

# 2016 Annual Report on Interbasin Transfers from the Catawba River Basin

North Carolina Division of Water Resources



Department of Environmental Quality

January 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

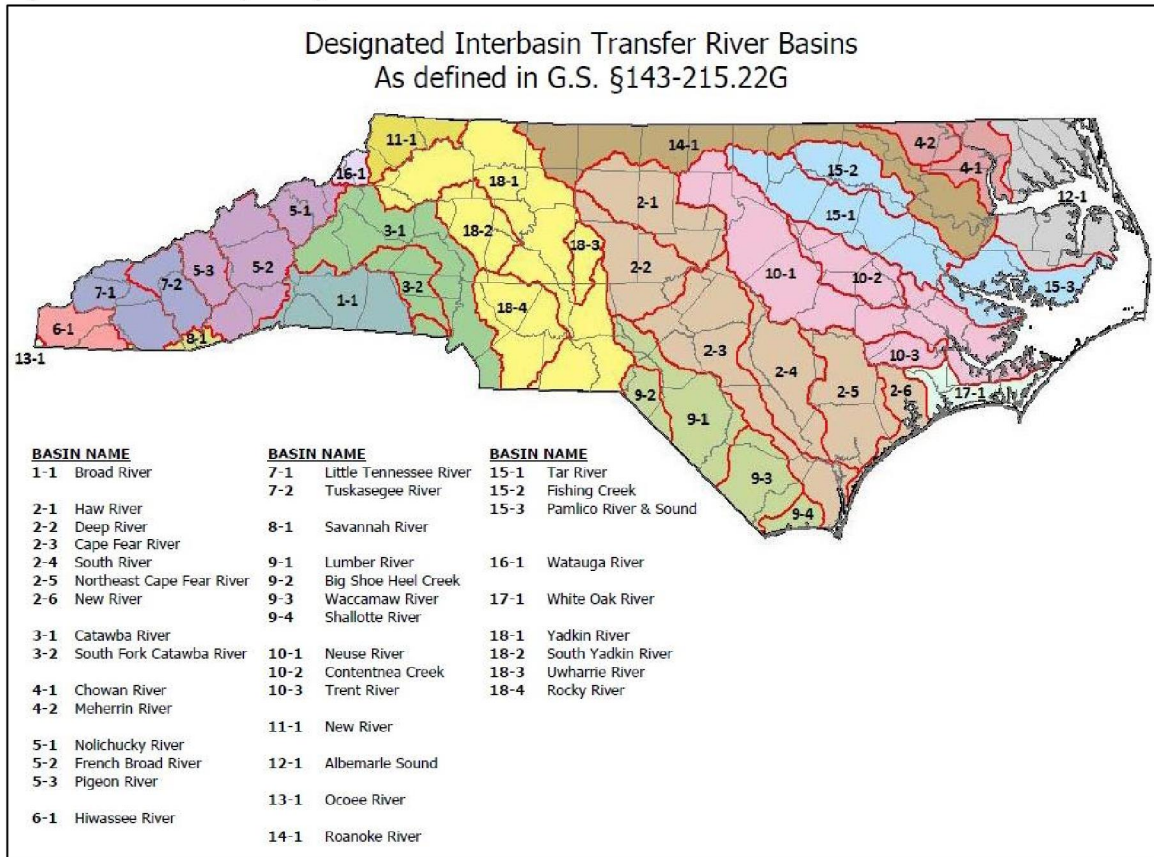
In 1993, the North Carolina Legislature enacted General Statute G.S. §143-215.22I as part of An Act to Regulate Interbasin Transfers (Session Law 1993-348). This law regulated large surface water transfers between river basins by requiring a certificate from the Environmental Management Commission (EMC).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



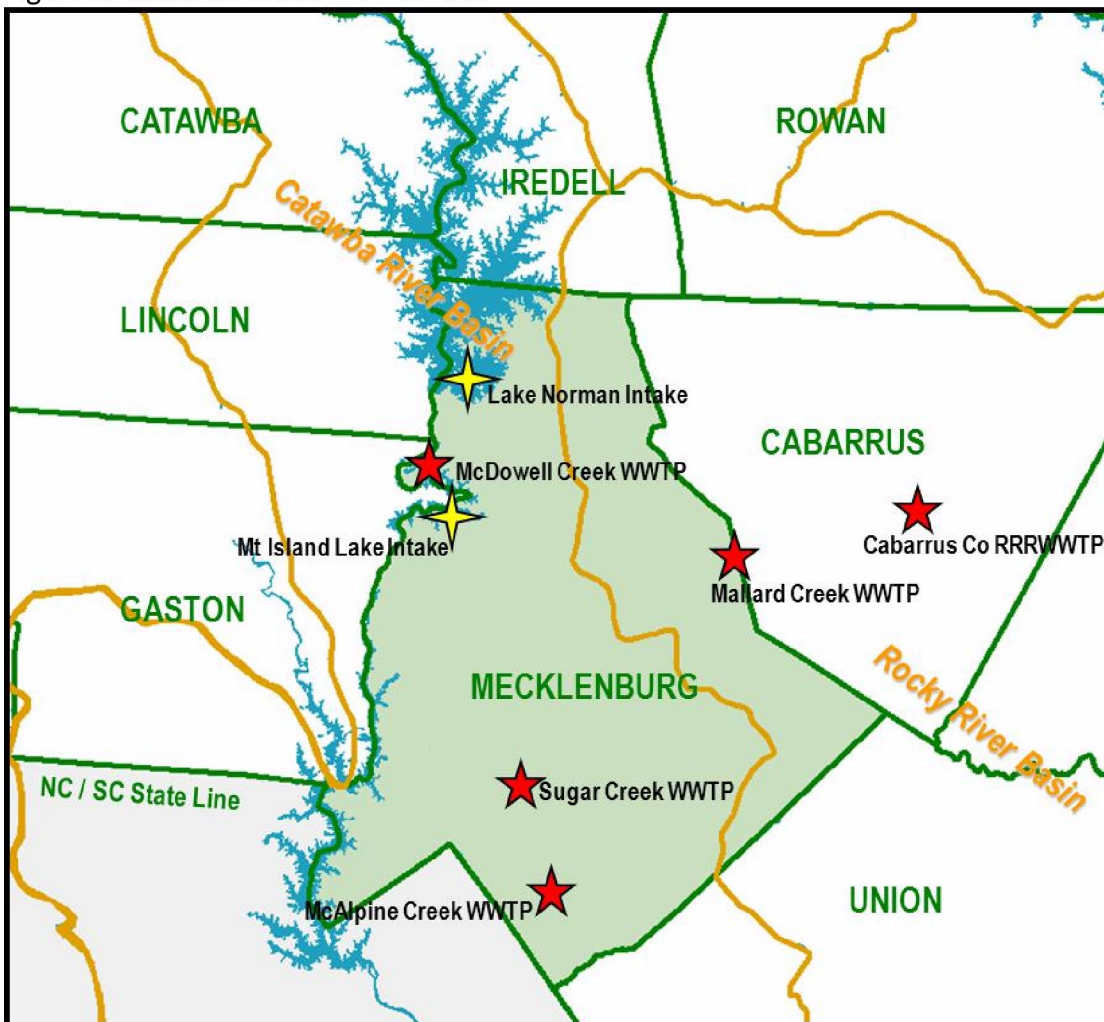
The current procedure for obtaining an IBT Certificate is specifically laid out in G.S. § 143-215.22L. The full process can take three to five years (or more), requires local and interstate notification, and offers a number of opportunities for public comment and review. The passage in 2013 of Session 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 December 2017, the North Carolina EMC has issued IBT certificates for eight 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 there are more than 100 grandfathered systems performing IBTs throughout North Carolina, most of which transfer less than 2.0 MGD on a maximum day basis. These grandfathered 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 2016 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 2016 are presented below in Table 1. Charlotte Water’s 2016 IBT annual report is included in Appendix B. Annual reports from 2002-2016 are available on the division’s website at, <http://www.ncwater.org/?page=300>.

Table 1: Charlotte Water 2016 Interbasin Transfers

Calendar Year	Avg. Annual IBT (MGD)	Max. Day IBT (MGD)
2016	17.32 (52.5%)	22.39 (67.9%)

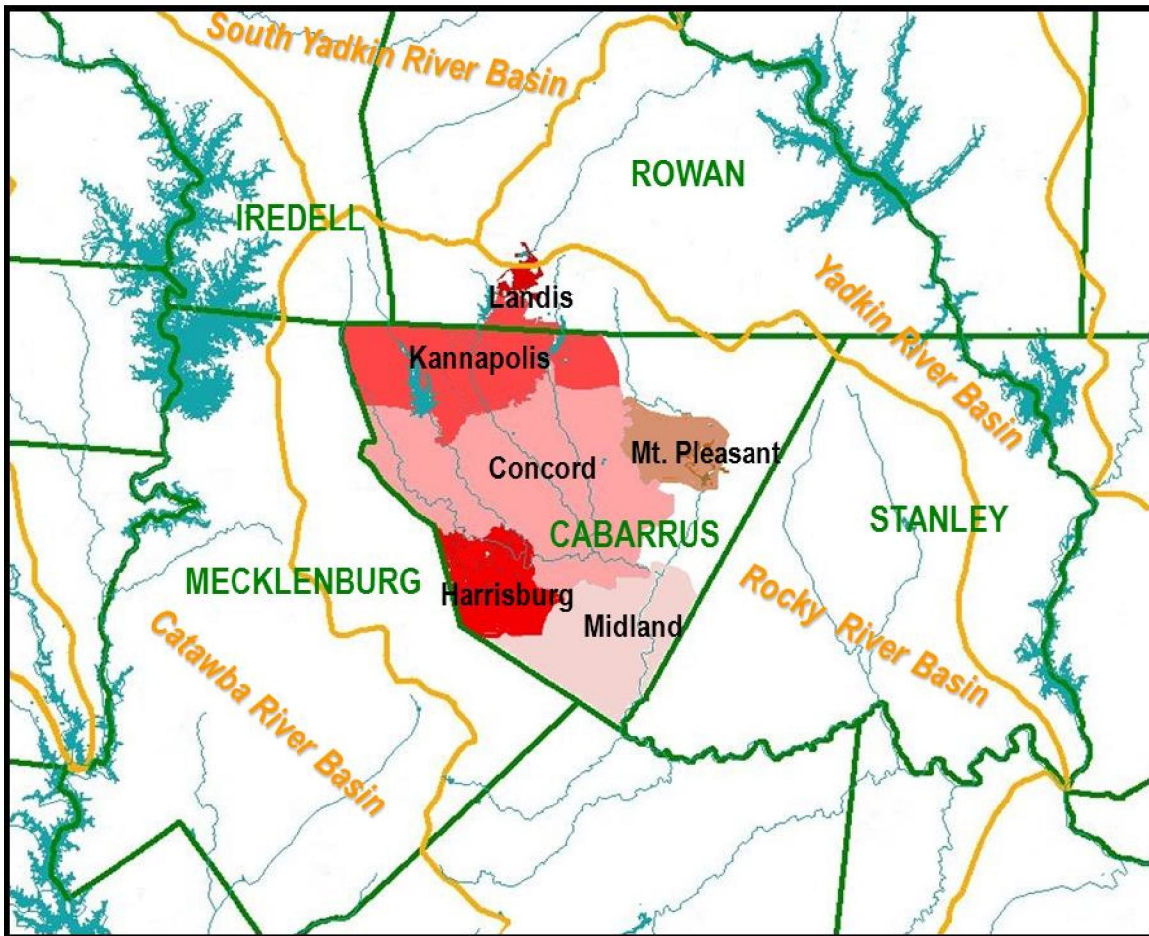
Values in parentheses represent the percentage of the total allowable transfer per the IBT Certificate.

**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' 2016 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 2016 are summarized below in Table 2.

Table 2: Concord and Kannapolis 2016 Interbasin Transfers

Calendar Year	Catawba to Rocky <sup>1</sup>		Yadkin to Rocky <sup>2</sup>		Second Creek (South Yadkin) to Rocky <sup>3</sup>	
	Avg. Daily (MGD)	Max. Day (MGD)	Avg. Daily (MGD)	Max. Day (MGD)	Avg. Daily (MGD)	Max. Day (MGD)
2016	0	0	1.11 (11.1%) <sup>4</sup>	1.53 (15.3%)	0.24 (4.0%)	5.28 (88.0%)

<sup>1</sup> Maximum Day IBT of 10 mgd from the Catawba River Basin to the Rocky River Basin.

<sup>2</sup> Maximum Day IBT of 10 mgd from the Yadkin River Basin to the Rocky River Basin.

<sup>3</sup> 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.

