

CONTRACT FOR AQUALUTIONS™ NUTRIENT REMOVAL FEASIBILITY STUDY AND PILOT STUDY DESIGN

This contract is dated, made, and entered into as of the _____ day of _____, 20____, by the City of Durham (“City”) and *ENTRIX, INC., d/b/a Cardno ENTRIX* (“Contractor”), a foreign corporation registered to do business in the State of North Carolina.

Sec. 1. Background and Purpose. The Falls Lake Nutrient Management Strategy requires large reductions of nitrogen and phosphorus (i.e., nutrients) from the City of Durham. The Public Works Department identified the AquaLutions™ nutrient removal system as a technology that has the potential to remove nitrogen and phosphorus at cost lower than that of traditional structural stormwater control measures. However, additional information is needed prior to developing a full scale application of AquaLutions™ in the city of Durham. A feasibility study that considers the treatment technology and the conditions in the City of Durham is needed before additional effort is expended on this technology. If the feasibility study indicates AquaLutions™ can be successfully applied in the City of Durham, a future pilot study of the AquaLutions™ nutrient removal system may be funded in the future.

Sec. 2. Services and Scope to be Performed. Presumption that Duty is Contractor’s. The Contractor shall evaluate the feasibility of using the AquaLutions™ nutrient removal system in a City of Durham watershed draining to Falls Lake. As part of this feasibility study, the Contractor shall evaluate physical and chemical conditions in the City of Durham, permitting conditions, and waste disposal associated with the AquaLutions™ system. The Contractor shall attend meetings, prepare reports, and meet project milestones. The detailed tasks and deliverables for the work to be performed are provided in Exhibit A, “Scope of Work”.

In this contract, “Work” means the services that the Contractor is required to perform pursuant to this contract and all of the Contractor’s duties to the City that arise out of this contract. Unless the context requires otherwise, if this contract states that a task is to be performed or that a duty is owed, it shall be presumed that the task or duty is the obligation of the Contractor.

Sec. 3. Schedule of Performance and Term. This Contract will be effective upon execution by both parties and will expire upon completion of the services and payment by the City.

Sec. 4. Complete Work without Extra Cost. Except to the extent otherwise specifically stated in this contract, the Contractor shall obtain and provide, without additional cost to the City, all labor, materials, equipment, transportation, facilities, services, permits, and licenses necessary to perform the Work.

Sec. 5. Contractor’s Billings to City. Compensation. The Contractor shall send invoices to the City on a monthly basis for the amounts to be paid pursuant to this contract. Each invoice shall document, to the reasonable satisfaction of the City: such information as may be reasonably requested by the City. This includes a monthly status report that summarizes the work progress, updated schedule, and a description of any contract issues and their resolution. Within twenty days after the City receives an invoice, the City shall send the Contractor a check in payment for all undisputed amounts contained in the invoice.

The City shall pay the Contractor for the Work on a time and materials basis not to exceed a total amount of **\$79,017.00**. The City shall not be obligated to pay the Contractor any payments, fees, expenses, or compensation other than those authorized by this section.

Sec. 6. Prompt Payment to Subcontractors. (a) Within 60 days of receipt by the Contractor of each payment from the City under this contract, the Contractor shall pay all Subcontractors (which term includes subconsultants and suppliers) based on work completed or service provided under the subcontract. Should any payment to the Subcontractor be delayed by more than 60 days after receipt of payment by the Contractor from the City under this contract, the Contractor shall pay the Subcontractor interest, beginning on the 61th day, at the rate of 1% per month or fraction thereof on such unpaid balance as may be due. By appropriate litigation, Subcontractors shall have the right to enforce this subsection (a) directly against the Contractor, but not against the City of Durham.

(b) If the individual assigned to administer this contract for the City (in this section, titled “Prompt Payment to Subcontractors,” he or she will be referred to as the “Project Manager”) determines that it is appropriate to enforce subsection (a) in this manner, the City may withhold from progress or final payments to the Contractor the sums estimated by the Project Manager to be

- (i) the amount of interest due to the Subcontractor under subsection (a), and/or
- (ii) the amounts past-due under subsection (a) to the Subcontractor but not exceeding 5% of the payment(s) due from the City to the Contractor.

