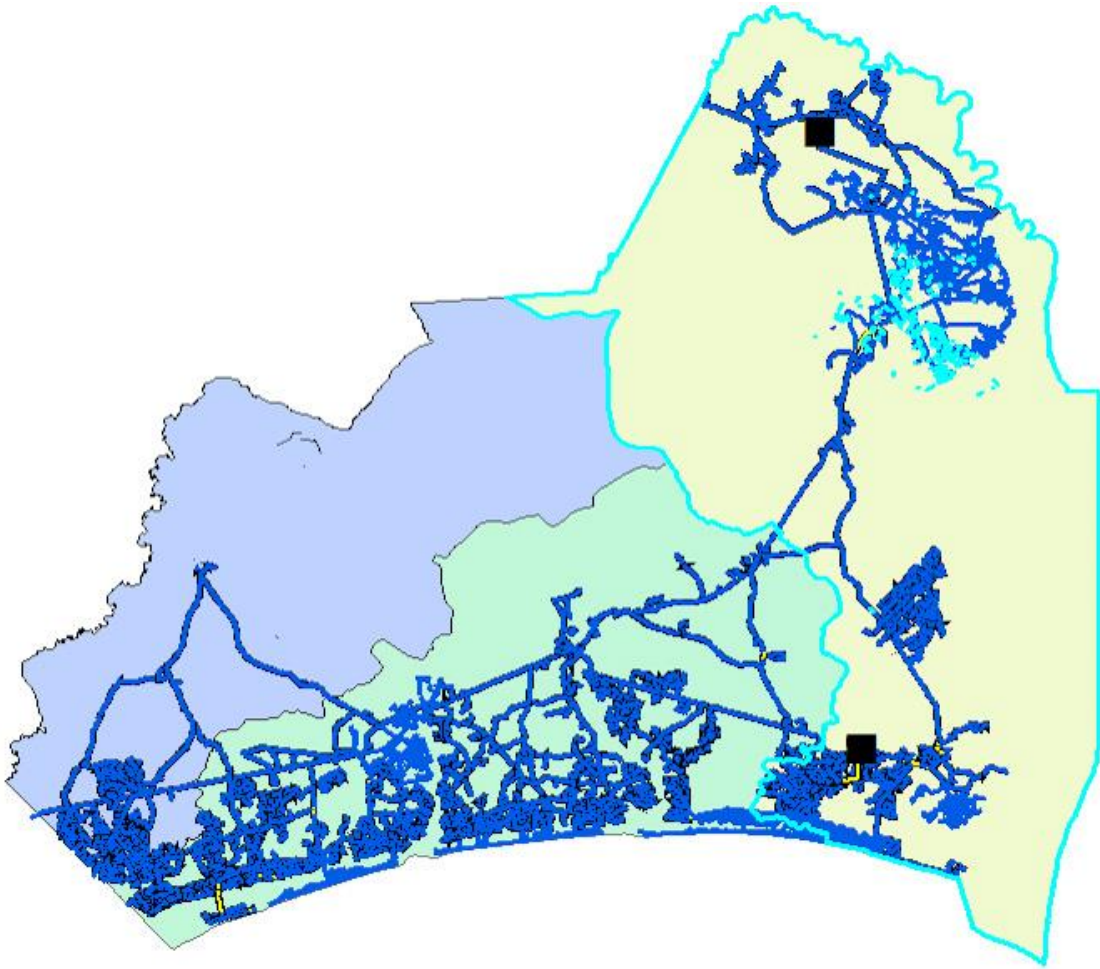


Brunswick County Public Utilities 2019 Interbasin Transfer Report



Brunswick County Public Utilities 2019 Annual Interbasin Transfer Report

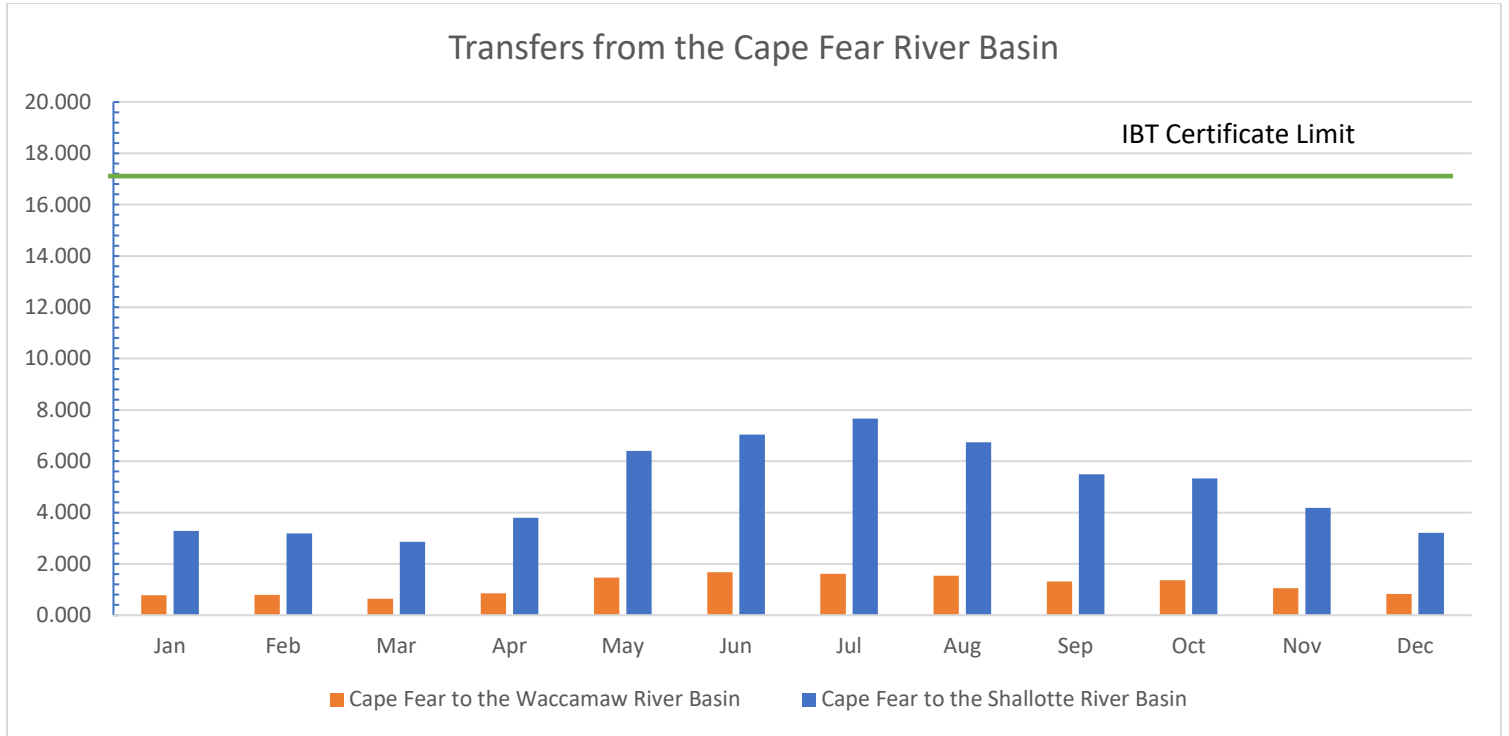
Summary:

Brunswick County Public Utilities provides water to more than 42,000 retail customers and 11 wholesale customers including the towns of Oak Island, Shallotte, Ocean Isle, and Holden Beach. The County owns and operates the water systems in unincorporated towns within the county and provides water directly to individual retail customers in those areas. The Northwest Water Treatment Plant (WTP), is one of two facilities that the County operates and is the only surface water treatment plant.

Brunswick County had a grandfathered surface water transfer capacity of 10.44 MGD. The grandfathered capacity allowed the system to transfer water from the Cape Fear River Basin to the Waccamaw and Shallotte River Basins (each a sub basin to the Lumber Major River Basin). On February 17, 2009, Brunswick County submitted a Notice of Intent to Request an Interbasin Transfer (IBT) Certificate to the EMC. In that notice the County requested an authorized transfer of 18.35 MGD to the Shallotte River Basin and 0.94 MGD to the Waccamaw River Basin. These transfer amounts were based on a proposed expansion of the Northwest WTP from 24 MGD to 36 MGD and took into account population projections through the year 2040. In its final determination on November 26, 2013, the EMC authorized a transfer amount not to exceed a maximum of 17 MGD, calculated as a daily average of a calendar month, from the Cape Fear River Basin to the Shallotte and Waccamaw River Basins.