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

In 2016, there was no water transferred out of the Catawba River Basin. The maximum day IBT from the Yadkin River Basin during the calendar year 2016 was 1.53 mgd, which represents 15.3 percent of the permitted maximum day, 10 mgd IBT from the Yadkin River Basin under the Certificate approved by the EMC in January 2007. The average day IBT from the Yadkin River Basin was 1.11 mgd, which represents 11.1 percent of the permitted maximum day, 10 mgd IBT. There were transfers of raw water from Second Creek with a maximum day IBT of 5.28 mgd, which represents 88 percent of the allowable maximum day, 6 mgd IBT from the South Yadkin River Basin under the grandfathered transfer. The 2016 annual report is included in Appendix C. Annual reports from 2007-2016 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 17.32 mgd, on an average daily basis, from the Catawba River basin in 2016. On a maximum day basis, approximately 22.39 mgd was transferred from the Catawba River basin in 2016. 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 2016 IBT Annual Report



August 10, 2017

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 2016

Dear Ms. Nimmer:

We are sending our calendar year 2016 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 2016, we experienced an actual maximum day IBT based on July billing data of 22.39 mgd. Of our authorized 33 mgd IBT, this value was approximately 67.9%. The average IBT was 17.32 mgd, approximately 52.5% of authorized IBT.

As of December 31, 2016, there were additional outstanding IBT commitments of 2.09 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, appearing to read "Keri B. Cantrell".

Dr. Keri B. Cantrell, PE  
Program Manager – Engineering Planning Section



*Charlotte Water  
Annual Report on Interbasin Transfer  
Calendar Year 2016*

## **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 2013 to 2016, the Town of Harrisburg increased its average daily consumption by 68%.

Table 1 summarizes actual IBT amounts for calendar years 2002 through 2016 (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 2016 was 22.39 mgd in July, which was 67.9% of the authorized IBT of 33 mgd. The average IBT for 2016 was 17.32 mgd, 52.5% 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, 2016, 1.48 mgd was committed to permitted donated projects (subdivisions) that have not been activated and 0.61 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 2016 was 24.48 mgd, approximately 74% of the authorized IBT.



*Table 1: Actual IBT Summary*

<b>Calendar Year</b>	<b>Avg. Annual IBT (mgd)</b>	<b>Max. Day IBT (mgd)</b>
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

## **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 Program (S.W.I.M. program). Provided below is the summary of progress made during CY2016. The Division of Water Resources shall have the authority to approve modifications to and need for continued reporting as necessary.

During CY2016, 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 2016, the following work was completed in the three (3) watersheds by CMSWS:

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

- 1. The restoration of a section of Torrence Creek at The Park Huntersville has been bid for construction. Construction is anticipated to be complete in early 2018.*

2. *CMSWS in partnership with the Town of Huntersville signed a Memorandum of Understanding (MOU) for the restoration of approximately 1.5 miles of stream between Statesville Road and North Mecklenburg Park. The MOU has been signed and a design and survey firm selected.*

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

1. *Easement negotiations have been finalized for the restoration of approximately two (2) miles of Stevens Creek. A survey and design is under contract for the project and 30% design work has been completed. A grant application was submitted to the National Fish and Wildlife Foundation in the amount of \$120,000 for the construction of six (6) habitat structures specifically targeting freshwater mussels. If funded, U.S. Fish and Wildlife staff plan to colonize the structures with freshwater mussels reared in nurseries. CMSWS is working 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. *Easement negotiations are complete 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. A design and survey firm is under contract and work has commenced.*
2. *The Town of Davidson is working to stabilize a head-cut near Davidson Elementary School in partnership with the Natural Resources Conservation Service. A design firm is under contract and a grant application has been submitted to Duke Energy for partial funding.*

**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 2016.

***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 2016.

*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 22.39 mgd, which was 67.9% of the authorized maximum day value of 33 mgd. The combined total of actual and outstanding IBT volumes was 24.48 mgd, which was approximately 74% of the authorized maximum day value. CLTWater was in full compliance with IBT authorizations and compliance conditions for calendar year 2016.

Appendix C:

Concord and Kannapolis' 2016 IBT Annual Report

**2016 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 2017

# Executive Summary

The 2016 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 2015 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 2016, the Certificate Holders complied with all conditions of their IBT Certificate. The Cities of Concord and Kannapolis purchased no water from Charlotte Water from the Catawba River Basin during 2016. The maximum daily transfer from the Yadkin River Basin was 1.53 mgd.

In 2016, 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 2016 was 5.28 mgd. The 2016 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

2016 IBT Average Annual & Maximum Day Demands for Concord and Kannapolis Service Areas

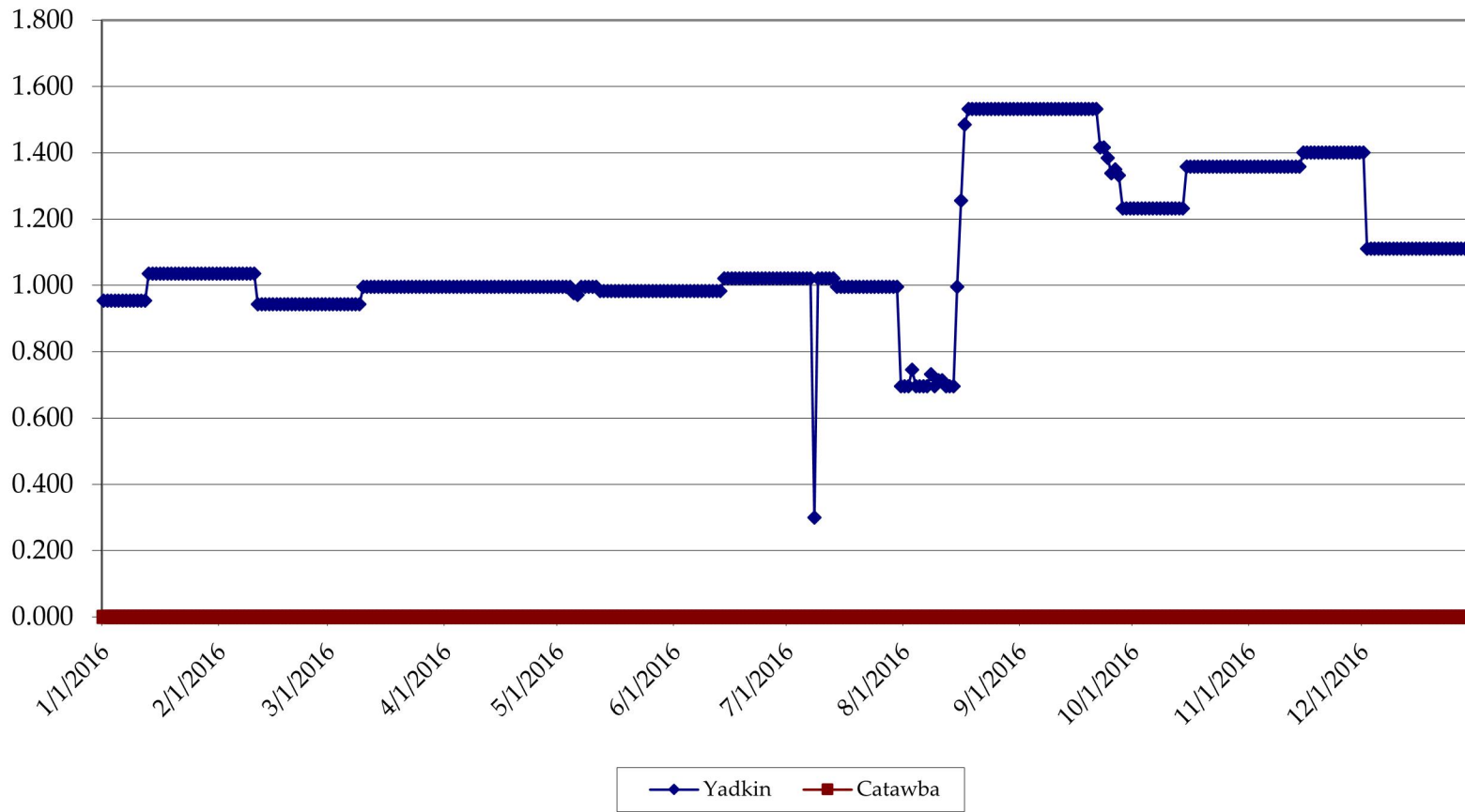
Year	Catawba River Basin			Yadkin River Basin			Second Creek <sup>c,d</sup> (South Yadkin River Basin)		
	Water Purchase (mgd)		IBT as % of Certificate <sup>a</sup>	Water Purchase (mgd)		IBT as % of Certificate <sup>b,c</sup>	Water Transfer (mgd)		IBT as % of Grandfathered amount
	Average Annual	Max. Day	Max. Day	Average Annual	Max. Day	Max. Day	Average Annual	Max. Day	Max. Day
2016	0.00	0.00	0%	1.11	1.53	15.32%	0.24	5.28	87.95%

<sup>a</sup> Maximum Day IBT of 10 mgd from the Catawba River Basin.

<sup>b</sup> Maximum Day IBT of 10 mgd from the Yadkin River Basin.

<sup>c</sup> 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.

2016 Daily IBT Per Basin (mgd)



**Figure ES-1**  
2016 Daily Interbasin Transfers by Basin

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## Appendix

Daily Interbasin Transfer Amounts for 2016

# 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 2015 and are available on the North Carolina Division of Water Resources (NCDWR) website.

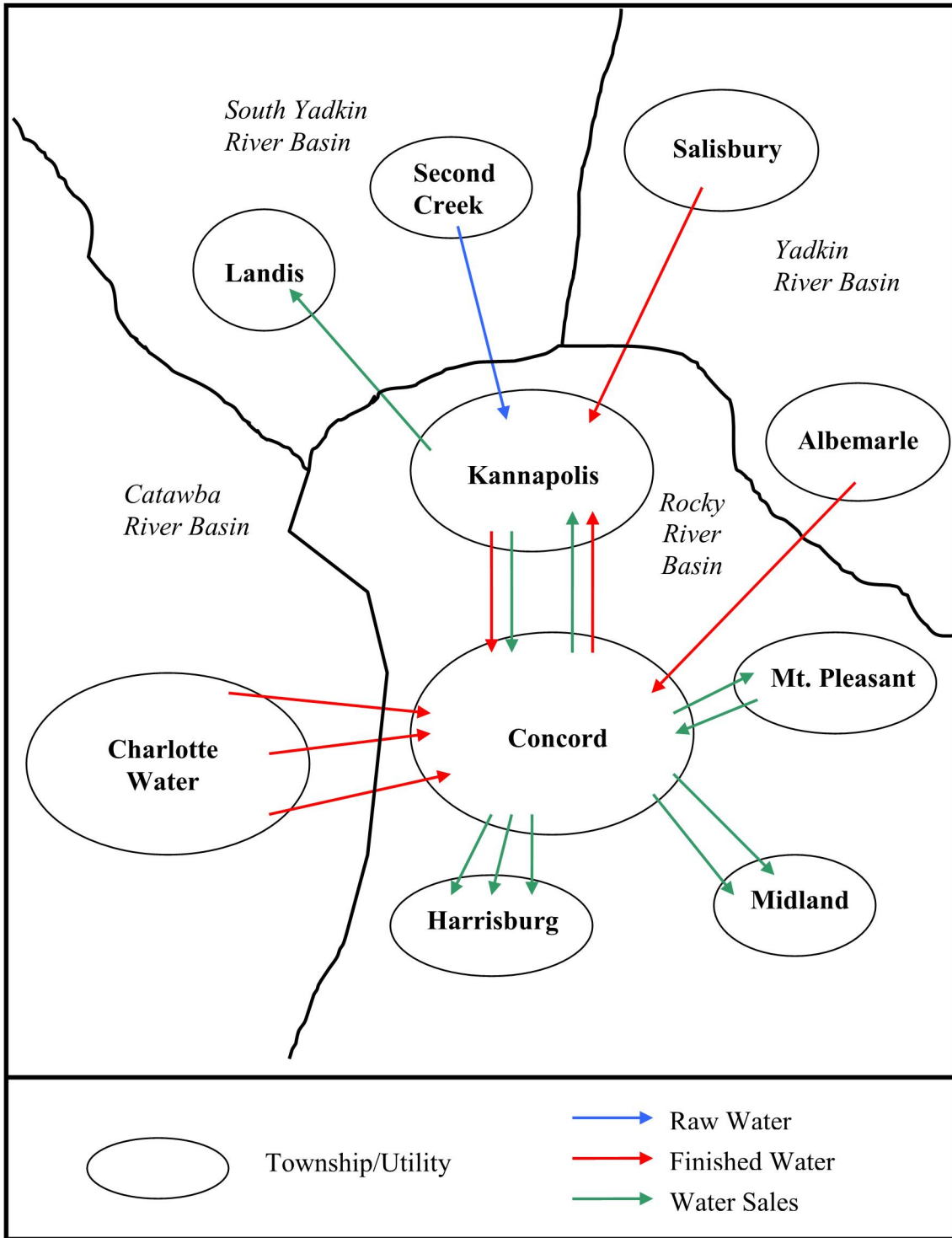
The Cities provide water to each other, various municipalities in the area (including: Mount Pleasant, Midland, Harrisburg, and Landis), and unincorporated areas of Cabarrus County. Concord owns and operates the water distribution system used by the Town of Midland. Charlotte Water and the City of Salisbury currently have contracts to provide water to the Cities from the Catawba and Yadkin River Basins, respectively. Kannapolis has an agreement in place with the City of Salisbury to purchase 0.3 mgd of finished water on a daily basis; the Cities have completed construction of an interconnection with the City of Albemarle, which is located in the Yadkin River Basin.

