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STATE OF NEW HAMPSHIRE
DEPARTMENT of NATURAL and CULTURAL RESOURCES
DIVISION of PARKS and RECREATION
172 Pembroke Road Concord, New Hampshire 03301
Phone: (603) 271-3556 Fax: (603) 271-3553
Web: www.nhstateparks.org

March 14, 2022

His Excellency, Governor Christopher T. Sununu
and the Honorable Council
State House
Concord, New Hampshire 03301

REQUESTED ACTION

Authorize the New Hampshire Department of Natural and Cultural Resources, Division of Parks and Recreation, to enter into a contract with GEI Consultants, Inc. (VC #174528) in the amount of $38,000 to complete the Coastal Resilience and Environment Update to the Hampton Beach Area Commission Master Plan, effective upon Governor and Council approval through June 30, 2023. 64% Federal Funds/36% General Funds.

Funding is available in acccunt, Hampton Beach Area Commission, as follows:

	FY 2022	FY2023
03-035-035-351510-70440000-103-502674 – Contracts for Ops Services	$5,000	$33,000

EXPLANATION

The Hampton Beach Area Commission (HBAC), enabled per RSA 216-J, was established to assist the Town of Hampton and State of New Hampshire agencies and departments in the long-range planning for the Hampton Beach area by the implementation of the Hampton Beach master plan. The Department of Natural and Cultural Resources (DNCR) is a member of the HBAC, and the DNCR Division of Parks and Recreation provides administrative assistance to the HBAC per RSA 216-J:3 and serves as the fiscal agent for the Hampton Beach Master Plan Fund, established per RSA 216-J:5.

This is a request for approval to enter into a contract with GEI Consultants, Inc. to complete the Coastal Resilience and Environment Update to the HBAC Master Plan. The HBAC, in partnership with DNCR and the New Hampshire Department of Environmental Services (NHDES), Coastal Program, issued a Request for Proposals (RFP) for planning services to develop the Coastal Resilience and Environment Update to the HBAC Master Plan on January 7, 2022. Three eligible proposals were received and ranked according to evaluation criteria set forth in the RFP. The proposal submitted by GEI Consultants, Inc. was most responsive to the RFP requirements and therefore was selected for funding. A scoring matrix that includes the list of the HBAC RFP review committee members, along with their titles and level of experience is provided in Attachment A.

Total project costs are budgeted at $38,000. DNCR will provide $24,000 of the project costs with federal funds authorized in a Memorandum of Agreement between DNCR and the NHDES Coastal Program that was approved by Governor and Executive Council on March 9, 2022, Item #74. DNCR will provide $14,000 of the remaining project costs from the Hampton Beach Area Commission Fund.

In the event that Federal funds become no longer available, General funds will not be requested to support this project.

The Attorney General's Office has reviewed and approved this contract as to form, substance and execution.

Respectfully submitted,

Sarah Stewart (SLS)

Sarah L. Stewart
Commissioner

Attachment A

Request For Proposals Scoring Matrix

	Rockingham Planning Commission	SLR International Corporation	GEI Consultants, Inc.
Reviewer "A"	99.8	72.5	97.2
Reviewer "B"	93.6	66.4	96.4
Reviewer "C"	89	34	99
AVERAGE	94.1	57.6	97.5
RANK	**2**	**3**	**1**

Review Team Members:

Nancy Stiles, HBAC Chair, 7 years serving on the HBAC, 6 years serving as a NH State Representative, 6 years serving as a NH State Senator and Chair of 3 Committees, Board of Trustees of 3 International Universities, 30 years in public education.

Barbara Kravitz, HBAC Commissioner, 3 years serving on the HBAC, 13 years serving as a Rockingham Planning Commission Commissioner and past Chairman (2019-2021), Daniel Quinlan Award recipient in 2017, 9 years serving as Seabrook Planning Board Administrator, 10 years serving on the Regional Economic Development Center Comprehensive Economic Development Strategy Steering Committee, current member of Town of Hampton Master Plan Steering Committee.

Ann Carnaby, HBAC Administrative Assistant, 7 years serving on the HBAC, 2011 Hampton Planning Board Alternate, Hampton Planning Board member since 2016, Rockingham Planning Commission Commissioner since 2014, Hampton Heritage Commission Planning Board representative since 2019.

FORM NUMBER P-37 (version 12/11/2019)

Notice: This agreement and all of its attachments shall become public upon submission to Governor and Executive Council for approval. Any information that is private, confidential or proprietary must be clearly identified to the agency and agreed to in writing prior to signing the contract.

AGREEMENT

The State of New Hampshire and the Contractor hereby mutually agree as follows:

GENERAL PROVISIONS

1. IDENTIFICATION.

1.1 State Agency Name Department of Natural and Cultural Resources		1.2 State Agency Address 172 Pembroke Rd, Concord NH 03301	
1.3 Contractor Name GEI CONSULTANTS, INC.		1.4 Contractor Address 400 Unicorn Park Drive, Woburn, MA 01801	
1.5 Contractor Phone Number 781-721-4000	1.6 Account Number 70440000-502674	1.7 Completion Date June 30, 2023	1.8 Price Limitation $38,000
1.9 Contracting Officer for State Agency Christopher Marino		1.10 State Agency Telephone Number 603-271-2387	
1.11 Contractor Signature Lissa Robinson Date: 3/9/2022		1.12 Name and Title of Contractor Signatory Lissa C. Robinson, Vice President	
1.13 State Agency Signature Sarah Stewart Date: 3/17/22		1.14 Name and Title of State Agency Signatory Sarah Stewart, Commissioner	
1.15 Approval by the N.H. Department of Administration, Division of Personnel *(if applicable)* By:		Director, On:	
1.16 Approval by the Attorney General (Form, Substance and Execution) *(if applicable)* By:		On: 3/22/2022	
1.17 Approval by the Governor and Executive Council *(if applicable)* G&C Item number:		G&C Meeting Date:	

Contractor Initials LCR
Date 3/9/2022

2. SERVICES TO BE PERFORMED. The State of New Hampshire, acting through the agency identified in block 1.1 ("State"), engages contractor identified in block 1.3 ("Contractor") to perform, and the Contractor shall perform, the work or sale of goods, or both, identified and more particularly described in the attached EXHIBIT B which is incorporated herein by reference ("Services").

3. EFFECTIVE DATE/COMPLETION OF SERVICES.

3.1 Notwithstanding any provision of this Agreement to the contrary, and subject to the approval of the Governor and Executive Council of the State of New Hampshire, if applicable, this Agreement, and all obligations of the parties hereunder, shall become effective on the date the Governor and Executive Council approve this Agreement as indicated in block 1.17, unless no such approval is required, in which case the Agreement shall become effective on the date the Agreement is signed by the State Agency as shown in block 1.13 ("Effective Date").

3.2 If the Contractor commences the Services prior to the Effective Date, all Services performed by the Contractor prior to the Effective Date shall be performed at the sole risk of the Contractor, and in the event that this Agreement does not become effective, the State shall have no liability to the Contractor, including without limitation, any obligation to pay the Contractor for any costs incurred or Services performed. Contractor must complete all Services by the Completion Date specified in block 1.7.

4. CONDITIONAL NATURE OF AGREEMENT.

Notwithstanding any provision of this Agreement to the contrary, all obligations of the State hereunder, including, without limitation, the continuance of payments hereunder, are contingent upon the availability and continued appropriation of funds affected by any state or federal legislative or executive action that reduces, eliminates or otherwise modifies the appropriation or availability of funding for this Agreement and the Scope for Services provided in EXHIBIT B, in whole or in part. In no event shall the State be liable for any payments hereunder in excess of such available appropriated funds. In the event of a reduction or termination of appropriated funds, the State shall have the right to withhold payment until such funds become available, if ever, and shall have the right to reduce or terminate the Services under this Agreement immediately upon giving the Contractor notice of such reduction or termination. The State shall not be required to transfer funds from any other account or source to the Account identified in block 1.6 in the event funds in that Account are reduced or unavailable.

5. CONTRACT PRICE/PRICE LIMITATION/ PAYMENT.

5.1 The contract price, method of payment, and terms of payment are identified and more particularly described in EXHIBIT C which is incorporated herein by reference.

5.2 The payment by the State of the contract price shall be the only and the complete reimbursement to the Contractor for all expenses, of whatever nature incurred by the Contractor in the performance hereof, and shall be the only and the complete compensation to the Contractor for the Services. The State shall have no liability to the Contractor other than the contract price.

5.3 The State reserves the right to offset from any amounts otherwise payable to the Contractor under this Agreement those liquidated amounts required or permitted by N.H. RSA 80:7 through RSA 80:7-c or any other provision of law.

5.4 Notwithstanding any provision in this Agreement to the contrary, and notwithstanding unexpected circumstances, in no event shall the total of all payments authorized, or actually made hereunder, exceed the Price Limitation set forth in block 1.8.

6. COMPLIANCE BY CONTRACTOR WITH LAWS AND REGULATIONS/ EQUAL EMPLOYMENT OPPORTUNITY.

6.1 In connection with the performance of the Services, the Contractor shall comply with all applicable statutes, laws, regulations, and orders of federal, state, county or municipal authorities which impose any obligation or duty upon the Contractor, including, but not limited to, civil rights and equal employment opportunity laws. In addition, if this Agreement is funded in any part by monies of the United States, the Contractor shall comply with all federal executive orders, rules, regulations and statutes, and with any rules, regulations and guidelines as the State or the United States issue to implement these regulations. The Contractor shall also comply with all applicable intellectual property laws.

6.2 During the term of this Agreement, the Contractor shall not discriminate against employees or applicants for employment because of race, color, religion, creed, age, sex, handicap, sexual orientation, or national origin and will take affirmative action to prevent such discrimination.

6.3. The Contractor agrees to permit the State or United States access to any of the Contractor's books, records and accounts for the purpose of ascertaining compliance with all rules, regulations and orders, and the covenants, terms and conditions of this Agreement.

7. PERSONNEL.

7.1 The Contractor shall at its own expense provide all personnel necessary to perform the Services. The Contractor warrants that all personnel engaged in the Services shall be qualified to perform the Services, and shall be properly licensed and otherwise authorized to do so under all applicable laws.