In 2019 Brunswick County experienced dryer than average weather for the months of May, June, July, August, and September. Brunswick County issued a water conservation alert on May 29th to raise awareness and encourage customers to use water wisely. However due to the seasonal nature of our customer demand, July was our peak month for water production and transfer between basins. Total water production for July at the Northwest WTP was 19.558 MGD or 81.5 % of its permitted capacity of 24 MGD, this represents an increase of 20.2 % over 2018 even though we issued a water conservation alert on May 29th, 2019. Potable water usage by customer class in each basin was up for wholesale, industrial, and most retail customers with the exception of retail customer usage in the Shallotte River Basin when compared to 2018. Wholesale and Industrial usage in the Cape Fear River Basin saw a 19.3 % increase, and a 22.1 % increase in the Shallotte River Basin as compared to 2018. Retail customer usage was up most dramatically in the Waccamaw river basin at 412.6 % over 2018; this is due to a meter replacement program that focused on this area of our water system. Retail usage in the Cape Fear river basin increased 24 % while in the Shallotte river basin retail usage declined by 1.8 % over 2018. All in all, there was an increase of 0.543 MGD of water transferred to the Shallotte river basin totaling 7.667 MGD and an increase of 1.311 MGD transferred into the Waccamaw river basin totaling 1.615 MGD both well within our IBT limit of 17 MGD.

Brunswick County Public Utilities 2019 Annual Interbasin Transfer Report - Continued



2019 Interbasin Transfer Supporting Data

Plant Flows	July-19 Total Monthly Flow (MG)	July-19 Daily Average (MGD)
Northwest WTP (Surface Water)	606.286	19.558
NC 211 WTP (Ground Water)	121.160	3.908
Total Plant Flows	727.446	23.466
Total Billed Flows	664.348	21.431
Unaccounted for Water	63.098	2.035
NWTP % of Plant flow to total flow	83%	
Surface Water (NWTP) Portion of Billed flow	553.697	17.861

Cape Fear River Basin Wholesale and Industrial Usage	July-19 Total Monthly Flow (MG)	July-19 Daily Average (MGD)
ADM	32.367	1.044
Bald Head Island	1.37637	0.044
DAK Monomers	0	0.000
Brunswick Regional (H2GO)	84.761	2.734
Leland	26.431	0.853
Navassa	3.026	0.098
Northwest	1.479	0.048
Oak Island	46.064	1.486
Duke Energy	5.643	0.182
Capital Power	21.550	0.695
Southport	23.910	0.771
Sunny Point	0.476	0.015
Total Flows	247.083	7.970
Surface Water Portion of Total	205.930	6.643

Shalotte River Basin Wholesale Water Usage (MG)

Holden Beach	26.110	0.842
Ocean Isle Beach	48.163	1.554
Shalotte	18.318	0.591
Total Flows	92.591	2.987
Surface Water Portion of Total Flow	77.169	2.489

Retail Water Usage for Peak Month	324.674	10.473
Surface Water Portion of Retail Flows	270.597	8.729

Retail Surface Water Flow Per Basin

Cape Fear River Basin	84.697	2.732
Shalotte River Basin	139.899	4.513
Waccamaw River Basin	45.731	1.475
	July-19	July-19

Surface Water Usage Billed Per Basin

(Million Gallons)

Cape Fear River Basin	290.627	9.375
Shalotte River Basin	217.068	7.002
Waccamaw River Basin	45.731	1.475

Billed Surface Water Flow Percentage Per Basin

Cape Fear River Basin	43.75%
Shalotte River Basin	32.67%
Waccamaw River Basin	6.88%

Non Revenue Flow Allocation Per Basin (Based upon Billed Percentages)	July-19 (MG)	July-19 (MGD)
Cape Fear River Basin	27.603	0.890
Shallotte River Basin	20.617	0.665
Waccamaw River Basin	4.343	0.140

Total Surface Water Transferred in Peak Month (July) (Million Gallons)		
Cape Fear to Shallotte River Basin	237.685	7.667
Cape Fear to Waccamaw River Basin	50.074	1.615