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 2016 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 2016 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 2016, finished water production averaged 14.25 mgd, purchased IBT finished water averaged 1.11 mgd for the Yadkin River Basin and 0.24 mgd for Second Creek. The combined 2016 annual average water use for the Certificate Holders was 15.60 mgd.

**Table 2-1**

2016 Water Production or Purchases by River Basin

Certificate Holders	Annual Average Finished Water Produced <sup>a</sup> (mgd)	2016			Annual Average Combined Water Use (mgd)
		Annual Average Purchased Water (mgd)			
		Catawba River Basin <sup>b</sup>	Yadkin River Basin	Second Creek	
Concord & Kannapolis	14.25	0.00	1.11	0.24	15.60

<sup>a</sup> 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, 2016 through December 31, 2016. The maximum day IBT from the Yadkin River Basin during the calendar year 2016 was 1.53 mgd. This represents 15.32% of the permitted maximum day, 10 mgd IBT from the Yadkin River Basin under the Certificate approved by the EMC in January 2007. There were transfers of raw water from Second Creek with a maximum day IBT 5.28 mgd, which represents 87.95% 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**

2016 IBT Average Annual & Maximum Day Demands for Concord and Kannapolis Service Areas

Year	Catawba River Basin			Yadkin River Basin			Second Creek <sup>c,d</sup> (South Yadkin River Basin)		
	Water Purchase (mgd)		IBT as % of Certificate <sup>a</sup>	Water Purchase (mgd)		IBT as % of Certificate <sup>b,c</sup>	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
2016	0.00	0.00	0%	1.11	1.53	15.32%	0.24	5.28	87.95%

<sup>a</sup> Maximum Day IBT of 10 mgd from the Catawba River Basin.

<sup>b</sup> Maximum Day IBT of 10 mgd from the Yadkin River Basin.

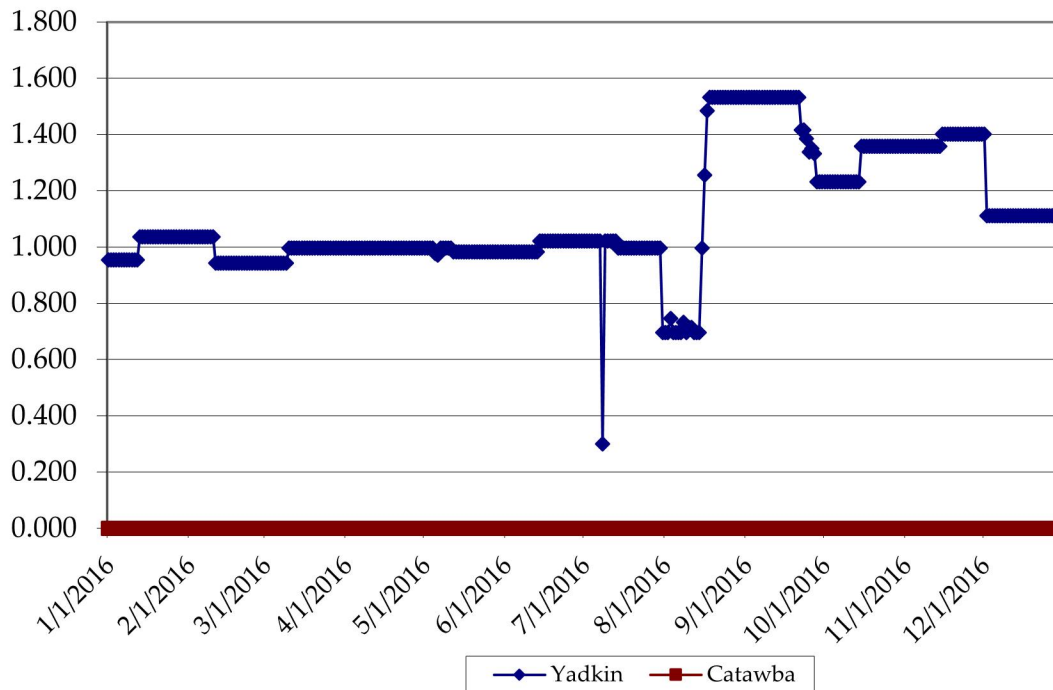
<sup>c</sup> The grandfathered 6-mgd Maximum Day IBT limit from Second Creek (South Yadkin River Basin) into the Rocky River Basin is not included in the 10-mgd Maximum Day IBT limit for the Yadkin River Basin.

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

**Figure 2-1**

2016 Daily Interbasin Transfers by Basin

**2016 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:

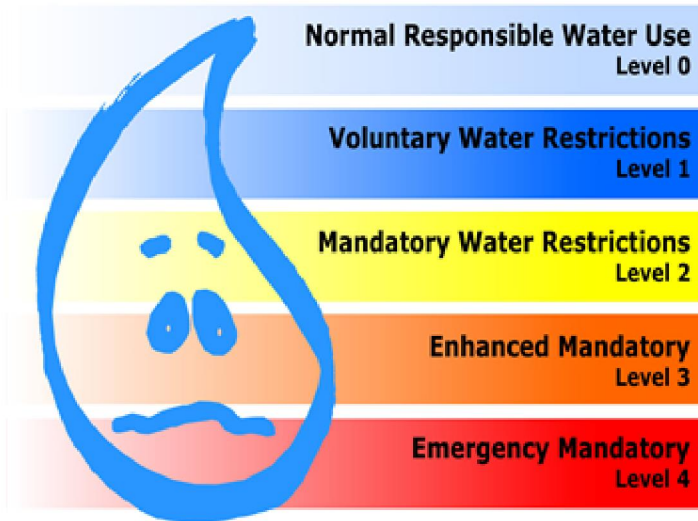
[http://www.ncwater.org/Water\\_Supply\\_Planning/Water\\_Shortage\\_Response\\_Plans/plan](http://www.ncwater.org/Water_Supply_Planning/Water_Shortage_Response_Plans/plan)

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. In April 2009, the Cities adopted a restricted irrigation schedule which allows irrigation on Tuesdays, Thursdays, and Saturdays only. This modified Level 0, Normal Responsible Water Use, was in place from August 1 through November 1 of 2016 (Figure 4-1). Other outdoor water use conservation

measures are encouraged but not required. Level 1, Voluntary Water Restriction, was in place November 1 through December 31 of 2016.

During the year, the Cities drought stages follow the drought stages of the Catawba-Wateree 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 2016 Normal and Drought Stages

2016 Period of Drought					
Drought Stage	Drought Monitor Classification	Catawba River Basin <sup>a</sup> (NC Drought Monitor)	Yadkin River Basin <sup>b</sup> (NC Drought Monitor)	Action by Cities	Cities' Actions Taken
	Normal	January 1 – March 29 May 24 – June 21 July 5 – September 13	January 1 – April 5 May 10 – November 15	Normal from January 1 – August 1	
0	Abnormally Dry	March 29 – May 24 June 21 – July 5 September 13 – November 15	April 5 – May 10 November 15 – December 31	Level 0 from August 1 – November 1	Voluntary conservation measures encouraged through public notification.
1	Moderate Drought	November 15 – December 31		Level 1 from November 1 – December 31	Voluntary conservation measures encouraged through public notification.
2	Severe Drought				
3	Extreme Drought				
4	Exceptional Drought				

<sup>a</sup> The Catawba River Basin is listed as the drought stage declared by the Catawba-Wateree Water Management Group.

<sup>b</sup> 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 2016.

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 2016. 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 2016.

### **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 2016**

2016 Concord-Kannapolis IBT Tracking

Calculated Fields

Condition of IBT Certificate (January 25, 2007)

