CERTIFICATE AUTHORIZING THE CITIES OF CONCORD AND KANNAPOLIS TO TRANSFER WATER FROM THE CATAWBA RIVER AND YADKIN RIVER BASINS TO THE ROCKY RIVER BASIN UNDER THE PROVISIONS OF G.S. § 143-215.22I

In November 2004, the cities of Concord and Kannapolis petitioned the Environmental Management Commission (EMC) for a 24 million gallon per day (MGD) interbasin transfer (IBT) on an average day basis from a combination of the Catawba River basin and the Yadkin River basin to the Rocky River basin. Subsequently, the petitioners revised their request to an average 22 MGD IBT from a combination of the Catawba and Yadkin River Basins. In addition to the average daily transfer limit, the applicants' request includes limits on the maximum transfer in any single calendar day. The maximum day limits proposed are 10 MGD from the Yadkin River Basin and 36 MGD from the Catawba River Basin. If permission is granted to transfer 10 MGD from the Yadkin River Basin, then the requested amount of the transfer from the Catawba River Basin is reduced to a maximum day transfer of up to 26 MGD.

The proposed IBT would use existing water system interconnections to meet short-term increases in demands, allowing Concord and Kannapolis the opportunity to expand the amount of finished water obtained from Charlotte-Mecklenburg Utilities, Salisbury-Rowan Utilities, and/or Albemarle, or to obtain raw water from Lake Norman in the Catawba River Basin.

Public hearings on the Interbasin Transfer Certification Petition for the Cities of Concord and Kannapolis were held on June 22, 2005 in Charlotte and on June 23, 2005 in Albemarle pursuant to G.S 143-215.22I. In response to the public's requests for additional comment opportunities, two additional public meetings were held on September 7, 2006 in Valdese and September 19, 2006 in Charlotte. Throughout the process, a total of 233 oral comments were received and 1,564 persons submitted written comments.

The EMC considered the petitioners' request at its regular meeting on January 11, 2007. According to G.S. § 143-215.I(g), the EMC shall issue a transfer certificate if the benefits of the proposed transfers outweigh the detriments of the proposed transfers, and the detriments have been or will be mitigated to a reasonable degree.

The EMC may grant the petition in whole or in part, or deny it, and may grant a certificate with conditions, as provided in G.S. § 143-215.22I(g)-(h). In making this determination, the EMC shall specifically consider:

1. Necessity, reasonableness, and beneficial effects of the transfer
2. Detrimental effects on the source river basin
2a. Cumulative effects on the source major river basins of any current or projected water transfer or consumptive water use
3. Detrimental effects on the receiving basin
4. Reasonable alternatives to the proposed transfer
5. Applicants' use of impounded storage capacity
6. Purposes of any US Army Corps of Engineers multi-purpose reservoir relevant to the petition
7. Any other facts or circumstances that are reasonably necessary to carry out the law

In addition, the certificate must include a drought management plan. The plan will specify how the transfer will be managed to protect the source river basins during drought conditions

The Commission Finds:

The members of the EMC reviewed and considered the complete record, which included the Hearing Officers' Report, the applicants' petition for the interbasin transfer, and the Revised Final Environmental Impact Statement, including public comments on the petition, Draft, and Final Environmental Impact Statements. Based on the record, the Commission makes the following findings of fact.

Findings of Fact

(1) Necessity, Reasonableness, and Beneficial Effects of the Transfer

The proposed transfers would provide water to the cities of Concord and Kannapolis and other surrounding communities. The current population served is about 112,800 and has an estimated current maximum day water demand (MDD) of about 29.3 MGD and an average day water demand (ADD) of about 19.6 MGD (See Table 1). The applicants are requesting an interbasin transfer, which together with other water supplies, would be sufficient to meet their demands for the next 30 years. The 2035 projected service area population is 418,300, with a MDD of 66.5 MGD and an ADD of 42.5 MGD. These projections are based on a continuing 10% reduction in per capita water use compared to per capita use prior to the 2002 drought.

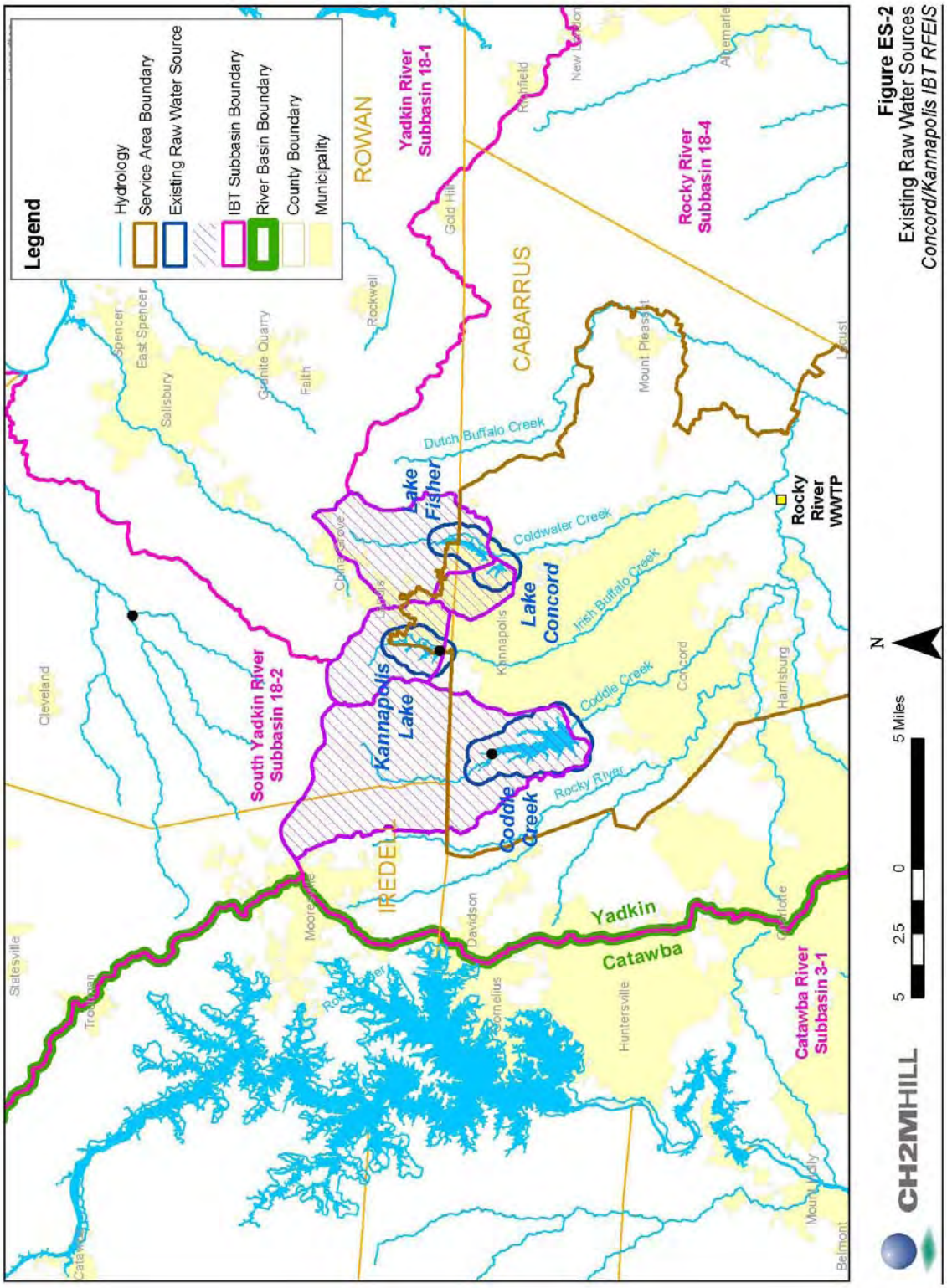
Concord and Kannapolis excelled in both the adoption and enforcement of rigorous water conservation measures during the 1998-2002 drought. Per capita water use in the two cities has remained below what it was before the drought and is in the normal range of similar cities in North Carolina.

Table 1 - Current and Projected Water System Demands for the Water Service Areas

	2000		2010		2020		2035	
Service Area	**ADD MGD**	**MDD MGD**	**ADD MGD**	**MDD MGD**	**ADD MGD**	**MDD MGD**	**ADD MGD**	**MDD MGD**
Concord/Harrisburg/ Midland	10.7	17.1	14.8	24.9	19.8	33.0	25.6	42.3
Mount Pleasant	0.3	0.45	0.4	0.7	0.6	0.9	0.8	1.3
Kannapolis	8.6	11.8	7.6	11.2	12.0	17.8	16.0	22.9
Combined Total	19.6	29.3	22.8	36.9	32.3	51.7	42.5	66.5

The applicants' current water supplies are obtained from reservoirs located near the headwaters of the Rocky River Basin and a small creek in the South Yadkin Basin (Figure 1). The City of Concord's current raw water supplies include Lake Howell (Coddle Creek Reservoir), operated by the Water and Sewer Authority of Cabarrus County (WSACC), Lake Concord, and Lake Fisher. The City of Kannapolis' raw water supply, Kannapolis Lake (Rocky River Basin), has a limited watershed of approximately 10 square miles. However, Kannapolis Lake is supplemented with raw water transfers from Lake Howell (Rocky River Basin) and Second Creek (South Yadkin River Basin). The transfer from Second Creek is a "grandfathered" IBT of 6 MGD, but only increases the safe yield of Kannapolis Lake by approximately 2.5 MGD. Taken all together, these sources provide a reliable supply of about 31 MGD based on the 50-year safe yield.

Figure 1 - Existing Water Sources



The applicants' requested maximum day IBT of 36 MGD is estimated to provide sufficient water supplies so that the applicants' maximum daily demand would reach 80% of available supplies in the year 2035. G.S. § 143-215.22I(l) requires a certificate holder to submit a plan to address future foreseeable water needs when water use reaches 80% of the amount of an approved interbasin transfer. However, this planning requirement does not require that the amount of water approved in an interbasin transfer certificate be increased beyond the normal 30-year planning period. When considering the necessity and reasonableness of the IBT request, the Commission finds that it is appropriate to consider actual projected demands, without the application of the 80% planning factor. This does not affect the requirement that the applicant have a plan in place when average demands eventually reach 80% of supplies.

