

## **AMENDMENT NO. 5 to the Agreement to Perform Professional Engineering Services for Water Treatment Regulatory Compliance with LT2ESWTR and DBP Stage II between the City of Durham and Black & Veatch International Company**

THIS AMENDMENT ( "Amendment No. 5") is dated, made and entered into as of the \_\_\_\_\_ day of \_\_\_\_\_, 20\_\_ between the City of Durham ("Owner") and Black & Veatch International Company ("Engineer"), hereinafter collectively referred to as the "parties."

The City and the Engineer entered into a contract titled "Agreement to Perform Professional Engineering Services for Water Treatment Regulatory Compliance with LT2ESWTR and DBP Stage II between the City of Durham and Black and Veatch International Company" dated February 28, 2008 for \$3,165,480.00. Initial contract authorization allowed for preliminary evaluations and design services for \$2,092,563.00 including contingency. That contract is referred to as the "Original Contract."

The parties entered into a first amendment to the Original Contract, which amendment is dated July 14, 2009 ("First Amendment"). The purpose of the First Amendment was to authorize expenditure, and performance by Engineer, of the Bidding Phase Services, Construction Phase Services and Resident Field Representation in the additional compensation amount of \$975,379.00, with additional contingency moneys equal to \$97,538.00, for a total amended contract amount, including all contingency moneys, of \$3,165,480.

The parties entered into a second amendment to the Original Contract, which amendment is dated July 15, 2009 ("Second Amendment"). The Second Amendment deleted the design from the Original Contract and added new design services at both Brown and Williams which included a plant expansion at Brown and process, chemical feed, SCADA, and administration facilities improvements at Brown and Williams. Upgrades to Brown filters 1 - 4 were scoped to be designed and constructed separate from the main project. The Second Amendment had an additional compensation amount of \$3,990,881.00, with additional contingency moneys equal to \$399,088.00, for a total amended contract amount, including all contingency moneys, of \$7,555,449.00.

The parties entered into a third amendment to the Original Contract, which is dated December 13, 2013 ("Third Amendment"). The Third Amendment modified the original scope of services for additional effort required for the Environmental Assessment, effort associated with a value engineering study and to compensate the engineer for schedule delays in design and construction. The Third Amendment had an additional compensation of \$941,921.00, for a total amended contract amount, including all contingency moneys of \$ 8,486,127.00.

The parties entered into a fourth amendment to the Original Contract, which is dated January 12, 2015 ("Fourth Amendment"). The Fourth Amendment modified the original scope of services

for additional effort required for the Environmental Assessment, effort associated with additional modeling demonstrating the effect of proposed water system strategies on Falls Lake water quality. The Fourth Amendment had an additional compensation of \$67,509.00, for a total amended contract amount, including all contingency moneys of \$8,553,636.00.

The Original Contract is hereby amended as follows:

1. Insert the following after Paragraph A of PHASE 3100. BIDDING PHASE SERVICES in Exhibit A, Part 1 Engineer's Responsibilities:
  - B. A Systems Integrator will be selected based on qualifications and price by an evaluation team consisting of OWNER and ENGINEER personnel. The solicitation and selection process will resemble in format and approach to the Systems Integration Services selection for the North & South Durham WRF project in 2013. To implement the qualifications based selection of System Integration Services, ENGINEER will provide the following additional services:
    1. Develop a Request for Proposal (RFP) document for solicitation of proposals for system integrator services. The North & South Durham WRF RFP will be utilized and edited. A software and equipment questionnaire will be included. One meeting with OWNER to review and advance the RFP is included in this amendment.
    2. Advertise and distribute the RFP documents. It is anticipated the RFP documents will consist of the RFP and a complete set of drawings and specifications developed for the overall project. ENGINEER will assist OWNER with the advertisement of the RFP, distribute documents, maintain records of the prospective integrators to whom documents have been issued, and receive, process, and retain payments for the documents. To reduce costs, all documentation for this advertisement process will be conducted electronically utilizing pdfs.
    3. Prepare, attend, and conduct pre-submission conference and prepare and distribute meetings minutes following the conference.
    4. Receive and respond to questions, requests, and comments from prospective integrators. Prepare addendum as appropriate to interpret, clarify, or further define the RFP documents.
    5. Review the submitted proposals in preparation for the selection meeting by the evaluation team. This review is for purposes of preparing the ENGINEER evaluation team member for the selection meeting.
    6. Attend and participate in the systems integrator selection process. It is anticipated the evaluation team will consist of one B&V professional and multiple professionals from the OWNER. ENGINEER will participate as a voting member of the selection team.

