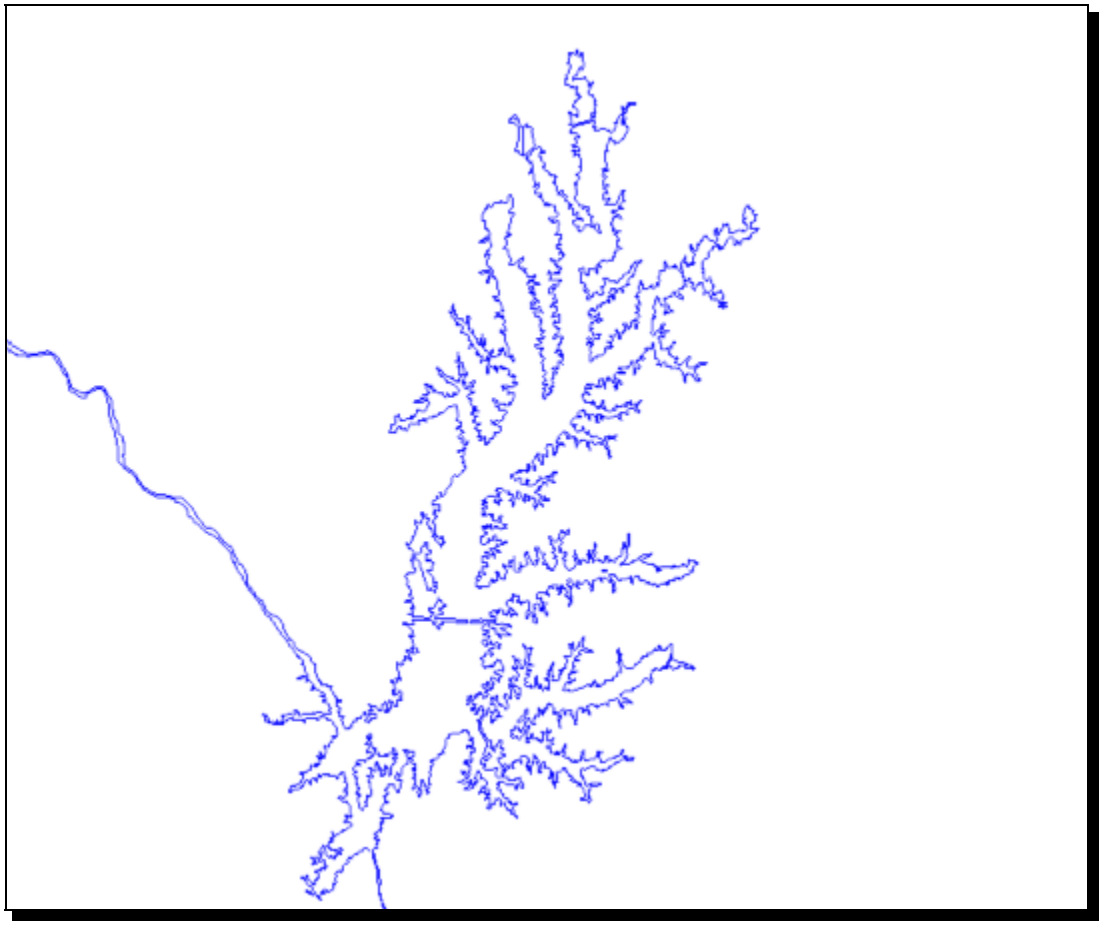
# JORDAN LAKE
# WATER SUPPLY STORAGE ALLOCATION
# APPLICATION GUIDELINES

## ROUND FOUR



June 4, 2013

Division of Water Resources
Department of Environment and Natural Resources

# INTRODUCTION

North Carolina General Statute GS 143-354(a)(11)[1] gives the Environmental Management Commission (EMC or Commission) the authority to allocate to local governments any interest in water supply storage held by the State in federal reservoirs. The State controls and allocates about 33 percent of the conservation pool in B. Everett Jordan Lake which is storage dedicated to water supply. The amount of water available from this storage capacity has been estimated at 100 million gallons per day (MGD).[2] Administrative rule 15A NCAC 2G.0503 requires applicants for a water supply allocation from Jordan Lake to provide information substantiating the requested allocation amount. The Division of Water Resources (DWR or Division) developed these guidelines to assist local governments in preparing their application for a Jordan Lake water supply storage allocation.

North Carolina General Statute 143-355(l) requires each unit of local government "that provides public water service or that plans to provide public water service" to prepare and update a Local Water Supply Plan (LWSP). Therefore, all applicants for an allocation should have an approved Local Water Supply Plan on file with the Division. All applicants must have an updated LWSP based on calendar year 2012. For the application process, applicants will be asked to supplement their 2012LWSP information to provide the additional information needed to evaluate an allocation request.

Local water supply plans will be submitted to DWR using the online submission program available on the Division's website at www.ncwater.org. Applicants' 2012 local plan submission must include a map of the existing and expected future service areas that is consistent with the information provided to support an allocation request.

The intent of these guidelines is to provide a common format and common content for allocation requests. Applications should be concise and complete.

The Jordan Lake water supply allocation application will consist of an introductory letter, the general application including the JLA-4 workbook, and a copy of the applicants LWSP that is consistent with the allocation request. Applicants may provide any supporting documents in additional appendices. The letter, application contents, and LWSP update are discussed in further detail below. A description of the costs

[1] (11) The Commission is authorized to assign or transfer to any county or municipality or other local government having a need for water supply storage in federal projects any interest held by the State in such storage, upon the assumption of repayment obligation therefor, or compensation to the State, by such local government. The Commission shall also have the authority to reassign or transfer interests in such storage held by local governments, if indicated by the investigation of needs made pursuant to subsection (a)(1) of this section, subject to equitable adjustment of financial responsibility.

[2] Allocations are made as a percentage of the water supply storage in Jordan Lake. However, since the available supply of the entire (100 percent) water supply storage is estimated to be 100 MGD. For convenience allocations are sometimes expressed in terms of MGD. For example, a 6.0 MGD allocation actually represents an allocation of 6.0 percent of Jordan Lake's water supply storage.

associated with a Jordan Lake water supply storage allocation and the rules for allocation are included in this document.

## INTRODUCTORY LETTER

The applicant must provide an introductory letter that includes the following:

1. A commitment to all financial obligations related to receiving an allocation from Jordan Lake
2. The total Level I and Level II allocation requested, stated as a percent of total water supply storage[3]
3. Description of any regional partnerships in which the applicant is participating
4. Any additional information that would be helpful in evaluating the application and documenting the applicant's need to obtain a water supply allocation from Jordan Lake.

## APPLICATION CONTENTS

The applicant is required to provide detailed information describing its projected water supply needs, current water supply sources, alternative water supply possibilities, and plans for obtaining water from Jordan Lake should it receive an allocation. This information must be consistent with the applicant's LWSP Update. The application will include the following sections:

Section I – Water Demand Forecast
Section II – Conservation & Demand Management
Section III – Current Water Supply
Section IV – Future Water Supply Needs
Section V – Water Supply Alternatives
Section VI – Plans to Use Jordan Lake

## SECTION I – WATER DEMAND FORECAST

Defensible decisions about allocations require realistic estimates of water system needs. Therefore, the demand projections contained in the local plans must be supplemented to provide additional details on the magnitude and timing of customer demands. DWR has prepared the accompanying JLA-4 workbook for consistent presentations of system demands and the various alternative sources that may be used to meet them.

[3] Level I allocations are based on projected water supply needs for a 20-year planning period and the withdrawal must be initiated within 5 years. Level II allocations are based on projected water supply needs for a 30-year planning period.

## User Sectors

Demands will be forecast using a disaggregated method based on water use sectors represented in the applicant's customer base.

The applicant must provide a complete description of its user sectors and the customer types included in those sectors and subsectors used in the application. Demands for unique customers may be estimated separately. For example, if an applicant has an unusually water-intensive industrial customer the applicant may project demand for that customer separately taking into consideration its particular usage patterns. The applicant will then project the water demands for each of its user sectors from 2010 to 2060 in five year increments. The "Population & Demand Projections" worksheet in the JLA-4 workbook has a table to enter this information.

| Sector | Subsector | Description |
|---|---|---|
| Residential | Single Family | May be disaggregated by applicant. |
| | Multi Family | |
| Commercial | | Disaggregated as appropriate by applicant, and explicitly defined. |
| Industrial | | Disaggregated as appropriate by applicant, and explicitly defined. |
| Institutional | | Disaggregated as appropriate by applicant, and explicitly defined. |
| Unique | (Specify) | Any large, unique customer that has a justifiable usage rate different from the norm for its typical sector. Each such customer must be specified. |

## Sector Projections

No specific methodology for estimating growth in service population is required. However, applications must include descriptions of the methodology and calculations used to arrive at the growth projections for the various user sectors used. Growth projections should be consistent with conditions reflected in the boundaries shown on the service area map submitted with the applicant's 2012 LWSP.

The number of *residential* users may be projected based on the number of dwelling units or population. The number of *nonresidential* users may be projected based on the square footage of building space, per employee, or any other reasonable method. The projection may be a function of a local land use plan or a function of the population. If an applicant has users with unique water demands that need to be calculated differently from other users with similar types of water use then those demands may be projected as appropriate. All projections for unique water users must be explained in detail.

DWR will review projections against various benchmarks. For example, a population projection for a particular utility's service area would not be expected to exceed the population projection for the county in which the utility is located unless the service area extends into a neighboring county. Service area build-out, based on local land use plans or stated economic development policies, may also be used to analyze demand projections.