This subsection (b) does not limit any other rights to withhold payments that the City may have.

(c) Nothing in this section (titled “Prompt Payment to Subcontractors”) shall prevent the Contractor at the time of invoicing, application, and certification to the City from withholding invoicing, application, and certification to the City for payment to the Subcontractor for unsatisfactory job progress; defective goods, services, or construction not remedied; disputed work; third-party claims filed or reasonable evidence that such a claim will be filed; failure of the subcontractor to make timely payments for labor, equipment, and materials; damage to the Contractor or another subcontractor; reasonable evidence that the subcontract cannot be completed for the unpaid balance of the subcontract sum; or a reasonable amount for retainage not to exceed 10%.

(d) The Project Manager may require, as a prerequisite to making progress or final payments, that the Contractor provide statements from any Subcontractors designated by the Project Manager regarding the status of their accounts with the Contractor. The statements shall be in such format as the Project Manager reasonably requires, including notarization if so specified.

Sec. 7. Insurance.

The Contractor shall purchase and maintain insurance coverage for not less than the following:

Commercial General Liability, covering:

- Premises/operations
- Products/completed operations (two years minimum, from project completion)
- Broad form property damage
- Contractual liability
- Independent contractors, if any are used in the performance of this contract
- City of Durham must be named additional insured, and an original of the endorsement to effect the coverage must be attached to the certificate (if by blanket endorsement, then agent may so indicate in the GL section of the certificate, in lieu of an original endorsement)
- Combined single limit not less than \$1,000,000 per occurrence, with an annual aggregate on not less than \$2,000,000.

Commercial Auto Liability, covering:

- Symbol 1, all vehicles
- Combined single limit of \$2,000,000
- City of Durham must be named additional insured

Professional Liability, covering:

- Covering claims arising out of professional advisement / consultation services performed in connection with this contract
- Combined single limit not less than \$1,000,000 per occurrence; if coverage is only available on claims made basis, then additional coverage requirements may apply, subject to review of City Finance Director

Workers' Compensation Insurance, covering:

- Statutory benefits;
- Covering employees; covering owners partners, officers, and relatives (who work on this contract) (this must be stated on the certificate)
- Employers' liability, \$1,000,000
- Waiver of subrogation in favor of the City of Durham

Insurance shall be provided by:

- Companies authorized to do business in the State of North Carolina
- Companies with Best rating of A-, VII or better.

Insurance shall be evidenced by a certificate:

- Providing notice to the City of not less than 30 days prior to cancellation or reduction of coverage
- Certificates shall be addressed to:
City of Durham, North Carolina
Attention: Public Works Department
101 City Hall Plaza
Durham, NC 27701

Sec. 8. Performance of Work by City. If the Contractor fails to perform the Work in accordance with the schedule referred to in Section 3 above, the City may, in its discretion, in order to bring the project closer to the schedule, perform or cause to be performed some or all of the Work, and doing so shall not waive any of the City's rights and remedies. Before doing so, the City shall give the Contractor notice of its intention. The Contractor shall reimburse the City for additional costs incurred by the City in exercising its right to perform or cause to be performed some or all of the Work pursuant to this section.

Sec. 9. Exhibits. The following exhibits are made a part of this contract:

Exhibit A. Scope of Work containing four page(s).

In case of conflict between an exhibit and the text of this contract excluding the exhibit, the text of this contract shall control.

Sec. 10. Notice. (a) All notices and other communications required or permitted by this contract shall be in writing and shall be given either by personal delivery, fax, UPS, Federal Express, or certified United States mail, return receipt requested, addressed as follows. The parties are requested to send a copy by email.

