Overview of EIS for Concord and Kannapolis Interbasin Transfer Request

May 10, 2006

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Overview

- Water demand projections and available supply
- IBT request
- Water supply/IBT alternatives
- Agency review issues
- Public review issues

Water Demand Projections and Available Supply Analysis

Projections background

- Water demands based on Water and Wastewater Master Planning – 2000-2002
- Projections were re-evaluated for Final EIS
  - *Reflect use changes after drought*
  - *Consider changes to industrial demands*
  - *Compare population projections with other sources*

Revised Demand Projections

TABLE 1-6
Current and Projected Water System Demands for the Water Service Areas
Concord/Kannapolis IBT Environmental Impact Statement

	2000		2010		2020		2035		2050	
Service Area	**ADD**	**MDD**	**ADD**	**MDD**	**ADD**	**MDD**	**ADD**	**MDD**	**ADD**	**MDD**
Concord/Harrisburg	10.7	17.1	14.8	24.9	19.8	33.0	25.6	42.3	32.3	53.3
Mt. Pleasant	0.3	0.45	0.4	0.7	0.6	0.9	0.8	1.3	1.0	1.7
Kannapolis	8.6	11.8	11.6	16.6	14.0	20.4	16.0	22.9	18.7	27.6
Combined Total	19.6	29.3	26.75	42.2	34.3	54.4	42.5	66.5	52.0	82.6

Sources: Cabarrus County Water and Wastewater System Master Plan. December 2002; Cities of Concord and Kannapolis

Available Supply Background

- Four existing reservoirs
  - *Lake Concord*
  - *Lake Fisher*
  - *Kannapolis Lake*
  - *Lake Howell (Coddle Creek Reservoir)*
- Additional supply
  - *Second Creek Intake (GF IBT of 6 mgd)*
  - *Emergency interconnections – CMU and Salisbury*

Safe Yield Determinations

TABLE 1-2
Safe Yield Analysis for Existing Water Supply Reservoirs in Cabarrus County
Concord/Kannapolis IBT Environmental Impact Statement

Water Source	Drainage Area (mi^2)	Reservoir Size (acres)	50-Year Safe Yield (MGD)	100-Year Safe Yield (MGD)
Lake Howell	47.0	1,285.6	16.20	7.05
Lake Fisher	18.7	230.5	5.15	3.00
Lake Concord	4.7	83.7	1.20	0.70
Kannapolis Lake	10.6	269.8	8.50	5.70
Second Creek[a]	55.6	-	-	-
Total Combined Safe Yield			31.05	16.45

Source: Black & Veatch, 2003.

[a]Withdrawals from Second Creek are transferred to Kannapolis Lake for storage and included in Kannapolis Lake safe yield analysis.