### Usage Rates

The applicant will calculate a usage rate for each of its user sectors and subsectors and apply these rates to their projections for each sector and subsector. When applying a usage rate to a sector or subsector projection, the applicant will adjust the usage rate to reflect the potential results of reasonable water conservation efforts within each sector taking into consideration the applicant's plans to reduce long term drinking water demands required by General Statute 143-355(l) as amended by Session Law 2011-374. The applicant's explanation of demand management and water conservation adjustments must be consistent with information provided in their LWSP and Section II of the application.

DWR will review usage rates for each sector based on historic information and reasonable standards, accounting for best practices and conservation.
After projecting the water demand for each sector, the applicants will calculate the resulting service area demand projections.

### Total Demand

The applicant determines the total service area demand for each projection year by the following method:

1. Sum the projected demand for each sector and subsector.
2. Add a percentage for *system processes*.
3. Add a percentage for *unaccounted-for* water.

The JLA-4 workbook contains a table to compile this information.

| Adjustment | Description |
|---|---|
| System Processes | Any water use that is not included in the sector breakdown that can be accounted-for by temporary metering or estimating usage can be included in this category. This category could include: filter backwash, line flushing, fire suppression, training activities, etc. Explain what was included and how the final amount was determined. |

| | |
|---|---|
| Unaccounted-For | That portion of the total surface water, groundwater and purchased water that is supplied to the water system that is not accounted for in the water use sector summaries or system process water estimates, but not to exceed 10%. |

**Bulk Water Sales**

The applicant may choose to include bulk water sales to other governmental entities in its allocation request as an existing sale or require a bulk water purchaser to submit its own allocation request. Inclusion as a bulk sale must be based on a long-term, contractual relationship between the two entities. Bulk water purchasers included in an application must have an updated 2012 LWSP (including a service area map) that supports the demand projections included in the application.

Bulk water sales to entities that are not required to complete a LWSP will be included in the appropriate user sector, and their demand projected accordingly over the period of the existing contracts. The applicant's updated 2012 LWSP must include contract amounts and expiration dates for all sale arrangements.

**Summary**

Applicants will supplement the demand projections in their LWSP using the "Population & Demand Projections" worksheet in the included JLA-4 workbook. The table breaks down water demand into the following categories: residential, commercial, industrial, institutional, system processes, and unaccounted-for water in five-year increments over a 50-year planning period.

## SECTION II – CONSERVATION & DEMAND MANAGEMENT

Demand management and water conservation programs provide valuable tools to manage the average and peak demands experienced by a water system. The applicant will describe and provide documentation of current and planned demand management and water conservation programs and how these initiatives will affect usage rates for each of their user sectors. A water conservation program will include the following elements:

1. Water conservation policy or ordinance
2. Water conservation pricing
3. Leak detection and repair
4. Annual water audits
5. Public education program, including a specific outdoor water use education program
6. Evaluation of plumbing retro-fit program to replace older less efficient water fixtures
7. Evaluation of the potential to use reclaimed water.

## SECTION III – CURRENT WATER SUPPLY

The applicant must list all surface water, groundwater, and purchased water sources currently available to the water system in the water supply sources section of its LWSP.

### Available Supply

Each application shall describe the available supply from each source based on the following criteria and standards.

For *reservoirs* included in the combined Cape Fear - Neuse River Basin Hydrologic Model the potential yield of a reservoir will be the "period-of-record" yield[4] as estimated by the model. For *reservoirs* not included in the Cape Fear - Neuse River Basin Hydrologic Model, applicants will use the USGS Annual Mass Curve Analysis method, based on a 50-year return period, to determine the available supply.[5] This amount should be reduced by the amount required for minimum releases and any reductions in available storage since construction. The Division will provide assistance to estimate minimum releases for proposed reservoirs.

For *groundwater*, applicants will determine the available supply based on a pump test completed no earlier than 2005. The well yield is the maximum amount of water in gallons per minute that can be pumped from a well such that the water level achieves equilibrium (stabilizes) above the pump intake. Based on the resulting well yield estimate, the available supply is the amount of water that the well can provide during 12 hours of pumping.[6]

For run-of-river sources, applicants will use the results of an instream flow study, when such is available, to determine the available supply. If the results of an instream flow study are not available for a given source, the applicant's available supply is assumed to be 20% of the 7Q10 flow as determined using the basecase scenario of the appropriate river basin hydrologic model if there are no other intakes in close proximity. Applicants that wish to explore the possibility of a larger available supply estimate for a run-of-river intake from an unregulated stream should contact the Division of Water Resources to discussed options.

[4] The "period-of-record" yield is estimated using the historical flow record included in the model and increasing the demand on the reservoir until the specified demand level cannot be fully met for every day in the flow data record. The demand level that first creates a total depletion of the useable storage is designated as the "period-of-record" yield for that reservoir.

[5] The Annual Mass Curve Analysis method is described in *Storage Analyses for Water Supply* (Riggs, H.C. and Clayton H. Hardison. 1973. Techniques of Water-Resources Investigations of the United States Geological Survey. Washington, DC: United States Government Printing Office. Chapter B2).

[6] This is in accordance with the Rules Governing Public Water Systems, 15A NCAC 18C.0402(g).

### Purchased Water

The applicant will use the contract maximum as the measure of the available supply of purchased water. Only contracts for regular use (i.e., routine, continuous use; not emergency use) will be considered. Similarly, water systems selling water to other systems must include the maximum contract amount as part of their water demand projections.

## SECTION III –FUTURE WATER SUPPLY NEEDS

The applicant will summarize its water demand forecast, current water supply, and future water supply needs in the LWSP and supplement that information by completing the “Population & Supply-Demand Projections” worksheet in the JLA-4 workbook.

## SECTION IV – ALTERNATIVE WATER SUPPLY OPTIONS

The applicant will describe the various alternative scenarios evaluated to satisfy future water supply needs. Descriptions should provide enough detail so the reader can develop an understanding of the timing of each component and other key factors affecting alternative selection. The JLA-4 workbook provides individual worksheets to summarize the various sets of alternative projects that could meet the identified supply shortages.

Alternative scenarios will be presented as sets of possible projects. Each set of projects will provide sufficient water to meet the projected demands through 2060 consistent with demands shown in the LWSP. Jordan Lake water supply will be included as one of the possible projects among the various combinations of projects within the set alternatives.

The applicant will compare the various supply alternatives based on the criteria discussed below. The JLA-4 workbook includes a worksheet labeled “Supply Alternatives Summary” to record the rankings of each alternative. Alternatives will be analyzed using the criteria and standards described below.

### Scope of Supply Alternatives

For any set of projects that constitute a supply alternative that includes the transfer of surface water between river basins designated by GS 143-215.22G that would require a certificate under GS 143-215.22L, the Regulation of Surface Water Transfers Act, or an

increase in a surface water transfer approved under a prior statute the application shall include two variations for this alternative. In addition to the alternative requiring a new or expanded surface water transfer, the application shall include an alternative describing facilities necessary to avoid the transfer. Copies of the referenced statutes are included in this document.

DWR encourages applicants to consider the following possibilities when exploring their options for meeting future demands, although not all of these options will be relevant for any given applicant. For example, aquifer storage and recovery is probably not a relevant option for most applicants in the vicinity of Jordan Lake.

Potential options include:

- Groundwater
  - Wells
  - Aquifer Storage and Recovery
- Surface Waters
  - Offstream Storage
  - Reservoir Expansions
  - New Reservoirs
  - New Stream Intakes or Expanded Stream Intakes
- Reclaimed Water Use
- Bulk Water Purchase

## Categories for Supply Alternative Comparisons

### Available Supply

The applicant must determine the available supply for each alternative using the same methodology as presented in Section II. For alternatives that are analyzed as unfavorable (i.e., receive the least favorable rating) for five or more criteria, applicants may use the Draft-Storage-Frequency Relations method for reservoirs.[7]

### Environmental Impacts

The applicant will estimate the environmental impacts of any project, and compare them with the environmental impacts associated with developing a Jordan Lake water supply. The applicant should consider only direct environmental impacts. The applicant will classify the expected environmental impacts of each project as either *More than*, *the Same as*, or *Less than* a Jordan Lake water supply allocation.

The applicant may also include a discussion of each alternative's sustainability with respect to resource management.

[7] The Draft-Storage-Frequency Relations method is described in *Evaluation of Reservoir Sites in North Carolina: Regional relations for estimating the reservoir capacity needed for a dependable water supply* (Arteaga, F.E. and E.F. Hubbard. 1975. U S Geological Survey Water Resources Investigations 46-74. Raleigh, NC: US Department of the Interior)

### Water Quality Classification

The applicant will provide the water quality classification designated by the Division of Water Quality for each surface water source included in the alternatives. The classification provides a measure of existing water quality protection for surface water sources. Applicants do not need to provide the classification for ground water supplies.

### Timeliness

Timeliness refers to the ability of a project to be operational prior to when its contribution to the system's supply will be needed. The timeliness of a given project may justify its inclusion or exclusion from a set of projects for a given alternative. The timeliness of a given project may also justify its order within a set of projects for a given alternative.

### Interbasin Transfer

The applicant will estimate the maximum day quantity of water in million gallons per day that will be subject to the Regulation of Surface Water Transfers Act (GS 143-215.22L) for each alternative. The applicant will estimate the quantity to be transferred between a source basin and receiving basin for each projection period based on the projected demand for that period and the applicant's projected service area in each basin. The applicant will estimate the consumptive losses in each basin within the system's service area. The applicant will use a maximum day / annual average day demand factor consistent with their LWSP. The applicant will calculate the surface water transfer as the maximum quantity to be transferred on a maximum day basis for each 5-year interval from 2010 to 2060.If the proposed surface water transfer would require an increase in an existing transfer certification or approval of a new transfer certification describe the volume and timing of the desired certification.

### Regional Partnerships

The applicant will discuss the possibilities of developing regional partnerships for any project. For every project with the potential for partners, the applicant will provide a list of the prospective partners. The applicant should provide any documentation supporting such partnerships in an appendix.