Wastewater Discharges (Million Gallons)	July-19 (MG)	July-19 (MGD)
---	-------------------------------	--------------------------------

Cape Fear River Basin		
Northeast Brunswick Regional WWTP	59.038	1.904

Waccamaw River Basin		
Carolina Shores WWTP	12.078	0.390

Non-Discharge Permits

Shallotte River Basin		
Sea Trail WWTP	4.826	0.156
West Brunswick WRF	144.79	4.671
Shallotte WWTP	4.02	0.130
Ocean Isle Beach WWTP	18.74	0.605
Total Shallotte River Basin	172.376	5.561

Monthly Water Production for Surface Water and Groundwater Treatment Plants 2019

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Northwest WTP	335.344	284.503	280.822	345.598	587.88	561.76	606.29	559.02	454.28	478.58	326.84	306.49
NC 211 WTP	6.429	4.607	66.786	78.959	102.50	121.77	121.16	119.25	107.35	99.17	77.25	71.86
Total Plant Flows	341.773	289.11	347.608	424.557	690.378	683.533	727.446	678.268	561.629	577.747	404.086	378.354
Total Billed Flows	277.2382	272.247	273.6845	356.6321	569.00	629.16	664.35	609.53	541.97	553.35	422.59	381.42
Unaccounted for Water	64.5348	16.863	73.9235	67.9249	121.3774	54.3763	63.0981	68.7401	19.6617	24.3968	-18.5039	-3.066374
NWTP % of Plant flow to total flow	98.1%	98.4%	80.8%	81.4%	85.2%	82.2%	83.3%	82.4%	80.9%	82.8%	80.9%	81.0%
NWTP Portion of Billed flow	272	268	221	290	485	517	554	502	438	458	342	309

Cape Fear River Basin Wholesale and Industrial Water Usage (MG)

Bald Head Island	0.241	0.132	0.208	0.246	0.265	0.632	1.376	2.013	0.283	0.868	0.016	0.350
DAK Monomers												
Brunswick Regional (H2GO)	45.619	42.683	47.147	55.737	100.883	77.758	84.761	78.858	75.059	78.457	48.657	51.792
Leland	6.696	6.084	8.266	11.384	27.400	28.629	26.431	24.050	23.020	22.320	11.660	11.480
Navassa	2.705	2.783	2.467	2.634	3.361	3.248	3.026	3.227	3.110	2.864	2.801	2.709
Northwest	1.512	1.254	1.174	1.200	1.404	1.400	1.479	1.573	1.370	1.409	1.431	1.314
Oak Island	19.737	18.620	22.753	27.141	36.683	43.592	46.064	41.283	35.399	33.853	25.407	21.360
Southport	10.745	9.517	11.311	15.087	23.484	21.319	23.910	21.419	19.630	19.653	13.845	11.066
ADM	26.769	27.898	19.073	29.345	32.040	28.233	32.367	33.040	30.310	36.550	31.360	45.504
Duke Energy	5.163	3.570	4.553	3.919	5.584	5.938	5.643	6.691	6.042	5.642	5.000	4.642
Capital Power	14.346	13.173	13.093	14.036	19.576	20.164	21.550	19.978	15.416	20.283	15.971	18.011
Sunny Point	2.658	0.804	1.909	2.425	0.868	0.362	0.476	0.576	0.920	0.736	0.267	0.276
Total Flows	136.191	126.518	131.954	163.154	251.548	231.275	247.083	232.708	210.559	222.635	156.415	168.504
Surface Water Portion of Total	133.630	124.502	106.602	132.811	214.201	190.073	205.930	191.794	170.313	184.420	126.514	136.498

Shalotte River Basin Wholesale Water Usage (MG)

Holden Beach	4.598	3.520	5.415	9.314	15.151	21.111	26.110	21.304	15.469	7.328	8.183	5.377
Ocean Isle Beach	7.068	6.582	9.558	14.380	24.385	24.391	48.163	30.522	20.930	18.713	16.025	8.873
Shalotte	11.699	10.639	12.100	12.767	18.155	18.383	18.318	16.632	15.581	15.230	12.089	12.056
Total Flows	23.365	20.741	27.073	36.461	57.691	63.885	92.591	68.458	51.980	41.271	36.297	26.306
Surface Water Portion of Total Flow	22.93	20.41	21.87	29.68	49.13	52.50	77.17	56.42	42.04	34.19	29.36	21.31