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										
	South Yadkin	Yadkin	Yadkin	Catawba	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 Finished water sales to Landis	Total South Yadkin IBT <sup>1</sup>	Total Yadkin IBT	Total Catawba IBT	Catawba	% of Permitted MDD Transfer	Yadkin	% of Permitted MDD Transfer	from Second Creek - South Yadkin River Basin
DATE																					
1/1/2016	0.000	0.300	0.654	0.136	-0.136	0.954	0.000	0.000	0.000%	0.954	9.540%	-0.136	-2.267%	0.136	6.834%						
1/2/2016	0.000	0.300	0.654	0.088	-0.088	0.954	0.000	0.000	0.000%	0.954	9.540%	-0.088	-1.467%	0.088	4.422%						
1/3/2016	0.000	0.300	0.654	0.193	-0.193	0.954	0.000	0.000	0.000%	0.954	9.540%	-0.193	-3.217%	0.193	9.698%						
1/4/2016	0.000	0.300	0.654	0.193	-0.193	0.954	0.000	0.000	0.000%	0.954	9.540%	-0.193	-3.217%	0.193	9.698%						
1/5/2016	0.000	0.300	0.654	0.165	-0.165	0.954	0.000	0.000	0.000%	0.954	9.540%	-0.165	-2.750%	0.165	8.291%						
1/6/2016	0.000	0.300	0.654	0.174	-0.174	0.954	0.000	0.000	0.000%	0.954	9.540%	-0.174	-2.900%	0.174	8.744%						
1/7/2016	0.000	0.300	0.654	0.197	-0.197	0.954	0.000	0.000	0.000%	0.954	9.540%	-0.197	-3.283%	0.197	9.899%						
1/8/2016	0.000	0.300	0.654	0.153	-0.153	0.954	0.000	0.000	0.000%	0.954	9.540%	-0.153	-2.550%	0.153	7.688%						
1/9/2016	0.000	0.300	0.654	0.181	-0.181	0.954	0.000	0.000	0.000%	0.954	9.540%	-0.181	-3.017%	0.181	9.095%						
1/10/2016	0.000	0.300	0.654	0.189	-0.189	0.954	0.000	0.000	0.000%	0.954	9.540%	-0.189	-3.150%	0.189	9.497%						
1/11/2016	0.000	0.300	0.654	0.150	-0.150	0.954	0.000	0.000	0.000%	0.954	9.540%	-0.150	-2.500%	0.150	7.538%						
1/12/2016	0.000	0.300	0.654	0.161	-0.161	0.954	0.000	0.000	0.000%	0.954	9.540%	-0.161	-2.683%	0.161	8.090%						
1/13/2016	0.000	0.300	0.736	0.191	-0.191	1.036	0.000	0.000	0.000%	1.036	10.360%	-0.191	-3.183%	0.191	9.598%						
1/14/2016	0.000	0.300	0.736	0.144	-0.144	1.036	0.000	0.000	0.000%	1.036	10.360%	-0.144	-2.400%	0.144	7.236%						
1/15/2016	0.000	0.300	0.736	0.137	-0.137	1.036	0.000	0.000	0.000%	1.036	10.360%	-0.137	-2.283%	0.137	6.884%						
1/16/2016	0.000	0.300	0.736	0.140	-0.140	1.036	0.000	0.000	0.000%	1.036	10.360%	-0.140	-2.333%	0.140	7.035%						
1/17/2016	0.000	0.300	0.736	0.16	-0.160	1.036	0.000	0.000	0.000%	1.036	10.360%	-0.160	-2.667%	0.160	8.040%						
1/18/2016	0.000	0.300	0.736	0.165	-0.165	1.036	0.000	0.000	0.000%	1.036	10.360%	-0.165	-2.750%	0.165	8.291%						
1/19/2016	0.000	0.300	0.736	0.180	-0.180	1.036	0.000	0.000	0.000%	1.036	10.360%	-0.180	-3.000%	0.180	9.045%						
1/20/2016	0.000	0.300	0.736	0.193	-0.193	1.036	0.000	0.000	0.000%	1.036	10.360%	-0.193	-3.217%	0.193	9.698%						
1/21/2016	0.000	0.300	0.736	0.192	-0.192	1.036	0.000	0.000	0.000%	1.036	10.360%	-0.192	-3.200%	0.192	9.648%						
1/22/2016	0.000	0.300	0.736	0.144	-0.144	1.036	0.000	0.000	0.000%	1.036	10.360%	-0.144	-2.400%	0.144	7.236%						
1/23/2016	0.000	0.300	0.736	0.196	-0.196	1.036	0.000	0.000	0.000%	1.036	10.360%	-0.196	-3.267%	0.196	9.849%						
1/24/2016	0.000	0.300	0.736	0.255	-0.255	1.036	0.000	0.000	0.000%	1.036	10.360%	-0.255	-4.250%	0.255	12.814%						
1/25/2016	0.000	0.300	0.736	0.197	-0.197	1.036	0.000	0.000	0.000%	1.036	10.360%	-0.197	-3.283%	0.197	9.899%						
1/26/2016	0.000	0.300	0.736	0.254	-0.254	1.036	0.000	0.000	0.000%	1.036	10.360%	-0.254	-4.233%	0.254	12.764%						
1/27/2016	0.000	0.300	0.736	0.2	-0.200	1.036	0.000	0.000	0.000%	1.036	10.360%	-0.200	-3.333%	0.200	10.050%						
1/28/2016	0.000	0.300	0.736	0.171	-0.171	1.036	0.000	0.000	0.000%	1.036	10.360%	-0.171	-2.850%	0.171	8.593%						
1/29/2016	0.000	0.300	0.736	0.188	-0.188	1.036	0.000	0.000	0.000%	1.036	10.360%	-0.188	-3.133%	0.188	9.447%						
1/30/2016	0.000	0.300	0.736	0.205	-0.205	1.036	0.000	0.000	0.000%	1.036	10.360%	-0.205	-3.417%	0.205	10.302%						
1/31/2016	0.000	0.300	0.736	0.246	-0.246	1.036	0.000	0.000	0.000%	1.036	10.360%	-0.246	-4.100%	0.246	12.362%						
2/1/2016	0.000	0.300	0.736	0.261	-0.261	1.036	0.000	0.000	0.000%	1.036	10.360%	-0.261	-4.350%	0.261	13.116%						
2/2/2016	0.000	0.300	0.736	0.246	-0.246	1.036	0.000	0.000	0.000%	1.036	10.360%	-0.246	-4.100%	0.246	12.362%						
2/3/2016	0.000	0.300	0.736	0.181	-0.181	1.036	0.000	0.000	0.000%	1.036	10.360%	-0.181	-3.017%	0.181	9.095%						
2/4/2016	0.000	0.300	0.736	0.187	-0.187	1.036	0.000	0.000	0.000%	1.036	10.360%	-0.187	-3.117%	0.187	9.397%						
2/5/2016	0.000	0.300	0.736	0.180	-0.180	1.036	0.000	0.000	0.000%	1.036	10.360%	-0.180	-3.000%	0.180	9.045%						
2/6/2016	0.000	0.300	0.736	0.136	-0.136	1.036	0.000	0.000	0.000%	1.036	10.360%	-0.136	-2.267%	0.136	6.834%						
2/7/2016	0.000	0.300	0.736	0.193	-0.193	1.036	0.000	0.000	0.000%	1.036	10.360%	-0.193	-3.217%	0.193	9.698%						
2/8/2016	0.000	0.300	0.736	0.19	-0.190	1.036	0.000	0.000	0.000%	1.036	10.360%	-0.190	-3.167%	0.190	9.548%						
2/9/2016	0.000	0.300	0.736	0.147	-0.147	1.036	0.000	0.000	0.000%	1.036	10.360%	-0.147	-2.450%	0.147	7.387%						
2/10/2016	0.000	0.300	0.736	0.194	-0.194	1.036	0.000	0.000	0.000%	1.036	10.360%	-0.194	-3.233%	0.194	9.749%						
2/11/2016	0.000	0.300	0.643	0.147	-0.147	0.943	0.000	0.000	0.000%	0.943	9.430%	-0.147	-2.450%	0.147	7.387%						
2/12/2016	0.000	0.300	0.643	0.181	-0.181	0.943	0.000	0.000	0.000%	0.943	9.430%	-0.181	-3.017%	0.181	9.095%						
2/13/2016	0.000	0.300	0.643	0.141	-0.141	0.943	0.000	0.000	0.000%	0.943	9.430%	-0.141	-2.350%	0.141	7.085%						
2/14/2016	0.000	0.300	0.643	0.191	-0.191	0.943	0.000	0.000	0.000%	0.943	9.430%	-0.191	-3.183%	0.191	9.598%						
2/15/2016	0.000	0.300	0.643	0.189	-0.189	0.943	0.000	0.000	0.000%	0.943	9.430%	-0.189	-3.150%	0.189	9.497%						
2/16/2016	0.000	0.300	0.643	0.215	-0.215	0.943	0.000	0.000	0.000%	0.943	9.430%	-0.215	-3.583%	0.215	10.804%						
2/17/2016	0.000	0.300	0.643	0.187	-0.187	0.943	0.000	0.000	0.000%	0.943	9.430%	-0.187	-3.117%	0.187	9.397%						
2/18/2016	0.000	0.300	0.643	0.145	-0.145	0.943	0.000	0.000	0.000%	0.943	9.430%	-0.145	-2.417%	0.145	7.286%						
2/19/2016	0.000	0.300	0.643	0.188	-0.188	0.943	0.000	0.000	0.000%	0.943	9.430%	-0.188	-3.133%	0.188	9.447%						
2/20/2016	0.000	0.300	0.643	0.13	-0.130	0.943	0.000	0.000	0.000%	0.943	9.430%	-0.130	-2.167%	0.130	6.533%						
2/21/2016	0.000	0.300	0.643	0.195	-0.195	0.943	0.000	0.000	0.000%	0.943	9.430%	-0.195	-3.250%	0.195	9.799%						
2/22/2016	0.000	0.300	0.643	0.166	-0.166	0.943	0.000	0.000	0.000%	0.943	9.430%	-0.166	-2.767%	0.166	8.342%						
2/23/2016	0.000	0.300	0.643	0.182	-0.182	0.943	0.000	0.000	0.000%	0.943	9.430%	-0.182	-3.033%	0.182	9.146%						
2/24/2016	0.000	0.300	0.643	0.174	-0.174	0.943	0.000	0.000	0.000%	0.943	9.430%	-0.174	-2.900%	0.174	8.744%						
2/25/2016	0.000	0.300	0.643	0.178	-0.178	0.943	0.000	0.000	0.000%	0.943	9.430%	-0.178	-2.967%	0.178	8.945%						
2/26/2016	0.000	0.300	0.643	0.154	-0.154	0.943	0.000	0.000	0.000%	0.943	9.430%	-0.154	-2.567%	0.154	7.739%						
2/27/2016	0.000	0.300	0.643	0.137	-0.137	0.943	0.000	0.000	0.000%	0.943	9.430%	-0.137	-2.283%	0.137	6.884%						
2/28/2016	0.000	0.300	0.643	0.227	-0.227	0.943	0.000	0.000	0.000%	0.943	9.430%	-0.227	-3.783%	0.227	11.407%						
2/29/2016	0.000	0.300	0.643	0.152	-0.152	0.943	0.000	0.000	0.000%	0.943	9.430%	-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	Yadkin	Catawba	South Yadkin	South Yadkin	Yadkin	Catawba	Grandfathered IBT from Second Creek - South Yadkin River Basin								
DATE	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 <sup>1</sup>	Total Yadkin IBT	Total Catawba IBT	Catawba	% of Permitted MDD Transfer	Yadkin	% of Permitted MDD Transfer	IBT from South Yadkin River Basin	% of Permitted MDD Transfer		
3/1/2016	0.000	0.300	0.643			0.141	-0.141	0.943	0.000	0.000	0.000	0.000%	0.943	9.430%	-0.141	-2.350%	0.141	7.085%
3/2/2016	0.000	0.300	0.643			0.180	-0.180	0.943	0.000	0.000	0.000	0.000%	0.943	9.430%	-0.180	-3.000%	0.180	9.045%
3/3/2016	0.000	0.300	0.643			0.152	-0.152	0.943	0.000	0.000	0.000	0.000%	0.943	9.430%	-0.152	-2.533%	0.152	7.638%
3/4/2016	0.000	0.300	0.643			0.134	-0.134	0.943	0.000	0.000	0.000	0.000%	0.943	9.430%	-0.134	-2.233%	0.134	6.734%
3/5/2016	0.000	0.300	0.643			0.162	-0.162	0.943	0.000	0.000	0.000	0.000%	0.943	9.430%	-0.162	-2.700%	0.162	8.141%
3/6/2016	0.000	0.300	0.643			0.17	-0.170	0.943	0.000	0.000	0.000	0.000%	0.943	9.430%	-0.170	-2.833%	0.170	8.543%
3/7/2016	0.000	0.300	0.643			0.168	-0.168	0.943	0.000	0.000	0.000	0.000%	0.943	9.430%	-0.168	-2.800%	0.168	8.442%
3/8/2016	0.000	0.300	0.643			0.2	-0.200	0.943	0.000	0.000	0.000	0.000%	0.943	9.430%	-0.200	-3.333%	0.200	10.050%
3/9/2016	0.000	0.300	0.643			0.144	-0.144	0.943	0.000	0.000	0.000	0.000%	0.943	9.430%	-0.144	-2.400%	0.144	7.236%
3/10/2016	0.000	0.300	0.696			0.157	-0.157	0.996	0.000	0.000	0.000	0.000%	0.996	9.960%	-0.157	-2.617%	0.157	7.899%
3/11/2016	0.000	0.300	0.696			0.196	-0.196	0.996	0.000	0.000	0.000	0.000%	0.996	9.960%	-0.196	-3.267%	0.196	9.849%
3/12/2016	0.000	0.300	0.696			0.145	-0.145	0.996	0.000	0.000	0.000	0.000%	0.996	9.960%	-0.145	-2.417%	0.145	7.286%
3/13/2016	0.000	0.300	0.696			0.146	-0.146	0.996	0.000	0.000	0.000	0.000%	0.996	9.960%	-0.146	-2.433%	0.146	7.337%
3/14/2016	0.000	0.300	0.696			0.196	-0.196	0.996	0.000	0.000	0.000	0.000%	0.996	9.960%	-0.196	-3.267%	0.196	9.849%
3/15/2016	0.000	0.300	0.696			0.184	-0.184	0.996	0.000	0.000	0.000	0.000%	0.996	9.960%	-0.184	-3.067%	0.184	9.246%
3/16/2016	0.000	0.300	0.696			0.175	-0.175	0.996	0.000	0.000	0.000	0.000%	0.996	9.960%	-0.175	-2.917%	0.175	8.794%
3/17/2016	0.000	0.300	0.696			0.199	-0.199	0.996	0.000	0.000	0.000	0.000%	0.996	9.960%	-0.199	-3.317%	0.199	10.000%
3/18/2016	0.000	0.300	0.696			0.144	-0.144	0.996	0.000	0.000	0.000	0.000%	0.996	9.960%	-0.144	-2.400%	0.144	7.236%
3/19/2016	0.000	0.300	0.696			0.144	-0.144	0.996	0.000	0.000	0.000	0.000%	0.996	9.960%	-0.144	-2.400%	0.144	7.236%
3/20/2016	0.000	0.300	0.696			0.147	-0.147	0.996	0.000	0.000	0.000	0.000%	0.996	9.960%	-0.147	-2.450%	0.147	7.387%
3/21/2016	0.000	0.300	0.696			0.204	-0.204	0.996	0.000	0.000	0.000	0.000%	0.996	9.960%	-0.204	-3.400%	0.204	10.251%
3/22/2016	0.000	0.300	0.696			0.175	-0.175	0.996	0.000	0.000	0.000	0.000%	0.996	9.960%	-0.175	-2.917%	0.175	8.794%
3/23/2016	0.000	0.300	0.696			0.181	-0.181	0.996	0.000	0.000	0.000	0.000%	0.996	9.960%	-0.181	-3.017%	0.181	9.095%
3/24/2016	0.000	0.300	0.696			0.149	-0.149	0.996	0.000	0.000	0.000	0.000%	0.996	9.960%	-0.149	-2.483%	0.149	7.487%
3/25/2016	0.000	0.300	0.696			0.144	-0.144	0.996	0.000	0.000	0.000	0.000%	0.996	9.960%	-0.144	-2.400%	0.144	7.236%
3/26/2016	0.000	0.300	0.696			0.196	-0.196	0.996	0.000	0.000	0.000	0.000%	0.996	9.960%	-0.196	-3.267%	0.196	9.849%
3/27/2016	0.000	0.300	0.696			0.167	-0.167	0.996	0.000	0.000	0.000	0.000%	0.996	9.960%	-0.167	-2.783%	0.167	8.392%
3/28/2016	0.000	0.300	0.696			0.162	-0.162	0.996	0.000	0.000	0.000	0.000%	0.996	9.960%	-0.162	-2.700%	0.162	8.141%
3/29/2016	0.000	0.300	0.696			0.175	-0.175	0.996	0.000	0.000	0.000	0.000%	0.996	9.960%	-0.175	-2.917%	0.175	8.794%
3/30/2016	0.000	0.300	0.696			0.185	-0.185	0.996	0.000	0.000	0.000	0.000%	0.996	9.960%	-0.185	-3.083%	0.185	9.296%
3/31/2016	0.000	0.300	0.696			0.188	-0.188	0.996	0.000	0.000	0.000	0.000%	0.996	9.960%	-0.188	-3.133%	0.188	9.447%
4/1/2016	0.000	0.300	0.696			0.176	-0.176	0.996	0.000	0.000	0.000	0.000%	0.996	9.960%	-0.176	-2.933%	0.176	8.844%
4/2/2016	0.000	0.300	0.696			0.135	-0.135	0.996	0.000	0.000	0.000	0.000%	0.996	9.960%	-0.135	-2.250%	0.135	6.784%
4/3/2016	0.000	0.300	0.696			0.243	-0.243	0.996	0.000	0.000	0.000	0.000%	0.996	9.960%	-0.243	-4.050%	0.243	12.211%
4/4/2016	0.000	0.300	0.696			0.194	-0.194	0.996	0.000	0.000	0.000	0.000%	0.996	9.960%	-0.194	-3.233%	0.194	9.749%
4/5/2016	0.000	0.300	0.696			0.169	-0.169	0.996	0.000	0.000	0.000	0.000%	0.996	9.960%	-0.169	-2.817%	0.169	8.492%
4/6/2016	0.000	0.300	0.696			0.185	-0.185	0.996	0.000	0.000	0.000	0.000%	0.996	9.960%	-0.185	-3.083%	0.185	9.296%
4/7/2016	0.000	0.300	0.696			0.187	-0.187	0.996	0.000	0.000	0.000	0.000%	0.996	9.960%	-0.187	-3.117%	0.187	9.397%
4/8/2016	0.000	0.300	0.696			0.192	-0.192	0.996	0.000	0.000	0.000	0.000%	0.996	9.960%	-0.192	-3.200%	0.192	9.648%
4/9/2016	0.000	0.300	0.696			0.106	-0.106	0.996	0.000	0.000	0.000	0.000%	0.996	9.960%	-0.106	-1.767%	0.106	5.327%
4/10/2016	0.000	0.300	0.696			0.182	-0.182	0.996	0.000	0.000	0.000	0.000%	0.996	9.960%	-0.182	-3.033%	0.182	9.146%
4/11/2016	0.000	0.300	0.696			0.184	-0.184	0.996	0.000	0.000	0.000	0.000%	0.996	9.960%	-0.184	-3.067%	0.184	9.246%
4/12/2016	0.000	0.300	0.696			0.181	-0.181	0.996	0.000	0.000	0.000	0.000%	0.996	9.960%	-0.181	-3.017%	0.181	9.095%
4/13/2016	0.000	0.300	0.696			0.191	-0.191	0.996	0.000	0.000	0.000	0.000%	0.996	9.960%	-0.191	-3.183%	0.191	9.598%
4/14/2016	0.000	0.300	0.696			0.188	-0.188	0.996	0.000	0.000	0.000	0.000%	0.996	9.960%	-0.188	-3.133%	0.188	9.447%
4/15/2016	0.000	0.300	0.696			0.187	-0.187	0.996	0.000	0.000	0.000	0.000%	0.996	9.960%	-0.187	-3.117%	0.187	9.397%
4/16/2016	0.000	0.300	0.696			0.142	-0.142	0.996	0.000	0.000	0.000	0.000%	0.996	9.960%	-0.142	-2.367%	0.142	7.136%
4/17/2016	0.000	0.300	0.696			0.25	-0.250	0.996	0.000	0.000	0.000	0.000%	0.996	9.960%	-0.250	-4.167%	0.250	12.563%
4/18/2016	0.000	0.300	0.696			0.201	-0.201	0.996	0.000	0.000	0.000	0.000%	0.996	9.960%	-0.201	-3.350%	0.201	10.101%
4/19/2016	0.000	0.300	0.696			0.260	-0.260	0.996	0.000	0.000	0.000	0.000%	0.996	9.960%	-0.260	-4.333%	0.260	13.065%
4/20/2016	0.000	0.300	0.696			0.271	-0.271	0.996	0.000	0.000	0.000	0.000%	0.996	9.960%	-0.271	-4.517%	0.271	13.618%
4/21/2016	0.000	0.300	0.696			0.195	-0.195	0.996	0.000	0.000	0.000	0.000%	0.996	9.960%	-0.195	-3.250%	0.195	9.799%
4/22/2016	0.000	0.300	0.696			0.151	-0.151	0.996	0.000	0.000	0.000	0.000%	0.996	9.960%	-0.151	-2.517%	0.151	7.588%
4/23/2016	0.000	0.300	0.696			0.315	-0.315	0.996	0.000	0.000	0.000	0.000%	0.996	9.960%	-0.315	-5.250%	0.315	15.829%
4/24/2016	0.000	0.300	0.696			0.195	-0.195	0.996	0.000	0.000	0.000	0.000%	0.996	9.960%	-0.195	-3.250%	0.195	9.799%
4/25/2016	0.000	0.300	0.696			0.254	-0.254	0.996	0.000	0.000	0.000	0.000%	0.996	9.960%	-0.254	-4.233%	0.254	12.764%
4/26/2016	0.000	0.300	0.696			0.188	-0.188	0.996	0.000	0.000	0.000	0.000%	0.996	9.960%	-0.188	-3.133%	0.188	9.447%
4/27/2016	0.000	0.300	0.696			0.248	-0.248	0.996	0.000	0.000	0.000	0.000%	0.996	9.960%	-0.248	-4.133%	0.248	12.462%
4/28/2016	0.000	0.300	0.696			0.215	-0.215	0.996	0.000	0.000	0.000	0.000%	0.996	9.960%	-0.215	-3.583%	0.215	10.804%
4/29/2016	0.000	0.300	0.696			0.188	-0.188	0.996	0.000	0.000	0.000	0.000%	0.996	9.960%	-0.188	-3.133%	0.188	9.447%
4/30/2016	0.000	0.300	0.696			0.138	-0.138	0.996	0.000	0.000	0.000	0.000%	0.996	9.960%	-0.138	-2.300%	0.138	6.935%
5/1/2016	0.000	0.300	0.696			0.190	-0.190	0.996	0.000	0.000	0.000	0.000%	0.996	9.960%	-0.190	-3.167%	0.190	9.548%
5/2/2016	0.000	0.300	0.696			0.194	-0.194	0.996	0.000	0.000	0.000	0.000%	0.996	9.960%	-0.194	-3.233%	0.194	9.749%
5/3/2016	0.000	0.300	0.696			0.187	-											