### Technical Complexity

The applicant will discuss the relative technical complexity of implementing each project. The applicant will summarize the technical complexity as *Not Complex*, *Complex*, or *Very Complex* and generally justify the rating. For example, a project limited to building a transmission line to convey purchased water might be rated "not complex," while a project to build a new reservoir would be "very complex."

### Institutional Complexity

The applicant will discuss the relative institutional complexity of implementing each project. The applicant will consider current and anticipated statutory and regulatory constraints, including such issues as water supply reclassification and environmental review requirements. The applicant will summarize the institutional complexity of each project as *Not Complex*, *Complex*, or *Very Complex* and generally justify the rating. For example, expanding a water supply intake up to the capacity of a previously estimated available supply determination might be rated “not complex,” while a new water supply source that requires reclassification or a surface water transfer certificate might be rated “very complex.”

### Political Complexity

The applicant will discuss the relative political complexity of implementing each project. The applicant will consider such issues as the likely acceptance by publicly elected officials and anticipated public perceptions. The applicant will summarize the political complexity of each project as *Not Complex*, *Complex*, or *Very Complex* and generally justify the rating.

### Public Benefits

The applicant will discuss any expected secondary public benefits such as recreation associated with each project. The applicant will summarize the expected public benefits as *None*, *Few*, or *Many*.

### Consistency with Local Plans

The applicant will discuss each project’s consistency with its local comprehensive land use plans, growth management plans, and capital improvement plans. The applicant may also discuss the consistency of a given alternative with the community’s stated economic development policies. The applicant should support its analysis with selected, relevant citations from its plans in an appendix in the application.

### Cost

Applicants will calculate the cost of an alternative as the total present worth in year 2010 dollars, including capital costs and O&M costs (operation and maintenance), from 2010 to 2060. The cost will be expressed both as total dollars and as a unit cost in dollars per 1000 gallons for each alternative. Applicants are not required to do a detailed cost

analysis for alternatives that are analyzed as unfavorable (i.e., receive the least favorable rating) for five or more criteria.

The Division does not require applicants to calculate costs at the level of detail necessary to complete a facility design proposal. For example, the Division does not expect applicants to determine an exact route for a transmission pipeline. The Division requires applicants to address each of the elements discussed below and provide cost estimates for each element that is relevant for each alternative. For example, an applicant may estimate the cost of a transmission pipeline by determining an average cost per unit length based on previous projects, estimating the length based on a general route, and adding some factor for possible deviations from that general route.

*Capital costs* include the cost of facilities and equipment, to include the water supply, water supply intake, transmission to a water treatment plant, the water treatment plant, and transmission to the service area distribution system (but not the distribution system within the service area). Capital costs include construction costs, land acquisition costs, engineering costs, legal and administrative costs, the cost of meeting regulatory requirements, and a general contingency of 10%. Land acquisition costs include land acquisition and directly related costs. Applicants must include justification for the cost per acre they use for estimating land acquisition costs. The annual capital cost of a project will be computed in year 2010 dollars. For alternatives that include an interbasin transfer the applicant should include an estimate of the cost associated with getting approval for the transfer from the Environmental Management Commission.

*O&M costs* include the costs of labor, repair, power, chemicals, supplies, and administration. The annual O&M cost for each project computed in year 2010 dollars.

For alternatives that involve transferring treated wastewater to a different basin, the incremental difference in costs associated with building the same wastewater treatment capacity to discharge back to the source basin must be included. The incremental difference in costs will include the capital costs and O&M costs associated with transmission to the wastewater treatment plant, the wastewater treatment plant, and transmission to the receiving waters.

The a*nnual cost* of any project is the sum of yearly capital costs (i.e., the total capital cost of the project, divided by the life of the project), O&M costs, and the annual cost of capital recovery (i.e., the cost of repaying the debt associated with the capital costs). Applicants will use an interest rate of 3.225% for capital recovery.[8] Applicants will assume a 25-year life for equipment and a 50-year life for pipelines and structures for replacement costs and salvage value. The applicant will add the replacement costs associated with a project if the replacement occurs before 2060.

[8] The interest rate for repayment of the capital investment in B. Everett Jordan Lake

*Total present worth* is calculated by summing the net present value of annual costs over the 2010-2060 planning period, assuming a discount rate of 1.295%, less the salvage value of facilities and equipment at 2060.[9]

*Unit costs* are expressed as an annual average. The average annual unit cost will be calculated by dividing the annual cost of each alternative in Year 2010 dollars by the related annual water demand and should be expressed in $/1000 gallons. The annual unit water costs will be calculated in 5-year increments according to expected annual deliveries for the life of the project.

For *Jordan Lake*, the costs of developing the proposed withdrawal should be estimated as described above. Costs will include an estimate of the required annual repayment for the allocation and costs related to developing water supply facilities such as intakes, treatment plants, transmission lines, etc. A summary of the annual costs and repayment requirements associated with an allocation of water supply storage in Jordan Lake is presented later in this document.

**Supply Alternatives Summary**

Applicants will summarize their analysis of alternatives in the "Supply Alternatives Summary" worksheet of the JLA-4 workbook. The total supply of an alternative is the sum of the available supplies of its constituent projects. Applicants will summarize surface water transfers for each alternative as the maximum amount that might be transferred during the planning horizon. Regional partnerships for a given alternative may be summarized as either *yes* or *no*. An alternative's consistency with plans may be summarized as either *yes* or *no*. The total cost of an alternative is the sum of the total present worth of its constituent projects. The unit cost of an alternative is the sum of the unit costs of its constituent projects.

Example of JLA4 – Supply Alternatives Summary worksheet

| Alternatives | Summary Description |
|---|---|
| Alternative 1 | |
| Alternative 2 | |
| Alternative 3 | |
| (etc.) | |

[9] The discount rate is based on an average of the inflationary factors projected for water and sewer for the five fiscal years from 2009-10 by the Office of State Budget and Management (Instructions for Preparation of the 2009-2011 Recommended State Budget, July 2008, Section 5, Attachment 5-9).

| | Alternatives | | | | |
|---|---|---|---|---|---|
| | Example | 1 | 2 | 3 | 4 |
| **Allocation Request (%)** | 24 | | | | |
| **Estimated Supply** (MGD) | 24 | | | | |
| **Environmental Impacts** | Same | | | | |
| **Water Quality Classification** | WS-III | | | | |
| **Interbasin Transfer** (MGD) | 3 | | | | |
| **Regional Partnerships** | Yes | | | | |
| **Technical Complexity** | Complex | | | | |
| **Institutional Complexity** | Not Complex | | | | |
| **Political Complexity** | Very Complex | | | | |
| **Public Benefits** | Few | | | | |
| **Consistency with Local Plans** | Yes | | | | |
| **Total Cost** ($ Millions) | 12.7 | | | | |
| **Unit Cost** ($/1000 gallons) | 2.12 | | | | |

## SECTION V – PLANS TO USE JORDAN LAKE

Applicants are required to explain their plans to use water from Jordan Lake if an allocation is approved. These plans will include the total Level I and Level II allocation requested as a percent of storage.

Level I allocations are based on projected water supply needs for a 20-year planning period and a stated intent to begin withdrawing water within 5 years. Level II allocations are assigned for water supply needs based on a 30-year planning period. For example, if an applicant determines that their 20-year total system deficit is 6 MGD and the 30-year total system deficit is 10 MGD, the Level I request could be for 6 MGD and the Level II request should be for the additional 4 MGD.

This section will include the location of any proposed intakes, water treatment plants and wastewater discharges. Also, details on any plans to enter into cooperative agreements in which the applicant would share facilities or the cost of facilities with another allocation holder or water system shall be described in the application. A discussion of the proposed schedule of development of the source shall also be addressed in this section.

### Raw and Finished Water Quality Monitoring Plan

Applicants will explain their plans for monitoring the quality of the raw and finished water that would be withdrawn and produced from Jordan Lake. This monitoring will be in accordance with the requirements of the North Carolina Department of Environment and Natural Resources, Division of Water Resources – Public Water Supply Section, and the United States Environmental Protection Agency.

## Jordan Lake Costs

Jordan Lake was financed and constructed by the federal government through the US Army Corps of Engineers. Storage space for municipal and industrial water supply was included at the request of state and local officials with the understanding that the costs associated with this water supply storage would be paid for by the actual users. The result of that arrangement is that the management plan for Jordan Lake dedicates 33 percent of the conservation pool, or 45,800 acre feet, for water supply storage.

North Carolina General Statute 143-215.38 authorized the State, acting through the Environmental Management Commission (EMC), to assume repayment responsibilities for the costs associated with providing water supply storage in Jordan Lake. These costs fall into three basic categories: capital costs including interest, operating costs, and administrative costs. The total cost for each percent of water supply allocated from Jordan Lake varies with a number of parameters, the key ones being when the allocation is granted and when water is expected to be withdrawn. The rules governing allocation of water supply storage require the state to recover the complete federal capital and interest costs associated with a Level I allocation by 2012. Thereafter, the cost of future Level I allocations will be based on the initial capital cost and accrued interest as well as the accrued operating expenses associated with the percent of storage.

## Capital and Interest Costs

Capital costs are based on the Jordan Lake construction costs of approximately $89 million, excluding funds budgeted specifically for recreational lands and facilities. Since the project's cost is shared among several project purposes, the Corps estimated that 4.6% of the construction cost is attributable to water supply. Including interest accrued during project construction, $4.388 million represents the original investment cost for the water supply provided by the reservoir. Based on this figure, the initial capital cost is $43,880 for each one percent of water supply storage.

In 1992, the State began making interest payments at a rate of 3.225% on the unallocated portion of the Jordan Lake water supply. As stated above, all of these interest payments will be passed on to the eventual holders of the water supply storage.

