

**Proposed Interbasin Transfer
Certificate
Kerr Lake Regional Water System**

**Water Allocation Committee
Environmental Management Commission
September 9, 2015**

Outline

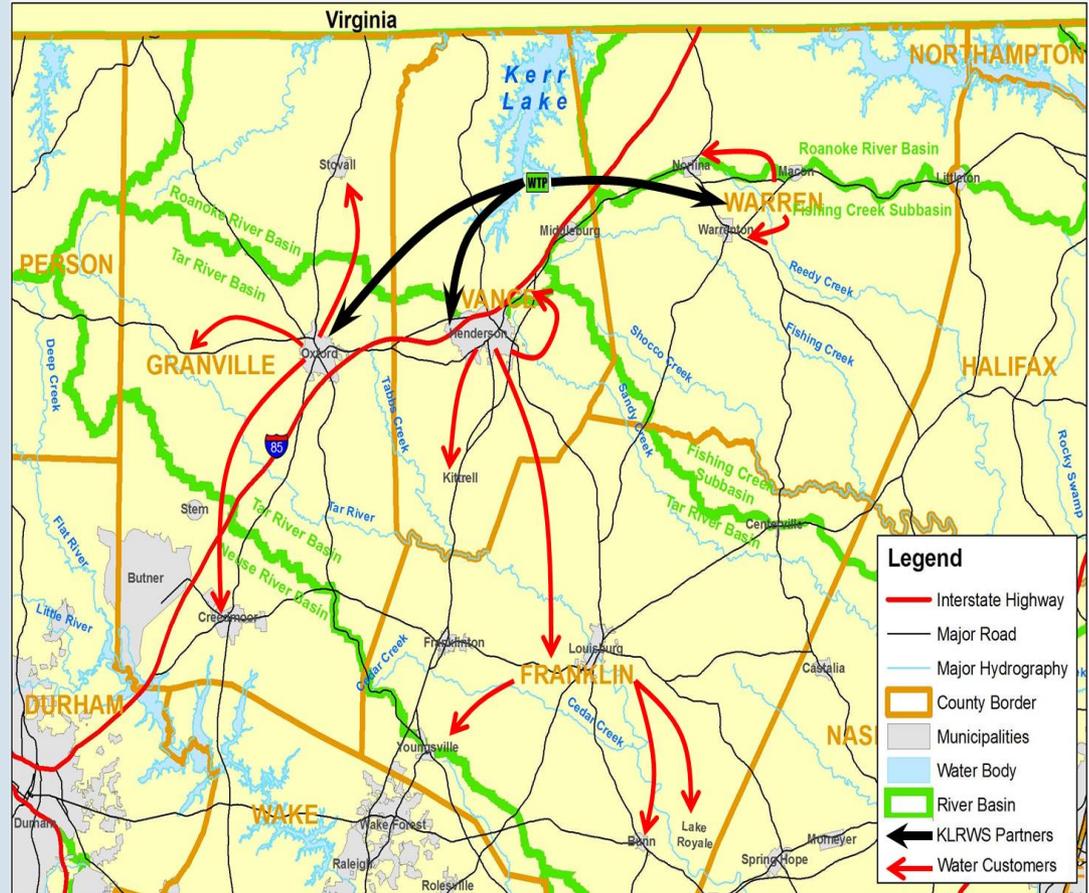
- IBT Certificate
 - Description
 - Timeline
 - Completion of Statutory Requirements
- Findings of Fact
- Role of the Water Allocation Committee

Requested Certificate

Primary Applicant:	Kerr Lake Regional Water System	
Source Basin:	Roanoke	
Receiving Basins:	Tar, Fishing Creek, Neuse	
Grandfathered Allowance:	10 MGD (max day)	
Existing transfer (2013 data):	4.64 MGD (avg day/max mth)	
	Roanoke to Tar:	3.63 MGD
	Roanoke to Fishing Creek:	0.82 MGD
	Roanoke to Neuse:	0.19 MGD
Total Requested IBT (<u>2045 Demands</u>):	14.2 MGD (avg day/max mth)	
	Roanoke to Tar:	10.7 MGD
	Roanoke to Fishing Creek:	1.7 MGD
	Roanoke to Neuse:	1.8 MGD

Kerr Lake Regional Water System

- Primary Partners
 - City of Henderson
 - City of Oxford
 - Warren County
- City of Henderson operates WTP
- Water sales to 11 additional communities/water users in Vance, Warren, Granville, and Franklin Counties