7.2 Unless otherwise authorized in writing, during the term of this Agreement, and for a period of six (6) months after the Completion Date in block 1.7, the Contractor shall not hire, and shall not permit any subcontractor or other person, firm or corporation with whom it is engaged in a combined effort to perform the Services to hire, any person who is a State employee or official, who is materially involved in the procurement, administration or performance of this Agreement. This provision shall survive termination of this Agreement.

7.3 The Contracting Officer specified in block 1.9, or his or her successor, shall be the State's representative. In the event of any dispute concerning the interpretation of this Agreement, the Contracting Officer's decision shall be final for the State.

Contractor Initials LQC
Date 5/9/2022

8. EVENT OF DEFAULT/REMEDIES.

8.1 Any one or more of the following acts or omissions of the Contractor shall constitute an event of default hereunder ("Event of Default"):

8.1.1 failure to perform the Services satisfactorily or on schedule;

8.1.2 failure to submit any report required hereunder; and/or

8.1.3 failure to perform any other covenant, term or condition of this Agreement.

8.2 Upon the occurrence of any Event of Default, the State may take any one, or more, or all, of the following actions:

8.2.1 give the Contractor a written notice specifying the Event of Default and requiring it to be remedied within, in the absence of a greater or lesser specification of time, thirty (30) days from the date of the notice; and if the Event of Default is not timely cured, terminate this Agreement, effective two (2) days after giving the Contractor notice of termination;

8.2.2 give the Contractor a written notice specifying the Event of Default and suspending all payments to be made under this Agreement and ordering that the portion of the contract price which would otherwise accrue to the Contractor during the period from the date of such notice until such time as the State determines that the Contractor has cured the Event of Default shall never be paid to the Contractor;

8.2.3 give the Contractor a written notice specifying the Event of Default and set off against any other obligations the State may owe to the Contractor any damages the State suffers by reason of any Event of Default; and/or

8.2.4 give the Contractor a written notice specifying the Event of Default, treat the Agreement as breached, terminate the Agreement and pursue any of its remedies at law or in equity, or both.

8.3. No failure by the State to enforce any provisions hereof after any Event of Default shall be deemed a waiver of its rights with regard to that Event of Default, or any subsequent Event of Default. No express failure to enforce any Event of Default shall be deemed a waiver of the right of the State to enforce each and all of the provisions hereof upon any further or other Event of Default on the part of the Contractor.

9. TERMINATION.

9.1 Notwithstanding paragraph 8, the State may, at its sole discretion, terminate the Agreement for any reason, in whole or in part, by thirty (30) days written notice to the Contractor that the State is exercising its option to terminate the Agreement.

9.2 In the event of an early termination of this Agreement for any reason other than the completion of the Services, the Contractor shall, at the State's discretion, deliver to the Contracting Officer, not later than fifteen (15) days after the date of termination, a report ("Termination Report") describing in detail all Services performed, and the contract price earned, to and including the date of termination. The form, subject matter, content, and number of copies of the Termination Report shall be identical to those of any Final Report described in the attached EXHIBIT B. In addition, at the State's discretion, the Contractor shall, within 15 days of notice of early termination, develop and submit to the State a Transition Plan for services under the Agreement.

10. DATA/ACCESS/CONFIDENTIALITY/ PRESERVATION.

10.1 As used in this Agreement, the word "data" shall mean all information and things developed or obtained during the performance of, or acquired or developed by reason of, this Agreement, including, but not limited to, all studies, reports, files, formulae, surveys, maps, charts, sound recordings, video recordings, pictorial reproductions, drawings, analyses, graphic representations, computer programs, computer printouts, notes, letters, memoranda, papers, and documents, all whether finished or unfinished.

10.2 All data and any property which has been received from the State or purchased with funds provided for that purpose under this Agreement, shall be the property of the State, and shall be returned to the State upon demand or upon termination of this Agreement for any reason.

10.3 Confidentiality of data shall be governed by N.H. RSA chapter 91-A or other existing law. Disclosure of data requires prior written approval of the State.

11. CONTRACTOR'S RELATION TO THE STATE. In the performance of this Agreement the Contractor is in all respects an independent contractor, and is neither an agent nor an employee of the State. Neither the Contractor nor any of its officers, employees, agents or members shall have authority to bind the State or receive any benefits, workers' compensation or other emoluments provided by the State to its employees.

12. ASSIGNMENT/DELEGATION/SUBCONTRACTS.

12.1 The Contractor shall not assign, or otherwise transfer any interest in this Agreement without the prior written notice, which shall be provided to the State at least fifteen (15) days prior to the assignment, and a written consent of the State. For purposes of this paragraph, a Change of Control shall constitute assignment. "Change of Control" means (a) merger, consolidation, or a transaction or series of related transactions in which a third party, together with its affiliates, becomes the direct or indirect owner of fifty percent (50%) or more of the voting shares or similar equity interests, or combined voting power of the Contractor, or (b) the sale of all or substantially all of the assets of the Contractor.

12.2 None of the Services shall be subcontracted by the Contractor without prior written notice and consent of the State. The State is entitled to copies of all subcontracts and assignment agreements and shall not be bound by any provisions contained in a subcontract or an assignment agreement to which it is not a party.

13. INDEMNIFICATION. Unless otherwise exempted by law, the Contractor shall indemnify and hold harmless the State, its officers and employees, from and against any and all claims, liabilities and costs for any personal injury or property damages, patent or copyright infringement, or other claims asserted against the State, its officers or employees, which arise out of (or which may be claimed to arise out of) the acts or omission of the

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Contractor, or subcontractors, including but not limited to the negligence, reckless or intentional conduct. The State shall not be liable for any costs incurred by the Contractor arising under this paragraph 13. Notwithstanding the foregoing, nothing herein contained shall be deemed to constitute a waiver of the sovereign immunity of the State, which immunity is hereby reserved to the State. This covenant in paragraph 13 shall survive the termination of this Agreement.

14. INSURANCE.

14.1 The Contractor shall, at its sole expense, obtain and continuously maintain in force, and shall require any subcontractor or assignee to obtain and maintain in force, the following insurance:

14.1.1 commercial general liability insurance against all claims of bodily injury, death or property damage, in amounts of not less than $1,000,000 per occurrence and $2,000,000 aggregate or excess; and

14.1.2 special cause of loss coverage form covering all property subject to subparagraph 10.2 herein, in an amount not less than 80% of the whole replacement value of the property.

14.2 The policies described in subparagraph 14.1 herein shall be on policy forms and endorsements approved for use in the State of New Hampshire by the N.H. Department of Insurance, and issued by insurers licensed in the State of New Hampshire.

14.3 The Contractor shall furnish to the Contracting Officer identified in block 1.9, or his or her successor, a certificate(s) of insurance for all insurance required under this Agreement. Contractor shall also furnish to the Contracting Officer identified in block 1.9, or his or her successor, certificate(s) of insurance for all renewal(s) of insurance required under this Agreement no later than ten (10) days prior to the expiration date of each insurance policy. The certificate(s) of insurance and any renewals thereof shall be attached and are incorporated herein by reference.

15. WORKERS' COMPENSATION.

15.1 By signing this agreement, the Contractor agrees, certifies and warrants that the Contractor is in compliance with or exempt from, the requirements of N.H. RSA chapter 281-A *("Workers' Compensation")*.

15.2 To the extent the Contractor is subject to the requirements of N.H. RSA chapter 281-A, Contractor shall maintain, and require any subcontractor or assignee to secure and maintain, payment of Workers' Compensation in connection with activities which the person proposes to undertake pursuant to this Agreement. The Contractor shall furnish the Contracting Officer identified in block 1.9, or his or her successor, proof of Workers' Compensation in the manner described in N.H. RSA chapter 281-A and any applicable renewal(s) thereof, which shall be attached and are incorporated herein by reference. The State shall not be responsible for payment of any Workers' Compensation premiums or for any other claim or benefit for Contractor, or any subcontractor or employee of Contractor, which might arise under applicable State of New Hampshire Workers' Compensation laws in connection with the performance of the Services under this Agreement.

16. NOTICE. Any notice by a party hereto to the other party shall be deemed to have been duly delivered or given at the time of mailing by certified mail, postage prepaid, in a United States Post Office addressed to the parties at the addresses given in blocks 1.2 and 1.4, herein.

17. AMENDMENT. This Agreement may be amended, waived or discharged only by an instrument in writing signed by the parties hereto and only after approval of such amendment, waiver or discharge by the Governor and Executive Council of the State of New Hampshire unless no such approval is required under the circumstances pursuant to State law, rule or policy.

18. CHOICE OF LAW AND FORUM. This Agreement shall be governed, interpreted and construed in accordance with the laws of the State of New Hampshire, and is binding upon and inures to the benefit of the parties and their respective successors and assigns. The wording used in this Agreement is the wording chosen by the parties to express their mutual intent, and no rule of construction shall be applied against or in favor of any party. Any actions arising out of this Agreement shall be brought and maintained in New Hampshire Superior Court which shall have exclusive jurisdiction thereof.

19. CONFLICTING TERMS. In the event of a conflict between the terms of this P-37 form (as modified in EXHIBIT A) and/or attachments and amendment thereof, the terms of the P-37 (as modified in EXHIBIT A) shall control.

20. THIRD PARTIES. The parties hereto do not intend to benefit any third parties and this Agreement shall not be construed to confer any such benefit.

21. HEADINGS. The headings throughout the Agreement are for reference purposes only, and the words contained therein shall in no way be held to explain, modify, amplify or aid in the interpretation, construction or meaning of the provisions of this Agreement.

22. SPECIAL PROVISIONS. Additional or modifying provisions set forth in the attached EXHIBIT A are incorporated herein by reference.

23. SEVERABILITY. In the event any of the provisions of this Agreement are held by a court of competent jurisdiction to be contrary to any state or federal law, the remaining provisions of this Agreement will remain in full force and effect.

24. ENTIRE AGREEMENT. This Agreement, which may be executed in a number of counterparts, each of which shall be deemed an original, constitutes the entire agreement and understanding between the parties, and supersedes all prior agreements and understandings with respect to the subject matter hereof.

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Exhibit A
Special Provisions

Federal Funds paid under this agreement are from a Contract Agreement to the State from the US Department of Commerce (DOC), National Oceanic and Atmospheric Administration under CFDA # 11.419. All applicable requirements, regulations, provisions, terms and conditions of this Federal Contract Agreement are hereby adopted in full force and effect to the relationship between this Department and the Contractor.