7. Negotiate with selected systems integrator to refine scope, to request software or equipment modifications, or to modify approach. Requested changes will be identified by the evaluation team during the systems integrator selection meeting. ENGINEER will review the revised proposal received by the selected systems integrator. One round of negotiations is included in this amendment.
  8. Following acceptance of the proposal of the selected system integrator, ENGINEER will modify the bidding documents for overall project to reflect the selected systems integrator and their approach and scope of supply. The final systems integrator's proposal will be included in the bidding documents for the bidding contractors to utilize for the development of the bids and later for utilization for the execution of the project.
  9. Following receipt, review, and acceptance of bids for the overall project, the OWNER will submit to City Council for award for both the system integration services and the prime contract for the overall project.
2. Delete the last sentence of the first paragraph of PHASE 4100. CONSTRUCTION PHASE SERVICES in Exhibit A, Part 1, Engineer's Responsibilities, of Amendment No. 2 that begins with "Contract 2 Construction" and replaced with the following sentence:

Contract 2 Construction will occur over a 30-month period commencing in 2016.

3. Delete Task Items 1 through 12 of PHASE 4100. CONSTRUCTION PHASE SERVICES in Exhibit A, Part 1, Engineer's Responsibilities in their entirety and replaced with the follow:
1. At a mutually agreeable date and time and at a facility provided by OWNER, conduct a preconstruction conference. ENGINEER shall prepare agenda for the conference, and prepare and distribute minutes. The preconstruction conference shall include a discussion of the Contractors' schedules, procedures for transmittal and review of the Contractors' submittals, processing payment applications, critical work sequencing, change orders, record documents, and the Contractors' responsibilities for safety and first aid, and OWNER's requirements for the project.
  2. Review and comment on the Contractors' initial and updated construction schedules and advise OWNER as to acceptability. Review the Contractor's construction schedule, activity sequence, and construction procedures with regard to OWNER's ability to keep existing facilities in operation.

3. Make periodic visits to the construction sites to observe progress of the Work, attend monthly progress meetings, and consult with the OWNER and the Contractor concerning problems and progress of the Work.
4. Interpret construction Contract Documents when requested by OWNER or the Contractor. Respond to requests for information (RFI) from Contractor. Work related to unreasonably numerous or insubstantial RFIs will be considered Additional Services.
5. Review drawings and other data submitted by Contractor as required by the construction contract documents. ENGINEER's review shall be for general conformity to the construction contract documents and shall not relieve the Contractor of any of their contractual responsibilities. Such reviews shall not extend to means, methods, techniques, sequences, or procedures of construction, or to safety precautions and programs incident thereto. ENGINEER's review of more than one re-submission of any submittal due to the Contractor's failure to provide all previously requested corrected data or additional information will be considered Additional Services. The construction Contract Documents will require the Contractor to reimburse the OWNER for these Additional Services.
6. Review and process the Contractors' monthly payment requests, and forward to OWNER if appropriate. ENGINEER's review shall be for the purpose of making a full independent mathematical check of the Contractors' payment request. The Resident Project Representative is responsible for verifying the quantities of work, which is the basis of the payment requests.
7. Provide documentation and administer the processing of change orders, including applications for extension of construction time. Evaluate the cost and scheduling aspects of change orders and, where necessary, negotiate with the Contractor to obtain a fair price for the Work. Said negotiation shall be subject to the approval of OWNER. Work related to unusually complex or unusually numerous claims will be considered Additional Services. Work related to OWNER initiated changes to the project will be considered Additional Services.
8. Provide factory witness testing services associated with the new SCADA system. Two factory witness testing trips are anticipated, one for the Williams WTP and the other for the Brown WTP. All SCADA equipment for a specific WTP will be witness tested during a single trip lasting approximately a week.

