DEP-070
12/12

CONTRACT BETWEEN

RUTGERS, THE STATE UNIVERSITY
(Name of Contractor)
AND
THE STATE OF NEW JERSEY
BY AND FOR
THE DEPARTMENT OF ENVIRONMENTAL PROTECTION

CONTRACT NUMBER: EC14-0013

TABLE OF SECTIONS IN GENERAL TERMS AND CONDITIONS

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A.	Additional Provisions and Special Modifications	☒ yes	☐ no
A-1.	Additional Federal Funded Agreement Provisions	☒ yes	☐ no
A-2.	Federal Funding Accountability and Transparency Act (FFATA) - $25,000 or greater	☒ yes	☐ no
A-3.	U.S. Environmental Protection Agency Funded Agreements	☐ yes	☒ no
A-4.	American Recovery and Reinvestment Act (ARRA) Funded Agreements	☐ yes	☒ no
B.	Approved Project Budget	☒ yes	☐ no
B-1.	Itemization and Justification of Budget	☐ yes	☒ no
B-2.	Approved Advance Payment	☐ yes	☒ no
C.	Expenditure Report	☒ yes	☐ no
D.	Scope of Services	☒ yes	☐ no
D-1.	Project Requirements	☒ yes	☐ no
D-2.	Contractor's Proposal	☒ yes	☐ no
E.	☐ Governing Body Resolution.. ☐ Corporate Resolution ☒ Other Authorization	☒ yes	☐ no
F.	Subcontractor Certification	☐ yes	☒ no
G.	Statement of Adequacy of Accounting System	☒ yes	☐ no
RB.	Reference Bibliography	☒ yes	☐ no

*Wherever this contract form, including any attachments, presents alternatives, choices must be indicated as follows: An "X" within brackets or on a blank line shall indicate selection of the particular alternative.

GENERAL TERMS AND CONDITIONS

I. Contract Award Data and Signatures

Contractor's - Name: **RUTGERS, THE STATE UNIVERSITY** (the "Contractor")

Address: Office of Research and Sponsored Programs
ASB III, 3 Rutgers Plaza
New Brunswick, NJ 08901

Vendor ID #: 226001086-13

Financial Officer's - name: Michele Conlin

- Title: Assistant Controller (the "Chief Financial Officer")

The State of New Jersey (The "State")

Department of Environmental Protection (the "Department" or the "DEP")

Contracting agency's – name: **OFFICE OF ENGINEERING AND CONSTRUCTION** (the Contracting Agency")

- address: Mail Code 501-01A, P.O. Box 420
Trenton, NJ 08625

Source of Funds	AMOUNT	STATE ACCOUNT NUMBER	CFDA NUMBER/ CFDA TITLE/ Federal Agency	ACCOUNT TITLE FEDERAL GRANT AWARD NAME/NUMBER
State General Fund	$119,212.00	14-100-042-4895-130		HR-6
Federal	0.00			
Contractor	0.00			
Other (i.e. bond fund, tax fund etc.)	0.00			
	$119,212.00	TOTAL APPROVED PROJECT AMOUNT		

Work Period: The "effective date" of this contract is the date the Contractor executes it or the date the State executes it, whichever date is later. The "work period" for this contract commences on 8/1/2013 or the effective date, whichever is ☒ earlier ☐ later, and runs for a period of eight months thereafter.* Contract funds may be used only to satisfy obligations which arise during the work period.

Purpose and Authority: Contract to be Funded: Strategies for Flood Risk Reduction for Vulnerable Coastal Populations in Salem and Cumberland Counties along Delaware Bay

Statutory Authority for this Contract: NJDEP General Contract Authority, N.J.S.A. 13:1D-9(q); FY 2013 Appropriations Act; N.J.S.A. 58:16A-6

In consideration of the payment of the State, the Federal, and if through the State treasury, the "other" amounts shown above (the "contract"), the Contractor agrees to provide its share of the Total Project amount and to perform the work described in Attachment D, within the work period and in the manner and upon the terms specified in this contract. The provisions of this contract set forth in this Section I through Section XXIII constitute the General Terms and Conditions portion of this contract.

*Wherever this agreement form, including any attachments, presents alternatives, choices must be indicated as follows: An "X" within brackets or on a blank line shall indicate selection of the particular alternative. "NA" or "---" (a dashed line) shall indicate that no information is to be entered on a particular blank line. No blanks may remain just prior to execution, except in the signature blocks on attachments C and F.

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STATE AND CONTRACTOR APPROVAL SIGNATURES

APPROVED AS TO LEGAL FORM

For the State: *

(signature)

Sean Moriarty, Deputy Attorney General
(print name)

Date: 8/02/13

For the Contractor **

(signature)

_____, Attorney for Contractor
(print name)

Date: _____

* A confidential and privileged memorandum pre-approving this agreement as to legal form ☐ has ☐ has not been provided to the Contracting Agency by the Deputy Attorney General.

** Approval of this contract by an attorney for Contractor is ☐ mandatory ☐ optional.

APPROVAL OF CONTRACTING AGENCY

OFFICE OF ENGINEERING AND CONSTRUCTION
(print name of Contracting Agency; all capitals)

By: _____
(signature)

Dave Rosenblatt
(print name)

Administrator
(print title)

Date: 7-16-13

EXECUTION SIGNATURES

By the signatures below, the Contractor and the State (the "parties") execute this contract and confirm that they are mutually bound by all provisions contained in its General Terms and Conditions and full authorized and empowered to enter into and bind their organization to all obligations under this agreement and in each attachment selected as "ATTACHED" in the Table of Attachments.

SIGNED

RUTGERS, THE STATE UNIVERSITY
(print Contractor's name; all capitals)

By: _____
(signature)

D. Dee Evans
(Print name)

Assistant Director/ Grants & Contracts
(print title)

Date: 8/20/13

COUNTERSIGNED:

THE STATE OF NEW JERSEY
By: The DEP

By: _____
(signature)

Rich Boornazian
(print name)

Assistant Commissioner
(print title; Commissioner or authorized delegate)

Date: 8/21/13

msword form v12.12

II. Compliance with Existing Laws and Policies

The Contractor, in order to induce the State to award this contract, agrees in the performance of this contract to comply with all applicable federal, State, and municipal laws, rules, regulations, and written policies. Failure to comply with such laws, rules, regulations or policies shall be grounds for termination of this contract. Such laws, rules, regulations, and policies include, but are not limited to, the following:

A. The New Jersey Prevailing Wage Act, N.J.S.A. 34:11-56.25 et seq., if applicable, is by this reference incorporated as part of this contract and the Contractor agrees to comply with it. The Contractor warrants that neither it nor any subcontractor it might employ to perform work in furtherance of this contract is suspended, debarred or otherwise listed or is on record in the Office of the Commissioner or Department of Labor for failure to pay prevailing wages in accordance with the New Jersey Prevailing Wage Act. The Contractor further warrants that it and any subcontractors it might employ to perform work in furtherance of this contract shall comply with the New Jersey Prevailing Wage Act.

B. The parties agree that, if applicable, the New Jersey Law Against Discrimination, N.J.S.A. 10:5-1 et seq., N.J.S.A. 10:5-31 et seq., N.J.S.A. 10:2-1 et seq., N.J.A.C. 13:6-1 et seq. and N.J.A.C. 17:27-1.1 et seq. are by this reference incorporated as part of this contract and are binding upon them. The Contractor agrees and guarantees to afford equal opportunity in performance of this contract in accordance with an affirmative action program approved by the State Treasurer. Further, if the cited laws and regulations apply to this contract, the Contractor agrees as follows:

   1. The Contractor shall not discriminate against any employee or applicant for employment because of age, race, creed, color, national origin, ancestry, marital status, affectional or sexual orientation or sex. The Contractor shall take affirmative action to ensure that such applicants are recruited and employed, that employees are treated during employment without regard to their age, race, creed, color, national origin, ancestry, marital status, affectional or sexual orientation or sex. Such action shall include, but not be limited to, the following: employment, upgrading, demotion or transfer; recruitment or recruitment advertising; layoff or termination; rates of pay or other forms of compensation; and selection for training, including apprenticeship. The Contractor agrees to post in conspicuous places, available to employees, and applicants for employment, notices to be provided by the contracting officer setting forth the provisions of this nondiscrimination clause;

   2. The Contractor shall, in all solicitations or advertisements for employees placed by or on behalf of the Contractor, state that all qualified applicants will receive consideration for employment without regard to age, race, creed, color, national origin, ancestry, marital status, affectional or sexual orientation or sex;

   3. The Contractor shall send to each labor union or representative of workers with which it has a collective bargaining contract or other contract or understanding, a notice, to be provided by the agency contracting officer, advising the labor union or workers' representative of the Contractor's commitments under this act and shall post copies of the notice in conspicuous places available to employees and applicants for employment.

   4. The Contractor shall include these same provisions in any subcontract for work in furtherance of this contract.

C. The act codified at N.J.S.A. 52:13D-12 et seq., the "New Jersey Conflicts of Interest Law", and the act codified at N.J.S.A. 40A:9-22.1 et seq., the Local Government Ethics Law, are by this reference incorporated as part of this contract. The Contractor represents and affirms that it will make its best efforts and responsible diligence in assuring that none of its employees, its subcontractors, its subcontractors' employees, is engaged in any conduct which constitutes a conflict of interest under, or a violation of, either the New Jersey Conflicts of Interest Law or the Local Government Ethics Law. The Contractor represents and affirms that itself is not engaged in any conduct which constitutes the aforementioned conflict of interest.

D. The Contractor represents and warrants:

   1. That no person or selling agency has been employed or retained to solicit or secure this contract in violation of N.J.S.A. 52:34-15,

   2. that it has made, and knows of no payments or gratuities made in violation of N.J.S.A. 52:34-19,

   3. that it is, and will remain, in full compliance with N.J.S.A. 40A:11-1 et seq., the Local Public Contracts Law, if applicable,

   4. and that it is, and will remain, in full compliance with N.J.S.A. 14A:13-1 et seq., and N.J.S.A. 15A:13-1 et seq. (both regarding out-of-state corporations), if applicable, and

   5. that it is, and will remain, in full compliance with N.J.S.A. 2A:44-143 (regarding bonds on construction and public works contracts), if applicable.

E. The Contractor shall report in writing to the Attorney General and the Executive Commission on Ethical Standards, the solicitation of any fee, commission, compensation, gift, gratuity or other thing of value by any State officer or employee or special State officer or employee from any other State vendor.

F. The Contractor shall not influence, or attempt to influence or cause to be influenced, any State officer or employee or special State officer or employee in his official capacity in any manner which might tend to impair the objectivity or independence of judgment of said officer or employee.

G. The Contractor warrants that it will obtain and maintain, during the term of this contract, all licenses, certifications, authorizations, or any documents required by the federal, state, county, or municipal governments and international authorities, wherever necessary, to perform this contract. The Contractor shall promptly notify the State of any disciplinary action or any change in the status of any license, permit, or other authorization required by law or this contract.

H. New Jersey State Circular Letter 04-04-OMB , Single Audit Policy for Recipients of Federal Grants, State Grants and State Aid is by this reference incorporated as part of this contract.

I. The following documents issued by the United States are by this reference incorporated as standards and procedures used by the Department and made part of this contract:

1. United States Office of Management and Budget ("OMB") Circulars A-21, A-87, and A-122 (Cost Principles: Educational Institutions; State, Local, and Indian Tribal Governments ; Non-Profit Organizations, respectively),
2. OMB Circulars A-102 and A-110 (Uniform Administrative Requirements for Grants in Aid and Other Agreements: State and Local Governments; Institutions of Higher Education, Hospitals and Other Non-Profit Organizations, respectively),
3. OMB Circular A-133 Revised (Audits of States, Local Governments, and Non-profit Organizations),
4. Common Rule regulations for federal agencies, as applicable. (e.g. 40 CFR 31 for USEPA), and
5. Compliance Supplement for Single Audits of State and Local Governments (Compliance Supplement Revised).

J. The following documents issues by the United States are by this reference incorporated as standards and procedures used by the Department and made part of this agreement:

1. United States Office of Management and Budget ("OMB") Circulars and the associated regulations A-21 (2 CFR Part 220), A-87 (2 CFR Part 225), and A-122 (2 CFR Part 230), the Cost Principles for Educational Institutions; State, Local and Indian Tribal Governments; and Non-Profit Organizations, respectively,
2. OMB Circulars and the associated regulations A-102 and A-110 (2 CFR Part 215), the Grants and Cooperative Agreements with State and Local Governments; and Uniform Administrative Requirements for Grants and Other Agreements with Institutions of Higher Education, Hospitals and Other Non-Profit Organizations, respectively,
3. OMB Circular A-133, Revised, Audits of States, Local Governments, and Non-Profit Organizations,
4. Common Rule regulations for federal agencies, as applicable (e.g. 40 CFR for U.S.E.P.A.) http://www.whitehouse.gov/omb/grants/chart.aspx , and
5. Compliance Supplement for Single Audits of State and Local Governments (Compliance Supplement Revised).

III. Insurance

The Contractor shall maintain in force for the term of this contract liability insurance as provided herein. These coverages shall be maintained either through insurance policies from insurance companies authorized to do business in the State of New Jersey or through formal, fully funded self-insurance programs authorized by law and acceptable to the Department. The minimum required coverages are:

A. Commercial General Liability: The minimum limit of liability shall be $1,000,000 per occurrence as a combined single limit for bodily injury and property damage. The policy shall include coverage for contractual liability and shall include the State of New Jersey as an additional insured. The policy shall also include coverage for products liability. The coverage to be provided under these policies shall be at least as broad as that provided by the standard basic, unamended, and unendorsed occurrence coverage forms currently in use in the State of New Jersey which shall not be circumscribed by any endorsements limiting the breadth of the coverage.

B. Business Automobile Liability Insurance which shall be written to cover any vehicle used by the insured. Limits of liability for bodily injury and property damage shall not be less than $1,000,000 per occurrence as a combined single limit.

C. Workers' Compensation Self Insurance in accordance with the laws of the State of New Jersey and commercially purchased Employer's Liability Insurance with a limit of not less than:

$1,000,000 Bodily Injury, Each Occurrence
$1,000,000 Disease Each Employee
$1,000,000 Disease Aggregate Limit

IV. Indemnification

The Contractor shall defend, indemnify, protect, and save harmless the State, its agents, servants, and employees from and against any and all claims, losses, demands, or damages of whatever kind or nature arising out or claimed to arise out of any tortious act or omission of the Contractor, its agents, servants, employees or subcontractors in the performance of this contract. The Contractor shall, at its own expense, appear, defend and pay all reasonable charges for attorneys and all costs and other expenses arising from such suit or claim incurred in connection therewith. If judgment shall be rendered against the State for which indemnification is provided under this paragraph, the Contractor shall, at his own expense, satisfy and discharge the same. However, the Contractor shall not have to indemnify the State for the State's negligent use of research results, or for the State's use of research results unless the research was negligently conducted by the Contractor. The Contractor does not hereby agree to indemnify the State against damage to the extent it results from the State's tortious action or inaction for which it would be liable under the New Jersey Tort Claims Act.

The State shall, as soon as practicable after the claim has been made against it, give written notice thereof to the Contractor, along with full and complete particulars of the claim. If the suit is brought against the State or any of its agents, servants, and employees, the State shall expeditiously forward or have forwarded to the Contractor every demand, complaint, notice, summons, pleading or other process received by the State or its representatives.

