CONTRACT
BETWEEN
NJ Sea Grant Consortium
(Name of Contractor)
AND
THE STATE OF NEW JERSEY
BY AND FOR
THE DEPARTMENT OF ENVIRONMENTAL PROTECTION

CONTRACT NUMBER: EC16-011

ACCOUNT DESCRIPTION	TOTAL BUDGET	FEDERAL	STATE	CONTRACTOR	OTHER
A. Personnel Costs Salaries	$ 79,759.00	$ 79,759.00	$ 0.00	$ 0.00	$ 0.00
Fringe Benefits	$ 20,509.00	$ 20,509.00	$ 0.00	$ 0.00	$ 0.00
B. Consultants and Subcontractors	$ 0.00	$ 0.00	$ 0.00	$ 0.00	$ 0.00
C. Other Costs Specify below:					
▪ Computer Charges	$ 2,000.00	$ 2,000.00	$ 0.00	$ 0.00	$ 0.00
▪ Sea Grant Fee	$ 11,250.00	$ 11,250.00	$ 0.00	$ 0.00	$ 0.00
▪	$ 0.00	$ 0.00	$ 0.00	$ 0.00	$ 0.00
▪	$ 0.00	$ 0.00	$ 0.00	$ 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	$ 113,518.00	$ 113,518.00	$ 0.00	$ 0.00	$ 0.00
Less Program Income (enter as negative)	$ 0.00	$ 0.00	$ 0.00	$ 0.00	$ 0.00
Total Direct Costs	$ 113,518.00	$ 113,518.00	$ 0.00	$ 0.00	$ 0.00
Indirect Costs (indicate rate: 10.00%)	$ 10,227.00	$ 10,227.00	$ 0.00	$ 0.00	$ 0.00
TOTAL PROJECT AMOUNT	$ 123,745.00	$ 123,745.00	$ 0.00	$ 0.00	$ 0.00

TOTAL CONTRACT AMOUNT is ☒ the sum of "Federal" and "State" column totals **$ 123,745.00**
☐ the sum of "Federal" "State" and "Other" column totals $

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) 7.

☐ Attachment B-1, Itemization and Justification of Budget, comprising _____ pages.

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CONTRACTOR'S PROPOSAL

Contractor's project proposal, comprising 7 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.

DAVIDSON LABORATORY
STEVENS INSTITUTE OF TECHNOLOGY

A Proposal

Rebuild by Design – Hudson River Project

"Technical Assistance for RBDH"

by

Alan Blumberg

201-216-5289

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Davidson Laboratory

Stevens Institute of Technology

Hoboken, NJ

August 20, 2015

STEVENS
INSTITUTE of TECHNOLOGY
THE INNOVATION UNIVERSITY

Proposal:

Stevens proposes to provide technical support, as detailed below, to Dewberry and to NJDEP. The work items are very time compressed but we will be involve Tom Herrington, Philip Orton and me to get everything done.

The total cost will be $112,500.

Scope of Work:

The New Jersey Transit (NJT) has issued Task Order 12 as part of Contract 13-002D Environmental Consulting Services Task Order Contract to perform a feasibility study and environmental impact statement for Rebuild by Design's "Resist, Delay, Store, Discharge" project. As part of this task order, Dewberry will carry out the feasibility analysis of five (5) concept design schemes that will allow for the selection of the three (3) feasible build alternatives for further assessment and further development, leading to the choice of a preferred alternative to be formally evaluated applying NEPA requirements. The assessment will include a thorough investigation of the site potential in view of the matrix of project drivers and requirements. One of the assessment tools evaluates existing conditions and three build alternatives using an integrated coastal and stormwater management hydrodynamic model. Dewberry intends to use Danish Hydraulic Institute (DHI)'s MIKE FLOOD model to simulate coastal and stormwater events. Dewberry will request NJDEP to engage Stevens Institute of Technology's Davidson Laboratory (SITDL) to assist the project team by performing the following scope of work items –

1. SITDL will assist Dewberry to perform coastal storm surge model validation and will specifically provide Dewberry with boundary condition hydrographs and observed water depths from the available SITDL's NYHOPS model for Superstorm Sandy. SITDL will participate in a 4-hour meeting (inclusive of total meetings listed in item 4) to decide on the specifics of the data from Superstorm Sandy to be used by Dewberry. SITDL will provide Dewberry with the required Superstorm Sandy dataset within 2 working days after the meeting.

2. Dewberry will provide SITDL choices of the coastal storm surge, rainfall and sea level rise combination events to be considered for the project (up to 8 combination events) for their review and comments.

3. Dewberry will perform the wave analysis using FEMA's Guidelines and Specifications to obtain the 0.2-percent-chance wave heights (500-year). SITDL will review and provide written comments on this wave height analysis computation within 5 working days from the receipt of the data and memo/report.

4. Review the final configuration of the Resist portion of the project and consider impacts to Jersey City and Weehawken as a result of that final configuration.
5. SITDL will attend up to 15 meetings comprising of technical discussion meetings, attending public meetings and community advisory group meetings (2 people max for 4 hours per meeting) along with Dewberry to discuss and review concepts, alternatives, technical information and modeling results related to coastal flood risk assessment. Dewberry will attempt to provide SITDL with appropriate read ahead information a day prior to the meeting. After the meeting, SITDL will provide written comments and suggestions on the items presented during the meeting for Dewberry's review.

