

JORDAN LAKE PARTNERSHIP
SUPPLEMENTAL ARTICLE No. 4
Regional Water Supply Study, Phase II

Pursuant to Section 5 of the *Memorandum of Understanding Supporting a Regional Water Supply Partnership for Water Supply Planning and Potential Joint Use of B. Everett Jordan Reservoir* dated March 16, 2009 (MOU), this Supplemental Article No. 4 defines the terms under which the **Regional Water Supply Study, Phase II** will be undertaken by the Jordan Lake Partnership. The signatories to this Supplemental Article agree to reimburse the Project Lead Agency for actual costs incurred, according to cost shares defined below, up to the total cost shown.

Project Lead Agency: City of Durham

Project Scope: The project scope is described in the Contract between the City of Durham and Triangle J Council of Governments dated March 23, 2012 (Attachment A):

- Task 1. Develop Phase II and Final Draft Triangle Region Water Supply Plan for Jordan Lake.
- Task 2. Develop Hydrologic Analyses to Support Jordan Lake Allocation Requests.
- Task 3. Assist Jordan Lake Partnership
- Task 4. Assist DWR in revising the Cape Fear River Basin Water Supply Plan and updating the Cape Fear River Basin Hydrologic Model
- Task 5. Assist Jordan Lake Partnership in working with DWR and EMC.

Project Cost: The total project cost, defined in detail in Attachment B, is \$95,700.

Project Management Team: The Project Management Team will be made up of one representative, appointed by the Manager or Executive Director, from each of the signatories.

Signatory Cost Shares: The costs will be split based on the relative Level 1 or Level 2 base charges each Partner is paying under the MOU.

<u>Partner</u>	<u>Cost Share</u>	<u>Total</u>
Town of Apex	13.04%	12,479
Town of Cary	13.04%	12,479
Chatham County	4.35%	4,163
City of Durham	13.04%	12,479
Town of Hillsborough	4.35%	4,163
Town of Holly Springs	4.35%	4,163
Town of Morrisville	4.35%	4,163
Orange County	4.35%	4,163
OWASA	13.04%	12,479
Town of Pittsboro	4.35%	4,163
City of Raleigh	13.04%	12,479
City of Sanford	4.35%	4,163
Wake County RTP South	4.35%	4,163
TOTAL	100.00%	\$95,700

TOWN OF APEX

Bruce Radford, Town Manager

Date

ATTEST: _____

TOWN OF CARY

Benjamin T. Shivar, Town Manager

Date

ATTEST: _____

CHATHAM COUNTY

Charlie Horne, County Manager

Date

ATTEST: _____

CITY OF DURHAM

Thomas J. Bonfield, City Manager

Date

ATTEST: _____

TOWN OF HILLSBOROUGH

Eric Peterson, Town Manager

Date

ATTEST: _____

TOWN OF HOLLY SPRINGS

Carl G. Dean, Town Manager

Date

ATTEST: _____

TOWN OF MORRISVILLE

John Whitson, Town Manager

Date

ATTEST: _____

ORANGE COUNTY

Laura E. Blackmon, County Manager

Date

ATTEST: _____

ORANGE WATER AND SEWER AUTHORITY

Ed Kerwin, Executive Director

Date

ATTEST: _____

TOWN OF PITTSBORO

William G. Terry, Town Manager

Date

ATTEST: _____

CITY OF RALEIGH

Russell Allen, City Manager

Date

ATTEST: _____

WAKE COUNTY

David C. Cooke, County Manager

Date

ATTEST: _____

CITY OF SANFORD

Phillip Hegwer, City Manager

Date

ATTEST: _____



TRIANGLE J COUNCIL OF GOVERNMENTS

W o r l d

C l a s s

R e g i o n

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www.tjcog.dst.nc.us

July 30, 2012

Ms. Vicki Westbrook
Deputy Director, Department of Water Management
City of Durham
101 City Hall Plaza
Durham, NC 27701

Re: Proposed changes to Durham Contract for Jordan Lake Regional Water Supply Study, Phase II

Dear Ms. Westbrook,

Please find attached a proposed revision to the scope and budget for Phase II of the Regional Water Supply Plan project being conducted for the Jordan Lake Partnership. This proposed revision would increase the scope and budget to a maximum of \$95,700, an increase of \$47,000 from the currently contracted scope and budget of \$48,700.