V. Assignments and Subcontracts

The Contractor shall not subcontract any of the work or services covered by this contract nor shall any interest be assigned or transferred, except as may be provided for in this contract or with the express written approval of the Department.

A. As a precondition of the Department's approval of a subcontractor and prior to any payments by the Department for subcontracted work, the Contractor shall secure from the subcontractor and shall submit to the Department a completed and executed copy of Attachment F, Subcontractor Certification.

B. The Contractor shall be responsible for compliance by any subcontractor with the terms, conditions and requirements of this contract.

C. The Contractor shall be responsible for any claims arising out of any subcontract hereunder and, as a condition of any subcontract hereunder, the subcontractor shall hold the State harmless from any claims by the subcontractor or third parties which may arise under or as a result of the subcontract.

VI. Availability of Funds

A. The State of New Jersey appropriates funds on a fiscal year basis, which is a period running from July 1 through June 30. The parties hereto recognize and agree that continuation of funding under this contract is expressly dependent upon availability to the Department of funds appropriated by the State Legislature from State or federal revenue or such other funding sources as may be available. The Department shall not be liable for any breach of this contract which results from the State Legislature's failure to appropriate the necessary funds.

B. The Department may encumber and commit to any contract only those funds which have been appropriated and are available during the State fiscal year in which the contract is executed. For any contract which will be completed during that fiscal year, the State's contract amount will be fully encumbered and committed. However, for any contract, the performance of which will span more than one State fiscal year, the Department may or may not be able to encumber and commit the full contract amount and the full funding of the contract may depend upon subsequent fiscal year appropriations by the State Legislature.

C. The parties understand that this contract is fully or partly funded as designated in Section II of Attachment A, Additional Provisions and Special Modifications.

VII. Procurement Standards

Procurement of supplies, equipment, and other services with funds provided by this contract shall be accomplished in accord with federal OMB Circulars A-102 or A-110 and the appropriate federal common rule, whichever would be applicable under federal law, which shall be provided to the Contractor, upon request, by the Department. Procurement shall also be consistent with the New Jersey Local Public Contracts Law, N.J.S.A. 40A:11-1 et seq., and other statutory requirements, as applicable. Both the federal and applicable State requirements shall be incorporated into any subcontracts under this contract.

Adherence to the standards contained in those applicable federal and state laws and regulations does not relieve the Contractor of the contractual responsibilities arising under its procurements. The Contractor is the responsible authority, without recourse to the Department, regarding the settlement and satisfaction of all contractual and administrative issues arising out of procurements entered into in support of this contract.

VIII. Property Management Standards

Property furnished by the Department or acquired in whole or in part with federal or Department funds or whose cost was charged to a project supported by federal or Department funds shall be utilized and disposed of in a manner generally consistent with state and federal requirements (OMB Circulars A-102 or A-110 and the appropriate federal common rule, whichever would be applicable under federal law).

IX. Method of Payment

A. Payment under this contract will be made upon submission by the Contractor of a properly executed State invoice form (available from the Department), and all invoices, bills, and other documents necessary to justify the payment. This form must also be accompanied by a certification from the Contractor that all procurements for which payment is requested have been made in accord with federal OMB Circulars A-102 or A-110 and the appropriate federal common rule, whichever would be applicable under federal law, and in accord with all applicable State laws and have been made during the work period.

1. If Attachment B-2, Approved Advance Payment, provides for a justification of an advance payment and if Section III of Attachment A, Additional Provisions and Special Modifications, so provides, an initial advance payment will be made to the Contractor upon receipt by the Department of a properly executed copy of this contract, signed by an appropriate officer of the Contractor organization, together with a properly executed invoice form.

2. Progress payments shall be made by the Department on a periodic basis as prescribed in Section III.B of Attachment A, Additional Provisions and Special Modifications. Such payments shall be issued only upon receipt of the required financial and narrative reports described in Section XIII of the General Terms and Conditions of this contract, Financial and Performance Reporting. Payment shall be made either in fixed amounts as determined by the Department to be reasonable to maintain an appropriate level of services or in the form of reimbursement of actually reported expenditures as indicated in Section III of Attachment A, Additional Provisions and Special Modifications.

3. If Section III of Attachment A, Additional Provisions and Special Modifications, so provides, a portion of the contract will be withheld pending receipt of the required final reports described in Section XVII of the General Terms and Conditions of this contract, Contract Closeout Procedures.

4. The Department shall withhold payment of any costs disallowed by the Department as improperly incurred under any provision of this contract.

5. Contractor may not use any contract funds to satisfy any obligation which arose outside the work period.

B. If this contract includes federal funds, all invoices must be submitted by the Contractor and all payments must be made by the State no later than ninety (90) days after the end of the work period.

X. Matching and Cost Sharing Requirements

If there are any matching and/or cost sharing requirements indicated in Section IV of Attachment A, Additional Provisions and Special Modifications, then, regardless of whether federal funds are involved, the Contractor shall account to the satisfaction of the Department for these requirements in accordance with federal OMB Circulars A-102 or A-110 and the appropriate federal common rule, whichever would be applicable under federal law.

XI. Project Income

Project income must be accounted for as indicated in Section V of Attachment A, Additional Provisions and Special Modifications. "Project income" means gross income earned by the Contractor from contract-supported activities. Such earnings include, but are not limited to, income from service fees, sale of commodities, usage or rental fees, and royalties on patents and copyrights. In all cases, interest earned on advances of contract funds shall be remitted to the Department, except for interest earned on advances to instrumentalities of a state as provided by the federal Intergovernmental Cooperation Act of 1968, P. L. 90-577.

XII. Financial Management System

The Contractor's Chief Financial Officer, as designated in Section I of the General Terms and Conditions of this contract, Contract Award Data and Signatures, shall be responsible for maintaining an adequate financial management system. The Chief Financial Officer shall notify the Department when the Contractor cannot comply with the requirements established in this Section XII, Financial Management System.

A. Contractor financial management system shall provide for:

1. accurate, current, and complete disclosure of the financial results of each project, agreement, or contract,

2. records that adequately identify the source and application of funds for Department- supported activities, and that contain information pertaining to awards and authorizations, obligations, unobligated balances, assets, liabilities, outlays, and income,

3. effective internal and accounting controls over all funds, property, and other assets, which controls adequately safeguard all such assets and assure that they are used solely for authorized purposes,

4. comparison of actual outlays with budgeted amounts for all major cost categories on Attachments B, Approved Project Budget; B-1, Itemization and Justification of Budget; D, Scope of Services; and D-2, Contractor's Proposal, and correlation of financial information with performance or productivity data, including the production of unit cost information required by the Department,

5. accounting records that are supported by source documentation,

6. procedures to minimize the time elapsing between the advance of funds from the Department and the disbursement by the Contractor, whenever funds are advanced by the Department, and

7. procedures for determining reasonableness, allowability, and allocability of costs generally consistent with the provisions of federal OMB Circulars A-102 or A-110 and the appropriate federal common rule, whichever would be applicable under federal law.

B. If required by Section VI of Attachment A, Additional Provisions and Special Modifications, the Department may require the submission of Attachment G, Statement of Adequacy of Accounting System.

C. The Department may review the adequacy of the financial management system of any applicant for financial assistance as part of a pre-award review or at any time subsequent to the award. If the Department determines that the Contractor's accounting system does not meet the standards described in paragraph B of this Section XII, Financial Management System, additional information to monitor the contract may be required by the Department upon written notice to the Contractor.

XIII. Financial and Performance Reporting

A. Attachment B, Approved Project Budget, is the approved financial plan to carry out the purpose of this contract. The budget shall be itemized to disclose specifically the contract tasks and project activities to be funded.

B. The Contractor shall submit interim expenditure reports, including a completed copy of Attachment C, Expenditure Report, comparing actual expenditures with the Approved Project Budget. These reports shall be submitted on a periodic basis as prescribed in Section VII of Attachment A, Additional Provisions and Special Modifications, and must be certified by the Contractor's Chief Financial Officer.

C. The Contractor shall submit performance reports on an interim basis as prescribed by the Department in Section VII of Attachment A, Additional Provisions and Special Modifications. Performance reports shall present the following information for each contract task and shall include all available and relevant, quantitative data pertaining to production of project work units, completion of contract tasks, and actual costs for each unit or task:

1. a comparison of actual accomplishments to the objectives established in Attachments D, Scope of Services; D-1, Project Requirements; and D-2, Contractor's Proposal, for the reporting period,

2. reasons why established goals were not met or tasks were not completed as scheduled, and

3. other pertinent information, including a description of work performed during the reporting period, relevant literature citations, raw data generated, any modifications to the planned scope of work, and an anticipated work schedule for the next reporting period.

D. The Contractor shall submit a final report on its overall performance of this contract, as prescribed in Section VII of Attachment A, Additional Provisions and Special Modifications, including a completed copy of Attachment C, Expenditure Report, comparing actual expenditures for the entire project with the Approved Project Budget, certified by the Chief Financial Officer, and a final performance report.

E. Extensions of reporting due dates may be granted upon written request to the Department.

F. If reports are not submitted as required the Department shall, at its discretion, suspend payments on this contract or any other contract entered into between the Department and the Contractor and shall take action to suspend payments to the Contractor by other State agencies.

G. If the Contractor has a history of unsatisfactory performance or the Contractor does not submit satisfactory reports, the Department may require additional and more detailed reports from the Contractor.

XIV. Monitoring Performance

A. The Contractor shall continually monitor its performance under this contract to assure that time schedules are being met, projected work units by time periods are being accomplished, and other performance goals are being achieved as applicable and as defined in Attachments D, Scope of Services; D-1, Project Requirements; and D-2, Contractor's Proposal.

B. The Contractor shall inform the Department as soon as possible if any of the following types of conditions affect project objectives and performance and shall describe the action taken, or contemplated, and the Department assistance needed, if any, to respond to any such condition:

1. problems, delays, or adverse conditions which will materially affect the ability to attain project objectives, prevent the meeting of time schedules and goals, or preclude the completion of project work units or contract tasks within established time periods; and

2. favorable developments or events which enable meeting time schedules and goals sooner than anticipated or producing more project work units or completing more contract tasks than originally projected.

C. The Department may, at its discretion, make site visits to:

1. review project accomplishments and management control systems,

2. audit the financial records pertaining to this contract, and

3. provide such technical assistance as may be required.

D. If the Contractor is not performing satisfactorily in the sole judgment of the Department, the Department may require remedial measures deemed necessary to fulfill the project requirements, including requiring the Contractor to obtain additional Department approvals before proceeding or requiring the Contractor to obtain outside technical or managerial assistance.

XV. Audit Requirements

A. All contracts are subject to audit by the State. This contract may be audited at the discretion of the State up to five (5) years after the date of last payment under this contract or as otherwise required, by the Office of the State Comptroller. Any such audit must be made in accordance with generally accepted auditing standards, including the standards described in the federal General Accounting Office Government Auditing Standards.

B. Where an audit conducted hereunder indicates any noncompliance by the Contractor with the material terms and conditions of this contract, the Contractor shall forthwith take corrective action as permitted or required by Section XVI of the General Terms and Conditions of this contract, Contract Amendment; Section XVIII of the General Terms and Conditions of this contract, Termination, Expiration, and Suspension; or as otherwise required by the Department. As a result of any audit hereunder, recommendations shall be made whether any costs incurred by the Contractor should be disallowed as beyond the scope or the purpose of this contract, excessive, or otherwise impermissible. The Department retains the right to recover any disallowed expenditures, and the Contractor shall return to the Department any disallowed expenditures no later than thirty (30) days after the request.

C. In any case, this contract is, at the discretion of the State, subject to audits by the State at any time prior to closeout and subject to a follow-up compliance audit which may build upon previous audits of the contract. .

XVI. Contract Amendment

If it desires to amend this contract, the Contractor must submit a written request to the Contract Officer designated in Section IX of Attachment A, Additional Provisions and Special Modifications. Any amendment, whether requested by the Contractor or the Department, must be documented by completion of the Department's amendment form (DEP-076). The completed amendment form must be formally executed by authorized representatives of both parties in the same manner as this contract, unless the amendment being documented is of the type described in paragraph A, B, or C of this Section XVI, Agreement Amendment. If the amendment is of the type described in paragraph A, B, or C below, the Contract Officer may execute the amendment form for the State by signing it in the designated place, and no formal execution by authorized representatives of the parties will be required. As a nonrestrictive example only, if the Department requests, and the Contractor consents to, any amendment to the scope of the services to be performed by the Contractor, including any increase in the amount of the approved budget, such amendment must be memorialized by a completed amendment form, formally executed by authorized representatives of both parties.

A. The Contractor may obtain approval directly from the Contract Officer to transfer amounts of up to $20,000 or 10% of the total contract amount, whichever is less, from one direct cost category to another or from the indirect cost category to a direct cost category, as long as this transfer does not result in any change in the project's scope, work period, objective, or deliverables. If the total contract amount is less than $25,000, the Contract Officer may disregard the 10% limitation and approve transfers of up to $2,500.

1. "Indirect costs" are those incurred for a common or joint purpose benefiting more than one cost objective and not readily assignable to the cost objectives specifically benefited, without effort disproportionate to the results achieved. "Direct costs" are those which can be identified specifically with a particular cost objective.

2. The amendment form documenting any budget revision shall clearly show and justify each change in each cost category, either on the form or on an attachment to it.

B. The Department may reduce the contract budget and the scope of services so that they fairly reflect anticipated project expenditures and progress if:

1. the Department notifies the Contractor, that the Contractor is making project expenditures or progress at a rate which, in the judgment of the Department, will result in substantial failure to expend the contract or to fulfill the purposes of this contract,

2. the Department notifies the Contractor at least thirty (30) days in advance of any reduction,

3. after consultation, the Contractor is unable to develop to the satisfaction of the Department a plan to rectify its low level of project expenditures or progress, and

4. the Department considers the contractor's fixed costs when making any reduction.

C. The Contract Officer may approve no-cost time extensions to the work period or the due date of the final report in increments of six months or less but not beyond the expiration date as described in Section XVIII.A.2 of the General Terms and Conditions of this contract, Termination, Expiration, and Suspension. Written justification and documentation evidencing the need to extend the work period or the due date of the final report must be submitted to the Contract Officer at least thirty (30) days in advance of the scheduled end of the work period. The Contract Officer shall decide whether to grant the extension. The amendment form documenting any no-cost time extension shall clearly show and justify the change, either on the form or on an attachment to it.

D. The Contract Officer may approve proposed Contractor substitutions to the personnel and/or subcontractors identified and approved for this contract. The Contractor must submit a written request to the Department which includes:

1. An explanation of the reasons why the original personnel/subcontractors cannot be provided;

2. Vitae/credentials which demonstrates that the qualifications of the substitutions are equal to or better than the originally proposed personnel/subcontractors; and

3. A declaration that the substitution will be provided at no additional cost to the State.

XVII. Closeout Procedures

The closeout of this contract shall mean the process by which the Department determines that all applicable administrative actions and all required work have been completed by the Contractor. This process shall include the steps enumerated below.

A. The Contractor shall submit a final report as provided in Section VII of Attachment A, Additional Provisions and Special Modifications. The Department may permit extensions when requested in writing by the Contractor.

B. The Contractor shall, together with the submission of the final report, refund to the Department any cash advanced but not committed to payment of eligible project costs in accordance with the Attachment B, Approved Project Budget.