Table 2 summarizes the applicants' projected water supply deficit, not including the 80% factor.

Table 2 - Summary of 2035 Water Supply Deficit

Projected ADD in 2035, MGD	42.50
Existing 50-Year Safe Yield, MGD	31.05
2035 ADD Deficit, MGD	11.45
2035 MDD Deficit (1.6 Peaking Factor), MGD	18.32

While the estimated 50-year safe yield of Concord and Kannapolis is about 31 MGD, the estimated 100-year safe yield is about half of the 50-year safe yield, or about 16.45 MGD. This is a larger than normal reduction in safe yield in going from a 50-year to a 100-year return period, resulting from the small size and particular hydrologic characteristics of the water supply watersheds of Concord and Kannapolis.

Based on the record, the Commission finds that current water supplies are insufficient to supply the Cities of Concord and Kannapolis and their related service areas on the reasonable planning horizon of the year 2035. Providing water for the anticipated growth of these communities will have a major beneficial effect. The Commission projects that the water supply deficit for these areas will be about 18.32 MGD on a maximum calendar day basis in 2035. Considering the unusually low 100-year yield of their existing water sources, a 20 MGD MDD transfer amount is appropriate. In droughts that exceed the 50-year return period, the cities will need to be prepared to impose water use restrictions.

(2) Detrimental Effects on the Source River Basin

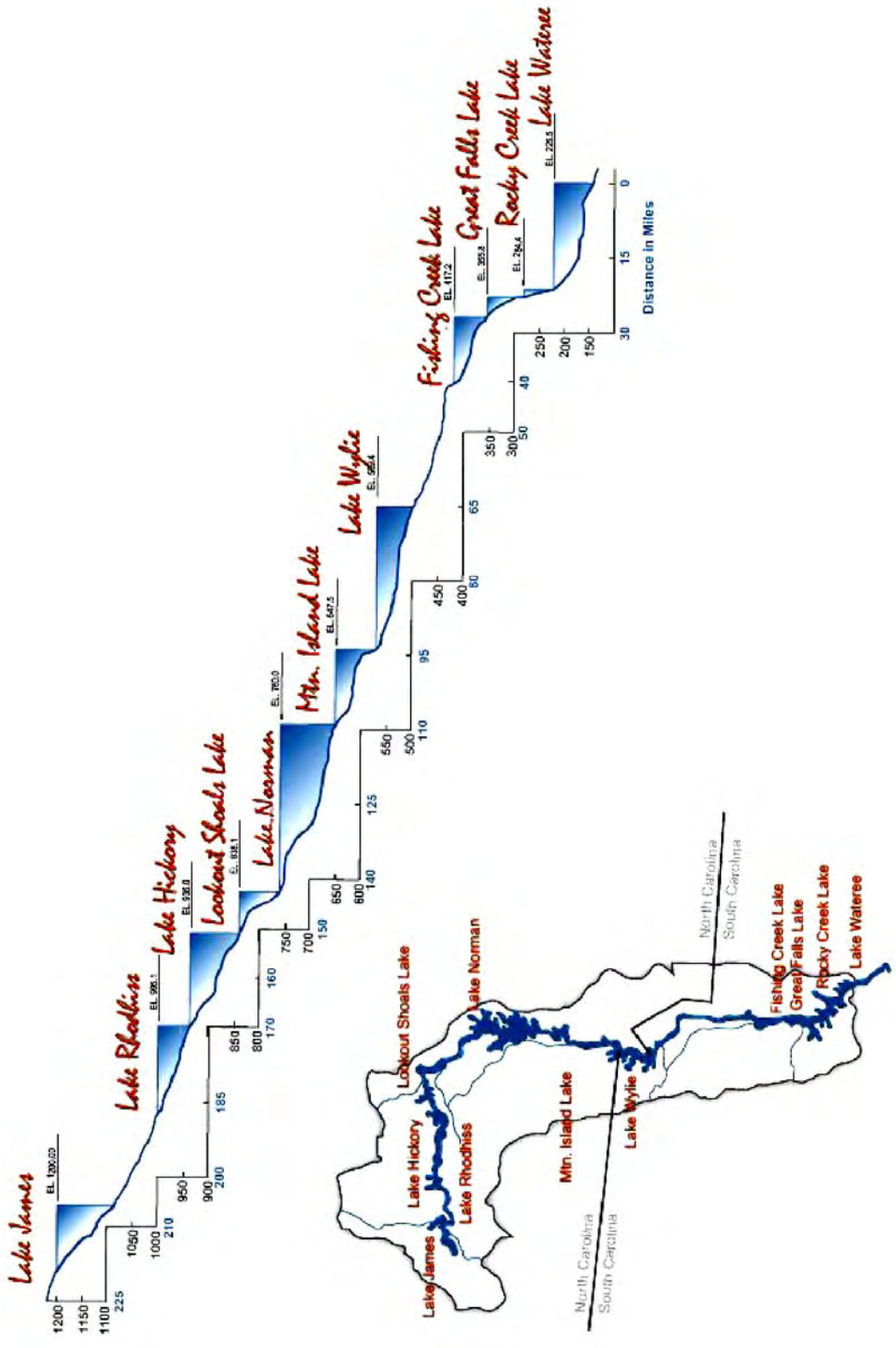
The direct impacts of the proposed IBT in the source basins were evaluated using modeling tools developed for relicensing of the hydropower facilities on the Catawba and Yadkin Rivers. Evaluation of direct impacts on the source basin focused on water quantity, including reservoir levels and instream flows, and an assessment of the likely impacts to water quality from changes in water quantity.

Catawba

For the Catawba River Basin the Division of Water Resources used the Catawba-Wateree CHEOPS (Computer Hydro-Electric Operations and Planning Model Software) model. The Catawba-Wateree model simulates variations in the amount of water in the river system based on variations in inflows, reservoir operations and water withdrawals. The model covers the area from Lake James in North Carolina to Lake Wateree in South Carolina (see Figure 2 - Catawba River Basin Reservoirs) and includes 75 years of data on inflows. The model uses average daily withdrawal amounts, which it varies for each month of the year based on the historical monthly water use pattern for each individual water withdrawer. All modeling results are based on the version of the model that was used by Duke Energy as the basis for the FERC license application and for the Final Comprehensive Relicensing Agreement for the Catawba-Wateree Hydroelectric Project filed with FERC in August 2006. This model includes a Low Inflow Protocol (LIP) for water resource management during drought periods. The LIP was also developed as part of the FERC relicensing application process based on the principle that all water users will share the responsibility to conserve water during low inflow conditions (see Appendix D in the revised Final EIS).

The impacts of the proposed IBT for Concord and Kannapolis were analyzed along with the estimated future demands for other water users in the Catawba River Basin and the operating scenario, including the LIP, from the relicensing application as described above. As required under G.S. § 143-215.22I(f)(2), local water supply plans were used in developing the projected water demands for water users in the Catawba River Basin through 2035. Water use projections included all permitted and anticipated withdrawals and all current and projected IBTs that were reported during the Duke Energy Water Supply Study (Appendix CD-7 in the revised Final EIS).

Figure 2 - Catawba River Basin Reservoirs



In the Catawba River source basin, the direct impacts of various levels of IBT were evaluated: Zero IBT from the Catawba, 10 MGD average daily transfer, 10 MGD constant daily transfer, and a 16 MGD average daily transfer. The 16 MGD average daily transfer is equivalent to the 26 MGD maximum daily transfer requested by the petitioners. Zero IBT reflects the baseline from which the impacts of the IBT were evaluated. The version of the model used for this analysis originally contained future withdrawals for Concord and Kannapolis that were used in the relicensing analysis. Under the Zero IBT modeling scenario, the withdrawals for Concord and Kannapolis were set at zero so the model would not withdraw any water for them. All four scenarios are based on 2035 water use projections. The impacts on several key indicators were assessed by reviewing:

- Long-Term Analysis
    - Examination of reservoir elevation duration data and minimum water levels
    - Examination of reservoir outflow duration and minimum daily releases
    - Low Inflow Protocol (LIP) implementation
- Extreme Case Analysis
    - Reservoir elevation based on time series data for the drought of record
- Water quality impacts
- Water supply impacts

Long-term Analysis

Reservoir Elevation

The modeling results indicate that the proposed IBT scenarios had very little effect on reservoir level duration data. Table 3 and Table 4 show the reservoir elevation duration data for Lake James and Lake Norman for the four modeling scenarios. These values show slight differences in the absolute minimum elevation predicted during the 75-year simulation of results. Lake James elevation differences from the base case are in the range of 1 to less than 3 inches on the lowest day in 75 years of record. Ninety-nine percent of the time the impact is less than 3/4 of an inch. Lake Norman elevation differences from the base case are in the range of 4 to 11 inches on the lowest day in 75 years of record. Ninety-nine percent of the time the impact is less than 1.5 inches.

