

## **SECTION 6. REGULATIONS AFFECTING WATER SUPPLY PLANNING**

Numerous regulations and governmental programs exist that need to be considered when planning for water supply needs. A general discussion of these requirements and programs follows. For more specific information, please contact the designated lead agency.

### **6.1 Water Use Act of 1967**

North Carolina has generally had sufficient water resources to meet its water supply needs. Consequently, there are no statewide water use permitting requirements. However, the Water Use Act of 1967 does allow the Environmental Management Commission to designate an area as a Capacity Use Area (CUA) if the sustainability of water resources in an area becomes threatened or if competition among water users requires coordination to protect the public interest.

Within a CUA, all persons withdrawing more than 100,000 gallons of water per day must first obtain a permit from the Division of Water Resources (DWR). CUA water use permits specify a maximum daily water withdrawal to protect the water source and other water users from negative impacts that might otherwise occur.

Presently, there is one capacity use area. Capacity Use Area #1 encompasses all or parts of Beaufort, Carteret, Craven, Hyde, Martin, Pamlico, Tyrrell, and Washington Counties. It was declared a capacity use area in 1976 due to concern over the potential impact of a large phosphate mining operation on water resources in the region.

Contact the Division of Water Resources at (919) 733-4064 for additional information about the Water Use Act and capacity use area issues.

### **6.2 Local and State Water Supply Planning**

Local governments that provide or plan to provide public water service are required to prepare a local water supply plan (LWSP), in accordance with NCGS 143-355(1), and submit it to the Division of Water Resources (DWR). DWR also encourages private water systems serving 1000 customers or more to prepare a local water supply plan.

The LWSP is basically an assessment of a system's water supply needs for a 20 to 25-year period and that system's ability to meet those needs. For systems with average daily demands that exceed 80 percent of their available supply during the planning period, a specific plan is required for meeting those needs. After DWR determines that the plan meets the requirements of the law, the plan must be adopted by the local governing board for the system. The LWSP must be updated at least every five years.

The first round of LWSPs were based on 1992 water supply and demand information and included projections through 2020. Over 500 local government water systems prepared 1992

LWSPs, along with numerous private water systems that voluntarily completed LWSPs. During 1998 and 1999, nearly all of these systems updated their LWSP using 1997 data.

The LWSPs are the building blocks for the State Water Supply Plan (SWSP), also required under NCGS 143-355. Prepared by DWR, and also to be updated every five years, the SWSP is a compilation of the local plan data, along with a detailed discussion of current and upcoming water supply issues that state and local governments will be dealing with over the next five to ten years.

### **6.3 Interbasin Transfer of Surface Water**

North Carolina's water resources have the potential to meet all of the state's agricultural, industrial, and public water supply needs. However, water is not distributed evenly across the state. To meet demands, it is sometimes necessary to transfer water from one area to another, which may involve transferring water between river basins. In other cases, as water systems grow, their service areas may extend into an adjoining river basin, or linking of systems to form regional water supply systems may involve multiple river basins. Sometimes, wastewater is discharged to a stream in a river basin different than the raw water source. In all of these situations, water is being transferred from one river basin to another in some degree.

When water is transferred out of a river basin, flows downstream of the withdrawal are reduced, which can raise a number of economic and ecological concerns. Likewise, increased water availability and wastewater discharges in the receiving basin can also raise a number of concerns. Issues include potential impacts on water supply availability, wastewater assimilation, water quality, fish and wildlife habitat, hydropower, navigation, recreation, and flooding.

#### **6.3.1 Regulation of Surface Water Transfers**

The Regulation of Surface Water Transfers Act (NCGS 143-215.22I) was enacted in 1993 to regulate large surface water transfers between river basins by requiring a certificate from the Environmental Management Commission (EMC). Transfers between any of the 38 defined river basins shown in Figure 6-1 may be subject to the provisions of the statute, depending on the transfer amount.

A transfer certificate is required for a new transfer of two million gallons per day (MGD) or more and for an increase in an existing transfer by 25 percent or more, if the total transfer including the increase is two MGD or more. But, if a transfer facility existed or was under construction on July 1, 1993, a certificate is not required up to the full capacity of that facility to transfer water, regardless of the transfer amount.

Responsibility for obtaining a transfer certificate lies with the owner of the pipe where it crosses the basin boundary. However, another party involved in the transfer can assume that responsibility, if approved by the Division of Water Resources.