C. The Contractor shall refund to the Department any funds spent on costs which are disallowed by the Department. Such refund shall be made within thirty (30) days after the request.

D. In the event a final audit has not been performed prior to the closeout of this contract, the Department retains the right to recover any appropriate amount after fully considering any recommendation on disallowed costs resulting from the final audit.

E. The Contractor shall account for any property acquired with contract funds or received from the Department in accordance with Section VIII of the General Terms and Conditions of this contract, Property Management Standards.

F. The Contractor shall comply with any Federal audit or closeout procedures applicable to this contract and/or identified by the Department as necessary to qualify for Federal reimbursement for any funds expended under this contract.

G. The Department retains the right to request any additional information necessary to close out this contract and may retain any final contract payment until the closeout procedure is completed.

XVIII. Termination, Expiration, and Suspension

A. The following definitions shall apply for the purposes of this Section XVIII, Termination, Expiration, and Suspension.

1. Termination - The "termination" of this contract means the cancellation of unsatisfied contractual obligations prior to the completion of the contract tasks by the Contractor. Work should stop unless the Contractor wants to continue at its own expense and is not otherwise required for good cause to stop by the Department.

2. Expiration Date - The "expiration date" of this contract is the agreed upon date at which time the term of this contract automatically ends absent a formal written amendment executed by the parties. The expiration date of this contract shall be the third anniversary of the date the work period would end as initially agreed upon in Section I of the General Terms and Conditions of this contract, Contract Award Data and Signatures.

3. Suspension - The "suspension" of this contract means a temporary cessation of State support or assistance pending corrective action by the Contractor or pending a decision to terminate the contract by the Department. Work should stop unless the Contractor wants to continue at its own expense and is not otherwise required for good cause to stop by the Department.

B. If the Contractor fails to comply with any term, condition, requirement, or provision of this contract or fails to make sufficient progress so as to reasonably ensure completion of performance of this contract within the time frame set forth herein, the Department may upon notice to the Contractor suspend this contract and withhold further payments, prohibit the Contractor from incurring additional obligations of contract funds pending corrective action by the Contractor, or decide to terminate this contract in accordance with paragraph C of this Section XVIII, Termination, Expiration, and Suspension. The Department may, at its sole discretion, allow Contractor to incur additional costs that could not be reasonably avoided during the period of suspension provided that said costs meet the provisions of federal OMB Circulars A-102 or A-110, appropriate federal common rule or any other applicable state or federal requirements.

C. The Department may terminate this contract, in whole or in part, upon thirty (30) days notice, whenever it determines that the Contractor has failed to comply with any term, condition, requirement, or provision of this contract or fails to make sufficient progress so as to reasonably ensure completion of performance of this contract within the time frames set forth therein. The Department shall promptly notify the Contractor, in writing, of its determination and the reasons for the termination together with the date on which the termination shall take effect. Upon termination, the Department retains the right to recover any improper expenditures from the Contractor and the Contractor shall return to the Department any improper expenditures no later than thirty (30) days after the date of termination. The Department may, at its sole discretion, allow Contractor to retain or be reimbursed for costs reasonably incurred prior to the termination that were not made in anticipation of termination and cannot be canceled provided that said costs meet the provisions of federal OMB Circulars A-102 or A-110, appropriate federal common rule or any other applicable state or federal requirements.

D. The Department and the Contractor may terminate this contract in whole, or in part, when both parties agree that the continuation of the project would not produce beneficial results commensurate with the further expenditure of funds. The two parties shall agree upon the termination conditions including the date on which the termination shall take effect, and, in case of partial terminations, the portion to be terminated. The Contractor shall not incur new obligations for the terminated portion after the date on which the termination shall take effect, and shall cancel as many outstanding obligations as possible.

E. The closeout procedures described in Section XVII of the General Terms and Conditions of this contract, Closeout Procedures, shall apply in all cases of termination of this contract.

XIX. Access to Records

A. The Contractor agrees to make available to the Department, any Federal agency whose funds are expended in the course of this contract, the Office of the State Comptroller or any other State auditor, and any of their duly authorized representatives, such pertinent accounting records, books, documents, and papers as may be necessary to monitor and audit contractor's operations.

B. Whenever reasonable and practical, the State shall give reasonable notice to the Contractor prior to any visitation, inspection, or audit, including any visitation or request for documentation in discharge of the State's responsibilities. However, the State retains the right to make unannounced visitations, inspections, and audits as deemed necessary during normal business hours.

C. The State reserves the right to have access to records of any subcontractor and requires the Contractor to provide the State access to such records in any contract with the subcontractor.

D. The State reserves the right to have access to all workpapers produced in connection with audits made by the Contractor or by independent certified public accountants or licensed public accountants hired by the Contractor to perform such audits.

XX. Record Retention

A. The Contractor shall retain financial records, supporting documents, statistical records, and all other records in the contractor's financial management system or otherwise pertinent to this contract (a) for a period of five (5) years from the date of last payment under this contractor the Department's record retention schedule, whichever is later, or (b) for such longer period as any applicable State or federal statute may require, with the qualifications stated below.

1. If any litigation, claim, or audit is started before the end of the five-year period, the records shall be retained until all litigations, claims, or audit findings involving the records have been resolved.

2. Records for nonexpendable property acquired with Department funds shall be retained for five (5) years after its final disposition.

B. The Department may request transfer of certain records to its custody from the Contractor when it determines that the records possess long term retention value and will make arrangements with the Contractor to retain any records that are continuously needed for joint use.

XXI. Approvals and Authorizations

A. Unless specifically stated otherwise, wherever this contract requires the approval or authorization of the Department, that approval or authorization must be given in writing by the Commissioner of the Department, by the authorized delegate who signed this contract, or by said delegate's successor or superior, if any.

B. If the Contractor is a municipal or county government agency, the Contractor must submit with this contract a copy of an ordinance or resolution, duly enacted by the governing body of that municipal or county government agency or of the municipality or county and authorizing execution of this contract. If the Contractor is a corporation, the Contractor must submit with this contract a corporate resolution, duly adopted by its board of directors, board of trustees, or equivalent governing body, and authorizing execution of this contract. The Department will not make any payments until such ordinance or resolution is received.

C. If the Contractor is a corporation or partnership, the Contractor must submit with this contract a disclosure of the names and addresses of any persons who own 10% or more of the firm's stock or interest, in accordance with N.J.S.A. 52:25-24.

D. If the Contractor is a corporation incorporated outside of New Jersey, the Contractor must, as a condition of payment hereunder, obtain a certificate of authority to do business in New Jersey from the Department of the Treasury and file a copy of that certificate with the Contract Officer designated in Section IX of Attachment A, Additional Provisions and Special Modifications.

E. If the Contractor is neither a government agency nor a corporation and if the Contractor has neither a residence nor a place of business in New Jersey, the Contractor hereby irrevocably appoints the Commissioner of the Department to receive process in any civil action which may arise out of or as a result of this contract. Within ten (10) days of receipt of any such process, the Commissioner shall transmit it by certified mail to the Contractor at the address shown in Section I of the General Terms and Conditions of this contract, Contract Award Data and Signatures.

XXII. Interest on Advance Payments and Disallowed Costs

A. Advance Payments: The Contractor is required to deposit any advance payments received hereunder in an interest bearing account. Any interest up to $100 per year may be retained by the Contractor for documented administrative expenses. If this contract is federally funded, any interest above $100 per year must be remitted on a quarterly basis to the Department for return to the federal government. If this contract is funded by the State, interest above $100 per year may be retained by the Contractor for purposes of this contract or shall be remitted to the Department as indicated in Section XI of Attachment A, Additional Provisions and Special Modifications.

B. Disallowed Costs: Where the Contractor has been reimbursed by the Department for costs which are subsequently disallowed by the Department, the Contractor shall return the funds to the Department no later than thirty (30) days after the request. Where the Contractor fails timely to return the funds or appeals the disallowed costs, an interest charge as indicated in Section XI of Attachment A, Additional Provisions and Special Modifications, shall be charged on the funds beginning thirty (30) days from the date the Contractor was notified of the debt. If the Contractor is successful on appeal, the accrued interest will be canceled.

THIS SECTION XXII DOES NOT APPLY FOR CONTRACTS WITH RUTGERS, THE STATE UNIVERSITY.

XXIII. Miscellaneous Provisions

A. Governing Law: It is agreed and understood that this contract shall be governed and construed, and the rights and obligations of the parties hereto shall be determined, in accordance with the laws of the State of New Jersey including but not limited to the Contractual Liability Act, N.J.S.A 59:13-1 et seq.

B. Conflict of Terms: In the event of any conflict, the order of precedence shall be (1) the terms and conditions of this Contract; (2) any State Agency application form or specific correspondence describing the Project and/or soliciting a Contractor proposal; and (3) the contractor's proposal (D-2).

NOTE: The only exception to the above is that consistency with rules and regulations promulgated pursuant to the State Program's enabling legislation shall always have precedence in any conflict with the terms and conditions of this Contract.

C. Dispute Resolution: Consistent with the Contractual Liability Act, N.J.S.A 59:13-1 et seq., unless otherwise provided in this contract, all claims, counterclaims, disputes, and other matters in question between the State and the Contractor arising out of, or relating to, this contract or the breach of it will proceed as follows:

1. The dispute shall initially be submitted by either party for resolution via administrative proceedings conducted by the Department.

2. If there is no mutually agreeable resolution after administrative recourse is exhausted, the matter may then proceed to arbitration or litigation. Any litigation must be submitted to, and heard by, a court of competent jurisdiction within the State of New Jersey.

D. Performance: The Contractor warrants that it is aware of the work required to be performed under this contract, that it has the capabilities and credentials required by the contract, and that it will faithfully perform the work and abide by the terms, conditions, and other requirements of this contract.

E. Disclaimer of Agency Relationship: The contractor's status shall be that of an independent principal and not as an agent or employee of the State. Nothing contained in the contract shall be construed to create, either expressly or by implication, the relationship of agency between the State and the Contractor or its subcontractors.

F. Computation of Time: When the contract refers to a period of time in terms of days, the day of the act or event from which the designated period begins to run is not to be included. The last day of the period so computed is to be included, unless it is a Saturday, Sunday, or legal holiday, in which event the period runs until the end of the next day which is neither a Saturday, Sunday, nor legal holiday. In computing a period of time of less than seven days, Saturday, Sunday, and legal holidays shall be excluded.

G. Intellectual Property Rights: All reports created pursuant to this contract are deliverables and the State will own the entire right, title and interest throughout the world to each while the Contractor shall retain the right to use such reports for research purposes. If the Contractor, in the course of its duties under this contract, develops any other intellectual property and/or data, the Contractor shall own the entire right, title and interest throughout the world to each such property right and to patents and copyrights protecting the same while the State shall retain a perpetual, royalty-free, irrevocable license to use such intellectual property and/or data for all State purposes. The Parties' ownership shall be unaffected by any assignment, suspension, termination, or expiration of this contract..

H. Captions and Headings: Captions and headings used in this contract are for convenience of reference only and shall in no way be deemed to define, limit, explain, or amplify any term or provision.

I. Severability: In case any term or provision of this contract shall be held invalid, illegal, or unenforceable, in whole or in part, neither the validity of any remaining part nor the validity of any other term or provision shall in any way be affected by such holding.

J. Entire Agreement: The parties understand and agree that all prior understandings and agreements between them regarding performance of the obligations described herein are merged into this written contract which supersedes all such prior understandings and agreements. Neither party enters into this contract in reliance on any statement nor representation of the other which is not reiterated herein, or incorporated herein by reference.

K. Successor and Assigns: This contract shall be binding upon any successors or assigns of the Contractor. The State may, in its sole discretion, reject any proposed successor or assign of the Contractor.

L. Counterparts: This contract may be executed in multiple counterparts, each of which shall constitute an original instrument and all of which taken together shall constitute one and the same instrument.

M. Notices: All notices, certificates, and other documents (a "notice") to be given by one party to the other shall be in writing and shall be delivered to the other party. Any such notice shall be delivered to the address of the Contractor or the Contracting Agency shown in Section I, Contract Award Data and Signatures, by overnight courier service or by regular first class, certified, or registered mail, postage prepaid. If mailed, said notice shall be deemed to have been

received five (5) days after its deposit in the United States Mail; and if given otherwise, said notice shall be deemed to have been received when delivered to the party to whom it is addressed.

N. Waiver of Breach: The waiver by either party of any breach of this contract shall not be deemed a waiver of any subsequent breach of the same or any other term or provision.

O. Gender and Number: Use of the singular or plural includes the other and use of any gender includes all genders, as the context requires or permits.

P. Waiver of Jury Trial: In the event of litigation, Contractor waives any right it may have to a trial by jury.

CONTRACT
BETWEEN
RUTGERS, THE STATE UNIVERSITY
(Name of Contractor)
AND
THE STATE OF NEW JERSEY
BY AND FOR
THE DEPARTMENT OF ENVIRONMENTAL PROTECTION

CONTRACT NUMBER: EC14-013
ADDITIONAL PROVISIONS AND SPECIAL MODIFICATIONS

This Attachment A adds the terms, conditions, requirements, and provisions specified in Sections I through XI below, and makes the modifications specified in Section XII below, to the preceding General Terms and Conditions of the contract between Rutgers, The State University and the State of New Jersey, by and for the DEP.
(print Contractor's name)

I. Insurance (See Section III of the General Terms and Conditions of this contract, Insurance.)

A. The Contractor maintains and must continue to maintain the required insurance coverages as follows:

1. commercial general liability
   - ☒ insurance
   - ☐ self insurance
   - ☐ not required
2. automobile liability
   - ☒ insurance
   - ☐ self-insurance
   - ☐ not required
3. worker's compensation
   - ☒ insurance
   - ☐ self-insurance
   - ☐ not required
4. employer's liability
   - ☒ insurance
   - ☐ self-insurance
   - ☐ not required

B. Certificates of insurance or documentation of self-insurance

- ☒ is on file with the Department.
- ☐ will be forthcoming within 30 days after the effective date of this contract.
- ☐ other (explain) _____.

NOTE: No payment can be made until the Department has received acceptable documentation of these required coverages.

II. Availability of Funds (See Section VI of the General Terms and Conditions of this contract, Availability of Funds.)

Based upon funds available to the Department in the State's fiscal year, the contract (the sum of the State, the federal, and if through the State treasury, the other amounts, shown as components of the Total Project Amount in Section I of the General Terms and Conditions of this contract, Contract Award Data and Signatures) is

- ☒ fully funded.
- ☐ partially funded in the amount of $_____.
- ☐ not applicable.

III. Method of Payment (See Section IX of the General Terms and Conditions of this contract, Method of Payment.)

A. Advance payment, if justified and itemized in Attachment B-2, Approved Advance Payment, is
- ☐ authorized for $_____.
- ☒ not applicable.

B. Progress payments
- ☐ shall be made on a _____ (e.g. mo./qtr./deliverable) basis for $ _____ per payment.
- ☒ shall be based on actual expenditures submitted on a qtr (e.g. mo./qtr.) basis accompanied by ☐ receipts ☒ computer printouts.
- ☐ shall be made on submission of deliverables in accordance with the project specifications and requirements.
- ☐ are not applicable.

C. Final payment of _____
(amount or description)
- ☐ shall be withheld pending receipt of all final reports.
- ☒ is not applicable.
- ☐ (other, specify) _____.

NOTE: No payment can be made unless a proper state invoice is submitted with appropriate justification, receipts, etc. and unless any required expenditure and performance reports are submitted.