Retail Water Usage Per River Basin (MG)

Retail Flows	117.682	124.988	114.657	157.017	259.762	333.997	324.674	308.362	279.428	289.444	229.878	186.611
Surface Water Portion of Retail Flows	115.468	122.996	92.628	127.815	221.196	274.495	270.597	254.146	226.018	239.760	185.934	151.166
(MG) Surface Water Flow Per Basin												
Cape Fear River Basin	36.142	38.498	28.993	40.006	69.234	85.917	84.697	79.548	70.744	75.045	58.197	47.315
Shalotte River Basin	59.697	63.589	47.889	66.080	114.358	141.914	139.899	131.393	116.851	123.956	96.128	78.153
Waccamaw River Basin	19.5141	20.7864	15.6541	21.6008	37.3821	46.3897	45.7310	42.9507	38.1971	40.5195	31.4228	25.5471

Surface Water Usage Billed Per Basin (MG)

Cape Fear River Basin	169.771	163.000	135.595	172.817	283.436	275.990	290.627	271.342	241.056	259.465	184.712	183.813
Shalotte River Basin	82.623	84.000	69.760	95.760	163.484	194.418	217.068	187.815	158.896	158.143	125.486	99.462
Waccamaw River Basin	19.5141	20.7864	15.6541	21.6008	37.3821	46.3897	45.7310	42.9507	38.1971	40.5195	31.4228	25.5471

Billed Surface Water Flow Percentage Per Basin

Cape Fear River Basin	61.24%	59.87%	49.54%	48.46%	49.81%	43.87%	43.75%	44.52%	44.48%	46.89%	43.71%	48.19%
Shalotte River Basin	29.80%	30.85%	25.49%	26.85%	28.73%	30.90%	32.67%	30.81%	29.32%	28.58%	29.69%	26.08%
Waccamaw River Basin	7.04%	7.64%	5.72%	6.06%	6.57%	7.37%	6.88%	7.05%	7.05%	7.32%	7.44%	6.70%

Non Revenue Flow Allocation Per Basin (MG)

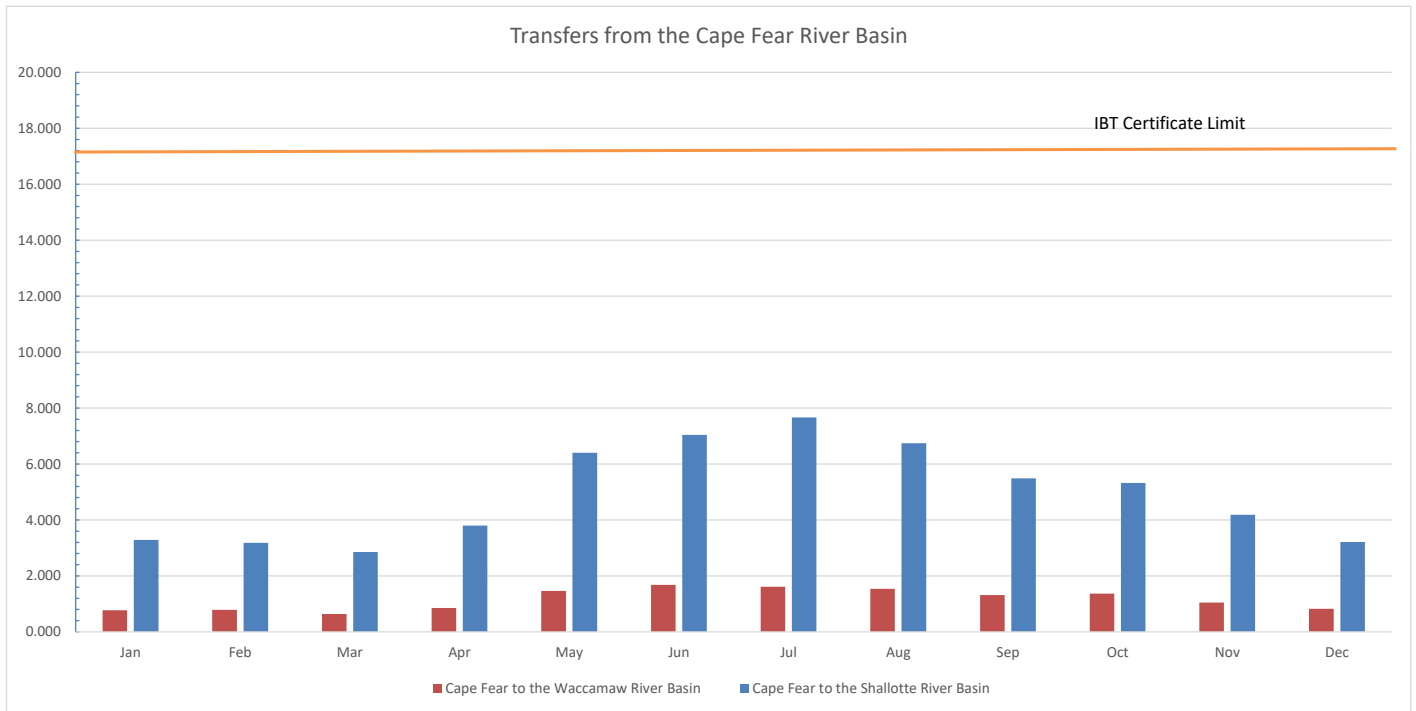
(Based upon Billed Percentages)												
Cape Fear	39.519	10.096	36.625	32.915	60.462	23.853	27.603	30.601	8.745	11.440	0.000	0.000
Shalotte	19.233	5.203	18.843	18.239	34.874	16.803	20.617	21.181	5.764	6.972	0.000	0.000
Waccamaw	4.542	1.288	4.228	4.114	7.974	4.009	4.343	4.844	1.386	1.786	0.000	0.000