The amount of a transfer is determined as the amount of water moved from the source basin to the receiving basin, less the amount of that water returned to the source basin. Therefore, any water

consumption or loss that occurs in the receiving basin would be considered a transfer, even if the remaining wastewater is discharged back to the source basin. If that out-of-basin consumption or loss is 2 MGD or greater, then certification would be required.

Petitions for certification must provide a description of the transfer facilities, the proposed water uses, water conservation measures that will be used to assure efficient use, and any other information necessary for the EMC to fully evaluate the request. The statute requires extensive public notice and a public hearing. Among the items that the EMC must consider in determining whether a certificate may be issued for a transfer are:

- < The necessity, reasonableness, and beneficial effects of the transfer;
- < Any detrimental effects on both the source river basin and receiving river basin;
- < Reasonable alternatives to the proposed transfer, including their probable costs and environmental impacts;
- < Projected municipal water needs in the source basin;
- < The cumulative effect on the source basin of any water transfer or consumptive water use currently authorized under this law or projected in any local water supply plan.

A certificate will be granted for a transfer if the applicant establishes and the EMC concludes by a preponderance of the evidence that (i) the benefits of the proposed transfer outweigh the detriments of the transfer, and, (ii) the detriments have been or will be mitigated to a reasonable degree. The EMC may grant the petition in whole or in part, or deny it, and may require mitigation measures to minimize detrimental effects.

Transfers requiring certification are also subject to the State Environmental Policy Act (SEPA). Preparation of an environmental document will be necessary (either an Environmental Assessment or an Environmental Impact Statement, depending on the issues involved in the transfer). As a result, the certification process can be expected to take 2 to 3 years to complete. The amount of time necessary will also depend on the level of public interest and the controversial nature of the proposed transfer.

Table 6-1 lists the estimated average daily transfer amounts (in million gallons per day) that occurred across the state in 1997. Many of these transfers were quite small and, unless they exceeded 100,000 gallons per day, were not quantified. Larger transfer amounts were estimated using average water use, sales, and discharge data from the 1997 Local Water Supply Plans. Certification is only required for those transfers that exceed the 2.0 MGD threshold or the grandfathered transfer amount, whichever is greater. However, the table does demonstrate how common interbasin transfers are across the state. Contact the Division of Water Resources at (919) 733-4064 for additional information about interbasin transfer and certification requirements.

### **6.3.2 Interbasin Transfer Certifications**

The Towns of Cary and Apex are currently approved for a 16 million gallon per day transfer from the Haw River basin to the Neuse River basin. This transfer was approved under General

Statutes 153A-285 and 162A-7, which were replaced with NCGS 143-215.22I described above. In addition, the Piedmont Triad Regional Water Authority already has approval to transfer up to 30.5 million gallons per day from the Deep River basin to the Haw and Yadkin River basins, in conjunction with its planned Randleman Reservoir project.

The Division of Water Resources is currently reviewing two requests for interbasin transfer certifications. Cary, Apex, Morrisville, and Wake County (serving Research Triangle Park) have requested an increase in their transfer amount totaling about 27 million gallons per day, associated with their requests for water supply storage allocations from Jordan Lake. An Environmental Impact Statement to support this request has been completed. The Environmental Management Commission approved a request to proceed to public hearing at its December 14, 2000 meeting. This hearing, which will be held in March 2001, will pertain to both the Jordan Lake allocation request and the associated interbasin transfers.

Charlotte Mecklenburg Utilities (CMU) has applied for a certificate to increase its transfer of water from the Catawba River basin to the Rocky River basin related to expansion of its Mallard Creed Water Reclamation Facility. CMU is currently preparing the SEPA environmental document required for the interbasin transfer petition.

#### **6.4 Registration of Water Withdrawals and Transfers**

In 1991, the General Assembly required that any person who withdraws or transfers one million gallons per day or more of surface water must register those withdrawals with the Division of Water Resources (NCGS 143-215.22H). That initial round of registrations was based on surface water withdrawals in 1991 and included local government water systems that later prepared a LWSP. The law was changed in 1993 to require registration of ground water withdrawals also and to exempt local government water systems with local water supply plans from the registration requirement. A second round of registrations was then held that included both surface and ground water withdrawals for 1993. In 1998, the registration threshold for all water uses except agriculture was lowered from one million gallons per day (MGD) to 100,000 gallons per day. The withdrawal registration threshold for agricultural water uses is still 1.0 MGD. Registrations for 1999 water withdrawals were due March 1, 2000. Water users must update their water withdrawal registrations every five years.