IV. Matching and Cost Sharing Requirements (See Section X of the General Terms and Conditions of this contract, Matching and Cost Sharing Requirements.)

- ☐ The Contractor shall provide the matching or cost sharing amounts indicated in Section I of the General Terms and Conditions of this contract, Contract Award Data and Signatures, and described further in Attachment B, Approved Project Budget.
- ☒ Matching and cost sharing requirements do not apply.

V. Project Income (See Section XI of the General Terms and Conditions of this contract, Project Income.)

A. Royalties, if any, received as a result of copyrights or patents produced under this contract shall be
- ☐ paid to the Department.
- ☐ retained by the Contractor.
- ☒ not applicable.

B. Other project income, if any, as defined in Section XI of the General Terms and Conditions of this contract, Project Income, shall be
- ☐ added to funds committed to the project by the Department and used to further eligible project objectives.
- ☐ deducted from the total project costs for the purpose of determining the net costs on which the Department shall base contract payments.
- ☐ paid to the Department.
- ☐ retained by the Contractor.
- ☒ not applicable.

VI. Certification of Adequacy of Accounting System (See Section XII of the General Terms and Conditions of this contract, Financial Management System.)

A. A statement attesting to the adequacy of the Contractor's accounting system in accordance with the standards set forth in Section XII of the General Terms and Conditions of this contract, Financial Management System,
- ☒ must be completed, on Attachment G, Statement of Adequacy of Accounting System, by the Chief Financial Officer identified in Section I of the General Terms and Conditions of this contract, Contract Award Data and Signatures.
- ☐ is not required.

B. Financial reports shall be prepared in a manner consistent with the Contractor's normal accounting records, which are kept on
- ☒ a cash basis.
- ☐ an accrual basis.
- ☐ modified accrual basis.
- ☐ (other, specify) _____.

VII. Financial and Performance Reporting (See Section XIII of the General Terms and Conditions of this contract, Financial and Performance Reporting.)

A. All financial reports must be certified by the Chief Financial Officer.

B. Interim expenditure reports, including a completed copy of Attachment C, Expenditure Report, shall be submitted

☐ on a quarterly (e.g. mo./qtr.) basis, no later than 30 days immediately following the end of the period.
☒ (other, specify) with progress payments, but no later than the due date of the final expenditure report.

C. Performance reports shall be submitted on a quarterly (e.g. qtr./annual) basis. These reports should be submitted no later than 30 days after the end of each reporting period.

D. A final expenditure report, including a completed copy of Attachment C, Expenditure Report, and a final performance report shall be submitted by the Contractor no later than 90 days after the Contractor's completion of all contract tasks, the expiration date of this contract, or the termination of this contract, whichever first occurs.

VIII. Audit Requirements (See Section XV of the General Terms and Conditions of this contract, Audit Requirements.)

A. Under the federal Single Audit Act or the State Circular Letter 04-04-OMB,

☒ this contract is subject to a single audit and will be audited as such on Contractor's fiscal year.
☐ this contract is not subject to a single audit and shall be audited as indicated in paragraphs B and C below.

B. If this contract is not subject to a single audit under paragraph A above,

☐ the contract shall otherwise be audited at the end of the work period.
☒ the contract may otherwise be audited at the Department's discretion up to five years after the Contractor's last payment.

C. If this contract is audited under paragraph B above, the audit shall be conducted by

☒ State auditors.
☐ Department internal auditors.
☐ a CPA firm appointed by Department.
☐ a CPA firm chosen by the Contractor.
☒ (other, specify) At the discretion of the Department.

D. The Department's records show the Contractor's fiscal year ends on 6/30. The Contractor shall notify the Department immediately if this date is incorrect or is changed.

E. Copies of all audit reports must be submitted to DEP, Office of Audit, PO Box 402, Trenton, NJ, 08625-0402 and to the Contracting Agency identified in Section I of the General Terms and Conditions of this contract, Contract Award Data and Signatures, not later than nine months after the close of the Contractor's fiscal year.

IX. Contract Amendment (See Section XVI of the General Terms and Conditions of this contract, Contract Amendment.)

All budget revisions and modifications must be submitted, in writing, to (name) John H. Moyle, (title of position) Manager or the successor to that position (the "Contract Officer").

X. Authorizations and Disclosures (See Section XXI of the General Terms and Conditions of this contract, Approvals and Authorizations.)

A. The Contractor is

☐ a local government agency.
☐ a New Jersey corporation.
☐ an out-of-state corporation.
☒ (other, specify) Rutgers, The State University

B. Appended hereto as Attachment E, Governing Body Resolution or Corporate Resolution, is

☒ a governing body resolution.
☐ a corporate resolution.
☐ no resolution.

C. A Contractor's Stockholder Disclosure Statement is

☐ submitted herewith.
☒ not applicable.

D. A certificate of authority for Contractor to do business in New Jersey

☐ will be submitted.
☒ is not applicable.

NOTE: No payment can be made until the Department has received any documents required under this Section X, Authorizations and Disclosures.

XI. **Interest** (See Section XXII of the General Terms and Conditions of this contract, Interest on Advance Payments and Disallowed Costs.)

A. Interest above $100 per year on advance payment of State funds

☐ may be retained by the Contractor for documented purposes under this contract.
☐ shall be remitted to the Department on a quarterly basis.
☒ will not exist because no advance payment is authorized.
☐ (other, explain) _____.

NOTE: On federally funded grants, any interest above $100 per year must be remitted on a quarterly basis to the Department for return to the federal government.

B. Interest on payments of disallowed costs not returned within 30 days of request shall accrue in favor of the State at the rate specified in the "Notice of Intent to Collect" document (ADM-182).

XII. **Modifications to General Terms and Conditions**

The General Terms and Conditions of this contract are changed, supplemented, or deleted ("modified") as specified in this Section XII, which supersedes inconsistent terms, conditions, requirements, or provisions contained elsewhere in this contract. If all modifications do not fit on this page, the numeral "5" in the phrase "of 5" in the header of each page of this Attachment A must be changed to equal the total number of pages in this Attachment A, and each new page must be identified and successively numbered in the same manner as the first five pages.

☐ This Section XII does not contain modifications to the General Terms and Conditions of this contract.

☒ This Section XII does contain modifications to the General Terms and Conditions of this contract, and this Attachment A now comprises 5 pages.

ADDITIONAL TERMS AND CONDITIONS

Patent and Copyright Liability

The Contractor shall hold and save the State of New Jersey, its officers, agents, servants and employees, harmless from liability of any nature or kind, for or on account of the use of any copyrighted or uncopyrighted composition, patented or unpatented invention, article, or appliance furnished or used in the performance of this contract. This is in addition to and in no way limits any other indemnification provision in the contract.

Delay of Contract

The Contractor is responsible for completing the contract as required by the Scope of Services and according to any approved project work schedules. However, a project schedule may be extended for delays caused by events which could not reasonably be anticipated and which are beyond the control of the Contractor. Such causes include, but are not limited to, actions by employees or other contractors employed by the State, unanticipated work changes ordered by the State, strikes, lockouts, fire, delays caused by common carriers, unavoidable casualties, work stoppage orders and work suspension riders. The Contractor shall submit written documentation to the Project Manager in accordance with Section XVI in order to request an extension of an approved project work schedule.

Dissemination of Information

During the course of this contract and for two years following submission of an approved final report, the Contractor shall not print, publish, disclose or otherwise make known to third parties the content of any data, information, studies, computation, memoranda, graphs, reports or other material arising from this Contract without at least thirty (30) days prior written notification to the State, and without informing the State of the nature of such disclosures. The Contractor shall coordinate all such disclosures with the State and shall permit the State to preview any such disclosure prior to its release. Contractor agrees to seriously consider the comments and suggestions of the State in the final drafting of all publications.

During the above thirty day period, the State may request a delay of any disclosure for up to one (1) year, if necessary, in order to protect the public interest. If the Contractor is publishing materials that the Department has reviewed and found unsatisfactory, inadequate or unacceptable, at the request of the Department, the Contractor shall include in any publication of materials resulting from this contract a statement, conspicuously placed, that the Department finds the material inadequate or unsatisfactory, that the Department disagrees with the analyses, interpretations, or conclusions contained therein, or both.

Acknowledge/Co-Authorship

Publication by the Contractor of any work or portion of work arising from this Contract must include a written acknowledgment of the Department's assistance (e.g., financial, equipment, manpower). Also, where State employees have contributed substantive work on the project, the appropriate State employees (project manager or other significant Department participant(s)) shall be named as co-author(s) on publications arising from this Contract.

Access to Material

Unless otherwise specified in this contract, the State shall have access to all data, samples, material, evidence and documentation gathered, originated or prepared for the State by the Contractor during the performance of his contractual responsibilities for a period of three (3) years from the submission of the approved Final Report. During that time period any such data, samples, material, evidence and documentation shall be provided to the State in a reasonably timely manner upon request by the State.

Substitutions of Personnel and Subcontractors

If, during the course of the contract, the Contractor finds that he cannot provide the personnel or subcontractors identified in this contract, and desires to substitute personnel or subcontractors, the Contractor must request in writing from the Department permission to substitute personnel or subcontractors. Such request must:

1. Explain the reasons why the original persons cannot be provided;
2. Demonstrate that the qualifications of the substitution are equal to or better than the originally proposed persons; and
3. Warrant that the substitution will be provided at no additional cost to the State.

GRANT AGREEMENT
BETWEEN

RUTGERS, THE STATE UNIVERSITY
(Name of Grantee)
AND
THE STATE OF NEW JERSEY
BY AND FOR
THE DEPARTMENT OF ENVIRONMENTAL PROTECTION

GRANT IDENTIFIER: EC14-013

ADDITIONAL FEDERAL FUNDED AGREEMENT PROVISIONS

I. Debarment and Suspension

The Grantee (Loan Recipient or Contractor) shall fully comply with Executive Order 12549 as implemented in federal regulation entitled *GOVERNMENTWIDE DEBARMENT AND SUSPENSION (NONPROCUREMENT*, 2 CFR Part 180, Subpart C - *Responsibilities of Participants Regarding Transactions (Doing Business with Other Persons)* and the applicable Federal agency Common Rule regulations found in http://www.whitehouse.gov/omb/grants/chart.aspx. The Grantee (Loan Recipient or Contractor) is responsible for ensuring that any lower tier covered transaction as described in Subpart B of 2 CFR Part 180 and the applicable Federal agency Common Rule regulations, entitled "Covered Transactions," includes a term or condition requiring compliance with Subpart C. The Grantee (Loan Recipient or Contractor) is responsible for further requiring the inclusion of a similar term or condition in any subsequent lower tier covered transactions. The Grantee (Loan Recipient or Contractor) acknowledges that failing to disclose the information as required at 2 CFR 180.355 may result in the delay or negation of this assistance agreement, or pursuance of legal remedies, including suspension and debarment.

The Grantee (Loan Recipient or Contractor) may access the Excluded Parties List System at http://www.sam.gov.

II. Restrictions on Lobbying

A. The Grantee (Loan Recipient or Contractor) agrees to fully comply with Common Rule regulations for federal agencies, *NEW RESTRICTIONS ON LOBBYING* found in http://www.whitehouse.gov/omb/grants/chart.aspx. The Grantee (Loan Recipient or Contractor) shall include the language of this provision in award documents for all subawards exceeding $100,000, and require that subrecipients submit certification and disclosure forms accordingly.

(1) No federal appropriated funds may be expended by the Grantee (Loan Recipient or Contractor) to pay any person for influencing or attempting to influence an officer or employee of any agency, a Member of Congress, an officer or employee of Congress, or an employee of a Member of Congress in connection with any of the following covered Federal actions: the awarding of any Federal contract, the making of any Federal grant, the making of any Federal loan, the entering into of any cooperative agreement, and the extension, continuation, renewal, amendment, or modification of any Federal contract, grant, loan, or cooperative agreement.

(2) The Grantee (Loan Recipient or Contractor) shall file with the Department a certification, set forth in Appendix A-1-A, that the Grantee (Loan Recipient or Contractor) has not made, and will not make, any payment prohibited by paragraph (1) of this section.

(3) The Grantee (Loan Recipient or Contractor) shall file with the Department a disclosure form, set forth in Appendix A-1-B, following instructions contained in the Common Rule regulations for federal agencies, *NEW RESTRICTIONS ON LOBBYING* found in http://www.whitehouse.gov/omb/grants/chart.aspx, if the Grantee (Loan Recipient or Contractor) has made or has agreed to make any payment using non-federal funds which would be prohibited under paragraph (1) of this section if paid for with federal funds.

B. In accordance with the Byrd Anti-Lobbying Amendment, any recipient who makes a prohibited expenditure under the *NEW RESTRICTIONS ON LOBBYING* Common Rule regulations or fails to file the required certification or lobbying forms shall be subject to a civil penalty of not less than $10,000 and not more than $100,000 for each such expenditure.

III. Compliance with the Civil Rights Act of 1964

A. The Grantee (Loan Recipient or Contractor) must comply with Title VI of the Civil Rights Act of 1964, Section 504 of the Rehabilitation Act of 1973, Title IX of the Education Amendments of 1972, the Age Discrimination Act of 1975, and a variety of program-specific statutes with non-discrimination requirements.

B. Other civil rights laws may impose additional requirements on the Grantee (Loan Recipient or Contractor) to which the Grantee (Loan Recipient or Contractor) must comply. These laws include, but are not limited to, Title VII of the Civil Rights Act of 1964 (prohibiting race, color, national origin, religion, and sex discrimination in employment), the Americans with Disabilities Act (prohibiting disability discrimination in employment and in services provided by State and local governments, businesses, and nonprofit agencies), and the Fair Housing Act (prohibiting race, color, national origin, age, family status, and disability discrimination in housing), as well as any other applicable civil rights laws.

IV. Trafficking Victim Protection Prohibition Statement

A. To implement requirements of Section 106 of the Trafficking Victims Protection Act of 2000, as amended, and the requirements contained in federal regulation 40 CFR Part 175, *TRAFFICKING IN PERSONS*, the Department may unilaterally terminate this award, without penalty, if a subrecipient that is a private entity fails to comply with these requirements. The Grantee (Loan Recipient or Contractor) must inform the Department immediately of any information received from any source alleging a violation of a prohibition in the Prohibition Statement below.

B. The Grantee (Loan Recipient or Contractor) must include the requirements of the Prohibition Statement below in any subaward you make to a private entity.

Prohibition Statement - You as the recipient, your employees, subrecipients under this award, and subrecipients' employees may not engage in severe forms of trafficking in persons during the period of time that the award is in effect; procure a commercial sex act during the period of time that the award is in effect; or use forced labor in the performance of the award or subawards under the award.

V. National Environmental Policy Act (NEPA)

The Grantee (Loan Recipient or Contractor) shall not begin any implementation work under this Agreement until the required environmental review process, if applicable, is completed in compliance with the National Environmental Policy Act (NEPA), 42 United States Code 4321, et seq., its implementing regulations 40 CFR Part 1500-1508, and other applicable federal agency NEPA requirements.

VI. Eligible Workers

A. The grantee shall ensure that all employees of the Grantee and the Grantee's contractors funded under this agreement complete the I-9 form to certify that they are eligible for lawful employment under the Immigration and Nationality Act (8 USC 1324a). The Grantee and the Grantee's contractors shall comply with the regulations regarding certification and retention of he completed forms. These requirements also apply to any contract or supplemental agreement under this agreement.