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 <sup>1</sup>	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	% of Permitted MDD Transfer			
5/8/2016	0.000	0.300	0.696	0.696	0.000	0.264	-0.264	0.996	0.000	0.000	0.000	0.000%	0.996	9.960%	-0.264	-4.400%	0.264	13.266%		
5/9/2016	0.000	0.300	0.696	0.696	0.000	0.226	-0.226	0.996	0.000	0.000	0.000	0.000%	0.996	9.960%	-0.226	-3.767%	0.226	11.357%		
5/10/2016	0.000	0.300	0.696	0.696	0.000	0.295	-0.295	0.996	0.000	0.000	0.000	0.000%	0.996	9.960%	-0.295	-4.917%	0.295	14.824%		
5/11/2016	0.000	0.300	0.696	0.696	0.000	0.237	-0.237	0.996	0.000	0.000	0.000	0.000%	0.996	9.960%	-0.237	-3.950%	0.237	11.910%		
5/12/2016	0.000	0.300	0.683	0.683	0.000	0.139	-0.139	0.983	0.000	0.000	0.000	0.000%	0.983	9.830%	-0.139	-2.317%	0.139	6.985%		
5/13/2016	0.000	0.300	0.683	0.683	0.000	0.191	-0.191	0.983	0.000	0.000	0.000	0.000%	0.983	9.830%	-0.191	-3.183%	0.191	9.598%		
5/14/2016	0.000	0.300	0.683	0.683	0.000	0.200	-0.200	0.983	0.000	0.000	0.000	0.000%	0.983	9.830%	-0.200	-3.333%	0.200	10.050%		
5/15/2016	0.000	0.300	0.683	0.683	0.000	0.252	-0.252	0.983	0.000	0.000	0.000	0.000%	0.983	9.830%	-0.252	-4.200%	0.252	12.663%		
5/16/2016	0.000	0.300	0.683	0.683	0.000	0.191	-0.191	0.983	0.000	0.000	0.000	0.000%	0.983	9.830%	-0.191	-3.183%	0.191	9.598%		
5/17/2016	0.000	0.300	0.683	0.683	0.000	0.243	-0.243	0.983	0.000	0.000	0.000	0.000%	0.983	9.830%	-0.243	-4.050%	0.243	12.211%		
5/18/2016	0.000	0.300	0.683	0.683	0.000	0.135	-0.135	0.983	0.000	0.000	0.000	0.000%	0.983	9.830%	-0.135	-2.250%	0.135	6.784%		
5/19/2016	0.000	0.300	0.683	0.683	0.000	0.185	-0.185	0.983	0.000	0.000	0.000	0.000%	0.983	9.830%	-0.185	-3.083%	0.185	9.296%		
5/20/2016	0.000	0.300	0.683	0.683	0.000	0.139	-0.139	0.983	0.000	0.000	0.000	0.000%	0.983	9.830%	-0.139	-2.317%	0.139	6.985%		
5/21/2016	0.000	0.300	0.683	0.683	0.000	0.191	-0.191	0.983	0.000	0.000	0.000	0.000%	0.983	9.830%	-0.191	-3.183%	0.191	9.598%		
5/22/2016	0.000	0.300	0.683	0.683	0.000	0.229	-0.229	0.983	0.000	0.000	0.000	0.000%	0.983	9.830%	-0.229	-3.817%	0.229	11.508%		
5/23/2016	0.000	0.300	0.683	0.683	0.000	0.183	-0.183	0.983	0.000	0.000	0.000	0.000%	0.983	9.830%	-0.183	-3.050%	0.183	9.196%		
5/24/2016	0.000	0.300	0.683	0.683	0.000	0.197	-0.197	0.983	0.000	0.000	0.000	0.000%	0.983	9.830%	-0.197	-3.283%	0.197	9.899%		
5/25/2016	0.000	0.300	0.683	0.683	0.000	0.199	-0.199	0.983	0.000	0.000	0.000	0.000%	0.983	9.830%	-0.199	-3.317%	0.199	10.000%		
5/26/2016	0.000	0.300	0.683	0.683	0.000	0.238	-0.238	0.983	0.000	0.000	0.000	0.000%	0.983	9.830%	-0.238	-3.967%	0.238	11.960%		
5/27/2016	0.000	0.300	0.683	0.683	0.000	0.159	-0.159	0.983	0.000	0.000	0.000	0.000%	0.983	9.830%	-0.159	-2.650%	0.159	7.990%		
5/28/2016	0.000	0.300	0.683	0.683	0.000	0.190	-0.190	0.983	0.000	0.000	0.000	0.000%	0.983	9.830%	-0.190	-3.167%	0.190	9.548%		
5/29/2016	0.000	0.300	0.683	0.683	0.000	0.196	-0.196	0.983	0.000	0.000	0.000	0.000%	0.983	9.830%	-0.196	-3.267%	0.196	9.849%		
5/30/2016	0.000	0.300	0.683	0.683	0.000	0.247	-0.247	0.983	0.000	0.000	0.000	0.000%	0.983	9.830%	-0.247	-4.117%	0.247	12.412%		
5/31/2016	0.000	0.300	0.683	0.683	0.000	0.209	-0.209	0.983	0.000	0.000	0.000	0.000%	0.983	9.830%	-0.209	-3.483%	0.191	9.598%		
6/1/2016	0.000	0.300	0.683	0.683	0.000	0.252	-0.252	0.983	0.000	0.000	0.000	0.000%	0.983	9.830%	-0.252	-4.200%	0.178	8.945%		
6/2/2016	0.000	0.300	0.683	0.683	0.000	0.243	-0.243	0.983	0.000	0.000	0.000	0.000%	0.983	9.830%	-0.243	-4.050%	0.162	8.141%		
6/3/2016	0.000	0.300	0.683	0.683	0.000	0.143	-0.143	0.983	0.000	0.000	0.000	0.000%	0.983	9.830%	-0.233	-3.883%	0.233	11.709%		
6/4/2016	0.000	0.300	0.683	0.683	0.000	0.259	-0.259	0.983	0.000	0.000	0.000	0.000%	0.983	9.830%	-0.259	-4.317%	0.208	10.452%		
6/5/2016	0.000	0.300	0.683	0.683	0.000	0.194	-0.194	0.983	0.000	0.000	0.000	0.000%	0.983	9.830%	-0.194	-3.233%	0.215	10.804%		
6/6/2016	0.000	0.300	0.683	0.683	0.000	0.178	-0.178	0.983	0.000	0.000	0.000	0.000%	0.983	9.830%	-0.178	-2.967%	0.229	11.508%		
6/7/2016	0.000	0.300	0.683	0.683	0.000	0.266	-0.266	0.983	0.000	0.000	0.000	0.000%	0.983	9.830%	-0.266	-4.433%	0.251	12.613%		
6/8/2016	0.000	0.300	0.683	0.683	0.000	0.188	-0.188	0.983	0.000	0.000	0.000	0.000%	0.983	9.830%	-0.188	-3.133%	0.277	13.920%		
6/9/2016	0.000	0.300	0.683	0.683	0.000	0.255	-0.255	0.983	0.000	0.000	0.000	0.000%	0.983	9.830%	-0.255	-4.250%	0.294	14.774%		
6/10/2016	0.000	0.300	0.683	0.683	0.000	0.358	-0.358	0.983	0.000	0.000	0.000	0.000%	0.983	9.830%	-0.358	-5.967%	0.181	9.095%		
6/11/2016	0.000	0.300	0.683	0.683	0.000	0.229	-0.229	0.983	0.000	0.000	0.000	0.000%	0.983	9.830%	-0.229	-3.817%	0.189	9.497%		
6/12/2016	0.000	0.300	0.683	0.683	0.000	0.286	-0.286	0.983	0.000	0.000	0.000	0.000%	0.983	9.830%	-0.286	-4.767%	0.218	10.955%		
6/13/2016	0.000	0.300	0.683	0.683	0.000	0.234	-0.234	0.983	0.000	0.000	0.000	0.000%	0.983	9.830%	-0.234	-3.900%	0.248	12.462%		
6/14/2016	0.000	0.300	0.721	0.721	0.000	0.184	-0.184	1.021	0.000	0.000	0.000	0.000%	1.021	10.210%	-0.184	-3.067%	0.157	7.899%		
6/15/2016	0.000	0.300	0.721	0.721	0.000	0.259	-0.259	1.021	0.000	0.000	0.000	0.000%	1.021	10.210%	-0.259	-4.317%	0.180	9.045%		
6/16/2016	0.000	0.300	0.721	0.721	0.000	0.245	-0.245	1.021	0.000	0.000	0.000	0.000%	1.021	10.210%	-0.245	-4.083%	0.274	13.769%		
6/17/2016	0.000	0.300	0.721	0.721	0.000	0.225	-0.225	1.021	0.000	0.000	0.000	0.000%	1.021	10.210%	-0.225	-3.750%	0.288	14.472%		
6/18/2016	0.000	0.300	0.721	0.721	0.000	0.240	-0.240	1.021	0.000	0.000	0.000	0.000%	1.021	10.210%	-0.240	-4.000%	0.138	6.935%		
6/19/2016	0.000	0.300	0.721	0.721	0.000	0.286	-0.286	1.021	0.000	0.000	0.000	0.000%	1.021	10.210%	-0.286	-4.767%	0.206	10.352%		
6/20/2016	0.000	0.300	0.721	0.721	0.000	0.244	-0.244	1.021	0.000	0.000	0.000	0.000%	1.021	10.210%	-0.244	-4.067%	0.325	16.332%		
6/21/2016	0.000	0.300	0.721	0.721	0.000	0.265	-0.265	1.021	0.000	0.000	0.000	0.000%	1.021	10.210%	-0.265	-4.417%	0.324	16.281%		
6/22/2016	0.000	0.300	0.721	0.721	0.000	0.324	-0.324	1.021	0.000	0.000	0.000	0.000%	1.021	10.210%	-0.324	-5.400%	0.225	11.307%		
6/23/2016	0.000	0.300	0.721	0.721	0.000	0.258	-0.258	1.021	0.000	0.000	0.000	0.000%	1.021	10.210%	-0.258	-4.300%	0.173	8.693%		
6/24/2016	0.000	0.300	0.721	0.721	0.000	0.212	-0.212	1.021	0.000	0.000	0.000	0.000%	1.021	10.210%	-0.212	-3.533%	0.257	12.915%		
6/25/2016	0.000	0.300	0.721	0.721	0.000	0.237	-0.237	1.021	0.000	0.000	0.000	0.000%	1.021	10.210%	-0.237	-3.950%	0.251	12.613%		
6/26/2016	0.000	0.300	0.721	0.721	0.000	0.230	-0.230	1.021	0.000	0.000	0.000	0.000%	1.021	10.210%	-0.230	-3.833%	0.193	9.698%		
6/27/2016	0.000	0.300	0.721	0.721	0.000	0.232	-0.232	1.021	0.000	0.000	0.000	0.000%	1.021	10.210%	-0.232	-3.867%	0.251	12.613%		
6/28/2016	0.000	0.300	0.721	0.721	0.000	0.296	-0.296	1.021	0.000	0.000	0.000	0.000%	1.021	10.210%	-0.296	-4.933%	0.239	12.010%		
6/29/2016	0.000	0.300	0.721	0.721	0.000	0.197	-0.197	1.021	0.000	0.000	0.000	0.000%	1.021	10.210%	-0.197	-3.283%	0.295	14.824%		
6/30/2016	0.000	0.300	0.721	0.721	0.000	0.226	-0.226	1.021	0.000	0.000	0.000	0.000%	1.021	10.210%	-0.226	-3.767%	0.291	14.623%		
7/1/2016	0.000	0.300	0.721	0.721	0.000	0.223	-0.223	1.021	0.000	0.000	0.000	0.000%	1.021	10.210%	-0.223	-3.717%	0.291	14.623%		
7/2/2016	0.000	0.300	0.721	0.721	0.000	0.192	-0.192	1.021	0.000	0.000	0.000	0.000%	1.021	10.210%	-0.192	-3.200%	0.442	22.211%		
7/3/2016	0.000	0.300	0.721	0.721	0.000	0.175	-0.175	1.021	0.000	0.000	0.000	0.000%	1.021	10.210%	-0.175	-2.917%	0.356	17.889%		
7/4/2016	0.000	0.300	0.721	0.721	0.000	0.172	-0.172	1.021	0.000	0.000	0.000	0.000%	1.021	10.210%	-0.172	-2.867%	0.194	9.749%		
7/5/2016	0.000	0.300	0.721	0.721	0.000	0.166	-0.166	1.021	0.000	0.000	0.000	0.000%	1.021	10.210%	-0.166	-2.767%	0.245	12.312%		
7/6/2016	0.000	0.300	0.721																	