Registering water withdrawals provides water use information needed for water supply planning and management throughout the state. By registering water use every five years, water users will establish a record of the amount of water they have been using.

#### **6.5 Instream Flow Assessment**

Adequate flow needs to be maintained in streams to protect aquatic habitat, allow recreational use, and maintain water quality. Downstream users also be depend on adequate flow reaching their intakes. Evaluating and maintaining instream flows is therefore very important.

In North Carolina, policies have been adopted that are intended to ensure adequate instream flows below reservoirs and river intakes. The Division of Water Resources, in conjunction with other state and federal resource agencies, determines instream flow requirements. The Division of Land Resources specifies the minimum release requirements for reservoirs in their dam safety permits.

Generally, instream flow requirements are not considered unless withdrawals exceed 20 percent of that location's 7Q10 flow (the lowest consecutive seven-day average flow expected to occur once in ten years). If withdrawals do exceed 20 percent of the 7Q10 flow, instream flow needs will be assessed based on the habitat rating of the affected reach, with higher habitat ratings typically resulting in higher instream flow requirements. The Division of Water Quality may further limit withdrawals based on water quality considerations (such as wastewater assimilation).

Minimum release requirements may have a significant impact on planning for public water supply systems, especially systems that do not currently have minimum release requirements. Any expansion of an existing reservoir or intake will subject that project to evaluation of instream flow requirements. When a new minimum release is applied to an existing reservoir, the minimum release can be up to ten percent of the reservoir's safe yield if habitat conditions warrant. For run-of-river intake expansions, the existing withdrawal capacity is normally "grandfathered," so a system can continue to rely on at least that grandfathered amount. However, when amounts in excess of this grandfathered capacity are withdrawn, a downstream flow target will need to be met, possibly restricting withdrawals. Detailed rules by which minimum releases and maximum withdrawals are set can be found in Title 15A 2K.0501-.0504 of the North Carolina Administrative Code.

Many smaller systems are beginning to outgrow their small water supplies. These systems may face difficulties in finding additional water supply because of financial constraints or because they are not located near a larger source or another system from which they could purchase water. From an instream flow standpoint, this can lead to some difficult situations where a local system would like to increase its demands on perhaps an already overtaxed surface water source.

Table 6-2 lists the instream flow studies that the Division of Water Resources has conducted, along with the water system and water body involved.

## **6.6 Water Supply Watershed Protection**

A water supply watershed is all of the land area that drains to a public water supply. There are over two hundred water supply watersheds in North Carolina. Land use activities on the watershed affect the quality and quantity of available water.

In 1989, the North Carolina General Assembly passed the Water Supply Watershed Protection Act (NCGS 143-214.5 and 143-214.6) to establish minimum statewide water supply protection measures. Watershed classifications are based on the presence of wastewater discharges and the level of development in the watershed at the time of classification. There are five classifications, ranging from WS-I, for an essentially undeveloped watershed in public ownership, to WS-V, which is the least restrictive water supply watershed classification.

Local governments with land use jurisdiction in water supply watersheds are required to develop ordinances to protect water quality in the streams and water bodies receiving runoff from the protected areas. Restrictions vary depending on classification, but could require limits on development density, storm water management, and vegetated buffers along waterways. Limitations are most strict on WS-I watersheds. Because of the diversity of communities in the state, watershed management programs are administered locally, but management plans have to be approved by the Environmental Management Commission.

If a new surface water source is planned along a stream segment that is not already part of a water supply watershed, a reclassification must be conducted before that new water supply can be used. The reclassification process can be expected to take about two years to complete. For further information contact the Division of Water Quality at (919) 733-5083.

## **6.7 Basinwide Water Quality Planning**

In 1991, the Division of Water Quality (DWQ) instituted a basinwide approach to water quality management. The program is a watershed-based management approach intended to improve the efficiency, effectiveness, consistency, and equitability of the state's surface water quality program. This approach features development of basinwide water quality management plans for the state's major river basins, basinwide permitting of wastewater discharges, and integration of existing point and non-point source programs within each basin.