B. The Grantee agrees to make these forms available in accordance with the access to records and record retention provisions of this agreement.

VII. Requirement for Data Universal Numbering System (DUNS) number

As a condition of this agreement, the Grantee (Loan Recipient or Contractor) must provide to the Department its Data Universal Numbering System (DUNS) number. A DUNS number means the nine-digit number established and assigned by Dun and Bradstreet, Inc. (D&B) to uniquely identify business entities. A DUNS number may be obtained from D&B by telephone (currently 866-705-5711) or the internet (http://fedgov.dnb.com/webform). No Grantee (Loan Recipient or Contractor may receive a subaward unless this number is provided below:

Grantee (Loan Recipient or Contractor) DUNS Number _____

GRANT AGREEMENT
BETWEEN

RUTGERS, THE STATE UNIVERSITY
(Name of Grantee)
AND
THE STATE OF NEW JERSEY
BY AND FOR
THE DEPARTMENT OF ENVIRONMENTAL PROTECTION

GRANT IDENTIFIER: EC14-013

CERTIFICATION REGARDING LOBBYING

CERTIFICATION FOR CONTRACTS, GRANTS, LOANS, AND COOPERATIVE AGREEMENTS

The undersigned certifies, to the best of his or her knowledge and belief, that:

(1) No Federal appropriated funds have been paid or will be paid, by or on behalf of the undersigned, to any person for influencing or attempting to influence an officer or employee of any agency, a Member of Congress, an officer or employee of Congress, or an employee of a Member of Congress in connection with the awarding of any Federal contract, the making of any Federal grant, the making of any Federal loan, the entering into of any cooperative agreement, and the extension, continuation, renewal, amendment, or modification of any Federal contract, grant, loan, or cooperative agreement.

(2) If any funds other than Federal appropriated funds have been paid or will be paid to any person for influencing or attempting to influence an officer or employee of any agency, a Member of Congress, an officer or employee of Congress, or an employee of a Member of Congress in connection with this Federal contract, grant, loan, or cooperative agreement, the undersigned shall complete and submit Standard Form-LLL, "Disclosure Form to Report Lobbying" in accordance with its instructions. (Appendix A-1-B)

(3) The undersigned shall require that the language of this certification be included in the award documents for all subawards at all tiers (including subcontracts, subgrants, and contracts under grants, loans, and cooperative agreements) and that all sub-recipients shall certify and disclose accordingly.

This certification is a material representation of fact upon which reliance was placed when this transaction was made or entered into. Submission of this certification is a prerequisite for making or entering into this transaction imposed by section 1352 , title 31 U.S. Code. Any person who fails to file the required certification shall be subject to a civil penalty of not less than $10,000 and not more than $100,000 for each such failure.

_____
Typed Name & Title of Authorized Representative

_____ _____
Signature of Authorized Representative Date

DISCLOSURE OF LOBBYING ACTIVITIES

Complete this form to disclose lobbing activities pursuant to 31 U.S.C. 1352
(See reverse for public burden disclosure.)

Approved by OMB
0348-0046

1. Type of Federal Action: _____ a. contract b. grant c. cooperative agreement d. loan e. loan guarantee f. loan insurance	**2. Status of Federal Action:** _____ a. bid/offer/application b. initial award c. cooperative agreement	**3. Report Type:** _____ a. initial filing b. material change **For Material Change Only:** year _____ quarter _____ date of last report _____
4. Name and Address of Reporting Entity: ☐ Prime ☐ Subawardee Tier _____, *if known:* **Congressional District,** *if known*: 4c	**5. If Reporting Entity in No. 4 is a Subawardee, Enter Name and Address of Prime** **Congressional District,** *if known*:	
6. Federal Department/Agency	**7. Federal Program Name/Description:** **CFDA Number,** *if applicable:* _____	
8. Federal Action Number, *if known*:	**9. Award Amount,** *if known*: $	
10. a. Name and Address of Lobbying Registrant (*if individual, last name, first name, MI*):	**b. Individuals Performing Services** (*including address if different from no. 10a)* (*last name, first name, MI*):	
11. Information requested through this form is authorized by title 31 U.S.C. section 1352. This disclosure of lobbing activities is a material representation of fact upon which reliance was placed by the tier above when this transaction was made or entered into. This disclosure is required pursuant to 31 U.S.C. 1352. This information will be available for public inspection. Any person who fails to file the required disclosure shall be subject to a civil penalty of not less than $10,000 and not more than $100,000 for each failure.	Signature: _____ Print Name: _____ Title: _____ Telephone No.: _____ Date: _____	
Federal Use Only:		Authorized for Local Reproduction Standard Form LLL (rev. 7-97)

INSTRUCTIONS FOR COMPLETION OF SF-LLL, DISCLOSURE OF LOBBYING ACTIVITIES

This disclosure form shall be completed by the reporting entity, whether subawardee or prime Federal recipient, at the initiation or receipt of a covered Federal action, or a material change to a previous filing, pursuant to title 31 U.S.C. section 1352. The filing of a form is required for each payment or agreement to make payment to any lobbying entity for influencing or attempting to influence an officer or employee of any agency, a Member of Congress, an officer or employee of Congress, or an employee of a Member of Congress in connection with a covered Federal action. Complete all items that apply for both the initial filing and material change report. Refer to the implementing guidance published by the Office of Management and Budget for additional information.

1. Identify the type of covered Federal action for which lobbying activity is and/or has been secured to influence the outcome of a covered Federal action.

2. Identify the status of the covered Federal action.

3. Identify the appropriate classification of this report. If this is a followup report caused by a material change to the information previously reported, enter the year and quarter in which the change occurred. Enter the date of the last previously submitted report by this reporting entity for this covered Federal action.

4. Enter the full name, address, city, State and zip code of the reporting entity. Include Congressional District, if known. Check the appropriate classification of the reporting entity that designates if it is, or expects to be, a prime or subaward recipient. Identify the tier of the subawardee, e.g., the first subawardee of the prime is the 1st tier. Subawards include but are not limited to subcontracts, subgrants and contract awards under grants.

5. If the organization filing the report in item 4 checks "Subawardee," then enter the full name, address, city, State and zip code of the prime Federal recipient. Include Congressional District, if known.

6. Enter the name of the federal agency making the award or loan commitment. Include at least one organizational level below agency name, if known. For example, Department of Transportation, United States Coast Guard.

7. Enter the Federal program name or description for the covered Federal action (item 1). If known, enter the full Catalog of Federal Domestic Assistance (CFDA) number for grants, cooperative agreements, loans, and loan commitments.

8. Enter the most appropriate Federal identifying number available for the Federal action identified in item 1 (e.g., Request for Proposal (RFP) number; Invitations for Bid (IFB) number; grant announcement number; the contract, grant, or loan award number; the application/proposal control number assigned by the Federal agency). Included prefixes, e.g., "RFP-DE-90-001."

9. For a covered Federal action where there has been an award or loan commitment by the Federal agency, enter the Federal amount of the award/loan commitment for the prime entity identified in item 4 or 5.

10. (a) Enter the full name, address, city, State and zip code of the lobbying registrant under the Lobbying Disclosure Act of 1995 engaged by the reporting entity identified in item 4 to influence the covered Federal action.

    (b) Enter the full names of the individual(s) performing services, and include full address if different from 10(a). Enter Last Name, First Name, and Middle Initial (MI).

11. The certifying official shall sign and date the form, print his/her name, title, and telephone number.

According to the Paperwork Reduction Act, as amended, no persons are required to respond to a collection of information unless it displays a valid OMB control Number. The valid OMB control number for this information collection is OMB No. 0348-0046. Public reporting burden for this collection of information is estimated to average 10 minutes per response, including time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the collection of information. Send comments regarding the burden estimate or any other aspect of this collection of information, including suggestions for reducing this burden, to the Office of Management and Budget, Paperwork Reduction Project (0348-0046), Washington, DC 20503

GRANT AGREEMENT
BETWEEN

RUTGERS, THE STATE UNIVERSITY
(Name of Grantee)
AND
THE STATE OF NEW JERSEY
BY AND FOR
THE DEPARTMENT OF ENVIRONMENTAL PROTECTION

GRANT IDENTIFIER: EC14-013

ADDITIONAL FEDERAL FUNDED AGREEMENT PROVISIONS

FEDERAL FUNDING ACCOUNTABILITY AND TRANSPARENCY ACT (FFATA)

FEDERAL FUNDED AGREEMENTS OF $25,000 OR GREATER

I. Federal Funding Accountability and Transparency Act (FFATA)

A. The Grantee (Loan Recipient or Contractor) agrees to obtain a Data Universal Numbering System (DUNS) number that will represent a universal identifier for all federal funding assistance. DUNS numbers can be obtained from Dun and Bradstreet http://fedgov.dnb.com/webform/.

B. The Grantee (Loan Recipient or Contractor) agrees to register with the Central Contractor Registration (CCR)/System for Award Management (SAM) and to maintain current registration at all times during which this agreement is active or under consideration by the Department. Register at http://www.sam.gov/.

C. The Grantee (Loan Recipient or Contractor) agrees to submit a signed FFATA Request Form set forth in Appendix A-2 as a condition of this Agreement including Total Compensation of Subrecipient Executives if applicable as set forth below:

Reporting of Total Compensation of Subrecipient Executives.

1. Applicability and what to report. You shall report the names and total compensation of each of your five most highly compensated executives for your preceding completed fiscal year, if --

i. in the preceding fiscal year, you received—

(A) 80 percent or more of your annual gross revenues from Federal procurement contracts (and subcontracts) and Federal financial assistance subject to the Transparency Act, as defined at 2 CFR 170.320 (and subawards) (Check One ☐ Yes ☐ No); and,

(B) $25,000,000 or more in annual gross revenues from Federal procurement contracts (and subcontracts), and Federal financial assistance subject to the Transparency Act (and subawards) (Check One ☐ Yes ☐ No); and

ii. The public does not have access to information about the compensation of the executives through periodic reports filed under section 13(a) or 15(d) of the Securities Exchange Act of 1934 (15 U.S.C. 78m(a), 78o(d)) or section 6104 of the Internal Revenue Code of 1986. (To determine if the public has access to the compensation information, see the U.S. Security and Exchange Commission total compensation filings at http://www.sec.gov/answers/execomp.htm.) (Check One ☐ Yes, if the public does not have access ☐ No)

2. If the answer to all three questions in paragraph 1. of this section is "Yes", then enter the full name and total compensation for the five highest paid individuals below:

Executive Name	Executive Compensation
1.	$
2.	$
3.	$
4.	$
5.	$

   i. If Reporting of Executive Compensation is required above, check "Yes" on the form in Appendix A-2, otherwise check "No".

3. Definitions. For purposes of this award term:

   i. Executive means officers, managing partners, or any other employees in management positions.

   ii. Total compensation means the cash and noncash dollar value earned by the executive during the recipient's or subrecipient's preceding fiscal year and includes the following (for more information see 17 CFR 229.402(c)(2)):

a) *Salary and bonus.*
b) *Awards of stock, stock options, and stock appreciation rights.* Use the dollar amount recognized for financial statement reporting purposes with respect to the fiscal year in accordance with the Statement of Financial Accounting Standards No. 123 (Revised 2004) (FAS 123R), Shared Based Payments.
c) *Earnings for services under non-equity incentive plans.* This does not include group life, health, hospitalization or medical reimbursement plans that do not discriminate in favor of executives, and are available generally to all salaried employees.
d) *Change in pension value.* This is the change in present value of defined benefit and actuarial pension plans.
e) *Above-market earnings on deferred compensation which is not tax-qualified.*
f) Other compensation, if the aggregate value of all such other compensation (e.g. severance, termination payments, value of life insurance paid on behalf of the employee, perquisites or property) for the executive exceeds $10,000.

Federal Funding Accountability and Transparency Act (FFATA) Request Form

New Jersey Department of Environmental Protection (NJDEP)

The NJDEP is required under the Federal Funding Accountability and Transparency Act (FFATA) to collect subrecipient information for transactions of $25,000 or greater.

Legal Name of Entity Receiving Subaward				
DUNS Number			**Parent Entity DUNS Number (if applicable)**	
Federal Agency **(see pg. 2)**	CFDA No. **(see pg. 2)**		Program Source **(to be completed by NJDEP)**	
Subaward Amount	Transaction Type (Grant/ Loan/Contract)		**REQUIRED** - Current and valid registration in Central Contractor Registration/System for Award Management (SAM) (www.sam.gov)? ☐ Yes	
Project Title (if applicable)			**REQUIRED** - Agree to maintain current and valid CCR registration at all times during which a federal subaward is active or under consideration by the NJ Dept. of Environmental Protection? ☐ Yes	
Location of Entity Receiving Award				
City	State	Zip+4	County	Congressional District
Principal Place of Performance				
City	State	Zip+4	County	Congressional District
Reporting of Total Compensation of Subrecipient Executives Required ☐ Yes ☐ No				
NAME OF AUTHORIZED REPRESENTATIVE			TITLE	
SIGNATURE OF AUTHORIZED REPRESENTATIVE			DATE	

By signing this document, the Authorized Representative attests to the information.
The NJDEP will not endorse the subaward until this form is completed and included in the agreement

CONTRACT
BETWEEN
RUTGERS, THE STATE UNIVERSITY
(Name of Contractor)
AND
THE STATE OF NEW JERSEY
BY AND FOR
THE DEPARTMENT OF ENVIRONMENTAL PROTECTION

CONTRACT NUMBER: EC14-013

ACCOUNT DESCRIPTION	TOTAL BUDGET	FEDERAL	STATE	CONTRACTOR	OTHER
A. Personnel Costs Salaries	$74,366	0.00	$74,366	0.00	0.00
Fringe Benefits	$16,177	0.00	$16,177	0.00	0.00
B. Consultants and Subcontractors	0.00	0.00	0.00	0.00	0.00
C. Other Costs Specify below:					
▪ Computer & Project Supplies	$4,500	0.00	$4,500	0.00	0.00
▪ Travel	$5,000	0.00	$5,000	0.00	0.00
▪ Publication Services	$1,000	0.00	$1,000	0.00	0.00
▪ Tuition	$8,065	0.00	$8,065	0.00	0.00
▪	0.00	0.00	0.00	0.00	0.00
D. Audit	0.00	0.00	0.00	0.00	0.00
Subtotal Direct Costs	$109,108	0.00	$109,108	0.00	0.00
Less Program Income	0.00	0.00	0.00	0.00	0.00
Total Direct Costs	$109,108	0.00	$109,108	0.00	0.00
Indirect Costs	$10,104	0.00	$10,104	0.00	0.00
TOTAL PROJECT AMOUNT	$119,212	0.00	$119,212	0.00	0.00

TOTAL CONTRACT AMOUNT is ☒ the sum of "Federal" and "State" column totals $119,212
☐ the sum of "Federal" "State" and "Other" column totals $0.00

The sums identified in the "Total Budget" column are itemized and justified in (check one or more as appropriate)

☐ Attachment D, Scope of Services, on page(s) _____.
☒ Attachment D-2, Contractor's Proposal, on page(s) _____.
☐ Attachment B-1, Itemization and Justification of Budget, comprising _____

CONTRACT
BETWEEN
RUTGERS, THE STATE UNIVERSITY
(Name of Contractor)
AND
THE STATE OF NEW JERSEY
BY AND FOR
THE DEPARTMENT OF ENVIRONMENTAL PROTECTION

CONTRACT NUMBER: EC14-013

ITEMIZATION AND JUSTIFICATION OF BUDGET

If neither Attachment D, Scope of Services, nor Attachment D-2, Contractor's Proposal, provides an itemization, explanation, and justification for the Approved Project Budget, they must be provided on this Attachment B-1, comprising _____ pages, including this page.