Table 3 - Lake James Elevation Duration Data

Model Scenario	Zero IBT	Average 10 MGD IBT	Constant 10 MGD IBT	16 MGD (26 MGD MDD) IBT
Exceedance, Percent Time	Elevation, ft	Elevation Difference, inches	Elevation Difference, inches	Elevation Difference, inches
0%	1203.20	0.00	0.00	0.00
10%	1199.88	0.00	-0.12	-0.24
25%	1197.65	-0.12	-0.48	-0.72
50%	1195.67	-0.12	-0.24	-0.60
75%	1194.59	0.00	0.00	0.00
90%	1193.05	0.00	0.00	0.00
95%	1192.57	0.00	0.00	0.12
99%	1192.01	0.00	0.00	0.00
100%	1188.88	-1.32	-2.16	-2.40

Table 4 - Lake Norman Elevation Duration Data

Model Scenario	Zero IBT	Average 10 MGD IBT	Constant 10 MGD IBT	16 MGD (26 MGD MDD) IBT
Exceedance, Percent Time	Elevation, FT	Elevation Difference, inches	Elevation Difference, inches	Elevation Difference, inches
0%	760.00	0.00	0.00	0.00
10%	759.99	0.00	0.00	0.00
25%	758.10	-0.12	-0.12	-0.12
50%	757.84	-0.12	-0.24	-0.36
75%	756.11	-0.24	-0.36	-0.36
90%	755.20	-0.96	-0.96	-0.72
95%	754.67	-1.08	-1.08	-1.08
99%	754.19	-0.60	-0.72	-0.12
100%	751.53	-10.56	-10.56	-3.72

Outflow Duration

The model was also used to predict changes in outflow from the reservoirs which might impact downstream reaches. Table 5 shows reservoir outflow duration data for outflows from Lake Wylie. This reservoir was selected because it is downstream of the proposed withdrawal and there is a flowing portion of the Catawba River below this dam. In addition, changes in outflows from Lake Wylie are a key indicator of potential downstream impacts in South Carolina. The differences in outflow duration among the four IBT scenarios as shown in this table are not appreciable. The daily minimum flows, which are important for assessing assimilative capacity, are identical for all scenarios. There are only minor differences across the range of the flows. For example, at the median (50% percent exceedance level) downstream flows are about 1% less for each of the other three scenarios than they are for the Zero IBT scenario.

Table 5 - Lake Wylie Outflow Duration Data

Model Scenario	Zero IBT	Average 10 MGD IBT	Constant 10 MGD IBT	16 MGD (26 MGD MDD) IBT
Exceedance, Percent Time	Outflow, cfs	Outflow Difference, cfs	Outflow Difference, cfs	Outflow Difference, cfs
0%	68400	-1	-2	-8
10%	8047	-50	-34	-82
25%	4027	-45	-38	-46
50%	2345	-24	-24	-32
75%	1271	0	-1	0
90%	1221	0	0	0
95%	1205	0	0	0
99%	1011	0	0	0
100%	838	0	0	0

Low Inflow Protocol (LIP) Implementation

Another approach to examining the long-term impacts of an IBT is to evaluate changes in the frequency of occurrence of LIP stage for the different scenarios modeled. Each LIP stage stipulates water management actions designed to manage project operations and withdrawals during low inflow conditions. Stage 0 is a drought watch and stages 1 through 4 include increasing levels of water use reductions. In Table 6 Stage -1 represents normal, non-drought, operations. Table 6 is a summary of the LIP stages for the Catawba River Basin model scenarios. For the two 10-MGD scenarios, there is no change in the number of days when the four LIP stages (1-4) that cause water users to require water use reductions are in effect.

Table 6 - Summary of Catawba LIP Stages

Model Scenario	Zero IBT		Avg 10 MGD IBT	Constant 10 MGD IBT	16 MGD Avg (26 MGD MDD) IBT
LIP Stage	Months	% Time	Number of Months Difference	Number of Months Difference	Number of Months Difference
Monthly Summary					
-1	576	64%	-2	0	0
0	276	31%	2	0	-1
1	43	5%	0	0	1
2	5	1%	0	0	0
3	0	0%	0	0	0
4	0	0%	0	0	0
Annual Summary - Number of years with at least one month occurrence in the calendar year					
LIP Stage	Year	% Year	Number of Years Difference	Number of Years Difference	Number of Years Difference
-1	66	88%	0	0	0
0	56	75%	0	0	0
1	10	13%	0	0	0
2	1	1%	0	0	0
3	0	0%	0	0	0
4	0	0%	0	0	0

During the public review of the FEIS, several commenters in the upper Catawba River Basin provided information related to possible lost revenue associated with increased occurrence of LIP Stages associated with a 22-MGD IBT. These commenters alleged that costs ranged from $75,000 to $400,000 per community and that this lost revenue could be multiplied many times to represent all of the communities in the basin. However, these costs were associated with the worst case situation that occurred only once during the 75-year simulation and based on all projected increased water demands in the basin for the year 2035. This worst case would only be expected to occur if inflows were similar to the drought of record. This worst case is also based on taking all of the water from the Catawba River Basin or a 22 MGD ADD IBT. Revenue impacts associated with a 10-MGD ADD IBT from the Catawba were not provided by the commenters. Based on the modeling results, even with the worst case analysis of increased 2035 water demands and a reoccurrence of the drought of record, the two versions of a 10 MGD IBT would not cause any additional months of LIP stages 1 through 4 and would therefore not have revenue impacts on public water supply systems.

Extreme Case Analysis

To assess impacts on a shorter time scale during extreme conditions, the effects of the four modeled IBT scenarios during significant droughts in the period of record were examined. The most severe drought during the 75-year period of record in the Catawba River Basin occurred during 2001-02. For all 11 reservoirs, reservoir levels predicted by the model are very similar for all of the IBT scenarios evaluated except during the extreme drought of 2002. Figure 3 shows that during 2002, the worst part of the five-year drought, the simulated reservoir levels for Lake James for the two 10

MGD transfer scenarios show no apparent difference from the ZERO IBT scenario. Figure 4 shows that during 2002 the Lake Norman simulated reservoir levels for the two 10 MGD transfer scenarios are about 11 inches lower than both the zero transfer and 16 MGD scenarios once in 75 years. Both Figure 3 and Figure 4 show some temporary higher reservoir levels for the 16 MGD scenario, which at first seems counter-intuitive. However, the 16 MGD scenario causes LIP stage 1 to be implemented sooner. In turn, this causes reductions in both required releases and water withdrawals, resulting in higher reservoir levels. This is explained in more detail in Section 2.1.10.1 of the revised Final EIS.

Figure 3 - Lake James Simulated 2002 Drought Elevations

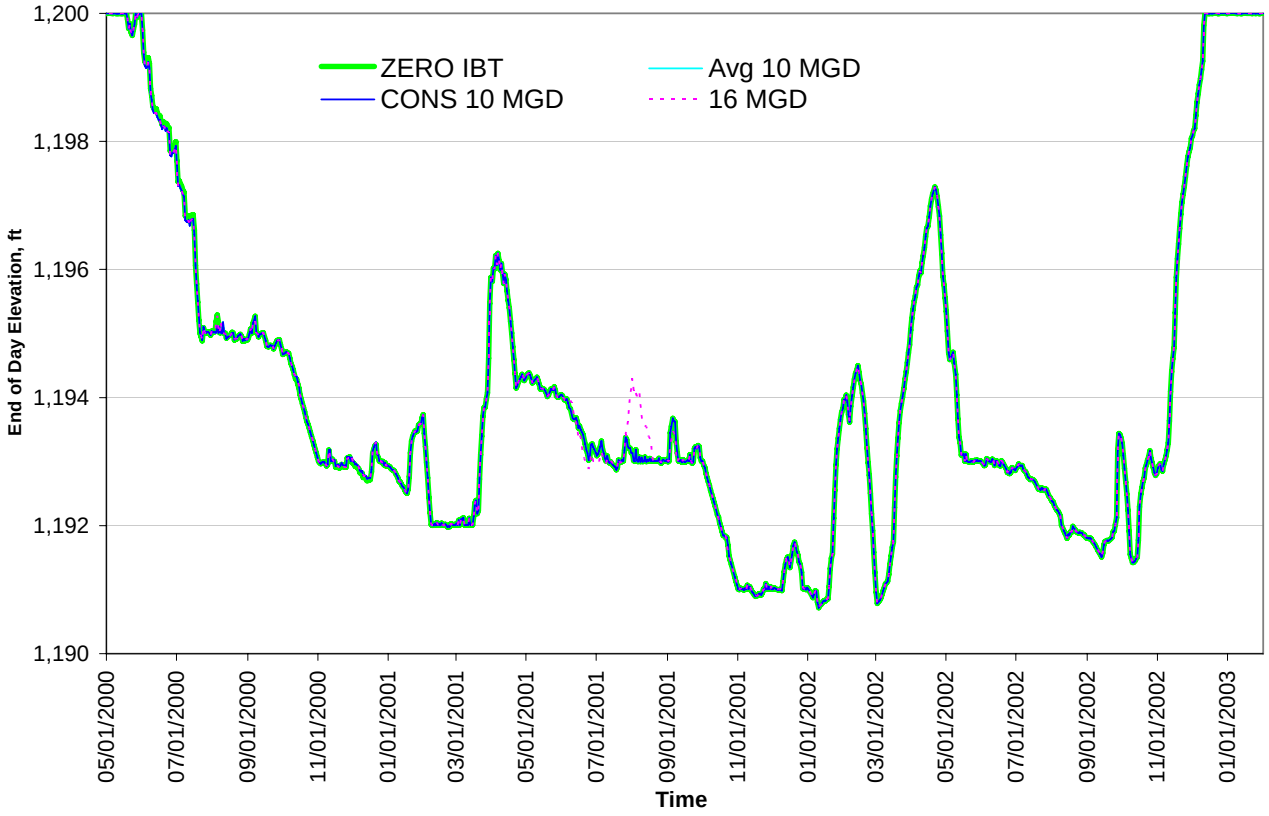
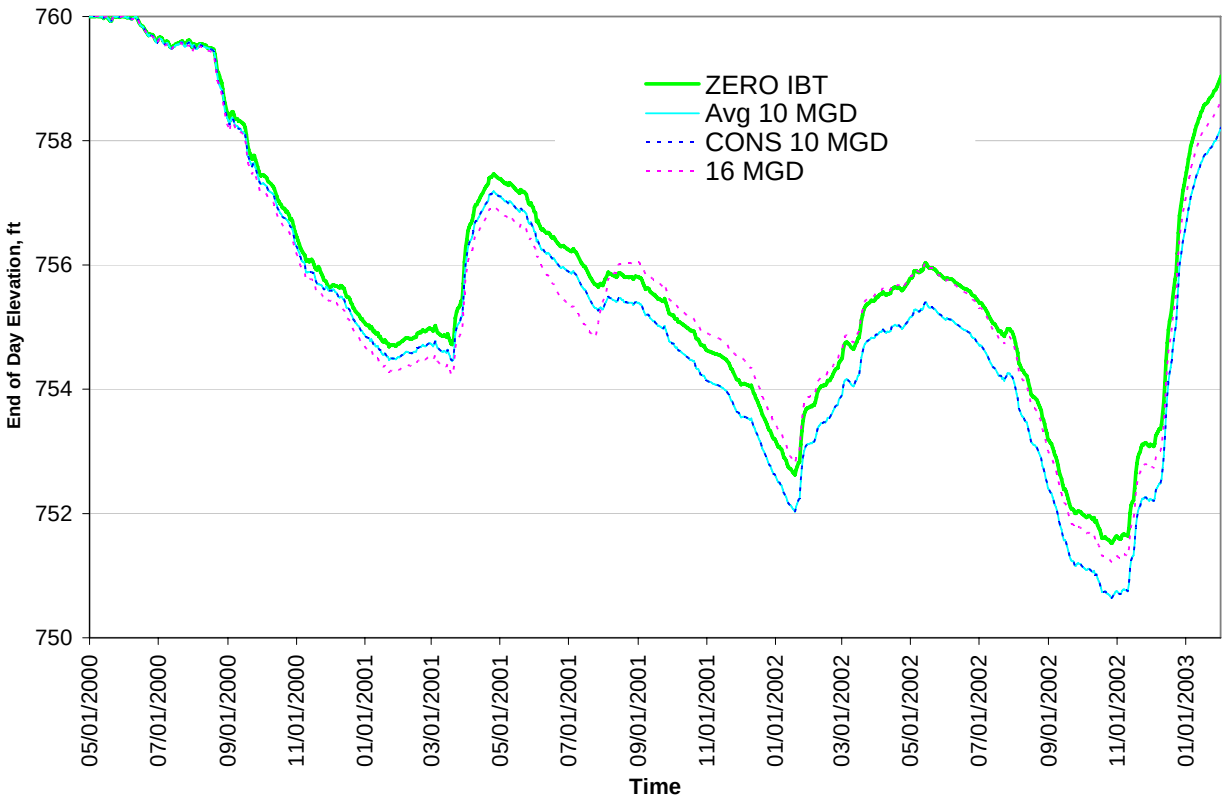


