

2011 Annual Report on Interbasin Transfers
for
The Cities of Concord and Kannapolis

Prepared for and by:

City of Concord



City of Kannapolis

KANNAPOLIS



Submitted to:

North Carolina Division of Water Resources

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Executive Summary

The 2011 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, 2008, 2009, and 2010 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 2011, the Certificate Holders complied with all conditions of their IBT Certificate. The Cities of Concord and Kannapolis purchased no water from Charlotte-Mecklenburg Utilities (CMU) from the Catawba River Basin during 2011. The maximum daily transfer from the Yadkin River Basin was 0.3 mgd.

In 2011, the City of Kannapolis pumped water from Second Creek to Kannapolis Lake under its South Yadkin River Basin grandfathered IBT. Water sales to Landis averaging 0.19 mgd resulted in an IBT to Second Creek (South Yadkin River Basin) during 2011. The maximum day transfer to the South Yadkin River Basin was 5.40 mgd. IBT amounts for 2011 are provided in Table ES-1. The 2011 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

2011 IBT Average Annual & Maximum Day Demands for Concord and Kannapolis Service Areas

Year	Catawba River Basin			Yadkin River Basin			Second Creek ^d (South Yadkin River Basin)		
	Water Purchase (mgd) ^a		IBT as % of Certificate ^b	Water Purchase (mgd)		IBT as % of Certificate ^{c,d}	Water Transfer (mgd)		IBT as % of Grand- fathered amount
	Average Annual	Max. Day	Max. Day	Average Annual	Max. Day	Max. Day	Average Annual	Max. Day	Max. Day
2011	0.00	0.00	0.0%	0.27	0.30	3.0%	0.778	5.398	90.0%

^a Concord no longer purchases water from CMU for a residential neighborhood.

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

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

^d 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.