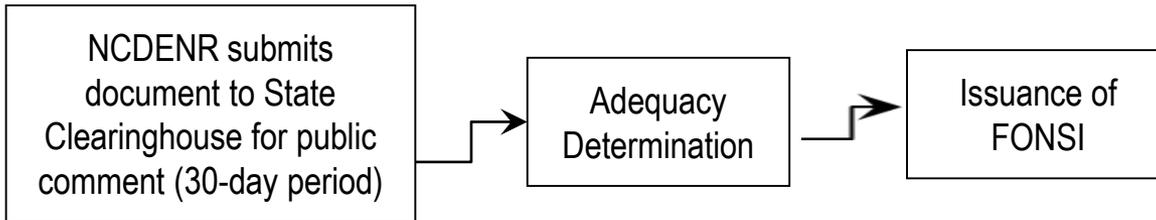


IBT Process § 143-215.22L(w)

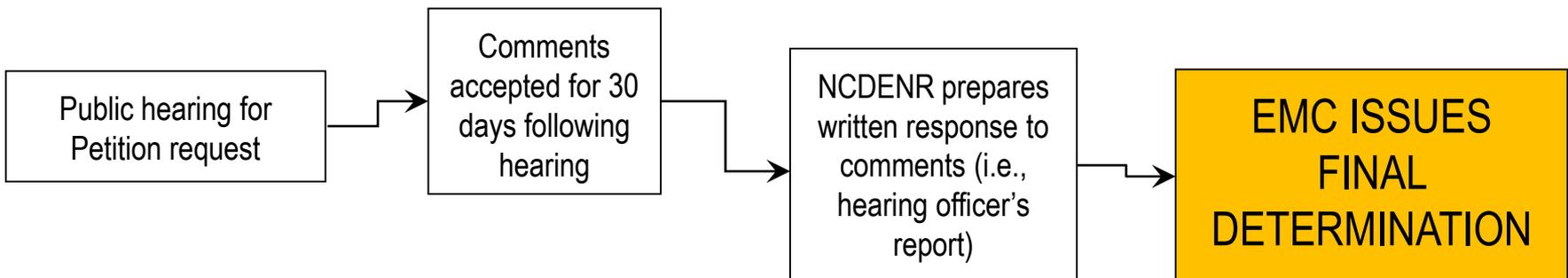
Requirements for Coastal Counties and Reservoirs Constructed
by the United States Army Corps of Engineers

I. Applicant submits Notice of Intent to file a petition

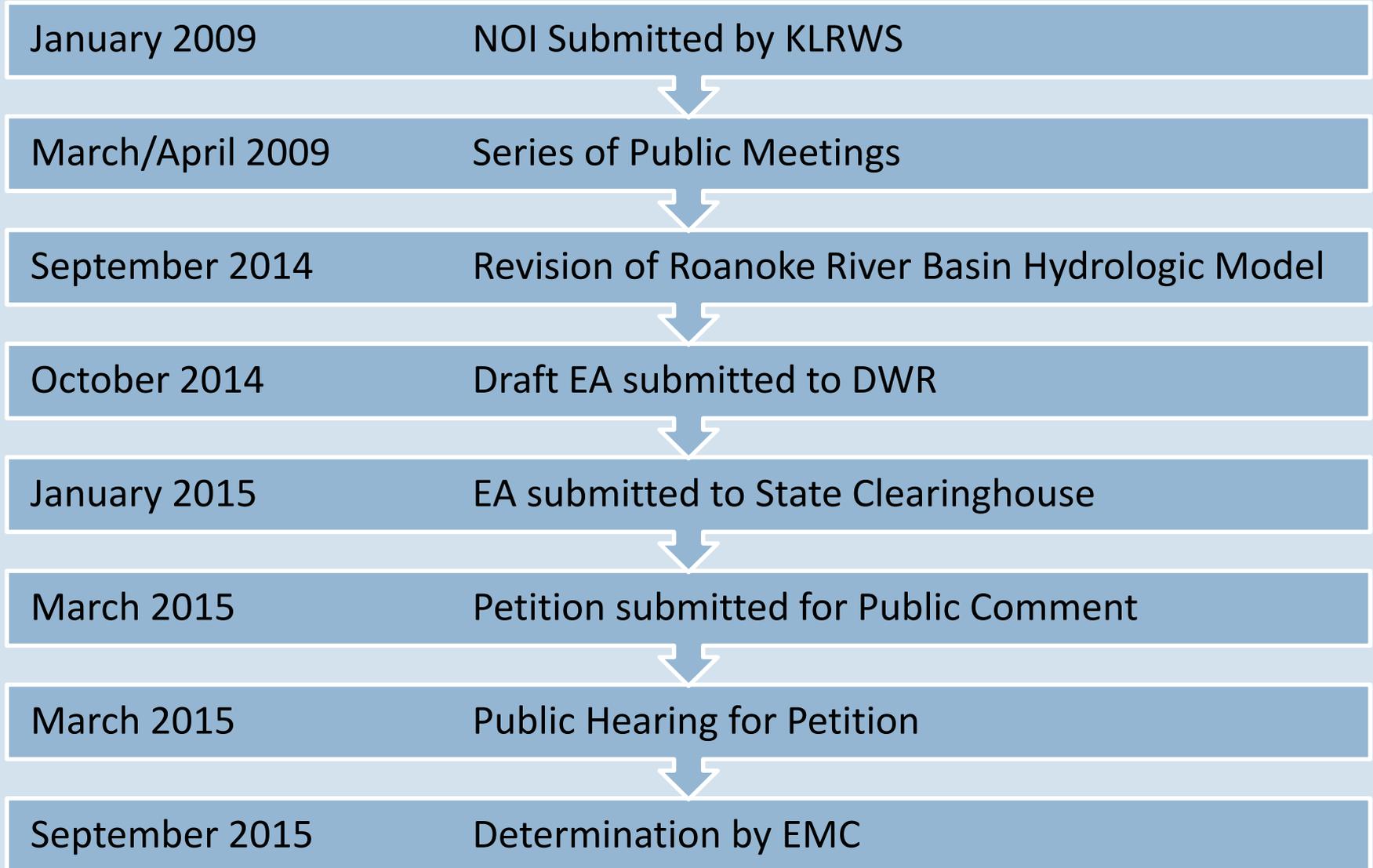
II. Applicant prepares environmental document (EA) pursuant to State Environmental Policy Act (SEPA)