In addition to the General Provisions of Paragraph 1 through 24, the following provisions as required by federal regulations apply to this Agreement:

I) ***Nondiscrimination.*** The Contractor shall comply with 15 CFR part 8 which prohibits discrimination under any program or activity receiving DOC assistance on the basis of race, color, national origin, gender or handicap, and 15 CFR part 20 which prohibits discrimination based on age.

II) ***Financial management***. *The Contractor shall comply with 2 CFR part 200 Subpart D* and the specific standards regarding financial reporting, accounting records, internal control, budget control, allowable cost, source documentation, and cash management outlined therein.

III) ***Allowable costs***. All costs charged to this Agreement shall be eligible, necessary, and reasonable for performing the tasks outlined in the approved project scope of services. The costs, including match, shall be incurred during the period of performance of the project, and shall be allowable, meaning that the costs must conform to specific federal requirements detailed in *2 CFR part 200 Subpart E*.

IV) ***Matching funds.*** All matching funds contributed by the Contractor shall conform to the same laws, regulations, and Contract conditions as the federal funds in the Agreement and referenced in *2 CFR part 200 Subpart E*.

V) ***Property Management.*** The Contractor shall comply with the property management and procedures detailed in 2 CFR Part 200 Subpart D.

VI) ***Debarrment and Suspension.*** The Contractor shall comply with 2 CFR Part 200 Subpart C. By signing and submitting the Agreement, the Contractor certifies that they have not been debarred or suspended by a government agency. The Contractor will not make any award or permit any award (subcontract) at any tier to any party which is debarred or suspended or is otherwise excluded from or ineligible for participation in Federal assistance programs under Executive Order 12549, "Debarment and Suspension."

VII) ***Procurement.*** When purchasing goods or services with contract or match funds, the Contractor shall comply with procurement regulations as detailed in 2 CFR Part 200 Subpart D which include procurement standards, competition, methods of procurement, contract cost and price, agency review, bonding requirements, and contract provisions.

a. Assignment of Subcontracts. The Contractor shall not assign, or otherwise transfer any interest in this contract without the prior written consent of the Contract Owner and the State.

b. Subcontracts. The Contractor shall:

i. Ensure that every subcontract includes provisions for compliance with Federal and State standards applicable to the contract;

ii. Ensure that every subcontract includes any clauses required by Federal statute and executive orders and their implementing regulations; and

iii. Ensure that subcontractors are aware of requirements imposed upon them by State and Federal statutes and regulations.

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VIII) ***Participation by Disadvantaged Business Enterprises.*** The Contractor shall comply with the terms of 2 CFR Part 200 Subpart D, which requires that organizations conduct a competitive procurement process making a good faith effort to utilize goods and services provided by disadvantaged businesses.

IX) ***New Restrictions on Lobbying: Interim Final Rule.*** The Contractor shall comply with the terms of 15 CFR part 28 and 2 CFR Part 200 Subpart E which prohibit the use of federal Contract funds to influence (or attempt to influence) a federal employee, and requires the submission of Standard Form LLL ("Disclosure of Lobbying Activities") if *non*federal funds have been used to influence (or attempt to influence) a federal employee.

X) ***Drug-Free Workplace.*** The Contractor shall comply with the terms of 2 CFR part 1329 which require that as a condition of the Agreement, certification that they maintain a drug-free workplace. By signing and submitting the Agreement, the Contractor e certifies that he or she will not engage in the unlawful manufacture, distribution, dispensing, possession, or use of a controlled substance in conducting any activity associated with the Agreement.

XI) ***Bonding requirements.*** The Contractor shall comply with 2 CFR Part 200 Subpart D for construction or facility improvement contracts or subcontracts exceeding the simplified acquisition threshold (currently $150,000), the minimum requirements shall be as follows:

a. A bid guarantee from each bidder equivalent to five percent of the bid price. The "bid guarantee" shall consist of a firm commitment such as a bid bond, certified check, or other negotiable instrument accompanying a bid as assurance that the bidder will, upon acceptance of his bid, execute such contractual documents as may be required within the time specified.

b. A performance bond on the part of the contractor for 100 percent of the contract price. A "performance bond" is one executed in connection with a contract to secure fulfillment of all the contractor's obligations under such contract.

c. A payment bond on the part of the contractor for 100 percent of the contract price. A "payment bond" is one executed in connection with a contract to assure payment as required by law of all persons supplying labor and material in the execution of the work provided for in the contract.

XII) ***Federal Funding Accountability and Transparency Act (FFATA).*** The Contractor shall comply with the terms of the FFATA by providing NHDES with their Data Universal Numbering System (DUNS) number, and all applicable Executive Compensation Data information as required under the FFATA. The DUNS number is 057824525.

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Exhibit B
Scope of Services

GEI CONSULTANTS, INC. (GEI) shall perform the tasks and complete the deliverables outlined below and specifically described in their proposal, entitled "Planning Services to Develop Coastal Resilience and Environment Update to the Hampton Beach Area Commission (HBAC) Master Plan," which is incorporated by reference. GEI will work with the HBAC Master Plan Committee and New Hampshire Coastal Program (NHCP) support staff from the onset of the project and will convene regular project check-ins on an anticipated minimum bi-weekly basis for the duration of the project.

TASKS:

Activity 1. GEI will review existing plans, surveys, and other materials and establish relationships with ongoing efforts and entities to ensure coordination and minimize overlap/duplication of work.

Activity 2. GEI, with assistance from the HBAC Master Plan Committee and guidance from the NHCP Support Team, will complete outreach with key contacts and stakeholders.

Activity 3. GEI will draft and submit to the HBAC for approval the HBAC Master Plan 2023 Update.

DELIVERABLES:

- Activity 1 – Data and Information Compilation
- Activity 2 – Public Outreach
- Activity 3 – 2023 Coastal Resilience and Environment Update to the HBAC Master Plan
- Produce and publish a written HBAC Master Plan 2023 Update encompassing consultant findings, data, scientific and technical recommendations, and recommendations for going forward based on completion of the Scope of Work.
- One (1) reproducible hard copy and (1) electronic copy each in Adobe PDF and MS Word format of interim draft(s) and final HBAC Master Plan 2023 Update content, including narrative and graphics.
- Drawings, maps, and supporting map data prepared by the Consultant for the HBAC Master Plan 2023 Update, provided in GIS format compatible with ArcMap 10.8 and referenced to the coordinate system in NH State Plan, NAD83 with units in feet.
- Spreadsheets and charts in MS Excel format including support data for all tables and graphs included in the HBAC Master Plan 2023 Update.
- Copies of all PPT slide presentations and meeting materials, including notes from all stakeholder outreach.
- Two (2) interim project progress reports covering the following reporting periods:
    - Contract start date – June 30, 2022
    - July 1, 2022 – December 31, 2022
- One (1) final project progress report summarizing major project outcomes completed during the project award period from contract approval through June 30, 2023.

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FUNDING CREDIT AND ADA COMPLIANCE:

All final work products and outreach materials shall include the National Oceanic and Atmospheric Administration (NOAA), New Hampshire Department of Environmental Services (NHDES), and the New Hampshire Coastal Program (NHCP) logos and shall state that "This project was funded, in part, by NOAA's Office for Coastal Management under the Coastal Zone Management Act in conjunction with the New Hampshire Department of Environmental Services Coastal Program." All final work products must meet the applicable Americans with Disabilities Act (ADA) Title II Regulations to the extent practicable and shall be guided by best practices outlined in the Revised Section 508 Standards of the Rehabilitation Act and the Web Content Accessibility Guidelines (WCAG). At minimum, final work products shall include sans-serif fonts, underlined and descriptive text links, color best practices, captions for audio and video content, headers in tables, images with alt text, gender-neutral text, and consideration of the Plain Writing Act. Examples of final work products and outreach materials include, but are not limited to, project reports, press releases, newsletter articles, websites, videos, and signage.

Contractor Initials KCR
Date 5/9/2022

Exhibit C
Method of Payment and Contract Price

The State shall pay to the Contractor the total reimbursable program costs in accordance with the following requirements:

Reimbursement requests for program costs shall be made by the Contractor using a payment request form as supplied by the State, which shall be completed and signed by the Contractor. The payment request form shall be accompanied by proper supporting documentation in the amount of each requested disbursement and required matching funds. Documentation of reimbursable and matching costs may include invoices for supplies, equipment, services, contractual services, and a report of personnel, travel, and indirect costs. For projects that demonstrate progress solely through the submission of interim progress reports, payments shall be made upon receipt, review and approval of the interim progress report and accompanying payment request form. Payments shall be made to the Contractor no more frequently than monthly.

The total reimbursement shall not exceed the grant award of $38,000.

Contractor Initials KER
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State of New Hampshire

Department of State

CERTIFICATE

I, William M. Gardner, Secretary of State of the State of New Hampshire, do hereby certify that GEI CONSULTANTS, INC. is a Massachusetts Profit Corporation registered to transact business in New Hampshire on November 02, 1983. I further certify that all fees and documents required by the Secretary of State's office have been received and is in good standing as far as this office is concerned.

Business ID: **73667**

Certificate Number: **0005675071**

IN TESTIMONY WHEREOF,

I hereto set my hand and cause to be affixed the Seal of the State of New Hampshire, this 18th day of February A.D. 2022.

William M. Gardner

Secretary of State

Certificate of Authority # 1 *(Corporation, Non-Profit Corporation)*

Corporate Resolution

I, Jon Mahoney, hereby certify that I am duly elected Clerk/Secretary/Officer of
(Name)
GEI Consultants, Inc. . I hereby certify the following is a true copy of a vote taken at
(Name of Corporation)

a meeting of the Board of Directors/shareholders, duly called and held on May 16th, 2018,

at which a quorum of the Directors/shareholders were present and voting.

VOTED: *That* Lissa Robinson, Vice President *(may list more than one person) is*
(Name and Title)

duly authorized to enter into contracts or agreements on behalf of

GEI Consultants, Inc. with the State of New Hampshire and any of
(Name of Corporation)

its agencies or departments and further is authorized to execute any documents

which may in his/her judgment be desirable or necessary to effect the purpose of

this vote.