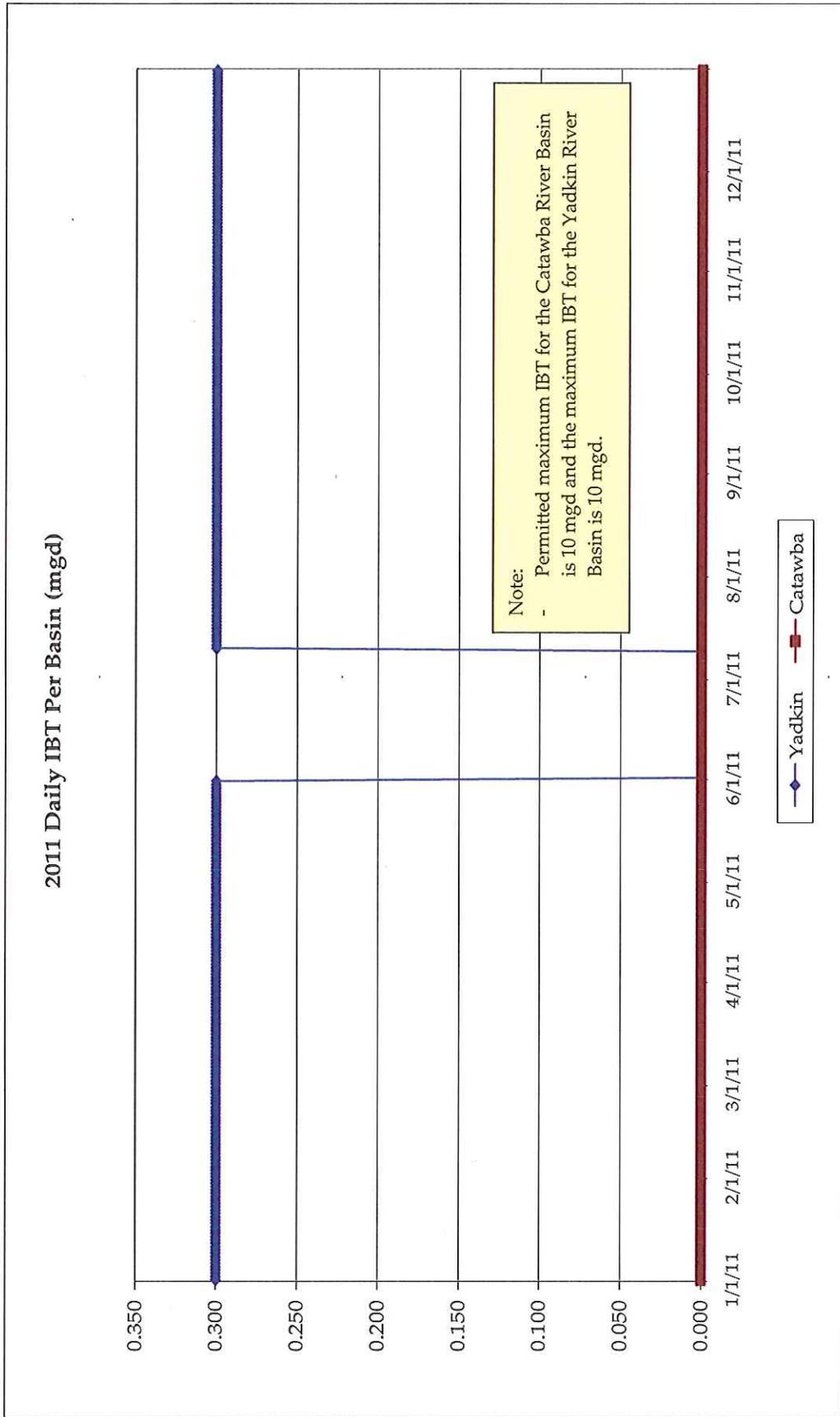


Figure ES-1
2011 Daily Interbasin Transfers by Basin

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Daily Interbasin Transfer Amounts for 2011

Acronyms and Abbreviations

CMU	Charlotte-Mecklenburg Utilities
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

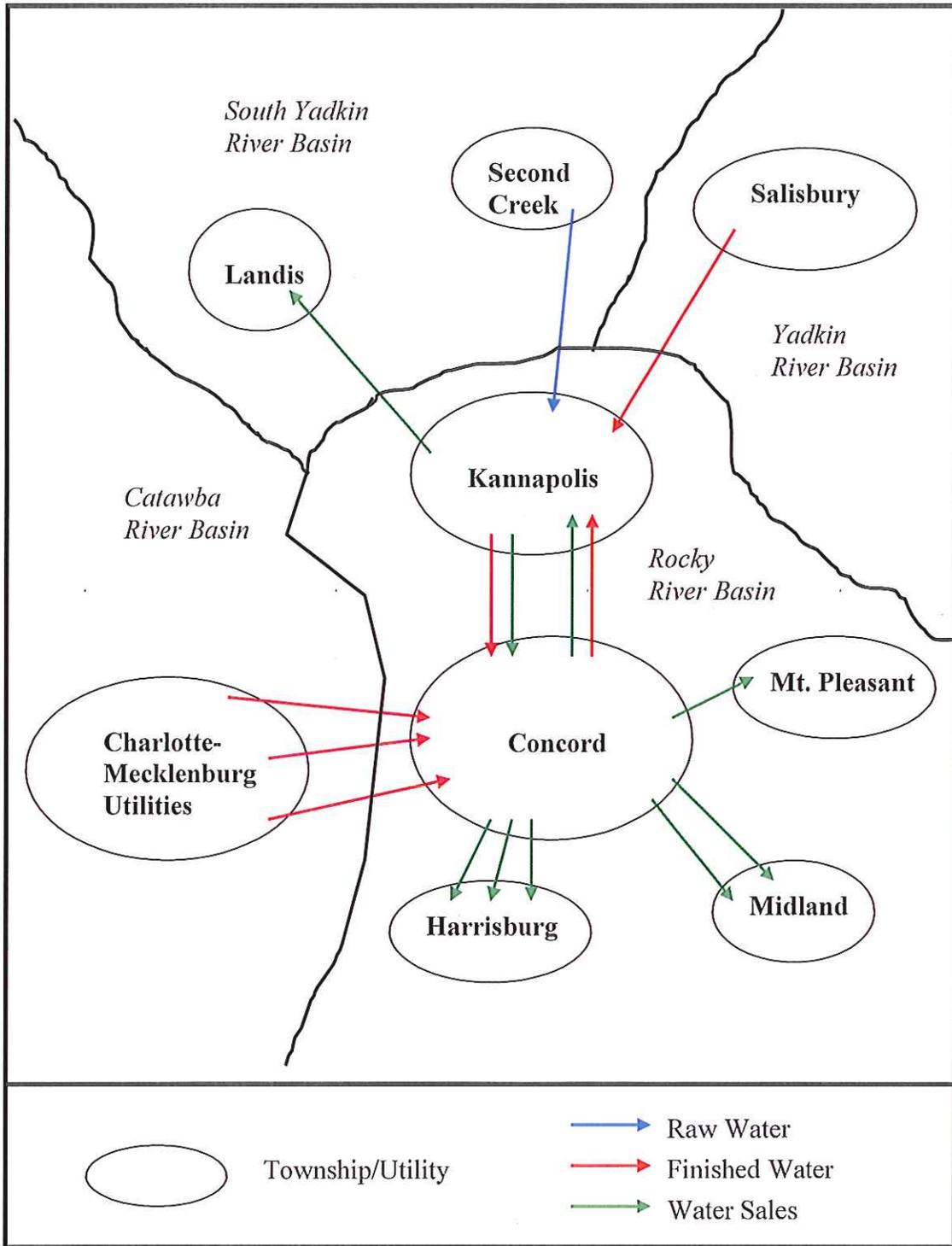
The Cities of Concord and Kannapolis (Cities) received an interbasin transfer (IBT) Certificate, which was originally approved on January 10, 2007, and signed into effect on January 25, 2007. The North Carolina Environmental Management Commission (EMC) has authorized transfers of up to 10 million gallons 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, 2008, 2009 and 2010 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-Mecklenburg Utilities (CMU) 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 are also in the process of constructing an interconnection with the City of Albemarle, which is located in the Yadkin River Basin. Currently, Concord purchases finished water from CMU for a small residential area.