Figure 4 - Lake Norman Simulated 2002 Drought Elevations



The analysis of the reservoir water level effects of the IBT has been primarily based on the use of the CHEOPS model and includes the anticipated effects of the Low Inflow Protocol. This approach was chosen because it uses the same model and assumptions that have been developed with the participation of stakeholders during relicensing. However, it is desirable to verify the conclusions of this analysis through another method that is not dependent on the CHEOPS model or the LIP.

The following simplified analysis of the impact to reservoir storage assumes no inflow for the 183 days from June 1 through November 30 for Mountain Island Lake and the five upstream reservoirs. This period is typically the driest six-month period of the year. A 10 MGD withdrawal would require a total of 1,830 million gallons over the 183 days. The six reservoirs have a combined surface area of 48,781 acres when they are full. If there were no inflows to these reservoirs during the 183-day period, the drawdown from a 10 MGD withdrawal would be 1.4 inches. If the reservoirs were initially at 50-percent capacity the drawdown would be 1.6 inches. These estimates can be considered the likely upper bounds on the impact to storage because the lowest estimated inflow during June 1 – November 30 over 75 years of record is 358 MGD, over 35 times a 10 MGD IBT.

Water Quality

Modeling shows that the IBT scenarios analyzed would have no appreciable effect on reservoir outflow duration or minimum daily releases from the reservoirs. Since by rule (15A NCAC 2B .0206), minimum daily flows are used to assess assimilative capacity on regulated streams for permitting of discharges, the proposed IBT would have no effect on assimilative capacity in the source basin. Since the IBT scenarios analyzed produced no appreciable effects on reservoir level duration, no impact to reservoir water quality is expected due to any of the modeled transfers compared to the Zero IBT scenario.

Whether the small variations in reservoir levels and outflows attributable to an IBT during droughts would have any impact on reservoir water quality conditions was also considered. Water quality data for drought and non-drought years used to calibrate water quality models used for FERC relicensing were examined to see if there was an effect that could be assessed with the model. At the stations examined, ambient concentrations of key parameters, including chlorophyll *a* and nutrients, decreased or remained approximately the same during the drought conditions. Ambient water quality data indicate that although water surface elevations decrease during drought conditions, watershed pollutant loadings, reservoir residence time, and other hydrologic and meteorological effects are such that the water quality of the reservoirs is virtually unchanged between recent normal and drought conditions observed in 1998 and 2001. This comparison, a review of the Duke Energy FERC water quality studies, review of water quality model calibration reports, and discussions with the water quality model developers indicated that additional water quality analysis of minor reservoir level and outflow changes was not warranted.

Water Supply

As part of FERC relicensing, Duke Energy commissioned a water supply study for the entire Catawba-Wateree Project (Revised Final EIS appendix CD-7). A major focus of this study was whether the Catawba-Wateree River Basin could support large projected increases in water use and electric power generation, while providing higher downstream releases for aquatic habitat and still meet critical reservoir elevation targets. To answer this question, Duke Energy coordinated a Water Supply Study, with the participation of major water users in the basin in North and South Carolina. Starting with data from the Local Water Supply Plans the Water Supply Study projected future water use to 2058 for industrial, public water supply, power generation, and agricultural irrigation activities for the Catawba-Wateree River Basin in North Carolina and South Carolina above Lake Wateree Dam. The projections included grandfathered, permitted, and other potential IBTs, including estimates for Concord and Kannapolis. In fact, 2038 and 2058 average IBTs used in the analysis for Concord and Kannapolis were 15 and 27 MGD, respectively. The analysis, using the final set of operating protocols and the final LIP, shows that all the projected demands (including all anticipated IBTs) can be met beyond 2048. The Duke Energy Water Supply Study concluded that all water supply demands could be satisfied through 2048, including the projected additional 354 MGD of water withdrawals and a total of 421 MGD of net outflows, even during a reoccurrence of drought conditions like 2001-2002 (the drought of record).

The Duke Water Supply Study evaluated water uses that remove water from the Catawba Basin, such as irrigation, power plant cooling, and transfers out of the basin. The study called these uses "net outflows". They are more often termed "consumptive uses". Considering the average flow of the Catawba River at Lake Wylie, the greatest net outflows projected for 2038 are evaporation for power plant cooling at 5.2% of average flow, public water supply consumptive use at 4.5%, and agricultural use at 1.7%. The 10 MGD Concord-Kannapolis net outflow would be about 0.4% of average flow.

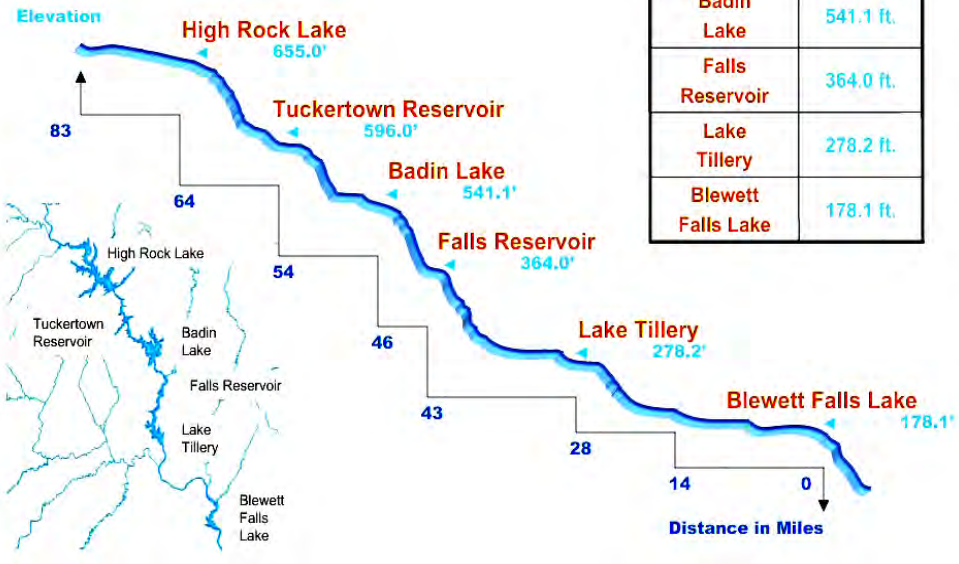
Yadkin

In the Yadkin River Basin, the transfer of water and the impacts due to this transfer were analyzed, by the Division of Water Resources, using a hydrologic simulation computer model called Yadkin Project Operations OASIS model. The Yadkin Project Operations model simulates water quantity changes due to variations in inflows, reservoir operations, and water withdrawals from Kerr Scott Reservoir in North Carolina to Pee Dee, South Carolina. Figure 5 shows the hydropower reservoirs owned and operated by Alcoa Power Generation Inc. (APGI) and Progress Energy. The basic OASIS program was customized for APGI in preparation for the relicensing of their four hydroelectric stations on the Yadkin River. The customized Yadkin OASIS model was used during relicensing to analyze short-term and long-term water management options for the Yadkin River Basin, as well as potential drought management protocols. As required under G.S. § 143-215.22I(f)(2), local water supply plans were used in developing the projected water demands from all users in the Yadkin River Basin through 2035 that could potentially affect or be affected by the proposed transfers.

A Low Inflow Protocol is under development as part of the FERC relicensing process for the Yadkin River Basin hydroelectric projects and is expected to be included in the final settlement agreements for both licensees. The LIP being developed for the FERC licensees and reservoir water users has provisions similar to the LIP for the Catawba-Wateree Basin.

Figure 5 - Yadkin River Basin Reservoirs and Full Pool Elevations

Lakes	Full Pool
High Rock Lake	655.0 ft.
Tuckertown Reservoir	596.0 ft.
Badin Lake	541.1 ft.
Falls Reservoir	364.0 ft.
Lake Tillery	278.2 ft.
Blewett Falls Lake	178.1 ft.



