

2017 Annual Report on Interbasin Transfers from the Catawba River Basin

North Carolina Division of Water Resources



Department of Environmental Quality

September 2018

INTRODUCTION

This report has been prepared in accordance with the Settlement Agreement signed on December 3, 2010 reached between the States of South Carolina and North Carolina, Duke Energy Carolinas LLC, and the Catawba River Water Supply Project. As a condition of that agreement, *“each State shall prepare an annual report of the average daily transfer amounts for each entity holding an [Interbasin Transfer] IBT certificate and provide it to the other State.”* Therefore, this annual report is intended to be a summary of IBTs to and from the Catawba River Basin that are conducted by IBT certificate holders.

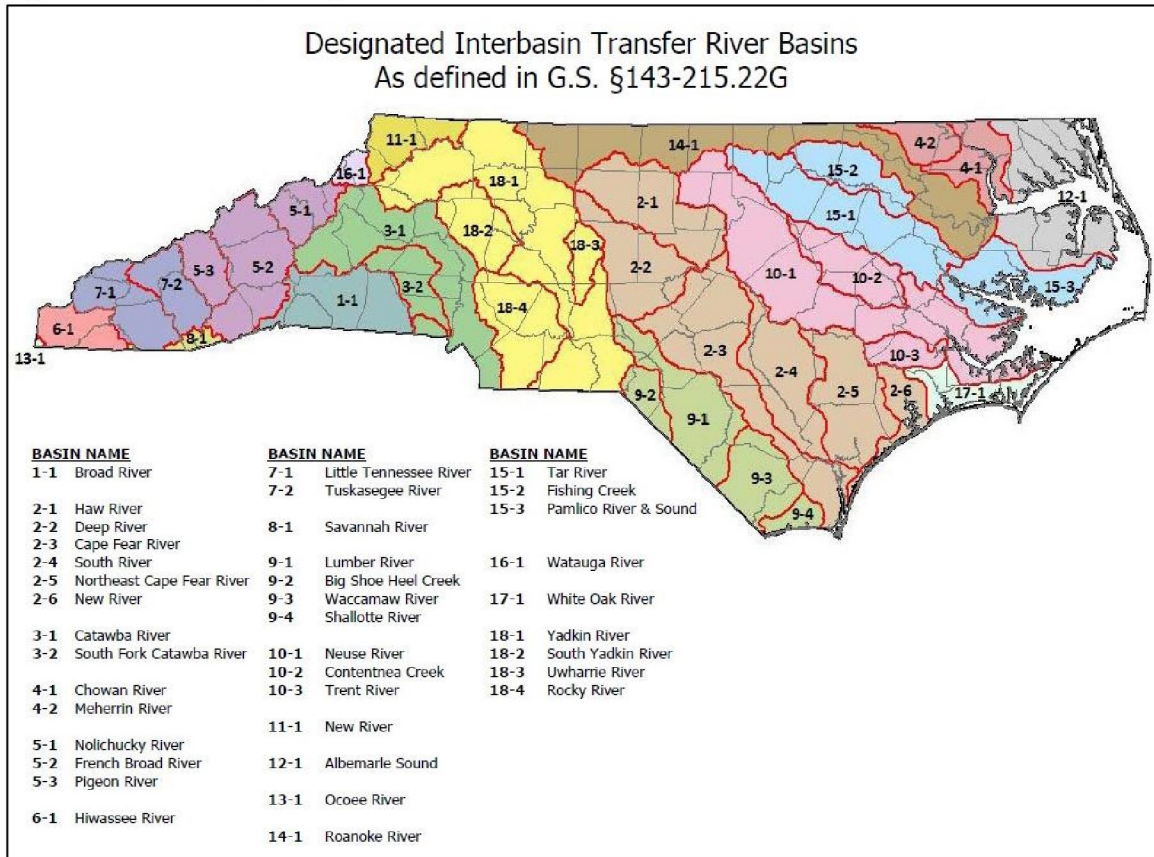
BACKGROUND: IBT LAW IN NORTH CAROLINA

In 1993, the North Carolina Legislature enacted General Statute G.S. §143-215.22I as part of An Act to Regulate Interbasin Transfers (Session Law 1993-348). This law regulated large surface water transfers between river basins by requiring a certificate from the Environmental Management Commission (EMC). Following General Statute G.S. §143-215.22I, a transfer certificate was required for new surface water transfers of 2.0 million gallons per day (MGD) or more.

Due to the fact that the Surface Water Transfer Act was first adopted in 1993, many of the IBT rules and requirements reference a system’s daily flows and capacity at that time. Facilities that were in existence prior to 1993 are said to have Grandfathered Transfers up to either 25 percent above their average daily flow at that time, their maximum system capacity at that time, or 2 MGD - whichever is greater. If a facility existed or was under construction by July 1, 1993, a certificate is not required up to the full capacity of that facility to transfer water, regardless of the transfer amount.

An important point in North Carolina’s IBT law is that it creates its own, specific definition of a “river basin.” According to G.S. §143-215.22G, there are 38 designated river basins. An IBT certificate is required for any transfer, meeting the statutorily defined thresholds, between any of these defined river basins. Figure 1 illustrates the designated river basins.

Figure 1: Statutorily designated IBT river basins



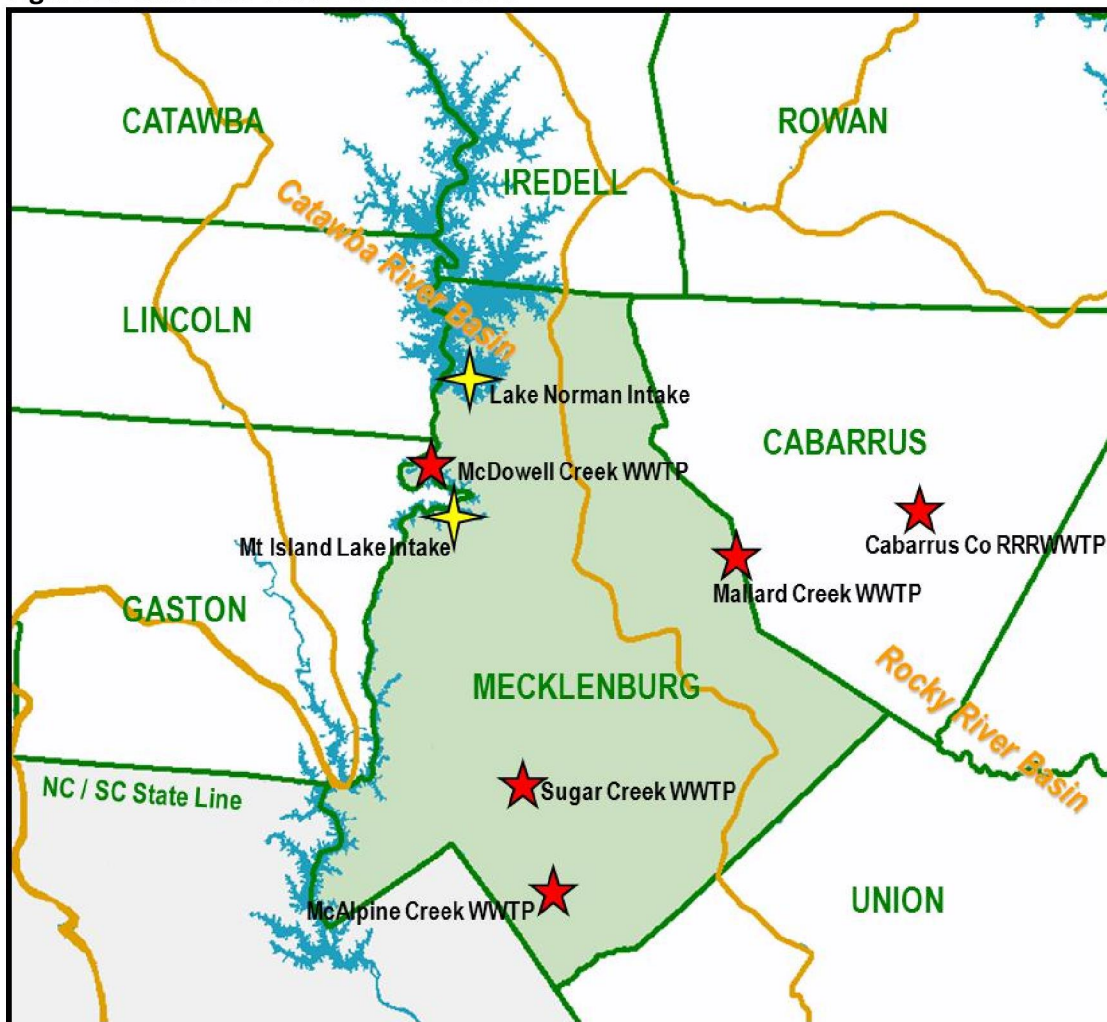
The current procedure for obtaining an IBT Certificate is specifically laid out in G.S. § 143-215.22L. The full process can take three to five years (or more), requires local and interstate notification, and offers a number of opportunities for public comment and review. The passage in 2013 of Session Law 2013-388 changed the way in which a proposed IBT is calculated, among other revisions. Instead of a maximum daily transfer, the revised calculation is based on an average daily transfer calculated over a calendar month. Even though the statistical calculation has changed, the 2.0 MGD threshold remains the same. The full text of IBT statute §143-215.22L is included as Appendix A in this report. Previous IBT statutes are available on the Division of Water Resources (DWR) website at: <http://www.ncwater.org/?page=296>.

As of September 2018, the North Carolina EMC has issued IBT certificates for nine water systems. Two of these certificates directly affect the Catawba River Basin. Those two certificates, Charlotte Water (formerly Charlotte Mecklenburg Utilities) and the Cities of Concord and Kannapolis, are further discussed in this report. The DWR also estimates that throughout North Carolina there are more than 100 water systems that have surface water transfers, most of which transfer less than 2.0 MGD on a maximum day basis. These water systems are not required to obtain an IBT certificate until they exceed the statutory thresholds. Since these systems are not required to obtain an IBT certificate, they are not discussed in this document.

CHARLOTTE WATER

Charlotte Water, formerly Charlotte Mecklenburg Utilities, has held an IBT certificate since March 14, 2002. The certificate allows Charlotte Water to transfer up to 33.0 MGD from the Catawba River Basin to the Rocky River basin. Figure 2 illustrates Charlotte Water's two water intakes in the Catawba River basin, and five wastewater treatment plants throughout the Catawba and Rocky River basins. The utility pursued this certificate in order to meet projected demands through 2030 in eastern Mecklenburg County. Specific details of Charlotte Water's service area and sales are included in Appendix B, Charlotte Water 2017 IBT Annual Report.

Figure 2: Charlotte Water Service Area



In May 2013, Charlotte Water was granted a modification to the original IBT Certificate from the EMC, which removed Condition 3 from the Certificate. Condition 3 stated that, "the Goose Creek subbasin in Mecklenburg County is removed from the area to be served by the IBT. A moratorium on the installation of new interbasin transfer water lines

(water lines crossing the ridgeline) into Goose Creek subbasin is in effect until the impacts of additional urban growth on the endangered species are fully evaluated.” This condition was removed after the EMC determined that the Town of Mint Hill’s 2010 Post-Construction Ordinance (PCO) permanently implemented appropriate mitigation measures for impacts to the Carolina Heelsplitter (*Lasmigona decorata*) in the Goose Creek watershed. Removal of this condition allows Charlotte Water to provide water service to customers in the Goose Creek watershed.

Charlotte Water provides water to retail customers in the Rocky River basin, including customers in the City of Concord and Town of Harrisburg, in neighboring Cabarrus County. Charlotte Water can transfer treated potable water to the Town of Harrisburg through two metered connections to their water system. Harrisburg’s service area is entirely within the Rocky River basin and is included in Charlotte Water’s IBT amounts. Water is only provided to Concord as an emergency backup to Concord’s primary supply consisting of Lake Howell and several smaller reservoirs. All of these reservoirs are within the Rocky River basin. The Cities of Concord and Kannapolis received an IBT Certificate in January 2007 for the transfer of up to 10.0 MGD from the Catawba River basin to the Rocky River basin; therefore, any water sold to Concord is not applied to Charlotte Water’s IBT amount.

Charlotte Water’s IBT calculation methodology was approved by DWR in June 2006. Per the certificate, Charlotte Water reports the maximum daily IBT amounts annually to DWR until such time as the transfer amount exceeds 80 percent of the authorized amount. Once that amount is exceeded, Charlotte Water is required to report monthly. To date, Charlotte Water has not exceeded 80 percent of the authorized IBT amount. Charlotte Water’s IBT certificate requires an annual report listing the maximum daily transfer for the calendar year. The average daily and maximum daily transfers for 2017 are presented below in Table 1. Charlotte Water’s 2017 IBT annual report is included in Appendix B. Annual reports from 2002-2017 are available on the division’s website at, <http://www.ncwater.org/?page=300>.

Table 1: Charlotte Water 2017 Interbasin Transfers

Calendar Year	Avg. Annual IBT (MGD)	Max. Day IBT (MGD)
2017	16.27 (49.3%)	21.97 (66.6%)

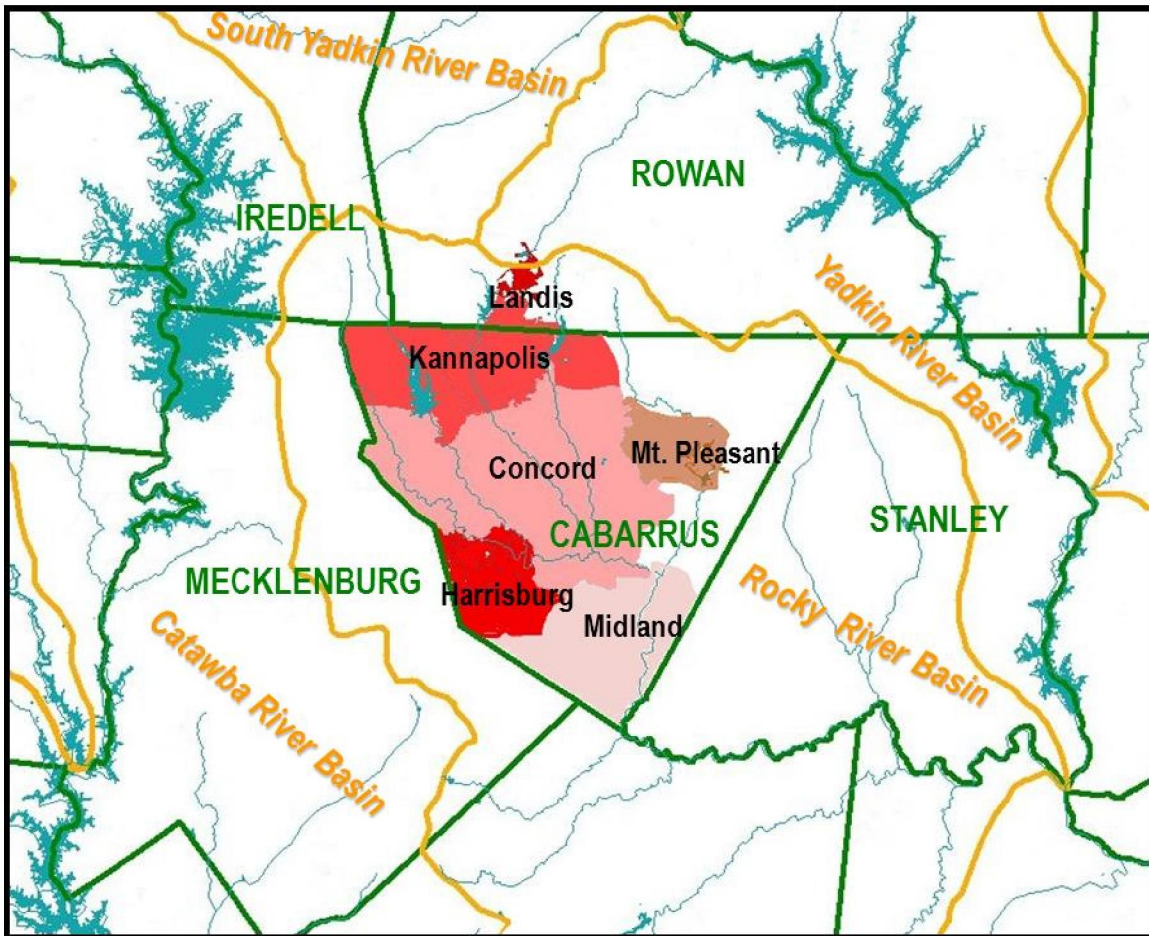
Values in parentheses represent the percentage of the total allowable transfer per the IBT Certificate.

CONCORD AND KANNAPOLIS

The Cities of Concord and Kannapolis (the cities) have held an IBT certificate since January 2007. This certificate authorizes the transfer of up to 10.0 MGD from the Catawba River basin to the Rocky River basin and 10.0 MGD from the Yadkin River basin to the Rocky River basin. These amounts were authorized based on the cities’ needs through 2035 and an analysis of the yield of available water sources. In addition, the

cities have a grandfathered transfer capacity (based on infrastructure in place prior to 1993) of 6.0 MGD for transfers from the South Yadkin River basin to the Rocky River basin. Figure 3 illustrates the cities' service area and interbasin transfers. Specific details of the cities' service area and sales are included in Appendix C, Concord and Kannapolis' 2017 IBT Annual Report.