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 2011 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 CMU and the City of Salisbury, if they occurred. Additionally, Table 2-1 presents the 2011 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 2011, finished water production averaged 12.65 mgd, purchased IBT finished water averaged 0.27 mgd for the Yadkin River Basin and 0.78 mgd for Second Creek. The City of Concord purchased no water from CMU, whose water source is from the Catawba River Basin, during 2011. The combined 2011 annual average water use for the Certificate Holders was 13.70 mgd.

Table 2-1

2011 Water Production or Purchases by River Basin

Certificate Holders	Annual Average Finished Water Produced ^a (mgd)	2011			Annual Average Combined Water Use (mgd)
		Annual Average Purchased Water (mgd)			
		Catawba River Basin ^b	Yadkin River Basin	Second Creek	
Concord & Kannapolis	12.65	0.00	0.27	0.78	13.70

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

^b Concord no longer purchases water from CMU for a residential neighborhood.

2.2 - Interbasin Transfers

Daily IBT amounts for the Certificate Holders are included in the Appendix. Data are provided for the period January 1, 2011 through December 31, 2011. *There was no IBT from the Catawba River Basin during the calendar year 2011. The maximum day IBT from the Yadkin River Basin during the calendar year 2008 was 0.3 mgd, which was consistent daily throughout 2011 due to contract agreements between Salisbury and Kannapolis.* This represents 3.0 percent 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 of 5.398 mgd, which represents 90.0% 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

2011 IBT Average Annual & Maximum Day Demands for Concord and Kannapolis Service Areas

Year	Catawba River Basin			Yadkin River Basin			Second Creek ^d (South Yadkin River Basin)		
	Water Purchase (mgd) ^a		IBT as % of Certificate ^b	Water Purchase (mgd)		IBT as % of Certificate ^{c,d}	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
2011	0.00	0.00	0.0%	0.27	0.30	3.0%	0.778	5.398	90.0%

^a Concord purchases water from CMU for a residential neighborhood. Only monthly total volume purchased quantities are available.