To the City:

Michelle Woolfolk
City of Durham, Public Works Department
101 City Hall Plaza
Durham, NC 27701-3329
The fax number is (919)560-4316.
Email: michelle.woolfolk@durhamnc.gov

To the Contractor:

Lauren Elmore
5400 Glenwood Ave.
Suite G 03
Raleigh, NC 27612
The fax number is (919) 239-8913.
Email: lauren.elmore@cardno.com

(b) Change of Address. Date Notice Deemed Given. A change of address, fax number, or person to receive notice may be made by either party by notice given to the other party. Any notice or other communication under this contract shall be deemed given and sent at the time of actual delivery, if it is personally delivered or sent by fax. If the notice or other communication is sent by United States mail, it shall be deemed given upon the third calendar day following the day on which such notice or other communication is deposited with the United States Postal Service or upon actual delivery, whichever first occurs.

Sec. 11. Indemnification. (a) To the maximum extent allowed by law, the Contractor shall defend, indemnify, and save harmless Indemnitees from and against all Charges that arise in any manner from, in connection with, or out of this contract as a result of acts or omissions of the Contractor or subcontractors or anyone directly or indirectly employed by any of them or anyone for whose acts any of them may be liable. In performing its duties under this subsection "a," the Contractor shall at its sole expense defend Indemnitees with legal counsel reasonably acceptable to City. (b) Definitions. As used in subsections "a" above and "c" below -- "Charges" means claims, judgments, costs, damages, losses, demands, liabilities, duties, obligations, fines, penalties, royalties, settlements, and expenses (included without limitation within "Charges" are (1) interest and reasonable attorneys' fees assessed as part of any such item, and (2) amounts for alleged violations of sedimentation pollution, erosion control, pollution, or other environmental laws, regulations, ordinances, rules, or orders -- including but not limited to any such alleged violation that arises out of the handling, transportation, deposit, or delivery of the items that are the subject of this contract). "Indemnitees" means City and its officers, officials, independent contractors, agents, and employees, excluding the Contractor. (c) Other Provisions Separate. Nothing in this section shall affect any warranties in favor of the City that are otherwise provided in or arise out of this contract. This section is in addition to and shall be construed separately from any other indemnification provisions that may be in this contract. (d) Survival. This section shall remain in force despite termination of this contract (whether by expiration of the term or otherwise) and termination of the services of the Contractor under this contract. (e) Limitations of the Contractor's Obligation. If this section is in, or is in connection with, a contract relative to the design, planning, construction, alteration, repair or maintenance of a building, structure, highway, road, appurtenance or appliance, including moving, demolition and excavating connected therewith, then subsection "a" above shall not require the Contractor

to indemnify or hold harmless Indemnitees against liability for damages arising out of bodily injury to persons or damage to property proximately caused by or resulting from the negligence, in whole or in part, of Indemnitees.

Sec. 12. Miscellaneous

(a) Choice of Law and Forum; Service of Process. (i) This contract shall be deemed made in Durham County, North Carolina. This contract shall be governed by and construed in accordance with the law of North Carolina. The exclusive forum and venue for all actions arising out of this contract shall be the North Carolina General Court of Justice, in Durham County. Such actions shall neither be commenced in nor removed to federal court. This subsection (a) shall not apply to subsequent actions to enforce a judgment entered in actions heard pursuant to this subsection. (ii) If the Contractor is not a natural person (for instance, the Contractor is a corporation or limited liability company), this subsection (ii) applies. "Agent for Service of Process" means every person now or hereafter appointed by the Contractor to be served or to accept service of process in any State of the United States. Without excluding any other method of service authorized by law, the Contractor agrees that every Agent for Service of Process is designated as its non-exclusive agent for service of process, summons, and complaint. The Contractor will instruct each Agent for Service of Process that after such agent receives the process, summons, or complaint, such agent shall promptly send it to the Contractor. This subsection (ii) does not apply while the Contractor maintains a registered agent in North Carolina with the office of the N. C. Secretary of State and such registered agent can be found with due diligence at the registered office.

(b) Waiver. No action or failure to act by the City shall constitute a waiver of any of its rights or remedies that arise out of this contract, nor shall such action or failure to act constitute approval of or acquiescence in a breach thereunder, except as may be specifically agreed in writing.