DWQ has prepared basinwide water quality management plans for each of the major river basins in the state. The plans communicate the state's rationale, approaches, and long-term water quality management strategies for each basin. The process of evaluating conditions in a basin and developing a management plan is a multi-year endeavor. DWQ will evaluate and update each basin plan every five years.

DWQ collects information from other agencies having resource management or data collection responsibilities within the basin, including water withdrawal and interbasin transfer data from the Division of Water Resources. Conditions in the basin are evaluated and implementation, monitoring, and enforcement plans are developed. After review by the Environmental Management Commission (EMC), DWQ releases a draft Basinwide Water Quality Plan for public comment. After revisions are made and the final plan is adopted by the EMC, water quality protection efforts throughout the basin are guided by the plan.

Water quality protection programs can have a major impact on community water supply planning. Maintaining the quality of raw water supplies is very important for ensuring consistently high quality drinking water. In addition, concerns about water quality downstream of existing or planned water withdrawals can limit the amount of water a community can withdraw from a surface water source. Water quality concerns can also limit the quantity of wastewater a community will be permitted to discharge, limiting system expansion.

As the population of North Carolina continues to grow, demands placed on our water resources also grow, resulting in conflicts between water uses. We expect our rivers and streams to

provide us with a variety of services, such as drinking water, irrigation, livestock watering, commercial fisheries, industrial supply, recreation, habitat maintenance, navigation, and waste assimilation. In order to manage our water resources to meet this wide range of demands, evaluation of the cumulative effects of water use on water quality is critical. The basinwide water quality planning process is a vital tool to promote responsible stewardship of our water resources while also trying to accommodate our state's growth. For more information on the Basinwide Water Quality Plan, visit the NC Division of Water Quality's web site at <http://h2o.enr.state.nc.us/basinwide/index.htm> or call (919) 733-5083.

## **6.8 Approval of Water System Expansions**

The Public Water Supply Section (PWSS) of the Division of Environmental Health (DEH) ensures the safety and reliability of public water systems. Plans for expansions of existing water systems, or for new systems, must be submitted to PWSS for approval. Construction or modification of a system can not legally begin until approval is received. PWSS approval focuses on assuring that drinking water delivered to customers meets health standards and the requirements of the Safe Drinking Water Act.

PWSS can also limit the number of service connections to a public water system based on the quality and quantity of water the system is capable of delivering. Several DEH rules that govern public water systems have specific references to local water supply plans. Of particular significance is the section that relates to new connections (T15A: 18C .0409). Units of local government which are operating under a LWSP in accordance with NCGS 143-355(1) shall not be limited in the number of service connections. This is because the local water supply plans consider future water needs and the water system's ability to meet those increased water supply needs. However, a public water system that does not have a LWSP must limit the number of connections based on criteria set out in DEH rules. The rules, in effect, encourage the preparation of LWSPs.

Under rules developed in 1999 to satisfy requirements included in the 1996 amendments to the Safe Drinking Water Act, water systems planning to modify or expand must now also document their technical, managerial, and financial "capacity" to operate. A Water System Management Plan must be prepared and submitted to PWSS in addition to the engineering plans that are submitted for approval. Units of local government that are required to develop a LWSP must submit copies of their adopted LWSP to PWSS along with the Engineer's Report and the Water System Management Plan.

The PWSS also oversees the Wellhead Protection and Source Water Assessment Programs. These programs are intended to assure that the quality of a system's raw water source is protected.

For more information on these programs, please contact the Public Water Supply Section at (919) 733-2321.

## **6.9 Coastal Area Management Act**

The Coastal Area Management Act (CAMA) of 1974 (NCGS 113A-100) was enacted to ensure the wise growth and protection of North Carolina coastal areas. The act establishes a cooperative program of coastal area management between state and local governments. It details policies and guidelines for the protection of natural resources, economic development, recreation, and tourism in coastal areas.

Land use planning lies at the center of local government's involvement in coastal area management. It gives local leaders the opportunity and responsibility to establish and enforce policies to guide the development of their communities. Under CAMA, each of the 20 coastal counties must prepare a land use plan and update that plan every five years. Municipalities in the coastal area can either be covered by a county plan or develop their own plan. The Division of Coastal Management (DCM) provides financial and technical assistance to local governments for land use plan preparation.