This proposed revision is in recognition of an elongated timeline for the updated Cape Fear/Neuse River Basin Hydrologic model and allocation process, as well as additional alternatives and collections of sources and associated analysis requested by the Technical Review Team (TRT) beyond what was envisioned in the original scope. In addition, this proposed revision would allow TJCOG to model up to three (3) regional alternatives for 2040 and 2060 using the updated hydrologic model as requested by the TRT, whereas the original scope included the modeling of one (1) regional alternative for both 2040 and 2060. Finally, this proposed revision recognizes the desire of the TRT to have agreement on a single preferred alternative to meeting the Region's future water supply needs. The original scope envisioned laying out a series of potential options for meeting the future water supply needs, but did not include the additional work necessary to develop agreement among the TRT on a single, preferred alternative, which is expected to take significant additional time, analyses, facilitation, individual and group meetings and technical writing.

If you have any questions or if I can provide any additional information, please do not hesitate to contact me at 919-295-0017 or mschlegel@tjcog.org. Thank you for the opportunity to assist you with this very important project. We look forward to continuing to work with the City of Durham and the Jordan Lake Partnership on this landmark study.

Sincerely,

Michael B. Schlegel
Water Resources Program Manager

MISSION STATEMENT

*To serve as an intergovernmental organization for local elected officials
that works proactively on regional issues in order to sustain and improve the quality of life for our citizens.*



W o r l d
C l a s s
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TRIANGLE J COUNCIL OF GOVERNMENTS

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Jordan Lake Partnership Regional Water Supply Study Phase II Project Proposal

July 30, 2012

Scope of Services

Task 1. Develop Phase II and Final Draft Triangle Region Water Supply Plan for Jordan Lake.

TJCOG will work with the Partners to develop a complete regional water supply plan and peer-reviewed alternatives for meeting future water supply needs in the Region suitable for supporting Jordan Lake water supply storage allocation applications.

1. TJCOG will work with local water supply system staffs to develop future individual system water supply source options and alternatives.
2. TJCOG will confirm projected future water supply needs and water supply assumptions.
3. TJCOG will review individual system source options and alternatives and develop a regional compilation of source options.
4. TJCOG will work with the Technical Review Team to develop regional alternatives.
5. TJCOG will work with local water supply system staffs to document the assumptions and expectations for water efficiency, water conservation, demand management and reclaimed water use in the future.
6. TJCOG will develop and facilitate a peer-review for water supply alternatives and system summaries
7. TJCOG will meet with local water supply system staffs to reconcile any discrepancies between system alternatives.
8. TJCOG will work with local water supply system staffs and their consultants to finalize current water supply safe yields.
9. TJCOG will work with local water supply system staffs to finalize Jordan Lake water supply storage allocation needs.
10. *TJCOG will work with the Technical Review Team to develop agreement on a preferred regional water supply alternative.*
11. TJCOG will draft a technical memorandum comprising the Phase II Triangle Region Water Supply Plan.

12. JLP will review the draft technical memorandum and provide comments.
13. TJCOG will produce a final draft technical memorandum incorporating both the Phase I needs assessment and the Phase II regional alternatives.

Task 2. Develop Hydrologic Analyses to Support Jordan Lake Allocation Requests.

TJCOG will use the draft updated Cape Fear River/Neuse Rive Basin Hydrologic Model (Model) to analyze the hydrologic impacts of Jordan Lake Partnership water supply alternatives and requested Jordan Lake water supply storage allocations under various scenarios. Model scenarios might include the following:

- Current conditions, with the US Army Corps of Engineers (USACE) Jordan Lake drought protocol
 - 2040 conditions, with the USACE Jordan Lake drought protocol (*up to 3 alternatives*)
 - 2060 conditions, with the USACE Jordan Lake drought protocol (*up to 3 alternatives*)
1. TJCOG will review the data in the 2030 and 2050 base scenarios to confirm input values.
 2. TJCOG will develop Model 2040 and 2060 scenarios (*up to 3 alternatives*) based on the updated input spreadsheets.
 3. TJCOG will work with JLP and DWR to develop Model scenario variations as necessary.
 4. TJCOG will document the inputs and assumptions for each model scenario and model run.
 5. TJCOG will run the Model for the available period of record under varying levels of Jordan Lake water supply demands based on the various scenarios.
 6. TJCOG will analyze Model outputs and present those analyses.
 7. TJCOG will use the Model to verify or calculate reservoir safe yields.
 8. TJCOG will work with JLP and DWR to refine Model output analysis and presentation.
 9. TJCOG will produce draft technical memoranda discussing the Model outputs and analyses, as necessary.
 10. JLP will review the draft technical memoranda and provide comments.
 11. TJCOG will produce final technical memoranda incorporating the comments from JLP.

Task 3. Assist Jordan Lake Partnership in Working with a Consultant for Jordan Lake Allocation Applications.