Water Supply Shortfall

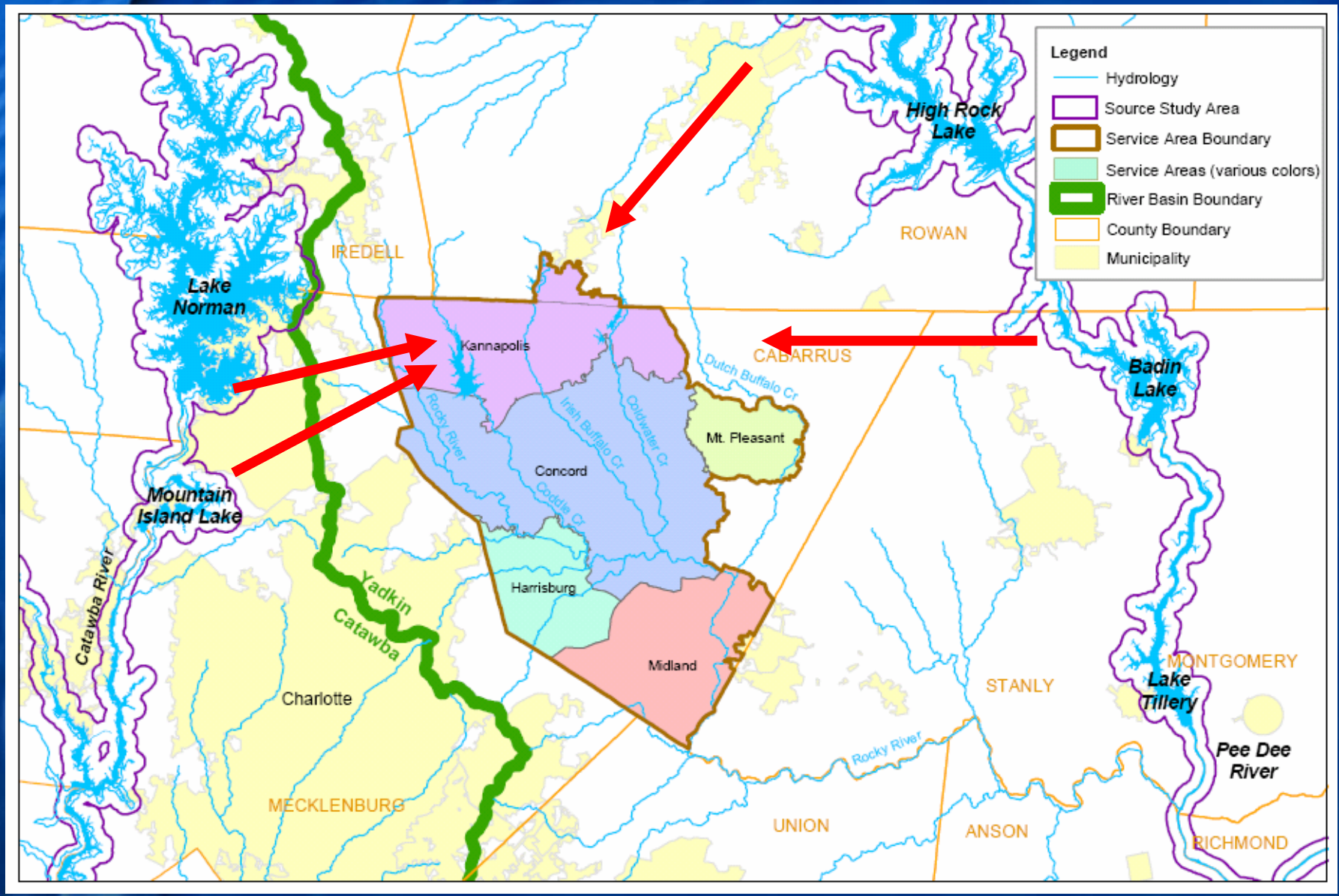
- 50-year projections
  - *ADD in 2050 of 52 MGD*
  - *Recommended available supply of 65 mgd*
  - *Water supply shortfall of 34 mgd*
- IBT requests based on 30 year Planning Period
  - *ADD in 2035 of 43 mgd*
  - *Recommended available supply of 53 mgd*
  - *Water supply shortfall of 22 mgd*

IBT Request

Summary of IBT Request

- IBT request is to meet a projected 22 mgd average daily demand (ADD) shortfall in water supply by the year 2035
- The preferred approach involves working with neighbors on cooperative agreements for water
  - *Yadkin River transfer of 10 mgd max. day demand (MDD)*
  - *Catawba River transfer of 36 mgd MDD*
  - *Less water from the Catawba is acceptable if Yadkin River transfer is granted*
  - *The 22 mgd referred to above is based on average daily demands (ADD) and the 36 mgd is based on maximum daily demand (MDD)*