Land use planning under CAMA affects many water supply systems in the coastal counties. The Division of Water Resources is working with DCM to coordinate land use and local water supply planning. According to CAMA's land use planning guidelines, all adopted local water supply plans that fall within the planning jurisdiction must be included as an appendix to the land use plan. Water supply issues in the land use plan may be referred to this appendix. By including local water supply plans in the land use planning process, coastal communities will be able to ensure that future water supply needs have been addressed.

## **6.10 State Environmental Policy Act**

In 1971, the General Assembly passed the North Carolina Environmental Policy Act (SEPA) to "declare a State policy which will encourage wise, productive, and beneficial use of the natural resources of the State without damage to the environment". It requires state agencies to review and report on the potential environmental effects and consequences of activities that involve an action by a state agency, an expenditure of public funds, or private use of public lands, and have a potential environmental effect. Actions by a state agency include such things as land and money appropriations, awarding grants, issuing permits, or granting licenses.

The rules implementing the law establish threshold criteria that, when exceeded, require the preparation of an environmental assessment (EA) of the potential impacts of a proposed project. An EA provides the agency with a decision-making tool to evaluate whether a proposed project has potential environmental impacts. After reviewing an EA, if the agency determines that potential impacts are significant then an environmental impact statement (EIS) will be required. If impacts are not expected to be significant the agency will issue a Finding of No Significant Impact (FONSI), a declaration that an EIS need not be prepared.

Non-major activities for which an EA is usually not required are listed in the NC Administrative Code at 15A NCAC 1C .0100 et seq. If a proposed project exceeds the criteria defined as "non-

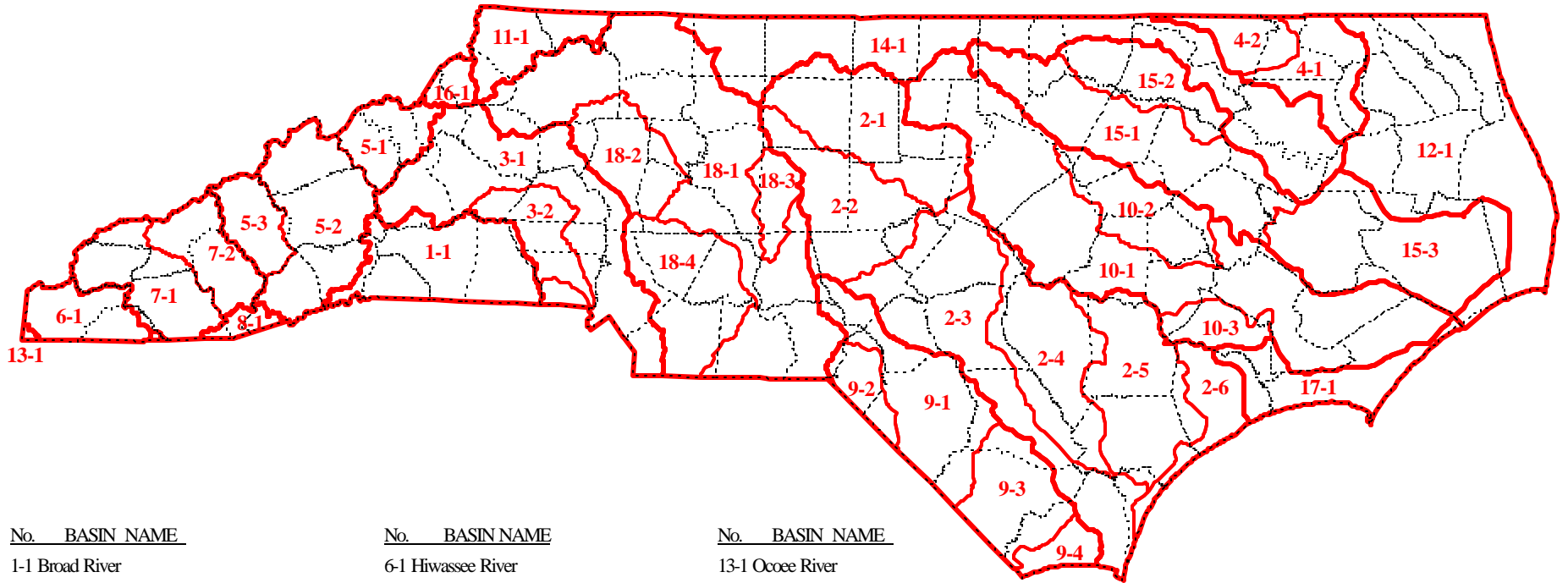


major”, it is considered a major activity and an EA must be prepared. The criteria for non-major activities associated with water system projects are:

- (1) improvements to a water treatment plant involving an increase in capacity of less than 1 MGD or improvements that result in a combined design withdrawal capacity less than one-fifth of the 7-day, 10-year low flow of the contributing stream;
- (2) ground water withdrawals of less than 1 MGD where such withdrawals are not expected to cause a significant alteration in established land use patterns, or degradation of ground water or surface water quality;
- (3) construction of a dam less than 25 feet in height and having storage capacity less than 50 acre-feet.

The rules have provisions for the Secretary of the Department of Environment and Natural Resources (DENR) to require environmental documentation even for non-major activities if there is the potential for significant adverse environmental or public health impacts.

The environmental review process under SEPA provides a mechanism to evaluate potential impacts on water resources of proposed projects before they are constructed. Through this process the detrimental impacts on resources can be mitigated and minimized. This process can be time consuming and has to be factored into decision-making for and scheduling of water supply projects. The DENR Customer Service Center (1-877-623-6748) can provide assistance with SEPA criteria and referrals to other sources of help.



No.	BASIN NAME
1-1	Broad River
2	Cape Fear
2-1	Haw River
2-2	Deep River
2-3	Cape Fear River
2-4	South River
2-5	Northeast Cape Fear River
2-6	New River
3	Catawba
3-1	Catawba River
3-2	South Fork Catawba River
4	Chowan
4-1	Chowan River
4-2	Meherin River
5	French Broad
5-1	Nolichucky River
5-2	French Broad River
5-3	Pigeon River

No.	BASIN NAME
6-1	Hiwassee River
7	Little Tennessee
7-1	Little Tennessee River
7-2	Tuckasegee River
8-1	Savannah River
9	Lumber
9-1	Lumber River
9-2	Big Shoe Heel Creek
9-3	Waccamaw River
9-4	Shalotte River
10	Neuse
10-1	Neuse River
10-2	Contentnea Creek
10-3	Trent River
11-1	New River
12-1	Albemarle Sound

No.	BASIN NAME
13-1	Ocoee River
14-1	Roanoke River
15	Tar - Pamlico
15-1	Tar River
15-2	Fishing Creek
15-3	Pamlico River & Sound
16-1	Watauga River
17-1	White Oak River
18	Yadkin
18-1	Yadkin River
18-2	South Yadkin River
18-3	Uwhamie River
18-4	Rocky River

**Legend**

- Major River Basin Boundary
- Sub-Basin Boundary
- County Boundary

**Figure 6-1. Basins in North Carolina as Defined by General Statute 143-215.22.G**

<b>Table 6-1. Estimated Interbasin Transfers in 1997</b>				
Source Sub-Basin	Supplier	Receiving Sub-Basin	Receiver (if different from Supplier)	Average Transfer (in MGD)
Broad River	Kings Mountain	Catawba River		0.288
	Kings Mountain	S Fork Catawba River	Gastonia WWTP	1.186
Haw River	Cary	Neuse River		8.200
	Cary	Neuse River	Apex	1.200
	Cary	Cape Fear River	Apex	0.300
	Cary	Neuse River	Holly Springs	<0.1
	Cary	Neuse River	Morrisville	<0.1
	Greensboro	Deep River		0.600
	Greensboro	Deep River	Jamestown	<0.1
	Reidsville	Roanoke River		<0.1
Deep River	High Point	Yadkin River		4.400
Cape Fear River	Brunswick Co	Shalotte River	Carolina Blythe	0.083
	Brunswick Co	Shalotte River	Holden Beach	0.353
	Brunswick Co	Shalotte River	Long Beach	0.360
	Brunswick Co	Shalotte River	Ocean Isle Beach	0.386
	Brunswick Co	Shalotte River	Shalotte	0.205
	Brunswick Co	Shalotte River	Sunset Beach	0.501
	Carthage	Deep River		0.200
	Carthage	Lumber River	Moore Co WWTP	0.111
	Dunn	South River		<0.1
	Dunn	Neuse River	Benson	1.200
	Dunn	South River	Falcon	<0.1
	Harnett Co	South River	Angier	0.200
	Harnett Co	South River	Coats	<0.1
	Harnett Co	Neuse River	Fuquay-Varina	0.140
	Sanford	Deep River		1.600
	Sanford	Deep River	Chatham Co E	<0.1
	Vass	Lumber River	Moore Co WWTP	0.094
	Wilmington	NE Cape Fear River		4.600
Wilmington	New River (Cape Fear)		<0.1	
Catawba River	Belmont	S Fork Catawba River		unknown
	Belmont	S Fork Catawba River	Cramerton	<0.1
	Burlington Industries	Rocky River	Mooreville WWTP	0.384
	Charlotte-Mecklenburg	Rocky River		9.000
	Charlotte-Mecklenburg	Rocky River	Union Co	<0.1
	Gastonia	S Fork Catawba River		6.724
	Gastonia	S Fork Catawba River	Cramerton	0.329
	Gastonia	S Fork Catawba River	Dallas	<0.1
	Gastonia	S Fork Catawba River	Lowell	0.454
	Gastonia	S Fork Catawba River	McAdenville	0.425
	Gastonia	S Fork Catawba River	Ranlo	0.329
	Hickory	S Fork Catawba River		5.100
	Hickory	S Fork Catawba River	Brookford	<0.1
	Hickory	S Fork Catawba River	Conover	<0.1
Hickory	S Fork Catawba River	Icard	<0.1	