CONTRACT
BETWEEN
RUTGERS, THE STATE UNIVERSITY
(Name of Contractor)
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CONTRACT NUMBER: EC14-013

APPROVED ADVANCE PAYMENT

If Attachment A provides for an advance payment, an itemization, explanation, and justification must be provided on this Attachment B-2, comprising _____ pages, including this page.

Budget for Advance Payment

Item Description	Item Cost
	0.00
	0.00
	0.00
	0.00
	0.00
	0.00
TOTAL ADVANCE PAYMENT	0.00

% of Approved Project Budget _____

% of Total Contract Amount - ☐ Contract is Sum of Federal and State _____
☐ Contract is Sum of Federal, State, and Other _____

Justification for Advance Payment

Explain the necessity for the advance payment, how it will be spent, and why this payment must be made before Contractor's performance of its obligations under this agreement can commence.

CONTRACT
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RUTGERS, THE STATE UNIVERSITY
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CONTRACT NUMBER: EC14-013

EXPENDITURE REPORT: For the period beginning _____ and ending _____

ACCOUNT DESCRIPTION	APPROVED PROJECT BUDGET	PREVIOUSLY REPORTED CUMULATIVE EXPENDITURES	ACTUAL EXPENDITURES AS OF _____ (date)	CUMULATIVE EXPENDITURES	UNEXPENDED BALANCE
A. Personnel Costs Salaries	$74,366				
Fringe Benefits	$16,177				
B. Consultants and Subcontractors	0.00				
C. Other Costs Specify below:					
▪ Computer & Project Supplies	$4,500				
▪ Travel	$5,000				
▪ Publication Services	$1,000				
▪ Tuition	$8,065				
▪	0.00				
D. Audit	0.00				
Subtotal Direct Costs	$109,108				
Less Program Income	0.00				
Total Direct Costs	$109,108				
Indirect Costs	$10,104				
TOTAL PROJECT AMOUNT	$119,212				

CERTIFICATION BY CHIEF FINANCIAL OFFICER

I certify that the above expenditures for the period are accurate as stated, that all procurements for which payment is required have been made in accordance with the standards contained in this contract, and that each obligation for which an expenditure is listed arose during the work period.

Signature: _____
(Signature)

Date: _____

Name: Michele Conlin
(print name)

Title: Asst Controller

CONTRACT
BETWEEN
RUTGERS, THE STATE UNIVERSITY
(Name of Contractor)
AND
THE STATE OF NEW JERSEY
BY AND FOR
THE DEPARTMENT OF ENVIRONMENTAL PROTECTION

CONTRACT NUMBER: EC14-013

SCOPE OF SERVICES

The Scope of Services for this contract comprises Attachment D-2, Contractor's Proposal; any project requirements delineated in Attachment D-1, Project Requirements; and any modifications, amendments, and additions to the Contractor's proposal discussed in this Attachment D. In case of conflict among the provisions of Attachments D, D-1, and D-2, the order of priority shall be: (1) Attachment D-1, (2) Attachment D, (3) Attachment D-2. This Attachment D comprises _____ pages, including this page.

CONTRACT
BETWEEN
RUTGERS, THE STATE UNIVERSITY
(Name of Contractor)
AND
THE STATE OF NEW JERSEY
BY AND FOR
THE DEPARTMENT OF ENVIRONMENTAL PROTECTION

CONTRACT NUMBER: EC14-013

PROJECT REQUIREMENTS

The Contractor shall comply with the requirements set forth below, as well as any rules and regulations promulgated pursuant to the program's enabling legislation, if any, N.J.S.A._____. See N.J.A.C._____. Listed below are specific requirements, including special conditions, of the program and the project covered by this contract. This Attachment D-1 comprises 1 pages, including this page.

The Contractor shall submit a written report detailing the results of the work conducted under this contract to the Department a written report detailing the results of the investigation within six months from the effective date of this contract. If, within the duration of the project, any short-term flood reduction alternatives are identified that can be considered for immediate implementation are identified, the contractor should provide the Department with an interim report on these findings.

The Contractor shall complete all tasks identified in the Contractor's Proposal, attached hereto as Attachment D-2, to the satisfaction and subject to the approval of the Department.

The Project Implementation Schedule set forth in the Contractor's Proposal shall be adjusted to begin on the effective date of this contract.

The Contractor shall ensure that its selection of subcontractor complies with all applicable federal, state and local statutes, rules and/or ordinances, including but not limited to those related to public advertisement and/or bidding.

CONTRACT
BETWEEN
RUTGERS, THE STATE UNIVERSITY
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THE STATE OF NEW JERSEY
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CONTRACT NUMBER: EC14-013

CONTRACTOR'S PROPOSAL

Contractor's project proposal, comprising 21 pages, including this page, is incorporated into this contract as this Attachment D-2. Except as modified, amended, or supplemented by Attachment D, this Attachment D-2, Contractor's Proposal, describes the assignment tasks and project work units which the Contractor shall perform and deliver pursuant to this contract.

Project Title: Strategies for Flooding Risk Reduction for Vulnerable Coastal Populations in Salem and Cumberland Counties along Delaware Bay

Applicants: Qizhong (George) Guo, Rutgers University, School of Engineering

David Bushek, Rutgers University, Institute of Marine and Coastal Sciences, Haskin Shellfish Research Laboratory, located in Cumberland County

Richard G. Lathrop Jr., Rutgers University, Walton Center for Remote Sensing & Spatial Analysis

Grant Amount Requested: $119,212

Date of Proposal: July 15, 2013

Background

The shore communities in Salem and Cumberland Counties are under hydraulic influences of the Delaware Bay. These communities experienced severe flooding problems resulted from the high tide, strong wave and storm surge during Hurricane (Superstorm) Sandy at end of October 2012. Water levels within the Delaware Bay during Sandy are shown in Figures 1 and 2 at Cape May, NJ and Ship John Shoal, NJ, respectively, indicating the results of high tide and storm surge. Some of these communities also experienced severe flooding problems resulted from heavy rainfall during Hurricane Irene in 2011.

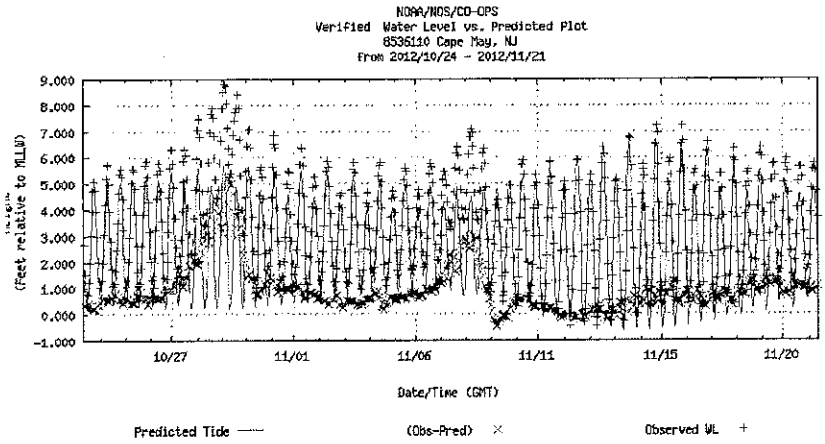

Figure 1. Water Levels at Cape May, NJ inside Delaware Bay from Oct. 24 to Nov. 21, 2012.

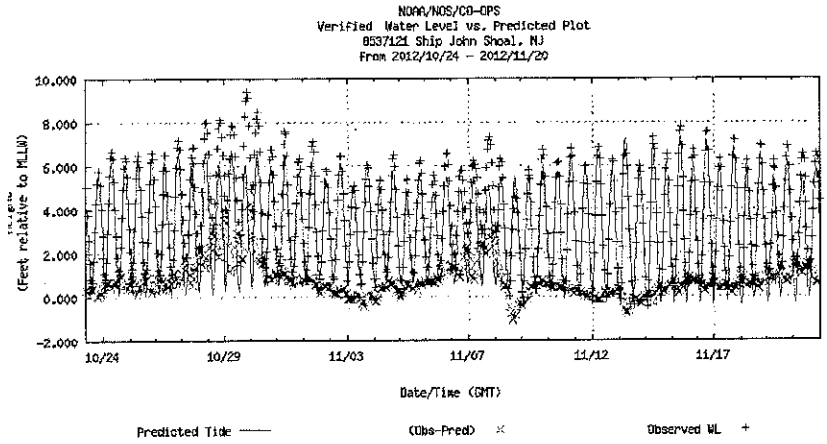

Figure 2. Water Levels at Ship John Shoal, NJ inside Delaware Bay from Oct. 24 to Nov. 21, 2012.

During Sandy, according to the news reports, the communities in Salem and Cumberland Counties have experienced flooding problems to different degrees:

Salem County

"The feeling here is certainly that we dodged a major bullet," said county administrator Evern Ford, speaking from the county office of emergency management Tuesday (October 30th) morning.

From a countywide perspective, Salem County Public Works Director Jeff Ridgway said initial damage assessments indicate that the county's infrastructure held up well through Sandy. Public works responded for 15 to 20 downed tree calls, along with a few downed wires. Ridgway said from an infrastructure standpoint, the worst damage occurred to Sinnickson Landing Road in Elsinboro Township, which has been eroded due to flooding. A few other roads suffered some erosion along their shoulders, but overall, countywide damage was minor, he said.

Though countywide damage was minor, there were localized incidents of serious damage, especially in the county's most vulnerable low-lying towns. Pennsville Lt. Allen Cummings said the township had a rough night, especially in the area of Penn Beach where the Delaware River breached the bulkhead and put the area under water. Even at low tide the river didn't recede much, which is a serious concern for the township during Tuesday's high tide periods, said Cummings.

Elsinboro Township was also hit hard. Mayor Sean Elwell said a number of areas and streets were flooded out last night.

River front areas in the Carneys Point and Penns Grove areas also saw significant flooding. Penns Grove-Carneys Point Library Board Chairperson Linda Huff said the library was under water. "We can't even get in there to assess the damage because the water is so high," said Huff.

Cumberland County

County officials were unable to provide specific figures on damage assessments Thursday (November 1st) evening, but Downe Township Mayor Bob Campbell reported to the county he estimated $30 million in damages in his municipality. Cumberland County spokesman Troy Ferus said the cost of completing repairs in Lawrence Township is anticipated to be close to that figure as well.

A dike in Heislerville was damaged. The compromised levee system threatened its surrounding area, including Matts Landing, Newell Road and River Road, at each high tide.

By Wednesday (October 31st) morning those communities along the Delaware Bay that were hit hardest by Hurricane Sandy were finally able to begin taking stock of the storm's damage. Record high tides had receded enough to allow officials and even some property owners access

to coastal areas of Downe, Commercial, and Maurice River Townships; even on the low tide some roads were nearly impassable, and flotsam and jetsam were piled high along the shoulders.

In the village of Bivalve, hard against the mouth of the Maurice River, a scant few hundred yards from the bay in Commercial Township, committeeman Bill Riggin was out along the docks, taking stock of the ravages of the storm surge. And it is immense. "The bank at Shellpile is gone, and Peak of the Moon was breached, as well as Ogden Avenue out near the State Police barracks," Riggin said in summation. "The PSE & G boardwalk was also washed away." "There was water on Main Street, which there hasn't been since Hurricane Donna back in 1962."

For the foreseeable future, oystering season in the bay is closed, due to bacterial contamination in the water. With several weeks left in the season, many of Commercial Township's commercial oyster vessels are unsure if and when they will be able to fill their yearly quotas.

Just down Route 553 in neighboring Downe, homeowners in the township's island communities of Gandy's Beach, Money Island, and Fortescue still haven't been able to get into their houses. George and Sandra Boland, year-round residents on Gandy's Beach, were displaced by Sandy on Sunday, and have been staying with their son in Newfield for the past few days. George managed to get onto the island for brief time this morning to survey the damage, but couldn't get inside of his house. Around 2 p.m. they were awaiting Mayor Bob Campbell to escort them past the sheriffs deputies that were guarding the only road into Gandy's. "We haven't been inside," said George. "But I did see that water washed through our first floor, which is 8 feet off the normal high-tide line." Damage on Gandy's was severe. According to Mayor Campbell, North Cove Road is pretty much gone, and South Cove Road is covered with two feet of sand. The storm surge breached a 750 foot concrete retaining wall that the township erected last weekend, and scattered the heavy blocks across the road "like peanuts". Every property on the island suffered some degree of damage, and according to some reports, a few were washed right into the bay, and all of the bulkheads are essentially gone.

A little further up the bay on the Cohansey River, the town of Greenwich was battling failing dikes. "We were doing pretty well until there was a 150-foot breach at the dike behind Godwin, near the Klondike ditch, and [Gloucester County] officials said they wouldn't be able to get out there until the tide lowered," said [Greenwich Township Mayor] Shivery Tuesday afternoon. While Godwin Pumps President Grant Salstrom has stated the flood waters were receding Tuesday afternoon, Shivery said the overflow could threaten areas of Gibbstown, including South Poplar Street and Tomlin Station Road.

Had the Hurricane Sandy also brought in the heavy rainfall besides the high tide, storm surge and wave, the damages would have been worse.

An opportunity now exists to address both the ocean water-induced and the rainfall-induced flooding problems along the low-lying coastal communities, and to look at a spectrum of possible solutions (short term vs. long term, grey vs. green, low cost vs. high cost, etc.) to the

rare as well as frequent flooding problems. Several separate initiatives are underway to identify problem areas and potential solutions, but there is a need for a more comprehensive compilation of existing flood control mechanisms, infrastructure and lands at risk, and possible alternative strategies to enhance and improve protection.

Goals, Objectives and Tasks Statements

Goals: Identify and evaluate alternatives for flooding risk reduction for vulnerable coastal populations in Populations in Salem and Cumberland Counties along Delaware Bay

Objectives: During the project period (8/1/2013-1/31/2014), project staff will identify and evaluate alternatives for flooding risk reduction including temporary and permanent, fixed and mobile solutions for both frequent and small flooding events (i.e. nor'easter) and extreme weather conditions (i.e. hurricane), as well as for both short and long terms.

Tasks: Proposed work can be categorized into six (6) areas:

1. Water Protection Levels

The water levels at which populations are to be protected should be determined quantitatively. A hydrologic model for the watershed and a hydrodynamic model for the tidal and non-tidal reaches of the river and bays can be developed for such a determination. However, this would be a major undertaking including the long project duration and the high cost. The modeling effort may also duplicate those of the Federal Emergency Management Agency (FEMA) and the U.S. Army Corps of Engineers. In addition, the NJ flood mapper (http://slrviewer.rutgers.edu/) provides a first estimate in this respect. Instead, for this proposed project of short duration (six months) and low cost, the water levels to protect are to be determined as follow:

(1) Highest water levels reached during Super Storm Sandy or other historical events. This will be determined by collecting and reviewing existing flood plain information such as FEMA's best available flood hazard data, Sandy surge data, and historical water level data from USGS and NOAA tidal gages.