Map Code Source Basin	Water Transfer (MGD) to Rocky River Basin					Water Sales (MGD)		IBT Totals Per Basin				Interbasin Transfer						
	South Yadkin	Salisbury 1 Yadkin	Albemarle 1 Yadkin	Charlotte 1-3 Yadkin	Catawba	South Yadkin	South Yadkin	Yadkin	Catawba	NOTE: All Wastewater discharge is to the Rocky River from RRWWTP, excluding water sales to Landis (subtracted from Total South Yadkin IBT).								
	Raw Water to Kannapolis Lake from Second Creek	Salsbury Interconnection with Kannapolis	Finished water	Albemarle Interconnection with Concord	Charlotte Water Interconnections with Concord	Kannapolis water sales to Landis	Finished water sales to Landis	Total South Yadkin IBT <sup>1</sup>	Total Yadkin IBT	Total Catawba IBT	Catawba		Yadkin		Grandfathered IBT from Second Creek - South Yadkin River Basin		IBT from Yadkin to South Yadkin River Basin	
	DATE	% of Permitted MDD Transfer	% of Permitted MDD Transfer	% of Permitted MDD Transfer	% of Permitted MDD Transfer	% of Permitted MDD Transfer	% of Permitted MDD Transfer	% of Permitted MDD Transfer	% of Permitted MDD Transfer	% of Permitted MDD Transfer	% of Permitted MDD Transfer	% of Permitted MDD Transfer	% of Permitted MDD Transfer	% of Permitted MDD Transfer	% of Permitted MDD Transfer	% of Permitted MDD Transfer	% of Permitted MDD Transfer	% of Permitted MDD Transfer
7/15/2016	0.000	0.300	0.696	0.000	0.000	0.285	-0.285	0.996	0.000	0.000	0.000	0.000%	0.996	9.960%	-0.285	-4.750%	0.224	11.256%
7/16/2016	0.000	0.300	0.696	0.000	0.000	0.281	-0.281	0.996	0.000	0.000	0.000	0.000%	0.996	9.960%	-0.281	-4.683%	0.220	11.055%
7/17/2016	0.000	0.300	0.696	0.000	0.000	0.250	-0.250	0.996	0.000	0.000	0.000	0.000%	0.996	9.960%	-0.250	-4.167%	0.230	11.558%
7/18/2016	0.000	0.300	0.696	0.000	0.000	0.207	-0.207	0.996	0.000	0.000	0.000	0.000%	0.996	9.960%	-0.207	-3.450%	0.220	11.055%
7/19/2016	0.000	0.300	0.696	0.000	0.000	0.239	-0.239	0.996	0.000	0.000	0.000	0.000%	0.996	9.960%	-0.239	-3.983%	0.215	10.804%
7/20/2016	0.000	0.300	0.696	0.000	0.000	0.240	-0.240	0.996	0.000	0.000	0.000	0.000%	0.996	9.960%	-0.240	-4.000%	0.225	11.307%
7/21/2016	0.000	0.300	0.696	0.000	0.000	0.248	-0.248	0.996	0.000	0.000	0.000	0.000%	0.996	9.960%	-0.248	-4.133%	0.223	11.206%
7/22/2016	0.000	0.300	0.696	0.000	0.000	0.289	-0.289	0.996	0.000	0.000	0.000	0.000%	0.996	9.960%	-0.289	-4.817%	0.235	11.809%
7/23/2016	0.000	0.300	0.696	0.000	0.000	0.286	-0.286	0.996	0.000	0.000	0.000	0.000%	0.996	9.960%	-0.286	-4.767%	0.250	12.563%
7/24/2016	0.000	0.300	0.696	0.000	0.000	0.237	-0.237	0.996	0.000	0.000	0.000	0.000%	0.996	9.960%	-0.237	-3.950%	0.243	12.211%
7/25/2016	0.000	0.300	0.696	0.000	0.000	0.242	-0.242	0.996	0.000	0.000	0.000	0.000%	0.996	9.960%	-0.242	-4.033%	0.280	14.070%
7/26/2016	0.000	0.300	0.696	0.000	0.000	0.283	-0.283	0.996	0.000	0.000	0.000	0.000%	0.996	9.960%	-0.283	-4.717%	0.381	19.146%
7/27/2016	0.000	0.300	0.696	0.000	0.000	0.256	-0.256	0.996	0.000	0.000	0.000	0.000%	0.996	9.960%	-0.256	-4.267%	0.265	13.317%
7/28/2016	0.000	0.300	0.696	0.000	0.000	0.336	-0.336	0.996	0.000	0.000	0.000	0.000%	0.996	9.960%	-0.336	-5.600%	0.266	13.367%
7/29/2016	0.000	0.300	0.696	0.000	0.000	0.272	-0.272	0.996	0.000	0.000	0.000	0.000%	0.996	9.960%	-0.272	-4.533%	0.250	12.563%
7/30/2016	0.000	0.300	0.696	0.000	0.000	0.311	-0.311	0.996	0.000	0.000	0.000	0.000%	0.996	9.960%	-0.311	-5.183%	0.245	12.312%
7/31/2016	0.000	0.300	0.696	0.000	0.000	0.237	-0.237	0.996	0.000	0.000	0.000	0.000%	0.996	9.960%	-0.237	-3.950%	0.300	15.075%
8/1/2016	0.000	0.000	0.696	0.000	0.000	0.238	-0.238	0.696	0.000	0.000	0.000	0.000%	0.696	6.960%	-0.238	-3.967%	0.279	14.020%
8/2/2016	0.000	0.000	0.696	0.000	0.000	0.249	-0.249	0.696	0.000	0.000	0.000	0.000%	0.696	6.960%	-0.249	-4.150%	0.262	13.166%
8/3/2016	0.000	0.050	0.696	0.000	0.000	0.266	-0.266	0.746	0.000	0.000	0.000	0.000%	0.746	7.460%	-0.266	-4.433%	0.316	15.879%
8/4/2016	0.000	0.000	0.696	0.000	0.000	0.291	-0.291	0.696	0.000	0.000	0.000	0.000%	0.696	6.960%	-0.291	-4.850%	0.218	10.955%
8/5/2016	0.000	0.000	0.696	0.000	0.000	0.261	-0.261	0.696	0.000	0.000	0.000	0.000%	0.696	6.960%	-0.261	-4.350%	0.245	12.312%
8/6/2016	0.000	0.000	0.696	0.000	0.000	0.285	-0.285	0.696	0.000	0.000	0.000	0.000%	0.696	6.960%	-0.285	-4.750%	0.274	13.769%
8/7/2016	0.000	0.000	0.696	0.000	0.000	0.290	-0.290	0.696	0.000	0.000	0.000	0.000%	0.696	6.960%	-0.290	-4.833%	0.235	11.809%
8/8/2016	0.000	0.036	0.696	0.000	0.000	0.432	-0.432	0.732	0.000	0.000	0.000	0.000%	0.732	7.320%	-0.432	-7.200%	0.230	11.558%
8/9/2016	0.000	0.000	0.696	0.000	0.000	0.393	-0.393	0.696	0.000	0.000	0.000	0.000%	0.696	6.960%	-0.393	-6.550%	0.251	12.613%
8/10/2016	0.000	0.018	0.696	0.000	0.000	0.198	-0.198	0.714	0.000	0.000	0.000	0.000%	0.714	7.140%	-0.198	-3.300%	0.219	11.005%
8/11/2016	0.000	0.018	0.696	0.000	0.000	0.253	-0.253	0.714	0.000	0.000	0.000	0.000%	0.714	7.140%	-0.253	-4.217%	0.237	11.910%
8/12/2016	0.000	0.000	0.696	0.000	0.000	0.249	-0.249	0.696	0.000	0.000	0.000	0.000%	0.696	6.960%	-0.249	-4.150%	0.215	10.804%
8/13/2016	0.000	0.000	0.696	0.000	0.000	0.246	-0.246	0.696	0.000	0.000	0.000	0.000%	0.696	6.960%	-0.246	-4.100%	0.220	11.055%
8/14/2016	0.000	0.000	0.696	0.000	0.000	0.250	-0.250	0.696	0.000	0.000	0.000	0.000%	0.696	6.960%	-0.250	-4.167%	0.190	9.548%
8/15/2016	0.000	0.300	0.696	0.000	0.000	0.235	-0.235	0.996	0.000	0.000	0.000	0.000%	0.996	9.960%	-0.235	-3.917%	0.225	11.307%
8/16/2016	0.000	0.024	1.232	0.000	0.000	0.262	-0.262	1.256	0.000	0.000	0.000	0.000%	1.256	12.560%	-0.262	-4.367%	0.273	13.719%
8/17/2016	0.000	0.253	1.232	0.000	0.000	0.264	-0.264	1.485	0.000	0.000	0.000	0.000%	1.485	14.850%	-0.264	-4.400%	0.235	11.809%
8/18/2016	0.000	0.300	1.232	0.000	0.000	0.239	-0.239	1.532	0.000	0.000	0.000	0.000%	1.532	15.320%	-0.239	-3.983%	0.242	12.161%
8/19/2016	0.000	0.300	1.232	0.000	0.000	0.281	-0.281	1.532	0.000	0.000	0.000	0.000%	1.532	15.320%	-0.281	-4.683%	0.175	8.794%
8/20/2016	0.000	0.300	1.232	0.000	0.000	0.256	-0.256	1.532	0.000	0.000	0.000	0.000%	1.532	15.320%	-0.256	-4.267%	0.260	13.065%
8/21/2016	0.000	0.300	1.232	0.000	0.000	0.246	-0.246	1.532	0.000	0.000	0.000	0.000%	1.532	15.320%	-0.246	-4.100%	0.180	9.045%
8/22/2016	0.000	0.300	1.232	0.000	0.000	0.234	-0.234	1.532	0.000	0.000	0.000	0.000%	1.532	15.320%	-0.234	-3.900%	0.236	11.859%
8/23/2016	2.300	0.300	1.232	0.000	0.000	0.256	2.044	1.532	0.000	0.000	0.000	0.000%	1.532	15.320%	2.044	34.067%	0.261	13.116%
8/24/2016	2.300	0.300	1.232	0.000	0.000	0.312	1.988	1.532	0.000	0.000	0.000	0.000%	1.532	15.320%	1.988	33.133%	0.248	12.462%
8/25/2016	2.300	0.300	1.232	0.000	0.000	0.207	2.093	1.532	0.000	0.000	0.000	0.000%	1.532	15.320%	2.093	34.883%	0.234	11.759%
8/26/2016	2.300	0.300	1.232	0.000	0.000	0.243	2.057	1.532	0.000	0.000	0.000	0.000%	1.532	15.320%	2.057	34.283%	0.269	13.518%
8/27/2016	0.000	0.300	1.232	0.000	0.000	0.239	-0.239	1.532	0.000	0.000	0.000	0.000%	1.532	15.320%	-0.239	-3.983%	0.295	14.824%
8/28/2016	0.000	0.300	1.232	0.000	0.000	0.242	-0.242	1.532	0.000	0.000	0.000	0.000%	1.532	15.320%	-0.242	-4.033%	0.200	10.050%
8/29/2016	0.000	0.300	1.232	0.000	0.000	0.285	-0.285	1.532	0.000	0.000	0.000	0.000%	1.532	15.320%	-0.285	-4.750%	0.170	8.543%
8/30/2016	2.300	0.300	1.232	0.000	0.000	0.290	2.010	1.532	0.000	0.000	0.000	0.000%	1.532	15.320%	2.010	33.500%	0.374	18.794%
8/31/2016	0.000	0.300	1.232	0.000	0.000	0.270	-0.270	1.532	0.000	0.000	0.000	0.000%	1.532	15.320%	-0.270	-4.500%	0.454	22.814%
9/1/2016	2.300	0.300	1.232	0.000	0.000	0.267	2.033	1.532	0.000	0.000	0.000	0.000%	1.532	15.320%	2.033	33.883%	0.267	13.417%
9/2/2016	2.300	0.300	1.232	0.000	0.000	0.225	2.075	1.532	0.000	0.000	0.000	0.000%	1.532	15.320%	2.075	34.583%	0.225	11.307%
9/3/2016	2.300	0.300	1.232	0.000	0.000	0.244	2.056	1.532	0.000	0.000	0.000	0.000%	1.532	15.320%	2.056	34.267%	0.244	12.261%
9/4/2016	2.500	0.300	1.232	0.000	0.000	0.232	2.268	1.532	0.000	0.000	0.000	0.000%	1.532	15.320%	2.268	37.800%	0.232	11.658%
9/5/2016	2.500	0.300	1.232	0.000	0.000	0.298	2.202	1.532	0.000	0.000	0.000	0.000%	1.532	15.320%	2.202	36.700%	0.298	14.975%
9/6/2016	2.500	0.300	1.232	0.000	0.000	0.318	2.182	1.532	0.000	0.000	0.000	0.000%	1.532	15.320%	2.182	36.367%	0.318	15.980%
9/7/2016	2.500	0.300	1.232	0.000	0.000	0.294	2.206	1.532	0.000	0.000	0.000	0.000%	1.532	15.320%	2.206	36.767%	0.294	14.774%
9/8/2016	2.000	0.300	1.232	0.000	0.000	0.287	1.713	1.532	0.000	0.000	0.000	0.000%	1.532	15.320%	1.713	28.550%	0.287	14.422%
9/9/2016	2.000	0.300	1.232	0.000	0.000	0.265	1.735	1.532	0.000	0.000	0.000	0.000%	1.532	15.320%	1.735	28.917%	0.265	13.317%
9/10/2016	2.000	0.300	1.232	0.000	0.000	0.268	1.732	1.532	0.000	0.000	0.000	0.000%	1.532	15.320%	1.732	28.867%	0.268	13.467%
9/11/2016	0.000	0.300	1.232	0.000	0.000	0.256	-0.256	1.532	0.000	0.000	0.000	0.000%	1.532	15.320%	-0.256	-4.267%	0.	