I hereby certify that said vote has not been amended or repealed and remains in full force and effect as of the date of the contract to which this certificate is attached. This authority **remains valid for thirty (30)** days from the date of this Corporate Resolution. I further certify that it is understood that the State of New Hampshire will rely on this certificate as evidence that the person(s) listed above currently occupy the position(s) indicated and that they have full authority to bind the corporation. To the extent that there are any limits on the authority of any listed individual to bind the corporation in contracts with the State of New Hampshire, all such limitations are expressly stated herein.

DATED: 3/8/22 **ATTEST:** - Clerk
(Name & Title)

CERTIFICATE OF LIABILITY INSURANCE

DATE (MM/DD/YYYY): 03/09/2022

THIS CERTIFICATE IS ISSUED AS A MATTER OF INFORMATION ONLY AND CONFERS NO RIGHTS UPON THE CERTIFICATE HOLDER. THIS CERTIFICATE DOES NOT AFFIRMATIVELY OR NEGATIVELY AMEND, EXTEND OR ALTER THE COVERAGE AFFORDED BY THE POLICIES BELOW. THIS CERTIFICATE OF INSURANCE DOES NOT CONSTITUTE A CONTRACT BETWEEN THE ISSUING INSURER(S), AUTHORIZED REPRESENTATIVE OR PRODUCER, AND THE CERTIFICATE HOLDER.

IMPORTANT: If the certificate holder is an ADDITIONAL INSURED, the policy(ies) must have ADDITIONAL INSURED provisions or be endorsed. If SUBROGATION IS WAIVED, subject to the terms and conditions of the policy, certain policies may require an endorsement. A statement on this certificate does not confer rights to the certificate holder in lieu of such endorsement(s).

PRODUCER MARSH USA, INC. 20 CHURCH STREET, 8TH FLOOR HARTFORD, CT 06103 Attn: Hartford.certrequest@Marsh.com CN102051728-CODwo-GAWUP-22-23	**CONTACT NAME:** Alicia M. Lynde **PHONE (A/C, No, Ext):** 860-709-7498 **FAX (A/C, No):** **E-MAIL ADDRESS:** Alicia.M.Lynde@marsh.com
INSURED GEI Consultants, Inc.(2900) 5 Milk Street Portland, ME 04101	**INSURER(S) AFFORDING COVERAGE** — **NAIC #** **INSURER A :** National Union Fire Ins. Co. of Pittsburgh, PA — 19445 **INSURER B :** N/A — N/A **INSURER C :** AIU Insurance Co — 19399 **INSURER D :** Allied World Surplus Lines Insurance Company — 24319 **INSURER E :** Allied World Assurance Company (U.S.) Inc. — 19489 **INSURER F :**

COVERAGES **CERTIFICATE NUMBER:** NYC-011287136-02 **REVISION NUMBER:** 2

THIS IS TO CERTIFY THAT THE POLICIES OF INSURANCE LISTED BELOW HAVE BEEN ISSUED TO THE INSURED NAMED ABOVE FOR THE POLICY PERIOD INDICATED. NOTWITHSTANDING ANY REQUIREMENT, TERM OR CONDITION OF ANY CONTRACT OR OTHER DOCUMENT WITH RESPECT TO WHICH THIS CERTIFICATE MAY BE ISSUED OR MAY PERTAIN, THE INSURANCE AFFORDED BY THE POLICIES DESCRIBED HEREIN IS SUBJECT TO ALL THE TERMS, EXCLUSIONS AND CONDITIONS OF SUCH POLICIES. LIMITS SHOWN MAY HAVE BEEN REDUCED BY PAID CLAIMS.

INSR LTR	TYPE OF INSURANCE	ADDL INSD	SUBR WVD	POLICY NUMBER	POLICY EFF (MM/DD/YYYY)	POLICY EXP (MM/DD/YYYY)	LIMITS		
A	X **COMMERCIAL GENERAL LIABILITY** CLAIMS-MADE [X] OCCUR GEN'L AGGREGATE LIMIT APPLIES PER: [X] POLICY [X] PRO-JECT [X] LOC OTHER:	X		GL 518-02-76	03/01/2022	03/01/2023	EACH OCCURRENCE DAMAGE TO RENTED PREMISES (Ea occurrence) MED EXP (Any one person) PERSONAL & ADV INJURY GENERAL AGGREGATE PRODUCTS - COMP/OP AGG	$ $ $ $ $ $	1,000,000 300,000 25,000 1,000,000 2,000,000 2,000,000
A A	**AUTOMOBILE LIABILITY** X ANY AUTO X OWNED AUTOS ONLY X HIRED AUTOS ONLY SCHEDULED AUTOS NON-OWNED AUTOS ONLY	X		CA 296-17-05 (AOS) CA 296-17-04 (MA) $5,000 Medical Payments - ea.person	03/01/2022 03/01/2022	03/01/2023 03/01/2023	COMBINED SINGLE LIMIT (Ea accident) BODILY INJURY (Per person) BODILY INJURY (Per accident) PROPERTY DAMAGE (Per accident) Comp/Coll Deductible	$ $ $ $ $	1,000,000 $250/$250
	UMBRELLA LIAB OCCUR **EXCESS LIAB** CLAIMS-MADE DED RETENTION $						EACH OCCURRENCE AGGREGATE	$ $	
A C	**WORKERS COMPENSATION AND EMPLOYERS' LIABILITY** ANYPROPRIETOR/PARTNER/EXECUTIVE OFFICER/MEMBER EXCLUDED? **(Mandatory in NH)** Y/N [N] N/A If yes, describe under DESCRIPTION OF OPERATIONS below	N/A		WC 012-01-6047 (AOS) WC 012-01-6046 (CA)	03/01/2022 03/01/2022	03/01/2023 03/01/2023	X PER STATUTE OTH-ER E.L. EACH ACCIDENT E.L. DISEASE - EA EMPLOYEE E.L. DISEASE - POLICY LIMIT	$ $ $	1,000,000 1,000,000 1,000,000
D	A&E CONTR. PROF LIAB.			0312-7531	03/01/2022	03/01/2023	Each Claim / Aggr.		5,000,000
E	CONTR. POLLUTION LIAB.			0312-7536	03/01/2022	03/01/2023	Each Claim / Aggr.		5,000,000

DESCRIPTION OF OPERATIONS / LOCATIONS / VEHICLES (ACORD 101, Additional Remarks Schedule, may be attached if more space is required)

GEI Proposal No. 2200318 (T. Pryor).

CERTIFICATE HOLDER

Dept of Natural and Cultural Resources
172 Pembroke Road
Concord, NH 03301

CANCELLATION

SHOULD ANY OF THE ABOVE DESCRIBED POLICIES BE CANCELLED BEFORE THE EXPIRATION DATE THEREOF, NOTICE WILL BE DELIVERED IN ACCORDANCE WITH THE POLICY PROVISIONS.

AUTHORIZED REPRESENTATIVE
of Marsh USA Inc.

Marsh USA Inc.

PLANNING SERVICES TO DEVELOP COASTAL RESILIENCE AND ENVIRONMENT UPDATE TO THE HAMPTON BEACH MASTER PLAN

Prepared for: Hampton Beach Area Commission
By: GEI Consultants, Inc.

Revised **March 9**, 2022
January 31, 2022

GEI Consultants, Inc.
5 Milk Street, Portland, ME 04101

Contact: Travis Pryor, RLA/LEED-AP
207.797-8904
tpryor@geiconsultants.com

Revised March 9, 2022

January 31, 2022

GEI Proposal #2200318

VIA EMAIL: beachareacom@gmail.com

Ms. Ann Carnaby, HBAC Administrative Assistant
Town of Hampton
100 Winnacunnet Road
Hampton, NH 03842

Re: Proposal for Planning Services to Develop Coastal Resilience and Environment Update to the Hampton Beach Area Commission Master Plan Hampton, New Hampshire

Dear Ms. Carnaby, members of the HBAC and NHCP staff:

GEI Consultants, Inc., is pleased to respond to the Hampton Beach Area Commission's (HBAC) Request for Proposals for development of a Coastal Resilience and Environment Update to the HBAC Master Plan. Since the preparation of the original 2001 Hampton Beach Area Master Plan, the HBAC, with support from the Town of Hampton, general public, local businesses, private consultants, and local, regional and state partners has continued to assess and plan for improvements to the Hampton Beach area in a thoughtful and comprehensive manner. Our Team is excited for the opportunity to provide the HBAC with fresh perspectives in a complimentary roll for the master planning process through development of coastal resilience and environment components to the plan.

The GEI Team is made up of engineers, landscape architects, planners, GIS technicians, and water resources professionals – all of whom specialize in coastal and waterfront planning, design, permitting, and construction projects throughout the Northeast. We have extensive experience that includes master planning for beaches, recreational and working waterfront facilities, municipal harbor plans, resilience studies, and flood risk analyses. Our Team brings a unique and deep understanding of conditions and issues experienced by coastal communities.

GEI Team members strive to understand our clients' goals and apply ingenuity, creative thinking, and professional expertise to meet them in practical and efficient ways. We look forward to applying this coordinated approach within the overall construct of the HBAC Master Plan.

We trust that the GEI Team's qualifications, understanding, and approach described in this proposal will demonstrate our ability to effectively work with the HBAC on this project. Thank you for the opportunity to be considered. Please contact me at (207) 797-8904 or at tpryor@geiconsultants.com if you have any questions.

Travis Pryor, RLA/LEED-AP
Senior Project Manager

Varoujan Hagopian, P.E.
Senior Coastal Engineer/In-House Reviewer

GEI Consultants, Inc.
5 Milk Street, Portland, ME 04101
207.797.8901

Table of Contents

1 Firm Overview and Qualifications

GEI is pleased to provide the Hampton Beach Area Commission with our proposal to provide planning services to work with the Commission to develop a new Master Plan.

GEI consistently ranks among the top 100 engineering firms in Engineering News Record's (ENR) annual rankings. We are currently ranked number 24 for ENR's Top Design Firms in New England (2020). We are proud of the work we do, but most important is how our clients feel about services they receive.