(2) Water levels at 100 year, 10-year, and 2-year return periods. These will be determined by analyzing the measured, historical water level data that are available. A statistical model using an extreme value distribution (GEV2) would be appropriate. The required long term data may not exist in the shore communities but (if necessary) we will correlate it to records at the Cape May (New Jersey), Ship John Shoal (New Jersey), or other long-term monitoring stations (e.g., Guo et al. 2002). The FEMA flood hazard maps will also be examined and

compared. Any existing modeling results such as those by the Army Corps of Engineers will be reviewed and compared as well.

(3) Add the projected inland precipitation intensification and sea level rise scenarios to the above two protection water levels.

2. Evaluate existing flood risk reduction structures and systems.

To develop a spectrum of solutions to the flooding problems, we should first identify what flood mitigation measures are already in place, and how they performed. We plan to:

a. Identify stormwater drainage pipes that routinely back up during storms as well as dikes (USDA 2010) and other flood control structures that are routinely breached or fail, flooding roadways and private property.
b. Conduct one-on-one interviews with local officials to identify flooded locations.
c. Review the existing flood mitigation plans for communities for further implementation and enhancement.
d. Based on results of evaluation, plans will be made to remediate and/or strengthen the existing structures and systems.

3. Identify and evaluate flood risk reduction alternatives.

There is a spectrum of alternatives that can be identified and evaluated, from grey to green, from in-water and on-land, from barrier to diversion, from immediate, short-term to long-term, etc. We have assembled an initial project team of experts, and we will reach out to more academics as well as managers, practitioners, and local officials for alternative solutions to the flooding problems. We plan to:

a. Consider permanent/fixed solutions on land (i.e. flood gates, flood walls, etc.)
b. Consider mobile flood barriers on land (i.e. sand bags, flood fences, etc.) (A literature review has turned up more than ten types of available mobile/portable flood barriers.)
c. Evaluate the use of in-water flood mitigation strategies including flood gates at the entrances to rivers and creeks
d. Identify green infrastructure (rain barrels, rain gardens, vegetative swales, discontinuous impervious areas, porous pavements, living shorelines etc.) to reduce the runoff volume (e.g., Guo et al. 2012, Guo and Correa 2013) and minimize flooding from storm surges

4. Design for Infrastructure Resilience

We have entered a world of more extremes and also more uncertainties. It is imperative to prepare our infrastructure for those extremes (such as Hurricane Sandy) and those uncertainties in inland precipitation and sea level change. We plan to:

a. Identify critical infrastructures of the area and locate them using GIS and interface with flood level maps.
b. Conduct one-on-one interviews with local officials to help identify critical infrastructure.
c. Prioritize critical infrastructure based on life and public safety concerns.
d. Identify and evaluate alternatives to protect the highest (top 5) critical infrastructures.

5. Analyze surface topography to assess routes, depths, and areas of flooding

An understanding of routes, depths and areas of flooding will help spatially place the flood risk reduction alternatives identified from this project. High resolution digital elevation models (DEMs) are available from the NJDEP and the USGS. These are available at a variety of scales, and for the scale of townships 1/9 arc-second DEMs (equivalent to roughly 8x10 foot resolution in plane, and about 9 feet resolution in elevation) will be used, while 1 arc second DEMs will be used for watershed-scaled analyses. Even-higher/finer, one or two-foot resolution-in-elevation LIDAR surveys are available and, if needed, will be used to resolve the critical hydrological/flooding patterns in the study area. In addition to low-lying areas, access points for flooding such as inlets, sloughs, and troughs will be identified for the possible installation of flood prevention devices such as floodgates, levees, or sandbags. These access points allow flood water to more easily travel and inundate the communities, and would be candidate sites for flood barrier placements.

The DEM analysis will include bathymetric calculations as different hypothetical inundation levels (different water protection levels in Task #1 above) to determine the spatial extent and volume of flood waters to better inform mitigation efforts.

The potential sites for placing flood risk alternatives will be identified in GIS.

6. Financial Analysis of Risk Reduction Methods

It would be important to include an evaluation of the financials of the risk reduction scenarios and the potential losses due to flooding. For this short-term, low-cost project, there would not be a full financial analysis. However, a preliminary financial analysis will be done since it may be an important driver of whether or not anything gets implemented.

Final Report

A final project report will be submitted to the NJDEP at the end of the project period.

References

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Project Management

This project is a collaborative effort among faculty from three different units within Rutgers University. The School of Engineering (SoE) will serve as the lead for this project and will be responsible for coordinating the project components, supervising project staff, designing and implementing project components, analyzing water protection levels, evaluating existing flood risk reduction structures and systems, identifying and evaluating flood risk reduction alternatives, identifying and evaluating safe to fail alternatives, conducting financial analysis, and submitting reports. The Haskin Shellfish Research Laboratory (HSRL), located in Cumberland County, will share responsibilities in designing and implementing project components, work with the engineering school and the Center for Remote Sensing and Spatial Analysis (CRSSA) on evaluating existing flood risk reduction structures and systems, identifying and evaluating flood risk reduction alternatives, assisting CRSSA with determining the routes, depths, and areas of flooding, and conducting one-on-one interviews with local officials. CRSSA will lead in locating critical infrastructures that should be protected in GIS. All units (SoE, HSRL, and CRSSA) will work together to produce the final project report.

Project Implementation Schedule

Task No.	Task Description	Respons-ible Party	Time Frame	Antici-pated Start Month	Antici-pated Comple-tion Month	Project Deliverable
1	Determine water protection levels	SoE	2 months	8/1 /2013	9/30 /2013	Three types of flood protection water levels
2	Evaluate existing flood risk reduction structures and systems	SoE, HSRL & CRSSA	3 months	8/1 /2013	10/30 /2013	Evaluation of and recommendation for existing flood risk reduction structures and systems.
3	Identify & evaluate flood risk reduction alternatives	SoE, HSRL & CRSSA	3 months	9/1 /2013	11/30 /2013	Recommendation of flood risk reduction alternatives
4	Identify and evaluate critical infrastructure	SoE, HSRL & CRSSA	3 months	9/1 /2013	11/30 /2013	Recommendation of critical infrastructure protection alternatives
5	Analyze surface topography to assess routes, depths, and areas of flooding	SoE & CRSSA	3 months	8/1 /2013	10/30 /2013	Recommendation of areas for installation of flood prevention devices.
6	Financial Analysis	SoE	2 months	11/1 /2013	12/30 /2013	Assessment of financial costs of flood risk reduction alternatives
	Final Report Preparation	SoE, HSRL & CRSSA	1 month	1/1 /2014	1/31 /2014	Final report submission

Project Team

Rutgers University

"Rutgers, The State University of New Jersey, is a leading national public research university and the state's preeminent, comprehensive public institution of higher education. Rutgers is dedicated to teaching that meets the highest standards of excellence; to conducting research that breaks new ground; and to turning knowledge into solutions for local, national, and global communities.

As it was at our founding in 1766, the heart of our mission is preparing students to become productive members of society and good citizens of the world. Rutgers teaches across the full educational spectrum: preschool to precollege; undergraduate to graduate and postdoctoral; and continuing education for professional and personal advancement. Rutgers is New Jersey's land-grant institution and one of the nation's foremost research universities, and as such, we educate, make discoveries, serve as an engine of economic growth, and generate ideas for improving people's lives."

http://www.rutgers.edu/about-rutgers/who-we-are

The project team will comprise of faculty, students, and research staff from three different units within Rutgers University: School of Engineering (SoE), Haskin Shellfish Research Laboratory (HSRL, located in Cumberland County), and the Center for Remote Sensing and Spatial Analysis (CRSSA). The Engineering School will primarily be responsible for engineering aspects of the project. The HSRL will be primarily responsible for interaction with local officials. The CRSSA will be primarily responsible for GIS technical aspects of the project.

Personnel

The Rutgers personnel will consist of faculty, graduate and undergraduate students, and research staff. The personnel whom have already been identified are listed below:

Qizhong (George) Guo:

Dr. Guo is a professor of civil and environmental engineering at School of Engineering, Rutgers University. He is also the Director of Fluid Mechanics and Hydraulics Laboratory as well as Director of Rutgers Hydroinformatics Laboratory. In addition, he is a member of the Institute of

Marine and Coastal Sciences as well as the Climate and Environmental Change Initiative at Rutgers. He earned the bachelor degree in hydraulic engineering, and Masters and doctoral degrees in civil engineering. He is a licensed civil engineer and a diplomate of the American Academy of Water Resources Engineers.

Dr. Guo has over twenty years of experience in urban stormwater management including urban flood management. He has conducted research on hydraulic transient modeling of urban storm drainage systems, effectiveness of green infrastructure implementation on flood mitigation, combined-sewer-sediment flushing technology, detention basin retrofit, hydrodynamic solids separation, development of flow-based TMDLs, demonstration of chemical tracers for detecting wet-weather induced sanitary sewer overflow, and watershed modeling.

In recognition of his "stormwater" expertise, Dr. Guo was invited by the American Society of Civil Engineers (ASCE) to lead a national committee of 50 members from academia, governments, and industry, to develop guidance for certification of the stormwater manufactured treatment devices, invited by the Water Environment Research Foundation (WERF) to steer a stormwater-borne solids research program, and invited to serve as a technical advisor for the United States Environmental Protection Agency (USEPA)'s large-scale field demonstration project for wet weather flow treatment. In addition, he was invited to deliver keynotes at international conferences, give seminars at national and international agencies and universities, and offer commentaries to national media.

Dr. Guo also has approximately 20 years of experience in estuarine and coastal environment management. He has lead the circulation study (water level, current velocity, and salinity) of Barnegat Bay, New Jersey. He has also led research on tidal dynamics, sediment transport, and water quality of the Maurice River Estuary and Schooner Creek (tidal).

Dr. Guo's "estuarine" research has lead to development of a new method for quantifying flushing time, quantification of net suspended solids flux through salt marsh, and discovery of the coastal ocean as a source of nitrogen to inland bays. His research has resulted in better management plans for coastal waters in New Jersey, other states in the nation, and in other countries. The research on solids flux through salt marsh has provided a quantitative evidence for impacts of sea level rise, adding to the climate change literature. In recognition of his estuarine expertise, Dr. Guo was invited by Barnegat Bay National Estuary Program, International Workshop on Coastal Eutrophication, and US-China Workshop on Sustainable Coastal Development, and others to present research findings and offer advice.

Moreover, Dr. Guo has a very broad technical background as reflected by many different upper-level undergraduate and graduate-level courses that he has taught at Rutgers' School of Engineering, namely, fluid mechanics, senior capstone design on stormwater management measures and water/wastewater conveyance and treatment facilities, elements of environmental engineering (on air, water, and solids), advanced hydrology, sediment transport, analysis of

receiving water quality, thermal effects on surface waters, coastal engineering , and green infrastructure for water management.

Dr. Guo has been awarded and lead to completion over 30 research grants and contracts as principal investigator; published over 120 technical papers, reports, and books; delivered over 90 professional presentations (many invited, including conference keynotes); served on over 20 local, national, and international technical committees; provided over 40 expert interviews to local, national and international media; served as consultant to over 10 agencies, organizations and companies; applied for 3 patents; supervised over 60 post-doctoral, doctoral, and Masters students as primary research advisor; taught 10 different graduate and undergraduate lecture courses to over 2,000 students.

Dr. Guo will be responsible for project coordination and reports submittal in addition to contributions to all the technical tasks 1, 2, 3, 4, 5 and 6.

David Bushek

Dr. David Bushek is the Director of the Haskin Shellfish Research Laboratory which has been an integral component of the Delaware Bayshore for more than 100 years through its close association with the shellfishing and related industries that dominate the communities of the Delaware Bayshore. He has been involved in the development of living shoreline strategies for Delaware Bay and has installed the only successful living shorelines along the Delaware Bay at Matts Landing. Dr. Bushek has been assisted local communities with responses to Hurricane Sandy and other recent storm events and is currently a member of several steering committees to develop short and long-term strategies for protecting Delaware Bayshore communities and resources. Although trained and practicing as a shellfish biologist, his presence as a resident and duties as Director of a major research facility located on the Bayshore, have driven his interactions with local community officials towards storm and flood protection. As such, Dr. Bushek is in an ideal position to conduct interviews with local officials and residents regarding risks and threats from sea level rise and increasing storm severity. His abbreviated CV is provided below.

Dr. Bushek will contribute to technical tasks 2, 3, and 4 and the final report.

David Bushek

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Rutgers University
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Phone: 856/785-0074 ext 4327
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Email: bushek@hsrl.rutgers.edu

EDUCATION

B.S. Ohio State University, 1984

M.S. University of Houston, 1987

Ph.D. Rutgers University, 1994

POSITIONS

2011 – Present**Director** Haskin Shellfish Research Laboratory, Department of Marine and Coastal Sciences and New Jersey Agricultural Experiment Station, Rutgers University, New Brunswick, NJ

2003 - present **Associate Professor**, Department of Marine and Coastal Sciences and New Jersey Agricultural Experiment Station, Rutgers University, New Brunswick, NJ

2003 – present**Adjunct Associate Professor of Marine Science** and **Baruch Associate**, University of South Carolina, Columbia, SC 29208

2002 - 2003 **Research Associate Professor**, Baruch Institute for Marine Biology and Coastal Research/ Marine Science Program/ School of the Environment, University of South Carolina, Columbia, SC 29208

1994 - 2003 **Assistant Director**, Baruch Marine Field Laboratory, **Research Assistant Professor**, Baruch Institute for Marine Biology and Coastal Research/ Marine Science Program University of South Carolina, Georgetown, SC 29442

RECENT SELECTED PUBLICATIONS

Bushek, D., S.E. Ford and I. Burt. 2012. Long-term patterns of an estuarine pathogen along a salinity gradient. J Marine Research, 70(2-3):225-251.

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Kreeger, K. and D. Bushek. 2008. Combating tidal marsh erosion with 'living shorelines'. Estuary News, 19(1):12-13.

Richard G. Lathrop Jr.

Dr. Lathrop will contribute to Tasks 2, 3, 4 and 5 and the final report. His CV is shown below:

RICHARD G. LATHROP JR.

Director – Walton Center for Remote Sensing & Spatial Analysis

Professor I - Dept. of Ecology, Evolution & Natural Resources

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EDUCATION:

1988	Ph.D. Environmental Monitoring	University of Wisconsin-Madison
1986	M.S. Forestry	University of Wisconsin-Madison
1985	M.S. Environmental Monitoring	University of Wisconsin-Madison
1981	B.A. Biology	Dartmouth College

PROFESSIONAL EXPERIENCE:

1999-Present Director, Walton Center for Remote Sensing & Spatial Analysis, Rutgers University.

1995-2006 Associate Professor, Department of Ecology & Natural Resources, Rutgers University.

1989-1995 Assistant Professor, Department of Natural Resources, Rutgers

1988-1989 Research Scientist, TGS Technology Inc., Ecosystem Science and Technology Branch, NASA/Ames Research Center, California.

5 Most Relevant Publications:

Lathrop, R.G., L. Auermuller, S. Haag and W. Im. 2012. The StormWater

Management Planning Tool: Coastal Water Quality Enhancement Through the Use of an Internet-based Geospatial Tools. Coastal Management 40(4):339-354.

Zhang, Y., Z. Miao, J. Bognar, and **R.G. Lathrop Jr**.* 2011. Landscape Scale

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Bay Region. Journal of Coastal Research SI 32:212-228.