In the Yadkin River source basin, OASIS modeling results were used to assess the impact of the proposed 10-MGD IBT on the reservoirs, using several withdrawal options, including purchasing finished water from the cities of Salisbury and Albemarle. The model results indicate that the direct impacts of the IBT on High Rock Lake, Tuckertown Reservoir, and Badin Lake would not be appreciable. Key indicators used for the assessment included reservoir water levels, reservoir outflow duration data, impacts during extreme droughts, water quality effects and water supply effects. Because the applicants' petition limited their request from the Yadkin River basin to 10 MGD, that is the maximum demand that was modeled. However, several options for meeting a 10 MGD withdrawal were modeled, including the following IBT scenarios:

- *Zero Yadkin Transfer conditions.*
  - "2035 No Transfer" – 2035 water use projections and no Yadkin interbasin transfer.
- *Maximum Daily Demand (MDD) Transfer conditions.*
  - "Tuckertown 10 MGD MDD Transfer" – 2035 water use projections with the Concord-Kannapolis IBT being supplied by the City of Albemarle via a 10 MGD maximum day transfer from Tuckertown Reservoir.
  - "Tuckertown-Salisbury 10 MGD MDD Transfer" – 2035 water use projections with the Concord Kannapolis IBT being supplied by the cities of Albemarle and Salisbury with a 10 MGD maximum day transfer divided evenly between Tuckertown Reservoir and the City of Salisbury.

- *Constant Transfer conditions.*
  - "Tuckertown 10 MGD Constant Transfer" – 2035 water use projections with the Concord-Kannapolis IBT being supplied by the City of Albemarle via a 10 MGD constant day transfer from Tuckertown Reservoir.
  - "Tuckertown-Salisbury 10 MGD Constant Transfer" – 2035 water use projections with the Concord-Kannapolis IBT being supplied by the cities of Albemarle and Salisbury with a 10 MGD constant day transfer divided evenly between Tuckertown Reservoir and the City of Salisbury.

Long-term Analysis

Table 7 and Table 8 show that the impacts to High Rock and Narrows (Badin) reservoirs are insignificant. For the 74 years simulated, 99% of the time the IBT results in a reservoir elevation difference of at most 1.3 inches lower, and usually much less than that. The maximum difference in reservoir elevation resulting from the IBT scenarios ranges from 2.5 to 5.9 inches lower, which occurs only one time in 74 years.

Table 7 - High Rock Lake Elevation Duration Table

Model Scenario	2035 Zero Transfer	Tuckertown 10 MGD MDD Transfer	Tuckertown-Salisbury 10 MGD MDD Transfer	Tuckertown 10 MGD Constant Transfer	Tuckertown-Salisbury 10 MGD Constant Transfer
Exceedance, Percent Time	Yadkin Datum, ft	Difference in Inches	Difference in Inches	Difference in Inches	Difference in Inches
0	655.00	0.0	0.0	0.0	0.0
10	654.17	-0.1	-0.1	-0.1	-0.1
25	652.04	-0.1	0.0	-0.1	-0.1
50	651.05	0.0	0.0	-0.1	-0.1
75	650.13	-0.1	-0.1	-0.1	-0.4
95	646.04	-0.2	-0.4	-0.2	-0.5
99	645.00	0.0	0.0	0.0	0.0
100	644.03	-3.1	-3.6	-5.0	-5.9

Table 8 - Narrows (Badin) Lake Elevation Duration Table

Model Scenario	2035 Zero Transfer	Tuckertown 10 MGD MDD Transfer	Tuckertown-Salisbury 10 MGD MDD Transfer	Tuckertown 10 MGD Constant Transfer	Tuckertown-Salisbury 10 MGD Constant Transfer
Exceedance, Percent Time	Yadkin Datum, ft	Difference in Inches	Difference in Inches	Difference in Inches	Difference in Inches
0	541.10	0.0	0.0	0.0	0.0
10	541.10	0.0	0.0	0.0	0.0
25	534.96	-0.1	0.0	-0.1	-0.1
50	534.51	0.0	0.0	0.0	0.0
75	534.50	0.0	0.0	0.0	0.0
95	534.42	-0.2	-0.1	-0.2	-0.2
99	532.04	-0.8	-0.8	-1.3	-1.2
100	526.77	-3.1	-2.5	-4.7	-3.7

Reservoir Outflow

Table 9 shows the modeling output at the Rockingham streamflow gage. The Rockingham gage is used to measure the minimum flows released from Blewett Falls reservoir. The simulated daily stream flows show no differences for all scenarios for low flows in the 75 to 100 percent exceedance levels, and insignificant differences for the 0 to 75 percent exceedance levels.

Table 9 - Rockingham Streamflow Gage Duration Data

Model Scenario	2035 Zero Transfer	Tuckertown 10 MGD MDD Transfer	Tuckertown-Salisbury 10 MGD MDD Transfer	Tuckertown 10 MGD Constant Transfer	Tuckertown-Salisbury 10 MGD Constant Transfer
Exceedance, Percent Time	Discharge, cfs	Difference in cfs	Difference in cfs	Difference in cfs	Difference in cfs
0	277,918	-10	-10	-10	-16
10	14,780	-9	-9	-9	-15
25	9,400	0	0	0	0
50	5,666	-13	-4	-13	-22
75	1,800	0	0	0	0
95	1,200	0	0	0	0
99	1,200	0	0	0	0
100	809	0	0	0	0

Low Inflow Protocol (LIP) Occurrence

The Yadkin LIP is similar to the Catawba LIP, with five LIP stages. Stage 0 is drought watch and Stages 1 through 4 include increasing levels of water use restrictions. In Table 10 and Figure 6 the Stage -1 represents normal, non-drought operations.

Table 10 is a summary of the LIP stages for the Yadkin River Basin model scenarios. For the two 10 MGD MDD scenarios there is no change in the number of days for the four LIP Stages (1-4) that cause water users to implement water use restrictions. The largest impact occurs under one of the 10 MGD constant IBT scenarios, where there are 19 additional days of stage 3 water use restrictions that occur during one event in the 74 years simulated.

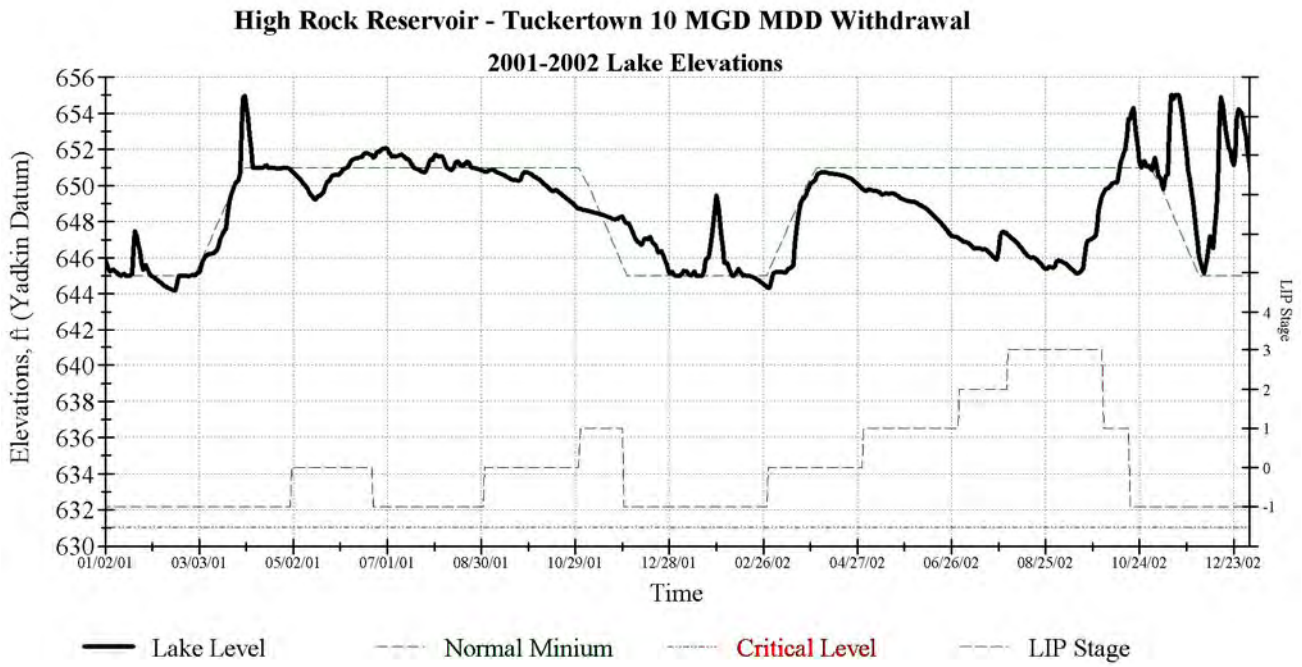
Table 10 - Summary of Yadkin LIP Stages

Model Scenario	2035 No Transfer		Tuckertown 10 MGD MDD Transfer	Tuckertown-Salisbury 10 MGD MDD Transfer	Tuckertown 10 MGD Constant Transfer	Tuckertown-Salisbury 10 MGD Constant Transfer
LIP Stage	Days	% Time	Number of Days Difference	Number of Days Difference	Number of Days Difference	Number of Days Difference
Monthly Summary						
-1	26,004	96.2%	0	-18	-4	-19
0	791	2.9%	0	18	3	19
1	92	0.3%	0	0	0	0
2	49	0.2%	0	0	1	-19
3	92	0.3%	0	0	0	19
4	0	0.0%	0	0	0	0
LIP Stage	Years	% Years	Number of Years Difference	Number of Years Difference	Number of Years Difference	Number of Years Difference
Annual Summary - Number of years with at least month occurrence in the calendar year.						
-1	74	100.0%	0	0	0	0
0	19	25.7%	0	0	0	0
1	3	4.1%	0	0	0	0
2	1	1.4%	0	0	0	0
3	1	1.4%	0	0	0	0
4	0	0.0%	0	0	0	0

Extreme Case Analysis

High Rock Lake experienced severe impacts associated with the drought of 2000 to 2002 as a result of the operating rules specified in the current FERC license, which does not include a LIP. The relicensing process is developing new operating rules that are expected to increase the protection of High Rock Lake during droughts. Figure 6 shows reservoir levels during conditions like the drought of record for the different IBT scenarios. Even during this extreme drought, only minor differences in reservoir levels occurred as a result of the IBT, on the order of 3 to 4 inches for very short periods of time.