900+ Engineers, Scientists, and Professionals

Founded In 1970

No. 84 ENR Top 500 Design Firms

1 Cohesive Team

200+ Shareholders

100% Employee Owned

43 Offices

Firm Overview and History

Established in 1970, GEI Consultants, Inc. is a consulting engineering firm specializing in geotechnical, environmental, water resources, and ecological services. With more than 900 staff and 43 offices nationwide, GEI is a leader in providing multi-disciplined engineering and technical services to a range of private and public-sector clients, both domestically and abroad. We partner with our clients to deliver outstanding solutions for complex projects, utilizing a fully integrated suite of services.

Our staff of experienced engineers and scientists support project activities from initial feasibility assessment, permitting, planning, and design stages through construction, testing, and final documentation. We foster personal relationships with our clients and support our staff in a partnership model, which is underpinned by continuous learning and sharing of knowledge. We retain proven, recognized experts, and attract talented minds to deliver a refreshing blend of technical expertise, collaborative spirit, and innovation that is rare in our profession. As an employee-owned firm, we can attract and retain talented staff who are committed to advancing the company's technical expertise and who truly value being part of GEI.

GEI has the expertise and the physical resources to perform the anticipated services. Our project manager and listed staff have ample capacity to support the needs of the the Commission on this project. GEI has qualified staff throughout North America working in the specialized niche market areas of waterfront structures, geotechnical engineering, environmental services, and water resources. This work will be managed from our local Portland, Maine office and additional resources from our other offices are available to assist if required.

Coastal and Waterfront Engineering Services

With over 34 years of regional waterfront planning and design experience, GEI provides comprehensive services that include investigations, planning, design, permitting, analysis, and construction for a wide range of coastal and waterfront engineering projects. This includes master planning for recreational and working waterfront sites, resilience studies to assess the impacts of climate change and sea level rise, municipal harbor planning and capacity analysis, invasive species management plans, erosion studies, living shoreline projects, and detailed design of piers, access facilities, marinas, and passenger vessel facilities.

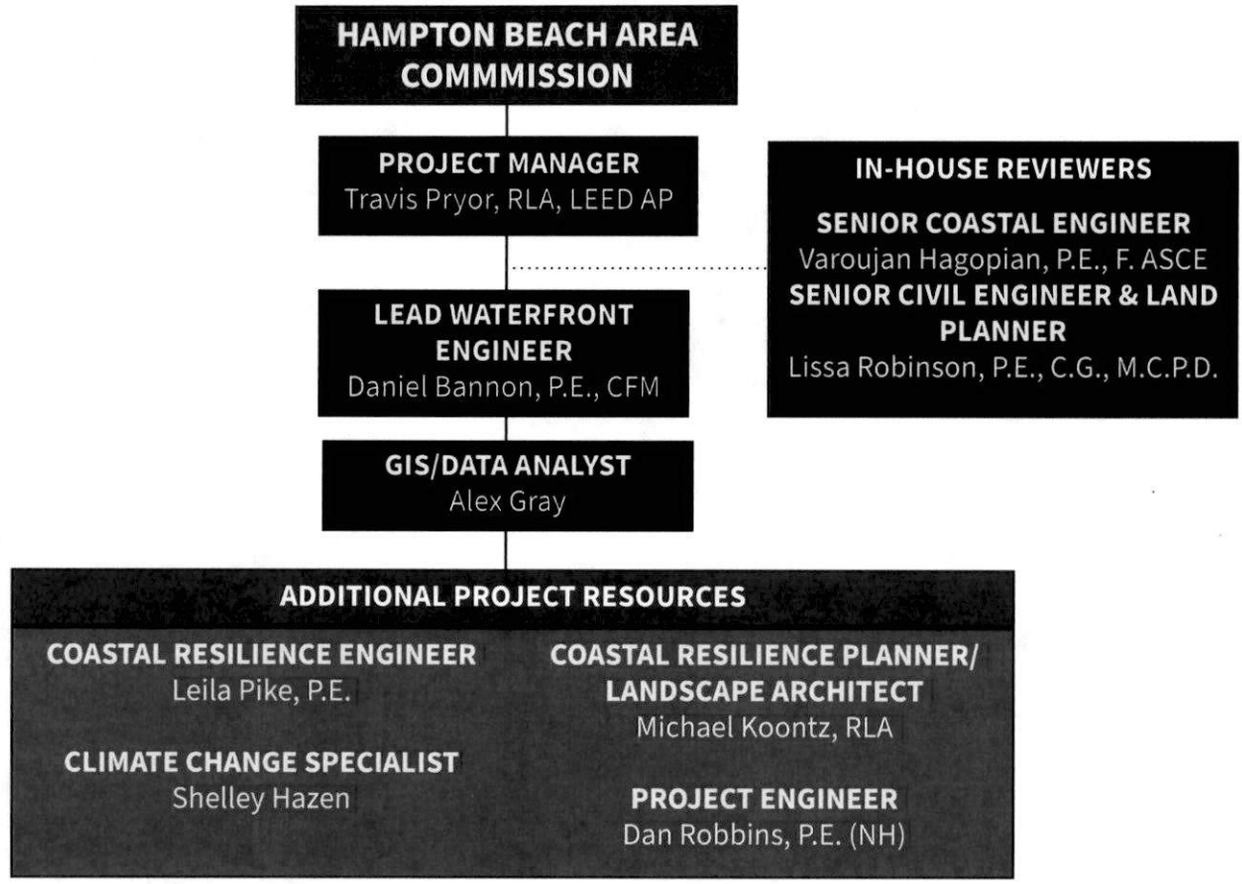
GEI's waterfront engineers specialize exclusively in harbor and waterfront projects. Each staff member has in-depth expertise in the field including design and permitting of waterfront structures. Our in-house engineering staff include structural, geotechnical, environmental, and water resource engineers, ecology experts, regulatory specialists, and engineer-divers.

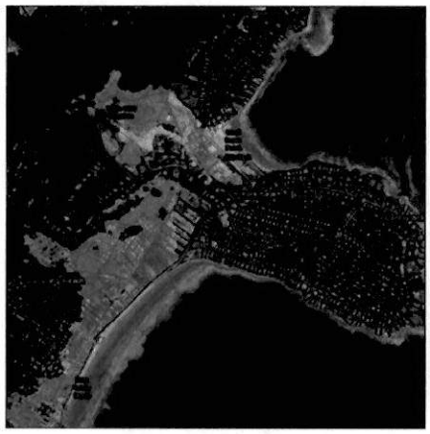
Experience Working with State Agencies

Over several decades GEI has established a client base that includes industrial facilities, government agencies, states, towns, private sector clients, A/E firms, and contractors. With the technical skills and market experience required, GEI has the expertise to see our clients' projects through the entire project life cycle.

2 GEI's Project Team

GEI has assembled a team of professionals to support the Hampton Beach Area Commission in updating their master plan. The project team has considerable experience in waterfront planning, coastal resources, infrastructure assessments, and project facilitation across the northeast. We have selected our team based on their relevant skill set, experience with similar projects, and availability to support the project. Below is our proposed organizational chart. Resumes are provided in **Appendix B**.





Above: A graphic GEI provided for the Southern Maine Planning & Development Commission. Similar graphics will be provided for the Hampton Beach Area Commission.

Above: A community engagement meeting hosted by GEI. GEI aims for a thoughtful, inclusive process that often combines in-person meetings and virtual meetings, and surveying tools supported by a variety of technological resources.

GEI's STAFF COMMITMENT TO QUALITY AND EXCELLENCE

GEI's employees are committed to working for the success of our clients, maintaining high standards of personal, business and professional honesty and ethics, high quality work and products, respect and equal opportunity for all people, personal initiative and responsibility.

TABLE 1– GEI PROJECT TEAM QUALIFICATIONS AND EXPERIENCE

PROJECT TEAM MEMBER	TEAM MEMBER BIO	QUALIFICATIONS
 **Travis Pryor, RLA, LEED AP** PROJECT MANAGER	The GEI Team will be led by Travis Pryor, who brings strong leadership and experience working in a collaborative project delivery approach. Mr. Pryor is a Senior Project Manager and Licensed Landscape Architect in GEI's Portland, Maine office. Travis utilizes his training in landscape architecture, community planning and environmental engineering towards the development of sustainable, resilient and context sensitive project outcomes for of a wide variety of infrastructure and development projects. He is also an accredited professional under the U.S. Green Building Council's Leadership in Energy and Environmental Design (LEED). Mr. Pryor has over twenty years of planning, design and project management experience in land use planning, waterfront development, community revitalization, parks and recreation, bicycle and pedestrian systems, and infrastructure / utility projects for public, private and institutional clients throughout the Northeast and beyond. He has been involved in all phases of project development, from master planning through public participation, design development, permitting, funding assistance and construction. Travis has led a wide variety of public planning and engagement processes, including site visits, large- and small-scale public input forums and charettes, stakeholder outreach campaigns, public surveys and polling initiatives, on-site meetings, and virtual presentations and tours. He also has current and past recent experience working in New Hampshire, including efforts in collaboration with the Coastal Program and other NH Department of Environmental Services divisions.	**EDUCATION** B.L.A, Landscape Architecture **YEARS OF EXPERIENCE** 20 years **REGISTRATIONS/LICENSES** Licensed Landscape Architect: NH No. 103 ME No. 3290 RI No. 471 USGBC LEED Accredited Professional
 **Varoujan Hagopian, P.E., F.ASCE** IN-HOUSE REVIEWER - SENIOR COASTAL ENGINEER	Varoujan Hagopian is a designer and experienced engineer. Throughout his professional career he has worked on complex, large-scale waterfront developments. For the past 42 years, he has managed, designed, permitted, value engineered and completed the planning, design, and construction of a variety of projects that include mixed-use waterfront developments, parks, marinas, offshore recreational islands, beach nourishment, shoreline and edge stabilization, river and lake engineering, wharfs, piers, canals, sea walls, breakwaters, commuter and ferry boat facilities, cruise ship piers, marinas, and harbor protection structures. He has provided complete turnkey services, from conducting feasibility and early planning studies, followed by detail design, permitting and on to final construction. In addition to his planning, design and project leadership responsibilities, Securing grants and funding for public projects from a large variety of federal government sources is one of Mr. Hagopian's core skills including working directly with client congressional representatives in Washington to get federal dollars for 50/50 cost sharing recreational and economic enhancement projects. Mr. Hagopian will provide project guidance on coastal engineering findings and recommendations for coastal resiliency and environment approaches.	**EDUCATION** B.S., Civil Engineering **YEARS OF EXPERIENCE** 40+ years **REGISTRATIONS/LICENSES** Professional Engineer: MA No. 40230

