

WATER SUPPLY PLANNING

WATER WITHDRAWALS & WASTEWATER DISCHARGE

WITHDRAWAL REGISTRATION

North Carolina General Statute G.S. 143-215.22H (Rules), requires surface water and ground water withdrawers who meet certain conditions to register their water withdrawals and surface water transfers with the State and update those registrations at least every five years. Agricultural water users that withdraw one million gallons of water a day or more and non-agricultural water users that withdraw one hundred thousand gallons of water a day are required to register. More information is available here: http://www.ncwater.org/Permits_and_Registration/Water_Withdrawal_and_Transfer_Registration/

Counties located in the Central Coastal Plain Capacity Use Area are required to obtain a permit for groundwater withdrawal of more than 100,000 gallons per day and annual registration and reporting of withdrawals is required for surface and groundwater users of more than 10,000 gallons per day. Current and historical summary water use by county, type of use and aquifer along with CCPCUA permit holders and registrants may be viewed at: www.ncwater.org/CCPCUA

LOCAL WATER SUPPLIES

Local governments and other large community water systems that provide water to the public are required to prepare [local water supply plans](#) (LWSP). The LWSPs describe current and projected water sources and demands. Customer demands can be met by withdrawing surface water or groundwater and by purchasing water from a neighboring community. In the Upper Tar, Lower Tar and Fishing Creek subbasins surface water is a primary water source. In the coastal plain portions of the basin, communities rely on groundwater as their main water source. Some communities also purchase water from neighboring communities or a regional supplier from within the Tar-Pamlico basin, or outside of the basin. The water supply sharing network has evolved based on local needs, water availability and financial considerations. Just as county boundaries can include portions of more than one subbasin, water system service areas can overlap basin boundaries.

Table 1 summarizes the estimated water demands for water systems in the Tar-Pamlico River Basin derived from local water supply plans. Based on 2010 data, total demand reported was 35.44 millions of gallons per day (mgd), with 4.96 mgd transferred from other basins. In 2010, 88 percent of water came from sources within the Tar-Pamlico River Basin by 2060 this portion is expected to increase to 94 percent of demands. From 2010 to 2060 surface water withdrawals are anticipated to increase from 59 percent to 72 percent of demands while groundwater sources decline from 13 percent to about 6 percent of demand.

The Central Coastal Plain Capacity Use Area is a regulatory program designed to develop sustainable use of the Cretaceous aquifers. This program has imposed mandatory reductions based on historical groundwater use from the deeper aquifers in some counties east and southeast of Nash and Halifax counties. Some water systems have chosen to address mandatory reductions in groundwater use by purchasing treated surface water from neighboring water systems. This arrangement results in surface water transfers to support communities in the

Central Coastal Plain. Total water demand is expected to double from 40.395 mgd to 81.039 mgd from 2010 to 2050.

A map of the public water systems and water supply watersheds is found here: <http://nc.maps.arcgis.com/apps/PublicInformation/index.html?appid=fd19a7d250474a41a7240e3daf74221e>

TABLE 1: TOTAL DEMAND PROJECTION FOR LWSP BY TYPE OF SOURCE IN MILLIONS OF GALLONS PER DAY

SUPPLY SOURCES (% LWSP TOTAL DEMAND)	2010*	2020**	2030**	2040**	2050**	2060**
WATER PURCHASE FROM MAJOR SYSTEM	6.11 (15%)	7.43 (15%)	9.26 (16%)	10.88 (16%)	12.20 (15%)	15.56 (16%)
SURFACE WATER DIRECT WITHDRAWAL	24.02 (59%)	33.09 (66%)	39.14 (67%)	46.69 (67%)	57.72 (71%)	70.28 (72%)
GROUNDWATER WELL WITHDRAWAL	5.31 (13%)	5.39 (11%)	5.49 (9%)	5.49 (8%)	5.77 (7%)	5.60 (6%)
TAR BASIN TOTAL	35.44 (88%)	45.91 (91%)	53.89 (93%)	63.0 (93%)	75.69 (93%)	91.45 (94%)
TRANSFER FROM OUTSIDE OF TAR BASIN	4.96 (12%)	4.29 (9%)	4.35 (7%)	4.86 (7%)	5.35 (7%)	5.67 (6%)
LWSP TOTAL DEMAND	40.395	50.195	58.239	67.928	81.039	97.118

*Reported use for Service Area including transfer from other basin

**Estimated for Service Area Demand including transfer from other basin

Table 2 summarizes the estimated surface water demand projections for communities in this basin (click on the PWSS ID # for a link to the LWSP). Rocky Mount and Greenville Utilities Commission (GUC), systems dependent on surface water from this basin expect significant growth in water demands through 2060. Franklin County Public Utilities, the other system that anticipates considerable growth in water demand over the next few decades will satisfy that demand with water from the Roanoke River Basin supplied by the Kerr Lake Regional Water System.