Figure 6 - High Rock 2001-2002 Simulated Reservoir Levels – Extreme Drought



The analysis of the reservoir water level effects of the IBT has been primarily based on the use of the OASIS model and includes the anticipated effects of the Low Inflow Protocol. This approach was chosen because it uses the same model and assumptions that have been developed with the participation of stakeholders during relicensing. However, it is desirable to verify the conclusions of this analysis through another method that is not dependent on the OASIS model or the LIP.

The following simplified analysis of impacts to the storage of High Rock Lake, Narrows (Badin) Reservoir and Lake Tillery assumes no inflow for the 183-day period from June 1 through November 30. This is typically the driest six-month period of the year. A 10 MGD withdrawal would require a total of 1830 million gallons of water over the 183 days. The combined surface area of the three reservoirs is 25,400 acres. If the reservoirs are full initially, an 1830 million gallon withdrawal would result in a drawdown of 2.7 inches on the three reservoirs. If the reservoirs were at 50-percent capacity, the drawdown due to the 10 MGD withdrawal would be 3.8 inches. These drawdown estimates can be considered an upper bound on elevation reductions, since the lowest inflow into High Rock Lake over 67 years of record for this 183-day period is 642 MGD, over 60 times a 10 MGD withdrawal.

Water Quality

No water quality effects are anticipated because the proposed IBT would not appreciably affect reservoir water levels or outflows. Return flow to the Rocky River would contain additional wastewater treatment plant effluent as a result of the IBT from the Yadkin and from the Catawba. The wastewater treatment plants expected to receive the increased flows are currently permitted for sufficient capacity to handle the majority of this increased flow, indicating that the flow is within the assimilative capacity of the Rocky River system.

Water Supply

Appreciable changes in reservoir levels and reservoir outflows would not occur in the Yadkin River Basin as a result of the IBT, and therefore impacts on water supply would be insignificant. Water intakes and withdrawals would not be impacted by either the 10-MGD MDD or constant 10-MGD IBT scenarios.

Based on the record, the Commission finds that the detrimental effects on the source basins described in G.S. § 143-215I(f)(2) will be insignificant.

(2a) Cumulative Effects on the Source Major River Basins of Any Current or Projected Water Transfer or Consumptive Water Use

Catawba

The Catawba-Wateree CHEOPS [model] discussed in Finding Number 2 includes data for current and projected water use withdrawals and water transfers. The model was used to evaluate current and future scenarios of basin water use. A safe yield analysis developed for the Duke Energy Water Supply Study for the entire Catawba-Wateree Project (revised Final EIS appendix CD-7) was evaluated using the Catawba-Wateree CHEOPS Operations Model. The analysis, using the final set of operating protocols and the final LIP, shows that all the projected demands (including all anticipated IBTs) can be met beyond 2048. The Duke Energy Water Supply Study concluded that through 2048, additional 354 MGD of water withdrawals, and a total of 421 MGD of consumptive uses or net outflows, the Catawba-Wateree Basin can meet these demands even during a reoccurrence of drought conditions such as those of 2001-2002 (the worst on record), without any reservoir dropping below critical elevations for the existing water supply intakes.

Yadkin

The Yadkin Project Operations OASIS model discussed in Finding Number 2 includes data for current and projected water withdrawals and water transfers. The model was used to evaluate current and future scenarios of basin water use. The safe yield of the reservoir system has not been determined. The reservoirs are managed by two different power companies and the model lacks adequate detail on the operational policies of both power companies to do a detailed safe yield analysis. However, based on the water use and operational scenarios and proposed LIP operations, the yield is at least as large as or larger than the cumulative 2035 water use scenario, including the 10 MGD IBT.

Based on the record, the Commission finds that the cumulative effects of this and other future water transfers and consumptive water uses on the source basins described in G.S. § 143-215I(f)(2a) are well within the sustainable capacity of the basins.

(3) Detrimental Effects on the Receiving Basin

Secondary impacts in the receiving basin would result from the proposed IBT because the additional water supply provided by the transfer would facilitate growth. Urbanization of portions of the water service areas could cumulatively cause degradation and/or loss of wetlands, aquatic resources and habitats, forest resources, prime agricultural land, wildlife habitat, and archeological resources. Changes in land use have an effect on both the quantity and quality of stormwater runoff.

In addition to state and federal programs and regulations that help mitigate these potential impacts associated with increased growth, Concord, Kannapolis, and other Cabarrus County communities have adopted an updated Unified Development Ordinance (UDO) (Revised Final EIS Appendix CD-1). The UDO was developed and adopted through cooperative efforts among all municipalities within the County. The following is a summary of the measures included in the UDO to address growth-related impacts:

- Measures have been implemented to address, and go beyond, Phase II Stormwater Rules.
- An undisturbed buffer of at least 50 feet shall be established along both sides of perennial streams, as measured from the top of the stream bank. Each ordinance also requires an additional buffer width based on slope up to a maximum buffer width of 120 feet. Buildings or structures may not be placed within an additional 20-foot zone outside the buffer. Intermittent streams are protected in accordance with the Phase II Stormwater Rules. When development is planned, streams will be designated on-site by a qualified professional to ensure proper application of stream buffer rules.
- Floodplain protection regulations limit land-disturbing and fill activities within floodplains, protecting and preserving their water quality and flood control functions.
- The City of Concord has developed and approved the use of a Stormwater Technical Standards Manual.

These efforts to address growth-related impacts were reviewed and accepted by agencies within DENR during EIS review.

The IBT will cause additional wastewater discharge to the Rocky River Basin; however, the NPDES permitted capacity is sufficient to accommodate almost all of the IBT flows. The NPDES permit is written to protect water quality standards.

Additional discharges associated with the IBT were considered as inputs to the Yadkin Project Operations OASIS model described in Finding Number 2. Modeling results did not show an appreciable impact due to the additional wastewater flows associated with the IBT.

Several of the facilities that could be used to transfer and treat water to implement the proposed IBT are already substantially complete. There would therefore be only minor detrimental effects expected in the short term associated with expansion of these facilities. Though improvements to these facilities will eventually be required, the improvements are expected to represent minor construction, and would follow established rights-of-way

Based on the record, the Commission finds that there would be secondary and cumulative impacts associated with the proposed interbasin transfer on the receiving basin as described in G.S. § 143-215I(f)(3). However, the implementation of the growth management measures adopted as part of the Unified Development Ordinance will be adequate to mitigate the impacts to a reasonable degree.

(4) Reasonable Alternatives to the Proposed Transfer

Four IBT alternatives and two non-IBT alternatives were considered in addition to the No Action Alternative (NAA). These alternatives are summarized as follows and the routes are shown in Figure 7.

- **Interbasin Transfer Alternatives**

    - **Alternative 1** would meet the entire water supply shortfall through transfers from the Catawba River Basin. This alternative would require the development of a water supply contract with Charlotte-Mecklenburg Utilities (CMU) for at least 10 MGD and up to 36 MGD MDD of finished water. A combination of finished water transferred through existing interconnections and transport of raw water from a new or existing intake on Lake Norman could also be used.

    - **Alternative 2** would meet the entire water supply shortfall through transfers from the Yadkin River Basin of 22 MGD ADD and up to 36 MGD MDD of water from Tuckertown Reservoir or Badin Lake. For this alternative, either raw water or finished water could be transferred.

    - **Alternative 3** would meet the entire water supply shortfall through transfers from the Yadkin River Basin of 22 MGD ADD and up to 36 MGD MDD of raw water from High Rock Lake. The water would be transferred from High Rock Lake and pumped through a new raw water main that would discharge into Lake Howell in Cabarrus County and Kannapolis Lake in Rowan County.

- The **Applicants' Preferred Alternative** is a combination of Alternatives 1 and 2, involving an IBT from both the Yadkin and the Catawba River Basins to the Rocky River Basin. This alternative would continue the use of the existing interconnections with Charlotte, Salisbury, and Albemarle to meet short-term increases in demands, and would allow Concord and Kannapolis the opportunity to expand the amount of finished water obtained from Charlotte, Salisbury, and/or Albemarle or to obtain raw water from Lake Norman in the Catawba River Basin. The Applicants' Preferred Alternative IBT certificate would be for up to 26 MGD MDD from the Catawba River Basin (if the Yadkin transfer were approved) and up to 10 MGD MDD from the Yadkin-Pee Dee River Basin. The total IBT from both sources would not exceed an MDD of 36 MGD or an ADD of 22 MGD.

- **Non-Interbasin Transfer Alternatives**

  - Two non-IBT alternatives that use flows in the Rocky River augmented by wastewater treatment plant (WWTP) discharges were also considered.