PROJECT TEAM MEMBER	TEAM MEMBER BIO	QUALIFICATIONS
 **Lissa Robinson, P.E, C.G., M.C.P.D** IN-HOUSE REVIEWER - SENIOR CIVIL ENGINEER & LAND PLANNER	Lissa Robinson is a Senior Civil Engineer, Hydrologist, Geologist, and Land Planner at GEI Consultants, Inc. with 30 years of consulting experience. She has worked across Maine, New England and nationally providing expertise in civil and water resource engineering and hydrology disciplines with emphasis in the areas of coastal, surface water, and ground water hydrology, and hydraulic engineering. Her work as a licensed Professional Engineer (Maine) and Certified Geologist (Maine) helps guide clients with analysis, modeling, mapping, and reporting for hydrologic and hydraulic studies. She has worked with clients to evaluate the resiliency of structures, systems, and processes to impacts such as riverine flooding, extreme precipitation, sea level rise, storm surge, and wave run-up. Representative clients include municipalities, federal and state agencies, the hydroelectric industry, water districts, as well as residential, commercial, and industrial facilities. Ms. Robinson also helps clients bridge the gap between science and land use policy through her knowledge and experience in community planning and development. Ms. Robinson will provide input related to land use planning and impacts on HBAC Master Plan Update, and will be the in-house reviewer on this project, responsible for QA/QC and review of study deliverables.	**EDUCATION** M.S., Community Planning and Development B.S., Civil Engineering **YEARS OF EXPERIENCE** 30 years **REGISTRATIONS/LICENSES** Professional Engineer: NH No. 14286 VT No. 018.0100451 ME No. 6839 Maine Certified Geologist No. 341
 **Daniel Bannon, P.E., CFM** WATERFRONT PROJECT ENGINEER	Daniel Bannon is a Senior Engineer in GEI's Portland, Maine office. He specializes in projects involving waterfront structures, shore access, flood protection, recreational and commercial boating facilities, waterfront planning and development, and bridges in coastal settings. . He is very familiar with the federal, state, and local regulations that govern development in coastal high hazard areas and sensitive environmental habitats, with a primary focus on the Maine coast. Mr. Bannon's experience with coastal planning and design projects for municipalities includes development of harbor inventories, review of harbor issues, and development of management recommendations – each of the key components of this study. Mr. Bannon's role in the project will be as the lead Waterfront Project Engineer. He will be responsible for leading the develop of all coastal resiliency and environment engineering solutions and will be involved throughout all phases of the Master Plan Update including inventory development, coastal waterfront resiliency and environment assessment, and recommendations.	**EDUCATION** M.S., Structural Engineering B.S., Civil Engineering **YEARS OF EXPERIENCE** 12 years **REGISTRATIONS/LICENSES** Professional Engineer: ME No. 13033

PROJECT TEAM MEMBER	TEAM MEMBER BIO	QUALIFICATIONS
 **Alex Gray** GIS/DATA ANALYST	Mr. Alexander Gray is an Adaptation Specialist/GIS Analyst in GEI's Portland, Maine office with more than 5 years of experience in the industry. Mr. Gray uses his GIS analytic skills to build models to assist municipalities and community organizations in understanding their vulnerabilities to storm surge and sea level rise. Alex has developed methods to quantify climate-related risks and calculate costs and benefits for adaptation strategies. Mr. Gray also performs hydrology and hydraulic modeling for rainfall runoff and hypothetical dam failure analysis. His work is used to develop inundation maps as part of resiliency and emergency action planning. His graduate school research in coastal community vulnerabilities was cited in the Northeast Chapter of the 2015 National Climate Assessment report and responsibilities after graduate school included training municipal code enforcement officers on coastal hazards. Mr. Gray's role in this project will be to lead the preparation of GIS mapping for climate resiliency and environment data within and and surrounding the HBAC Master Plan area. He will be responsible for preparation of maps and new GIS layers, and will assist with field survey and documentation.	**EDUCATION** M.S., Ecology and Environmental Science B.S., Environmental Studies **YEARS OF EXPERIENCE:** 7+ years
 **Michael Koontz, RLA** COASTAL RESILIENCE PLANNER/LANDSCAPE ARCHITECT	Michael Koontz is the Senior Urban Design/Waterfront Planning Practice Leader in GEI's Huntington Station, NY office. He is an accomplished Landscape Architect with quality design, project, staff, and client management experience. He has led design teams for several high-profile public waterfront and urban design spaces regionally, nationally, and internationally. His experience has been highly collaborative and has always adhered to the highest standard of resiliency and sustainability.	**EDUCATION** B.S., Landscape Architecture **YEARS OF EXPERIENCE** 30 years **REGISTRATIONS/LICENSES** Registered Landscape Architect, NY
 **Shelley Hazen** CLIMATE CHANGE SPECIALIST	Shelley Hazen brings diverse climate change vulnerability and adaptation expertise to her projects. She provides research and planning support to her clients to help them understand current and future climate and extreme weather impacts, vulnerabilities and opportunities, while providing recommendations for effective adaptation. Ms. Hazen's work spreads across infrastructure, energy, agriculture, natural systems, and other sectors to help clients navigate through climate uncertainty. Her work spans all stages of adpatation, from foundational data analysis to implementing resilience on the ground.	**EDUCATION** M.A. Geography B.E.S. Biophysical Earth System Specialization **YEARS OF EXPERIENCE:** 9+ years

3 Project Understanding

This section presents GEI's project understanding and our approach for delivering a successful project to the Hampton Beach Area Commission. Our detailed scope of work is provided in Section 4.

CRAB MEADOW WATERSHED HYDROLOGIC STUDY AND STEWARDSHIP PLAN - HUNTINGTON, NY

GEI provided stakeholder and public involvement services during the development and implementation of the Crab Meadow Stewardship plan. Public outreach and education sessions were held to solicit community participation and formulation of a Draft stewardship plan. The project involved close coordination with the Town Planning Department and a project Citizen Advisory Committee that included environmental organizations, staff and student interns from Hofstra University and City College.

Project Background

As noted in the RFP, the Hampton Beach Area Commission (HBAC), in partnership with the New Hampshire Department of Environmental Services Coastal Program (NHCP) and the Department of Natural and Cultural Resource (DNCR), is soliciting proposals from qualified consultants to prepare the 2023 Coastal Resilience and Environment Update to the Hampton Beach Area Commission Master Plan.

The HBAC, enabled per RSA 216-J, was established to assist the Town of Hampton and State of New Hampshire agencies and departments in the long-range planning for the Hampton Beach area through the implementation of the 2001 Hampton Beach Area Master Plan and 2018 Transportation Update.

When HBAC was formed by the NH Legislature in 2003, likely it did not envision the speed at which the forces of nature would endanger the coastal environment, nor that by 2050 its impact could reach considerably westward in the Town of Hampton and throughout the Region. When in 2021 HBAC Commissioners authorized updating the environmental portion of its Hampton Beach Area Master Plan to compliment the 2018 Transportation update, it found that several government agencies as well as several private and public groups are or have been simultaneously engaged in pursuing scientific research, remediation options, and in elevating awareness of the coastal risks and hazards affecting Hampton Beach's future. The urgent need was to identify and coordinate these elements and the current status of their work to promote consistency and if at all possible, prevent duplication of effort as the HBAC Master Plan 2023 Coastal Resilience and Environment Update moves forward.

For the purpose of the HBAC Master Plan 2023 Coastal Resilience and Environment Update, the HBAC defines coastal resilience as the development and implementation of a comprehensive, coordinated, and cooperative strategy to address the impacts of climate change, increased precipitation, sea level rise, and storm surge in order to diminish the severity and frequency of hazardous events such as hurricanes, coastal storms and flooding resulting in long-term community-wide disasters from which recovery would be limited or unlikely.

Preparation of the HBAC Master Plan 2023 Coastal Resilience and Environment Update should build upon and will need to be informed and coordinated with a wealth of relevant state, municipal, public, private and town initiatives, developed since the 2001 HBAC Master Plan. A few of these efforts are ongoing and will be coordinated with the HBAC Master Plan 2023 Coastal Resilience and Environment Update concurrently.

Why Choose GEI?

Effective community master planning reaches clear public consensus and provides recommendations that are actionable move forward with implementation of the consensus goals. The consultant's role is to provide objective, technical information that allows the community to make informed decisions on how best to proceed with a project that reflects their values. This is the primary focus of all of GEI's planning efforts. Additionally, planning for the critical issue of resilience to climate risks presents

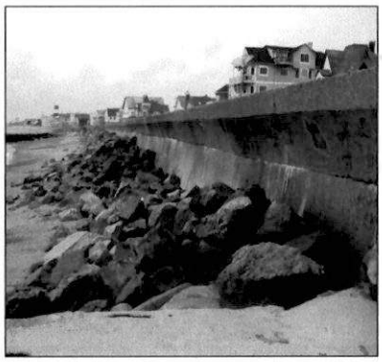
particular challenges. The work must rely on sound science, and consider the latest up-to-date recommendations from local, regional, and federal groups related to coastal hazards. communication of these risks can present challenges as those impacted may come from a range of political, socio-economic, racial, and other backgrounds, and their exposure to climate related risks may vary significantly. Clear and thoughtful communication is key to developing support for Master Plan recommendations that can ultimately lead to community actions.