Figure 3: Concord and Kannapolis Service Area



In 2010, the cities reached a settlement in a lawsuit filed by the Catawba River Foundation, Inc. and the Protect the Catawba Coalition. While this settlement agreement does not affect the IBT Certificate, its conditions, or required reporting, the cities did agree to several operational conditions in the Catawba River basin. Until July 1, 2015, the cities agreed to transfer no more than 3.0 MGD (on a maximum day basis) from the Catawba River basin. Thereafter, the cities must first transfer 5.0 MGD from the Yadkin River basin before exceeding an IBT of 3.0 MGD from the Catawba River basin. During designated droughts beyond July 1, 2015, following either Low Inflow Protocol (LIP) or Drought Management Advisory Council (DMAC) Drought Stage declaration, the cities have agreed to limit the Catawba River basin IBT so that it

corresponds to water use reduction goals. Further details about this agreement, including the water use reduction goals after July 2015, can be found in Appendix C.

The cities' IBT certificate requires an annual report listing the maximum daily transfer for the calendar year. The average daily and maximum daily transfers for 2017 are summarized below in Table 2.

Table 2: Concord and Kannapolis 2017 Interbasin Transfers

Calendar Year	Catawba to Rocky ¹		Yadkin to Rocky ²		Second Creek (South Yadkin) to Rocky ³	
	Avg. Daily (MGD)	Max. Day (MGD)	Avg. Daily (MGD)	Max. Day (MGD)	Avg. Daily (MGD)	Max. Day (MGD)
2017	0.01 (0.1%) ⁴	1.10 (11%)	2.27 (22.7%)	3.51 (35.1%)	0.44 (7.3%)	5.22 (87%)

¹ Maximum Day IBT of 10 mgd from the Catawba River Basin to the Rocky River Basin.

² Maximum Day IBT of 10 mgd from the Yadkin River Basin to the Rocky River Basin.

³ The grandfathered 6 MGD Max-Day IBT from the South Yadkin into the Rocky is not included in the 10 MGD IBT limit from the Yadkin.

⁴ Values in parentheses represent the percentage of the total allowable transfer per the Concord Kannapolis IBT Certificate. No value listed is effectively zero.

In 2017, the maximum day IBT from the Catawba River Basin was 1.10 mgd, which represents 11 percent of the permitted maximum day transfer of 10 mgd under the IBT Certificate approved by the EMC in January 2007. The maximum day IBT from the Yadkin River Basin during the calendar year 2017 was 3.51 mgd, which represents 35.1 percent of the permitted maximum day of 10 mgd IBT from the Yadkin River Basin under the IBT Certificate. The average day IBT from the Catawba River Basin was 0.01 mgd, which represents 0.1 percent of the permitted maximum day transfer of 10 mgd. The average day IBT from the Yadkin River Basin was 2.27 mgd, which represents 22.7 percent of the permitted maximum day transfer of 10 mgd. There was a transfer of raw water from Second Creek with a maximum day of 5.22 mgd, which represents 87 percent of the allowable maximum day transfer of 6 mgd from the South Yadkin River Basin under the grandfathered transfer. The 2017 annual report is included in Appendix C. Annual reports from 2007-2017 are available on the division's website at, <http://www.ncwater.org/?page=301>.

CONCLUSION

Based on the information previously discussed in this report, the Division of Water Resources estimates that IBT certificate holders transferred approximately 16.28 mgd, on an average daily basis, from the Catawba River basin in 2017. On a maximum day basis, approximately 23.07 mgd was transferred from the Catawba River basin in 2017. None of the transfers from the Catawba River basin exceeded 80 percent of the allowable transfer; therefore, annual reports will continue to be the required

monitoring procedure. For any questions concerning these IBTs please contact Kim Nimmer with the NC Division of Water Resources at (919)707-9019. Further information can also be found on DWR's website at, <http://www.ncwater.org/?page=297>.

Appendix A:

North Carolina General Statute §143-215.22L

§ 143-215.22L. Regulation of surface water transfers.

(a) Certificate Required. – No person, without first obtaining a certificate from the Commission, may:

- (1) Initiate a transfer of 2,000,000 gallons of water or more per day, calculated as a daily average of a calendar month and not to exceed 3,000,000 gallons per day in any one day, from one river basin to another.
- (2) Increase the amount of an existing transfer of water from one river basin to another by twenty-five percent (25%) or more above the average daily amount transferred during the year ending 1 July 1993 if the total transfer including the increase is 2,000,000 gallons or more per day.
- (3) Increase an existing transfer of water from one river basin to another above the amount approved by the Commission in a certificate issued under G.S. 162A-7 prior to 1 July 1993.

(b) Exception. – Notwithstanding the provisions of subsection (a) of this section, a certificate shall not be required to transfer water from one river basin to another up to the full capacity of a facility to transfer water from one basin to another if the facility was in existence or under construction on 1 July 1993.

(c) Notice of Intent to File a Petition. – An applicant shall prepare a notice of intent to file a petition that includes a nontechnical description of the applicant's request and an identification of the proposed water source. Within 90 days after the applicant files a notice of intent to file a petition, the applicant shall hold at least one public meeting in the source river basin upstream from the proposed point of withdrawal, at least one public meeting in the source river basin downstream from the proposed point of withdrawal, and at least one public meeting in the receiving river basin to provide information to interested parties and the public regarding the nature and extent of the proposed transfer and to receive comment on the scope of the environmental documents. Written notice of the public meetings shall be provided at least 30 days before the public meetings. At the time the applicant gives notice of the public meetings, the applicant shall request comment on the alternatives and issues that should be addressed in the environmental documents required by this section. The applicant shall accept written comment on the scope of the environmental documents for a minimum of 30 days following the last public meeting. Notice of the public meetings and opportunity to comment on the scope of the environmental documents shall be provided as follows:

- (1) By publishing notice in the North Carolina Register.
- (2) By publishing notice in a newspaper of general circulation in:
 - a. Each county in this State located in whole or in part of the area of the source river basin upstream from the proposed point of withdrawal.
 - b. Each city or county located in a state located in whole or in part of the surface drainage basin area of the source river basin that also falls within, in whole or in part, the area denoted by one of the following eight-digit cataloging units as organized by the United States Geological Survey:
 - 03050105 (Broad River: NC and SC);
 - 03050106 (Broad River: SC);
 - 03050107 (Broad River: SC);
 - 03050108 (Broad River: SC);
 - 05050001 (New River: NC and VA);
 - 05050002 (New River: VA and WV);
 - 03050101 (Catawba River: NC and SC);
 - 03050103 (Catawba River: NC and SC);

03050104 (Catawba River: SC);
 03010203 (Chowan River: NC and VA);
 03010204 (Chowan River: NC and VA);
 06010105 (French Broad River: NC and TN);
 06010106 (French Broad River: NC and TN);
 06010107 (French Broad River: TN);
 06010108 (French Broad River: NC and TN);
 06020001 (Hiwassee River: AL, GA, TN);
 06020002 (Hiwassee River: GA, NC, TN);
 06010201 (Little Tennessee River: TN);
 06010202 (Little Tennessee River: TN, GA, and NC);
 06010204 (Little Tennessee River: NC and TN);
 03060101 (Savannah River: NC and SC);
 03060102 (Savannah River: GA, NC, and SC);
 03060103 (Savannah River: GA and SC);
 03060104 (Savannah River: GA);
 03060105 (Savannah River: GA);
 03040203 (Lumber River: NC and SC);
 03040204 (Lumber River: NC and SC);
 03040206 (Lumber River: NC and SC);
 03040207 (Lumber River: NC and SC);
 03010205 (Albemarle Sound: NC and VA);
 06020003 (Ocoee River: GA, NC, and TN);
 03010101 (Roanoke River: VA);
 03010102 (Roanoke River: NC and VA);
 03010103 (Roanoke River: NC and VA);
 03010104 (Roanoke River: NC and VA);
 03010105 (Roanoke River: VA);
 03010106 (Roanoke River: NC and VA);
 06010102 (Watauga River: TN and VA);
 06010103 (Watauga River: NC and TN);
 03040101 (Yadkin River: VA and NC);
 03040104 (Yadkin River: NC and SC);
 03040105 (Yadkin River: NC and SC);
 03040201 (Yadkin River: NC and SC);
 03040202 (Yadkin River: NC and SC).

- c. Each county in this State located in whole or in part of the area of the source river basin downstream from the proposed point of withdrawal.
 - d. Any area in the State in a river basin for which the source river basin has been identified as a future source of water in a local water supply plan prepared pursuant to G.S. 143-355(l).
 - e. Each county in the State located in whole or in part of the receiving river basin.
- (3) By giving notice by first-class mail or electronic mail to each of the following:
- a. The board of commissioners of each county in this State or the governing body of any county or city that is politically independent of a county in any state that is located entirely or partially within the

source river basin of the proposed transfer and that also falls within, in whole or in part, the area denoted by one of the eight-digit cataloging units listed in sub-subdivision b. of subdivision (2) of this subsection.

- b. The board of commissioners of each county in this State or the governing body of any county or city that is politically independent of a county in any state that is located entirely or partially within the receiving river basin of the proposed transfer and that also falls within, in whole or in part, the area denoted by one of the eight-digit cataloging units listed in sub-subdivision b. of subdivision (2) of this subsection.
- c. The governing body of any public water system that withdraws water upstream or downstream from the withdrawal point of the proposed transfer.
- d. If any portion of the source or receiving river basins is located in another state, all state water management or use agencies, environmental protection agencies, and the office of the governor in that state upstream or downstream from the withdrawal point of the proposed transfer.
- e. All persons who have registered a water withdrawal or transfer from the proposed source river basin under this Part or under similar law in an another state.
- f. All persons who hold a certificate for a transfer of water from the proposed source river basin under this Part or under similar law in an another state.
- g. All persons who hold a National Pollutant Discharge Elimination System (NPDES) wastewater discharge permit for a discharge of 100,000 gallons per day or more upstream or downstream from the proposed point of withdrawal.
- h. To any other person who submits to the applicant a written request to receive all notices relating to the petition.

(d) Environmental Documents. – The definitions set out in G.S. 113A-9 apply to this section. The Department shall conduct a study of the environmental impacts of any proposed transfer of water for which a certificate is required under this section. The study shall meet all of the requirements set forth in G.S. 113A-4 and rules adopted pursuant to G.S. 113A-4. An environmental assessment shall be prepared for any petition for a certificate under this section. The determination of whether an environmental impact statement shall also be required shall be made in accordance with the provisions of Article 1 of Chapter 113A of the General Statutes; except that an environmental impact statement shall be prepared for every proposed transfer of water from one major river basin to another for which a certificate is required under this section. The applicant who petitions the Commission for a certificate under this section shall pay the cost of special studies necessary to comply with Article 1 of Chapter 113A of the General Statutes. An environmental impact statement prepared pursuant to this subsection shall include all of the following:

- (1) A comprehensive analysis of the impacts that would occur in the source river basin and the receiving river basin if the petition for a certificate is granted.
- (2) An evaluation of alternatives to the proposed interbasin transfer, including water supply sources that do not require an interbasin transfer and use of water conservation measures.

- (3) A description of measures to mitigate any adverse impacts that may arise from the proposed interbasin transfer.

(e) Public Hearing on the Draft Environmental Document. – The Commission shall hold a public hearing on the draft environmental document for a proposed interbasin transfer after giving at least 30 days' written notice of the hearing in the Environmental Bulletin and as provided in subdivisions (2) and (3) of subsection (c) of this section. The notice shall indicate where a copy of the environmental document can be reviewed and the procedure to be followed by anyone wishing to submit written comments and questions on the environmental document. The Commission shall prepare a record of all comments and written responses to questions posed in writing. The record shall include complete copies of scientific or technical comments related to the potential impact of the interbasin transfer. The Commission shall accept written comment on the draft environmental document for a minimum of 30 days following the last public hearing. The applicant who petitions the Commission for a certificate under this section shall pay the costs associated with the notice and public hearing on the draft environmental document.

(f) Determination of Adequacy of Environmental Document. – The Commission shall not act on any petition for an interbasin transfer until the Commission has determined that the environmental document is complete and adequate. A decision on the adequacy of the environmental document is subject to review in a contested case on the decision of the Commission to issue or deny a certificate under this section.

(g) Petition. – An applicant for a certificate shall petition the Commission for the certificate. The petition shall be in writing and shall include all of the following:

- (1) A general description of the facilities to be used to transfer the water, including current and projected areas to be served by the transfer, current and projected capacities of intakes, and other relevant facilities.
- (2) A description of all the proposed consumptive and nonconsumptive uses of the water to be transferred.
- (3) A description of the water quality of the source river and receiving river, including information on aquatic habitat for rare, threatened, and endangered species; in-stream flow data for segments of the source and receiving rivers that may be affected by the transfer; and any waters that are impaired pursuant to section 303(d) of the federal Clean Water Act (33 U.S.C. § 1313(d)).
- (4) A description of the water conservation measures used by the applicant at the time of the petition and any additional water conservation measures that the applicant will implement if the certificate is granted.
- (5) A description of all sources of water within the receiving river basin, including surface water impoundments, groundwater wells, reinjection storage, and purchase of water from another source within the river basin, that is a practicable alternative to the proposed transfer that would meet the applicant's water supply needs. The description of water sources shall include sources available at the time of the petition for a certificate and any planned or potential water sources.
- (6) A description of water transfers and withdrawals registered under G.S. 143-215.22H or included in a local water supply plan prepared pursuant to G.S. 143-355(l) from the source river basin, including transfers and withdrawals at the time of the petition for a certificate and any planned or reasonably foreseeable transfers or withdrawals by a public water system with service area located within the source river basin.

- (7) A demonstration that the proposed transfer, if added to all other transfers and withdrawals required to be registered under G.S. 143-215.22H or included in any local water supply plan prepared by a public water system with service area located within the source basin pursuant to G.S. 143-355(l) from the source river basin at the time of the petition for a certificate, would not reduce the amount of water available for use in the source river basin to a degree that would impair existing uses, pursuant to the antidegradation policy set out in 40 Code of Federal Regulation § 131.12 (Antidegradation Policy) (1 July 2006 Edition) and the statewide antidegradation policy adopted pursuant thereto, or existing and planned consumptive and nonconsumptive uses of the water in the source river basin. If the proposed transfer would impact a reservoir within the source river basin, the demonstration must include a finding that the transfer would not result in a water level in the reservoir that is inadequate to support existing uses of the reservoir, including recreational uses.
- (8) The applicant's future water supply needs and the present and reasonably foreseeable future water supply needs for public water systems with service area located within the source river basin. The analysis of future water supply needs shall include agricultural, recreational, and industrial uses, and electric power generation. Local water supply plans prepared pursuant to G.S. 143-355(l) for water systems with service area located within the source river basin shall be used to evaluate the projected future water needs in the source river basin that will be met by public water systems.
- (9) The applicant's water supply plan prepared pursuant to G.S. 143-355(l). If the applicant's water supply plan is more than two years old at the time of the petition, then the applicant shall include with the petition an updated water supply plan.
- (10) Any other information deemed necessary by the Commission for review of the proposed water transfer.

(h) Settlement Discussions. – Upon the request of the applicant, any interested party, or the Department, or upon its own motion, the Commission may appoint a mediation officer. The mediation officer may be a member of the Commission, an employee of the Department, or a neutral third party but shall not be a hearing officer under subsections (e) or (j) of this section. The mediation officer shall make a reasonable effort to initiate settlement discussions between the applicant and all other interested parties. Evidence of statements made and conduct that occurs in a settlement discussion conducted under this subsection, whether attributable to a party, a mediation officer, or other person shall not be subject to discovery and shall be inadmissible in any subsequent proceeding on the petition for a certificate. The Commission may adopt rules to govern the conduct of the mediation process.

(i) Draft Determination. – Within 90 days after the Commission determines that the environmental document prepared in accordance with subsection (d) of this section is adequate or the applicant submits its petition for a certificate, whichever occurs later, the Commission shall issue a draft determination on whether to grant the certificate. The draft determination shall be based on the criteria set out in this section and shall include the conditions and limitations, findings of fact, and conclusions of law that would be required in a final determination. Notice of the draft determination shall be given as provided in subsection (c) of this section.

(j) Public Hearing on the Draft Determination. – Within 60 days of the issuance of the draft determination as provided in subsection (i) of this section, the Commission shall hold

public hearings on the draft determination. At least one hearing shall be held in the affected area of the source river basin, and at least one hearing shall be held in the affected area of the receiving river basin. In determining whether more than one public hearing should be held within either the source or receiving river basins, the Commission shall consider the differing or conflicting interests that may exist within the river basins, including the interests of both upstream and downstream parties potentially affected by the proposed transfer. The public hearings shall be conducted by one or more hearing officers appointed by the Chair of the Commission. The hearing officers may be members of the Commission or employees of the Department. The Commission shall give at least 30 days' written notice of the public hearing as provided in subsection (c) of this section. The Commission shall accept written comment on the draft determination for a minimum of 30 days following the last public hearing. The Commission shall prepare a record of all comments and written responses to questions posed in writing. The record shall include complete copies of scientific or technical comments related to the potential impact of the interbasin transfer. The applicant who petitions the Commission for a certificate under this section shall pay the costs associated with the notice and public hearing on the draft determination.