TABLE 2: ESTIMATED DEMANDS FOR PUBLIC WATER SYSTEMS WITHDRAWING SURFACE WATER IN THE TAR-PAMLICO RIVER BASIN BASE ON LOCAL WATER SUPPLY PLAN DATA (MILLION GALLONS PER DAY)

SYSTEM NAME	PWSS ID	2010*	2020*	2030*	2040*	2050*	2060*
FRANKLINTON	02-35-010	0.32	0.36	0.38	0.41	0.44	0.47
FRANKLIN COUNTY PUBLIC UTILITIES	02-35-030	2.44	4.02	5.31	6.73	7.86	11.44
LOUISBURG	02-35-015	0.56	0.49	0.59	0.67	0.76	0.90
ROCKY MOUNT	04-64-010	10.20	11.23	12.30	13.15	13.95	15.15
ENFIELD	04-42-025	0.52	0.55	0.56	0.56	0.56	0.56
TARBORO	04-33-010	2.80	3.12	3.60	4.03	4.47	4.92
GREENVILLE UTILITIES COMMISSION (GUC)	04-74-010	11.56	19.40	24.36	30.95	40.94	52.30
TOTAL SURFACE WATER DEMAND		28.4	39.17	47.1	56.5	68.98	85.74

*Estimated demands for customers of the named system and other dependent water systems

WASTEWATER DISCHARGES

Tables 3 lists wastewater discharge information for municipal NPDES permit holders that discharge treated wastewater in the Tar-Pamlico River Basin. If future water demands reach the magnitudes shown in the projection tables some communities may have to increase the volume of their wastewater discharges to accommodate their customer's water usage.

TABLE 3: MUNICIPAL WASTEWATER DISCHARGE PERMIT FLOW IN MILLIONS OF GALLONS PER DAY (MGD)

PERMIT	OWNER	FACILITY	COUNTY	FLOW	SUBBASIN	RECEIVING STREAM
NC0020231	Town of Louisburg	Louisburg WWTP	Franklin	1.37	Upper Tar	Tar River
NC0020605	Town of Tarboro	Tarboro WWTP	Edgecombe	5.00	Lower Tar	Tar River
NC0020648	City of Washington	Washington WWTP	Beaufort	3.65	Pamlico	Tar River
NC0020834	Town of Warrenton	Warrenton WWTP	Warren	2.00	Fishing Creek	Fishing Creek
NC0023931	Greenville Utilities Commission	GUC WWTP	Pitt	17.50	Lower Tar	Tar River
NC0025054	City of Oxford	Oxford WWTP	Granville	3.50	Fishing Creek	Fishing Creek
NC0025402	Town of Enfield	Enfield WWTP	Halifax	1.00	Fishing Creek	Fishing Creek
NC0026042	Town of Robersonville	Robersonville WWTP	Martin	1.80	Pamlico Sound	Flat Swamp
NC0026492	Town of Belhaven	Belhaven WWTP	Beaufort	1.00	Pamlico	Battalina Creek
NC0030317	City of Rocky Mount	Tar River Regional WWTP	Edgecombe	21.00	Upper Tar	Tar River
NC0069311	Franklin County	Franklin County WWTP	Franklin	3.00	Upper Tar	Cedar Creek
NC0020061	Town of Spring Hope	Spring Hope WWTP	Nash	0.40	Upper Tar	Tar River
NC0020435	Town of Pinetops	Pinetops WWTP	Edgecombe	0.30	Lower Tar	Town Creek
NC0021521	Town of Aurora	Aurora WWTP	Beaufort	0.12	Pamlico	South Creek
NC0023337	Town of Scotland Neck	Scotland Neck WWTP	Halifax	0.68	Fishing Creek	Canal Creek
NC0025691	Town of Littleton	Littleton WWTP	Halifax	0.28	Fishing Creek	Butterwood Creek
NC0042269	Town of Bunn	Bunn WWTP	Franklin	0.15	Upper Tar	Crooked Creek
NC0050661	Town of Macclesfield	Macclesfield WWTP	Edgecombe	0.18	Lower Tar	Bynum's Mill Creek