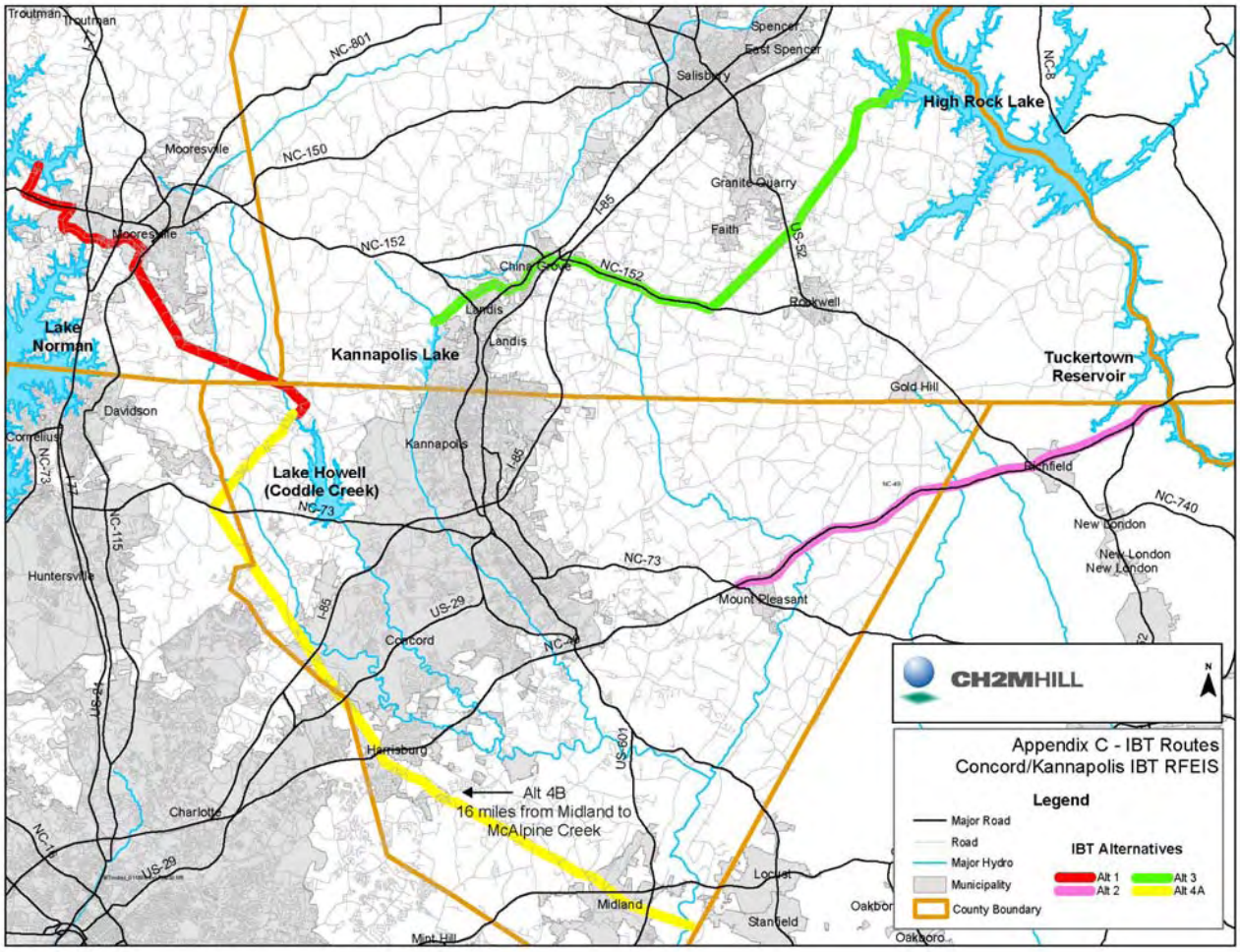
    - In **Alternative 4A**, an ADD of 22 MGD would be withdrawn near Midland from the Rocky River approximately 10 miles downstream of the Rocky River Regional WWTP and raw water would be pumped up to Lake Howell.

    - **Alternative 4B** would transfer up to an ADD of 22 MGD of raw water from Lake Norman to Lake Howell and simultaneously withdraw up to an ADD of 22 MGD from the Rocky River near Midland and pump it to McAlpine Creek near Mint Hill in the Catawba River Basin to mitigate the IBT.

These alternatives were not found to be feasible because of several factors. In particular, the high proportion of flow in the Rocky River from WWTP discharges significantly reduces its potential use as a water supply under the North Carolina water supply protection regulatory framework.

Alternatives that involve eliminating or reducing the IBT by returning WWTP effluent discharges to the source basins were considered but were found to be impractical because the discharges would need to be to very small streams or directly to reservoirs used as public water supply.

Figure 7 - IBT Routes



In addition to the alternatives considered in the EIS, the Hearing Officers requested staff to consider a variation on the applicants' preferred alternative, an IBT from both the Yadkin and the Catawba River Basins to the Rocky River Basin. This alternative would continue the use of existing and expanded interconnections with Charlotte, Salisbury, and Albemarle to meet demands. The Hearing Officers' Alternative IBT would be for up to 10 MGD MDD from the Catawba River Basin and up to 10 MGD MDD from the Yadkin-Pee Dee River Basin. The summary of the staff analysis is in attachment B. This alternative meets the projected 2035 deficit, after removing the 80% planning factor, as shown in Table 2 - Summary of 2035 Water Supply Deficit.

Based on the record, the Commission finds that reasonable alternatives to the proposed IBT were considered. Based on a review of the project information, the Hearing Officers have selected the recommended alternative as the most feasible means of meeting the petitioners' water supply needs while minimizing detrimental environmental impacts.

(5) Applicants' Use of Impoundment Storage Capacity

This criterion is not applicable, as the petitioners do not own or operate the impoundments involved in the proposed transfer.

(6) Purposes of Any US Army Corps of Engineers Multi-Purpose Reservoir Relevant to the Petition

Catawba

This criterion is not applicable, because there are no US Army Corps of Engineers reservoirs in the basin.

Yadkin

The US Army Corps of Engineers operates W. Kerr Scott reservoir in the headwaters of the basin. This criterion is not applicable because the petitioners are proposing to use storage in an Alcoa Power Generating, Inc. reservoir and the operation of Kerr Scott reservoir is unaffected by the IBT.

(7) Any Other Facts or Circumstances that are Reasonably Necessary to Carry Out the Law

During the public review period, a number of comments stated that the environmental analysis on which the IBT petition is based is flawed, because the hydrologic modeling results are greatly affected during drought by assumptions related to the LIPs. The LIPs include both voluntary and mandatory water conservation measures both for hydropower and required releases and for water users. The hydrologic models include assumptions about the expected levels of water withdrawal reduction during the various stages of drought. Therefore, the concerns are the uncertainty in the enforceability of the LIP on water users other than the power companies and the uncertainty about whether FERC will make the LIP a part of the power companies' new FERC licenses.

Two factors may reduce the uncertainty surrounding the enforceability of the LIPs. First, water users which have signed the Catawba-Wateree Comprehensive Relicensing Agreement are agreeing to follow the LIP protocols. The second factor is the 401 water quality certification for the hydropower projects in both source basins. FERC is required to include North Carolina's 401 certification requirements in the applicant's license. The Division of Water Quality (DWQ) is the agency responsible for 401 certifications. In past similar cases, DWQ has required an LIP as a condition for certification. DWR intends to request that DWQ require the LIPs as a condition to the 401 water quality certification in both the Catawba and Yadkin basins.

In addition to the concerns surrounding the LIPs, there were concerns regarding the possibility that the FERC final license requirements could turn out to be significantly different from the assumptions used in the impact analysis. In the case of the Catawba-Wateree process, the impact analysis was consistent with the relicensing agreement signed by 85 percent of the stakeholders involved in the process and with Duke Energy's FERC application. Nevertheless, some uncertainty about the eventual outcome of hydropower relicensing is being recognized by applying conditions to the IBT certificate that will allow the license to be reopened if the license conditions are substantially different from those that are anticipated.

Several comments were received indicating concern that the Catawba River was supporting a heavy demand for water and may be approaching overuse. There are existing state laws and regulations to address that condition. If the aggregate water use in either the Catawba or Yadkin River basins, including transfers out to the basin, reaches the point that water users are facing water shortages not associated with hydrological drought conditions, or if there is a potential of impairing the renewal or replenishment of the water resources of the basin, the Commission has the authority under the Water Use Act of 1967 (G.S. 143-215.11 et seq.) to designate a capacity use area to provide coordination and limited regulation of water resources in the basin. Designation of a capacity use area requires development of an administrative rule delineating the boundaries of the capacity use area and requiring all water users over 100,000 gallons per day to obtain a permit. The administrative rule and permits can regulate and modify all withdrawals, including interbasin transfers.

The Commission finds that to protect the source basin during drought conditions and as authorized by G.S. § 143-215.22I(h), a drought management plan is required. As part of the plan, the cities of Concord and Kannapolis and the communities to which they supply water will follow all applicable water conservation rules included in the Low Inflow Protocols for both the Catawba and Yadkin River basins. The drought management plan will describe the actions that the cities of Concord and Kannapolis will take to protect the Catawba and Yadkin River basins during drought conditions.

The Commission finds that if the Revised Final Environmental Impact Statement or the analysis on which it is based turns out to be substantially in error, or if new information becomes available indicating that the environmental impacts associated with the transfer are substantially different from the projected impacts that form the basis for the Findings of Fact associated with this certificate, the Commission reserves the right to reopen the certificate to modify it as needed to protect the resources of the Catawba and Yadkin river basins, under the terms of G.S. § 143-215.22I.

The Commission finds that the recommended certificate conditions are based on specific anticipated FERC license conditions for the licensees in the Catawba and Yadkin river basins which have been developed during several years of stakeholder consultations, but which will not be finally determined by FERC until 2008; the Commission directs the Division of Water Resources to provide a report to the Commission that compares anticipated FERC license conditions with the new FERC license for Projects Nos. 2232, 2206, and 2197; and that if the final FERC decisions are substantially different from the anticipated conditions, such as changes to minimum flow requirements or low inflow protocols, the Commission reserves the right to reopen the certificate to modify it as needed to protect the resources of the Catawba and Yadkin river basins.

The Commission determines that if at some future time, total water use in either the Catawba or the Yadkin basin, including transfers out of the basin, reaches the point that water users in the basin are facing water shortages or if there is a potential of depleting the water resources of the basin, the EMC may investigate adopting a Capacity Use Area for the entire basin in North Carolina and instituting an administrative rule to regulate the use of water resources. The rule would be designed to provide equitable access to water supplies and to protect the resource. Any transfers of water out of the basin would be subject to control and adjustment by the provisions of the Capacity Use Area rule, along with all the water uses within the basin.

The Commission finds that the applicants' Compliance and Monitoring Plan as included in the petition is not adequate to monitor the proposed water transfer. The monitoring plan needs to be based on actual metered water usage.