GEI is highly qualified to provide the professional consultant services required for the Coastal Resilience and Environment Update to the HBAC Master Plan. We believe the following key factors make GEI the ideal candidate for the services requested:

- **Context Sensitive Planning:** Given the wealth of investment in planning initiatives for the Hampton Beach Area, by the Town, local residents and businesses, regional and state partners and supporting consultants, it is critical that the HBAC Master Plan 2023 Coastal Resilience and Environment Update be led by an objective consultant team that can support these prior recent and ongoing efforts in a respectful, complementary manner, which does not conflict or overlap with others who are already connected to the planning process.
- **A commitment to Diversity, Equity, and Inclusion:** DE&I is woven throughout our values and our business. GEI's commitment to DE&I influences how we interact within our teams, with clients, and with the public - recognizing that projects outcomes are improved when a diverse range of perspectives are heard. Increasingly, coastal communities are facing challenges with maintaining diverse, equitable and inclusive environments for their residents, working waterfront members and visitors as the costs of living on the coastline become unsustainable. As noted in the RFP, it will be critical to engage the full representation of the HBAC community, providing adequate opportunity to participate by those who may be challenged to participate.
- **Coastal Practice Expertise:** The GEI Team have experience in a wide range of coastal planning studies from recreation site master plans to harbor plans to resilience assessments. Key to these studies and their ultimate success in implementation and sustainability over long periods of time is the fact that they are supported by our Team's comprehensive experience working on all phases of coastal project development beyond the initial master planning – including detailed design development, permitting, funding, construction and post construction monitoring.
- **Familiarity with New Hampshire's Coastal Environment:** The GEI Team includes individuals with experience in New Hampshire, including our project Manager, Travis Pryor, who is currently working on the New Hampshire Marine Patrol Headquarters Dock Replacement project and has past experience coordinating with the New Hampshire Coastal Program on coastal resiliency and environmental quality improvements within the Great Bay tidal estuary in Exeter. Our lead project engineer, Dan Robbins, was previously with Appledore Engineering and has a variety of practical engineering experience in New Hampshire including at the Hampton River Marina. Lastly, our lead GIS Analyst, Alex Gray, has key project experience working on a coastal resiliency project for Portsmouth, and joint ventures with Maine and New Hampshire DOTs.
- **Public Facilitation Expertise:** Our coastal planning projects routinely include public facilitation, and we can utilize a variety of approaches to generate feedback from members of the public. We aim for a thoughtful, inclusive process that often combines in-person meetings and virtual meetings, and surveying tools supported by a variety of technological resources. With a little over a year to complete the work, there will be adequate time to develop a public outreach plan early on with the HBAC committee that takes advantage of user interests at Hampton Beach throughout all four changing seasons, through connections with businesses, residents, and visitors alike. In addition to the traditional public meetings via video conference and on-site, we will provide HBAC with support to reach out to the community through a variety of opportunities such as at planned public gathering events like local elections, community festivals.
- **Comprehensive, In-House Resources:** GEI's staff has the full range of consulting skills, expertise, and resources in-house to undertake a successful project for the HBAC. This allows us to work efficiently and cost effectively, given an ambitious scope of work and limited budget constraints.
- **Leaders in Current Coastal Resiliency Projects:** Our team includes a diverse group of experts both local to the area and greater northeast region, as well as throughout the country and in Canada. What this means is that our project management team and key project leaders, with a sound understanding of New Hampshire and the surround New England coastline, regulatory clime and realities of the local marine construction industry will provide HBAC with a practical working knowledge. At the same time, our leadership team will be able to draw from our larger firm's working knowledge as leaders in the coastal and environmental resiliency field in general, who have test experience in places like New York City, which has a head start on the rest of the Northeast implementing resiliency measures after recovering from past recent historical 500-year storm events like Hurricane Sandy and Irene.

4 Scope of Work

GEI's ability to balance strong technical expertise and an innovative spirit distinguishes us in the industry. We work as a team with our clients to find simpler, more efficient, and more economical ways to get the project done.



DUXBURY BEACH SEAWALLS AND BARRIER BEACH AND WINTHROP BEACH STUDY - DUXBURY, MA

GEI was retained by the town of Duxbury to perform an assessment of their coastal shoreline protective structures, to determine the risk to these current structures of future major coastal storms and to develop recommendations for improvements.

In accordance with the RFP, all outcomes of this scope of work will be in line with RSA 216 – J:3 Powers and duties of the Commission. Outcomes of this scope of work are:

i. to develop an HBAC area-wide Coastal Resilience and Environment Update to the Master Plan that identifies specific areas of concern for life and property and develop strategies for sustainability and economic viability through 2050, including priorities and timeframes.

ii. to identify potential impacts to the valuable coastline, seashore preservation, and the economic value of the Beach area, and to the Town and the State, by maintaining a thriving coastal economy attracting year-round and seasonal residents, businesses, and tourists;

iii. to mitigate to the extent possible, the inevitable impacts over time of sea level rise, flooding, coastal erosion, and like hazards;

iv. to educate and involve residents, businesses, taxpayers, government, and visitors with the technical, science-based, and economic factors and data to support the actions necessary for adopting an area-wide resilience strategy;

v. to identify long-term adaptation strategies and potential remedies and resources, including specific projects; vi. to provide technical and scientific justification for future funding and implementation action.

vi. to foster/promote beneficial interaction and cooperation among the various professional and community entities engaged in research and/or mitigation activity in the Hampton Beach area including identifying areas of duplication of effort and activity and recommendations of their resolution.

vii. to avoid duplicating work performed by others and determine the relevant applicability of other work for inclusion in the HBAC Master Plan 2023 Update.

viii. to the extent possible, evaluate and align the findings presented via the Town of Hampton Master Plan 2023 Update and avoid conflicts in presentation.

General project scope of work components is noted below, with detailed scope of work task items following:

Project Management

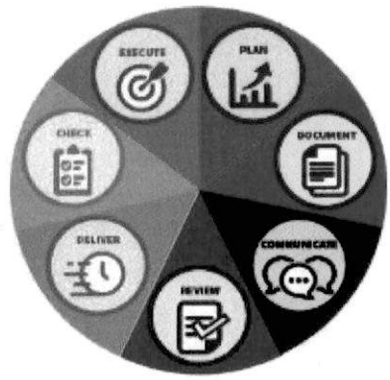
GEI is the sole / lead firm for our proposed scope of work. Travis Pryor, RLA, LEED-AP will serve as our project manager and point of contact throughout all components of the proposed scope of work. We have included regular project check-in with the HBAC and NHCP support team for the duration of the project (assumed twice monthly over a one year period).

GEI has a formalized project delivery model (PDM), which is a framework of proven processes and tools we use to successfully accomplish client work. At the core of the model are three interrelated processes: planning, execution, and managing change. Consultant planning and design projects evolve over time, and our approach explicitly acknowledges that change occurs. We anticipate changes in the planning process, monitor work and look for changes as we execute, and proactively manage changes to keep the project moving toward its objectives. We believe our project delivery

framework and approach to dealing with change can provide the HBAC tremendous value. We also have a companywide Health and Safety plan, regular training programs, standards, and an EMR under 1. GEI considers safety, quality, along with ethical behavior and client success, critical components of our philosophy and mission.

Strategic Decision Making: During the early stages of a project, we will focus on those issues that maximize the potential for meeting the HBAC's project goals while minimizing the risks to project schedule, public outreach, and project deliverables. As the program is implemented, GEI will develop and communicate critical information early so decisions can be determined on the preferred approach for implementation.

Fiscal Management: Financial control will be maintained through our Financial Monitoring System, which utilizes BST support software that provides GEI project managers with the financial status of their projects on a weekly basis. This system enables close tracking of the project budget for monthly reporting and percentage complete details.



Quality Assurance - Quality Control (QA/QC): GEI's Quality Assurance Program has three primary components: Standard Operating Procedures (SOPs), Training, and Product and Process Review. All personnel will have undergone appropriate training and will follow our standard operating procedures when carrying out work for this project. QA/QC will be provided by the Project Manager and the In-House Reviewer, who will review project deliverables (e.g., public outreach materials, memorandums, draft plans) for technical content before they are issued to the client for review. The Project Manager and the In-House Reviewer work with the Project Managers to assure objectivity and quality of work product.

At the beginning of the project, GEI will facility a Kick-Off Meeting with HBAC and it's project partners to:

- Establish clear means of communication
- Confirm project goals and schedule objectives
- Confirm readily available, relevant data and reports for consideration during development of the Coastal Resilience and Environment Update to the HBAC 2023 Master Plan
- Develop a public outreach campaign outline that identifies:
    - What relevant information has been collected by HBAC to-date
    - What public outreach practices have been most effective during prior recent and concurrent planning initiatives in Hampton.
    - Who the key community stakeholder and interest groups are that we need to target for input
    - When are the best times of the year for an on-site meeting and follow-up outreach /presentations to the general public, stakeholders and interest groups.
    - Effective methods of public engagement that can be undertaken during the COVID-19 pandemic with consideration for safety of all, as well as applicable precautions.

HBAC Master Plan Committee

GEI will work with the HBAC special committee and NHCP support staff from the onset of the project and we will continue to apprise HBAC of the status of the project on an anticipated minimum twice-monthly basis for the duration of the work. It is critical that we work in a partnership with the HBAC on all phases of the Coastal Resilience and Environment Update to the HBAC Master Plan, as the HBAC and it's partners share your knowledge of all prior and concurrent related planning efforts, and as GEI engages in additional public outreach and in subsequent design discussions and Master Plan Update recommendations.

Data and Information Compilation

There have been numerous assessments, studies, and planning initiatives in the Town of Hampton and Hampton Beach area that analyze impacts from coastal hazards like flooding and sea level rise. Each report has a specific lens through which the work was

UPGRADES AND REPAIRS TO MUNICIPAL FISH PIER AND MODELING - STONINGTON, ME

In 2019, GEI was retained by the Town of Stonington for a project that included evaluation of the existing facility and development of a program of improvements for the Municipal Fish Pier facility, with preliminary design for the proposed program of improvements.

GEI understands that it is important to the Commission that the chosen consultant will have an inclusive public outreach and participation plan. It is important to GEI that we provide multiple options for important stakeholders.