**Table 6-1. Estimated Interbasin Transfers in 1997 (continued)**

Source Sub-Basin	Supplier	Receiving Sub-Basin	Receiver (if different from Supplier)	Average Transfer (in MGD)
Catawba River	Hickory	S Fork Catawba River	Long View	<0.1
	Lenoir	Yadkin River	Caldwell Co N	<0.1
	Lenoir	Yadkin River	Caldwell Co SE	<0.1
	Lincoln Co	S Fork Catawba River		unknown
	Lincoln Co	S Fork Catawba River	Lincolnton	0.110
	Long View	S Fork Catawba River		1.310
	Long View	S Fork Catawba River	Burke Co	<0.1
	Mooreville	Rocky River		unknown
	Mooreville	South Yadkin River		unknown
	Morganton	S Fork Catawba River		<0.1
	Morganton	S Fork Catawba River	Burke Co	<0.1
	Mount Holly	S Fork Catawba River	Stanley	<0.1
	Union Co	Rocky River		3.600
	Union Co	Rocky River	Monroe	2.000
	Valdese	S Fork Catawba River	Burke Co	<0.1
Valdese	S Fork Catawba River	Icard	<0.1	
S Fork Catawba River	Bessemer City	Catawba River		0.366
	Cherryville	Broad River		unknown
	Lincolnton	Catawba River		<0.1
	Newton	Catawba River		<0.1
	Newton	Catawba River	Catawba	<0.1
	Stanley	Catawba River		<0.1
French Broad River	Hendersonville	Broad River		<0.1
	Hendersonville	Broad River	Saluda	0.151
Pigeon River	Canton	French Broad River		<0.1
Little Tennessee River	Highlands	Savannah River		0.110
Lumber River	Southern Pines	Cape Fear River		unknown
	Southern Pines	Cape Fear River	Moore Co (Pinehurst)	unknown
Neuse River	Durham	Haw River		18.000
	Goldsboro	Contentnea Creek	Wayne WD	<0.1
	Goldsboro	NE Cape Fear River	Wayne WD	<0.1
	Hillsborough	Haw River	Orange-Alamance WS	<0.1
	Orange-Alamance WS	Haw River		0.500
	Raleigh	Contentnea Creek	Zebulon	<0.1
	Zebulon	Contentnea Creek		0.680
New River	Blowing Rock	Catawba River		0.137
	Blowing Rock	Yadkin River		<0.1
	Boone	Watauga River		<0.1
Roanoke River	Kerr Lake RWS	Tar River	Henderson	<0.1
	Kerr Lake RWS	Tar River	Oxford	1.330
	Kerr Lake RWS	Fishing Creek	Warren Co	0.644
	Roanoke Rapids SD	Meherrin River	Halifax Co	<0.1
	Roanoke Rapids SD	Meherrin River	Northampton-Gaston	<0.1
	Roxboro	Neuse River		<0.1
Tar River	Franklin Co	Neuse River	Youngsville	<0.1