(k) Final Determination: Factors to be Considered. – In determining whether a certificate may be issued for the transfer, the Commission shall specifically consider each of the following items and state in writing its findings of fact and conclusions of law with regard to each item:

- (1) The necessity and reasonableness of the amount of surface water proposed to be transferred and its proposed uses.
- (2) The present and reasonably foreseeable future detrimental effects on the source river basin, including present and future effects on public, industrial, economic, recreational, and agricultural water supply needs, wastewater assimilation, water quality, fish and wildlife habitat, electric power generation, navigation, and recreation. Local water supply plans for public water systems with service area located within the source river basin prepared pursuant to G.S. 143-355(1) shall be used to evaluate the projected future water needs in the source river basin that will be met by public water systems. Information on projected future water needs for public water systems with service area located within the source river basin that is more recent than the local water supply plans may be used if the Commission finds the information to be reliable. The determination shall include a specific finding as to measures that are necessary or advisable to mitigate or avoid detrimental impacts on the source river basin.
- (3) The cumulative effect on the source major river basin of any water transfer or consumptive water use that, at the time the Commission considers the petition for a certificate is occurring, is authorized under this section, or is projected in any local water supply plan for public water systems with service area located within the source river basin that has been submitted to the Department in accordance with G.S. 143-355(1).
- (4) The present and reasonably foreseeable future beneficial and detrimental effects on the receiving river basin, including present and future effects on public, industrial, economic, recreational, and agricultural water supply needs, wastewater assimilation, water quality, fish and wildlife habitat, electric power generation, navigation, and recreation. Local water supply plans prepared pursuant to G.S. 143-355(1) that affect the receiving river basin shall be used to evaluate the projected future water needs in the

receiving river basin that will be met by public water systems. Information on projected future water needs that is more recent than the local water supply plans may be used if the Commission finds the information to be reliable. The determination shall include a specific finding as to measures that are necessary or advisable to mitigate or avoid detrimental impacts on the receiving river basin.

- (5) The availability of reasonable alternatives to the proposed transfer, including the potential capacity of alternative sources of water, the potential of each alternative to reduce the amount of or avoid the proposed transfer, probable costs, and environmental impacts. In considering alternatives, the Commission is not limited to consideration of alternatives that have been proposed, studied, or considered by the applicant. The determination shall include a specific finding as to why the applicant's need for water cannot be satisfied by alternatives within the receiving basin, including unused capacity under a transfer for which a certificate is in effect or that is otherwise authorized by law at the time the applicant submits the petition. The determination shall consider the extent to which access to potential sources of surface water or groundwater within the receiving river basin is no longer available due to depletion, contamination, or the declaration of a capacity use area under Part 2 of Article 21 of Chapter 143 of the General Statutes. The determination shall consider the feasibility of the applicant's purchase of water from other water suppliers within the receiving basin and of the transfer of water from another sub-basin within the receiving major river basin. Except in circumstances of technical or economic infeasibility or adverse environmental impact, the Commission's determination as to reasonable alternatives shall give preference to alternatives that would involve a transfer from one sub-basin to another within the major receiving river basin over alternatives that would involve a transfer from one major river basin to another major river basin.
- (6) If applicable to the proposed project, the applicant's present and proposed use of impoundment storage capacity to store water during high-flow periods for use during low-flow periods and the applicant's right of withdrawal under G.S. 143-215.44 through G.S. 143-215.50.
- (7) If the water to be withdrawn or transferred is stored in a multipurpose reservoir constructed by the United States Army Corps of Engineers, the purposes and water storage allocations established for the reservoir at the time the reservoir was authorized by the Congress of the United States.
- (8) Whether the service area of the applicant is located in both the source river basin and the receiving river basin.
- (9) Any other facts and circumstances that are reasonably necessary to carry out the purposes of this Part.

(l) Final Determination: Information to be Considered. – In determining whether a certificate may be issued for the transfer, the Commission shall consider all of the following sources of information:

- (1) The petition.
- (2) The environmental document prepared pursuant to subsection (d) of this section.
- (3) All oral and written comment and all accompanying materials or evidence submitted pursuant to subsections (e) and (j) of this section.

- (4) Information developed by or available to the Department on the water quality of the source river basin and the receiving river basin, including waters that are identified as impaired pursuant to section 303(d) of the federal Clean Water Act (33 U.S.C. § 1313(d)), that are subject to a total maximum daily load (TMDL) limit under subsections (d) and (e) of section 303 of the federal Clean Water Act, or that would have their assimilative capacity impaired if the certificate is issued.
- (5) Any other information that the Commission determines to be relevant and useful.

(m) Final Determination: Burden and Standard of Proof; Specific Findings. – The Commission shall grant a certificate for a water transfer if the Commission finds that the applicant has established by a preponderance of the evidence all of the following:

- (1) The benefits of the proposed transfer outweigh the detriments of the proposed transfer. In making this determination, the Commission shall be guided by the approved environmental document and the policy set out in subsection (t) of this section.
- (2) The detriments have been or will be mitigated to the maximum degree practicable.
- (3) The amount of the transfer does not exceed the amount of the projected shortfall under the applicant's water supply plan after first taking into account all other sources of water that are available to the applicant.
- (4) There are no reasonable alternatives to the proposed transfer.

(n) Final Determination: Certificate Conditions and Limitations. – The Commission may grant the certificate in whole or in part, or deny the certificate. The Commission may impose any conditions or limitations on a certificate that the Commission finds necessary to achieve the purposes of this Part including a limit on the period for which the certificate is valid. The conditions and limitations shall include any mitigation measures proposed by the applicant to minimize any detrimental effects within the source and receiving river basins. In addition, the certificate shall require all of the following conditions and limitations:

- (1) A water conservation plan that specifies the water conservation measures that will be implemented by the applicant in the receiving river basin to ensure the efficient use of the transferred water. Except in circumstances of technical or economic infeasibility or adverse environmental impact, the water conservation plan shall provide for the mandatory implementation of water conservation measures by the applicant that equal or exceed the most stringent water conservation plan implemented by a public water system that withdraws water from the source river basin.
- (2) A drought management plan that specifies how the transfer shall be managed to protect the source river basin during drought conditions or other emergencies that occur within the source river basin. Except in circumstances of technical or economic infeasibility or adverse environmental impact, this drought management plan shall include mandatory reductions in the permitted amount of the transfer based on the severity and duration of a drought occurring within the source river basin and shall provide for the mandatory implementation of a drought management plan by the applicant that equals or exceeds the most stringent water conservation plan implemented by a public water system that withdraws water from the source river basin.

- (3) The maximum amount of water that may be transferred, calculated as a daily average of a calendar month, and methods or devices required to be installed and operated that measure the amount of water that is transferred.
- (4) A provision that the Commission may amend a certificate to reduce the maximum amount of water authorized to be transferred whenever it appears that an alternative source of water is available to the certificate holder from within the receiving river basin, including, but not limited to, the purchase of water from another water supplier within the receiving basin or to the transfer of water from another sub-basin within the receiving major river basin.
- (5) A provision that the Commission shall amend the certificate to reduce the maximum amount of water authorized to be transferred if the Commission finds that the applicant's current projected water needs are significantly less than the applicant's projected water needs at the time the certificate was granted.
- (6) A requirement that the certificate holder report the quantity of water transferred during each calendar quarter. The report required by this subdivision shall be submitted to the Commission no later than 30 days after the end of the quarter.
- (7) Except as provided in this subdivision, a provision that the applicant will not resell the water that would be transferred pursuant to the certificate to another public water system. This limitation shall not apply in the case of a proposed resale or transfer among public water systems within the receiving river basin as part of an interlocal agreement or other regional water supply arrangement, provided that each participant in the interlocal agreement or regional water supply arrangement is a co-applicant for the certificate and will be subject to all the terms, conditions, and limitations made applicable to any lead or primary applicant.

(o) Administrative and Judicial Review. – Administrative and judicial review of a final decision on a petition for a certificate under this section shall be governed by Chapter 150B of the General Statutes.

(p) Certain Preexisting Transfers. – In cases where an applicant requests approval to increase a transfer that existed on 1 July 1993, the Commission may approve or disapprove only the amount of the increase. If the Commission approves the increase, the certificate shall be issued for the amount of the preexisting transfer plus any increase approved by the Commission. A certificate for a transfer approved by the Commission under G.S. 162A-7 shall remain in effect as approved by the Commission and shall have the same effect as a certificate issued under this Part. A certificate for the increase of a preexisting transfer shall contain all of the conditions and limitations required by subsection (m) of this section.

(q) Emergency Transfers. – In the case of water supply problems caused by drought, a pollution incident, temporary failure of a water plant, or any other temporary condition in which the public health, safety, or welfare requires a transfer of water, the Secretary of Environment and Natural Resources may grant approval for a temporary transfer. Prior to approving a temporary transfer, the Secretary shall consult with those parties listed in subdivision (3) of subsection (c) of this section that are likely to be affected by the proposed transfer. However, the Secretary shall not be required to satisfy the public notice requirements of this section or make written findings of fact and conclusions of law in approving a temporary transfer under this subsection. If the Secretary approves a temporary transfer under this subsection, the Secretary shall specify conditions to protect other water users. A temporary

transfer shall not exceed six months in duration, but the approval may be renewed for a period of six months by the Secretary based on demonstrated need as set forth in this subsection.

(r) Relationship to Federal Law. – The substantive restrictions, conditions, and limitations upon surface water transfers authorized in this section may be imposed pursuant to any federal law that permits the State to certify, restrict, or condition any new or continuing transfers or related activities licensed, relicensed, or otherwise authorized by the federal government. This section shall govern the transfer of water from one river basin to another unless preempted by federal law.

(s) Planning Requirements. – When any transfer for which a certificate was issued under this section equals or exceeds eighty percent (80%) of the maximum amount authorized in the certificate, the applicant shall submit to the Department a detailed plan that specifies how the applicant intends to address future foreseeable water needs. If the applicant is required to have a local water supply plan, then this plan shall be an amendment to the local water supply plan required by G.S.143-355(l). When the transfer equals or exceeds ninety percent (90%) of the maximum amount authorized in the certificate, the applicant shall begin implementation of the plan submitted to the Department.

(t) Statement of Policy. – It is the public policy of the State to maintain, protect, and enhance water quality within North Carolina. It is the public policy of this State that the reasonably foreseeable future water needs of a public water system with its service area located primarily in the receiving river basin are subordinate to the reasonably foreseeable future water needs of a public water system with its service area located primarily in the source river basin. Further, it is the public policy of the State that the cumulative impact of transfers from a source river basin shall not result in a violation of the antidegradation policy set out in 40 Code of Federal Regulations § 131.12 (1 July 2006 Edition) and the statewide antidegradation policy adopted pursuant thereto.

(u) Repealed by Session Laws 2013-388, s. 2, effective August 23, 2013.

(v) Modification of Certificate. – A certificate may be modified as provided in this subsection:

- (1) The Commission or the Department may make any of the following modifications to a certificate after providing electronic notice to persons who have identified themselves in writing as interested parties:
 - a. Correction of typographical errors.
 - b. Clarification of existing conditions or language.
 - c. Updates, requested by the certificate holder, to a conservation plan, drought management plan, or compliance and monitoring plan.
 - d. Modifications requested by the certificate holder to reflect altered requirements due to the amendment of this section.
- (2) A person who holds a certificate for an interbasin transfer of water may request that the Commission modify the certificate. The request shall be considered and a determination made according to the following procedures:
 - a. The certificate must have been issued pursuant to G.S. 162A-7, 143-215.22I, or 143-215.22L and the certificate holder must be in substantial compliance with the certificate.
 - b. The certificate holder shall file a notice of intent to file a request for modification that includes a nontechnical description of the certificate holder's request and identification of the proposed water source.
 - c. The certificate holder shall prepare an environmental document pursuant to subsection (d) of this section, except that an

environmental impact statement shall not be required for the modification of a certificate unless it would otherwise be required by Article 1 of Chapter 113A of the General Statutes.

- d. Upon determining that the documentation submitted by the certificate holder is adequate to satisfy the requirements of this subsection, the Department shall publish a notice of the request for modification in the North Carolina Register and shall hold a public hearing at a location convenient to both the source and receiving river basins. The Department shall provide written notice of the request for the modification and the public hearing in the Environmental Bulletin, a newspaper of general circulation in the source river basin, a newspaper of general circulation in the receiving river basin, and as provided in subdivision (3) of subsection (c) of this section. The certificate holder who petitions the Commission for a modification under this subdivision shall pay the costs associated with the notice and public hearing.
- e. The Department shall accept comments on the requested modification for a minimum of 30 days following the public hearing.
- f. The Commission or the Department may require the certificate holder to provide any additional information or documentation it deems reasonably necessary in order to make a final determination.
- g. The Commission shall make a final determination whether to grant the requested modification based on the factors set out in subsection (k) of this section, information provided by the certificate holder, and any other information the Commission deems relevant. The Commission shall state in writing its findings of fact and conclusions of law with regard to each factor.
- h. The Commission shall grant the requested modification if it finds that the certificate holder has established by a preponderance of the evidence that the requested modification satisfies the requirements of subsection (m) of this section. The Commission may grant the requested modification in whole or in part, or deny the request, and may impose such limitations and conditions on the modified certificate as it deems necessary and relevant to the modification.
- i. The Commission shall not grant a request for modification if the modification would result in the transfer of water to an additional major river basin.
- j. The Commission shall not grant a request for modification if the modification would be inconsistent with the December 3, 2010 Settlement Agreement entered into between the State of North Carolina, the State of South Carolina, Duke Energy Carolinas, and the Catawba River Water Supply Project.

(w) Requirements for Coastal Counties and Reservoirs Constructed by the United States Army Corps of Engineers. – A petition for a certificate (i) to transfer surface water to supplement ground water supplies in the 15 counties designated as the Central Capacity Use Area under 15A NCAC 2E.0501, (ii) to transfer surface water withdrawn from the mainstem of a river to provide service to one of the coastal area counties designated pursuant to G.S. 113A-103, or (iii) to withdraw or transfer water stored in any multipurpose reservoir constructed by the United States Army Corps of Engineers and partially located in a state

adjacent to North Carolina, provided the United States Army Corps of Engineers approved the withdrawal or transfer on or before July 1, 2014, shall be considered and a determination made according to the following procedures:

- (1) The applicant shall file a notice of intent that includes a nontechnical description of the applicant's request and identification of the proposed water source.
- (2) The applicant shall prepare an environmental document pursuant to subsection (d) of this section, except that an environmental impact statement shall not be required unless it would otherwise be required by Article 1 of Chapter 113A of the General Statutes.
- (3) Upon determining that the documentation submitted by the applicant is adequate to satisfy the requirements of this subsection, the Department shall publish a notice of the petition in the North Carolina Register and shall hold a public hearing at a location convenient to both the source and receiving river basins. The Department shall provide written notice of the petition and the public hearing in the Environmental Bulletin, a newspaper of general circulation in the source river basin, a newspaper of general circulation in the receiving river basin, and as provided in subdivision (3) of subsection (c) of this section. The applicant who petitions the Commission for a certificate under this subdivision shall pay the costs associated with the notice and public hearing.
- (4) The Department shall accept comments on the petition for a minimum of 30 days following the public hearing.
- (5) The Commission or the Department may require the applicant to provide any additional information or documentation it deems reasonably necessary in order to make a final determination.
- (6) The Commission shall make a final determination whether to grant the certificate based on the factors set out in subsection (k) of this section, information provided by the applicant, and any other information the Commission deems relevant. The Commission shall state in writing its findings of fact and conclusions of law with regard to each factor.
- (7) The Commission shall grant the certificate if it finds that the applicant has established by a preponderance of the evidence that the petition satisfies the requirements of subsection (m) of this section. The Commission may grant the certificate in whole or in part, or deny the request, and may impose such limitations and conditions on the certificate as it deems necessary and relevant. (1993, c. 348, s. 1; 1997-443, ss. 11A.119(a), 15.48(c); 1997-524, s. 1; 1998-168, s. 4; 2001-474, s. 28; 2007-484, s. 43.7C; 2007-518, s. 3; 2008-125, s. 1; 2008-198, s. 11.5; 2010-155, ss. 2, 3; 2011-398, s. 50; 2013-388, s. 2; 2014-120, s. 37.)

Appendix B:

Charlotte Water's 2017 IBT Annual Report



June 1, 2018

Ms. Kim Nimmer
Water Supply Planning Branch
N.C. Division of Water Resources
1611 Mail Service Center
Raleigh, North Carolina 27699-1611

Subject: IBT Report for 2017

Dear Ms. Nimmer:

We are sending our calendar year 2017 IBT Annual Report. We are also transmitting this report to you electronically. The report follows the format of earlier reports and includes a narrative section with background and program progress reports along with spreadsheets detailing the IBT amount calculation.