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	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	Kannapolis Finished water sales to Landis	Total South Yadkin IBT <sup>1</sup>					Total Yadkin IBT	Total Catawba IBT	Grandfathered IBT from Second Creek - South Yadkin River Basin				IBT from Yadkin to 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					Catawba	% of Permitted MDD Transfer	Yadkin	% of Permitted MDD Transfer	Yadkin	% of Permitted MDD Transfer	Yadkin	% of Permitted MDD Transfer			
DATE																				
9/21/2016	0.000	0.300	1.232	0.274	-0.274	1.532	0.000	0.000	0.000	0.000	0.000%	1.532	15.320%	-0.274	-4.567%	0.274	13.769%			
9/22/2016	0.000	0.184	1.232	0.258	-0.258	1.416	0.000	0.000	0.000	0.000	0.000%	1.416	14.160%	-0.258	-4.300%	0.258	12.965%			
9/23/2016	0.000	0.184	1.232	0.245	-0.245	1.416	0.000	0.000	0.000	0.000	0.000%	1.416	14.160%	-0.245	-4.083%	0.245	12.312%			
9/24/2016	0.000	0.153	1.232	0.225	-0.225	1.385	0.000	0.000	0.000	0.000	0.000%	1.385	13.850%	-0.225	-3.750%	0.225	11.307%			
9/25/2016	0.000	0.106	1.232	0.240	-0.240	1.338	0.000	0.000	0.000	0.000	0.000%	1.338	13.380%	-0.240	-4.000%	0.240	12.060%			
9/26/2016	0.000	0.118	1.232	0.250	-0.250	1.350	0.000	0.000	0.000	0.000	0.000%	1.350	13.500%	-0.250	-4.167%	0.250	12.563%			
9/27/2016	0.000	0.100	1.232	0.209	-0.209	1.332	0.000	0.000	0.000	0.000	0.000%	1.332	13.320%	-0.209	-3.483%	0.209	10.503%			
9/28/2016	5.500	0.000	1.232	0.296	5.204	1.232	0.000	0.000	0.000	0.000	0.000%	1.232	12.320%	5.204	86.733%	0.296	14.874%			
9/29/2016	5.500	0.000	1.232	0.227	5.273	1.232	0.000	0.000	0.000	0.000	0.000%	1.232	12.320%	5.273	87.883%	0.227	11.407%			
9/30/2016	5.500	0.000	1.232	0.242	5.258	1.232	0.000	0.000	0.000	0.000	0.000%	1.232	12.320%	5.258	87.633%	0.242	12.161%			
10/1/2016	5.500	0.000	1.232	0.223	5.277	1.232	0.000	0.000	0.000	0.000	0.000%	1.232	12.320%	5.277	87.950%	0.223	11.206%			
10/2/2016	4.000	0.000	1.232	0.278	3.722	1.232	0.000	0.000	0.000	0.000	0.000%	1.232	12.320%	3.722	62.033%	0.278	13.970%			
10/3/2016	3.000	0.000	1.232	0.269	2.731	1.232	0.000	0.000	0.000	0.000	0.000%	1.232	12.320%	2.731	45.517%	0.269	13.518%			
10/4/2016	3.000	0.000	1.232	0.255	2.745	1.232	0.000	0.000	0.000	0.000	0.000%	1.232	12.320%	2.745	45.750%	0.255	12.814%			
10/5/2016	3.000	0.000	1.232	0.305	2.695	1.232	0.000	0.000	0.000	0.000	0.000%	1.232	12.320%	2.695	44.617%	0.305	15.327%			
10/6/2016	0.000	0.000	1.232	0.227	-0.227	1.232	0.000	0.000	0.000	0.000	0.000%	1.232	12.320%	-0.227	-3.783%	0.227	11.407%			
10/7/2016	0.000	0.000	1.232	0.208	-0.208	1.232	0.000	0.000	0.000	0.000	0.000%	1.232	12.320%	-0.208	-3.467%	0.208	10.452%			
10/8/2016	0.000	0.000	1.232	0.204	-0.204	1.232	0.000	0.000	0.000	0.000	0.000%	1.232	12.320%	-0.204	-3.400%	0.204	10.251%			
10/9/2016	0.000	0.000	1.232	0.210	-0.210	1.232	0.000	0.000	0.000	0.000	0.000%	1.232	12.320%	-0.210	-3.500%	0.210	10.553%			
10/10/2016	0.000	0.000	1.232	0.215	-0.215	1.232	0.000	0.000	0.000	0.000	0.000%	1.232	12.320%	-0.215	-3.583%	0.215	10.804%			
10/11/2016	0.000	0.000	1.232	0.228	-0.228	1.232	0.000	0.000	0.000	0.000	0.000%	1.232	12.320%	-0.228	-3.800%	0.228	11.457%			
10/12/2016	0.000	0.000	1.232	0.263	-0.263	1.232	0.000	0.000	0.000	0.000	0.000%	1.232	12.320%	-0.263	-4.383%	0.263	13.216%			
10/13/2016	0.000	0.000	1.232	0.255	-0.255	1.232	0.000	0.000	0.000	0.000	0.000%	1.232	12.320%	-0.255	-4.250%	0.255	12.814%			
10/14/2016	0.000	0.000	1.232	0.180	-0.180	1.232	0.000	0.000	0.000	0.000	0.000%	1.232	12.320%	-0.180	-3.000%	0.180	9.045%			
10/15/2016	0.000	0.000	1.358	0.287	-0.287	1.358	0.000	0.000	0.000	0.000	0.000%	1.358	13.580%	-0.287	-4.783%	0.287	14.422%			
10/16/2016	0.000	0.000	1.358	0.329	-0.329	1.358	0.000	0.000	0.000	0.000	0.000%	1.358	13.580%	-0.329	-5.483%	0.329	16.533%			
10/17/2016	0.000	0.000	1.358	0.320	-0.320	1.358	0.000	0.000	0.000	0.000	0.000%	1.358	13.580%	-0.320	-5.333%	0.320	16.080%			
10/18/2016	0.000	0.000	1.358	0.337	-0.337	1.358	0.000	0.000	0.000	0.000	0.000%	1.358	13.580%	-0.337	-5.617%	0.337	16.935%			
10/19/2016	0.000	0.000	1.358	0.329	-0.329	1.358	0.000	0.000	0.000	0.000	0.000%	1.358	13.580%	-0.329	-5.483%	0.329	16.533%			
10/20/2016	0.000	0.000	1.358	0.306	-0.306	1.358	0.000	0.000	0.000	0.000	0.000%	1.358	13.580%	-0.306	-5.100%	0.306	15.377%			
10/21/2016	0.000	0.000	1.358	0.305	-0.305	1.358	0.000	0.000	0.000	0.000	0.000%	1.358	13.580%	-0.305	-5.083%	0.305	15.327%			
10/22/2016	0.000	0.000	1.358	0.347	-0.347	1.358	0.000	0.000	0.000	0.000	0.000%	1.358	13.580%	-0.347	-5.783%	0.347	17.437%			
10/23/2016	0.000	0.000	1.358	0.311	-0.311	1.358	0.000	0.000	0.000	0.000	0.000%	1.358	13.580%	-0.311	-5.183%	0.311	15.628%			
10/24/2016	0.000	0.000	1.358	0.305	-0.305	1.358	0.000	0.000	0.000	0.000	0.000%	1.358	13.580%	-0.305	-5.083%	0.305	15.327%			
10/25/2016	0.000	0.000	1.358	0.034	-0.034	1.358	0.000	0.000	0.000	0.000	0.000%	1.358	13.580%	-0.034	-0.568%	0.034	1.714%			
10/26/2016	0.000	0.000	1.358	0.340	-0.340	1.358	0.000	0.000	0.000	0.000	0.000%	1.358	13.580%	-0.340	-5.667%	0.340	17.085%			
10/27/2016	0.000	0.000	1.358	0.295	-0.295	1.358	0.000	0.000	0.000	0.000	0.000%	1.358	13.580%	-0.295	-4.917%	0.295	14.824%			
10/28/2016	0.000	0.000	1.358	0.308	-0.308	1.358	0.000	0.000	0.000	0.000	0.000%	1.358	13.580%	-0.308	-5.133%	0.308	15.477%			
10/29/2016	0.000	0.000	1.358	0.311	-0.311	1.358	0.000	0.000	0.000	0.000	0.000%	1.358	13.580%	-0.311	-5.183%	0.311	15.628%			
10/30/2016	3.500	0.000	1.358	0.346	3.154	1.358	0.000	0.000	0.000	0.000	0.000%	1.358	13.580%	3.154	52.567%	0.346	17.387%			
10/31/2016	3.800	0.000	1.358	0.300	3.500	1.358	0.000	0.000	0.000	0.000	0.000%	1.358	13.580%	3.500	58.333%	0.300	15.075%			
11/1/2016	3.800	0.000	1.358	0.336	3.464	1.358	0.000	0.000	0.000	0.000	0.000%	1.358	13.580%	3.464	57.733%	0.336	16.884%			
11/2/2016	3.800	0.000	1.358	0.319	3.481	1.358	0.000	0.000	0.000	0.000	0.000%	1.358	13.580%	3.481	58.017%	0.319	16.030%			
11/3/2016	3.800	0.000	1.358	0.336	3.464	1.358	0.000	0.000	0.000	0.000	0.000%	1.358	13.580%	3.464	57.733%	0.336	16.884%			
11/4/2016	3.800	0.000	1.358	0.336	3.464	1.358	0.000	0.000	0.000	0.000	0.000%	1.358	13.580%	3.464	57.733%	0.336	16.884%			
11/5/2016	3.800	0.000	1.358	0.140	3.660	1.358	0.000	0.000	0.000	0.000	0.000%	1.358	13.580%	3.660	61.000%	0.140	7.035%			
11/6/2016	3.800	0.000	1.358	0.319	3.481	1.358	0.000	0.000	0.000	0.000	0.000%	1.358	13.580%	3.481	58.017%	0.319	16.030%			
11/7/2016	3.800	0.000	1.358	0.319	3.481	1.358	0.000	0.000	0.000	0.000	0.000%	1.358	13.580%	3.481	58.017%	0.319	16.030%			
11/8/2016	4.600	0.000	1.358	0.299	4.301	1.358	0.000	0.000	0.000	0.000	0.000%	1.358	13.580%	4.301	71.683%	0.299	15.025%			
11/9/2016	4.600	0.000	1.358	0.320	4.280	1.358	0.000	0.000	0.000	0.000	0.000%	1.358	13.580%	4.280	71.333%	0.320	16.080%			
11/10/2016	4.600	0.000	1.358	0.294	4.306	1.358	0.000	0.000	0.000	0.000	0.000%	1.358	13.580%	4.306	71.767%	0.294	14.774%			
11/11/2016	4.600	0.000	1.358	0.296	4.304	1.358	0.000	0.000	0.000	0.000	0.000%	1.358	13.580%	4.304	71.733%	0.296	14.874%			
11/12/2016	4.600	0.000	1.358	0.332	4.268	1.358	0.000	0.000	0.000	0.000	0.000%	1.358	13.580%	4.268	71.133%	0.332	16.683%			
11/13/2016	4.600	0.000	1.358	0.277	4.323	1.358	0.000	0.000	0.000	0.000	0.000%	1.358	13.580%	4.323	72.050%	0.277	13.920%			
11/14/2016	4.600	0.000	1.358	0.322	4.278	1.358	0.000	0.000	0.000	0.000	0.000%	1.358	13.580%	4.278	71.300%	0.322	16.181%			
11/15/2016	4.600	0.000	1.401	0.347	4.253	1.401	0.000	0.000	0.000	0.000	0.000%	1.401	14.010%	4.253	70.883%	0.347	17.437%			
11/16/2016	4.600	0.000	1.401	0.366	4.234	1.401	0.000	0.000	0.000	0.000	0.000%	1.401	14.010%	4.234	70.567%	0.366	18.392%			
11/17/2016	4.600	0.000	1.401	0.371	4.229	1.401	0.000	0.000	0.000	0.000	0.000%	1.401	14.010%	4.229	70.483%	0.371	18.643%			
11/18/2016	4.600	0.000	1.401	0.328	4.272	1.401	0.000	0.000	0.000	0.000	0.000%	1.401	14.010%	4.272	71.200%	0.328	16.482%			
11/19/2016	4.600	0.000	1.401	0.332	4.268	1.401	0.000	0.000	0.000	0.000	0.000%	1.401	14.010%	4.268	71.133%	0.332	16.683%			