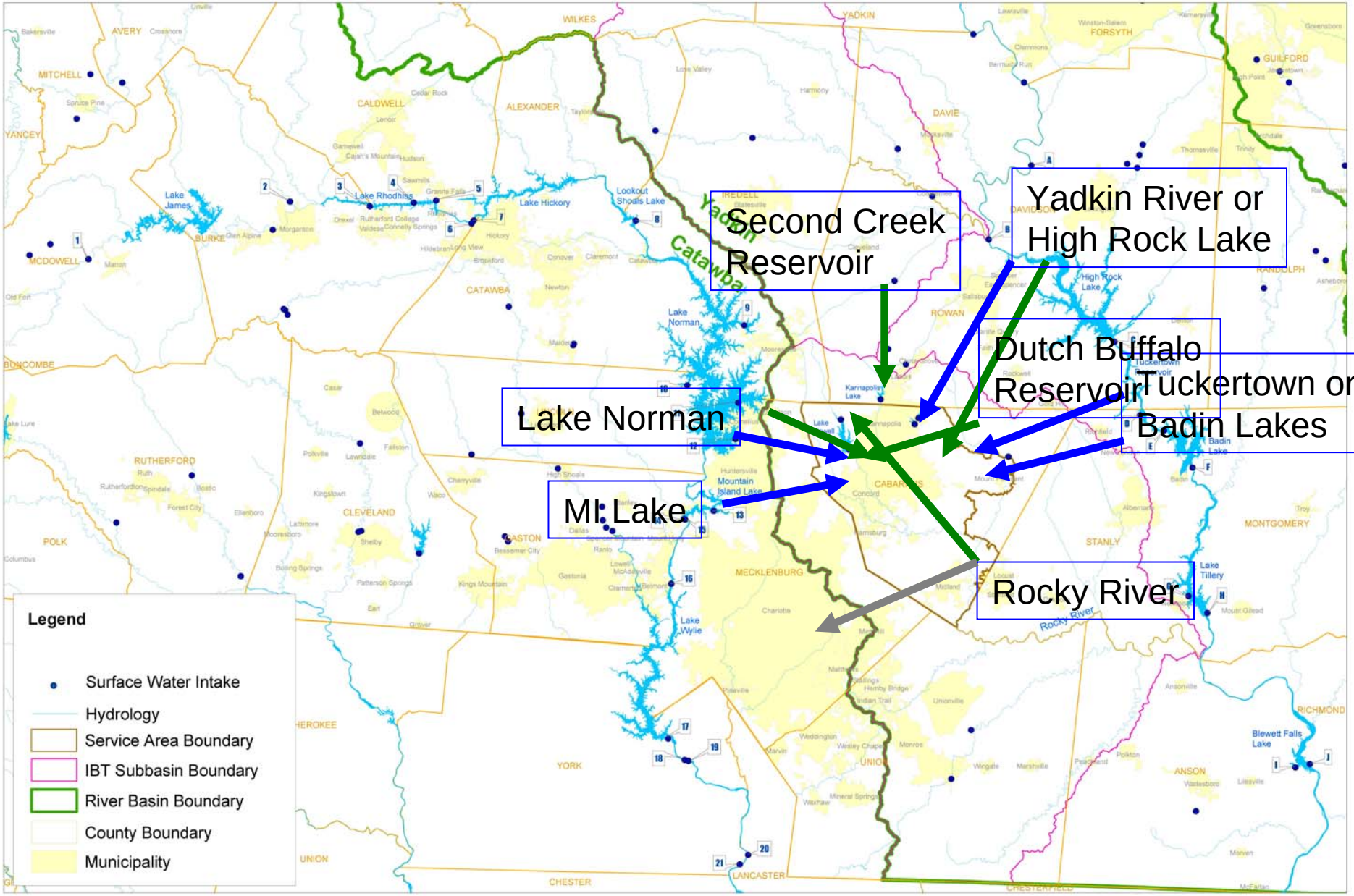
Illustration of Preferred Alternative



Water Supply IBT Alternatives

Various Alternatives Considered

- Catawba River Basin
- Yadkin River Basin
- South Yadkin Subbasin
  - *Second Creek Reservoir*
- Rocky River Subbasin
  - *Dutch Buffalo Creek Reservoir*
  - *Rocky River*
- Water return



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Existing Raw Water Sources

Concord/Kannapolis IBT Environmental Impact Statement

Agency Issues

DENR Agency issues focused on growth-related impacts

- Wildlife Resources Commission and Natural Heritage Program
  - *Secondary and Cumulative Impacts*
    - *Need for stream buffers*
    - *Stormwater management*
    - *Low levels of imperviousness*
    - *Protected species concerns*
- Division of Water Quality
  - *Required expansion of WSACC WWTP?*
  - *Potential downstream nutrient impacts*

Mitigation and information addressing concerns

- Secondary and Cumulative Impacts
  - *Stream buffers*
  - *Phase 2 Stormwater*
  - *Unified Development Ordinance for all areas served by water*
- Water quality concerns
  - *WWTP expansion not until end of 30 year planning period*
    - *Expansion would trigger more stringent limits*
  - *Nutrient issues in Blewett Falls Reservoir being evaluated through basinwide planning process*

Public Issues

Wide Range of Public Issues – during and after comment period

- Inadequate public notice
- Excessive water request
  - *Demand projections*
  - *Cities are poor water stewards*
- Water supply alternatives
  - *Use of Rocky River avoids IBT*
- Incompleteness of the EIS
  - *Misunderstanding of IBT approval versus an infrastructure project*
- Lake impacts
  - *Relationship to FERC Process*
  - *Lake level/outflow impacts*

