

FUND: Water and Sewer Fund

DEPARTMENT: Water and Sewer Plant and Field Operations

Description and Responsibilities

The Public Works and Utilities Department is responsible for the operation of a Water Treatment Plant, the operation and maintenance of the water distribution system, the operation of a Wastewater Treatment Plant, and the operation and maintenance of the wastewater collection system.

Water Plant

The 1.000 million gallons per day (MGD) Water Treatment Plant (expandable to 2.000 MGD) was constructed in 1978 and receives water from the Town's 45-47 million-gallon pond on Brickhouse Creek, with Chetola Lake having the capability to serve as a backup water source during times of drought. In addition, in 2008, the Town executed a water agreement with the Town of Boone for water system interconnection that can be used in emergency situations. The interconnection project was completed in 2011 and allows water to be transferred between Blowing Rock, Boone and Appalachian State University water systems.

The Blowing Rock Water Plant is located along U.S. Highway 321 just south of the Blue Ridge Parkway. The facility is a traditional treatment process including alum addition, flocculation, disinfection, settling and filtration. Corrosion control is also utilized prior to distribution to the residents using orthophosphate.

The Town's service area is predominantly south of the Water Treatment Plant. Finished water is pumped to a high elevation, and then allowed to gravity feed into the service area. The Green Hill tank, capacity 3.000 MGD, is the means of control at the highest point of the system. A number of pressure reducing valves have been placed in the system to control pressures for the residents.

Wastewater Treatment Plant

The Town of Blowing Rock operates a Wastewater Treatment Plant very near the Water Treatment Plant and utilizes a discharge to the Middle Fork of the New River. The plant is rated for capacity of 0.800 MGD, but could be expanded to a service capacity of 1.200 MGD. The original plant was constructed in 1960, expanded in 1989, and refurbished in 2013. The facility is fed by five (5) sewer system lift stations that handle the wastewater generated by the community. The facility is of concrete construction and is set up for extended aeration treatment. The plant operators sample the water discharge everyday and also send samples out three times per week to an independent testing lab to ensure environmental compliance.

Water & Sewer Field Operations Division

The Field Operations division is responsible for all water and sewer taps, leak repair and water line installation. This department is also responsible for all water meter reading in the town on a bi-monthly basis. In addition, this department maintains the water distribution system and the wastewater collection system.

There are approximately 2,186 water meters and 1,745 sewer taps in the system. The water distribution system consists of approximately 22.02 miles of lines. The wastewater collection system consists of approximately 16.07 miles of gravity sewer lines and 3.59 miles of pressure sewer. There are five (5) wastewater lift-stations: Mayview, Chetola, Grandfather, Chestnut Ridge and Quail Hollow.

Staffing and Schedules

A Utility Plant Supervisor and four Utility Plant Operators are assigned to the Water Plant and Wastewater Plant Divisions. The personnel work a varied schedule to meet the service demands of the utility.

A Heavy Equipment Operator, a Light Equipment Operator and two (2) Equipment Operator II's are assigned to the Water & Sewer - Field Operations Division. The division uses other employees, as needed, for the reading of water meters. The personnel work a standard 40-hour week schedule and are on call for emergency repairs.

Measures of Activity

2016-2017 Wastewater Plant – Average Daily Flow

Month	2016 Average Daily (.800 MGD capacity)	2017 Average Daily (.800 MGD capacity)
January	.313	.200
February	.306	.173
March	.306	.147
April	.182	.331
May	.182	.604
June	.211	.271
July	.246	.284
August	.300	.270
September	.204	.247
October	.245	.419
November	.202	.323
December	.187	.186
Total Year	83.021 MG	104.91 MG
Daily Avg	.227	.288

2016-2017 Water Plant - Total Water Treated

Month	2016 Average Daily Water Treated (Million Gallons)	2017 Average Daily Water Treated (Million Gallons)
January	.365	.391
February	.441	.349
March	.348	.327
April	.322	.365
May	.366	.360
June	.425	.431
July	.417	.510
August	.462	.479
September	.401	.440
October	.373	.416
November	.393	.404
December	.341	.392
Total Year	148.4567	119.2173
Daily Avg	.406	.405