**Table 6-1. Estimated Interbasin Transfers in 1997 (continued)**

Source Sub-Basin	Supplier	Receiving Sub-Basin	Receiver (if different from Supplier)	Average Transfer (in MGD)
Yadkin River	Albemarle	Rocky River		5.822
	Albemarle	Rocky River	Pfeiffer-North Stanly WA	0.153
	Albemarle	Rocky River	Stanly Co	0.775
	Anson Co	Rocky River		0.650
	Anson Co	Rocky River	Ansonville	<0.1
	Anson Co	Rocky River	Marshville	0.249
	Anson Co	Rocky River	Peachland	<0.1
	Anson Co	Rocky River	Polkton	<0.1
	Anson Co	Rocky River	Union Co	0.788
	Davidson Water	Uwharrie River		1.120
	Davidson Water	Deep River		0.420
	Davidson Water	Deep River	Archdale	0.176
	Davidson Water	Deep River	High Point	<0.1
	Denton	Uwharrie River	Handy SD	<0.1
	Hamlet	Big Shoe Heel Creek	Richmond Co	<0.1
	King	Roanoke River		<0.1
	Landis	Rocky River		<0.1
	Montgomery Co	Deep/Lumber/Uwharrie River		unknown
	Montgomery Co	Deep River	Biscoe	<0.1
	Montgomery Co	Deep River	Candor	<0.1
	Montgomery Co	Lumber River	Candor	<0.1
	Montgomery Co	Deep River	Star	<0.1
	North Wilkesboro	Cape Fear River	Broadway	0.062
	Norwood	Rocky River		0.355
	Norwood	Rocky River	Stanly Co	<0.1
	Richmond Co	Big Shoe Heel Creek		<0.1
	Richmond Co	Lumber River		<0.1
	Salisbury	South Yadkin River		0.290
	Salisbury	South Yadkin River	Rowan Co	0.119
	Thomasville	Uwharrie River		<0.1
Winston-Salem	Roanoke River		0.386	
Winston-Salem	Haw River		<0.1	
Winston-Salem	Deep River		<0.1	
South Yadkin River	Alexander Co WC	Catawba River		unknown
	Alexander Co WC	Catawba River	Taylorville	0.400
	Alexander Co WC	Catawba River	West Iredell WC	<0.1
	Davie Co	Yadkin River		<0.1
	Kannapolis	Rocky River		4.492
	Mocksville	Yadkin River		0.563
	Statesville	Catawba River	Troutman	<0.1
	Statesville	Catawba River	West Iredell WC	unknown
Uwharrie River	Asheboro	Deep River		4.630
	Asheboro	Yadkin River		<0.1
	Asheboro	Deep River	Randleman	<0.1
	Asheboro	Deep River	Seagrove/Ulah WD	<0.1
Rocky River	Monroe	Catawba River		<0.1

**Table 6-2. Instream Flow Studies Conducted**

RIVER BASIN	WATER SYSTEM	WATER BODY
Broad	Shelby	First Broad River
	Cleveland County Sanitary District	First Broad River
	Rutherford County	Roberson Creek
	Forest City	Second Broad
Cape Fear	Siler City	Rocky River Reservoir
	Piedmont Triad Water Authority	Randleman Reservoir
	Graham-Mebane	Back Creek
	Fayetteville	Little Cross Creek
	Carthage	Nicks Creek
Catawba	Cherryville	Indian Creek
	Lincolnton	South Fork Catawba
	Morganton	Catawba
French Broad	Hendersonville	Mills River North Fork Mills Bradley Creek
	Weaverville	Ivy Creek
	Woodfin	Reems Creek
	Maggie Valley Sanitary District	Campbell Creek Johnathon Creek
Neuse	Falls Lake	Neuse River
	Hillsborough	Eno River West Fork
	Wilson	Contentnea Creek Buckhorn reservoir
Tar-Pamlico	FWASA/Louisburg	Tar River
	Rocky Mount	Tar River
Watauga	Beech Mountain	Buckeye Creek
Yadkin-Pee Dee	Winston-Salem	Yadkin River
	Concord	Coddle Creek Reservoir
	Yadkinville	South Deep Creek
	Yadkin County	South Deep Creek
	Mount Airy	Stewarts Creek Lovills Creek Pauls Creek
	Pilot Mountain	Tom's Creek
Little Tennessee	Cherokee Indian Reservation	Oconaluftee River
Lumber	Southern Pines	Drowning Creek