

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 Berlin Water Works (BWW) has not increased water rates in twenty years. The NHDES 2015 Water Rate Survey was published and Berlin Water Works ranks 17th highest in the State for an average of \$615.84/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 June 6, 2017 in the amount of \$234.00 from Revolution Energy LLC for carbon credits. BWW signed a contract with First Point Power for eighteen months with a savings of approximately \$6,150. The normal cost for yearly electricity at the Ammonoosuc Treatment Plant was about \$30,000 before the Hydro was installed. We have seen a substantial drop in cost for electric power at the Ammonoosuc Treatment Facility. After some review and changes to the

original Hydro system, the process is running smoothly and generating electricity for the treatment facility; we have generated extra power that is credited to our electric account at the Ammonoosuc Treatment Facility.

BWW staff met with Robert Mann from New Hampshire Department of Environmental Services to complete a Sanitary Survey that is completed every three years. The survey is information collected by the DES Drinking Water and Groundwater Bureau for the purpose to review the capacity of the system’s source, treatment, distribution and management to continuously produce safe drinking water. We will receive the report at a later date. Superintendent Carrigan and Foreman Lefebvre both met with Mr. Mann to discuss the BWW distribution system and day to day activities. Mr. Mann was very interested and impressed in our use of the GIS system and how the work orders are being applied to daily work. Mr. Mann spoke of a possible presentation to other Water Districts that are currently not using this type of system. The final report was received on December 19, 2016; there were no concerns raised about the facility or practices at BWW, the State commended the BWW on the many positive features.

BWW paid off the New Hampshire State Revolving Loans #01, #02 and #03. We have only seven New Hampshire State Revolving Loans remaining and one Rural Development Loan. We received the official letter from the State of New Hampshire dated January 6, 2017 to confirm payment of the three loans. Superintendent Carrigan and City Manager James Wheeler met with Anne Getchell of Rural Development in November to review funding guidelines

for Rural Development Loans. Berlin is now listed under a population of 10,000 as the funding guidelines now do not include populations of prisons, thereby allowing the City of Berlin and BWW to apply for funding from Rural Development. BWW was also required by Rural Development to send out a Data Collection survey to customers regarding race, ethnicity and sex designation to ensure that we are following the Federal Laws prohibiting discrimination; the survey was sent out in the May Quarter Billing 2017. 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 some of our older equipment this year including the 1985 Mack Truck, the Grey Mack, Red Ford and Yellow Mack water Truck. All sales income is applied to BWW debt.

BWW continues to offer on line bill paying for customers who can pay their bills by going to the City of Berlin Website berlinnh.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 765 or 22% 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 3405 BWW accounts requiring metering and protective devices. BWW has installed 2043 backflow devices to-date at customer's homes. BWW has

installed 1515 radio read units to-date. BWW is currently upgrading old brass meters by replacing them with poly Sensus iperl meters. FY 2017 BWW replaced 183 meters and of the total replaced, all were Sensus iperl meters. BWW has installed a computer program for the iperl meter data logger; this enables us to look at the usage history of a meter that has been installed to help determine the cause of unusually high water usage and it also displays a graph of the information that can be shown to customers.

BWW celebrated Drinking Water Week from May 7, 2017 to May 13, 2017 with open house at the Ammonoosuc Treatment Plant Monday through Friday. National Water Week tours included two elementary classes and a few other residents who visited the plant.

During the mild winter of 2016/2017, we had 0 people running water to prevent service line freeze-up. Efforts continue to reduce the number of running water customers, of which there were 1003 of 3500 customers in the winter of 2000-2001.

The School Department contracted with BWW to help them replace the gymnasium floor at the Junior High. They found the concrete under the existing wood floor to be in poor condition due to the coal ash that was used for fill under the concrete, it destroyed the drain lines causing damage to the concrete. BWW staff has replaced the outside perimeter of drain line and will repair the roof drains that run into the courtyard as well as replace the drain line to the main line in the street. We completed this project and they are very pleased with the results. BWW installed a perimeter drain, replaced the old drain

system from the manhole in the yard to the street, installed new walkways, helped with the excavation of coal ash inside and replaced with gravel and graded the grounds away from the gym. This generated approximately \$30k for BWW revenues. The School Department has also requested a quote from BWW to remove old asphalt and complete preparation for paving at the Marston playground area and the walkways to the Middle School at the State Street entrance; BWW is awaiting bid response. A "thank-you" note from a student who attends the Berlin High School "School to Career Program" was received. The student "job shadowed" at the Treatment Facility. The student appreciated and enjoyed working with and learning about the daily operations from both of the Treatment Plant Operators.

BWW assisted Jay Poulin of HEB Engineers and the Nansen Ski Club with a 2" HDPE water line from the river through a culvert under Route 16 to tie into the Canon Ski Area Snow Gun to cover the landing at the ski jump for the recent jump. PWD assisted the BWW with the sewer jet helping to push the 2" line through the culvert. The Nansen Ski Club is thinking about installing a permanent line underground if future events are to take place at the ski jump.

