

BRUNSWICK COUNTY INTERBASIN TRANSFER

2017 ANNUAL REPORT

Due to the seasonal nature of the water system, July was once again our peak month. The average daily usage was slightly higher than the previous year. Total water production at the Northwest Water Treatment Plant was 18.13 mgd or 75.5% of its permitted capacity of 24 mgd, this is 3.2% higher than last year. The potable water usage by customer class was up slightly for wholesale, retail, and industrial customers when compared to 2016. The total interbasin transfer in the month of July decreased to 7.84 mgd mostly due to the exclusion of the groundwater WTP flows from the calculations. This was based on discussions with DEQ staff after review of the language in the IBT transfer permit that specifically excludes groundwater.

Wastewater discharges increased slightly in the Cape Fear river basin while discharges decreased in the Shallotte and Waccamaw river basins. Most of the wastewater effluent was used as reclaimed water for irrigation at golf courses and tree farms while other uses were for groundwater recharge.

	July 2017	July 2016
Total Surface Water Production (mg)	561.903	675.946
Total Surface Water Sold (mg)	537.352	603.013
Total IBT (mgd) Shallotte	7.84	9.89
Total IBT (mgd) Waccamaw	0.316	0.42
Total Wastewater Flow (mg)	216.089	211.32

**AVERAGE DAY IN PEAK MONTH
TRANSFERRED BETWEEN RIVER BASINS**

	July-17 (mg)	July-17 (mgd)
Plant Flows		
(Million Gallons)		
Northwest WTP	561.903	18.126
NC 211 WTP	108.300	3.494
Total Plant Flows	670.203	21.619
Total Billed Flows	640.920	20.675
Unaccounted for Water	29.283	0.945
NWTP % of Plant flow to total flow	0.838	
Surface Water (NWTP) Portion of Billed flow	537.352	17.334
Cape Fear River Basin		
(Million Gallons)		
ADM	41.206	1.329
Bald Head Island	5.162	0.167
DAK Monomers	0.07404	0.002
Brunswick Regional (H2GO)	68.993	2.226
Leland	15.569	0.502
Navassa	3.137	0.101
Northwest	1.646	0.053
Oak Island	49.451	1.595
Duke Energy	6.193	0.200
Capital Power	28.479	0.919
Southport	23.158	0.747
Sunny Point	0.965	0.031
Total Flows	244.032	7.872
Surface Water Portion of Total	204.598	6.600
Shallotte River Basin		
(Million Gallons)		
Holden Beach	29.088	0.938
Ocean Isle Beach	42.411	1.368
Shallotte	23.445	0.756
Total Flows	94.944	3.063
Surface Water Portion of Total Flow	79.602	2.568
Retail Flows		
	301.944	9.740
Surface Water Portion of Retail Flows	253.152	8.166
(MG) Surface Water Flow Per Basin	90.882	2.932
Cape Fear River Basin	152.904	4.932
Shallotte River Basin	9.367	0.302
Waccamaw River Basin		
Surface Water Billed Flow By Basin		
(Million Gallons)		
Cape Fear River Basin	295.480	9.532
Shallotte River Basin	232.506	7.500
Waccamaw River Basin	9.367	0.302
Surface Water Percentage Per Basin		
Cape Fear River Basin	46.10%	
Shallotte River Basin	36.28%	
Waccamaw River Basin	1.46%	

Non Revenue Flow Allocation

(Based upon Billed Percentages)

Cape Fear	13.500	0.435
Shallotte	10.623	0.343
Waccamaw	0.428	0.014

Total Surface Water Transferred

(Million Gallons)

Cape Fear to Shallotte River Basin	243.129	7.843
Cape Fear to Waccamaw River Basin	9.795	0.316

Wastewater Discharges**July-17
(mg)****July-17
(mgd)**

NPDES Permits

(Million Gallons)

Cape Fear River Basin		
Northeast Brunswick Regional WWTP	61.721	1.991

Waccamaw River Basin

Carolina Shores WWTP	9.331	0.301
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Non-Discharge Permits

Shallotte River Basin

Sea Trail WWTP	4.402	0.142
West Brunswick WRF	115.06	3.712
Shallotte WWTP	6.727	0.217
Ocean Isle Beach WWTP	18.848	0.608