Total Surface Water Transferred Per Month (MG)

Cape Fear to Shalotte River Basin	101.855	89.203	88.603	113.999	198.358	211.221	237.685	208.996	164.660	165.115	125.486	99.462
Cape Fear to Waccamaw River Basin	24.0566	22.0739	19.8824	25.7149	45.3563	50.3990	50.0744	47.7945	39.5828	42.3060	31.4228	25.5471

Total Surface Water Transferred Per Day (MG)

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Cape Fear to the Shallotte River Basin	3.29	3.19	2.86	3.80	6.40	7.04	7.67	6.74	5.49	5.33	4.18	3.21
Cape Fear to the Waccamaw River Basin	0.776	0.788	0.641	0.857	1.463	1.680	1.615	1.542	1.319	1.365	1.047	0.824
Total Water Transferred	4.062	3.974	3.500	4.657	7.862	8.721	9.283	8.284	6.808	6.691	5.230	4.033



MONTHLY VOLUMES OF WASTEWATER PROCESSED PER RIVER BASIN IN 2019

Wastewater Discharges

NPDES Permits

Cape Fear River Basin

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Northeast Brunswick Regional WWTP	70.559	56.661	62.894	59.968	57.486	53.053	59.038	62.920	64.391	55.100	53.974	54.743

Waccamaw River Basin

Carolina Shores WWTP	6.741	7.091	7.250	7.033	9.851	11.096	12.078	12.204	11.84	12.54	12.20	11.72
----------------------	-------	-------	-------	-------	-------	--------	--------	--------	-------	-------	-------	-------

Non-Discharge Permits

Shallotte River Basin

Sea Trail WWTP	5.065	4.57	5.261	5.483	5.126	5.086	4.83	4.847	6.10	6.58	6.73	6.32
West Brunswick WRF	119.44	89.72	99.86	105.14	101.18	116.33	144.79	134.53	113.50	98.44	95.12	95.16
Shallotte WWTP	4.23	3.7	4.2	4.13	5.01	3.78	4.02	5.17	7.26	5.05	4.81	5.10
Ocean Isle Beach WWTP	6.69	6.32	8.53	8.63	11.24	16.11	18.74	14.57	10.30	9.09	7.39	7.09
Total Shallotte River Basin	135.425	104.31	117.851	123.383	122.556	141.306	172.376	159.117	137.157	119.156	114.052	113.671