BWW staff has been working with a new prospective customer, Romik Developers for Jericho Road Campground. Randall Suozzo of NH Department of Environmental Services wanted to make sure that we could provide adequate pressure and water. A letter from the Superintendent dated May 11, 2017 was sent to Dexter Lefavour at Horizons Engineering regarding the campground that under normal conditions, barring any

unforeseen problems such as a major break or drought, that our system has sufficient water supply and pressure to meet the demands of their development. The Superintendent sent a letter dated March 28, 2017 to James McMahon of the NHDOT Bureau of Highway Maintenance regarding the campground. The letter states that in our policy the customer owns and is responsible to maintain the service line from their property line into the building. The service connection at the water main in the street and the physical connection of the customer's water service line to the main line will be made by BWW. Romik received their permit to start from the State and they have applied for a water service permit from BWW.

BWW staff has also been in discussion with North Country Growers Engineers for a Greenhouse project on East Milan Road. A letter dated March 23, 2017 was sent to Eric Grenier from HEB Engineering who is working with North Country Growers. Mr. Grenier e-mailed the Superintendent on March 22, 2017 that NHDES-DW&GB requested a letter from the Berlin Water Works with supporting information. The letter states that our distribution system has sufficient water supply for this development barring any unforeseen problems such as a major break or drought. Also attached to the letter were our Rules and Regulations and that BWW is responsible from the main to the curb stop of the property. A backflow/meter building is to be installed on the 8" main service line to protect the BWW water system from the NCG'S system. BWW is looking forward to supplying the proposed Growers with water from the City's water distribution system. A meeting was held at City Hall with Richard Rosen who is the CEO of American Energy and his representatives with BWW and the City to

discuss the North Country Growers water and sewer concerns. One concern was the backflow meter house that we and the State required to be built. Steve Lefebvre showed them the Burgess Bio unit to have a better understanding of why this is necessary. Mr. Rosen also asked about a water discount but found that they will not use the additional water that would qualify for a reduced rate.

	FISCAL 2016	FISCAL 2017
Total Flow	626,419,382	624,724,307
Difference from previous year	6% increase	Less than 1% decrease
Gallons per Day	1.72 Million gallons	1.71 Million Gallons
Running Water Customers	0	0
Running Water Start - early	-	-
Running Water Start - regular	-	-
Running Water Finish	-	-
Frozen Water Calls - outside	0	1
Frozen Water Calls - inside	1	0
Hydrant Flushing	8/3/15 to 9/11/16	8/23/16 to 10/3/16
Number of main line breaks	8	1
Number of service line breaks	5	7

Our lead and copper water sampling program passed the last seven rounds of testing in June of 2006, December of 2006, September 2007, September 2008, September 2009, September 2012 and September 2015. The testing results from September 2015 showed all passed for copper and one failed for lead. The State of NH Department of Environmental Services dropped the number of test sites required from 60 sample sites 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 to 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 2018. Water Quality Report for calendar year 2016 was distributed to all water customers as a bill stuffer in the May 2017 Billing. Paperless customers received an internet address to view the Water Quality Report.

BWW continues to update the office and garage buildings at 55 Willow Street. Security cameras and door access system locks were installed at the office Building and the Garage. Plantings have been completed at the office and garage facilities with donated trees and shrubs.

Improvements to the Distribution System facilities included BWW staff cleaning all four storage tanks. A new heating system was installed at the Ammonoosuc Treatment Plant Facility.

Melanson, Heath & Co PC was accepted by the Board to perform the Water Works financial report for period ending June 30, 2017 (FY2017). Water Works re-signed our Engagement Letter dated May 28, 2015 with Melanson-Heath Accounts & Auditors Firm for services from FY15 – FY17. The FY 2015 was completed and FY 2016 was completed. Our FY 2018 budget of \$3,113,687 was presented by the Board on May 24, 2017 at the budget hearing providing \$2,409,820 for operations and \$703,866 for loan debt payments. The proposed budget was approved June 21, 2017. This budget represents the twentieth 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. Work has been completed on Main Street from Peavey Lane to Eighth Street where Berlin Water Works relocated services, hydrants and valves at intersections from the discontinued 1892 vintage 10" CI water main to the new 16" HDPE water main. This work was a prerequisite for the City of Berlin Road Rebuild and Paving Project from St. Anne's Church to the Community College. Approximately 2900 feet of old 10" cast iron main was eliminated on Main Street from Peavey Lane to Eighth Street. The six inch cast iron main on Birch Street was slip lined with a 4" hdpe water main. We also eliminated the old cross lot line near Cambridge from School Street to Main Street. FY 17 Work on Cedar Street between Prospect Street and Hillside Avenue has been completed; Hillside Avenue from Spruce Street to Portland Street has been completed. BWW ran a new 1" copper service line from the high pressure line on Grafton Street to 601 Lancaster Street, it was not completed as part of the Grafton Street Project, and the homeowner sent a thank you card to the BWW.