For calendar year 2017, we experienced an actual maximum day IBT based on July billing data of 21.97 mgd. Of our authorized 33 mgd IBT, this value was approximately 66.6%. The average IBT was 16.27 mgd, approximately 49.3% of authorized IBT.

As of December 31, 2017, there were additional outstanding IBT commitments of 2.34 mgd. This total takes into account permitted donated projects (largely subdivisions) and non-activated master metered connections. We are aware of the impact of these additional flows on our current IBT.

Please let me know if you have any questions.

Sincerely,

CHARLOTTE WATER

A handwritten signature in blue ink that reads "Bhavana Sinha".

Bhavana Sinha, PE
Program Manager – Engineering Planning Section



*Charlotte Water
Annual Report on Interbasin Transfer
Calendar Year 2017*

INTRODUCTION

The North Carolina Environmental Management Commission (EMC) approved Charlotte Water's (CLTWater's) petition to increase the amount of water transferred from the Catawba River basin to the Rocky River basin. An interbasin transfer (IBT) Certificate was issued on March 14, 2002, that authorizes CLTWater to transfer up to 33 million gallons per day (mgd) between the river basins.

The IBT Certificate requires CLTWater to report maximum daily IBT amounts annually to the North Carolina Division of Water Resources (NC DWR) until such time as the transfer amount exceeds 80% of the authorized amount. Once that amount is exceeded, CLTWater is required to report monthly. CLTWater has not exceeded 80% of the authorized IBT amount.

SYSTEM OVERVIEW

CLTWater operates the water and wastewater systems that serve Charlotte, Cornelius, Davidson, Huntersville, Mint Hill, Matthews, Pineville, and much of the unincorporated areas of Mecklenburg County. This system is divided between two river basins designated by NC General Statutes for regulation of IBT water. The western portion of the system is within the Catawba River basin and the eastern portion is within the Rocky River basin. Water transferred from the Catawba River basin to the Rocky River basin that is not returned to the Catawba river basin is regulated IBT.

Water for distribution to CLTWater's customers is withdrawn from the Catawba River basin at two locations. An intake at Lake Norman sends water to the Lee S. Dukes Water Treatment Plant. A second intake at Mountain Island Lake sends water to the Walter M. Franklin Water Treatment Plant and to the Vest Water Treatment Plant. Potable water from these three plants is delivered through an interconnected distribution system to retail customers throughout CLTWater's service area in Mecklenburg County and in small areas of Iredell, Cabarrus, and Union Counties. CLTWater also provides wholesale water to municipal systems for resale including: City of Concord (NC), Town of Harrisburg (NC), Union County (NC), and Lancaster County Water and Sewer District (SC).

CLTWater treats wastewater at five advanced wastewater treatment plants (WWTP's) that discharge into small streams in Mecklenburg County. Four of the streams are tributary to the Catawba River basin and one (Mallard Creek) is tributary to the Rocky River basin. CLTWater also conveys wastewater generated in portions of Mecklenburg County to the Rocky River Regional Wastewater Treatment Plant (RRRWWTP) operated by the Water and Sewer Authority of Cabarrus County (WSACC). The RRRWWTP discharges treated effluent to the Rocky River.



IBT MONITORING

Water supplied to CLTWater's retail customers in the Rocky River Basin, that is not returned to the Catawba basin, is included in the reported IBT amounts. Water provided to municipalities with service areas in the Rocky River basin includes the City of Concord and the Town of Harrisburg.

CLTWater can transfer treated potable water to the City of Concord through three metered connections to their water system. All of Concord's service area is within the Rocky River basin; therefore, any water purchased by them becomes an IBT. Water service is only provided as an emergency back-up to Concord's routine supply, which are Lake Howell and several smaller reservoirs. All of these reservoirs are within the Rocky River basin. Wastewater from Concord is treated at the RRRWWTP. CLTWater's agreement with Concord is that water will be supplied to them subject to availability and subject to regulatory constraints including IBT and Federal Energy Regulatory Commission (FERC) limitations.

Concord received an IBT Certificate in January 2007 for the transfer of up to 10 mgd from the Catawba River basin to the Rocky River basin. NC DWR advised CLTWater that water sold to Concord should not be applied to CLTWater's IBT amount. For calendar year 2016, Concord did not purchase any water. Therefore, the average day IBT estimate was not adjusted to reflect this potential consumption.

CLTWater can transfer treated potable water to the Town of Harrisburg through three metered connections to their water system. Harrisburg's service area is entirely within the Rocky River basin and is included in CLTWater's IBT amounts. From 2016 to 2017, the Town of Harrisburg decreased its average daily consumption by 95%.

Table 1 summarizes actual IBT amounts for calendar years 2002 through 2017 (all amounts were calculated using the methodology approved by NC DWR in June of 2006). The table considers the daily amounts of water transferred from the Catawba River basin to customers within the Rocky River basin that is not returned to the Catawba River basin.

The maximum average monthly IBT for calendar year 2017 was 21.97 mgd in July, which was 66.6% of the authorized IBT of 33 mgd. The average IBT for 2017 was 16.27 mgd, 49.3% of the authorized IBT. In addition to the actual amount of IBT reported in Table 1, CLTWater has committed to provide IBT to development that has been proposed but has not yet been activated within the Rocky River basin. As of December 31, 2017, 1.46 mgd was committed to permitted donated projects (subdivisions) that have not been activated and 0.88 mgd was committed to master meter connections (generally commercial or multi-family developments) that have not been activated; both commitments are based on maximum day estimates. The combined actual plus committed maximum day IBT for 2017 was 24.32 mgd, approximately 73.7% of the authorized IBT.



Table 1: Actual IBT Summary

Calendar Year	Avg. Annual IBT (mgd)	Max. Day IBT (mgd)
2002	6.74	11.97
2003	6.91	9.82
2004	7.79	12.56
2005	8.66	13.79
2006	9.56	14.35
2007	9.96	17.22
2008	11.39	17.42
2009	12.04	16.00
2010	13.33	18.33
2011	13.11	18.82
2012	12.18	17.67
2013	12.99	16.80
2014	15.02	21.44
2015	16.59	24.19
2016	17.32	22.39
2017	16.27	21.97

COMPLIANCE WITH CERTIFICATE CONDITIONS

Condition 1: S.W.I.M. Program Summary

Mecklenburg County is required to annually summarize progress in implementation of watershed management approaches of the Surface Water Improvement and Management (S.W.I.M.) Program. Provided below is the summary of progress made during CY2017. The Division of Water Resources shall have the authority to approve modifications to and need for continued reporting as necessary.

During CY2017, watershed management approaches continued to be implemented by Charlotte-Mecklenburg Storm Water Services (CMSWS) as part of Mecklenburg County’s S.W.I.M. Program. Efforts continued to focus on McDowell and Goose Creeks, as initiated in 2007, as well as on the West Branch of the Rocky River in Davidson that began in 2009. During calendar year 2017, the following work was completed in the three (3) watersheds by CMSWS:

McDowell Creek (including the Torrence Creek Tributary to McDowell Creek)

- 1. Construction was started on the restoration of a section of Torrence Creek at The Park Huntersville. Construction is anticipated to be complete in early 2019.*

2. CMSWS in partnership with the Town of Huntersville began the implementation of a Memorandum of Understanding (MOU) for the restoration of approximately 1.5 miles of stream between Statesville Road and North Mecklenburg Park. The design firm has been selected.
3. CMSWS in partnership with the Town of Cornelius is negotiating a MOU for the restoration of approximately 1 mile of stream upstream of Statesville Road in Cornelius, NC. The MOU has been agreed to in draft format and should be signed in late 2018.

Goose Creek (including the Stevens Creek Tributary to Goose Creek)

1. A survey and design is under contract for the project and 30% design work has been completed. A grant was awarded by the National Fish and Wildlife Foundation in the amount of \$120,000 for the construction of six (6) habitat structures specifically targeting freshwater mussels. CMSWS continues to work closely with Charlotte Water to remove an aging package wastewater treatment plant from the project area to improve water quality for freshwater mussels.

Rocky River

1. A design and survey firm is under contract and has initiated work for the restoration of a tributary of the South Prong of the West Branch of the Rocky River and a section of the South Prong itself. The project will restore or enhance approximately three (3) miles of stream in two (2) phases over the next four (4) years.
2. The Town of Davidson is working to stabilize a head-cut near Davidson Elementary School in partnership with the Natural Resources Conservation Service. Bids for construction of the completed design were received and a construction firm will be selected in mid-2018.

Condition 2: Stakeholder Process (Completed)

A stakeholder process is required to investigate, develop, adopt, and implement storm water ordinances that control water quantity from single-family development and water quality for all development until completed. The requirements of Condition 2 were completed in 2007.

Condition 3: Goose Creek Subbasin (Completed)

The IBT Certificate removed the Goose Creek subbasin from the area to be served by the IBT, and imposed a moratorium on the installation of new IBT water lines (water lines crossing the ridgeline) into Goose Creek subbasin until the impacts of additional growth on the endangered species were fully evaluated.

CLTWater submitted the final Environmental Assessment of new development in the Goose Creek basin (Mint Hill area) to the NC Division of Water Resources (DWR) in February of 2013. The Environmental Management Commission approved the Environmental Assessment in May of 2013 and has removed the requirements under Condition 3.



Condition 4: Environmental Management Commission

The IBT Certificate provides that the Environmental Management Commission may reopen the Certificate under certain circumstances. This did not occur in 2017.

Condition 5: Compliance and Monitoring Plan

The IBT Certificate requires CLTWater to develop a compliance and monitoring plan for reporting maximum daily transfer amounts, compliance with certificate conditions, and progress on mitigation measures, and drought management activities. CLTWater's monitoring plan and reporting format were approved in June of 2006 by NC DWR and continue to be used for 2017.

Charlotte Water monitored water treatment plant pump rates, streamflow and lake storage indicators, the US Drought Monitor, and other factors in accordance with the CLTWater Water Shortage Response Plan. Measurements were assessed monthly to identify designated triggers that could indicate developing drought conditions. All appropriate planning, communication and preparation were in place to respond as needed to changing conditions.

In coordination with 17 other utilities in the Catawba-Wateree river basin, CLTWater participated in regional drought response planning and response activities as directed by the Catawba Basin Low Inflow Protocol.

SUMMARY

The actual maximum day amount of water transferred from the Catawba River basin to the Rocky River basin was 21.97 mgd, which was 66.6% of the authorized maximum day value of 33 mgd. The combined total of actual and outstanding IBT volumes was 24.32 mgd, which was approximately 73.7% of the authorized maximum day value. CLTWater was in full compliance with IBT authorizations and compliance conditions for calendar year 2017.

Appendix C:

Concord and Kannapolis' 2017 IBT Annual Report

**2017 Annual Report on Interbasin Transfers
for
The Cities of Concord and Kannapolis**

Prepared for and by:

City of Concord



City of Kannapolis



Submitted to:

North Carolina Division of Water Resources

February 2018

Executive Summary

The 2017 Annual Report on Interbasin Transfers (IBTs) for the Cities of Concord and Kannapolis (Cities) includes monitoring data for daily tracking of IBT amounts and documentation of compliance with all IBT Certificate conditions. Annual reports were previously prepared for calendar years 2007 through 2016 and are available on the North Carolina Division of Water Resources (NCDWR) website.

The North Carolina Environmental Management Commission (EMC) approved the Cities' IBT Certificate in January 2007 authorizing transfers of up to 10 million gallons per day (mgd) from the Catawba River Basin to the Rocky River Basin and 10 mgd from the Yadkin River Basin to the Rocky River Basin. Additionally, a grandfathered IBT of 6 mgd authorizes transfer from Second Creek, located in the South Yadkin River Basin, to the Rocky River Basin. The terms "Cities" and "Certificate Holders" are used interchangeably herein.

In 2017, the Certificate Holders complied with all conditions of their IBT Certificate. The Cities of Concord and Kannapolis had a maximum daily transfer from the Catawba River Basin of 1.1 mgd during 2017. The maximum daily transfer from the Yadkin River Basin was 3.51 mgd.

In 2017, the City of Kannapolis pumped water from Second Creek to Kannapolis Lake under its South Yadkin River Basin grandfathered IBT. The maximum daily transfer under the grandfathered IBT from the South Yadkin River Basin to the Rocky River Basin in 2017 was 5.22 mgd. The 2017 IBT daily transfers for Concord and Kannapolis are shown in Figure ES-1.

In addition, a settlement was reached in 2010 on a lawsuit filed by the Catawba River Foundation, Inc. and the Protect the Catawba Coalition. While this does not change the IBT Certificate or required reporting in any way, the Cities did agree to some operational conditions regarding the Catawba River Basin during times of drought.

Table ES-1

2017 IBT Average Annual & Maximum Day Demands for Concord and Kannapolis Service Areas

Year	Catawba River Basin			Yadkin River Basin			Second Creek ^{c,d} (South Yadkin River Basin)		
	Water Purchase (mgd)		IBT as % of Certificate ^a	Water Purchase (mgd)		IBT as % of Certificate ^{b,c}	Water Transfer (mgd)		IBT as % of Grandfathered amount
	Average Annual	Max. Day	Max. Day	Average Annual	Max. Day	Max. Day	Average Annual	Max. Day	Max. Day
2017	0.01	1.10	11%	2.27	3.51	35.14%	0.34	5.22	86.92%

^a Maximum Day IBT of 10 mgd from the Catawba River Basin.

^b Maximum Day IBT of 10 mgd from the Yadkin River Basin.

^c The grandfathered 6-mgd Maximum Day IBT limit from Second Creek (South Yadkin River Basin) into the Rocky River Basin is not included in the 10-mgd Maximum Day IBT limit for the Yadkin River Basin.

2017 Daily IBT Per Basin (mgd)

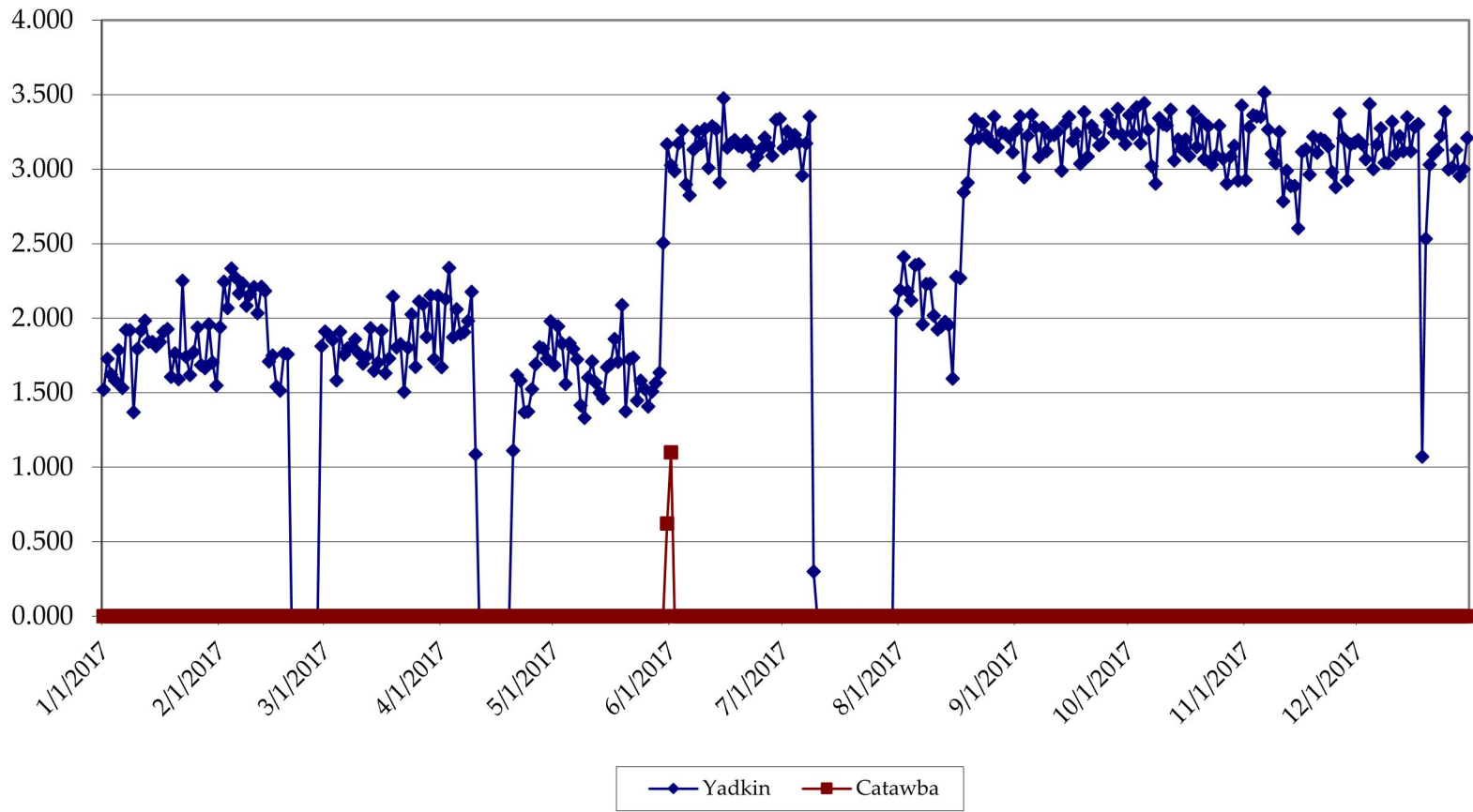


Figure ES-1
2017 Daily Interbasin Transfers by Basin

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Appendix

Daily Interbasin Transfer Amounts for 2017

Acronyms and Abbreviations

DMAC	Drought Management Advisory Council
EMC	Environmental Management Commission
FERC	Federal Energy Regulatory Commission
IBT	Interbasin Transfer
LIP	Low Inflow Protocol
mgd	million gallons per day
NCDWR	North Carolina Division of Water Resources
WSRP	Water Shortage Response Plan
WTP	Water Treatment Plant

