (18) feet in length and water loss of approximately 14,000 gallons of water per minute. The backup well on the East Milan Road were activated adding about 1,000 gallons back into the system. Dave Patry, Superintendent of Gorham Water Works came out on Sunday night, to offer assistance. Gorham crews assisted BWW on Monday to help with customer freeze-ups. Bryan Lamirande, Administrator for the School System and Mike Perreault,

Public Works Director were also out helping to locate the leak. The Public Works Department crew was instrumental in helping thaw valves for the shutdown with their boiler. The community support was fantastic. People were bringing crews food and drinks. There was a lot of positive feedback from the public.

Berlin Water Works hosted a Flagging Training Seminar held on May 18<sup>th</sup>, 2015 put on by Primex to recertify the full and part time employees for traffic control. We included our four summer hires, six PWD employees and one BFD employee. Donny Labrecque attended a two-day seminar in Keene on Trident Filters, the type of filter system that we have at the plant. Berlin Water Works hired a full time mechanic utility person in training Grade III and the Water Works garage has been permitted for vehicle inspections by the State of New Hampshire.

	<b>FY 2014</b>	<b>FY 2015</b>
Total Flow	409,947,806	591,225,440
Difference from previous year	+30%	+44%
Gallons per day	1.123 million gals	1.62 million gals
Running Water Customers	124	
Running Water Start-early	1/2/2014	2/4/2015
Running Water Finish	5/6/2014	4/24/2015
Frozen Water Calls outside	70	230
Frozen Water Calls inside	1	7
Hydrant Flushing	8/26 to 9/13/2013	9/2 to 10/10/2014
Main Line Breaks	3	10
Service Line Breaks	3	6

Berlin Water Works has helped the School Department with work at the High School and at the Middle School. The entrance to the High School has been repaved and BWW will be installing the new service line for the Middle School from State Street into the school as well as work on the entrance to the school. The School Department pays BWW for the work and we have also been contacted about inspecting the School buses for the School Department. Berlin Water Works also contracted with Lancaster Water and Sewer to fuse 2000 feet of HDPE Pipe.

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 2014 was distributed to all water customers as a bill stuffer in the May 2015 Billing. Paperless customers received an internet address to view the Water Quality Report.

The outside garage retaining wall is 95 percent complete. To date December 17, 2014 \$5,210 (Est. \$11,450) has been spent on redi-rock wall blocks from Coleman Concrete. Crews put the top layer of blocks on the outside wall as of January 21, 2015. Tri State Curbing was contacted for a quote

to complete the granite curbing installation for the Berlin Water Works office building. This is the same company that is working in Berlin on the NHDOT Route 110 Bypass Project. City Manager Jim Wheeler has told Berlin Water Works that we can use some of the granite curbing at the Public Works Department to use on the sidewalk in front of the office building. A flag pole has been ordered for the office building. Also in other building upgrades The Androscoggin Facility roof repairs Phase II were completed in September. At the Ammonoosuc Treatment Plant facility, a new vacuum lifting system was installed to aid in the addition of 50 pound bags of Sodium Bicarbonate to the water treatment process. Dave Witham did a plant inspection and reviewed the Vacuum Lifting System and was very pleased. He also commented on how clean the plant is and that there were no safety issues seen.

Improvements to the Distribution System included four out of seven PLC units were replaced by Charlie Fritz of Electrical Installations, Inc. The RACO alarm system that is used as protocol to keep the on-duty person updated if an alarm should sound off was replaced in October. With the replacement of the RACO system we also had to update the SCADA system, the update was completed by Charlie Fritz, the upgrade to the SCADA system was planned for in the Berlin Water Works Budget. All upgrade was completed by January 21, 2015. The NHDES completed the Sanitary Survey, which is completed every three years on December 3, 2013; they did not identify any significant deficiencies and thanked Superintendent Viens and System Operator Steven Lefebvre for their assistance.

Melanson, Heath & Co PC was accepted by the Board to perform the Water Works financial report for period ending June 30,

2015 (FY2015). Water Works re-signed our Engagement Letter dated May 28, 2015 with Melanson-Heath Accounts & Auditors Firm for services from FY15 – FY17. The FY 2014 was completed and FY 2015 is currently in progress. Our FY 2016 budget of \$3,395,465 was presented by the Board on May 27, 2015 at the budget hearing providing \$2,380,667 for operations and \$1,014,798 for water bond and loan debt payments. The proposed budget was approved June 17, 2015. This budget represents the seventeenth consecutive year with no water rate increase for its customers.

### **IMPROVEMENT PROJECTS:**

BWW 15-1 NHSRL #11 – In FY 2015 Berlin Water Works applied and was approved for a \$2,000,000 State Revolving Loan. The Environmental Review has been completed and the first pay request was submitted on June 2, 2015. Work has started on Main Street from Peavey Lane to Eighth Street, Berlin Water Works is removing services, hydrants and intersections from the discontinued 1892 vintage 10” CI water main to the new 16” HDPE water main. This work is a prerequisite for the City of Berlin Road Rebuild and Paving Project from St. Anne’s Church to the Community College.