III. NCDENR publishes a Petition in the NC Register



Project Timeline



EMC - Basis for Decision

- **§ 143-215.22L (w) Reservoirs Constructed by USACE**
 - (6) “The Commission shall make a final determination whether to grant the certificate based on the factors set out in subsection (k) [Findings of Fact – 9 factors] of this section, information provided by the applicant, and any other information the Commission deems relevant. The Commission shall state in writing its findings of fact and conclusions of law with regard to each factor.”

Findings of Fact

- [§ 143-215.22L \(k\)](#) requires the EMC to specifically consider:
 1. The necessity, reasonableness, and beneficial effects of transfer amount
 2. Detrimental effects on the source river basin
 3. Cumulative effects on the source major river basin of any current or projected water transfer or consumptive water use
 4. Detrimental effects on the receiving basin
 5. Reasonable alternatives to the proposed transfer
 6. Use of impounded storage
 7. Purposes and water storage allocations in a US Army Corps of Engineers multipurpose reservoir
 8. Compare the water system service area to the locations of both the source and receiving basins
 9. Any other facts or circumstances

1. Transfer amount is necessary, reasonable, and has beneficial effects

- Existing IBT limitations (10 MGD grandfathered transfer) will be exceeded between 2020 and 2030
 - 2013 population: 186,000
 - 2013 Ave day/max month demand (MDD): 7.7 MGD
 - 2045 population: 224,000
 - 2045 MDD: 17.4 MGD (14.2 MGD is IBT)

2. Insignificant Detrimental Effects on the Source River Basin

- Kerr Lake elevation estimated to decrease by 2.4 inches with 2002 drought conditions and 1.2 inches with 2007 drought conditions under 2045 IBT model scenario
- Reduction in flow out of Kerr Lake due to IBT: 0.07% on average, up to 0.3% under 2007 drought conditions
- Local ordinances minimize secondary effects caused by growth in region serviced by KLRWS

Lake Level Difference for Proposed 2045 IBT for Entire Simulation Period and during 2002 and 2007 Droughts

Scenario Comparison	Results (feet)	Roanoke River Reservoirs		
		Kerr	Gaston	Roanoke Rapids
2045 Baseline versus 2045 IBT	Average Baseline Elevation	299.8	200.0	132.0
	Average Elevation during 2002 Drought	284.8	200.0	132.0
	Average Difference with IBT during 2002 Drought	-0.2	0.0	0.0
	Average Elevation during 2007 Drought	284.6	200.0	132.0
	Average Difference with IBT during 2007 Drought	-0.1	0.0	0.0