The estimated cost for a new Level 1 allocation made in 2015 is $91,041 per percent of water supply storage. In future years entities that receive a new Level I allocation in this round of allocations will be billed for operation and maintenance expenses based on the percentage of storage in the allocation.

Holders of Level II allocations are required to make the annual interest payments on the capital costs associated with the allocation percentage, along with a similar proportion of operating expenses, until their allocation is converted to Level I.[10]

### Operating Costs

In addition to the costs incurred to construct the project, there are continuing expenses for operation and maintenance (O&M), and periodic expenses for replacement and rehabilitation of facilities at the reservoir. Current and future allocation holders are required to pay a proportional share of these operating expenses. Allocation holders must also reimburse the State for payments made to cover operating expenses since the Corps started charging for these expenses in 1992. The estimated accrued operating expenses for a new Level I allocation of one percent made in 2014 is $13,034 which would be added to the capital and interest payment.

The water supply proportional share of operation and maintenance costs is estimated by the Corps to be 5.4% of the total expenses. For example, in 2011 $109,258 was attributed to annual operation and maintenance costs associated with water supply. Thus, $1,092.58 was attributed to each one percent of water supply storage. The average annual O&M cost for 2007-2011 is $777 per percent of storage. Since 1992, the Corps has been charging the State the full 5.4% of operation and maintenance costs associated with water supply storage. Future allocation holders must reimburse the State for the actual operation and maintenance charges for their allocations since 1992.

### Replacement Costs

The proportional share of replacement costs attributed to water supply is estimated by the Corps to be 2.8% of the total expense. These costs are more difficult to budget because they are not incurred on a regular basis. The Corps estimated an annual equivalent project replacement expense of approximately $66,000.[11] The proportion of these annual replacement costs charged against water supply storage is approximately $1,800 in total, or $18 per percent of storage. Until the Corps starts incurring replacement costs and passing these costs on to the State (they have not through 2011), allocation holders will not have any additional reimbursement costs associated with replacement costs.

### Rehabilitation Costs

The proportional share of major rehabilitation costs attributed to water supply is also estimated by the Corps to be 2.8% of the total expense. Annual rehabilitation costs can

[10] Level I allocations are based on projected water supply needs for a 20-year planning period and the withdrawal must be initiated within 5 years. Level II allocations are based on projected water supply needs for a 30-year planning period.

[11] It is important to note that replacement costs will fluctuate from year to year based on actual expenses incurred by the Corps.

be estimated at about $30,092.86 based on costs incurred in 1995 and 1996. At this rate the proportion of the annual rehabilitation costs charged against water supply storage amounts to approximately $843 or $8.43 per percent of storage. Future allocation holders must reimburse the State for the actual rehabilitation payments made on their allocations since 1992. The Corps has not billed the state for any rehabilitation expenses since 1996. When rehabilitation expenses are incurred in the future they will be distributed proportionally to allocation holders.

**Cost Summary**

Based in the figures presented in the discussions above a new one percent Level I allocation of water supply storage made in 2015 is estimated to cost the holder $91,041. This figure includes: $43,880 of capital cost, $32,548 in accrued interest, $13,775 in accrued O&M costs, $34 in accrued rehabilitation costs, and $26 estimated costs for annual rehabilitation and replacement costs. In addition a fixed $250 administration fee is added to each bill. Based on the figures used for these estimates, in subsequent years the cost of a one percent Level I allocation can be expected to be in the neighborhood of $2,200 based on historical O&M and interest costs.

The cost of a new one percent Level II allocation made in 2015 is also estimated to be about $2,200 annually, based on the same figures. At the time a Level II allocation is converted to a Level I allocation the holder can expect to make a payment of at least $91,041 for each one percent of storage allocated. This covers the capital cost and accrued expense up to the time the Level II allocation is made. After that date the allocation holder will be paying the O&M and interest payments annually. These estimates are presented as a table below.

Table 1. Example of Payment Responsibilities for Allocation Holders (per percent of storage allocated).

| Estimates for Year | 2015 | | 2015 |
|---|---|---|---|
| | New 1% Level I | | New 1% Level II |
| Allocation Level | I | I | II |
| | 1st Year | Subsequent Years | 1 st Year |
| | | | |
| Capital Cost [1] | $ 43,880.00 | $ - | $ - |
| Accrued Interest on Capital [2] | $ 32,547.99 | $ - | $ - |
| Total Capital Cost [3] | $ 76,427.99 | $ - | $ - |
| Interest Portion of Capital Payments [4] | $ - | $ 1,415.13 | $ 1,415.13 |
| | | | |
| Annual O&M Cost [5] | $ 777.30 | $ 777.30 | $ 777.30 |
| Accrued O&M Costs [6] | $ 13,775.07 | $ - | |
| Annual Rehabilitation Cost [7] | $ 8.43 | $ 8.43 | $ 8.43 |
| Accrued Rehabilitation Costs [8] | $ 33.98 | | |
| Replacement Cost [9] | $ 18.00 | $18.00 | $18.00 |
| | | | |
| Total Cost per PERCENT [10] | $ 91,040.76 | $ 2,218.85 | $ 2,218.85 |
| Additional Fixed Cost per Acct. [11] | $ 250.00 | $ 250.00 | $ 250.00 |

Notes:
1. $4,388,000 for 45,800 acre-feet of storage.
2. 3.225% interest paid annually on the original capital cost for the years 1992-2014, compounded annually.
3. Total Capital Cost = Capital Cost + Accrued Interest on Capital.
4. The interest on $43,880 at 3.225% interest rate.
5. The estimated annual O&M (operation and maintenance) cost, based on an average of actual O&M costs for the years 2007-2011.
6. The total of actual O&M costs for the years 1992-2011 and estimates for 2012, 2013 and 2014.
7. The estimated annual rehabilitation cost, based on an average of actual rehabilitation costs for the years 1995-1996.
8. The total of actual rehabilitation costs for the years 1992-1999. Payback assumes either a lump sum, or 20 equal annual payments at a 3.225% interest rate.
9. Replacement cost is based on the Corps estimate of the average annual replacement cost. Note that there is no accrued replacement cost, as the State has not been billed for such as of year 2011.
10. Total Cost per percent of storage = (Total Capital Cost or Interest Portion of Capital Payments) + Annual O&M Cost + Accrued O&M Cost + Annual Rehabilitation Cost + Accrued Rehabilitation Costs + Replacement Cost.
11. An additional administrative charge of $250 is added to each allocation holder's bill.

## Reference Material

## Jordan Lake Allocation Rules

STATE OF NORTH CAROLINA ADMINISTRATIVE CODE

TITLE 15A. DEPARTMENT OF ENVIRONMENT AND NATURAL RESOURCES

CHAPTER 2. ENVIRONMENTAL MANAGEMENT

SUBCHAPTER 2G. WATER RESOURCES PROGRAMS

### SECTION .0500. ALLOCATION OF JORDAN LAKE WATER SUPPLY STORAGE

#### .0501 INTRODUCTION

To increase the availability of municipal and industrial water supplies, the State of North Carolina requested the U.S. Army Corps of Engineers to designate 32.62 percent of the Jordan Lake conservation storage, between the elevations 202 mean sea level (msl) and 216 msl, as water supply storage.

The State, acting through the Environmental Management Commission, will assign to local governments having a need for water supply capacity any interest held by the State in such storage, with proportional payment by the user to the State for the state's associated capital, interest, administrative and operating costs.

Upon signing the water supply storage contract with the U.S. Army Corps of Engineers, the Commission will apply the following procedures in allocating Jordan Lake water supply storage.

History Note: Statutory Authority G.S. 143-215.3(a)(1); 143-215.38 through 143-215.43; 143-354(a)(11); 143B-282; Eff. March 1, 1988.

#### .0502 DEFINITIONS

As used throughout this Subchapter:

(1) "Capital costs" means initial costs of the project;

(2) "Commission" means Environmental Management Commission;

(3) "Department" means the North Carolina Department of Natural Resources and Community Development;

(4) "Division" means the Division of Water Resources;

(5) "Effective date of allocation" means the date the Commission approves the allocation;

(6) "Interest costs" means interest accrued on the unpaid balance;

(7) “Local government” means any city, county, authority, sanitary district, metropolitan water district, or other local unit;

(8) “Operating costs” means Jordan Lake’s state and federal operating, maintenance, replacement, and administrative costs associated with water supply storage;

(9) “State” means the state of North Carolina; and

(10) “Water supply storage” means storage of water for municipal or industrial use.

History Note: Statutory Authority G.S. 143-354(a)(11); Eff. March 1, 1988.

**.0503 FORMAL APPLICATION**

(a) The Commission may receive initial allocation requests from local governments beginning on this Section’s effective date. In order to be reviewed, applications must contain the following information:

(1) Projected population and water use, including a detailed map of the existing and projected water service areas;

(2) A listing of water sources presently available, including estimated yields of these sources;

(3) An analysis of the yield, quality, and cost of alternative sources of water supply other than Jordan Lake that could meet or partially meet projected needs, including regionalization of systems;

(4) A description of conservation and demand-management practices to be used;

(5) An outline of plans to use water from Jordan Lake, including proposed location of intake and water treatment plant(s), location of wastewater treatment plant(s), any proposed sharing of facilities or other cooperative arrangements with other local governments, and a proposed schedule of development;

(6) A plan for monitoring the quality of the raw and finished water in accordance with the requirements of North Carolina’s Department of Human Resources and the U.S. Environmental Protection Agency;

(7) The estimated cost of developing water supply facilities at Jordan Lake, also costs of alternative sources of supply; and

(8) A letter of intent to enter into a financial commitment for Jordan Lake water storage.

(b) The Commission or the department may request such additional information as may be reasonably necessary for a complete understanding of the allocation request.

(c) Local governments may apply for two levels of allocation: Level I allocations are for applicants which have demonstrated an immediate need and will commence withdrawals within five years of the effective date of allocation; Level II allocations are for applicants with documented longer range needs for water.