Total Shallotte River Basin	145.037	4.679
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	VOLME OF WATER TRANSFERRED BETWEEN RIVER BASINS IN 2017											
Plant Flows	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
(Million Gallons)												
Northwest WTP	268.112	248.988	333.039	380.219	435.36	460.60	561.90	451.06	413.61	444.33	338.79	300.33
NC 211 WTP	71.3	55.2	23.8	82.9	110.30	118.70	108.30	112.46	71.81	45.77	47.76	52.94
Total Plant Flows	339.412	304.188	356.839	463.119	545.656	579.3	670.203	563.522	485.423	490.099	386.55	353.273
Total Billed Flows	257.99	254.72	276.09	342.64	423.24	481.96	640.92	544.52	438.68	436.99	394.21	365.32
Unaccounted for Water	81.422	49.468	80.749	120.479	122.416	97.34	29.283	19.002	46.743	53.109	-7.66	-12.047
NWTP % of Plant flow to total flow	79.0%	81.9%	93.3%	82.1%	79.8%	79.5%	83.8%	80.0%	85.2%	90.7%	87.6%	85.0%
Surface Water (NWTP) Portion of Billed flow	204	208	258	281	338	383	537	436	374	396	346	311
Cape Fear River Basin												
(Million Gallons)												
ADM	28.094	30.774	30.008	20.200	24.566	31.353	41.206	41.806	38.769	39.508	36.463	42.871
Bald Head Island	0.278	0.407	0.109	0.606	0.672	1.883	5.162	3.879	0.614	0.937	0.365	1.290
DAK Monomers	0.053	0.277	0.393	0.259	0.262	0.061	0.074	0.137	1.084			
Brunswick Regional (H2GO)	43.116	39.197	46.887	45.047	78.095	52.115	68.993	57.378	49.260	53.293	51.601	60.138
Leland	5.181	4.762	6.808	10.856	14.342	12.507	15.569	11.286	8.090	10.994	7.328	7.253
Navassa	2.089	1.913	2.248	2.084	2.276	2.284	3.137	2.382	2.411	2.243	4.579	6.389
Northwest	2.992	1.345	1.259	2.199	1.506	1.309	1.646	1.818	1.964	2.025	2.364	3.393
Oak Island	20.257	17.246	20.681	25.295	28.999	35.677	49.451	39.302	27.309	30.881	26.012	26.390
Duke Energy	4.942	3.828	6.297	3.511	4.093	4.312	6.193	3.578	4.268	4.877	4.921	5.862
Capital Power	10.670	16.071	10.609	13.798	14.950	16.798	28.479	25.487	19.960	22.511	14.342	15.781
Southport	10.449	9.184	10.980	13.690	17.333	18.265	23.158	18.793	16.918	18.778	16.807	19.794
Sunny Point	0.391	0.278	0.464	0.619	0.361	1.307	0.965	0.898	0.744	0.530	0.480	1.123
Total Flows	128.512	125.283	136.742	138.164	187.456	177.871	244.032	206.743	171.391	186.577	165.262	190.285
Surface Water Portion of Total	101.516	102.548	127.622	113.432	149.563	141.425	204.598	165.484	146.037	169.153	144.843	161.769
Shalotte River Basin												
(Million Gallons)												
Holden Beach	6.038	4.492	5.507	11.953	13.762	21.674	29.088	21.670	14.635	13.872	9.238	9.998
Ocean Isle Beach	9.233	8.019	11.085	18.753	22.185	30.991	42.411	32.092	21.084	17.819	15.257	14.578
Shalotte	5.996	5.758	7.853	7.610	9.345	6.130	23.445	17.121	13.404	15.209	13.487	14.425
Total Flows	21.267	18.269	24.445	38.315	45.291	58.795	94.944	70.884	49.123	46.901	37.982	39.001
Surface Water Portion of Total Flow	16.80	14.95	22.81	31.46	36.14	46.75	79.60	56.74	41.86	42.52	33.29	33.16
Retail Flows												
Surface Water Portion of Retail Flows	108.211	111.168	114.903	166.161	190.493	245.294	301.944	266.894	218.166	203.512	190.966	136.034
(MG) Surface Water Flow Per Basin	85.479	90.995	107.240	136.418	151.986	195.032	253.152	213.631	185.892	184.506	167.371	115.649