1.0 - Introduction

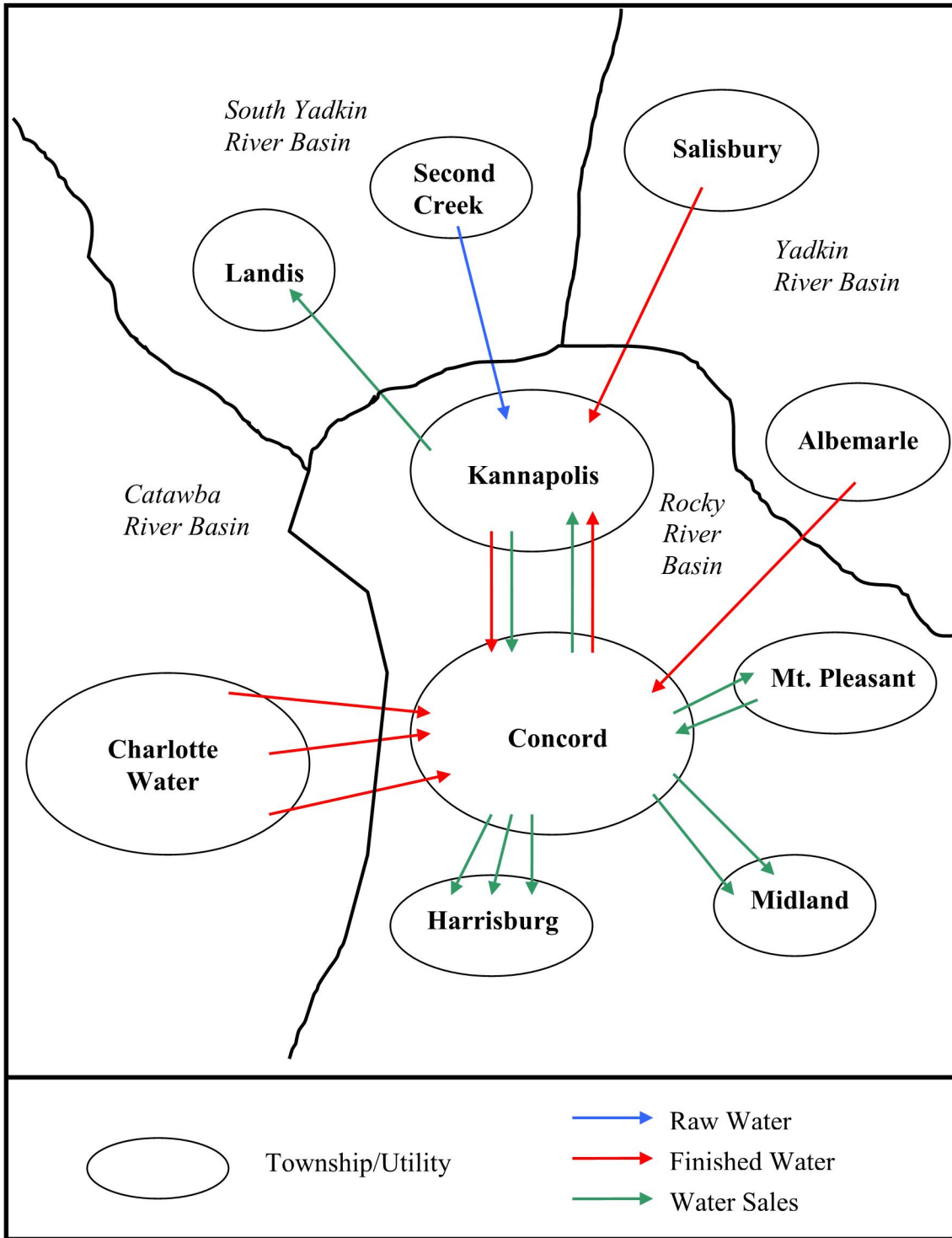
The Cities of Concord and Kannapolis (Cities) received an interbasin transfer (IBT) Certificate, which was originally approved on January 10, 2007, and signed into effect on January 25, 2007. The North Carolina Environmental Management Commission (EMC) has authorized transfers of up to 10 million gallons per day (mgd) from the Catawba River Basin to the Rocky River Basin and 10 mgd from the Yadkin River Basin to the Rocky River Basin. As a condition of the IBT Certificate, the Cities are required to produce an Annual Report that documents transfers over the past year. Annual reports were also prepared for calendar years 2007 through 2016 and are available on the North Carolina Division of Water Resources (NCDWR) website.

The Cities provide water to each other, various municipalities in the area (including: Mount Pleasant, Midland, Harrisburg, and Landis), and unincorporated areas of Cabarrus County. Concord owns and operates the water distribution system used by the Town of Midland. Charlotte Water and the City of Salisbury currently have contracts to provide water to the Cities from the Catawba and Yadkin River Basins, respectively.

The terms “Cities” and “Certificate Holders” are used interchangeably herein. Figure 1-1 illustrates the ability to transfer water among the Certificate Holders and all municipalities served by the Certificate Holders.

Figure 1-1

Water Connections of the Certificate Holders and All Municipalities Served by the Certificate Holders



2.0 - IBT Monitoring

2.1 - Service Area Water Demand

Table 2-1 presents 2017 annual average water production for the Certificate Holders based on finished water produced at the Hillgrove, Coddle Creek, and Kannapolis Water Treatment Plants (WTPs). It also shows finished water purchases from Charlotte Water, the City of Salisbury and the City of Albemarle, if they occurred. Additionally, Table 2-1 presents the 2017 annual average IBT (or water purchases) from each basin covered by the IBT Certificate and from Second Creek, from which transfers are authorized by a grandfathered IBT. In 2017, finished water production averaged 13.14 mgd, purchased IBT finished water averaged 0.01 mgd for Catawba River Basin, 2.27 mgd for the Yadkin River Basin and 0.34 mgd for Second Creek. The combined 2017 annual average water use for the Certificate Holders was 15.76 mgd.

Table 2-1

2017 Water Production or Purchases by River Basin

Certificate Holders	Annual Average Finished Water Produced ^a (mgd)	2017			Annual Average Combined Water Use (mgd)
		Annual Average Purchased Water (mgd)			
		Catawba River Basin ^b	Yadkin River Basin	Second Creek	
Concord & Kannapolis	13.14	0.01	2.27	0.34	15.76

^a Water produced within Rocky River Basin; may include water from Second Creek transferred directly into Kannapolis Lake.

2.2 - Interbasin Transfers

Daily IBT amounts for the Certificate Holders are included in the Appendix. Data is provided for the period January 1, 2017 through December 31, 2017. The maximum day IBT from the Catawba River Basin during the calendar year 2017 was 1.10 mgd. This represents 11% of the permitted maximum day, 10 mgd IBT from the Catawba River Basin under the Certificate approved by the EMC in January 2007. The maximum day IBT from the Yadkin River Basin during the calendar year 2017 was 3.51 mgd. This represents 35.14% of the permitted maximum day, 10 mgd IBT from the Yadkin River Basin under the Certificate. There were transfers of raw water from Second Creek with a maximum day IBT 5.22 mgd, which represents 86.92% of the permitted maximum day, 6 mgd IBT from the South Yadkin River Basin under the grandfathered Certificate. Table 2-2

shows the IBT use for the Certificate Holders and the percentage of use from the Catawba and Yadkin River Basins.

Table 2-2

2017 IBT Average Annual & Maximum Day Demands for Concord and Kannapolis Service Areas

Year	Catawba River Basin			Yadkin River Basin			Second Creek ^{c,d} (South Yadkin River Basin)		
	Water Purchase (mgd)		IBT as % of Certificate ^a	Water Purchase (mgd)		IBT as % of Certificate ^{b,c}	Water Transfer (mgd)		IBT as % of Grand-fathered amount
	Average Annual	Max. Day	Max. Day	Average Annual	Max. Day	Max. Day	Average Annual	Max. Day	Max. Day
2017	0.01	1.10	11%	2.27	3.51	35.14%	0.34	5.22	86.92%

^a Maximum Day IBT of 10 mgd from the Catawba River Basin.

^b Maximum Day IBT of 10 mgd from the Yadkin River Basin.

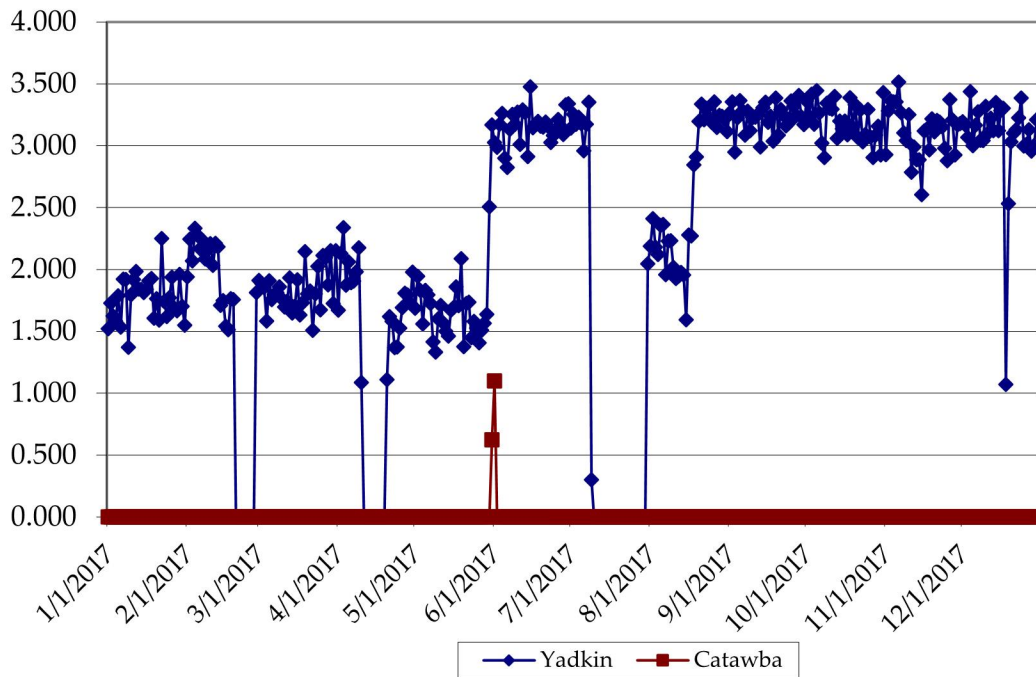
^c The grandfathered 6-mgd Maximum Day IBT limit from Second Creek (South Yadkin River Basin) into the Rocky River Basin is not included in the 10-mgd Maximum Day IBT limit for the Yadkin River Basin.

Figure 2-1 displays the daily IBT amounts for water purchases from the Catawba and Yadkin River Basins.

Figure 2-1

2017 Daily Interbasin Transfers by Basin

2017 Daily IBT Per Basin (mgd)



3.0 - Other Related Information

In 2010, a settlement was reached in a lawsuit filed by the Catawba River Foundation, Inc. and the Protect the Catawba Coalition. While this does not affect the IBT Certificate, its conditions, or required reporting in any way, the Cities did agree to some operational conditions regarding the Catawba River Basin during times of drought.

During designated droughts beyond July 1, 2015, following either Low Inflow Protocol (LIP) or Drought Management Advisory Council (DMAC) Drought Stage declaration, the Cities have agreed to limit the Catawba River Basin IBT so that it corresponds to water use reduction goals. A summary of this agreement is presented in Table 3-1.

Table 3-1
Catawba River Basin IBT during Drought Conditions

LIP Stage or DMAC Drought Stage	Maximum Day Transfer (mgd)
0 / Abnormally Dry	10.0
1 / Moderate Drought	9.0
2 / Severe Drought	8.5
3 / Extreme Drought	7.0
4 / Exceptional Drought	6.0

4.0 - Compliance with Certificate Conditions

A summary of the conditions of the IBT Certificate approved on January 10, 2007 along with the current status of compliance for each is provided below. Language from the certificate is followed by 2010 actions for each condition.

4.1 - Condition 1 (Federal Energy Regulatory Commission [FERC] Licensure)

If at any time any legal requirement that (a) governs the operation of the hydroelectric facilities in the Catawba River Basin currently licensed as Federal Energy Regulatory Commission (FERC) Project No. P-2232 or in the Yadkin Pee-Dee River Basin currently licensed as FERC Project Nos. P-2206 and P-2197 and (b) governs or affects water use and/or quality, substantially differs from the actual or anticipated FERC license conditions or other legal requirement upon which the analysis underlying this Certificate is based, such as changes to minimum flow requirements or drought mitigation measures, the Commission may reopen and modify this Certificate.

This condition requires no action by the Certificate Holders.

4.2 - Condition 2 (Drought Management Plan)

Each Certificate Holder shall prepare a Drought Management Plan. The Cities shall implement measures corresponding to the most severe level of drought conditions in either the Catawba or Yadkin River Basins. The Cities shall not transfer any water to any other jurisdictions unless that jurisdiction agrees to be bound by this condition in full.

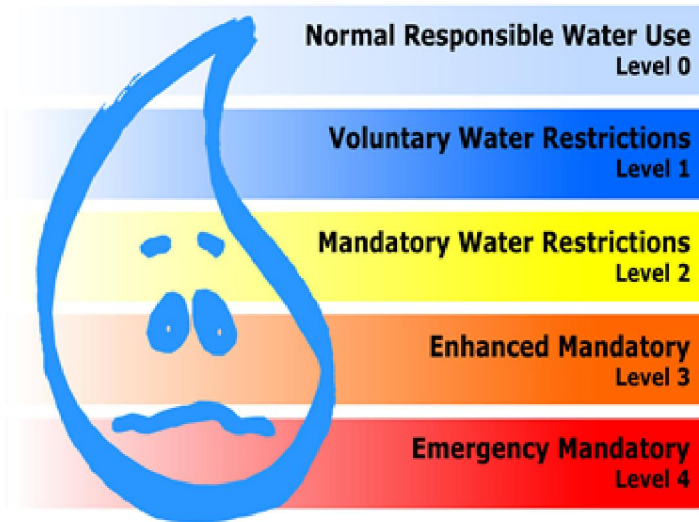
The Cities submitted the Drought Management Plan on July 31, 2007; comments were received on November 11, 2007, and the revised plan was submitted on January 8, 2008. The Drought Management Plan was incorporated into an updated Water Shortage Response Plan (WSRP) in 2010. The WSRP, prepared as a joint document for the Certificate Holders, is available on the NCDWR website at the following web address:

http://www.ncwater.org/Water_Supply_Planning/Water_Shortage_Response_Plans/plan

Table 4-1 shows Normal and Drought Stages 0-4, the names of each, the date the Catawba River Basin managers implemented Draft LIP actions in response to drought monitoring, the Yadkin-Pee Dee River Basin drought monitor, and the associated actions taken by the Cities.

Beginning in the winter of 2008, drought conditions in the state began to decrease, permitting an easing of drought restrictions for both the Catawba and Yadkin River Basins. Level 0, Normal Responsible Water Use, was in place from July 3 through December 31 of 2017 (Figure 4-1). Other outdoor water use conservation measures are encouraged but not required. Level 1, Voluntary Water Restriction, was in place January 1 through July 3 of 2017.

During the year, the Cities drought stages follow the drought stages of the Catawba-Wataree Water Management Group; hence the Cities stayed in Normal Responsible Water Use Level.



The Cities have agreements in place that include enforcement policies with other systems that purchase water from them.

Table 4-1

Concord and Kannapolis 2017 Normal and Drought Stages

2017 Period of Drought					
Drought Stage	Drought Monitor Classification	Catawba River Basin ^a (NC Drought Monitor)	Yadkin River Basin ^b (NC Drought Monitor)	Action by Cities	Cities' Actions Taken
	Normal	May 2 – November 27	February 21 – February 27 April 25 – August 28 September 5 – October 2 October 24 – November 6		
0	Abnormally Dry	January 24 – February 27 April 25 – May 1 November 28 – December 31	January 3 – January 23 February 14 – February 20 February 28 – March 13 March 21 – March 27 August 29 – September 4 October 3 – October 23 November 7 – December 31	Level 0 from July 3 – December 31	Voluntary conservation measures encouraged through public notification.
1	Moderate Drought	January 1 – January 23 February 28 – April 24	January 1 – January 2 January 24 – February 13 March 14 – March 20 March 28 – April 24	Level 1 from January 1 – July 3	Voluntary conservation measures encouraged through public notification.
2	Severe Drought				
3	Extreme Drought				
4	Exceptional Drought				

^a The Catawba River Basin is listed as the drought stage declared by the Catawba-Wataree Water Management Group.