(d) The applicant should include in the application the assumptions and the methodology used to develop projections. The Commission will assist applicants by providing a copy of departmental procedures for projecting water supply demands and determining yields.

(e) Using departmental procedures for projecting water supply demands and determining yields, the department will provide the Commission an independent assessment of the applicant's water supply needs.

History Note: Statutory Authority G.S. 143-215.3(a)(1); 143-354(a)(11); 143B-282; Eff. March 1, 1988.

**.0504 ALLOCATION OF WATER SUPPLY STORAGE**

(a) The segment of Jordan Lake proposed for a water supply withdrawal must be classified by the Commission as a drinking water source prior to any allocation of Jordan Lake water supply storage. Prior to the first allocation of water supply storage at Jordan Lake, the Commission shall hold one or more public meetings on the amount(s) requested by each applicant, the suitability of Jordan Lake water for public water supply use, the availability of alternative water sources, and the best utilization of the water resources of the region. For future allocation decisions, additional public meetings may be held as determined by the Commission.

(b) The Commission will assign Level I allocations of Jordan Lake water supply storage based on an intent to begin withdrawing water within five years of the effective date of allocation, on consideration of projected water supply needs for a period not to exceed 20 years, and on the design capacity of the associated withdrawal and treatment facilities.

(c) The Commission will make Level II allocations of Jordan Lake water supply to applicants based on projected water supply needs for a period not to exceed 30 years.

(d) The Commission will initially keep 50 percent of the water supply storage unallocated to meet future water supply needs as they develop.

(e) If additional storage is requested by holders of Level II allocations, these parties must submit an application addendum to the Commission for review.

(f) When holders of Level II allocations have documented an immediate need and wish to commence withdrawals within five years, their Level II allocations will be changed to Level I upon review and approval by the Commission.

(g) The department will issue a notice that it has received applications for Level I and Level II allocations and requests for increases in allocations, with a 30-day period for comment. If there is significant public interest, the department may hold a public meeting to obtain comments and information, with appropriate notice.

(h) To protect the yield of Jordan Lake for water supply and water quality purposes, the Commission will limit water supply allocations that will result in diversions out of the lake's watershed to 50 percent of the total water supply yield. The Commission may review and revise this limit based on experience in managing the lake and on the effects of changes in the lake's watershed that will affect its yield. For applicants whose discharge or intake represents a diversion pursuant to G.S. 153A-285 or 162A-7, the Commission will coordinate the review of the diversion with the review of the allocation request.

(i) Where applications for allocations exceed storage capacity, the Commission will assign, reassign, or transfer allocations based on the applicants' or holders' need(s) and alternative water sources available (as defined in the application requirements), the existing or proposed average degree of utilization of the

resource (relative to the total allocation application), the level of financial commitment (relative to the applicant's or holder's total costs in developing Jordan Lake as a water supply source), the effects on the lake's yield, and the level of sharing facilities or other cooperative arrangements with other local governments.

History Note: Statutory Authority G.S. 143-54(a)(11); 143-215.3(a)(1); 143B-282; 153A-285; 162A-7; Eff. March 1, 1988.

**.0505 NOTIFICATION AND PAYMENT**

(a) The Commission will notify applicants of the decisions made regarding their allocation requests.

(b) Recipients of Level I allocations are required to pay a proportional share of the state's total water supply storage capital and interest costs over a term suitable to the recipient and the Commission, but by 2012. Interest rates will vary with the payback term, and will be based on the state recovering the total federal capital and interest costs associated with water supply storage by 2012. After 2012, the Commission may review and adjust repayment requirements to assure equitable and efficient allocation of the resource. Level I recipients are also required to pay annually a proportional share of operating costs.

(c) Holders of Level II allocations are required to pay a proportional share of the project's water supply storage interest and operating costs.

History Note: Statutory Authority G.S. 143-215.3(a)(1); 143-354(a)(11); 143B-282; Eff. March 1, 1988.

**.0506 RECIPIENTS' REQUIREMENTS**

(a) Holders of Level I allocations must provide documentation meeting the requirements of the North Carolina Environmental Policy Act, G.S. 113A-1 thru 113A-10, at the time the holders propose to build facilities to use water from Jordan Lake. Such documentation shall include the environmental impacts of the proposed withdrawal, treatment, distribution, and disposal of the holders' allocated water.

(b) Local governments must install and maintain suitable meters for the measurement of water withdrawn, report these withdrawals to the department on a monthly basis, and obtain the department's approval for the design, location, and installation of associated withdrawal facilities.

(c) Holders of Level I and Level II allocations must pay the required capital, interest, and operating costs when due.

History Note: Statutory Authority G.S. 113A-1 through 113A-10; 143-215.3(a)(1); 143-354(a)(11); 143B-282; Eff. March 1, 1988.

**.0507 LOSS OF ALLOCATION**

(a) The Commission will review the Level I and Level II allocations at five year intervals, beginning on the effective date of the first allocation.

(b) Level I allocations will be reviewed for possible reassignment if the recipient does not begin to withdraw water within five years of the effective date of allocation or is not using and withdrawing the water as proposed in the application.

(c) Level I and Level II allocations will be rescinded upon failure by the local government to meet the regulation requirements in .0506 (a), (b), and (c).

(d) The Commission may adjust, reassign, or transfer interests in water supply storage held by local governments, if indicated by an investigation of needs or changes in the project's water supply storage capacity. Capital, interest, and operating costs will be equitably adjusted to reflect the allocation recipients' proportion of total capacity.

Holders of Level I and Level II allocations will receive appropriate refunds for any payments made if their allocations are adjusted, reassigned, or otherwise amended with the approval of the Commission. Rescinded allocations will not be refunded.

(e) The Commission shall hold a public meeting to obtain comments and information regarding the proposed loss of allocation.

History Note: Statutory Authority G.S. 143-215.3(a)(1); 143-354(a)(11); 143B-282; Eff. March 1, 1988.

## Session Law 2011-374

**Extracted from copy of Session Law 2011-374 through the General Assembly website on September 26, 2012**

**GENERAL ASSEMBLY OF NORTH CAROLINA**
**SESSION 2011**

**SESSION LAW 2011-374**

**HOUSE BILL 609**

AN ACT TO PROMOTE THE DEVELOPMENT OF WATER SUPPLY RESERVOIRS AND OTHER WATER SUPPLY RESOURCES, TO PROVIDE THAT FUNDS FROM THE CLEAN WATER MANAGEMENT TRUST FUND MAY BE USED TO PRESERVE LANDS FOR THE DEVELOPMENT OF WATER SUPPLY RESERVOIRS, AND TO IMPROVE THE EFFICIENCY OF USE OF NORTH CAROLINA'S WATER RESOURCES.

Whereas, S.L. 2007-518 directed the Environmental Review Commission to study the allocation of surface water resources and their availability and maintenance in the State; and

Whereas, pursuant to this directive, the Environmental Review Commission commissioned a study and report on water allocation issues and policy options; and

Whereas, the resulting water allocation report included a recommendation that the State create an expedited regulatory process for the construction of new water supply reservoirs; and

Whereas, the resulting water allocation report found that certain areas of the State, including the Piedmont, are expected to experience significant population growth over the next 30 years and do not have adequate water supplies to support the expected growth; Now, therefore,

The General Assembly of North Carolina enacts:

**PART III. IMPROVE THE EFFICIENCY OF USE OF NORTH CAROLINA'S WATER RESOURCES**

**SECTION 3.1.** G.S. 143-355(l) reads as rewritten:

"(l) Local Water Supply Plans. – Each unit of local government that provides public water service or that plans to provide public water service and each large community water system shall, either individually or together with other units of local government and large community water systems, prepare a local water supply plan and submit it to the Department for approval. The Department shall provide technical assistance with the preparation of plans to units of local government and large community water systems upon request and to the extent that the Department has resources available to provide assistance. At a minimum, each unit of local government and large community water system shall include in local water supply plans all information that is readily available to it. Plans shall include present and projected population, industrial development, and water use within the service area; present and future water supplies; an estimate of the technical assistance that may be needed at the local level to address projected water needs; current and future water conservation and water reuse programs, **including a plan for the reduction of long-term per capita demand for potable water;** a description of how the

local government or large community water system will respond to drought and other water shortage emergencies and continue to meet essential public water supply needs during the emergency; and any other related information as the Department may require in the preparation of a State water supply plan. A unit of local government or large community water system shall submit a revised plan that specifies how the water system intends to address foreseeable future water needs when eighty percent (80%) of the water system's available water supply based on calendar year average daily demand has been allocated to current or prospective water users or the seasonal demand exceeds ninety percent (90%). Local plans shall be revised to reflect changes in relevant data and projections at least once each five years unless the Department requests more frequent revisions. The revised plan shall include the current and anticipated reliance by the local government unit or large community water system on surface water transfers as defined by G.S. 143-215.22G. Local plans and revised plans shall be submitted to the Department once they have been approved by each unit of local government and large community water system that participated in the preparation of the plan."

**SECTION 3.2.** G.S. 143-355.4(b) reads as rewritten:

"(b) To be eligible for State water infrastructure funds from the Drinking Water State Revolving Fund or the Drinking Water Reserve or any other grant or loan of funds allocated by the General Assembly whether the allocation of funds is to a State agency or to a nonprofit organization for the purpose of extending waterlines or expanding water treatment capacity, a local government or large community water system must demonstrate that the system:

…

(7) Has implemented a consumer education program that emphasizes the importance of water conservation and that includes information on measures that residential customers may implement to reduce water consumption."

## Surface Water Transfer Statutes

### § 143-215.22G. Definitions.

In addition to the definitions set forth in G.S. 143-212 and G.S. 143-213, the following definitions apply to this Part.