(c) Performance of Government Functions. Nothing contained in this contract shall be deemed or construed so as to in any way estop, limit, or impair the City from exercising or performing any regulatory, policing, legislative, governmental, or other powers or functions.

(d) Severability. If any provision of this contract shall be unenforceable, the remainder of this contract shall be enforceable to the extent permitted by law.

(e) Assignment. Successors and Assigns. Without the City's written consent, the Contractor shall not assign (which includes to delegate) any of its rights (including the right to payment) or duties that arise out of this contract. The City Manager may consent to an assignment without action by the City Council. Unless the City otherwise agrees in writing, the Contractor and all assignees shall be subject to all of the City's defenses and shall be liable for all of the Contractor's duties that arise out of this contract and all of the City's claims that arise out of this contract. Without granting the Contractor the right to assign, it is agreed that the duties of the Contractor that arise out of this contract shall be binding upon it and its heirs, personal representatives, successors, and assigns.

(f) Compliance with Law. In performing all of the Work, the Contractor shall comply with all applicable law.

(g) Notice of City Policy. THE CITY OPPOSES DISCRIMINATION ON THE BASIS OF RACE AND SEX AND URGES ALL OF ITS CONTRACTORS TO PROVIDE A FAIR OPPORTUNITY FOR MINORITIES AND WOMEN TO PARTICIPATE IN THEIR WORK FORCE AND AS SUBCONTRACTORS AND VENDORS UNDER CITY CONTRACTS.

(h) EEO Provisions. During the performance of this Contract the Contractor agrees as follows: (1) The Contractor shall not discriminate against any employee or applicant for employment because of race, color, religion, sex, national origin, political affiliation or belief, age, or handicap. The Contractor shall take affirmative action to insure that applicants are employed and that employees are treated equally during employment, without regard to race, color, religion, sex, national origin, political affiliation or belief, age, or handicap. Such action shall include but not be limited to the following: employment, upgrading, demotion, transfer, recruitment or advertising, layoff or termination, rates of pay or other forms of compensation, and selection for training, including apprenticeship. The Contractor shall post in conspicuous places, available to employees and applicants for employment, notices setting forth these EEO provisions. (2) The Contractor shall in all solicitations or advertisement for employees placed by or on behalf of the Contractor, state that all qualified applicants will receive consideration for employment without regard to race, color, religion, sex, national origin, political affiliation or belief, age, or handicap. (3) The Contractor shall send a copy of the EEO provisions to each labor union or representative of workers with which it has a collective bargaining agreement or other contract or understanding. (4) In the event of the Contractor's noncompliance with these EEO provisions, the City may cancel, terminate, or suspend this contract, in whole or in part, and the City may declare the Contractor ineligible for further City contracts. (5) Unless exempted by the City Council of the City of Durham, the Contractor shall include these EEO provisions in every purchase order for goods to be used in performing this contract and in every subcontract related to this contract so that these EEO provisions will be binding upon such subcontractors and vendors.

(i) SDBE. The Contractor shall comply with all applicable provisions of Article III of Chapter 18 of the

Durham City Code (Equal Business Opportunities Ordinance), as amended from time to time. The failure of the Contractor to comply with that article shall be a material breach of contract which may result in the rescission or termination of this contract and/or other appropriate remedies in accordance with the provisions of that article, this contract, and State law. The Participation Plan submitted in accordance with that article is binding on the Contractor. Section 18-59(f) of that article provides, in part, “If the City Manager determines that the Contractor has failed to comply with the provisions of the Contract, the City Manager shall notify the Contractor in writing of the deficiencies. The Contractor shall have 14 days, or such time as specified in the Contract, to cure the deficiencies or establish that there are no deficiencies.” It is stipulated and agreed that those two quoted sentences apply only to the Contractor’s alleged violations of its obligations under Article III of Chapter 18 and not to the Contractor’s alleged violations of other obligations.

(j) No Third Party Rights Created. This contract is intended for the benefit of the City and the Contractor and not any other person.