^b The Yadkin River Basin is listed as the highest classification within the basin at a given date. Portions of the basin may be in a lower category.

4.3 - Condition 3 (Disaggregation of IBT Amount)

If the Certificate Holders discontinue their cooperative service agreement, then the permitted IBT amount will be allocated amongst the Certificate Holders based on their projected 2030 needs.

The cooperative service agreement between the Certificate Holders remained in effect throughout 2017.

The Cities and local municipalities cooperatively and effectively communicate and manage their respective water distribution systems. The Cities sell water to each other and reconcile billing monthly. Additionally, Concord owns and operates the water distribution system for Midland, providing water service to all Midland customers. Harrisburg purchases water from Concord, measured by six meters. Concord also provides water service to unincorporated areas of Cabarrus County. Mount Pleasant did not purchase water from the City of Concord in 2017. Further emphasizing the interconnected nature of the Cities and local municipalities, Kannapolis provides water to Landis, located in the South Yadkin River Basin, which is not subject to this IBT Certificate.

4.4 - Condition 4 (Compliance and Monitoring Plan)

In cooperation with the Division of Water Resources, the Certificate Holders shall develop an IBT Compliance and Monitoring Plan.

The Cities submitted the Compliance and Monitoring Plan on July 31, 2007. This plan was finalized in December 2007.

4.5 - Condition 5 (EMC Consideration of Impacts)

The EMC may reopen the Certificate and adjust existing or require new conditions to ensure detrimental impacts are mitigated if environmental impacts are found to be substantially different from those projected in the EMC's Findings of Fact.

This condition requires no action by the Certificate Holders. The EMC did not take action on this condition in 2017.

4.6 - Condition 6 (20-Year Certificate Evaluation)

In twenty years from the date of the Certificate, the Cities shall submit a written report to the EMC to include: (a) summary of transfers for the previous twenty years, (b) discussion of any changes to the environmental impacts assessment from IBT transfers, (c) summary of all actions to address actual or potential drought conditions, (d) recommendations for any changes to the Certificate, (e) details on consultation with interested stakeholders, and (f) certification of compliance with Certificate. This will continue at 20-year intervals.

The IBT Certificate was approved on January 10, 2007 and signed into effect on January 25, 2007; therefore, the first 20-year certificate evaluation report will be completed in 2027.

4.7 - Condition 7 (Limit of Certificate)

The Certificate does not exempt the Cities from compliance with any other requirements of law.

This condition requires no action by the Cities.

APPENDIX

Daily Interbasin Transfer Amounts for 2017

2017 Concord-Kannapolis IBT Tracking

Calculated Fields

Condition of IBT Certificate (January 25, 2017)

Maximum day transfer from the Catawba River Basin 10 MGD
 Maximum day transfer from the Yadkin Pee-Dee River Basin 10 MGD
 Maximum day transfer from the South Yadkin River Basin (grandfather) 6 MGD
 Maximum day transfer to the South Yadkin River Basin (cannot exceed transfer from South Yadkin by more than 1.99 MGD)

Map Code Source Basin	Water Transfer (MGD) to Rocky River Basin				Water Sales (MGD)		IBT Totals Per Basin			Interbasin Transfer						
	Salisbury 1		Albemarle 1	Charlotte 1-3	South Yadkin	South Yadkin	Yadkin	Catawba	Grandfathered IBT from Second Creek - South Yadkin River Basin							
	South Yadkin	Yadkin	Yadkin	Catawba					Catawba	% of Permitted MDD Transfer	Yadkin	% of Permitted MDD Transfer	IBT from Yadkin to South Yadkin River Basin	% of Permitted MDD Transfer		
DATE	Raw Water to Kannapolis Lake from Second Creek	Salisbury Finished water Interconnection with Kannapolis	Albemarle Finished water Interconnection with Concord	Charlotte Finished water Interconnections with Concord	Kannapolis Finished water sales to Landis	Total South Yadkin IBT ¹	Total Yadkin IBT	Total Catawba IBT	Catawba	% of Permitted MDD Transfer	Yadkin	% of Permitted MDD Transfer	IBT from Yadkin to South Yadkin River Basin	% of Permitted MDD Transfer		
1/1/2017	0.000	0.000	1.520	0.000	0.333	-0.333	1.520	0.000	0.000	0.000%	1.520	15.200%	-0.333	-5.550%	0.333	16.734%
1/2/2017	0.000	0.000	1.728	0.000	0.353	-0.353	1.728	0.000	0.000	0.000%	1.728	17.280%	-0.353	-5.883%	0.353	17.739%
1/3/2017	0.000	0.000	1.624	0.000	0.316	-0.316	1.624	0.000	0.000	0.000%	1.624	16.240%	-0.316	-5.267%	0.316	15.879%
1/4/2017	0.000	0.000	1.582	0.000	0.252	-0.252	1.582	0.000	0.000	0.000%	1.582	15.820%	-0.252	-4.200%	0.252	12.663%
1/5/2017	0.000	0.000	1.786	0.000	0.281	-0.281	1.786	0.000	0.000	0.000%	1.786	17.860%	-0.281	-4.683%	0.281	14.121%
1/6/2017	0.000	0.000	1.533	0.000	0.215	-0.215	1.533	0.000	0.000	0.000%	1.533	15.330%	-0.215	-3.583%	0.215	10.804%
1/7/2017	0.000	0.000	1.922	0.000	0.241	-0.241	1.922	0.000	0.000	0.000%	1.922	19.220%	-0.241	-4.017%	0.241	12.111%
1/8/2017	0.000	0.000	1.920	0.000	0.287	-0.287	1.920	0.000	0.000	0.000%	1.920	19.200%	-0.287	-4.783%	0.287	14.422%
1/9/2017	0.000	0.000	1.370	0.000	0.273	-0.273	1.370	0.000	0.000	0.000%	1.370	13.700%	-0.273	-4.550%	0.273	13.719%
1/10/2017	0.000	0.000	1.795	0.000	0.301	-0.301	1.795	0.000	0.000	0.000%	1.795	17.950%	-0.301	-5.017%	0.301	15.126%
1/11/2017	0.000	0.000	1.918	0.000	0.375	-0.375	1.918	0.000	0.000	0.000%	1.918	19.180%	-0.375	-6.250%	0.375	18.844%
1/12/2017	0.000	0.000	1.984	0.000	0.279	-0.279	1.984	0.000	0.000	0.000%	1.984	19.840%	-0.279	-4.650%	0.279	14.020%
1/13/2017	0.000	0.000	1.842	0.000	0.328	-0.328	1.842	0.000	0.000	0.000%	1.842	18.420%	-0.328	-5.467%	0.328	16.482%
1/14/2017	0.000	0.000	1.840	0.000	0.319	-0.319	1.840	0.000	0.000	0.000%	1.840	18.400%	-0.319	-5.317%	0.319	16.030%
1/15/2017	0.000	0.000	1.812	0.000	0.292	-0.292	1.812	0.000	0.000	0.000%	1.812	18.120%	-0.292	-4.867%	0.292	14.673%
1/16/2017	0.000	0.000	1.840	0.000	0.321	-0.321	1.840	0.000	0.000	0.000%	1.840	18.400%	-0.321	-5.350%	0.321	16.131%
1/17/2017	0.000	0.000	1.909	0.000	0.37	-0.370	1.909	0.000	0.000	0.000%	1.909	19.090%	-0.370	-6.167%	0.370	18.593%
1/18/2017	0.000	0.000	1.928	0.000	0.334	-0.334	1.928	0.000	0.000	0.000%	1.928	19.280%	-0.334	-5.567%	0.334	16.784%
1/19/2017	0.000	0.000	1.606	0.000	0.277	-0.277	1.606	0.000	0.000	0.000%	1.606	16.060%	-0.277	-4.617%	0.277	13.920%
1/20/2017	0.000	0.000	1.763	0.000	0.287	-0.287	1.763	0.000	0.000	0.000%	1.763	17.630%	-0.287	-4.783%	0.287	14.422%
1/21/2017	0.000	0.000	1.590	0.000	0.296	-0.296	1.590	0.000	0.000	0.000%	1.590	15.900%	-0.296	-4.933%	0.296	14.874%
1/22/2017	0.000	0.000	2.251	0.000	0.306	-0.306	2.251	0.000	0.000	0.000%	2.251	22.510%	-0.306	-5.100%	0.306	15.377%
1/23/2017	0.000	0.000	1.741	0.000	0.291	-0.291	1.741	0.000	0.000	0.000%	1.741	17.410%	-0.291	-4.850%	0.291	14.623%
1/24/2017	0.000	0.000	1.619	0.000	0.289	-0.289	1.619	0.000	0.000	0.000%	1.619	16.190%	-0.289	-4.817%	0.289	14.523%
1/25/2017	0.000	0.000	1.773	0.000	0.308	-0.308	1.773	0.000	0.000	0.000%	1.773	17.730%	-0.308	-5.133%	0.308	15.477%
1/26/2017	0.000	0.000	1.938	0.000	0.240	-0.240	1.938	0.000	0.000	0.000%	1.938	19.380%	-0.240	-4.000%	0.240	12.060%
1/27/2017	0.000	0.000	1.686	0.000	0.244	-0.244	1.686	0.000	0.000	0.000%	1.686	16.860%	-0.244	-4.067%	0.244	12.261%
1/28/2017	0.000	0.000	1.666	0.000	0.248	-0.248	1.666	0.000	0.000	0.000%	1.666	16.660%	-0.248	-4.133%	0.248	12.462%
1/29/2017	0.000	0.000	1.960	0.000	0.206	-0.206	1.960	0.000	0.000	0.000%	1.960	19.600%	-0.206	-3.433%	0.206	10.352%
1/30/2017	0.000	0.000	1.703	0.000	0.341	-0.341	1.703	0.000	0.000	0.000%	1.703	17.030%	-0.341	-5.683%	0.341	17.136%
1/31/2017	0.000	0.000	1.549	0.000	0.326	-0.326	1.549	0.000	0.000	0.000%	1.549	15.490%	-0.326	-5.433%	0.326	16.382%
2/1/2017	0.000	0.000	1.940	0.000	0.218	-0.218	1.940	0.000	0.000	0.000%	1.940	19.400%	-0.218	-3.833%	0.218	10.955%
2/2/2017	0.000	0.000	2.246	0.000	0.251	-0.251	2.246	0.000	0.000	0.000%	2.246	22.460%	-0.251	-4.183%	0.251	12.613%
2/3/2017	0.000	0.000	2.069	0.000	0.245	-0.245	2.069	0.000	0.000	0.000%	2.069	20.690%	-0.245	-4.083%	0.245	12.312%
2/4/2017	0.000	0.000	2.333	0.000	0.241	-0.241	2.333	0.000	0.000	0.000%	2.333	23.330%	-0.241	-4.017%	0.241	12.111%
2/5/2017	0.000	0.000	2.276	0.000	0.212	-0.212	2.276	0.000	0.000	0.000%	2.276	22.760%	-0.212	-3.533%	0.212	10.653%
2/6/2017	0.000	0.000	2.167	0.000	0.273	-0.273	2.167	0.000	0.000	0.000%	2.167	21.670%	-0.273	-4.550%	0.273	13.719%
2/7/2017	0.000	0.000	2.234	0.000	0.343	-0.343	2.234	0.000	0.000	0.000%	2.234	22.340%	-0.343	-5.717%	0.343	17.236%
2/8/2017	3.000	0.000	2.085	0.000	0.281	-0.281	2.085	0.000	0.000	0.000%	2.085	20.850%	2.719	45.317%	0.281	14.121%
2/9/2017	3.000	0.000	2.160	0.000	0.252	-0.252	2.160	0.000	0.000	0.000%	2.160	21.600%	2.748	45.800%	0.252	12.663%
2/10/2017	3.000	0.000	2.209	0.000	0.249	-0.249	2.209	0.000	0.000	0.000%	2.209	22.090%	2.751	45.850%	0.249	12.513%
2/11/2017	3.000	0.000	2.033	0.000	0.257	-0.257	2.033	0.000	0.000	0.000%	2.033	20.330%	2.743	45.717%	0.257	12.915%
2/12/2017	3.000	0.000	2.212	0.000	0.256	-0.256	2.212	0.000	0.000	0.000%	2.212	22.120%	2.744	45.733%	0.256	12.864%
2/13/2017	3.000	0.000	2.182	0.000	0.254	-0.254	2.182	0.000	0.000	0.000%	2.182	21.820%	2.746	45.767%	0.254	12.764%
2/14/2017	3.000	0.000	1.710	0.000	0.252	-0.252	1.710	0.000	0.000	0.000%	1.710	17.100%	2.748	45.800%	0.252	12.663%
2/15/2017	3.000	0.000	1.749	0.000	0.208	-0.208	1.749	0.000	0.000	0.000%	1.749	17.490%	2.792	46.533%	0.208	10.452%
2/16/2017	3.000	0.000	1.541	0.000	0.251	-0.249	1.541	0.000	0.000	0.000%	1.541	15.410%	2.749	45.817%	0.251	12.613%
2/17/2017	0.000	0.000	1.514	0.000	0.244	-0.244	1.514	0.000	0.000	0.000%	1.514	15.140%	-0.244	-4.067%	0.244	12.261%
2/18/2017	0.000	0.000	1.764	0.000	0.201	-0.201	1.764	0.000	0.000	0.000%	1.764	17.640%	-0.201	-3.350%	0.201	10.101%
2/19/2017	0.000	0.000	1.757	0.000	0.256	-0.256	1.757	0.000	0.000	0.000%	1.757	17.570%	-0.256	-4.267%	0.256	12.864%
2/20/2017	0.000	0.000	0.000	0.000	0.228	-0.228	0.000	0.000	0.000	0.000%	0.000	0.000%	-0.228	-3.800%	0.228	11.457%
2/21/2017	0.000	0.000	0.000	0.000	0.294	-0.294	0.000	0.000	0.000	0.000%	0.000	0.000%	-0.294	-4.900%	0.294	14.774%
2/22/2017	0.000	0.000	0.000	0.000	0.279	-0.279	0.000	0.000	0.000	0.000%	0.000	0.000%	-0.279	-4.850%	0.279	14.920%
2/23/2017	0.000	0.000	0.000	0.000	0.280	-0.280	0.000	0.000	0.000	0.000%	0.000	0.000%	-0.280	-4.667%	0.280	14.070%
2/24/2017	0.000	0.000	0.000	0.000	0.295	-0.295	0.000	0.000	0.000	0.000%	0.000	0.000%	-0.295	-4.917%	0.295	14.824%
2/25/2017	0.000	0.000	0.000	0.000	0.319	-0.319	0.000	0.000	0.000	0.000%	0.000	0.000%	-0.319	-5.317%	0.319	16.030%
2/26/2017	0.000	0.000	0.000	0.000	0.298	-0.298	0.000	0.000	0.000	0.000%	0.000	0.000%	-0.298	-4.967%	0.298	14.975%
2/27/2017	0.000	0.000	0.000	0.000	0.281	-0.281	0.000	0.000	0.000	0.000%	0.000	0.000%	-0.281	-4.683%	0.281	14.121%
2/28/2017	0.000	0.000	1.812	0.000	0.274	-0.274	1.812	0.000	0.000	0.000%	1.812	18.120%	-0.274	-4.567%	0.274	13.769%
3/1/2017	0.000	0.000	1.911	0.000	0.152	-0.152	1.911	0.000	0.000	0.000%	1.911	19.110%	-0.152	-2.533%	0.152	7.638%