(1) "River basin" means any of the following river basins designated on the map entitled "Major River Basins and Sub-basins in North Carolina" and filed in the Office of the Secretary of State on 16 April 1991. The term "river basin" includes any portion of the river basin that extends into another state. Any area outside North Carolina that is not included in one of the river basins listed in this subdivision comprises a separate river basin.

| | | |
|---|---|---|
| a. | 1-1 | Broad River. |
| b. | 2-1 | Haw River. |
| c. | 2-2 | Deep River. |
| d. | 2-3 | Cape Fear River. |
| e. | 2-4 | South River. |
| f. | 2-5 | Northeast Cape Fear River. |
| g. | 2-6 | New River. |
| h. | 3-1 | Catawba River. |
| i. | 3-2 | South Fork Catawba River. |
| j. | 4-1 | Chowan River. |
| k. | 4-2 | Meherrin River. |
| l. | 5-1 | Nolichucky River. |
| m. | 5-2 | French Broad River. |
| n. | 5-3 | Pigeon River. |
| o. | 6-1 | Hiwassee River. |
| p. | 7-1 | Little Tennessee River. |
| q. | 7-2 | Tuskasegee (Tuckasegee) River. |
| r. | 8-1 | Savannah River. |
| s. | 9-1 | Lumber River. |
| t. | 9-2 | Big Shoe Heel Creek. |
| u. | 9-3 | Waccamaw River. |
| v. | 9-4 | Shallotte River. |
| w. | 10-1 | Neuse River. |
| x. | 10-2 | Contentnea Creek. |
| y. | 10-3 | Trent River. |
| z. | 11-1 | New River. |
| aa. | 12-1 | Albemarle Sound. |
| bb. | 13-1 | Ocoee River. |
| cc. | 14-1 | Roanoke River. |
| dd. | 15-1 | Tar River. |
| ee. | 15-2 | Fishing Creek. |
| ff. | 15-3 | Pamlico River and Sound. |
| gg. | 16-1 | Watauga River. |
| hh. | 17-1 | White Oak River. |
| ii. | 18-1 | Yadkin (Yadkin-Pee Dee) River. |
| jj. | 18-2 | South Yadkin River. |
| kk. | 18-3 | Uwharrie River. |
| ll. | 18-4 | Rocky River. |

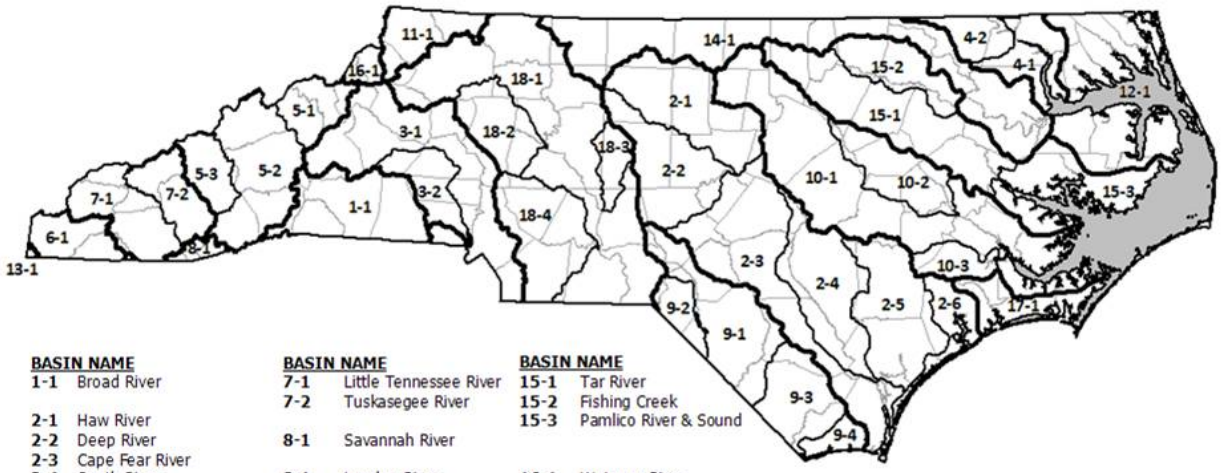
(2) "Surface water" means any of the waters of the State located on the land surface that are not derived by pumping from groundwater.

(3) "Transfer" means the withdrawal, diversion, or pumping of surface water from one river basin and discharge of all or any part of the water in a river basin different from the origin. However, notwithstanding the basin definitions in G.S. 143-215.22G(1), the following are not transfers under this Part:

a. The discharge of water upstream from the point where it is withdrawn.

b. The discharge of water downstream from the point where it is withdrawn. (1991, c. 712, s. 1; 1993, c. 348, s. 1; 1997-443, s. 15.48(b).)

Designated Interbasin Transfer River Basins
As defined in G.S. §143-215.22G




| BASIN NAME | | BASIN NAME | | BASIN NAME | |
|---|---|---|---|---|---|
| 1-1 | Broad River | 7-1 | Little Tennessee River | 15-1 | Tar River |
| | | 7-2 | Tuskasegee River | 15-2 | Fishing Creek |
| 2-1 | Haw River | | | 15-3 | Pamlico River & Sound |
| 2-2 | Deep River | 8-1 | Savannah River | | |
| 2-3 | Cape Fear River | | | | |
| 2-4 | South River | 9-1 | Lumber River | 16-1 | Watauga River |
| 2-5 | Northeast Cape Fear River | 9-2 | Big Shoe Heel Creek | | |
| 2-6 | New River | 9-3 | Waccamaw River | 17-1 | White Oak River |
| | | 9-4 | Shallotte River | | |
| 3-1 | Catawba River | | | 18-1 | Yadkin River |
| 3-2 | South Fork Catawba River | 10-1 | Neuse River | 18-2 | South Yadkin River |
| | | 10-2 | Contentnea Creek | 18-3 | Uwharrie River |
| 4-1 | Chowan River | 10-3 | Trent River | 18-4 | Rocky River |
| 4-2 | Meherrin River | | | | |
| | | 11-1 | New River | | |
| 5-1 | Nolichucky River | | | | |
| 5-2 | French Broad River | 12-1 | Albemarle Sound | | |
| 5-3 | Pigeon River | | | | |
| | | 13-1 | Ocoee River | | |
| 6-1 | Hiwassee River | | | | |
| | | 14-1 | Roanoke River | | |

## § 143-215.22L. Regulation of surface water transfers.

**Copied from the DWR website on September 26, 2012**

(a) Certificate Required. – No person, without first obtaining a certificate from the Commission, may:

(1) Initiate a transfer of 2,000,000 gallons of water or more per day from one river basin to another.

(2) Increase the amount of an existing transfer of water from one river basin to another by twenty-five percent (25%) or more above the average daily amount transferred during the year ending 1 July 1993 if the total transfer including the increase is 2,000,000 gallons or more per day.

(3) Increase an existing transfer of water from one river basin to another above the amount approved by the Commission in a certificate issued under G.S. 162A-7 prior to 1 July 1993.

(b) Exception. – Notwithstanding the provisions of subsection (a) of this section, a certificate shall not be required to transfer water from one river basin to another up to the full capacity of a facility to transfer water from one basin to another if the facility was in existence or under construction on 1 July 1993.

(c) Notice of Intent to File a Petition. – An applicant shall prepare a notice of intent to file a petition that includes a nontechnical description of the applicant's request and an identification of the proposed water source. Within 90 days after the applicant files a notice of intent to file a petition, the applicant shall hold at least one public meeting in the source river basin upstream from the proposed point of withdrawal, at least one public meeting in the source river basin downstream from the proposed point of withdrawal, and at least one public meeting in the receiving river basin to provide information to interested parties and the public regarding the nature and extent of the proposed transfer and to receive comment on the scope of the environmental documents. Written notice of the public meetings shall be provided at least 30 days before the public meetings. At the time the applicant gives notice of the public meetings, the applicant shall request comment on the alternatives and issues that should be addressed in the environmental documents required by this section. The applicant shall accept written comment on the scope of the environmental documents for a minimum of 30 days following the last public meeting. Notice of the public meetings and opportunity to comment on the scope of the environmental documents shall be provided as follows:

(1) By publishing notice in the North Carolina Register.

(2) By publishing notice in a newspaper of general circulation in:

a. Each county in this State located in whole or in part of the area of the source river basin upstream from the proposed point of withdrawal.

b. Each city or county located in a state located in whole or in part of the surface drainage basin area of the source river basin that also falls within, in whole or in part, the area denoted by one of the following eight-digit cataloging units as organized by the United States Geological Survey:

03050105 (Broad River: NC and SC);
03050106 (Broad River: SC);
03050107 (Broad River: SC);
03050108 (Broad River: SC);
05050001 (New River: NC and VA);
05050002 (New River: VA and WV);
03050101 (Catawba River: NC and SC);
03050103 (Catawba River: NC and SC);
03050104 (Catawba River: SC);
03010203 (Chowan River: NC and VA);
03010204 (Chowan River: NC and VA);
06010105 (French Broad River: NC and TN);
06010106 (French Broad River: NC and TN);
06010107 (French Broad River: TN);
06010108 (French Broad River: NC and TN);
06020001 (Hiwassee River: AL, GA, TN);
06020002 (Hiwassee River: GA, NC, TN);
06010201 (Little Tennessee River: TN);
06010202 (Little Tennessee River: TN, GA, and NC);
06010204 (Little Tennessee River: NC and TN);
03060101 (Savannah River: NC and SC);
03060102 (Savannah River: GA, NC, and SC);
03060103 (Savannah River: GA and SC);
03060104 (Savannah River: GA);
03060105 (Savannah River: GA);
03040203 (Lumber River: NC and SC);
03040204 (Lumber River: NC and SC);
03040206 (Lumber River: NC and SC);
03040207 (Lumber River: NC and SC);
03010205 (Albemarle Sound: NC and VA);
06020003 (Ocoee River: GA, NC, and TN);
03010101 (Roanoke River: VA);
03010102 (Roanoke River: NC and VA);
03010103 (Roanoke River: NC and VA);
03010104 (Roanoke River: NC and VA);
03010105 (Roanoke River: VA);
03010106 (Roanoke River: NC and VA);
06010102 (Watauga River: TN and VA);
06010103 (Watauga River: NC and TN);
03040101 (Yadkin River: VA and NC);
03040104 (Yadkin River: NC and SC);

03040105 (Yadkin River: NC and SC);
03040201 (Yadkin River: NC and SC);
03040202 (Yadkin River: NC and SC).

c. Each county in this State located in whole or in part of the area of the source river basin downstream from the proposed point of withdrawal.

d. Any area in the State in a river basin for which the source river basin has been identified as a future source of water in a local water supply plan prepared pursuant to G.S. 143-355(l).

e. Each county in the State located in whole or in part of the receiving river basin.