EIS additions for excessive water request issues

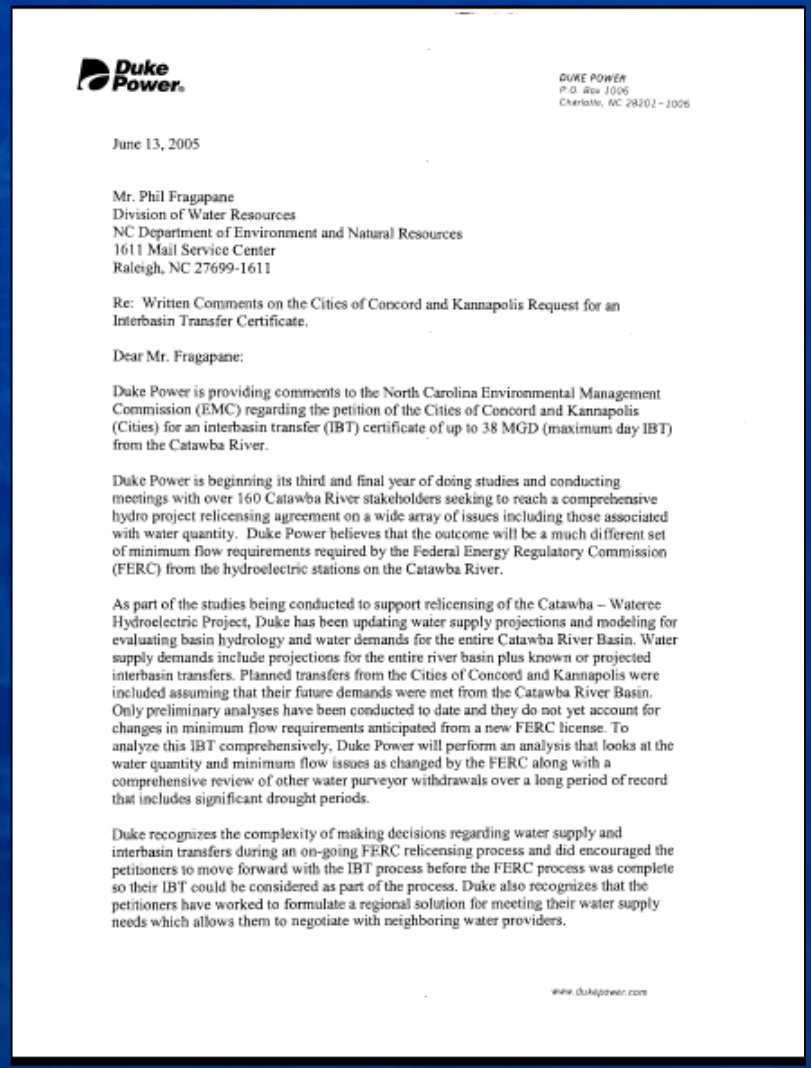
- Demand projections
  - *Consistent with projections for Catawba Water Supply Planning by Duke Stakeholders*
  - *Updated – as discussed*
- Conservation programs
  - *Conservation rates adopted in 2001*
  - *Multiple levels of control*
    - *Mandatory conservation (no outdoor use)*
  - *Aggressive enforcement*
  - *Met Governor's conservation goal over 1 year prior to his request*
  - *2001 to 2003 actions had lasting impacts on water use*
  - *Reservoir operations – current Low Inflow Protocol keys local actions*

EIS clarifications for Rocky River as a Water Supply

- NC Public Water Supply (and other DENR agencies) did not support Rocky River as a water supply alternative
- Rocky River has over 50 mgd of permitted wastewater discharges upstream of potential intake
  - *Rocky River currently not classified by NC EMC as a water supply (cannot be used without reclassification)*
  - *Treated wastewater makes up much of the flow*

Relationship to FERC Relicensing

- Duke and Alcoa contacted early in process
  - *Encouraged consideration of IBT prior to FERC relicensing*
- Duke's CHEOPS Model
  - *Early version for draft EIS*
  - *Updated for Final EIS*
- Alcoa's OASIS Model
  - *Used for Final EIS*
- Duke supported IBT request
  - *Requested condition limiting request to 10 mgd until Fall 2006*
- Alcoa
  - *Current water supply contracts include charges for lost hydropower*



Duke Power

DUKE POWER
P.O. Box 1006
Charlotte, NC 28201-1006

June 13, 2005

Mr. Phil Fragapane
Division of Water Resources
NC Department of Environment and Natural Resources
1611 Mail Service Center
Raleigh, NC 27699-1611

Re: Written Comments on the Cities of Concord and Kannapolis Request for an Interbasin Transfer Certificate.

Dear Mr. Fragapane:

Duke Power is providing comments to the North Carolina Environmental Management Commission (EMC) regarding the petition of the Cities of Concord and Kannapolis (Cities) for an interbasin transfer (IBT) certificate of up to 38 MGD (maximum day IBT) from the Catawba River.

Duke Power is beginning its third and final year of doing studies and conducting meetings with over 160 Catawba River stakeholders seeking to reach a comprehensive hydro project relicensing agreement on a wide array of issues including those associated with water quantity. Duke Power believes that the outcome will be a much different set of minimum flow requirements required by the Federal Energy Regulatory Commission (FERC) from the hydroelectric stations on the Catawba River.

As part of the studies being conducted to support relicensing of the Catawba – Wateree Hydroelectric Project, Duke has been updating water supply projections and modeling for evaluating basin hydrology and water demands for the entire Catawba River Basin. Water supply demands include projections for the entire river basin plus known or projected interbasin transfers. Planned transfers from the Cities of Concord and Kannapolis were included assuming that their future demands were met from the Catawba River Basin. Only preliminary analyses have been conducted to date and they do not yet account for changes in minimum flow requirements anticipated from a new FERC license. To analyze this IBT comprehensively, Duke Power will perform an analysis that looks at the water quantity and minimum flow issues as changed by the FERC along with a comprehensive review of other water purveyor withdrawals over a long period of record that includes significant drought periods.