Map Code Source Basin	Water Transfer (MGD) to Rocky River Basin				Water Sales (MGD)		IBT Totals Per Basin				Interbasin Transfer							
	Salisbury 1		Albemarle 1		Charlotte 1-3		NOTE: All Wastewater discharge is to the Rocky River from RRWWTP, excluding water sales to Landis (subtracted from Total South Yadkin IBT).											
	South Yadkin	Yadkin	Yadkin	Catawba	South Yadkin	South Yadkin	Yadkin	Catawba										
DATE	Raw Water to Kannapolis Lake from Second Creek	Salisbury Finished water Interconnection with Kannapolis	Albemarle Finished water Interconnection with Concord	Charlotte Water Interconnections with Concord	Kannapolis water sales to Landis	Finished water sales to Landis	Total South Yadkin IBT ¹	Total Yadkin IBT	Total Catawba IBT	Catawba	% of Permitted MDD Transfer	Yadkin	% of Permitted MDD Transfer	Grandfathered IBT from Second Creek - South Yadkin River Basin	% of Permitted MDD Transfer	IBT from Yadkin to South Yadkin River Basin	% of Permitted MDD Transfer	
3/2/2017	0.000	0.000	1.887	0.000	0.304	-0.304	1.887	0.000	0.000	0.000	0.000%	1.887	18.870%	-0.304	-5.067%	0.304	15.276%	
3/3/2017	0.000	0.000	1.855	0.000	0.291	-0.291	1.855	0.000	0.000	0.000	0.000%	1.855	18.550%	-0.291	-4.850%	0.291	14.623%	
3/4/2017	0.000	0.000	1.582	0.000	0.253	-0.253	1.582	0.000	0.000	0.000	0.000%	1.582	15.820%	-0.253	-4.217%	0.253	12.714%	
3/5/2017	0.000	0.000	1.908	0.000	0.230	-0.230	1.908	0.000	0.000	0.000	0.000%	1.908	19.080%	-0.230	-3.833%	0.230	11.558%	
3/6/2017	0.000	0.000	1.756	0.000	0.232	-0.232	1.756	0.000	0.000	0.000	0.000%	1.756	17.560%	-0.232	-3.867%	0.232	11.658%	
3/7/2017	0.000	0.000	1.798	0.000	0.254	-0.254	1.798	0.000	0.000	0.000	0.000%	1.798	17.980%	-0.254	-4.233%	0.254	12.764%	
3/8/2017	0.000	0.000	1.813	0.000	0.250	-0.250	1.813	0.000	0.000	0.000	0.000%	1.813	18.130%	-0.250	-4.167%	0.250	12.563%	
3/9/2017	0.000	0.000	1.859	0.000	0.249	-0.249	1.859	0.000	0.000	0.000	0.000%	1.859	18.590%	-0.249	-4.150%	0.249	12.513%	
3/10/2017	0.000	0.000	1.761	0.000	0.256	-0.256	1.761	0.000	0.000	0.000	0.000%	1.761	17.610%	-0.256	-4.267%	0.256	12.864%	
3/11/2017	0.000	0.000	1.696	0.000	0.217	-0.217	1.696	0.000	0.000	0.000	0.000%	1.696	16.960%	-0.217	-3.617%	0.217	10.905%	
3/12/2017	0.000	0.000	1.744	0.000	0.249	-0.249	1.744	0.000	0.000	0.000	0.000%	1.744	17.440%	-0.249	-4.150%	0.249	12.513%	
3/13/2017	0.000	0.000	1.933	0.000	0.212	-0.212	1.933	0.000	0.000	0.000	0.000%	1.933	19.330%	-0.212	-3.533%	0.212	10.653%	
3/14/2017	0.000	0.000	1.647	0.000	0.250	-0.250	1.647	0.000	0.000	0.000	0.000%	1.647	16.470%	-0.250	-4.167%	0.250	12.563%	
3/15/2017	0.000	0.000	1.701	0.000	0.245	-0.245	1.701	0.000	0.000	0.000	0.000%	1.701	17.010%	-0.245	-4.083%	0.245	12.312%	
3/16/2017	0.000	0.000	1.917	0.000	0.207	-0.207	1.917	0.000	0.000	0.000	0.000%	1.917	19.170%	-0.207	-3.450%	0.207	10.402%	
3/17/2017	0.000	0.000	1.632	0.000	0.244	-0.244	1.632	0.000	0.000	0.000	0.000%	1.632	16.320%	-0.244	-4.067%	0.244	12.261%	
3/18/2017	0.000	0.000	1.730	0.000	0.252	-0.252	1.730	0.000	0.000	0.000	0.000%	1.730	17.300%	-0.252	-4.200%	0.252	12.663%	
3/19/2017	0.000	0.000	2.145	0.000	0.204	-0.204	2.145	0.000	0.000	0.000	0.000%	2.145	21.450%	-0.204	-3.400%	0.204	10.251%	
3/20/2017	0.000	0.000	1.804	0.000	0.26	-0.260	1.804	0.000	0.000	0.000	0.000%	1.804	18.040%	-0.260	-4.333%	0.260	13.065%	
3/21/2017	0.000	0.000	1.827	0.000	0.250	-0.250	1.827	0.000	0.000	0.000	0.000%	1.827	18.270%	-0.250	-4.167%	0.250	12.563%	
3/22/2017	0.000	0.000	1.507	0.000	0.208	-0.208	1.507	0.000	0.000	0.000	0.000%	1.507	15.070%	-0.208	-3.467%	0.208	10.452%	
3/23/2017	0.000	0.000	1.803	0.000	0.274	-0.274	1.803	0.000	0.000	0.000	0.000%	1.803	18.030%	-0.274	-4.567%	0.274	13.769%	
3/24/2017	0.000	0.000	2.026	0.000	0.207	-0.207	2.026	0.000	0.000	0.000	0.000%	2.026	20.260%	-0.207	-3.450%	0.207	10.402%	
3/25/2017	0.000	0.000	1.674	0.000	0.245	-0.245	1.674	0.000	0.000	0.000	0.000%	1.674	16.740%	-0.245	-4.083%	0.245	12.312%	
3/26/2017	0.000	0.000	2.113	0.000	0.256	-0.256	2.113	0.000	0.000	0.000	0.000%	2.113	21.130%	-0.256	-4.267%	0.256	12.864%	
3/27/2017	0.000	0.000	2.094	0.000	0.203	-0.203	2.094	0.000	0.000	0.000	0.000%	2.094	20.940%	-0.203	-3.383%	0.203	10.201%	
3/28/2017	0.000	0.000	1.875	0.000	0.268	-0.268	1.875	0.000	0.000	0.000	0.000%	1.875	18.750%	-0.268	-4.467%	0.268	13.467%	
3/29/2017	0.000	0.000	2.152	0.000	0.272	-0.272	2.152	0.000	0.000	0.000	0.000%	2.152	21.520%	-0.272	-4.533%	0.272	13.668%	
3/30/2017	0.000	0.000	1.725	0.000	0.286	-0.286	1.725	0.000	0.000	0.000	0.000%	1.725	17.250%	-0.286	-4.767%	0.286	14.372%	
3/31/2017	0.000	0.000	2.151	0.000	0.313	-0.313	2.151	0.000	0.000	0.000	0.000%	2.151	21.510%	-0.313	-5.217%	0.313	15.729%	
4/1/2017	0.000	0.000	1.671	0.000	0.300	-0.300	1.671	0.000	0.000	0.000	0.000%	1.671	16.710%	-0.300	-5.000%	0.300	15.075%	
4/2/2017	0.000	0.000	2.128	0.000	0.282	-0.282	2.128	0.000	0.000	0.000	0.000%	2.128	21.280%	-0.282	-4.700%	0.282	14.171%	
4/3/2017	0.000	0.000	2.337	0.000	0.269	-0.269	2.337	0.000	0.000	0.000	0.000%	2.337	23.370%	-0.269	-4.483%	0.269	13.518%	
4/4/2017	0.000	0.000	1.872	0.000	0.261	-0.261	1.872	0.000	0.000	0.000	0.000%	1.872	18.720%	-0.261	-4.350%	0.261	13.116%	
4/5/2017	0.000	0.000	2.061	0.000	0.263	-0.263	2.061	0.000	0.000	0.000	0.000%	2.061	20.610%	-0.263	-4.383%	0.263	13.216%	
4/6/2017	0.000	0.000	1.894	0.000	0.284	-0.284	1.894	0.000	0.000	0.000	0.000%	1.894	18.940%	-0.284	-4.733%	0.284	14.271%	
4/7/2017	0.000	0.000	1.906	0.000	0.273	-0.273	1.906	0.000	0.000	0.000	0.000%	1.906	19.060%	-0.273	-4.550%	0.273	13.719%	
4/8/2017	0.000	0.000	1.981	0.000	0.285	-0.285	1.981	0.000	0.000	0.000	0.000%	1.981	19.810%	-0.285	-4.750%	0.285	14.322%	
4/9/2017	0.000	0.000	2.176	0.000	0.271	-0.271	2.176	0.000	0.000	0.000	0.000%	2.176	21.760%	-0.271	-4.517%	0.271	13.818%	
4/10/2017	0.000	0.000	1.087	0.000	0.261	-0.261	1.087	0.000	0.000	0.000	0.000%	1.087	10.870%	-0.261	-4.350%	0.261	13.116%	
4/11/2017	0.000	0.000	0.000	0.000	0.313	-0.313	0.000	0.000	0.000	0.000	0.000%	0.000	0.000%	-0.313	-5.217%	0.313	15.729%	
4/12/2017	0.000	0.000	0.000	0.000	0.259	-0.259	0.000	0.000	0.000	0.000	0.000%	0.000	0.000%	-0.259	-4.317%	0.259	13.015%	
4/13/2017	0.000	0.000	0.000	0.000	0.308	-0.308	0.000	0.000	0.000	0.000	0.000%	0.000	0.000%	-0.308	-5.133%	0.308	15.477%	
4/14/2017	0.000	0.000	0.000	0.000	0.324	-0.324	0.000	0.000	0.000	0.000	0.000%	0.000	0.000%	-0.324	-5.400%	0.324	16.281%	
4/15/2017	0.000	0.000	0.000	0.000	0.326	-0.326	0.000	0.000	0.000	0.000	0.000%	0.000	0.000%	-0.326	-5.433%	0.326	16.382%	
4/16/2017	0.000	0.000	0.000	0.000	0.27	-0.270	0.000	0.000	0.000	0.000	0.000%	0.000	0.000%	-0.270	-4.500%	0.270	13.568%	
4/17/2017	0.000	0.000	0.000	0.000	0.319	-0.319	0.000	0.000	0.000	0.000	0.000%	0.000	0.000%	-0.319	-5.317%	0.319	16.030%	
4/18/2017	0.000	0.000	0.000	0.000	0.3	-0.300	0.000	0.000	0.000	0.000	0.000%	0.000	0.000%	-0.300	-5.000%	0.300	15.075%	
4/19/2017	0.000	0.000	0.000	0.000	0.311	-0.311	0.000	0.000	0.000	0.000	0.000%	0.000	0.000%	-0.311	-5.183%	0.311	15.628%	
4/20/2017	0.000	0.000	1.111	0.000	0.312	-0.312	1.111	0.000	0.000	0.000	0.000%	1.111	11.110%	-0.312	-5.200%	0.312	15.678%	
4/21/2017	0.000	0.000	1.618	0.000	0.279	-0.279	1.618	0.000	0.000	0.000	0.000%	1.618	16.180%	-0.279	-4.650%	0.279	14.020%	
4/22/2017	0.000	0.000	1.580	0.000	0.265	-0.265	1.580	0.000	0.000	0.000	0.000%	1.580	15.800%	-0.265	-4.417%	0.265	13.317%	
4/23/2017	0.000	0.000	1.369	0.000	0.273	-0.273	1.369	0.000	0.000	0.000	0.000%	1.369	13.690%	-0.273	-4.550%	0.273	13.719%	
4/24/2017	0.000	0.000	1.374	0.000	0.316	-0.316	1.374	0.000	0.000	0.000	0.000%	1.374	13.740%	-0.316	-5.267%	0.316	15.879%	
4/25/2017	0.000	0.000	1.525	0.000	0.262	-0.262	1.525	0.000	0.000	0.000	0.000%	1.525	15.250%	-0.262	-4.367%	0.262	13.166%	
4/26/2017	0.000	0.000	1.691	0.000	0.249	-0.249	1.691	0.000	0.000	0.000	0.000%	1.691	16.910%	-0.249	-4.150%	0.249	12.513%	
4/27/2017	0.000	0.000	1.807	0.000	0.331	-0.331	1.807	0.000	0.000	0.000	0.000%	1.807	18.070%	-0.331	-5.517%	0.331	16.633%	
4/28/2017	0.000	0.000	1.796	0.000	0.3	-0.300	1.796	0.000	0.000	0.000	0.000%	1.796	17.960%	-0.300	-5.000%	0.300	15.075%	
4/29/2017	0.000	0.000	1.728	0.000	0.327	-0.327	1.728	0.000	0.000	0.000	0.000%	1.728	17.280%	-0.327	-5.450%	0.327	16.432%	
4/30/2017	0.000	0.000	1.979	0.000	0.35	-0.350	1.979	0.000	0.000	0.000	0.000%	1.979	19.790%	-0.350	-5.833%	0.350	17.588%	
5/1/2017	0.000	0.000	1.686	0.000	0.352	-0.352	1.686	0.000	0.000	0.000	0.000%	1.686	16.860%	-0.352	-5.867%	0.352	17.688%	
5/2/2017	0.000	0.000	1.945	0.000	0.363	-0.363	1.945	0.000	0.000	0.000	0.000%	1.945	19.450%	-0.363	-6.050%	0.363	18.241%	
5/3/2017	0.000																	