BWW 12-1 NHSRL #10 –In FY 2015 the water main line work was completed on Alpine Street, Pine Island Avenue and finish work on Riverside Drive from Twelfth Street to Noury.

BWW 11-3 NHSRL #9 –In FY 2015 he building for the Hydro project at the Ammonoosuc Treatment Plant has been completed. The header for the hydro has been installed and the turbine is in place. Electrical and Instrumentation work is also complete. Start-up of the Hydro is scheduled for July 2015. The completion

date for this project was extended from December 2013 to December 2015. BWW knew that the Green Energy funding would not be enough to cover all the costs but as it stands today we will be short by \$18,500 which is less than we estimated at the beginning of the project.

BWW 11-2 NHSRL #8 the total project includes the carryover streets from BWW 09-2 NHSRL #7 as well as NHDOT project on Route 110. – In FY 2015 BWW replaced the 6” cast iron water main on Summer Street from Elm Street to Cedar Street, a minor leak on the 6” cast iron main was discovered on Summer Street when we shut down for the project. Grafton Street water main replacement was completed from Lancaster Street to Sullivan Street. BWW is working with NHDOT to obtain a permit to install the new high pressure line on Jericho Road. The completion date for this project was extended from December 2013 to December 2015.

BWW 09-1 Rural Development Loan #3 – Water Main Replacement Project was completed with the last pay request in November 2014. Water main replacement work on Third Avenue was completed by BWW. Water main replacement of 6” cast iron water main with a 12” HDPE main and the installation of an 8” HDPE high pressure line on Grafton Street from Lancaster Street to Cheshire Street was completed eliminating 24 low pressure customers.

BWW 12-2 Rural Development Loan #5 – Godfrey Transmission Line Project-BWW completed work in the amount of \$450,000 on the Godfrey Transmission Line Project. BWW closed the Rural Development Loan at \$450,000; funds were received July 28, 2014. On September 9<sup>th</sup>, 2014, we were notified by Anne Getchell of RUD that the interest rate is 2.50% and not originally signed off on for 2.375%. They will issue

revised paperwork. The Board agreed to pay an extra \$100,000 on the loan with the first payment of \$5,671.23 due in January 2015. The balance due on the loan was paid before June 30, 2015 and has now been paid in full.

NHDOT Route 110 Phase II Project – BWW and NHDOT negotiated a contract to perform all water main and water service work on the Route Phase II Road Improvement Project. The contract is a time and material contract with fixed scope. A large portion of the work is due to existing water main and proposed drain system location conflicts. BWW started work in the summer of 2013 and work is on-going. At this writing water work was nearly completed from Green Street RR Bridge to beyond Duguay Street. BWW work on NHDOT project should be completed in FY 2016.

<b>WORK COMPLETED</b>	<b>Total FY2014</b>	<b>FY 2014</b>	<b>FY 2015</b>
Curb-to-curb street paving (includes	10.80 miles	0	0
Number of New Meters	3584 total in system	92	67
Number of New hydrants	420 total in system	10	0
Number of Replaced services	3500 total in system	65	25
New water main installed – since 1990	28.35 Miles	1.60	.82

The BWW installed 4,349 feet of water main. 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 2015) and 1890 thru 1920's vintage

unlined cast iron mains (29,741 feet remaining as of June 2015) with the highest frequency problems corrected first. As the streets for replacement of water mains are selected for design, improved fire protection flow capabilities are considered. The results of these increased efforts will be a much improved distribution system.

Raymond Raposa from the NEWWA (New England Water Works Association) sent a letter August 9, 2014 to congratulate Berlin Water Works as being selected to receive this year's Utility of the Year Award. Steve Lefebvre attended the NEWWA meeting on January 15, 2014 in Concord to receive the "Utility of the Year" award presented to BWW for making significant improvements to the water system infrastructure, customer service, staff training and operations dated September 23, 2014.

Superintendent Roland Viens retired from the Berlin Water Works on January 25, 2015 after fourteen years and eight months. At the December 17, 2014 Board meeting, Superintendent Viens thanked the Board and staff for all the years of support and stated that all things can be accomplished with a "GOOD TEAM". Craig Carrigan was appointed Superintendent on December 17, 2014 and Steven Lefebvre was promoted to General Foreman on April 15, 2015.

Thanks to all BWW employees, Water Works Commissioners, the Honorable Mayor Paul Grenier, the City of Berlin and the NHDES Drinking Water staff for their continued support. 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.

Craig Carrigan  
Water Works Superintendent

WATER LINE BREAK HISTORY CALENDAR YEAR

ANNUAL FLOW IN MILLIONS OF GALLONS