Duke recognizes the complexity of making decisions regarding water supply and interbasin transfers during an on-going FERC relicensing process and did encouraged the petitioners to move forward with the IBT process before the FERC process was complete so their IBT could be considered as part of the process. Duke also recognizes that the petitioners have worked to formulate a regional solution for meeting their water supply needs which allows them to negotiate with neighboring water providers.

www.dukepower.com

Overview

- Water demand projections and available supply
- IBT request
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- Agency review Issues
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Additional Slides for Q&A

Catawba-Wateree Project Reservoirs

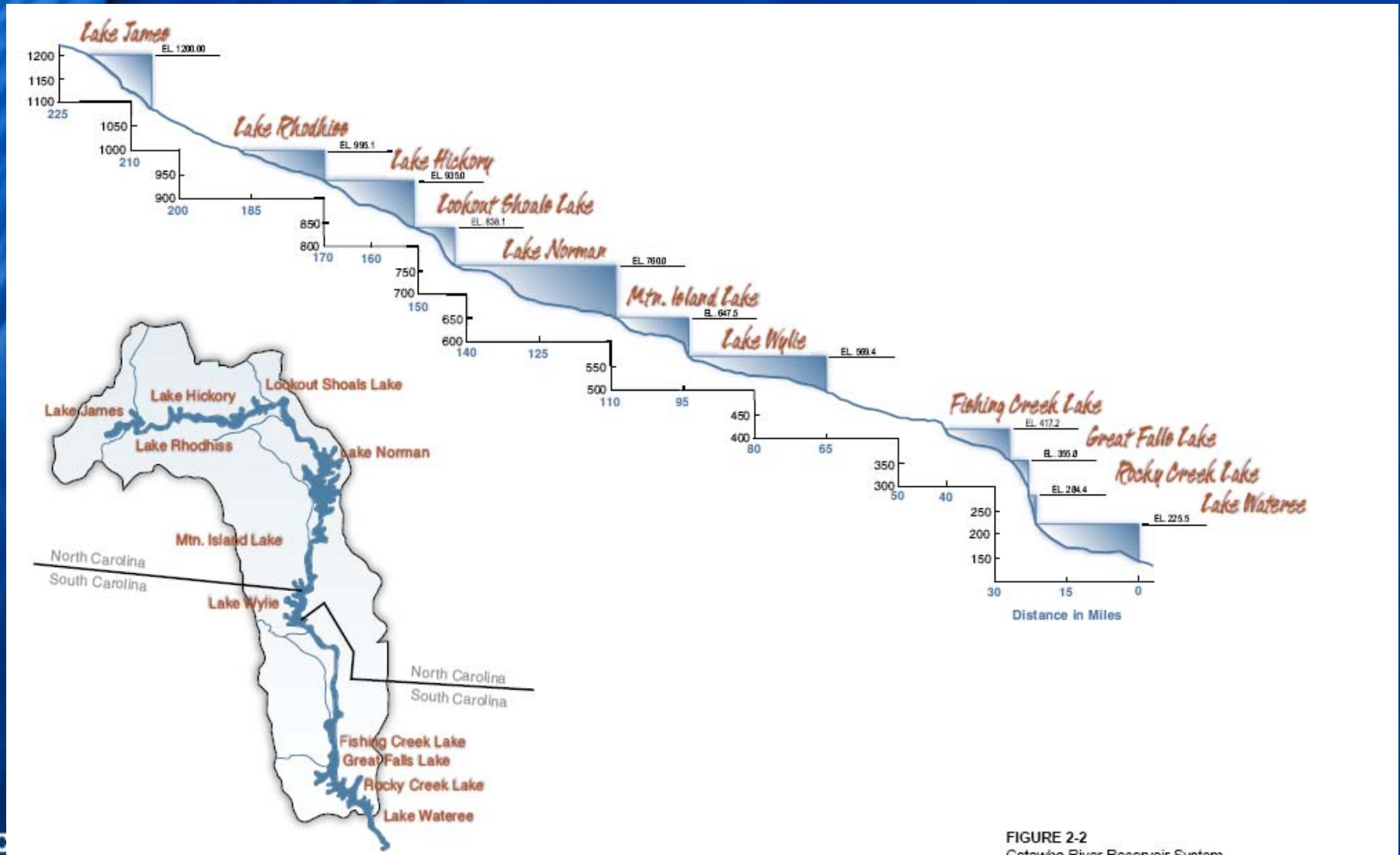
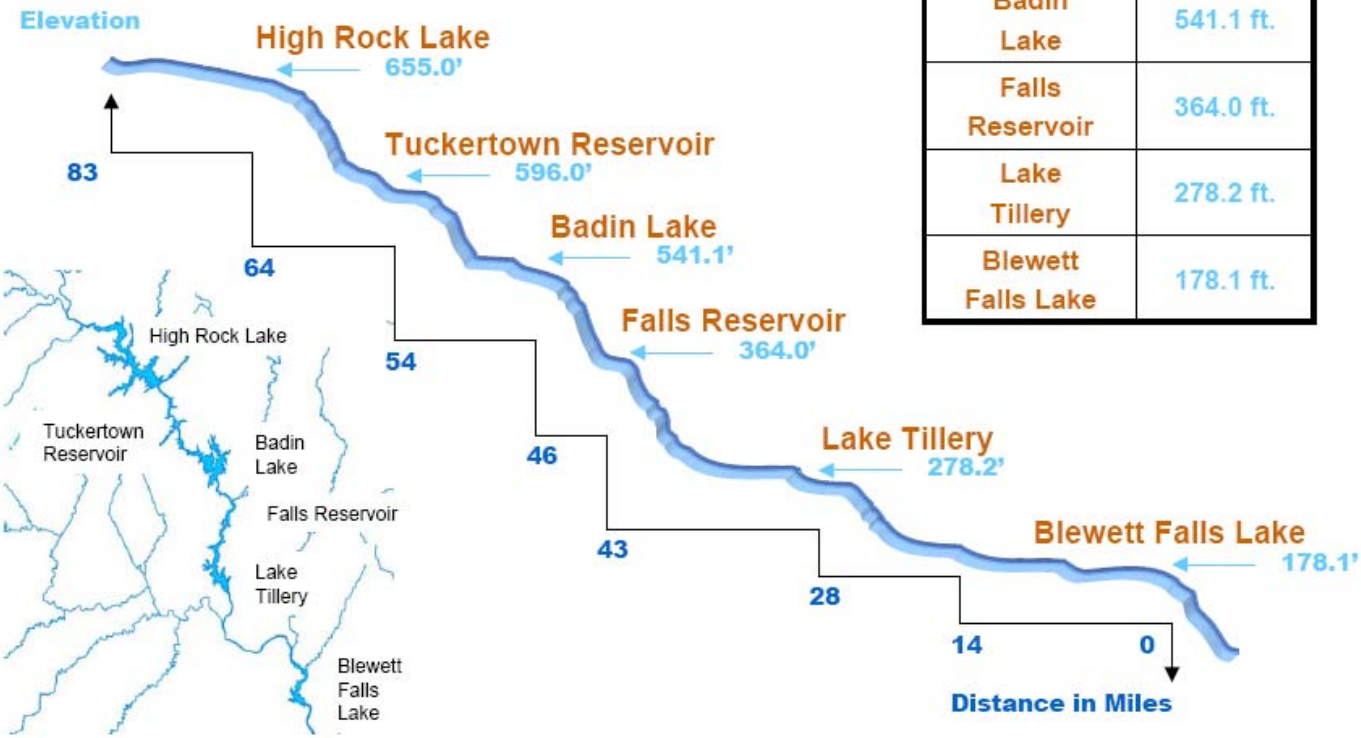