Map Code Source Basin	Water Transfer (MGD) to Rocky River Basin				Water Sales (MGD)		IBT Totals Per Basin			Interbasin Transfer							
	Salisbury 1 Yadkin		Albemarle 1 Yadkin		Charlotte 1-3 Catawba		South Yadkin	South Yadkin	Yadkin	Catawba	Grandfathered IBT from Second Creek - South Yadkin River Basin						
	Raw Water to Kannapolis Lake from Second Creek	Salsbury Interconnection with Kannapolis	Finished water Interconnection with Concord	Albemarle Finished water Interconnection with Concord	Charlotte Water Interconnections with Concord	Kannapolis water sales to Landis	Finished water sales to Landis	Total South Yadkin IBT ¹	Total Yadkin IBT	Total Catawba IBT	Catawba	% of Permitted MDD Transfer	Yadkin	% of Permitted MDD Transfer	Yadkin River Basin	% of Permitted MDD Transfer	IBT from Yadkin to South Yadkin River Basin
5/9/2017	0.000	0.000	1.331	0.000	0.000	0.356	-0.356	1.331	0.000	0.000	0.000%	1.331	13.310%	-0.356	-5.933%	0.356	17.889%
5/10/2017	0.000	0.000	1.601	0.000	0.000	0.292	-0.292	1.601	0.000	0.000	0.000%	1.601	16.010%	-0.292	-4.867%	0.292	14.673%
5/11/2017	0.000	0.000	1.709	0.000	0.000	0.323	-0.323	1.709	0.000	0.000	0.000%	1.709	17.090%	-0.323	-5.383%	0.323	16.231%
5/12/2017	0.000	0.000	1.568	0.000	0.000	0.310	-0.310	1.568	0.000	0.000	0.000%	1.568	15.680%	-0.310	-5.167%	0.310	15.578%
5/13/2017	0.000	0.000	1.501	0.000	0.000	0.307	-0.307	1.501	0.000	0.000	0.000%	1.501	15.010%	-0.307	-5.117%	0.307	15.427%
5/14/2017	0.000	0.000	1.461	0.000	0.000	0.265	-0.265	1.461	0.000	0.000	0.000%	1.461	14.610%	-0.265	-4.417%	0.265	13.317%
5/15/2017	0.000	0.000	1.672	0.000	0.000	0.354	-0.354	1.672	0.000	0.000	0.000%	1.672	16.720%	-0.354	-5.900%	0.354	17.789%
5/16/2017	0.000	0.000	1.692	0.000	0.000	0.375	-0.375	1.692	0.000	0.000	0.000%	1.692	16.920%	-0.375	-6.250%	0.375	18.844%
5/17/2017	0.000	0.000	1.860	0.000	0.000	0.342	-0.342	1.860	0.000	0.000	0.000%	1.860	18.600%	-0.342	-5.700%	0.342	17.186%
5/18/2017	0.000	0.000	1.708	0.000	0.000	0.356	-0.356	1.708	0.000	0.000	0.000%	1.708	17.080%	-0.356	-5.933%	0.356	17.889%
5/19/2017	0.000	0.000	2.088	0.000	0.000	0.328	-0.328	2.088	0.000	0.000	0.000%	2.088	20.880%	-0.328	-5.467%	0.328	16.482%
5/20/2017	0.000	0.000	1.376	0.000	0.000	0.317	-0.317	1.376	0.000	0.000	0.000%	1.376	13.760%	-0.317	-5.283%	0.317	15.930%
5/21/2017	0.000	0.000	1.724	0.000	0.000	0.343	-0.343	1.724	0.000	0.000	0.000%	1.724	17.240%	-0.343	-5.717%	0.343	17.236%
5/22/2017	0.000	0.000	1.735	0.000	0.000	0.352	-0.352	1.735	0.000	0.000	0.000%	1.735	17.350%	-0.352	-5.867%	0.352	17.688%
5/23/2017	0.000	0.000	1.448	0.000	0.000	0.316	-0.316	1.448	0.000	0.000	0.000%	1.448	14.480%	-0.316	-5.267%	0.316	15.879%
5/24/2017	0.000	0.000	1.581	0.000	0.000	0.294	-0.294	1.581	0.000	0.000	0.000%	1.581	15.810%	-0.294	-4.900%	0.294	14.774%
5/25/2017	0.000	0.000	1.527	0.000	0.000	0.266	-0.266	1.527	0.000	0.000	0.000%	1.527	15.270%	-0.266	-4.433%	0.266	13.367%
5/26/2017	0.000	0.000	1.407	0.000	0.000	0.288	-0.288	1.407	0.000	0.000	0.000%	1.407	14.070%	-0.288	-4.800%	0.288	14.472%
5/27/2017	0.000	0.000	1.509	0.000	0.000	0.291	-0.291	1.509	0.000	0.000	0.000%	1.509	15.090%	-0.291	-4.850%	0.291	14.623%
5/28/2017	0.000	0.000	1.564	0.000	0.000	0.356	-0.356	1.564	0.000	0.000	0.000%	1.564	15.640%	-0.356	-5.933%	0.356	17.889%
5/29/2017	0.000	0.000	1.636	0.000	0.000	0.287	-0.287	1.636	0.000	0.000	0.000%	1.636	16.360%	-0.287	-4.783%	0.287	14.422%
5/30/2017	0.000	0.000	2.505	0.000	0.000	0.290	-0.290	2.505	0.000	0.000	0.000%	2.505	25.050%	-0.290	-4.833%	0.290	14.573%
5/31/2017	0.000	0.000	3.167	0.623	0.000	0.288	-0.288	3.167	0.623	0.000	0.623%	3.167	31.670%	-0.288	-4.800%	0.288	14.472%
6/1/2017	0.000	0.000	3.026	1.100	0.000	0.314	-0.314	3.026	1.100	0.000	1.100%	3.026	30.260%	-0.314	-5.233%	0.314	14.958%
6/2/2017	0.000	0.000	2.986	0.320	0.000	0.320	-0.320	2.986	0.000	0.000	0.000%	2.986	29.860%	-0.320	-5.333%	0.320	14.845%
6/3/2017	0.000	0.000	3.173	0.000	0.000	0.328	-0.328	3.173	0.000	0.000	0.000%	3.173	31.730%	-0.328	-5.467%	0.328	15.141%
6/4/2017	0.000	0.000	3.261	0.000	0.000	0.325	-0.325	3.261	0.000	0.000	0.000%	3.261	32.610%	-0.325	-5.383%	0.325	15.709%
6/5/2017	0.000	0.000	2.898	0.000	0.000	0.306	-0.306	2.898	0.000	0.000	0.000%	2.898	28.980%	-0.306	-5.100%	0.306	14.452%
6/6/2017	0.000	0.000	2.825	0.000	0.000	0.305	-0.305	2.825	0.000	0.000	0.000%	2.825	28.250%	-0.305	-5.083%	0.305	14.804%
6/7/2017	0.000	0.000	3.131	0.000	0.000	0.314	-0.314	3.131	0.000	0.000	0.000%	3.131	31.310%	-0.314	-5.233%	0.314	15.508%
6/8/2017	0.000	0.000	3.253	0.000	0.000	0.300	-0.300	3.253	0.000	0.000	0.000%	3.253	32.530%	-0.300	-5.000%	0.300	12.613%
6/9/2017	0.000	0.000	3.174	0.000	0.000	0.332	-0.332	3.174	0.000	0.000	0.000%	3.174	31.740%	-0.332	-5.533%	0.332	13.920%
6/10/2017	0.000	0.000	3.271	0.000	0.000	0.344	-0.344	3.271	0.000	0.000	0.000%	3.271	32.710%	-0.344	-5.733%	0.344	14.774%
6/11/2017	0.000	0.000	3.009	0.000	0.000	0.354	-0.354	3.009	0.000	0.000	0.000%	3.009	30.090%	-0.354	-5.900%	0.354	15.995%
6/12/2017	0.000	0.000	3.289	0.000	0.000	0.355	-0.355	3.289	0.000	0.000	0.000%	3.289	32.890%	-0.355	-5.917%	0.355	14.979%
6/13/2017	0.000	0.000	3.269	0.000	0.000	0.393	-0.393	3.269	0.000	0.000	0.000%	3.269	32.690%	-0.393	-6.550%	0.393	15.955%
6/14/2017	0.000	0.000	2.911	0.000	0.000	0.305	-0.305	2.911	0.000	0.000	0.000%	2.911	29.110%	-0.305	-5.083%	0.305	12.462%
6/15/2017	0.000	0.000	3.475	0.000	0.000	0.245	-0.245	3.475	0.000	0.000	0.000%	3.475	34.750%	-0.245	-4.083%	0.245	7.889%
6/16/2017	0.000	0.000	3.145	0.000	0.000	0.342	-0.342	3.145	0.000	0.000	0.000%	3.145	31.450%	-0.342	-5.700%	0.342	9.045%
6/17/2017	0.000	0.000	3.175	0.000	0.000	0.334	-0.334	3.175	0.000	0.000	0.000%	3.175	31.750%	-0.334	-5.567%	0.334	13.769%
6/18/2017	0.000	0.000	3.196	0.000	0.000	0.340	-0.340	3.196	0.000	0.000	0.000%	3.196	31.960%	-0.340	-5.667%	0.340	14.472%
6/19/2017	0.000	0.000	3.158	0.000	0.000	0.318	-0.318	3.158	0.000	0.000	0.000%	3.158	31.580%	-0.318	-5.300%	0.318	6.935%
6/20/2017	0.000	0.000	3.150	0.000	0.000	0.307	-0.307	3.150	0.000	0.000	0.000%	3.150	31.500%	-0.307	-5.117%	0.307	10.352%
6/21/2017	0.000	0.000	3.190	0.000	0.000	0.298	-0.298	3.190	0.000	0.000	0.000%	3.190	31.900%	-0.298	-4.967%	0.298	16.332%
6/22/2017	0.000	0.000	3.154	0.000	0.000	0.306	-0.306	3.154	0.000	0.000	0.000%	3.154	31.540%	-0.306	-5.100%	0.306	16.281%
6/23/2017	0.000	0.000	3.027	0.000	0.000	0.307	-0.307	3.027	0.000	0.000	0.000%	3.027	30.270%	-0.307	-5.117%	0.307	11.307%
6/24/2017	0.000	0.000	3.083	0.000	0.000	0.316	-0.316	3.083	0.000	0.000	0.000%	3.083	30.830%	-0.316	-5.267%	0.316	8.693%
6/25/2017	0.000	0.000	3.135	0.000	0.000	0.316	-0.316	3.135	0.000	0.000	0.000%	3.135	31.350%	-0.316	-5.267%	0.316	12.915%
6/26/2017	0.000	0.000	3.212	0.000	0.000	0.318	-0.318	3.212	0.000	0.000	0.000%	3.212	32.120%	-0.318	-5.300%	0.318	12.613%
6/27/2017	0.000	0.000	3.158	0.000	0.000	0.340	-0.340	3.158	0.000	0.000	0.000%	3.158	31.580%	-0.340	-5.667%	0.340	9.698%
6/28/2017	0.000	0.000	3.091	0.000	0.000	0.320	-0.320	3.091	0.000	0.000	0.000%	3.091	30.910%	-0.320	-5.333%	0.320	12.613%
6/29/2017	0.000	0.000	3.331	0.000	0.000	0.340	-0.340	3.331	0.000	0.000	0.000%	3.331	33.310%	-0.340	-5.667%	0.340	12.010%
6/30/2017	0.000	0.000	3.338	0.000	0.000	0.312	-0.312	3.338	0.000	0.000	0.000%	3.338	33.380%	-0.312	-5.200%	0.312	14.824%
7/1/2017	0.000	0.000	3.141	0.000	0.000	0.31	-0.310	3.141	0.000	0.000	0.000%	3.141	31.410%	-0.310	-5.167%	0.291	14.623%
7/2/2017	0.000	0.000	3.254	0.000	0.000	0.274	-0.274	3.254	0.000	0.000	0.000%	3.254	32.540%	-0.274	-4.567%	0.291	14.623%
7/3/2017	0.000	0.000	3.174	0.000	0.000	0.296	-0.296	3.174	0.000	0.000	0.000%	3.174	31.740%	-0.296	-4.933%	0.442	22.211%
7/4/2017	0.000	0.000	3.230	0.000	0.000	0.277	-0.277	3.230	0.000	0.000	0.000%	3.230	32.300%	-0.277	-4.617%	0.356	17.889%
7/5/2017	0.000	0.000	3.178	0.000	0.000	0.302	-0.302	3.178	0.000	0.000	0.000%	3.178	31.780%	-0.302	-5.033%	0.194	9.749%
7/6/2017	0.000	0.000	2.958	0.000	0.000	0.299	-0.299	2.958	0.000	0.000	0.000%	2.958	29.580%	-0.299	-4.983%	0.245	12.312%
7/7/2017	0.000	0.000	3.173	0.000	0.000	0.286	-0.286	3.173	0.000	0.000	0.000%	3.173	31.730%	-0.286	-4.767%	0.191	9.598%
7/8/2017	0.000	0.000	3.352	0.000	0.000	0.343	-0.343	3.352	0.000	0.000	0.000%	3.352	33.520%	-0.343	-5.717%	0.200	10.050%
7/9/2017	0.000	0.000	3.145	0.000	0.000	0.368	-0.368	3.145	0.000	0.000	0.000%	3.145	31.450%	-0.368	-6.133%	0.290	14.573%
7/10/2017																	

Map Code Source Basin	Water Transfer (MGD) to Rocky River Basin				Water Sales (MGD)		IBT Totals Per Basin				Interbasin Transfer							
	Salisbury 1		Albemarle 1		Charlotte 1-3		South Yadkin	South Yadkin	Yadkin	Catawba	Grandfathered IBT from Second Creek - South Yadkin River Basin							
	South Yadkin	Yadkin	Yadkin	Catawba	Kannapolis Finished water sales to Landis	Total South Yadkin IBT ¹					Total Yadkin IBT	Total Catawba IBT	Catawba	% of Permitted MDD Transfer	Yadkin	% of Permitted MDD Transfer	IBT from Yadkin to South Yadkin River Basin	% of Permitted MDD Transfer
DATE	Raw Water to Kannapolis Lake from Second Creek	Salisbury Finished water Interconnection with Kannapolis	Albemarle Finished water Interconnection with Concord	Charlotte Water Interconnections with Concord														
11/29/2017	0.000	0.000	3.168	0.000	0.235	-0.235	3.168	0.000	0.000	0.000%	3.168	31.680%	-0.235	-3.917%	0.235	11.809%		
11/30/2017	0.000	0.000	3.177	0.000	0.257	-0.257	3.177	0.000	0.000	0.000%	3.177	31.770%	-0.257	-4.283%	0.257	12.915%		
12/1/2017	0.000	0.000	3.195	0.000	0.270	-0.270	3.195	0.000	0.000	0.000%	3.195	31.950%	-0.270	-4.500%	0.270	13.568%		
12/2/2017	0.000	0.000	3.168	0.000	0.222	-0.222	3.168	0.000	0.000	0.000%	3.168	31.680%	-0.222	-3.700%	0.222	11.156%		
12/3/2017	0.000	0.000	3.066	0.000	0.247	-0.247	3.066	0.000	0.000	0.000%	3.066	30.660%	-0.247	-4.117%	0.247	12.412%		
12/4/2017	0.000	0.000	3.437	0.000	0.264	-0.264	3.437	0.000	0.000	0.000%	3.437	34.370%	-0.264	-4.400%	0.264	13.266%		
12/5/2017	0.000	0.000	3.001	0.000	0.249	-0.249	3.001	0.000	0.000	0.000%	3.001	30.010%	-0.249	-4.150%	0.249	12.513%		
12/6/2017	0.000	0.000	3.165	0.000	0.252	-0.252	3.165	0.000	0.000	0.000%	3.165	31.650%	-0.252	-4.200%	0.252	12.663%		
12/7/2017	0.000	0.000	3.274	0.000	0.247	-0.247	3.274	0.000	0.000	0.000%	3.274	32.740%	-0.247	-4.117%	0.247	12.412%		
12/8/2017	0.000	0.000	3.044	0.000	0.247	-0.247	3.044	0.000	0.000	0.000%	3.044	30.440%	-0.247	-4.117%	0.247	12.412%		
12/9/2017	0.000	0.000	3.041	0.000	0.249	-0.249	3.041	0.000	0.000	0.000%	3.041	30.410%	-0.249	-4.150%	0.249	12.513%		
12/10/2017	0.000	0.000	3.319	0.000	0.251	-0.251	3.319	0.000	0.000	0.000%	3.319	33.190%	-0.251	-4.183%	0.251	12.513%		
12/11/2017	0.000	0.000	3.102	0.000	0.256	-0.256	3.102	0.000	0.000	0.000%	3.102	31.020%	-0.256	-4.267%	0.256	12.864%		
12/12/2017	0.000	0.000	3.223	0.000	0.249	-0.249	3.223	0.000	0.000	0.000%	3.223	32.230%	-0.249	-4.150%	0.249	12.513%		
12/13/2017	0.000	0.000	3.122	0.000	0.244	-0.244	3.122	0.000	0.000	0.000%	3.122	31.220%	-0.244	-4.067%	0.244	12.261%		
12/14/2017	0.000	0.000	3.348	0.000	0.249	-0.249	3.348	0.000	0.000	0.000%	3.348	33.480%	-0.249	-4.150%	0.249	12.513%		
12/15/2017	0.000	0.000	3.121	0.000	0.238	-0.238	3.121	0.000	0.000	0.000%	3.121	31.210%	-0.238	-3.967%	0.238	11.960%		
12/16/2017	0.000	0.000	3.285	0.000	0.238	-0.238	3.285	0.000	0.000	0.000%	3.285	32.850%	-0.238	-3.967%	0.238	11.960%		
12/17/2017	0.000	0.000	3.303	0.000	0.213	-0.213	3.303	0.000	0.000	0.000%	3.303	33.030%	-0.213	-3.550%	0.213	10.704%		
12/18/2017	0.000	0.000	1.072	0.000	0.259	-0.259	1.072	0.000	0.000	0.000%	1.072	10.720%	-0.259	-4.317%	0.259	13.015%		
12/19/2017	0.000	0.000	2.533	0.000	0.244	-0.244	2.533	0.000	0.000	0.000%	2.533	25.330%	-0.244	-4.067%	0.244	12.261%		
12/20/2017	0.000	0.000	3.031	0.000	0.260	-0.260	3.031	0.000	0.000	0.000%	3.031	30.310%	-0.260	-4.333%	0.260	13.065%		
12/21/2017	0.000	0.000	3.101	0.000	0.272	-0.272	3.101	0.000	0.000	0.000%	3.101	31.010%	-0.272	-4.533%	0.272	13.668%		
12/22/2017	0.000	0.000	3.129	0.000	0.226	-0.226	3.129	0.000	0.000	0.000%	3.129	31.290%	-0.226	-3.767%	0.226	11.357%		
12/23/2017	0.000	0.000	3.225	0.000	0.265	-0.265	3.225	0.000	0.000	0.000%	3.225	32.250%	-0.265	-4.417%	0.265	13.317%		
12/24/2017	0.000	0.000	3.385	0.000	0.242	-0.242	3.385	0.000	0.000	0.000%	3.385	33.850%	-0.242	-4.033%	0.242	12.161%		
12/25/2017	0.000	0.000	2.998	0.000	0.205	-0.205	2.998	0.000	0.000	0.000%	2.998	29.980%	-0.205	-3.417%	0.205	10.302%		
12/26/2017	0.000	0.000	3.010	0.000	0.194	-0.194	3.010	0.000	0.000	0.000%	3.010	30.100%	-0.194	-3.233%	0.194	9.749%		
12/27/2017	0.000	0.000	3.129	0.000	0.242	-0.242	3.129	0.000	0.000	0.000%	3.129	31.290%	-0.242	-4.033%	0.242	12.161%		
12/28/2017	0.000	0.000	2.955	0.000	0.201	-0.201	2.955	0.000	0.000	0.000%	2.955	29.550%	-0.201	-3.350%	0.201	10.101%		
12/29/2017	0.000	0.000	3.001	0.000	0.246	-0.246	3.001	0.000	0.000	0.000%	3.001	30.010%	-0.246	-4.100%	0.246	12.362%		
12/30/2017	0.000	0.000	3.209	0.000	0.235	-0.235	3.209	0.000	0.000	0.000%	3.209	32.090%	-0.235	-3.917%	0.235	11.809%		
12/31/2017	0.000	0.000	3.093	0.000	0.214	-0.214	3.093	0.000	0.000	0.000%	3.093	30.930%	-0.214	-3.567%	0.214	10.754%		
AVG 2017	0.644	0.000	2.278	0.005	0.303	0.341	2.271	0.005	0.005	0.005%	2.271	22.706%	0.341	5.685%	0.280	14.057%		
MAX 2017	5.500	0.000	3.514	1.100	0.651	5.215	3.514	1.100	1.100	1.100%	3.514	35.140%	5.215	86.917%	0.454	22.814%		

¹ Transfers from Second Creek to Kannapolis Lake (South Yadkin Basin to Rocky River Basin) shall not exceed 6 MGD; positive numbers represent this direction of transfer as dominate
Transfers from Kannapolis (via purchase from Salisbury) to Landis (Yadkin Basin to South Yadkin Basin) shall not exceed 2 MGD; negative numbers represent this direction of transfer as the dominate