9. In accordance with Chapter 17 of the 2012 North Carolina Building Code, specialty inspections of certain geotechnical, structural, and architectural components are required. ENGINEER shall perform the specialty inspections. Specialty inspection services include the following areas of inspections:
  - Verification of structural subsurface and foundation conditions
  - Inspection of structural steel fabrication and erection
  - Inspection of rebar placement and condition
  - Verification of concrete placement, curing, and strength
  - Verification of masonry placement, grout strength, and reinforcing
  - Inspection of any on-site structural steel welding
  - Verification of structural steel bolted connections
  - Inspection of architectural wall and roof sections and materials
  - Documentation sealed by structural engineer of all structural modifications.
  - Documentation, certification, and/or reporting of all inspections.
10. Upon notification of substantial completion by Contractor, inspect the construction work and prepare punch-list of those items to be completed or corrected before final completion of the Project. Submit results of the inspections to Owner and the Contractor.
11. Before ENGINEER issues a Certificate of Substantial Completion, submit to the Contractor a list of observed items requiring completion or correction.
12. Verify that all items on the final list have been completed or corrected and make recommendations to OWNER concerning acceptance.
13. Upon completion of the project, revise the construction Contract Drawings to conform to the construction records. Submit AutoCAD Drawing files on electronic DVD and pdf versions of drawings and specifications on separate DVD. The Contractor is responsible for maintaining a record copy of all documents, annotated to show all changes made during construction, in accordance with the construction contract documents.
14. Upon completion or correction of the items of work on the punch-list, conduct final inspection to determine if the Work is completed. Provide written recommendation concerning final payment to OWNER, including a list of items, if any, to be completed prior to making such payment.

4. Insert the following new section titled “PHASE 4300. COORDINATION WITH RESIDUALS PROJECT” after PHASE 4200 – CONSTRUCTION MATERIALS TESTING of Exhibit A, Part 1:

**PHASE 4300. COORDINATION WITH RESIDUALS PROJECT**

Wash water and residuals handling, processing, and dewatering improvements at the Brown WTP and Williams WTP (Residuals Project) are anticipated to be constructed concurrently and under a separate construction contract with this project. The Residuals Project is currently scheduled to commence approximately 6 months after the start of this project. To allow for proper coordination between the two projects, a budgeted amount has been included for coordination services. Coordination services shall include attendance at the monthly progress meetings, planning and participation in facilities shutdowns, review and scheduling of facilities tie-ins, start-ups, and testing, weekly/daily coordination between Engineer’s field staff, coordination of deliveries or construction activities that may be adverse to plant operations or the other project, resolution of conflicts between the two projects, and other coordination activities that may become necessary during the course of the project. Owner and Engineer agree that the time and effort to properly coordinate between the two projects are not well defined. As a result, compensation for coordination services will be tracked separately and invoiced based on billable hourly rates plus expenses. Owner and Engineer will communicate frequently on the status, progress, and engineering costs incurred in the performance of these coordination services.

5. Delete the last sentence of the last paragraph of PHASE 4200. CONSTRUCTION MATERIALS TESTING in Exhibit A, Part 1 Engineer’s Responsibilities beginning with “An allowance of \$40,000 has been included . . .” and replaced with the following sentence:

An allowance has been included for provision of these services.

6. Delete the fourth and fifth sentences of the first paragraph of PHASE 5100. RESIDENT FIELD REPRESENTATION of Exhibit A, Part 1 beginning with “ shall be deleted and replaced with the following sentences:

One full-time resident will be provided to observe the work at both WTPs during the 30 months of construction of Contract 2. A second full-time resident will be provided for a 12 month period.