FIGURE 2-2
Catawba River Reservoir System
Concord/Kannapolis IBT Environmental Impact Statement

Yadkin River Reservoirs Regulated by FERC

FIGURE 2-3
Yadkin River Reservoirs managed by Alcoa and Progress Energy
Concord/Kannapolis IBT Environmental Impact Statement

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.



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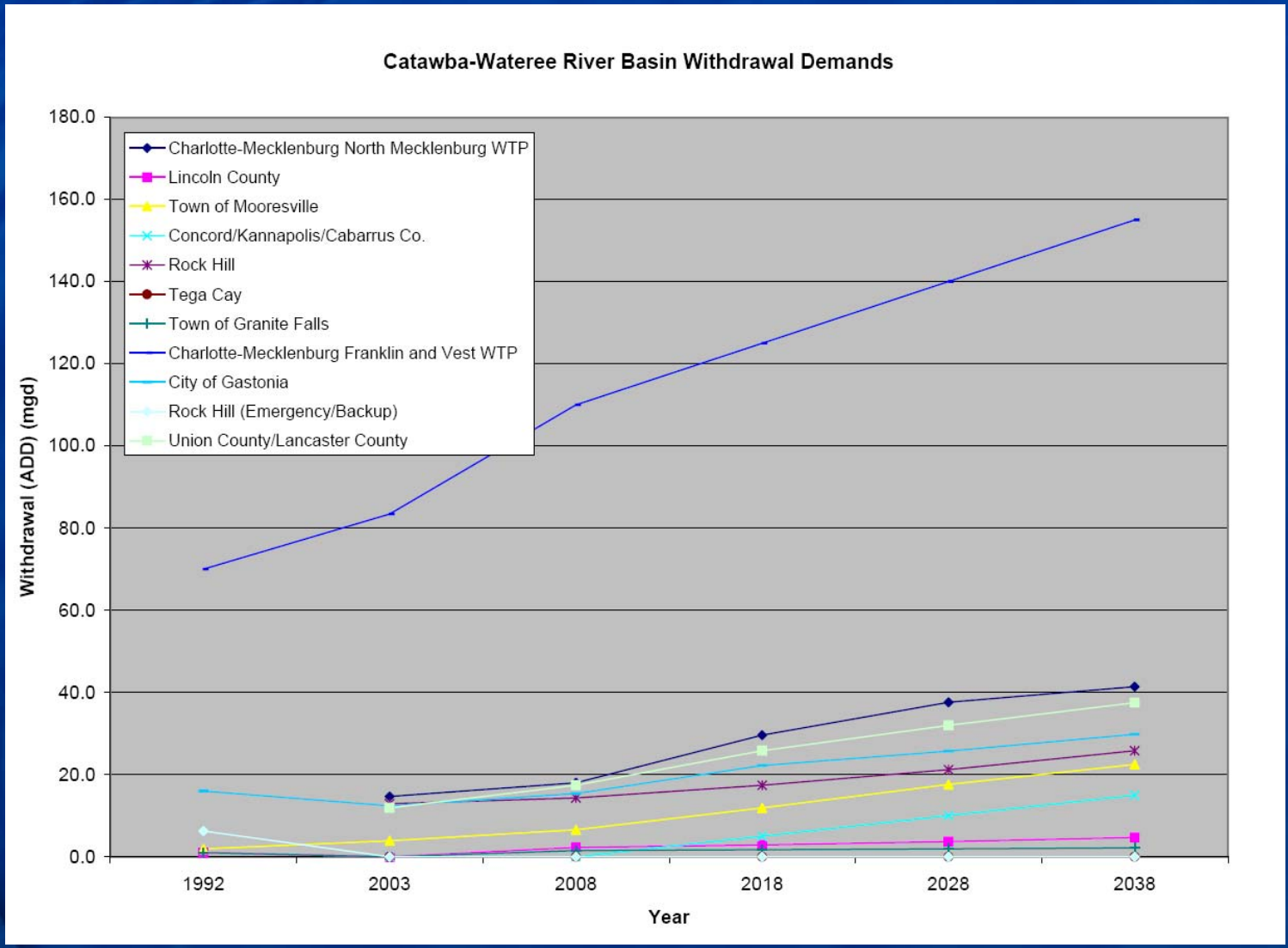
Catawba- Wateree Projected Demands – Public Water Supplies