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Structure and spatial pattern of New Jersey (USA) salt marshes under different management regimes. Wetlands Ecology and Management 8:163-172.

5 Additional Relevant Publications:

Miao, Z., **R. G. Lathrop***, M. Xu, I. P. LaPuma, K. L. Clark, J. Hom, N. Skowronski,

And S. Van Tuyl. 2011. Simulation and sensitivity analysis of carbon storage and fluxes in the New Jersey Pinelands. Environmental Modelling & Software 26(9):1112-1122.

McCarthy, K. and **R.G. Lathrop**. 2011. Stormwater Basins of the New Jersey

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Expansion Alter the Structure and Function of Marsh Landscapes? Patterns and Processes Revisited. Estuaries 28(2B):423-435.

Synergistic Activities

In trying to improve our understanding of the structure and function of coupled human-environmental systems at broader landscape to regional scales, I have attempted to integrate insights from ecology and geography with the application of geo-spatial information science and technology. My work is largely focused on mapping and modeling of land use/land cover change (including natural habitat loss and alteration) and quantifying the potential consequences for ecological systems at landscape scales to inform natural resource management and land use planning. Five examples:

- Collaborative research and outreach with the JC National Estuarine Research Reserve and the NOAA Coastal Services Center on the development of a sea level and coastal inundation viewer;
- Collaborative research with the Barnegat Bay National Estuary Program on the effects of nutrient enrichment from urbanizing areas on the structure and function of a shallow lagoonal estuary;
- Serve as President of the American Littoral Society, a coastal conservation and education non-profit group, working to connect people to the coast;
- Collaborative research with the NJ Pinelands Commission and the US Geological Survey on potential effect of groundwater-level declines on forested wetlands in the New Jersey Pinelands;
- Collaborative research with the US Forest Service on spatial and temporal patterns of wildfire and vegetation in the wildland-urban interface in the NJ Pinelands National Reserve.

Rutgers, The State University of New Jersey **Sponsored Programs Budget Template**

Title: Strategies for Flooding Risk Reduction for Vulnerable Coastal Populations in Salem and Cun **Date:** (mm/dd/yy) **Log#:** Enter Log here

PI: Qizhong (George) Guo Project Period: (mm/dd/yy) to (mm/dd/yy)

Spon: New Jersey Department of Environmental Protection

Facilities & Administrative Costs Rate & Base:

Description	*Enter Rate Code*			*Enter Base Code*	
Sponsor Funding	9	Varies below		1	Varies Below
If rate code=9, enter rate percentages for Years 1-5:	10.00%	0.00%	0.00%	0.00%	0.00%
If base code=3, enter amt. subject to F&A for Years 1-5:	$ -	$ -	$ -	$ -	$ -

Sub-code	Expense Classification (see comment)	FY 2013	FY 2014	FY 2015	FY 2016	FY 2017		Notes
	Cost Rate Base Percentages:	10.00%	0.00%	0.00%	0.00%	0.00%		
	Enter Amounts in Whole $ only	Year 1	Year 2	Year 3	Year 4	Year 5	Total	
12000*	Salaries - Regular Employees & Faculty	29,000	0	0	0	0	29,000	
12100*	Co-Adjutant Salaries	25,000	0	0	0	0	25,000	
12300*	Wages of Labor	900	0	0	0	0	900	
12500*	Student Wages	10,000	0	0	0	0	10,000	
12900*	Other Compensation	0	0	0	0	0	0	
13300*	Summer Employment - 10 month	0	0	0	0	0	0	
13500*	Faculty Summer Compensation	5,716	0	0	0	0	5,716	
13700*	Post-Doctoral Associates	0	0	0	0	0	0	
15000*	Graduate/Teaching Assistants	3,750	0	0	0	0	3,750	
	A Total Salaries & Wages (Personnel Worksheet)	74,366	0	0	0	0	74,366	
17100*	**B Fringe Benefits (See Note 1)**	16,177	0	0	0	0	16,177	
21200*	Computer Supplies	2,500	0	0	0	0	2,500	
21800*	Computer Software	0	0	0	0	0	0	
21900*	Project Supplies	2,000	0	0	0	0	2,000	
22400*	Equipment Less than $5,000 per unit	0	0	0	0	0	0	
	Other (please identify)	0	0	0	0	0	0	
	Other (please identify)	0	0	0	0	0	0	
	C Total Supplies	4,500	0	0	0	0	4,500	
31000*	Other Services	0	0	0	0	0	0	
31100*	Prof. Services - Consultants	0	0	0	0	0	0	
31200*	Educ. Services - Honoraria	0	0	0	0	0	0	
31400*	Human Subject Payments	0	0	0	0	0	0	
31600*	Computer Services	0	0	0	0	0	0	
31700*	Publication Services	1,000	0	0	0	0	1,000	
	Other (please identify)	0	0	0	0	0	0	
	Other (please identify)	0	0	0	0	0	0	
	D Total Services	1,000	0	0	0	0	1,000	
35200*	Travel - Domestic	5,000	0	0	0	0	5,000	
35300*	Travel - Foreign	0	0	0	0	0	0	
35900*	Conference Registrations	0	0	0	0	0	0	
	E Total Travel	5,000	0	0	0	0	5,000	
30400*	Telephone - Long Distance	0	0	0	0	0	0	
30700*	Advertising	0	0	0	0	0	0	
32400*	Business Meeting Expenses	0	0	0	0	0	0	
32500*	Conference Expenses	0	0	0	0	0	0	
32900*	Animal Care Per Diem	0	0	0	0	0	0	
37000*	First $25,000 of Subcontract Expense	0	0	0	0	0	0	
	F Total Other MTDC	0	0	0	0	0	0	
	G Total MTDC (Sum of A to F)	101,043	0	0	0	0	101,043	
34000	Rent - Buildings & Grounds	0	0	0	0	0	0	
34100	Rent - Equipment	0	0	0	0	0	0	
36100	Participant Support	0	0	0	0	0	0	
41000	Repair & Maint - Equipment	0	0	0	0	0	0	
72600	Equip $5,000 or More per unit	0	0	0	0	0	0	
82400	Tuition	8,065	0	0	0	0	8,065	
84500	Training Grant-Stipends	0	0	0	0	0	0	
37100	Subcontract Expense over $25,000	0	0	0	0	0	0	
	H Total Other Non-MTDC	8,065	0	0	0	0	8,065	
	I Total Direct Costs - TDC	109,108	0	0	0	0	109,108	
88000	**J Facilities & Administrative Costs**	10,104	0	0	0	0	10,104	
83700	**RU Gift Assessment**	0	0	0	0	0	0	
83800	**K IRB or IACUC Fees**	0	0	0	0	0	0	
88010	**RU Gift Assessment**	0	0	0	0	0	0	
	TOTAL PROJECT COSTS (SUM I to J)	119,212	0	0	0	0	119,212	

NOTES:

(1) Fringe Benefits:

Fringe benefits are calculated by multiplying a composite fringe benefit rate by the salary and wages charged to a particular subcode.

Please see Budget Period Worksheet for details and applicable Fringe Benefit Rates.

Budget and Justifications

A. Salary and Wages

Qizhong (George) Guo (SoE): One month academic month salary $12,000

David Bushek (HSRL): One half month summer salary $5,716

SoE Research Staff: Six months, 50% time: $25,000

SoE Students, hourly: $10,000

HSRL Research Staff: Six months, 25% time: $5,000

HSRL GRA Student: six months, 25% time: $3,750

HSRL Hourly staff: 10 hrs/mo @ $15/hr for 6 months: $900

CRSSA Research Staff (James Trimble): Four months, 50% time: $12,000

B. Fringe Benefits

Qizhong (George) Guo: 44.1% rate

David Bushek: 7.3% rate

SoE Research Staff: 7.3%

SoE Students, hourly: 0.0% rate

HSRL Research Staff: 44.1% rate

HSRL Graduate Student: 28.8%

HSRL Hourly staff: 7.3% rate

CRSSA Research Staff: 44.1%

C. Supplies

Computer supplies: $2,500

Project supplies: $2,000

D. Services

Publication Services: $1,000

E. Travels

Domestic travels to sites, meetings, and conferences: $5,000

F. Other costs: $0

G. Modified Total Direct Cost (Sum of A to F): $101,043

H. Tuition for Graduate Research Assistant (GRA) Student: $8,065

I. Total Direct Cost: $109,108

J. Facilities and Administrative Costs

10% (reduced rate for state agencies) of the Modified Total Direct Cost (MTDC): $10,104

Total Cost (I + J): $119,212

CONTRACT
BETWEEN
RUTGERS, THE STATE UNIVERSITY
(Name of Contractor)
AND
THE STATE OF NEW JERSEY
BY AND FOR
THE DEPARTMENT OF ENVIRONMENTAL PROTECTION

CONTRACT NUMBER: EC14-013

GOVERNING BODY RESOLUTION

INSERT CURRENT BOARD RESOLUTION

CONTRACT
BETWEEN
RUTGERS, THE STATE UNIVERSITY
(Name of Contractor)
AND
THE STATE OF NEW JERSEY
BY AND FOR
THE DEPARTMENT OF ENVIRONMENTAL PROTECTION

CONTRACT NUMBER: EC14-013

SUBCONTRACTOR CERTIFICATION

As a condition of the State's consent to the subcontract entered into between _____ (the "subcontractor") and **RUTGERS, THE STATE UNIVERSITY** (the "Contractor") (such subcontract, the "subcontract") for work in furtherance of the contract with the State of New Jersey (the "State") captioned above (the "contract") and in consideration of any payment or benefit the subcontractor may receive for its performance of the subcontract, the subcontractor agrees that the following terms, provisions, and conditions ("terms") shall be additional terms of the subcontract, shall inure to the benefit of the State, and shall not be modified in any way without the written agreement of the State:

1. With respect to all services and goods the subcontractor provides pursuant to the subcontract or in furtherance of the contract, the subcontractor shall comply with, and shall be bound by, all terms of the contract (excepting only (a) those terms, if any, requiring the provision of goods or services not required by the subcontract, (b) the following Sections of the General Terms and Conditions of the contract: IV, IX, X, XI, XIII, XV, XVI, XVII, and XXII, and (c) Attachments B, B-1, B-2, C, and G) as though it were the Contractor and as though all such terms were explicit terms of the subcontract for the benefit of the State as third party beneficiary. The subcontractor acknowledges that the Contractor has given it a complete copy of the contract and that it is familiar with all of the contract's terms

2. The subcontractor acknowledges and accepts that it is an independent principal working for the Contractor and has no relationship with the State in connection with the contract as its agent, servant, employee, contractor, or otherwise.

3. The subcontractor shall make no claim or demand against the State, its officers, its agents, its servants, or its employees (the "State or its agents") (a) which arises out of or in connection with, or which is based on, (i) the subcontract or the contract, (ii) any services or goods the subcontractor provides pursuant to the subcontract or in furtherance of the contract, or (iii) the relationship between the subcontractor and the Contractor in connection with the subcontract or (b) which would not exist if the subcontract did not exist.

4. The subcontractor shall defend, indemnify, protect, and save harmless the State, its officers, its agents, its servants, and its employees from and against any damage, claim, demand, liability, judgment, loss, expense, or cost (collectively, "damage") arising, or claimed to arise, from, in connection with, or as a result of, the subcontractor's performance, attempted performance, or failure to perform in connection with the subcontract (collectively, "performance"), regardless of whether such performance was undertaken by the subcontractor, its officers, its directors, its agents, its servants, its employees, its subcontractors, or any other person at its request, subject to its direction, or on its behalf. As nonrestrictive examples only, this indemnification shall apply, but shall not be limited, to (a) any settlement by the State of any claim or judgment against the State or its agents, provided the subcontractor had the opportunity to participate in the settlement negotiation, and (b) all attorneys' fees, litigation costs, and other expenses of any nature, incurred by the State in connection with any damage. The subcontractor (a) shall immediately notify the State of any damage for which it or the State might be liable and (b) shall, at its sole expense, (i) appear, defend, and pay all charges for attorneys, all costs, and all other expenses incurred in connection with any damage and (ii) promptly satisfy and discharge any judgment rendered against the State or its agents, or any settlement entered into by the State, for any damage. The subcontractor shall not assert any defense which would be available to the State but not to the subcontractor, whether arising pursuant to the New Jersey Tort Claims Act or otherwise, without having first obtained the written approval of the New Jersey Division of Law. This agreement to indemnify shall continue in full force and effect after the termination or expiration of the subcontract and the contract. The subcontractor does not hereby agree to indemnify the State against damage to the extent it results from the state's tortious action or inaction for which it would be liable under the New Jersey Tort Claims Act. As soon as practicable after it receives a claim for damage made against it, the State shall notify the subcontractor in writing and shall have a copy of such claim forwarded to the subcontractor.

Date: _____, _____

_____
(print name of subcontractor)

by: _____
(signature)

_____
(print name)

ATTEST:

_____
(print title)

_____
(signature of another officer of subcontractor, if corp. or org.; otherwise, person as witness)

_____
(number and street)

_____
(municipality, state, and zip code)

_____
(print name and title)

_____
(telephone number)

CERTIFICATION*

I, _____, _____, of
(print name) (print title)

_____ certify that the individual who executed this
(print subcontractor's name)
Subcontractor Certification on behalf of the subcontractor was duly authorized to do so.

ATTEST:

_____
(signature of subcontractor's secretary or equivalent)

_____
(signature of another officer of subcontractor, if corp. or org.; otherwise, person as witness)

_____
(print name)

_____
(print name)

_____
(print title)

_____
(print title)

Date: _____

SEAL

***This certification must be completed if the subcontractor is an organization, rather than a sole proprietorship.**

REFERENCE BIBLIOGRAPHY

This bibliography is provided for reference purposes only. It lists documents incorporated by reference into this contract and other documents which might be helpful to the Contractor.

A. New Jersey Department of the Treasury

- State Circular Letter 04-04-OMB: Single Audit Policy for Recipients of Federal Grants, State Grants and State Aid
- State Grant Compliance Supplement

B. United States General Accounting Office

- Government Auditing Standards (Yellow Book)

C. United States Office of Management and Budget

- Circular A-21: Cost Principles for Educational Institutions
- Circular A-87: Cost Principles for State, Local, and Indian Tribal Governments
- Circular A-102: Grants and Cooperative Agreements with State and Local Governments
- Uniform Administrative Requirements for Grants and Cooperative Agreements with State and Local Governments (Common Rule), (March 11, 1988) http://www.whitehouse.gov/omb/grants/chart.aspx
- Circular A-110: Uniform Administrative Requirements for Grants and Other Agreements with Institutions of Higher Education, Hospitals and Other Nonprofit Organizations
- Circular A-122: Cost Principles for Nonprofit Organizations
- Circular A-133 Revised: Audits of States, Local Governments, and Non-profit Organizations
- Compliance Supplement for Single Audits of State and Local Governments-Uniform Requirements for Grants to State and Local Governments (Compliance Supplement, Revised)
- A-21 (2 CFR Part 220), A-87 (2 CFR Part 225), A-110 (2 CFR Part 215), and A-122 (2 CFR Part 230)

D. American Institute of Certified Public Accountants ("AICPA")

- State and Local Governments – Audit and Accounting Guide
- Not-for-Profit Organizations — AICPA Audit and Accounting Guide
- Auditing Recipients of Federal Awards: Practical Guidance for Applying OMB Circular A-133
- Government Auditing Standards and Circular A-133 Audits – AICPA Audit and Accounting Guide