Decision

Based on the record and the recommendation of the Hearing Officers, the Commission, on January 10, 2007 by duly made motions, concludes by a preponderance of the evidence based upon the Findings of Fact stated above that (1) the benefits of the proposed transfer outweigh the detriments of the transfer, and (2) the detriments of the proposed transfer will be mitigated to a reasonable degree under the conditions of this Certificate. Therefore, and by duly made motions, the Commission grants in part the petition of the cities of Concord and Kannapolis ("Cities") to transfer water from the Catawba and Yadkin River basins to the Rocky River basin. The permitted transfer amount shall not exceed a maximum of 10 million gallons on any calendar day from the Catawba River basin to the Rocky River basin and shall not exceed a maximum of 10 million gallons on any calendar day from the Yadkin River basin to the Rocky River basin. These transfer amounts are nonexclusive of each other. This certificate is effective immediately.

The certificate is subject to the conditions below, which are imposed under the authority of G.S. § 143-215.22I. The Cities shall comply with any plan that is approved pursuant to this Certificate and any approved amendments to such plan. A violation of any plan approved pursuant to this Certificate will be considered a violation of the terms and conditions of this Certificate.

1. 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 requirements 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 to ensure continued compliance with G.S. ch. 143, art. 21, part 2A.
2. The Cities shall implement drought management measures that become more stringent as drought conditions increase in severity. The Cities shall implement measures corresponding to the most severe level of drought existing in either the Catawba or Yadkin River basins. Prior to transferring any water under this Certificate, the Cities shall submit a plan to the Division of Water Resources ("Division"), for the Division's approval, for implementing this condition. The plan shall include a demonstration that each of the Cities has legal authority and adequate resources to implement the drought management measures specified in this condition. The Cities shall not transfer any water to any other jurisdiction (regardless of the origin of that water) unless that jurisdiction agrees to be bound by this condition in full. The drought management measures shall be at least as stringent as the measures in Attachment A to this Certificate, which is incorporated herein:

3. If the Division determines that the Cities are no longer cooperating with each other for the implementation of this Certificate, the Division may, in consultation with the Cities and considering the proportionate 2035 projected needs of each of the Cities, allocate the certified transfer amount between the Cities. Within three months of any such allocation, each of the Cities shall submit a plan to the Division, for the Division's approval, which shall assure that the Certificate amounts will not be exceeded.

4. Within four months of the effective date of this Certificate, the Cities shall develop and submit to the Division for the Division's approval a compliance and monitoring plan for reporting at least annually: (a) maximum daily transfer amounts based on data derived from water meters, (b) a demonstration of compliance with certificate conditions, and (c) drought management activities.

5. If the Commission determines that the record on which this Certificate is based, including the revised Final Environmental Impact Statement ("FEIS") or the analysis on which the FEIS is based, is substantially in error or if new information becomes available, that clearly demonstrates that any Finding of Fact (including those regarding environmental, hydrologic, or water use impacts) pursuant to G.S. § 143-215.22I(f) was not or is no longer supported or is materially incomplete, the Commission may reopen and modify this Certificate to ensure continued compliance with G.S. ch. 143, art. 21, part 2A.

6. No later than twenty years from the date of this Certificate, and then at twenty year intervals, the Cities shall, with direction from the Division and after solicitation of input from and consultation with interested stakeholders (notice to stakeholders shall be distributed in accordance with G.S. § 143-215.22I(d)(2)-(3)), submit a written report to the Commission (a) summarizing transfers for the previous twenty years; (b) discussing any new or revised facts that suggest that the record was substantially in error or that the environmental impacts associated with activities pursuant to this Certificate are substantially different from those projected impacts that formed the basis for the findings of fact and this Certificate; (c) summarizing all actions taken to address actual or potential drought conditions; (d) recommending any changes to this Certificate (including under Condition 5) or any plans pursuant to this Certificate that may be necessary to assure compliance with G.S. ch. 143, art. 21, part 2A; (e) detailing consultation with interested stakeholders; and (f) certifying compliance with this Certificate. The report shall be signed by an officer of each city that is responsible for compliance with this Certificate. The Cities shall make the report available to all interested stakeholders.
7. This Certificate does not exempt the Cities or any other entity from compliance with any other requirements of law. For example, if a Capacity Use Area is designated under the provisions of the Water Use Act of 1967, G.S. § 143-215.11 et seq. in the Catawba, Yadkin or Rocky river basins the Cities and other entities shall comply with any implementing rules and the Commission may reopen and modify this Certificate to ensure compliance.

NOTICE: The holders of this certificate are jointly and severally responsible for compliance with the terms, conditions and requirements stated herein, and are therefore jointly and severally liable for all penalties assessed to enforce such terms, conditions and requirements as provided in G.S. §143-215.6A.

This is the 25th day of January, 2007.

David H. Moreau, Chairman

Attachment A – Minimum Criteria for Drought Management Plan

General Statute § 143-215.22I(h) states "The certificate shall include a drought management plan that specifies how the transfer shall be managed to protect the source river basin during drought conditions." At a minimum, the following conditions shall be included in the drought management plan submitted to the Division.

Implementation of the Cities' drought management plan shall, at a minimum, be linked to declarations of levels of drought severity pursuant to (a) the protocol established in the Low Inflow Protocol ("LIP") that is included in any FERC license (including via a certificate under 33 U.S.C. § 1341) for Project Nos. 2232, 2206, or 2197 or (b) the drought classifications applied by the North Carolina Drought Management Advisory Council (NC DMAC), whichever is more stringent.

The Cities' drought management measures shall be at least as stringent as the following measures:

Stage 1 Actions - (NC DMAC Moderate Drought) The goal is to reduce water usage by 3-5% (or more) from the amount that would otherwise be expected. The Cities (and other jurisdictions) shall complete at a minimum the following activities within 14 days after the Stage 1or Moderate Drought declaration:

a. Notify their water customers and employees of the low inflow condition through public outreach and communication efforts.
b. Request that their water customers and employees implement voluntary water use restrictions, in accordance with their drought response plans.
c. Provide a status update to the appropriate drought management advisory group and the Division of Water Resources on actual water withdrawal trends and plans for moving to mandatory restrictions, if required.

Stage 2 Actions - (NC DMAC Severe Drought) The goal is to reduce water usage by 5-10% (or more) from the amount that would otherwise be expected. The Cities (and other jurisdictions) shall complete at a minimum the following activities within 14 days after the Stage 2 or Severe Drought declaration:

a. Notify their water customers and employees of the continued low inflow condition and movement to mandatory water use restrictions through public outreach and communication efforts.
b. Require that their water customers and employees implement mandatory water use restrictions, in accordance with their drought response plans.
c. Enforce mandatory water use restrictions through the assessment of penalties.
d. Provide a status update to the appropriate drought management advisory group and the Division of Water Resources on actual water withdrawal trends and plans for moving to increased water restrictions, if required.

Stage 3 Actions - (NC DMAC Extreme Drought) The goal is to reduce water usage by 10-20% (or more) from the amount that would otherwise be expected. The Cities (and other jurisdictions) shall complete at a minimum the following activities within 14 days after the Stage 3 or Extreme Drought declaration:

a. Notify their water customers and employees of the continued low inflow condition and movement to mandatory water use restrictions through public outreach and communication efforts.
b. Require that their water customers and employees implement increased mandatory water use restrictions, in accordance with their drought response plans.
c. Enforce mandatory water use restrictions through the assessment of penalties.
d. Encourage industrial/manufacturing process changes that reduce water consumption.
e. Provide a status update to the appropriate drought management advisory group and the Division of Water Resources on actual water withdrawal trends and plans for moving to increased water restrictions, if required.

Stage 4 Actions - (NC DMAC Exceptional Drought) The goal is to reduce water usage by 10-20% (or more) from the amount that would otherwise be expected. The Cities (and other jurisdictions) shall complete at a minimum the following activities within 14 days after the Stage 4 or Exceptional Drought declaration:

a. Notify their water customers and employees of the continued low inflow condition and movement to emergency water use restrictions through public outreach and communication efforts.
b. Require that their water customers and employees implement emergency water use restrictions, in accordance with their drought response plans.
c. Enforce emergency water use restrictions through the assessment of penalties.
d. Restrict all outdoor water use.
e. Prioritize and meet with their commercial and industrial large water customers to discuss strategies for water reduction measures, including development of an activity schedule and contingency plans.
f. Provide a status update to the appropriate drought management advisory group and the Division of Water Resources on actual water withdrawal trends and prepare to implement emergency plans to respond to water outages, if required.

Attachment B

North Carolina Department of Environment and Natural Resources
Division of Water Resources

Michael F. Easley, Governor

William G. Ross Jr., Secretary
John Morris, Director

January 24, 2007

MEMORANDUM

To: Members of the Environmental Management Commission

From: John Morris

Subject: **Request by the Commission to Review the Final FERC License Conditions and Effects on the Concord and Kannapolis Interbasin Transfer Certificate**

At the Commission's January 10, 2007 meeting, part of the motion to approve the Concord and Kannapolis Interbasin Transfer Certificate included a requirement for the Division of Water Resources to provide a report detailing the differences between the anticipated FERC license conditions, which were a part of the impact analysis, and the final new FERC licenses. The North Carolina Attorney General's Office has advised the Division that it is not appropriate to add a condition to the certificate for which the Cities are not responsible.

The Division, as we agreed at the January 10th meeting, will provide to the Commission a report detailing the differences between anticipated FERC license conditions and the finalized FERC licenses in both the Catawba and Yadkin River Basins (Projects Nos. 2232, 2206, and 2197), following FERC issuance of the new licenses and the closure of all rehearing and administrative challenge periods.

The Division will work with the power companies and other appropriate parties to summarize the differences and show how they will potentially change the impacts of the recently approved transfer. Items to be included are any changes in the low inflow protocol, minimum releases, operational constraints that impact lake levels, and other conditions that impact the use of the projects for water supply.

We look forward to working with the Commission on this important water management issue.

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