Budget:

AGENCY: RBDH NJDEP
PI Name: Alan Blumberg
Proposal Title: Technical Assistance for RBDH

DIRECT COST (Subject to O/H)		**Year 1**	**Total**
Salary & Wages (Academic or Calendar Year)	**KFS Object Codes**	**1/1/16-12/31/16**	
Post-Docs	5109	$0	$0
Part Time Employees	5203/5112	$0	$0
Faculty/R Scientists	5101 / 5103	$20,826	$20,826
Salary & Wages (Summer Months)			
Faculty, Summer	5105	$48,933	$48,933
Graduate Students (academic year)	5306	$0	$0
Graduate Students (summer)	5306	$0	$0
Graduate Students (hourly)	5304	$10,000	$10,000
Undergraduates	5301	$0	$0
Benefits	5401	$20,509	$20,509
Total Salaries, Wages & Benefits		**$100,267**	**$100,267**
OTHER Direct Expenses			
Catalogue & Publishing Costs	6179	$0	$0
Printing and reproduction	6179	$0	$0
Computer charges, software& hardware	6175	$2,000	$2,000
Office, Dept & Lab supplies	6174/6172	$0	$0
Travel (Domestic)	6211	$0	$0
Travel (Foreign)	6212	$0	$0

Conference fees	6135	$0	$0
Subcontracts ≤$25k	6022	$0	$0
Consulting & outside services	6013	$0	$0
Repairs and Maintenance	6221	$0	$0
Honoraria	6146	$0	$0
Legal Fees		$0	$0
Other category as needed		$0	$0
Total Other Direct Expenses		***$2,000***	***$2,000***
TOTAL (takes O/H)		**$102,267**	**$102,267**
OTHER DIRECT COST (No O/H)			
Tuition Remission	5305	$0	$0
Participant Support - Travel	6041	$0	$0
Participant Support - Stipend	6042	$0	$0
Participant Support - Subsistence	6043	$0	$0
Participant Support - Other	6044	$0	$0
Equipment over $5,000	7506	$0	$0
Sub-Contracts >$25k	6021	$0	$0
TOTAL DIRECT COST		**$102,267**	**$102,267**
Indirect Costs* (63% for DoD Contracts ONLY)	10.0%	$10,227	$10,227
TOTAL FROM SPONSOR		$112,494	$112,494
Cost Share by Stevens**		$0	$0
TOTAL BUDGET		**$112,494**	**$112,494**

Budget Justification

Salary amounts are based on actual salary and include a 3% annual cost of living increase for faculty, staff, postdocs, and undergraduate students, and 1.5% for graduate student stipends. The fringe benefit rate for full time faculty and other professionals is 29.4%. No fringe benefits apply to graduate stipends.

Personnel Costs

PI Professor Alan Blumberg will devote 0.75 months academic month per year to the research.

Research Professor Thomas Herrington will devote 2.5 academic months per year to the research.

Research Assistant Professor Philip Orton will devote 2.75 academic months per year to the research.

Graduate Students:

Stipend for 1 graduate student for the academic year (30 weeks x 20 hours/week) is requested. The graduate student stipend is Stevens Institute of Technology's standard stipend rate for the academic year.

NON-PERSONNEL COSTS

Materials and Supplies:

Funds are requested in the amount of $2,000 to allow for notebook computer expenses and certain software licenses.

Indirect Cost

The Institute's current negotiated F&A (indirect) cost rate is 10.0% of the Modified Total Direct Cost. The Institute's cognizant agency is the Department of the Navy, Office of Naval Research.

Statement of Qualifications

Dr. Alan Blumberg at Stevens Institute is a pioneer ocean modeler, first with the Princeton Ocean Model and later coastal and estuarine operational models and water quality models with sECOM and NYHOPS for New York. His decades of experience will be brought to bear on new sECOM developments, overall forecast system design, and interpretation of results. The main focus of Alan Blumberg's career has been directed towards understanding and predicting the physical dynamics of estuarine and coastal ocean circulation and the creation of ocean observing and forecasting systems which are used for environmental studies, surface vessel operations, and for securing the future safety and sustainability of urban coastal regions. Alan has 150-refereed papers.

Dr. Thomas Herrington is a research professor of ocean engineering in the Department of Civil, Environmental and Ocean Engineering at Stevens Institute of Technology in Hoboken, New Jersey. Dr. Herrington is the Assistant Director of the Center for Maritime Systems at Stevens and is the Director of the New Jersey State funded Coastal Protection Technical Assistance Service. Dr. Herrington has over 25 years of experience in coastal sustainability and hazard mitigation research. He is the chief architect of the NJ Coastal Monitoring Network and the Stevens Storm Surge Warning System designed to inform municipal officials and the public regarding potential flooding events. He is the developer and coordinator of a graduate

certificate program in Multi-hazard Engineering at Stevens Institute of Technology. He is author or coauthored on over 100 journal, outreach and technical publications in the field of coastal and ocean engineering, including the NJ Sea Grant Manual for Coastal Hazard Mitigation. He is a contributing author of the NJ State Hazard Mitigation Plan.

Dr. Philip Orton is a research assistant professor at the Stevens Institute of Technology in Hoboken, NJ, and specializes in coastal physical oceanography and storm surges. He holds a PhD in physical oceanography from Columbia University and a MS in marine science from the University of South Carolina. He has published 21 articles in peer-reviewed journals, as well as three op-eds on climate change, coastal ecosystem health and coastal flooding in The New York Times, one in the Sunday Edition. He is a technical team member of the NYC Panel on Climate Change (NPCC), and recently worked on NYC's Special Initiative on Rebuilding and Resilience after Sandy, using a storm surge model to quantify the influence of adaptation strategies on coastal flooding. His other research interests include air-sea interaction, turbulent mixing, sediment transport, carbon dioxide and ocean acidification, and relationships between ecosystems, climate and ocean physics.