(3) By giving notice by first-class mail or electronic mail to each of the following:

a. The board of commissioners of each county in this State or the governing body of any county or city that is politically independent of a county in any state that is located entirely or partially within the source river basin of the proposed transfer and that also falls within, in whole or in part, the area denoted by one of the eight-digit cataloging units listed in sub-subdivision b. of subdivision (2) of this subsection.

b. The board of commissioners of each county in this State or the governing body of any county or city that is politically independent of a county in any state that is located entirely or partially within the receiving river basin of the proposed transfer and that also falls within, in whole or in part, the area denoted by one of the eight-digit cataloging units listed in sub-subdivision b. of subdivision (2) of this subsection.

c. The governing body of any public water supply system that withdraws water upstream or downstream from the withdrawal point of the proposed transfer.

d. If any portion of the source or receiving river basins is located in another state, all state water management or use agencies, environmental protection agencies, and the office of the governor in that state upstream or downstream from the withdrawal point of the proposed transfer.

e. All persons who have registered a water withdrawal or transfer from the proposed source river basin under this Part or under similar law in an another state.

f. All persons who hold a certificate for a transfer of water from the proposed source river basin under this Part or under similar law in an another state.

g. All persons who hold a National Pollutant Discharge Elimination System (NPDES) wastewater discharge permit for a discharge of 100,000 gallons per day or more upstream or downstream from the proposed point of withdrawal.

h. To any other person who submits to the applicant a written request to receive all notices relating to the petition.

(d) Environmental Documents. – The definitions set out in G.S. 113A-9 apply to this section. The Department shall conduct a study of the environmental impacts of any proposed transfer of water for which a certificate is required under this section. The study shall meet all of the requirements set forth in G.S. 113A-4 and rules adopted pursuant to G.S. 113A-4. An environmental assessment shall be prepared for any petition for a certificate under this section. The determination of whether an environmental impact statement shall also be required shall be made in accordance with the provisions of Article 1 of Chapter 113A of the General Statutes; except that an environmental impact statement shall be prepared for every proposed transfer of water from one major river basin to another for which a certificate is required under this section. The applicant who petitions the Commission for a certificate under this section shall pay the cost of special studies necessary to comply with Article 1 of Chapter 113A of the General Statutes. An environmental impact statement prepared pursuant to this subsection shall include all of the following:

(1) A comprehensive analysis of the impacts that would occur in the source river basin and the receiving river basin if the petition for a certificate is granted.

(2) An evaluation of alternatives to the proposed interbasin transfer, including water supply sources that do not require an interbasin transfer and use of water conservation measures.

(3) A description of measures to mitigate any adverse impacts that may arise from the proposed interbasin transfer.

(e) Public Hearing on the Draft Environmental Document. – The Commission shall hold a public hearing on the draft environmental document for a proposed interbasin transfer after giving at least 30 days' written notice of the hearing in the Environmental Bulletin and as provided in subdivisions (2) and (3) of subsection (c) of this section. The notice shall indicate where a copy of the environmental document can be reviewed and the procedure to be followed by anyone wishing to submit written comments and questions on the environmental document. The Commission shall prepare a record of all comments and written responses to questions posed in writing. The record shall include complete copies of scientific or technical comments related to the potential impact of the interbasin transfer. The Commission shall accept written comment on the draft environmental document for a minimum of 30 days following the last public hearing. The applicant who petitions the Commission for a certificate under this section shall pay the costs associated with the notice and public hearing on the draft environmental document.

(f) Determination of Adequacy of Environmental Document. – The Commission shall not act on any petition for an interbasin transfer until the Commission has determined that the environmental document is complete and adequate. A decision on the adequacy of the environmental document is subject to review in a contested case on the decision of the Commission to issue or deny a certificate under this section.

(g) Petition. – An applicant for a certificate shall petition the Commission for the certificate. The petition shall be in writing and shall include all of the following:

(1) A description of the facilities to be used to transfer the water, including the location and capacity of water intakes, pumps, pipelines, and other facilities.

(2) A description of all the proposed consumptive and nonconsumptive uses of the water to be transferred.

(3) A description of the water quality of the source river and receiving river, including information on aquatic habitat for rare, threatened, and endangered species; in-stream flow data for segments of the source and receiving rivers that may be affected by the transfer; and any waters that are impaired pursuant to section 303(d) of the federal Clean Water Act (33 U.S.C. § 1313(d)).

(4) A description of the water conservation measures used by the applicant at the time of the petition and any additional water conservation measures that the applicant will implement if the certificate is granted.

(5) A description of all sources of water within the receiving river basin, including surface water impoundments, groundwater wells, reinjection storage, and purchase of water from another source within the river basin, that is a practicable alternative to the proposed transfer that would meet the applicant's water supply needs. The description of water sources shall include sources available at the time of the petition for a certificate and any planned or potential water sources.

(6) A description of water transfers and withdrawals registered under G.S. 143-215.22H or included in a local water supply plan prepared pursuant to G.S. 143-355(l) from the source river basin, including transfers and withdrawals at the time of the petition for a certificate and any planned or reasonably foreseeable transfers or withdrawals by a public water system with service area located within the source river basin.

(7) A demonstration that the proposed transfer, if added to all other transfers and withdrawals required to be registered under G.S. 143-215.22H or included in any local water supply plan prepared by a public water system with service area located within the source basin pursuant to G.S. 143-355(l) from the source river basin at the time of the petition for a certificate, would not reduce the amount of water available for use in the source river basin to a degree that would impair existing uses, pursuant to the antidegradation policy set out in 40 Code of Federal Regulation § 131.12 (Antidegradation Policy) (1 July 2006 Edition) and the statewide antidegradation policy adopted pursuant thereto, or existing and planned consumptive and nonconsumptive uses of the water in the source river basin. If the proposed transfer would impact a reservoir within the source river basin, the demonstration must include a finding that the transfer would not result in a water level in the reservoir that is inadequate to support existing uses of the reservoir, including recreational uses.

(8) The applicant's future water supply needs and the present and reasonably foreseeable future water supply needs for public water systems with service area located within the source river basin. The analysis of future water supply needs shall include agricultural, recreational, and industrial uses, and electric power generation. Local water supply plans prepared pursuant to G.S. 143-355(l) for water systems with service area located within the source river basin shall be

used to evaluate the projected future water needs in the source river basin that will be met by public water systems.

(9) The applicant's water supply plan prepared pursuant to G.S. 143-355(l). If the applicant's water supply plan is more than two years old at the time of the petition, then the applicant shall include with the petition an updated water supply plan.

(10) Any other information deemed necessary by the Commission for review of the proposed water transfer.

(h) Settlement Discussions. – Upon the request of the applicant, any interested party, or the Department, or upon its own motion, the Commission may appoint a mediation officer. The mediation officer may be a member of the Commission, an employee of the Department, or a neutral third party but shall not be a hearing officer under subsections (e) or (j) of this section. The mediation officer shall make a reasonable effort to initiate settlement discussions between the applicant and all other interested parties. Evidence of statements made and conduct that occurs in a settlement discussion conducted under this subsection, whether attributable to a party, a mediation officer, or other person shall not be subject to discovery and shall be inadmissible in any subsequent proceeding on the petition for a certificate. The Commission may adopt rules to govern the conduct of the mediation process.

(i) Draft Determination. – Within 90 days after the Commission determines that the environmental document prepared in accordance with subsection (d) of this section is adequate or the applicant submits its petition for a certificate, whichever occurs later, the Commission shall issue a draft determination on whether to grant the certificate. The draft determination shall be based on the criteria set out in this section and shall include the conditions and limitations, findings of fact, and conclusions of law that would be required in a final determination. Notice of the draft determination shall be given as provided in subsection (c) of this section.

(j) Public Hearing on the Draft Determination. – Within 60 days of the issuance of the draft determination as provided in subsection (i) of this section, the Commission shall hold public hearings on the draft determination. At least one hearing shall be held in the affected area of the source river basin, and at least one hearing shall be held in the affected area of the receiving river basin. In determining whether more than one public hearing should be held within either the source or receiving river basins, the Commission shall consider the differing or conflicting interests that may exist within the river basins, including the interests of both upstream and downstream parties potentially affected by the proposed transfer. The public hearings shall be conducted by one or more hearing officers appointed by the Chair of the Commission. The hearing officers may be members of the Commission or employees of the Department. The Commission shall give at least 30 days' written notice of the public hearing as provided in subsection (c) of this section. The Commission shall accept written comment on the draft determination for a minimum of 30 days following the last public hearing. The Commission shall prepare a record of all comments and written responses to questions posed in writing. The record shall include complete copies of scientific or technical comments related to the potential impact of the interbasin transfer. The applicant who petitions the Commission for a certificate under this

section shall pay the costs associated with the notice and public hearing on the draft determination.

(k) Final Determination: Factors to be Considered. – In determining whether a certificate may be issued for the transfer, the Commission shall specifically consider each of the following items and state in writing its findings of fact and conclusions of law with regard to each item:

(1) The necessity and reasonableness of the amount of surface water proposed to be transferred and its proposed uses.