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

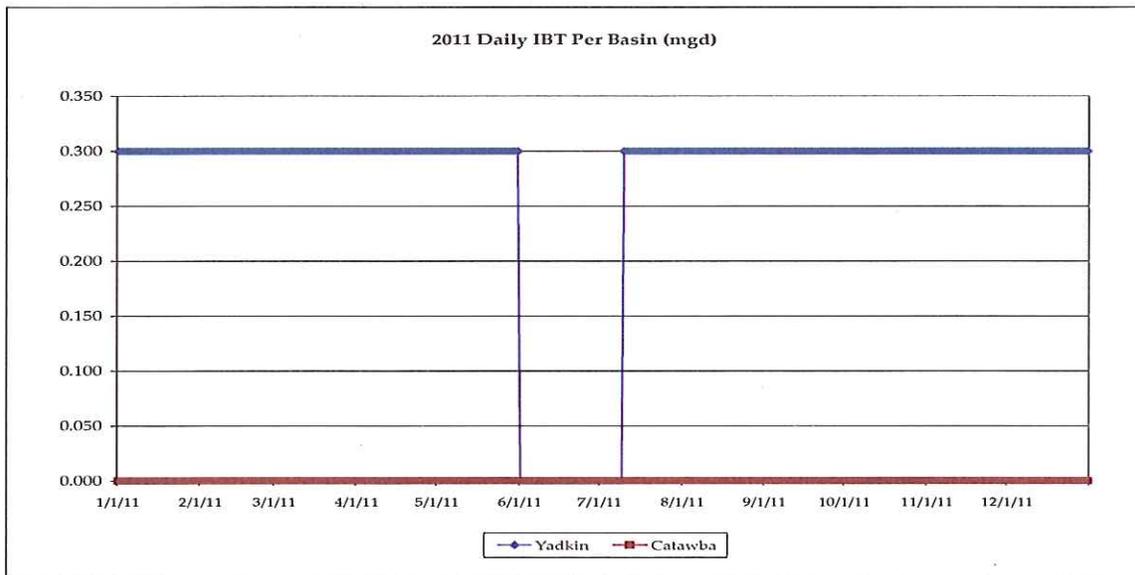
^c Maximum Day IBT of 10 mgd from the Yadkin River Basin.

^d 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

2011 Daily Interbasin Transfers by Basin



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.

Until July 1, 2015, the Cities have agreed to transfer no more than 3.0 mgd (maximum day) 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. A summary of this agreement is presented in Table 3-1.

Table 3-1
Catawba River Basin IBT during Drought Conditions

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

4.0 - Compliance with Certificate Conditions

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

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

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

This condition requires no action by the Certificate Holders.

4.2 - Condition 2 (Drought Management Plan)

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

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

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

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

Beginning in the winter of 2008, drought conditions in the state began to decrease, permitting an easing of drought restrictions for both the Catawba and Yadkin River Basins. 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 July 1 through August 31 of 2011 (Figure 4-1). Other outdoor water use conservation measures

are encouraged but not required. Level 1, Voluntary Water Restrictions, was in place for the remainder of 2011. Level 1 restrictions include suggested water conservation measures to reduce usage by 3% to 5% in addition to the Level 0 restrictions. Both the Catawba and Yadkin River Basins began the year with Stage 2 Moderate Drought water levels. For brief periods during the summer and fall, the drought level has switched to Stage 0 Abnormally Dry and back to Moderate Drought. In the spring, rainfall decreased and the Yadkin-Pee Dee River Basin moved to Severe Drought, but rainfall increased in the summer and the basin finished the year in Abnormally Dry. The Catawba River Basin stayed mostly in Stage 1, Moderate Drought, with the exception of July and August when the basin was in Abnormally Dry, the basin ended the year in Moderate Drought.

During the year, the Cities drought stages follow the drought stages of the Catawba-Wataeree Water Management Group; hence the Cities fluctuated between Normal Responsible Water Use Level 0 and Voluntary Water Restrictions Level 1.



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

Table 4-1
Concord and Kannapolis 2011 Normal and Drought Stages

		2011 Period of Drought			
Drought Stage	Drought Monitor Classification	Catawba River Basin ^a (Draft LIP)	Yadkin River Basin ^b (NC Drought Monitor)	Action by Cities	Cities' Actions Taken
	Normal				
0	Abnormally Dry	July 1 - August 31	June 7 - June 20 August 16 - September 12 September 27 - December 31	Level 0 from July 1 - August 31	Lawn irrigation allowed only on Tuesday, Thursday, & Saturday. Other voluntary conservation efforts encouraged.
1	Moderate Drought	January 1 - June 30 September 1 - December 31	January 1 - January 31 April 5 - June 6 June 21 - August 15 September 13 - September 26	Level 1 from January 1 - June 30 and September 1 - December 31	Lawn irrigation allowed only on Tuesday, Thursday, & Saturday. Additional voluntary conservation efforts encouraged to reduce water usage by 3% to 5%.
2	Severe Drought	-	February 1 - April 4		
3	Extreme Drought	-	-		
4	Exceptional Drought	-	-		

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

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

4.3 - Condition 3 (Disaggregation of IBT Amount)

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

The cooperative service agreement between the Certificate Holders remained in effect throughout 2010.

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 five meters. Concord also provides water service to unincorporated areas of Cabarrus County. Mount Pleasant did not purchase water from the City of Concord in 2011. 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 2011.

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 2011