(k) Principles of Interpretation and Definitions. (1) The singular includes the plural and the plural the singular. The pronouns “it” and “its” include the masculine and feminine. References to statutes or regulations include all statutory or regulatory provisions consolidating, amending, or replacing the statute or regulation. References to contracts and agreements shall be deemed to include all amendments to them. The words “include,” “including,” etc. mean include, including, etc. without limitation. (2) References to a “Section” or “section” shall mean a section of this contract. (3) “Contract” and “Agreement,” whether or not capitalized, refer to this instrument. (4) “Duties” includes obligations. (5) The word “person” includes natural persons, firms, companies, associations, partnerships, trusts, corporations, governmental agencies and units, and other legal entities. (6) The word “shall” is mandatory. (7) The word “day” means calendar day. (8) The word “Work” is defined in Section 2. (9) A definition in this contract will not apply to the extent the context requires otherwise.

(l) Modifications. Entire Agreement. A modification of this contract is not valid unless signed by both parties and otherwise in accordance with requirements of law. Further, a modification is not enforceable against the City unless it is signed by the City Manager, a deputy or assistant City Manager, or, in limited circumstances, a City department director. This contract contains the entire agreement between the parties pertaining to the subject matter of this contract. With respect to that subject matter, there are no promises, agreements, conditions, inducements, warranties, or understandings, written or oral, expressed or implied, between the parties, other than as set forth or referenced in this contract.

(m) City’s Manager’s Authority. To the extent, if any, the City has the power to suspend or terminate this contract or the Contractor’s services under this contract, that power may be exercised by City Manager or a deputy or assistant City Manager without City Council action.

Sec. 13. Termination for Convenience (“TFC”). (a) *Procedure.* Without limiting any party’s right to terminate for breach, the parties agree that the City may, without cause, and in its discretion, terminate this contract for convenience by giving the Contractor written notice that refers to this section. TFC shall be effective at the time indicated in the notice. (b) *Obligations.* Upon TFC, all obligations that are still executory on both sides are discharged except that any right based on prior breach or performance survives, and the indemnification provisions and the section of this contract titled Trade Secrets and Confidentiality, if any, shall remain in force. At the time of TFC or as soon afterwards as is practical, the Contractor shall give the City all Work, including partly completed Work. In case of TFC, the Contractor shall follow the City’s instructions as to which subcontracts to terminate. (c) *Payment.* The City shall pay the Contractor an equitable amount for the costs and charges that accrue because of the City’s decisions with respect to the subcontracts, but excluding profit for the Contractor. Within 20 days after TFC, the City shall pay the Contractor one hundred dollars as a TFC fee and shall pay the Contractor for all Work performed except to the extent previously paid for. Work shall be paid for in accordance with the method (unit prices, hourly fees, etc.) to be used for payment had the Work been completed except to the extent it would be inequitable to either party, and if Work was to be paid for on a lump-sum basis, the City shall pay the part of the lump sum that reflects the percentage of completion attained for that Work. The Contractor shall not be entitled to any payment because of TFC except as stated in this section, whether on the basis of overhead, profit, damages, other economic loss, or otherwise.

Sec. 14. Trade Secrets; Confidentiality. The request for proposals (RFP) section titled “Trade Secrets and Confidentiality” shall apply to any Trade Secrets disclosed to the City during the process leading to the parties’ entering into this Contract (including all of the Contractor’s responses to the RFP). This section (titled “Trade Secrets; Confidentiality”) shall remain in force despite termination of this contract (whether by expiration of the term or otherwise) and termination of the services of the Contractor under this contract. For purposes of this contract, the word “candidate” in the RFP section just cited shall mean the “Contractor.”

IN WITNESS WHEREOF, the City and the Contractor have caused this contract to be executed under seal themselves or by their respective duly authorized agents or officers.