WATER AND SEWER FUND
 DESCRIPTION: WATER AND SEWER EXPENDITURES
 CODE: 30-91-7120

ACCOUNT NUMBER	DESCRIPTION	2010-2011 ACTUAL	2011-2012 ACTUAL	2012-2013 ACTUAL	2013-2014 ACTUAL	2014-2015 ACTUAL	2015-2016 ACTUAL	2016-2017 ACTUAL	2017-2018 ADOPTED	2018-2019 ADOPTED
Plant Operations 7120										
002	Salaries	158,765	163,587	157,925	144,681	164,406	205,327	217,277	220,991	233,700
003	Overtime	1,701	5,875	4,006	24,804	21,942	14,778	22,750	20,000	15,000
005	FICA Expense	11,675	11,610	11,360	11,908	13,035	14,958	24,531	18,436	19,026
006	Group Insurance	21,483	21,537	22,599	19,654	18,091	26,401	34,019	32,924	33,500
007	401K	3,288	3,314	3,261	3,397	5,492	8,335	16,523	12,050	12,435
008	Retirement	18,464	19,836	19,576	21,152	10,135	25,571	44,825	32,678	34,420
	Personnel Subtotal	215,376	225,759	218,726	225,597	233,101	295,369	359,925	337,079	348,081
011	Telephone	1,920	2,088	2,050	2,124	2,240	2,109	3,579	2,500	700
013	Utilities	135,895	145,521	156,252	159,422	136,183	134,711	134,528	140,000	145,000
014	Employee Development	200	420	260	254	773	2,127	2,899	3,500	3,500
016	Maintenance/Repair-Equip	57,593	35,448	29,046	37,206	24,860	16,948	17,885	50,000	30,000
031	Gasoline	3,556	3,749	3,099	1,994	2,989	2,582	3,094	3,500	3,500
033	Materials and Supplies	16,076	20,763	12,285	11,535	19,637	23,976	29,629	25,000	25,000
034	Sludge Processing	32,400	41,640	39,120	33,842	72,155	71,805	70,425	80,000	49,000 #
036	Uniforms	2,992	1,590	1,354	1,542	2,934	2,863	2,356	3,000	3,000
053	Permits & Dues	3,035	3,035	3,200	2,790	2,710	2,830	3,155	4,250	4,250
057	Miscellaneous	-	420	716	1,190	220	931	388	500	500
104	Lab Contract	23,073	18,179	23,007	21,978	20,292	21,012	20,484	24,000	24,000
333	Chemicals	33,993	48,642	29,118	50,963	41,937	33,411	33,873	50,000	40,000
	Operating & Maint. Subtotal	310,732	321,495	299,506	324,839	326,930	315,304	322,295	386,250	328,450
500	Capital Outlay	2,051	-	15,426	-	-	-	-	33,000	255,000 *
505	Transfer to Capital Projects	-	-	-	-	65,000	-	-	-	-
	Capital Subtotal	2,051	-	15,426	-	65,000	-	-	33,000	255,000
900	Debt Service	-	-	-	-	-	-	2,051	2,196	11,765 D
	SUBTOTAL - PLANT OPERATIONS	528,159	547,255	533,658	550,436	625,031	610,673	684,271	758,525	943,296
IP	220,000	Sewage Spinner & Pad								
IP	\$ 35,000	2008 Ford Ranger Replacement								
	<u>\$255,000</u>	Total								
D	See debt service schedule for details.									
#	Reduced by 1/4 annual cost due to Sewage Spinner									
Field Operations 7120										
202	Salaries	105,519	108,063	100,096	104,591	108,691	117,913	124,576	127,954	137,900
203	Overtime	3,386	4,148	3,826	3,400	2,871	2,470	2,706	4,000	8,000
	On Call/Standby Pay	-	-	-	-	-	-	-	-	20,800
205	FICA Expense	8,895	8,266	7,721	7,744	8,381	8,655	1,316	10,094	12,753
206	Group Insurance	21,413	19,342	21,625	23,761	23,742	23,804	25,871	26,601	27,500
207	401K	2,342	2,175	2,094	2,117	3,432	4,645	867	6,598	8,335
208	Retirement	13,143	13,019	12,575	13,232	6,334	14,250	2,345	17,893	23,071
	Personnel Subtotal	154,698	155,014	147,936	154,845	153,451	171,736	157,681	193,140	238,359
211	Telephone	-	-	-	-	-	-	-	-	-
213	Utilities	-	-	-	-	-	-	-	-	-
214	Employee Development	1,350	2,309	2,200	2,184	2,150	3,211	7,320	3,000	3,000
216	Maintenance/Repair-Equip	9,322	7,285	13,865	9,927	24,709	9,989	9,347	10,000	10,000
217	Maintenance/Repair-Lift Station	-	-	-	-	1,141	1,791	2,875	15,000	15,000
231	Diesel/Gasoline	3,914	4,243	3,752	-	(8)	-	5,239	6,000	7,500
233	Materials and Supplies	55,910	43,807	62,803	55,951	60,787	54,107	84,868	178,500	80,000
235	Safety Supplies	-	-	-	-	-	-	2,300	3,000	3,000
236	Uniforms	2,199	1,871	1,541	1,936	2,952	1,987	2,672	3,500	3,500
257	Miscellaneous	1,419	2,379	3,884	175	4,333	2,315	807	3,000	3,000
	Operating & Maint. Subtotal	74,115	61,893	88,046	70,173	96,064	73,400	115,428	222,000	125,000
502	Capital Outlay	-	8,350	10,000	8,982	39	177,003	-	-	-
505	Transfer to Capital Projects	-	-	-	-	-	425,146	-	-	-
	Capital Subtotal	-	8,350	10,000	8,982	39	602,148	-	-	-
950	Debt Service	13,635	-	7,289	23,788	-	23,867	1,192	58,580	29,815 D
	SUBTOTAL - FIELD OPERATIONS	242,448	225,257	253,271	257,788	249,554	871,152	274,301	473,720	393,174
D	See debt service schedule for details.									
	TOTAL EXPENDITURES	770,607	772,512	786,929	808,224	874,585	1,481,824	958,572	1,232,245	1,336,470