7. Items C and E of PHASE 6100. POST-CONSTRUCTION PHASE in Exhibit A, Part 1 Engineer’s Responsibilities shall be deleted. These services will be provided as part of the WARRANTEE SUPPORT SERVICES.

8. Add the following new phases after PHASE 6100. POST-CONSTRUCTION PHASE in Exhibit A, Part 1 Engineer's Responsibilities.

#### **PHASE 6200. WARRANTEE SUPPORT SERVICES**

ENGINEER will assist OWNER in the communication, coordination, inspection, and close-out of warrantee items that are identified by OWNER during the correction period of the completed project. OWNER will notify ENGINEER when a warrantee item is identified. ENGINEER will log the event for purposes of extending the correction period for that equipment or system and will work with Contractor towards the successful resolution of the problem. Correction or resolution of the warrantee item will remain the responsibility of the Contractor. Warrantee support services will commence at Substantial Completion and extend 12 months through the correction period of the project. The project will have two correction periods, a 12 month period extending from the completion of Williams and later another 12 month period extending from the completion of Brown. A budgeted amount has been included for warrantee support services. OWNER and ENGINEER agree that the time and effort to complete these services are not well defined and dependent of the quantity, severity, and responsiveness of the vendor or contractor. As a result, compensation for warrantee support services will be tracked separately and invoiced based on billable hourly rates plus expenses. OWNER and ENGINEER will communicate frequently on the status, progress, and engineering costs incurred in the performance of these warrantee services.

#### **PHASE 6300. ASSET MANAGEMENT SUPPORT SERVICES**

ENGINEER will assist OWNER in obtaining and organizing project asset data for utilization in the OWNER's asset management system. As required by the Contract Documents, O&M information shall be provided by Contractor for each maintainable piece of equipment, equipment assembly or subassembly, and material provided or modified under this contract. Asset data shall be provided for areas, structures, equipment, pipelines, and other miscellaneous assets provided or modified as a part of the Contract. ENGINEER will review each O&M for asset data content and assist OWNER in the format and delivery of this information to the OWNER.

9. Delete Part 3 – SCHEDULE of Exhibit A Engineer’s Responsibilities, and replaced with the following:

**PART 3 - SCHEDULE**

The ENGINEER shall perform the tasks on the following schedule:

PHASE SERIES 1000	Evaluations	February 1, 2008 – July 1, 2009
PHASE SERIES 2000	Design/ Permitting	March 17, 2009 – March 15, 2014
PHASE SERIES 3000	Bid Phase Services	October 15, 2015 – May 15, 2016
PHASE SERIES 4000	Construction Phase	
	Contract No. 1	April 1, 2010 – April 1, 2012
	Contract No. 2	June 1, 2016 – November 30, 2018
PHASE SERIES 5000	Resident Services	June 1, 2016 – November 30, 2018
PHASE SERIES 6000	Post Construction Services	July 31, 2018 – November 30, 2019
PHASE SERIES 7000	Other Services	January 1, 2009 – November 30, 2019

The Contract shall be extended until November 30, 2019.

10. Delete paragraph 1 of Section C4.01 for Basic Services Having A Determined Scope – Lump Sum Method of Payment of Exhibit C Payments to Engineer for Services and Reimbursable Expenses and replace with the following:

1. An amount of up to **\$ 806,700** for this amendment based on the following assumed distribution of Lump Sum compensation:

Task		Original Contract and Amendment Nos. 1, 2, 3 and 4 Value	Additional Lump Sum	Total Contract Value after Amendment No. 5
<b>Phase Series 1000. Evaluations</b>				
1100	Water Treatment Plant Evaluations	\$ 450,290	-	\$ 450,290
1200	Water Age Analysis	\$ 11,200	-	\$ 11,200
1300	Corrosion Study	\$ 62,200	-	\$ 62,200
1400	Environmental Assessment	\$ 363,109	-	\$ 363,109