BWW 12-1 NHSRL #10 –In FY 2016 Berlin Water Works lowered the pavement in all the trenches across Riverside Drive from Twelfth Street to the White Mountain Community College in preparation of the City of Berlin repaving project from Twelfth Street to the College. FY 2017 BWW completed the intersection and water main work at Hillside Avenue and Willow Street where staff found that the water lines had been buried in coal ash. Work was started on Western Avenue at

Mink Street and will continue 1200 feet north on Western Avenue to spend down the remaining NHSRL #10. We processed the final pay request to close out the loan; the amount of the pay request exceeded the amount remaining in the loan so the funds were transferred to the NH State Revolving Loan #11.

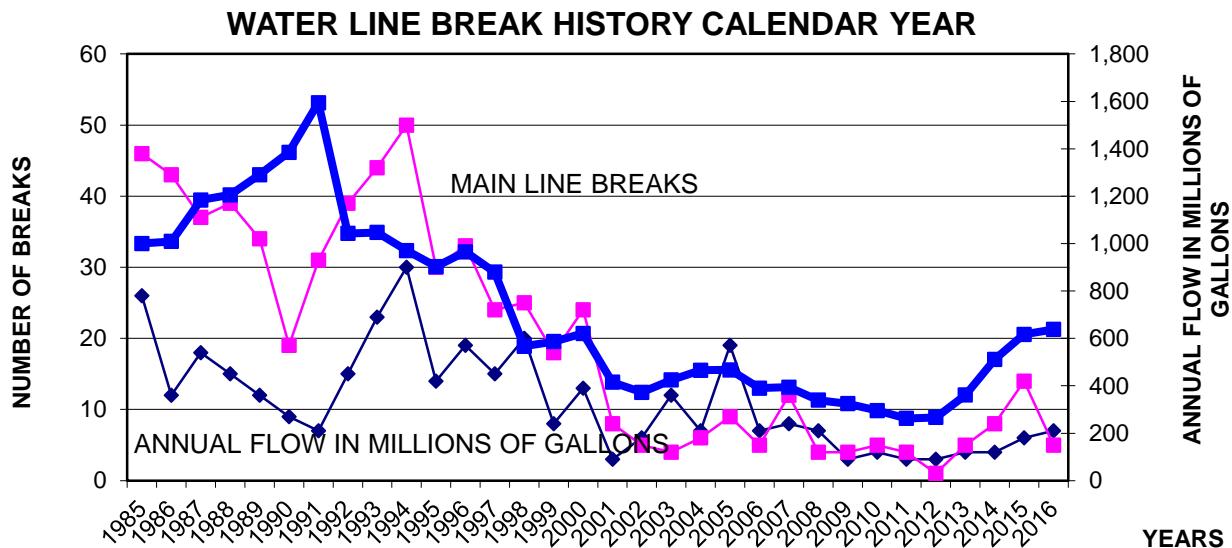
BWW Brown Farm Well #2 is in the planning process. Funding for the project will be through the BWW budget. In July 2016 several test wells were drilled and a site for the second well was determined. Dave MacLean of Geo Insight sent in the Large Ground Water Withdrawal Permit to NH DES. Geo Insight solicited three bids for drilling Well #2, Layne Christensen Company was selected to complete the project in FY 2018. Lee Carroll was selected to complete the Electrical Engineering Design for the Brown Farm Well #2.

	Total as of FY2017	FY 2016	FY 2017
Curb-to-curb street paving (includes overlay)	12.23 miles	.38	.26
Number of New Meters	3405 total in system	102	183
Number of New hydrants	421 total in system	0	0
Number of Replaced services	3405 total in system	20	38
New water main installed - since 1990	29.50 Miles	.62	.53

The BWW installed 2800 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 2017) and 1890 thru 1920's vintage unlined cast iron mains (25,790 feet remaining as of June 2017) 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



BWW has submitted a pre application for a NH State Revolving Loan on May 17, 2017 in the amount of \$1.5 million.

Richard Skarinka of NHDES suggested that Berlin Water Works apply for an Asset Management Grant through NHDES to assist us with the GIS Mapping System through People GIS. The grant application was submitted in November 2015. We received the payment in the amount of \$15,000 from the NHDES 2016 Asset Management Grant Program for our GIS Project on June 7, 2017. NHDES suggested a plan to divide the city to record all GIS location information in one zone at a time. Berlin was divided into seven zones; Zone 1 is completed and BWW is in the process of completing Zone 2 with the 2015-2016 Asset Management Grant. BWW has applied for the 2016-2017 Asset Management Grant and we were approved on June 29, 2017 for up to \$20,000. With the new grant BWW will continue to cover

all zones of the city. A requirement of the Asset Management grant was to complete an Asset Management Plan and Brochure; both were prepared by BWW staff and approved by the Board of Water Commissioners in June 2017.

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.

Respectfully submitted,
Craig Carrigan
Water Works Superintendent