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 <sup>1</sup>					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 Finished water Interconnections with Concord														
11/28/2016	3.000	0.000	1.401		0.313	2.687	1.401	0.000	0.000	0.000%	1.401	14.010%	2.687	44.783%	0.313	15.729%		
11/29/2016	0.000	0.000	1.401		0.303	-0.303	1.401	0.000	0.000	0.000%	1.401	14.010%	-0.303	-5.050%	0.303	15.226%		
11/30/2016	0.000	0.000	1.401		0.303	-0.303	1.401	0.000	0.000	0.000%	1.401	14.010%	-0.303	-5.050%	0.303	15.226%		
12/1/2016	0.000	0.000	1.401		0.337	-0.337	1.401	0.000	0.000	0.000%	1.401	14.010%	-0.337	-5.617%	0.337	16.935%		
12/2/2016	0.000	0.000	1.111		0.260	-0.260	1.111	0.000	0.000	0.000%	1.111	11.110%	-0.260	-4.333%	0.260	13.065%		
12/3/2016	0.000	0.000	1.111		0.344	-0.344	1.111	0.000	0.000	0.000%	1.111	11.110%	-0.344	-5.733%	0.344	17.286%		
12/4/2016	0.000	0.000	1.111		0.262	-0.262	1.111	0.000	0.000	0.000%	1.111	11.110%	-0.262	-4.367%	0.262	13.166%		
12/5/2016	0.000	0.000	1.111		0.318	-0.318	1.111	0.000	0.000	0.000%	1.111	11.110%	-0.318	-5.300%	0.318	15.980%		
12/6/2016	0.000	0.000	1.111		0.289	-0.289	1.111	0.000	0.000	0.000%	1.111	11.110%	-0.289	-4.817%	0.289	14.523%		
12/7/2016	0.000	0.000	1.111		0.267	-0.267	1.111	0.000	0.000	0.000%	1.111	11.110%	-0.267	-4.450%	0.267	13.417%		
12/8/2016	0.000	0.000	1.111		0.238	-0.238	1.111	0.000	0.000	0.000%	1.111	11.110%	-0.238	-3.967%	0.238	11.960%		
12/9/2016	0.000	0.000	1.111		0.285	-0.285	1.111	0.000	0.000	0.000%	1.111	11.110%	-0.285	-4.750%	0.285	14.322%		
12/10/2016	0.000	0.000	1.111		0.247	-0.247	1.111	0.000	0.000	0.000%	1.111	11.110%	-0.247	-4.117%	0.247	12.412%		
12/11/2016	0.000	0.000	1.111		0.242	-0.242	1.111	0.000	0.000	0.000%	1.111	11.110%	-0.242	-4.033%	0.242	12.161%		
12/12/2016	0.000	0.000	1.111		0.240	-0.240	1.111	0.000	0.000	0.000%	1.111	11.110%	-0.240	-4.000%	0.240	12.060%		
12/13/2016	0.000	0.000	1.111		0.255	-0.255	1.111	0.000	0.000	0.000%	1.111	11.110%	-0.255	-4.250%	0.255	12.814%		
12/14/2016	0.000	0.000	1.111		0.352	-0.352	1.111	0.000	0.000	0.000%	1.111	11.110%	-0.352	-5.867%	0.352	17.688%		
12/15/2016	0.000	0.000	1.111		0.241	-0.241	1.111	0.000	0.000	0.000%	1.111	11.110%	-0.241	-4.017%	0.241	12.111%		
12/16/2016	0.000	0.000	1.111		0.236	-0.236	1.111	0.000	0.000	0.000%	1.111	11.110%	-0.236	-3.933%	0.236	11.859%		
12/17/2016	0.000	0.000	1.111		0.296	-0.296	1.111	0.000	0.000	0.000%	1.111	11.110%	-0.296	-4.933%	0.296	14.874%		
12/18/2016	0.000	0.000	1.111		0.244	-0.244	1.111	0.000	0.000	0.000%	1.111	11.110%	-0.244	-4.067%	0.244	12.261%		
12/19/2016	0.000	0.000	1.111		0.239	-0.239	1.111	0.000	0.000	0.000%	1.111	11.110%	-0.239	-3.983%	0.239	12.010%		
12/20/2016	0.000	0.000	1.111		0.293	-0.293	1.111	0.000	0.000	0.000%	1.111	11.110%	-0.293	-4.883%	0.293	14.724%		
12/21/2016	0.000	0.000	1.111		0.243	-0.243	1.111	0.000	0.000	0.000%	1.111	11.110%	-0.243	-4.050%	0.243	12.211%		
12/22/2016	0.000	0.000	1.111		0.236	-0.236	1.111	0.000	0.000	0.000%	1.111	11.110%	-0.236	-3.933%	0.236	11.859%		
12/23/2016	0.000	0.000	1.111		0.199	-0.199	1.111	0.000	0.000	0.000%	1.111	11.110%	-0.199	-3.317%	0.199	10.000%		
12/24/2016	0.000	0.000	1.111		0.240	-0.240	1.111	0.000	0.000	0.000%	1.111	11.110%	-0.240	-4.000%	0.240	12.060%		
12/25/2016	0.000	0.000	1.111		0.231	-0.231	1.111	0.000	0.000	0.000%	1.111	11.110%	-0.231	-3.850%	0.231	11.608%		
12/26/2016	0.000	0.000	1.111		0.187	-0.187	1.111	0.000	0.000	0.000%	1.111	11.110%	-0.187	-3.117%	0.187	9.397%		
12/27/2016	0.000	0.000	1.111		0.317	-0.317	1.111	0.000	0.000	0.000%	1.111	11.110%	-0.317	-5.283%	0.317	15.930%		
12/28/2016	0.000	0.000	1.111		0.350	-0.350	1.111	0.000	0.000	0.000%	1.111	11.110%	-0.350	-5.833%	0.350	17.588%		
12/29/2016	0.000	0.000	1.111		0.404	-0.404	1.111	0.000	0.000	0.000%	1.111	11.110%	-0.404	-6.733%	0.404	20.302%		
12/30/2016	0.000	0.000	1.111		0.367	-0.367	1.111	0.000	0.000	0.000%	1.111	11.110%	-0.367	-6.117%	0.367	18.442%		
12/31/2016	0.0	0.000	1.111		0.400	-0.400	1.111	0.000	0.000	0.000%	1.111	11.110%	-0.400	-6.667%	0.400	20.101%		
<b>AVG 2016</b>	0.475	0.207	0.905	#DIV/0!	0.233	0.241	1.110	0.000	0.000	0.000%	1.110	11.099%	0.243	4.047%	0.231	11.625%		
<b>MAX 2016</b>	5.500	0.300	1.401	0.000	0.432	5.277	1.532	0.000	0.000	0.000%	1.532	15.320%	5.277	87.950%	0.454	22.814%		

<sup>1</sup> 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