ATTEST:

CITY OF DURHAM

_____ By: _____

preaudit certificate, if applicable _____

ENTRIX, INC.
d/b/a Cardno Entrix

(Affix corporate seal)

By: _____

Title of officer: _____

State of _____ 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 (~~strike through the inapplicable:~~) chairperson/ president/ chief executive officer/ vice-president/ assistant vice-president/ treasurer/ chief financial officer of ENTRIX, INC. d/b/a Cardno Entrix, a Texas corporation registered to do business in North Carolina, and that by authority duly given and as the act of the corporation, he or she signed the foregoing contract with the City of Durham and the corporate seal was affixed to said instrument(s). This the _____ day of _____, 20_____.

My commission expires:

Notary Public

Exhibit A - Scope of Work

Nutrient Removal Feasibility Study and Pilot Study Design using AquaLutions™

The project goal is to conduct a feasibility study of the AquaLutions™ technology for removing nutrients from Durham streams and Falls Lake. The target areas for the feasibility study are Ellerbe and Little Lick Creeks, both located in the Falls Lake watershed. The feasibility study will evaluate the application of the AquaLutions™ technology to free-flowing water from the creeks, as well as slow-moving water from the mouth of each of these creeks at Falls Lake (i.e., coves). The output of the feasibility study is an evaluation of the potential nutrient removal efficiency, cost-effectiveness of the technology, and barriers to implementation, if any. If the feasibility study indicates that the AquaLutions™ technology can be a cost-effective way for reducing nutrients from Durham streams, then, at the direction of the City, Cardno ENTRIX will complete the design of a pilot study.

The feasibility study is divided into the following tasks:

1. Evaluate water quality and hydrology conditions in Ellerbe and Little Lick Creeks to determine the viability of AquaLutions™ treatment and to support pilot study site selection.
2. Evaluate the viability and potential effectiveness of AquaLutions™ treatment by analyzing bench-scale samples in the Aqua Fibers laboratory.
3. Evaluate permitting issues associated with the application of AquaLutions™ treatment in general, and for potential pilot study sites.
4. Develop a waste disposal plan for any byproducts of the treatment.
5. Develop a preliminary cost estimate for the design, installation and implementation of a pilot study.

Task 1- Evaluate water quality and hydrology conditions in Ellerbe and Little Lick Creeks to determine the viability of AquaLutions™ treatment and to support pilot study site selection.

Cardno ENTRIX will:

- Utilize parcel data, hydrography and other relevant spatial information to identify potential pilot study sites within Ellerbe and Little Lick Creeks, and their coves.
- Review existing hydrology and water quality data available from City of Durham and other sources such as NC Division of Water Quality (DWQ), and the U.S. Geological Survey (USGS) to determine potential location(s) for implementing a pilot project.
- Examine the need for additional hydrology and water quality data to support site selection.
- Consider critical factors for candidate sites including turbidity, toxicity, and minimum flow requirements.

Deliverables: Cardno ENTRIX will provide a technical memorandum describing the proposed locations for bench-scale sample collection (Task 2), along with maps and data analysis used to identify candidate sampling locations.

Task 2. Evaluate the viability and potential effectiveness of AquaLutions™ treatment by analyzing bench-scale samples in the Aqua Fibers laboratory.

Cardno ENTRIX will:

Collect water from five locations. They can be generally described as follows:

- 1) within Ellerbe Cove,
- 2) in Ellerbe Creek downstream of the North Durham Water Reclamation Facility (WRF) Ellerbe outfall,
- 3) in Ellerbe Creek upstream of the WRF outfall,
- 4) in Little Lick Cove, and
- 5) in Little Lick Creek upstream of the cove.

Specific sampling locations will be discussed with the City Project Manager prior to sample collection. Samples will be collected under two discharge conditions: (a) typical flow conditions and (b) high flow conditions; which will be generally determined based upon available flow records. Cardno ENTRIX will collect field measurements with a multi-parameter data sonde for temperature, conductivity, pH, and dissolved oxygen (mg/L and percent saturation) at all locations during each sampling event. Each sample will be sealed, put on ice, and rush shipped to AquaFiber's facility for bench level testing of the AquaLutions™ technology. The tests will determine the effectiveness and efficiency of nutrient and algae removal achieved at the different locations and flow scenarios. This testing and data analysis will provide valuable information regarding the site selection for the Pilot Study and for adjusting the AquaLutions™ process to most cost effectively remove nutrients and/or algae based on site-specific conditions.