<b>Subtotal –Evaluations</b>		<b>\$ 886,799</b>	<b>-</b>	<b>\$ 886,799</b>
<b>Phase Series 2000. Design and Permitting</b>				
2100	Field Surveys	\$ 126,000	-	\$ 126,000
2200	Design Services	\$ 4,227,501	-	\$ 4,227,501
2300	Permitting Services	\$ 74,000	-	\$ 74,000
<b>Subtotal –Design and Permitting</b>		<b>\$ 4,427,501</b>	<b>-</b>	<b>\$ 4,427,501</b>
<b>Phase Series 3000. Bidding Phase Services</b>				
3100	Bidding Phase Services	\$ 113,800	\$22,600	\$136,400
<b>Subtotal – Bidding Phase</b>		<b>\$ 113,800</b>	<b>\$ 22,600</b>	<b>\$ 136,400</b>
<b>Phase Series 4000. Construction Phase Services</b>				
4100	Construction Phase Services	\$ 1,784,700	\$1,496,500	\$ 3,281,200
4200	Construction Materials Testing	\$ 40,000	(\$40,000)	\$ 0
<b>Subtotal – Construction Phase</b>		<b>\$ 1,824,700</b>	<b>\$1,456,500</b>	<b>\$3,281,200</b>
<b>Phase Series 5000. Resident Field Representation</b>				
5100	Resident Field Representation	\$ 744,000	(\$744,000)	\$ 0
<b>Subtotal – Resident Field Representation</b>		<b>\$ 744,000</b>	<b>(\$744,000)</b>	<b>\$ 0</b>
<b>Phase Series 6000. Post-Construction Services</b>				
6100	Post-Construction Services	\$ 94,000	-	\$ 94,000
6300	Asset Management Support Services	\$ 0	\$ 71,600	\$ 71,600
<b>Subtotal – Post-Construction Services</b>		<b>\$ 94,000</b>	<b>\$71,600</b>	<b>\$ 165,600</b>
<b>Phase Series 7000. Other Services</b>				
7100	Current Consolidated As-Built Drawings	\$ 151,800	-	\$151,800
7200	Subsurface Utility Engineering	\$ 71,000	-	\$71,000
7300	Master Site Plans	\$ 49,500	-	\$49,500
7400	LEED Services	\$ 168,696		\$ 168,696
7500	Lead-based Paint and Asbestos Tile Abatement	\$ 21,840		\$ 21,840
<b>Subtotal – Other Services</b>		<b>\$ 462,836</b>	<b>-</b>	<b>\$ 462,836</b>
<b>Subtotal – All Tasks</b>		<b>\$ 8,553,636</b>	<b>\$ 806,700</b>	<b>\$ 9,360,336</b>

The preceding table presents a breakdown of fees for evaluations, final design, and construction administration based on an assumed Scope of Work. If the parties fail to agree on the items of work or the fees, this agreement may be terminated according to paragraph 6.06.A.2 of Article 6.

An amount of up to **\$1,458,500** for this amendment based on the following assumed distribution of Billable Hourly Rates plus Reimbursable Expenses compensation.

- a. For PHASE 4200 – CONSTRUCTION MATERIALS TESTING, an amount not to exceed \$200,000 without further authorization based upon the attached Billable Hourly Rate Schedule, plus reimbursable expenses.
- b. For PHASE 4300 - COORDINATION WITH RESIDUALS PROJECT, an amount not to exceed \$100,000 without further authorization based upon the attached Billable Hourly Rate Schedule, plus reimbursable expenses.
- c. For PHASE 5100 – RESIDENT FIELD REPRESENTATION, an amount not to exceed \$1,058,500 without further authorization based upon the attached Billable Hourly Rate Schedule, plus reimbursable expenses.
- d. For PHASE 6200 – WARRANTY SUPPORT SERVICES, an amount not to exceed \$100,000 without further authorization based upon the attached Billable Hourly Rate Schedule, plus reimbursable expenses.

The distribution of work and associated compensation for the above listed Billable Hourly Rate phases are budgetary in nature and may change based on the required work of each phase. The budgeted costs may be shared between these phases provided the total costs do not exceed the upper limit for Billable Hourly Rates of this amendment.