Cape Fear River Basin	30.687	32.667	38.499	48.974	54.563	70.017	90.882	76.693	66.735	66.238	60.086	41.518
Shalotte River Basin	51.629	54.961	64.773	82.396	91.800	117.799	152.904	129.033	112.279	111.442	101.092	69.852
Waccamaw River Basin	3.1627	3.3668	3.9679	5.0475	5.6235	7.2162	9.3666	7.9043	6.8780	6.8267	6.1927	4.2790
Surface Water Billed Flow By Basin												
(Million Gallons)												
Cape Fear River Basin	159.199	157.950	175.241	187.138	242.019	247.888	295.480	283.436	238.126	252.815	225.348	231.803
Shalotte River Basin	72.897	73.230	89.218	120.712	137.091	176.595	232.506	199.916	161.402	158.342	139.074	108.853
Waccamaw River Basin	3.1627	3.3668	3.9679	5.0475	5.6235	7.2162	9.3666	7.9043	6.8780	6.8267	6.1927	4.2790
Surface Water Percentage Per Basin												
Cape Fear River Basin	61.71%	62.01%	63.47%	54.62%	57.18%	51.43%	46.10%	52.05%	54.28%	57.85%	57.16%	63.45%
Shalotte River Basin	28.26%	28.75%	32.31%	35.23%	32.39%	36.64%	36.28%	36.71%	36.79%	36.23%	35.28%	29.80%
Waccamaw River Basin	1.23%	1.32%	1.44%	1.47%	1.33%	1.50%	1.46%	1.45%	1.57%	1.56%	1.57%	1.17%
Non Revenue Flow Allocation												
(Based upon Billed Percentages)												
Cape Fear	50.24344266	30.67469514	51.25329741	65.80125756	70.00046292	50.06511055	13.50016675	9.89101636	25.37326107	30.72553875	-4.37880456	-7.644054847
Shalotte	23.00624539	14.22169683	26.09378502	42.4445674	39.65156005	35.6663445	10.62295824	6.976441874	17.19796325	19.24393148	-2.70238741	-3.589592769
Waccamaw	0.99815769	0.653850704	1.160495577	1.774785328	1.626511437	1.457432875	0.427952143	0.275835771	0.732875979	0.82967801	-0.120332769	-0.14110703
Total Surface Water Transferred												
(Million Gallons)												
Cape Fear to Shalotte River Basin	95.903	87.452	115.311	163.156	176.743	212.261	243.129	206.893	178.600	177.586	136.372	105.263
Cape Fear to Waccamaw River Basin	4.1609	4.0207	5.1284	6.8222	7.2500	8.6736	9.7946	8.1802	7.6109	7.6564	6.0724	4.1379
Total Surface Water Transferred												
(Million Gallons Per Day)												
Cape Fear to Shalotte River Basin	3.09	3.12	3.72	5.44	5.70	7.08	7.84	6.67	5.95	5.73	4.55	3.40
Cape Fear to Waccamaw River Basin	0.134	0.144	0.165	0.227	0.234	0.289	0.316	0.264	0.254	0.247	0.202	0.133
Wastewater Discharges												
NPDES Permits												
(Million Gallons)												
Cape Fear River Basin												
Northeast Brunswick Regional WWTP	59.489	49.644	52.638	58.560	57.443	52.710	61.721	73.408	74.250	58.187	55.440	59.210
Waccamaw River Basin												
Carolina Shores WWTP	9.393	8.96	9.424	9.33	9.36	9.269	9.331	9.486	9.03	9.58	10.35	11.01
Non-Discharge Permits												
Shalotte River Basin												
Sea Trail WWTP	4.74	3.61	4.216	4.17	4.154	4.83	4.40	3.348	4.59	5.21	2.91	3.35
West Brunswick WRF	84.351	72.044	78.554	87.99	86.459	89.37	115.06	113.119	109.53	90.86	85.56	81.78
Shalotte WWTP	4.526	6.272	5.394	4.98	4.061	11.22	6.73	2.356	3.36	6.57	5.19	4.74
Ocean Isle Beach WWTP	5.27	5.18	6.88	11.04	11.501	15.36	18.85	14.58	12.36	10.29	7.95	6.73
Total Shalotte River Basin	98.887	87.106	95.044	108.18	106.175	120.78	145.037	133.403	129.84	112.931	101.61	96.596