Task 3. Evaluate permitting issues associated with the application of AquaLutions™ treatment in general, and for potential pilot study sites.

Cardno ENTRIX will consider permitting issues (e.g., U.S. Army Corps of Engineers, water withdrawal, or discharge permits) while evaluating candidate sites since they can affect project implementation or significantly delay the overall project schedule. Cardno ENTRIX will also evaluate site access and rights-of-way, available space, utilities, and land ownership, which are important factors for project feasibility.

Task 4. Develop a waste disposal plan for any byproducts of the treatment.

Cardno ENTRIX will address options for waste recovery, disposal and/or reuse of biomass and other material that would be produced by a full-scale AquaLutions™ facility (the Feasibility Study will produce no waste material and the Pilot Study would produce an insignificant amount). Cardno ENTRIX will also examine the feasibility of one or more renewable uses for algae and nutrient byproducts. The evaluation will include consideration of treatment byproducts as an agricultural soil amendment, disposal in a municipal wastewater stream to increase efficiency in wastewater treatment, or disposal in a landfill. The level of detail in the waste disposal plan will be limited by the degree to which we are able to assess the size of full-scale facility desired by the City. Cardno ENTRIX does not anticipate evaluating specific recipients (e.g., land owners for agricultural application) as part of the waste disposal plan. The plan will provide the City with multiple options, costs, and recommend the most advantageous and cost effective solution.

Task 5. Develop a preliminary cost estimate for the design, installation and implementation of a pilot study.

Cardno ENTRIX will prepare a technical memorandum to the City presenting and discussing the results of the AquaLutions™ bench testing at all five locations. This document will provide the rationale for selecting one or more locations for evaluation in a Pilot Study.

Cardno ENTRIX will develop a preliminary cost estimate for implementation of the Pilot Study. The relative ease of implementation of the AquaLutions™ technology allows the Cardno ENTRIX team to move quickly from the Feasibility Study phase directly into the Pilot Study phase of the project, if approved by the City. Cost considerations will include:

- 1) Pilot study design
- 2) Installation plans
- 3) Installation oversight
- 4) Any required site work
- 5) Materials and labor for unit assembly
- 6) Electrical power for the unit
- 7) General operation, maintenance, and unit optimization
- 8) Waste disposal and biomass harvesting labor
- 9) Water quality monitoring
- 10) Lab analysis
- 11) Dismantling of the unit

Deliverables: Cardno ENTRIX will provide a draft and final Feasibility Study Report presenting the results of all of the above tasks, incorporating the interim memorandum and the results of the AquaLutions™ testing. Approximately three weeks should be scheduled for City coordinating team review. A section of the Feasibility Study Report will discuss details and expected costs for implementation of the optional Pilot Study.

The Pilot Study Design will include all necessary information regarding access and placement of necessary equipment and supplies, staffing, and permitting requirements. The plan will also include information and techniques necessary to handle waste disposal, water management, site safety, and spill response.

Cardno ENTRIX anticipates the pilot study to consist of temporarily placing an AquaLutions™ mobile trailer unit at one or more candidate sites, and operating the unit for a period of several days to several weeks in order to evaluate effectiveness. There will be no need to develop site construction, engineering or installation plans for the use of the AquaLutions™ mobile trailer unit. Electrical connections are desirable, but not essential, since the mobile unit can be equipped with generators.

Task 6. Meetings and Client Communication

The City of Durham will create a coordinating team to review the information generated by the feasibility study. Cardno ENTRIX will attend meetings with City of Durham coordinating team as requested by the City Project manager. At a minimum, this will include the following three meetings, anticipated to be held at Durham City Hall:

- 1) a project kick-off meeting,

- 2) a meeting to agree upon sampling locations for Task 2, and
- 3) a meeting to present and discuss the results of the feasibility study.

Cardno ENTRIX will also provide regular status updates to the City Project Manager via telephone and email correspondence.