3. Insignificant Cumulative Effects on the Source Major River Basin

- The modeling results indicate that even during exceptional drought conditions, the proposed IBT increase will have negligible effects on the elevation of Kerr Lake
- A comparison of discharges, or reservoir releases, under the baseline and IBT scenarios indicates that the proposed IBT would not require upstream releases to maintain the elevation of Kerr Lake and the lower reservoirs, even during periods of drought

4. Insignificant Detrimental Effects on the Receiving Basins

- Wastewater discharges within the limits of the current NPDES permitted flows
- Stream flows are not expected to change significantly
- Tar-Pamlico River basin & Falls Lake in the Neuse River basin have nutrient management strategies in place
- Possible SCI from development and urbanization will be mitigated by implementation of federal, state, and local protection programs

5. Reasonable Alternatives to the Proposed Transfer Considered

1. No action (Not to exceed grandfathered IBT of 10 mgd)
2. Increase IBT to meet 2045 needs (**Proposed IBT Certificate**)
3. Avoid IBT increase with alternative surface water:
 - Alternative 3a – surface water withdrawal from the Tar River Basin
 - Alternative 3b – construct a new reservoir on the Tar River
 - Alternative 3c – water withdrawal with offline storage in Tar River Basin
4. Avoid IBT increase by using groundwater sources
5. Minimize IBT by Returning to Roanoke River Basin
6. Use Coastal Water as a Source
 - Alternative 6a – Desalination technology
 - Alternative 6b – Pipe groundwater from PCS Phosphate Mine in Aurora

6. Applicants' Use of Impoundment Storage Capacity Not Applicable

- Petitioners do not own, manage, or maintain a water supply impoundment.

7. Consistent with Purposes of Corps of Engineers Multi-Purpose Reservoir

- 57% of lake storage for flood control; 41% for hydropower; and 2% for water supply
- KLRWS began drawing water in 1978, received allocation of 20 MGD in 2005
- Current IBT request of 14.2 MGD within KLRWS's allocation from Kerr Lake
- Negligible change to elevation of Kerr Lake from IBT, not expected to alter reservoir operations or recreation

Kerr Lake Water Storage Allocation

Drainage Area (square miles)		7,800
Storage (AF)	Total Usable Pool (Elevation 268-320 ft msl)	2,262,421
	Flood Control Pool (57%) (Elevation 300-320 ft msl)	1,282,367
	Conservation Pool (43%) (Elevation 268-300 ft msl)	980,054
	Hydropower (41%)	958,939
	Water Supply ¹ (2%)	21,115

Source: 2005 USACE Reallocation Report

¹ Approximately 1% of Kerr Lake is currently allocated for water supply, less than half of what is available for allocation. The total water supply pool available for allocation by the USACE represents 2% of the reservoir.

8. Applicants' service area is located in both the source and receiving river basins

Percentage of KLRWS Service Area in Individual River Basins

System	River Basin			
	Roanoke	Tar	Neuse	Fishing Creek
Oxford		100%		
Granville Co.		100%		
Stovall	100%			
SGWASA			100%	
Wilton			100%	
Henderson	30%	70%		
Franklin Co.		85%	15%	
Bunn		100%		
Lake Royale		100%		
Vance Co.	50%	50%		
Kittrell		100%		
Warren Co.	38%			62%
Warrenton				100%
Norlina	50%			50%

9. Any Other Facts or Circumstances that are Reasonably Necessary

- Specific conditions in IBT certificate for:
 - Submitted within 90 days of approval:
 - Water Conservation Plan
 - Drought Management Plan
 - Compliance and Monitoring Plan
 - Quarterly Monitoring Reports
 - Reopen, amend, and modify clauses
 - No selling of transferred water to water systems that are not co-applicants on the Certificate

Response to Public Hearing Comments

- 235 commenters, including oral and written (delivered by hand, mail, and email)
- 1,419 petition signatures
- 33 comment categories

Public Comments

- Concern about effect on Kerr Lake level
 - Modeling results support that lake levels will not be noticeably effected by the proposed IBT. Furthermore, USACE manages the reservoir and is responsible for water supply allocations which could potentially affect lake levels.
- EIS should be conducted/EA not adequate
 - Since DENR reached the conclusion of being able to issue a FONSI, and given the exception in G.S. 143-215.22L(w)(2), it was concluded that an EIS was not required or necessary
- Could lead to transfer of water to Raleigh/Wake Co
 - A condition of the IBT certificate will be that water may not be transferred to water systems that are not listed as co-applicants on the certificate

EMC - Authority

- **§ 143-215.22L (w) Reservoirs Constructed by USACE**
 - (7) “The Commission shall grant the certificate if it finds that the applicant has established by a preponderance of the evidence that the petition satisfies the requirements of subsection (m) [Burden and Standard of Proof] of this section. The Commission may grant the certificate in whole or in part, or deny the request, and may impose such limitations and conditions on the certificate as it deems necessary and relevant.”