(2) The present and reasonably foreseeable future detrimental effects on the source river basin, including present and future effects on public, industrial, economic, recreational, and agricultural water supply needs, wastewater assimilation, water quality, fish and wildlife habitat, electric power generation, navigation, and recreation. Local water supply plans for public water systems with service area located within the source river basin prepared pursuant to G.S. 143-355(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.

(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.

(5) The availability of reasonable alternatives to the proposed transfer, including the potential capacity of alternative sources of water, the potential of each alternative to reduce the amount of or avoid the proposed transfer, probable costs, and environmental impacts. In considering alternatives, the Commission is not limited to consideration of alternatives that have been proposed, studied, or considered by the applicant. The determination shall include a specific finding as to why the applicant's need for water cannot be satisfied by alternatives within the receiving basin, including unused capacity under a transfer for which a certificate is in effect or

that is otherwise authorized by law at the time the applicant submits the petition. The determination shall consider the extent to which access to potential sources of surface water or groundwater within the receiving river basin is no longer available due to depletion, contamination, or the declaration of a capacity use area under Part 2 of Article 21 of Chapter 143 of the General Statutes. The determination shall consider the feasibility of the applicant's purchase of water from other water suppliers within the receiving basin and of the transfer of water from another sub-basin within the receiving major river basin. Except in circumstances of technical or economic infeasibility or adverse environmental impact, the Commission's determination as to reasonable alternatives shall give preference to alternatives that would involve a transfer from one sub-basin to another within the major receiving river basin over alternatives that would involve a transfer from one major river basin to another major river basin.

(6) If applicable to the proposed project, the applicant's present and proposed use of impoundment storage capacity to store water during high-flow periods for use during low-flow periods and the applicant's right of withdrawal under G.S. 143-215.44 through G.S. 143-215.50.

(7) If the water to be withdrawn or transferred is stored in a multipurpose reservoir constructed by the United States Army Corps of Engineers, the purposes and water storage allocations established for the reservoir at the time the reservoir was authorized by the Congress of the United States.

(8) Whether the service area of the applicant is located in both the source river basin and the receiving river basin.

(9) Any other facts and circumstances that are reasonably necessary to carry out the purposes of this Part.

(l) Final Determination: Information to be Considered. – In determining whether a certificate may be issued for the transfer, the Commission shall consider all of the following sources of information:

(1) The petition.

(2) The environmental document prepared pursuant to subsection (d) of this section.

(3) All oral and written comment and all accompanying materials or evidence submitted pursuant to subsections (e) and (j) of this section.

(4) Information developed by or available to the Department on the water quality of the source river basin and the receiving river basin, including waters that are identified as impaired pursuant to section 303(d) of the federal Clean Water Act (33 U.S.C. § 1313(d)), that are subject to a total maximum daily load (TMDL) limit under subsections (d) and (e) of section 303 of the federal Clean Water Act, or that would have their assimilative capacity impaired if the certificate is issued.

(5) Any other information that the Commission determines to be relevant and useful.

(m) Final Determination: Burden and Standard of Proof; Specific Findings. – The Commission shall grant a certificate for a water transfer if the Commission finds that the applicant has established by a preponderance of the evidence all of the following:

(1) The benefits of the proposed transfer outweigh the detriments of the proposed transfer. In making this determination, the Commission shall be guided by the approved environmental document and the policy set out in subsection (t) of this section.

(2) The detriments have been or will be mitigated to the maximum degree practicable.

(3) The amount of the transfer does not exceed the amount of the projected shortfall under the applicant's water supply plan after first taking into account all other sources of water that are available to the applicant.

(4) There are no reasonable alternatives to the proposed transfer.

(n) Final Determination: Certificate Conditions and Limitations. – The Commission may grant the certificate in whole or in part, or deny the certificate. The Commission may impose any conditions or limitations on a certificate that the Commission finds necessary to achieve the purposes of this Part including a limit on the period for which the certificate is valid. The conditions and limitations shall include any mitigation measures proposed by the applicant to minimize any detrimental effects within the source and receiving river basins. In addition, the certificate shall require all of the following conditions and limitations:

(1) A water conservation plan that specifies the water conservation measures that will be implemented by the applicant in the receiving river basin to ensure the efficient use of the transferred water. Except in circumstances of technical or economic infeasibility or adverse environmental impact, the water conservation plan shall provide for the mandatory implementation of water conservation measures by the applicant that equal or exceed the most stringent water conservation plan implemented by a community water system, as defined in G.S. 143-355(l), that withdraws water from the source river basin.

(2) A drought management plan that specifies how the transfer shall be managed to protect the source river basin during drought conditions or other emergencies that occur within the source river basin. Except in circumstances of technical or economic infeasibility or adverse environmental impact, this drought management plan shall include mandatory reductions in the permitted amount of the transfer based on the severity and duration of a drought occurring within the source river basin and shall provide for the mandatory implementation of a drought management plan by the applicant that equals or exceeds the most stringent water conservation plan implemented by a community water system, as defined in G.S. 143-355(l), that withdraws water from the source river basin.

(3) The maximum amount of water that may be transferred on a daily basis, and methods or devices required to be installed and operated that measure the amount of water that is transferred.

(4) A provision that the Commission may amend a certificate to reduce the maximum amount of water authorized to be transferred whenever it appears that an alternative source of water is available to the certificate holder from within the receiving river basin, including, but not limited to, the purchase of water from another water supplier within the receiving basin or to the transfer of water from another sub-basin within the receiving major river basin.

(5) A provision that the Commission shall amend the certificate to reduce the maximum amount of water authorized to be transferred if the Commission finds that the applicant's current projected water needs are significantly less than the applicant's projected water needs at the time the certificate was granted.

(6) A requirement that the certificate holder report the quantity of water transferred during each calendar quarter. The report required by this subdivision shall be submitted to the Commission no later than 30 days after the end of the quarter.

(7) Except as provided in this subdivision, a provision that the applicant will not resell the water that would be transferred pursuant to the certificate to another public water supply system. This limitation shall not apply in the case of a proposed resale or transfer among public water supply systems within the receiving river basin as part of an interlocal agreement or other regional water supply arrangement, provided that each participant in the interlocal agreement or regional water supply arrangement is a co-applicant for the certificate and will be subject to all the terms, conditions, and limitations made applicable to any lead or primary applicant.

(o) Administrative and Judicial Review. – Administrative and judicial review of a final decision on a petition for a certificate under this section shall be governed by Chapter 150B of the General Statutes.

(p) Certain Preexisting Transfers. – In cases where an applicant requests approval to increase a transfer that existed on 1 July 1993, the Commission may approve or disapprove only the amount of the increase. If the Commission approves the increase, the certificate shall be issued for the amount of the preexisting transfer plus any increase approved by the Commission. A certificate for a transfer approved by the Commission under G.S. 162A-7 shall remain in effect as approved by the Commission and shall have the same effect as a certificate issued under this Part. A certificate for the increase of a preexisting transfer shall contain all of the conditions and limitations required by subsection (m) of this section.

(q) Emergency Transfers. – In the case of water supply problems caused by drought, a pollution incident, temporary failure of a water plant, or any other temporary condition in which the public health, safety, or welfare requires a transfer of water, the Secretary of Environment and Natural Resources may grant approval for a temporary transfer. Prior to approving a temporary transfer, the Secretary shall consult with those parties listed in subdivision (3) of subsection (c) of this section that are likely to be affected by the proposed transfer. However, the Secretary shall not be required to satisfy the public notice requirements of this section or make written findings of fact and conclusions of law in approving a temporary transfer under this subsection. If the Secretary approves a temporary transfer under this subsection, the Secretary shall specify conditions to protect other water users. A temporary transfer shall not exceed six

months in duration, but the approval may be renewed for a period of six months by the Secretary based on demonstrated need as set forth in this subsection.

(r) Relationship to Federal Law. – The substantive restrictions, conditions, and limitations upon surface water transfers authorized in this section may be imposed pursuant to any federal law that permits the State to certify, restrict, or condition any new or continuing transfers or related activities licensed, relicensed, or otherwise authorized by the federal government. This section shall govern the transfer of water from one river basin to another unless preempted by federal law.

(s) Planning Requirements. – When any transfer for which a certificate was issued under this section equals or exceeds eighty percent (80%) of the maximum amount authorized in the certificate, the applicant shall submit to the Department a detailed plan that specifies how the applicant intends to address future foreseeable water needs. If the applicant is required to have a local water supply plan, then this plan shall be an amendment to the local water supply plan required by G.S.143-355(l). When the transfer equals or exceeds ninety percent (90%) of the maximum amount authorized in the certificate, the applicant shall begin implementation of the plan submitted to the Department.

(t) Statement of Policy. – It is the public policy of the State to maintain, protect, and enhance water quality within North Carolina. It is the public policy of this State that the reasonably foreseeable future water needs of a public water system with its service area located primarily in the receiving river basin are subordinate to the reasonably foreseeable future water needs of a public water system with its service area located primarily in the source river basin. Further, it is the public policy of the State that the cumulative impact of transfers from a source river basin shall not result in a violation of the antidegradation policy set out in 40 Code of Federal Regulations § 131.12 (1 July 2006 Edition) and the statewide antidegradation policy adopted pursuant thereto.

(u) Renewal of Certificate. – A petition to extend or renew a certificate shall be treated as a new petition. (1993, c. 348, s. 1; 1997-443, ss. 11A.119(a), 15.48(c); 1997-524, s. 1; 1998-168, s. 4; 2001-474, s. 28; 2007-484, s. 43.7C; 2007-518, s. 3; 2008-125, s. 1; 2008-198, s. 11.5; 2010-155, ss. 2, 3; 2011-398, s. 50.)