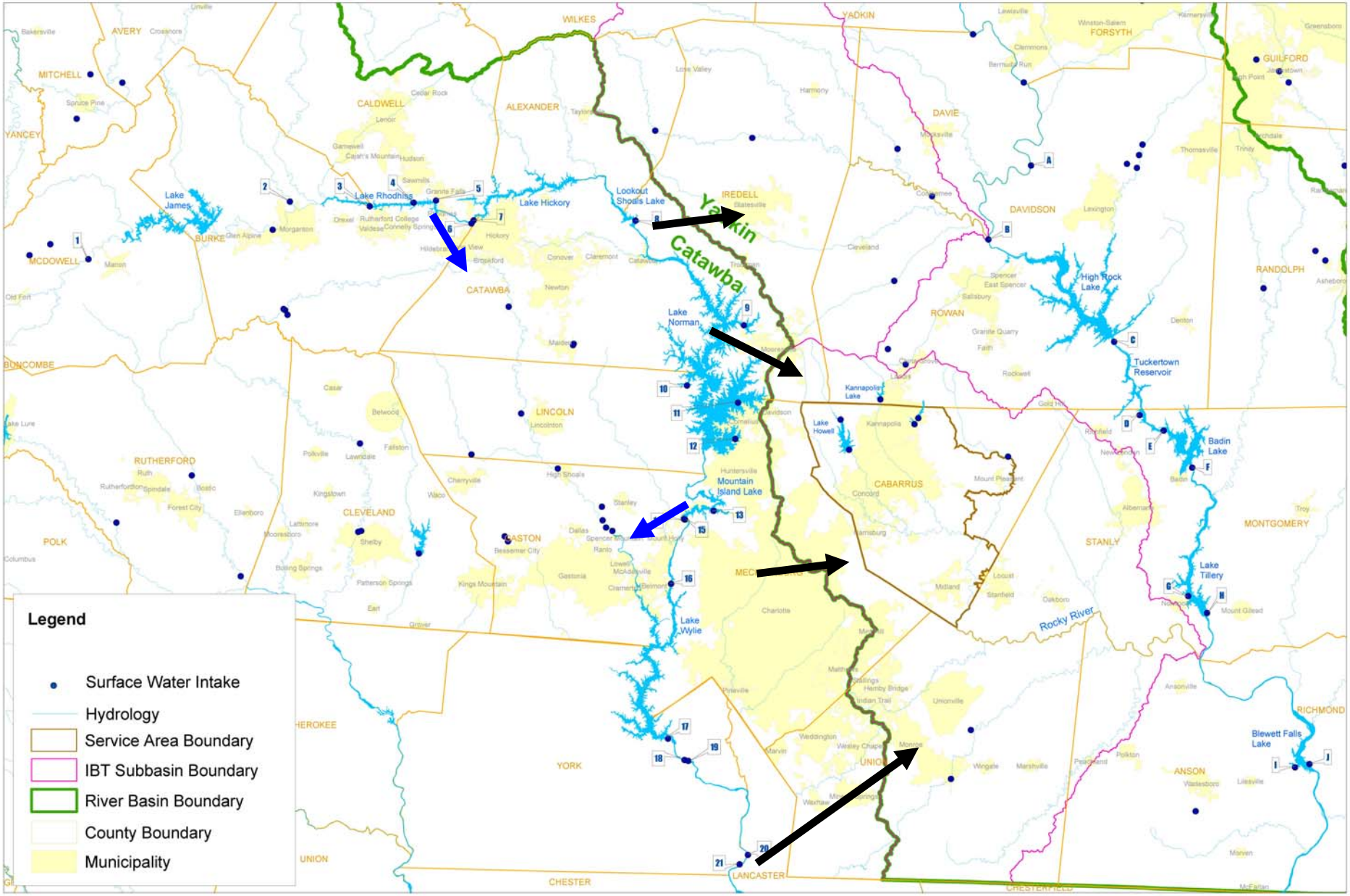
Projected IBTs from the Catawba River

Interbasin Transfers Out of the Catawba River Major Basin (average day mgd)

System	Certificate/ Grandfather Amount (max day)	2008	2018	2028	2038	2048	2058
Charlotte-Mecklenburg Utilities	33	11	14	16	17	19	20
Concord/Kannapolis	Potential 36	2	5	10	15	15	15
Caldwell County North	-	0.2	0.2	0.2	0.2	0.2	0.2
Mooresville	9.5	5	8	12	16	18	20
Statesville	-	5	6	7	8	9	9
Union County	5 now; Potential for 18	5	7	10	11	15	17

Interbasin Transfers from the Catawba River Basin to the South Fork Catawba River Basin

System	Certificate/ Grandfather Amount	2008	2018	2028	2038	2048	2058
Conover	-	0.4	0.5	0.7	0.9	1.1	1.5
Cramerton	-	0.3	0.4	0.5	0.5	0.5	0.6
Gastonia	To South Fork = 20	10	11	14	15	18	20
Hickory	19	6	8	10	11	12	13
Lowell	-	0.4	0.4	0.4	0.5	0.5	0.5
Stanley	-	0.3	0.3	0.3	0.3	0.3	0.3
McAdenville	-	0.7	0.8	0.8	0.8	0.9	0.9



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Existing Raw Water Sources

Concord/Kannapolis IBT Environmental Impact Statement

TABLE ES-2

Summary of Alternatives Analysis

Concord/Kannapolis IBT Environmental Impact Statement

Alternative with Water Source(s) Listed	Capital Cost Rating	Environmental Consequences Rating	SCI to Receiving Basin Rating	Public Health Issues related to Water Supply	Impacts to Hydroelectric Power Generation Rating
Alt. 1 - Lake Norman/Catawba	$86.5M	Low	Low	Low	Low
Alt. 2 – Tuckertown-Badin Lake/ Yadkin	$116.3M	Low	Low	Low	Low
Alt. 3 - High Rock Lake/Yadkin	$80.4M	Middle	Low	Low	Low
Preferred Alternative	$138.7M [a]	Low	Low	Low	Low
Alt. 4A – Indirect Reuse/Rocky River	$93.4M	Middle	Low	High	Lowest
Alt. 4B – Reverse IBT/Catawba	$107.7M	Middle	Low	Low	Low
No Action	N/A[b]	Lowest	N/A	N/A	Lowest

[a] This price could be reduced based on negotiations with neighboring communities after an IBT certificate is issued.
[b] For the No Action Alternative, there would be lost economic costs at the biomedical research facility (Pillowtex re-development) of approximately 1 billion dollars.