§ 143-215.22L (m)

- **Final Determination:** Burden and Standard of Proof; Specific Findings. – The Commission shall grant a certificate for a water transfer if the Commission finds that the applicant has established by a preponderance of the evidence all of the following:
 - (1) The benefits of the proposed transfer outweigh the detriments of the proposed transfer. In making this determination, the Commission shall be guided by the approved environmental document and the policy set out in subsection (t) of this section.
 - (2) The detriments have been or will be mitigated to the maximum degree practicable.
 - (3) The amount of the transfer does not exceed the amount of the projected shortfall under the applicant's water supply plan after first taking into account all other sources of water that are available to the applicant.
 - (4) There are no reasonable alternatives to the proposed transfer.

Action – Request WAC Support

- Division of Water Resources is requesting the Water Allocation Committee support the requested IBT certificate, as presented, to go before the full EMC tomorrow, September 10, 2015 for a final determination.

Contact Information

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§ 143-215.22L (k)

- Final Determination: Factors to be Considered. – In determining whether a certificate may be issued for the transfer, the Commission shall specifically consider each of the following items and state in writing its findings of fact and conclusions of law with regard to each item:
 - (1) The necessity and reasonableness of the amount of surface water proposed to be transferred and its proposed uses.
 - (2) The present and reasonably foreseeable future detrimental effects on the source river basin, including present and future effects on public, industrial, economic, recreational, and agricultural water supply needs, wastewater assimilation, water quality, fish and wildlife habitat, electric power generation, navigation, and recreation. Local water supply plans for public water systems with service area located within the source river basin prepared pursuant to G.S. 143-355(l) shall be used to evaluate the projected future water needs in the source river basin that will be met by public water systems. Information on projected future water needs for public water systems with service area located within the source river basin that is more recent than the local water supply plans may be used if the Commission finds the information to be reliable. The determination shall include a specific finding as to measures that are necessary or advisable to mitigate or avoid detrimental impacts on the source river basin.

§ 143-215.22L (k) cont'd

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

§ 143-215.22L (k) cont'd

- (5) The availability of reasonable alternatives to the proposed transfer, including the potential capacity of alternative sources of water, the potential of each alternative to reduce the amount of or avoid the proposed transfer, probable costs, and environmental impacts. In considering alternatives, the Commission is not limited to consideration of alternatives that have been proposed, studied, or considered by the applicant. The determination shall include a specific finding as to why the applicant's need for water cannot be satisfied by alternatives within the receiving basin, including unused capacity under a transfer for which a certificate is in effect or that is otherwise authorized by law at the time the applicant submits the petition. The determination shall consider the extent to which access to potential sources of surface water or groundwater within the receiving river basin is no longer available due to depletion, contamination, or the declaration of a capacity use area under Part 2 of Article 21 of Chapter 143 of the General Statutes. The determination shall consider the feasibility of the applicant's purchase of water from other water suppliers within the receiving basin and of the transfer of water from another sub-basin within the receiving major river basin. Except in circumstances of technical or economic infeasibility or adverse environmental impact, the Commission's determination as to reasonable alternatives shall give preference to alternatives that would involve a transfer from one sub-basin to another within the major receiving river basin over alternatives that would involve a transfer from one major river basin to another major river basin.

§ 143-215.22L (k) cont'd

- (6) If applicable to the proposed project, the applicant's present and proposed use of impoundment storage capacity to store water during high-flow periods for use during low-flow periods and the applicant's right of withdrawal under G.S. 143-215.44 through G.S. 143-215.50.
- (7) If the water to be withdrawn or transferred is stored in a multipurpose reservoir constructed by the United States Army Corps of Engineers, the purposes and water storage allocations established for the reservoir at the time the reservoir was authorized by the Congress of the United States.
- (8) Whether the service area of the applicant is located in both the source river basin and the receiving river basin.
- (9) Any other facts and circumstances that are reasonably necessary to carry out the purposes of this Part.