TJCOG will provide assistance in selecting a consultant that will prepare Jordan Lake water supply storage allocation applications for each member of the Jordan Lake Partnership interested in obtaining a new or increased allocation. Furthermore, TJCOG will provide technical support to any consultant with which the Jordan Lake Partnership contracts.

1. TJCOG will provide technical assistance in the drafting of any requests for proposals.
2. TJCOG will assist JLP in evaluating any proposals submitted by consultants.
3. TJCOG will assist JLP in selecting and contracting with a consultant.
4. TJCOG will assist consultants in translating information from the Triangle Region Water Supply Plan into the individual Jordan Lake water supply storage allocation applications.

5. TJCOG will provide consultants with Model outputs and analyses to incorporate as necessary into the individual Jordan Lake water supply storage allocation applications.
6. TJCOG will assist consultants in evaluating Model results.

Task 4. Assist DWR in revising the Cape Fear River Basin Water Supply Plan and updating the Cape Fear River Basin Hydrologic Model

TJCOG will coordinate with the Division of Water Resources in its revision of the draft Cape Fear River Basin Water Supply Plan (Basin Plan) to ensure consistency with the Jordan Lake Partnership regional water supply plan. TJCOG will work with the Division of Water Resources and its consultant to ensure updates of the Cape Fear River Basin Hydrologic Model (Model) are consistent with the Jordan Lake Partnership regional water supply plan.

1. TJCOG will coordinate with DWR in their update of the Basin Plan to ensure that the information used for the Basin Plan is consistent with the information used for the JLP regional water supply plan.
2. TJCOG will attend DWR meetings for the Basin Plan as necessary.
3. TJCOG will work with DWR and its consultant to ensure that Model input data are consistent with data in the JLP regional water supply plan.
4. TJCOG will assist DWR and its consultant in obtaining input data from local governments to update the Model.
5. TJCOG will work with DWR and its consultant to ensure that the updated Model meets the needs of the JLP.
6. TJCOG will attend DWR meetings for the Model update as necessary.

Task 5. Assist Jordan Lake Partnership in working with DWR and EMC.

TJCOG will facilitate and provide technical support for meetings between the Jordan Lake Partnership and the Division of Water Resources or the Environmental Management Commission.

1. TJCOG will assist JLP in scheduling meetings with DWR and EMC.
2. TJCOG will assist JLP in preparing for meetings with DWR and EMC.
3. TJCOG will attend meetings between JLP and DWR or EMC to provide technical support.

HydroLogics Support

HydroLogics, Inc. developed the Model. TJCOG may need assistance from HydroLogics for some parts of this project, such as developing specialized operating rules using the OASIS Operation Control Language for a particular Model scenario.

Project Management and Administration

For any contracted project, some amount of time is required to manage the finances of the project, such as accounting for the time that staff members spend on various project tasks, accounting for travel and other expenses, and preparing invoices.

Budget

Billing will be on a cost-reimbursable basis. Labor will be billed according to the rates in Table 1. Mileage expenses will be reimbursed at the rate of \$0.500 per mile for the foreseeable future. Other expenses will be reimbursed based on actual cost. The total budget for Phase II of the Jordan Lake Partnership Regional Water Supply Study is \$95,700, and details for each task are included in Table 2.

Table 1. Labor Billing Rates

Labor Category	Billing Rate
Water Resources Program Manager	\$89.57 per hour, July 1, 2011 – December 31, 2013
Water Resources Planner	\$51.00 per hour, July 1, 2011 – December 31, 2013

Note that the billing rates provided in Table 1 are an estimate. TJCOG will inform the Jordan Lake Partnership of any billing rate changes during the course of the Project.

Table 2. Complete Project Budget

As currently contracted:

Task	WR Program Manager Hours	WR Planner Hours	Total Labor Hours	Budget
Task 1	168	150	318	\$22,700
Task 2	68	128	196	\$12,600
Task 3	24	24	48	\$3,400
Task 4	16	14	30	\$2,100
Task 5	12	12	24	\$1,700
Project Management	12	12	24	\$1,700
HydroLogics Support				\$4,500
Total	300	340	640	\$48,700

As proposed:

Task	WR Program Manager Hours	WR Planner Hours	Total Labor Hours	Budget
Task 1	365	420	785	\$54,115
Task 2	91	360	451	\$26,510
Task 3	24	36	60	\$3,985
Task 4	16	24	40	\$2,655
Task 5	16	16	32	\$2,250
Project Management	12	12	24	\$1,685
HydroLogics Support				\$4,500
Total	524	868	1,392	\$95,700
Difference	224	528	752	\$47,000