Amounts expended pursuant to this Amendment No. 5 shall not exceed **\$2,265,200** without written authorization by Owner. Total contract value shall not exceed \$10,818,836.00 without written authorization by Owner.

## **BILLABLE HOURLY RATE SCHEDULE**

<u>Classification</u>	<u>2015 Billing Rates, \$</u>
Principal	245
Senior Project Manager	235
Engineering Manager	195
Senior Project Engineer	185
Project Engineer	175
Technical Specialist	195
Lead Design Engineer	165
Civil Engineer 04	150
Civil Engineer 03	140
Civil Engineer 02	130
Civil Engineer 01	120
Senior CAD Technician	115
CAD Graphics Technician	100
CAD Drafter	85
Office Administrator	98
Secretary	75
Clerical	55

The billable hourly rates include computer, local travel, telephone, miscellaneous copying, postage, and subsistence. The following expenses are reimbursable work items and will be billed at cost plus the indicated mark-up.

1. Subcontract costs (10 percent).
2. Bulk reproduction of report, Drawings, and Specifications (0 percent).
3. Charges for review of Drawings and Specifications by government agencies, if any (0 percent).
4. Airline and other travel expenses (0 percent).

11. State Law Provisions.

(a) E-Verify Requirements. (A) If this contract is awarded pursuant to North Carolina General Statutes (NCGS) 143-129 – (i) the contractor represents and covenants that the

contractor and its subcontractors comply with the requirements of Article 2 of Chapter 64 of the NCGS; (ii) the words "contractor," "contractor's subcontractors," and "comply" as used in this subsection (A) shall have the meanings intended by NCGS 143-129(j); and (iii) the City is relying on this subsection (A) in entering into this contract. (B) If this contract is subject to NCGS 143-133.3, the contractor and its subcontractors shall comply with the requirements of Article 2 of Chapter 64 of the NCGS.

(b) Iran Divestment Act Certification. The Contractor certifies that, if it submitted a successful bid for this contract, then as of the date it submitted the bid, the Contractor was not identified on the Iran List. If it did not submit a bid for this contract, the Contractor certifies that as of the date that this contract is entered into, the Contractor is not identified on the Iran List. It is a material breach of contract for the Contractor to be identified on the Iran List during the term of this contract or to utilize on this contract any subcontractor that is identified on the Iran List. In this Iran Divestment Act Certification section -- "Contractor" means the person entering into this contract with the City of Durham; and "Iran List" means the Final Divestment List – Iran, the Parent and Subsidiary Guidance– Iran list, and all other lists issued from time to time by the N.C. State Treasurer to comply with G. S. 147-86.58 of the N.C. Iran Divestment Act.

IN WITNESS WHEREOF, the parties hereto have executed this Amendment, the Effective Date of which is indicated on page 1.

OWNER - CITY OF DURHAM

ATTEST:

\_\_\_\_\_

By: \_\_\_\_\_

Pre-audit certificate:

\_\_\_\_\_

ENGINEER:

Black & Veatch International Company

Corporate Seal - Engineer

By: \_\_\_\_\_

ATTEST: \_\_\_\_\_

Date Signed: \_\_\_\_\_

State of \_\_\_\_\_

ACKNOWLEDGMENT BY CORPORATION

County of \_\_\_\_\_

I, a notary public in and for the aforesaid county and state, certify that \_\_\_\_\_ personally appeared before me this day and stated that he or she is \_\_\_\_\_ Secretary of \_\_\_\_\_, a corporation, and that by authority duly given and as the act of the corporation, the foregoing contract or agreement with the City of Durham was signed in its name by its Associate Vice-President, whose name is \_\_\_\_\_, sealed with its corporate seal, and attested by him/herself as its said Secretary or Assistant Secretary. This the \_\_\_\_\_ day of \_\_\_\_\_, 20\_\_\_\_\_.

My commission expires: \_\_\_\_\_

\_\_\_\_\_  
Notary Public