Our coastal planning projects routinely include public facilitation, and we can utilize a variety of approaches to generate feedback from members of the public. We aim for a thoughtful, inclusive process that often combines in-person meetings and virtual meetings, and surveying tools supported by a variety of technological resources.

performed, and recommendations or insights explored. Given the depth and breadth of work, both on-going and completed, GEI's process for reviewing these reports, their data, and ultimately the recommendations of the Master Plan Update will be clearly synthesized and presented in a matrix of report characteristics and data sources, such as:

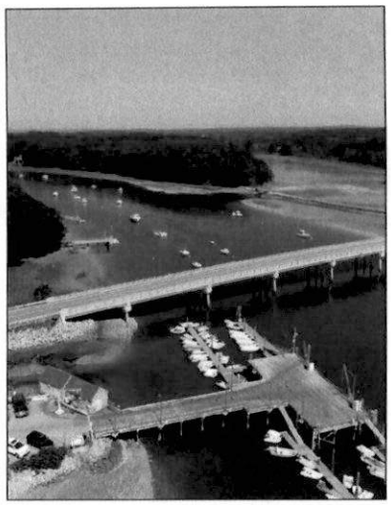
- Year study was completed
- Author of report (i.e., State agency, research group, consultant, etc.)
- Year(s) for which study encompasses (i.e., forward looking scenario years)
- Topic of report (e.g., transportation, economy, property, people, etc.)
- Location (i.e., spatial locations and resolutions)
- Key recommendations
- Data used or developed (i.e., GIS, CAD, tables, calculations, etc.)
- Areas of overlap (i.e., results, recommendations, locations)
- Funding source for the report

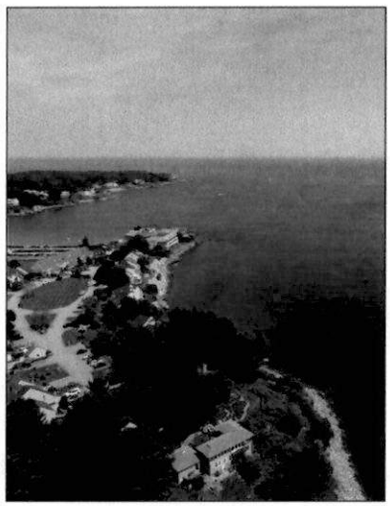
This report matrix will help us to understand:

- The chronology of study activity and which results, or recommendations may be more current or appropriate. This would also enable us to ensure recommendations are consistent with the 2050-time horizon for HBAC's vision of the future viability.
- The resolution of data used in the study. Some state-based datasets may be more coarse than more localized studies that focus on sites or sectors of Hampton. This would help us to understand data-related assumptions and potential impacts they have/had on recommendations.
- The various economic, environmental, and social sectors of HBAC areas which would aid in organizing recommendations for thoughtfully.
- The different data types used during or created because of the reports. We envision compiling many of these spatial data into one comprehensive web map for future public outreach and communication.

Public Outreach and Participation

GEI's programs for public outreach and community engagement are designed for cooperative and proactive communication. Services we provide may include attending and facilitating meetings to establish a dialogue between project managers and interested citizens, producing written and graphic materials, developing conflict resolution strategies, and helping project personnel better communicate environmental and risk issues to the media and the public. GEI will provide public outreach materials (meeting notices, surveys, etc.) to the HBAC for distribution and/or gathering of public input. GEI will also play a lead role in facilitating public input and stakeholder meetings. The majority of these meetings will be presented in videoconference, allowing for greater flexibility to the public to attend / review on their schedule, as the meetings can be recorded by HBAC/NHCP/GEI as necessary and made available for public consumption during a longer time period. An on-site meeting will be held for GEI to observe the site conditions and to solicit feedback from a variety of stakeholders as readily available early in the planning process.





YORK HARBOR STUDY- YORK, ME

GEI was retained by the Town of York to help the Town update their Harbor Plan. GEI provided recommendations which included: improved mooring field layouts, improving clear navigation channels, expanded dinghy facilities or consideration of shared dinghy program, creation of new public access to better separate uses, and improved paddlecraft management.

For those that cannot attend or wish to discuss their input outside of a public meeting, GEI will follow-up with one-on-one teleconferences, including participation by a designated HBAC member. This process will allow for general, peer group discussions, while also giving flexibility to reach out to key community stakeholders and interest groups that may not be readily available to attend an on-site meeting. Our experience suggests that some stakeholders may be more comfortable sharing their input in one-on-one situations versus in a public format, and we feel that this additional outreach approach is critical to make sure that all community perspectives are understood.

Coastal Resilience and Environment Update to the HBAC Master Plan

In accordance with the RFP, GEI will work with the HBAC to develop the Coastal Resilience and Environment Update to the HBAC MP Update. The scope of work tasks are noted as follows, with additional detailed recommendations by GEI included:

Activity 1 - GEI will review existing plans, surveys, and other materials and establish relationships with ongoing efforts and entities to ensure coordination and minimize overlap/duplication of work. For each resource reviewed, GEI will summarize the following information:

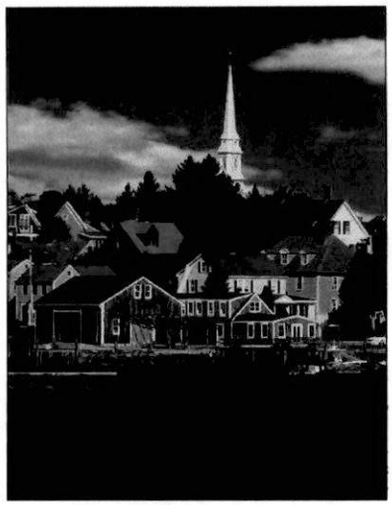
1. Topic of study – link to full report
2. Who authorized the study? (State, municipal, agency, NGO group)?
3. Who conducted or is conducting the study/lead contact?
4. Funding source, amount
5. Date and time frame of the study/updates
6. Purpose/goal(s) of study
7. First 3 recommendations (if study complete)
8. Study vetting & validation
9. Apparent or potential areas of duplicative efforts
10. Suggestions for minimizing duplications and addressing any conflicting findings and recommendations

A draft of the Report Matrix synthesizing our analysis of readily available data and identifying preliminary resiliency recommendations will be provided to HBAC for review and comment during a video conference meeting with GEI.

After compilation of work, GEI will attend a full day site visit to photo document the site and do limited field measurements. This site visit will be combined with Activity 2 public outreach regarding on-site discussions with the public, key stakeholders, and interest groups as available.

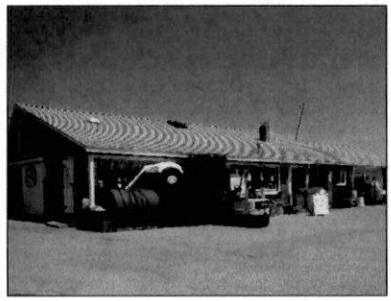
Activity 2 - GEI, with assistance from the HBAC Committee and guidance from the NHCP Support Team, will complete outreach with key contacts and stakeholders. GEI, with assistance from the HBAC Committee, will complete the following outreach activities:

1. Plan/coordinate with HBAC 2021 Symposium Advisory Committee & Commissioners to convene a virtual presentation informing the HBAC community of options to address resiliency developed in other venues.
    - GEI will provide HBAC with public outreach materials for distribution prior to the meeting.



PORTSMOUTH SEA LEVEL RISE PREPARATION- PORTSMOUTH, NH

GEI was retained by the City of Portsmouth to provide recommendations to address the rising sea level in the City. The project focused on four strategy areas to evaluate the impact of flooding and sea-level rise on historic assets in a variety of land uses and settings.



- GEI will provide HBAC with a summary of our meeting notes.

2. Convene 2 video conference meetings hosted by HBAC/NHCP/GEI as necessary, with HBAC Symposium advisors, to brainstorm best practices observed from the virtual meeting and the potential resilience actions resulting from the symposium that may be applicable for HBAC Master Plan.
3. Coordinate one or more meetings and/or survey opportunities with several key stakeholder groups such as, but not limited to beach businesses, residents, town and village district officials to obtain input and feedback for the HBAC Master Plan 2023 Update.
    - This effort will be initiated with our full day site visit with the assistance of HBAC to coordinate scheduling of meetings with the public and individual stakeholders / interest groups for estimated half hour minimum to hour maximum meeting lengths as time and interest allows. Follow-up interviews will be performed via teleconference with those stakeholders and interest groups who cannot attend the site visit in person and will be supported by the attendance of an HBAC member.
4. Attend one video conference meeting hosted by HBAC/NHCP/GEI as necessary to enter a conversation with the full Board of HBAC Commissioners as to GEI's initial recommendations in outline for Coastal Resilience and Environment recommendations for the Master Plan Update.
5. Plan and execute 1-3 design brainstorming activities focused on specific HBAC sites/areas. This meeting will be held on-site.
    - Following this meeting, additional follow-up meetings with key stakeholders and interest groups who we have not reached to-date may be scheduled as needed.
6. Present the draft HBAC Master Plan 2023 Update content to HBAC Commissioners, Town of Hampton Boards, Committees, Commissions. Hampton Beach Village District Precinct, relevant state agencies, and other government and community stakeholders for feedback via videoconference meeting.

Activity 3 - GEI will draft and submit to the HBAC for approval the HBAC Master Plan 2023 Update. A final draft will:

1. Be based on input from the HBAC Committee, NHCP support staff, stakeholder input, and the Hampton Beach Area Coastal Flood Risk Vulnerability Assessment and Guidance.
2. Explore areas of concern with input from professionals with a wide background of expertise who will develop renderings of potential concept level designs including examples of specific structures, overview maps with approximate locations of planning improvements for potential implementation of resilience mitigation, and typical sections of each recommended improvement.
3. Incorporate HBAC Committee, Commissioner stakeholder feedback on draft content inclusive of renderings & recommendations resulting from the above.
4. GEI will submit to HBAC Commissioners for approval.
5. GEI will integrate comments from a public comment period on the HBAC Master Plan 2023 Update Draft.
6. GEI will address comments and feedback from one or more public hearings focused on the HBAC Master Plan 2023 Update Draft.

Project Deliverables

GEI deliverables will provide the following deliverables by Activity:

- Activity 1 – Data and Information Compilation
- Activity 2 – Public Outreach
- Activity 3 – Coastal Resilience and Environment Update to the 2023 HBAC Master Plan
- Produce and publish a written Master Plan 2023 Update encompassing consultant findings, data, scientific and technical recommendations, and recommendations for going forward based on completion of the Scope of Work.
- One (1) reproducible hard copy and (1) electronic copy each in Adobe PDF and MS Word format of interim draft(s) and final HBAC Master Plan 2023 Update content, including narrative and graphics.
- Drawings, maps, and supporting map data prepared by the Consultant for the HBAC Master Plan 2023 Update, provided in GIS format compatible with ArcMap 10.8 and referenced to the coordinate system in NH State Plan, NAD83 with units in feet.
- Spreadsheets and charts in MS Excel format including support data for all tables and graphs included in the HBAC Master Plan 2023 Update.
- Copies of all PPT slide presentation and meeting materials, including notes from all stakeholder outreach.
- Two (2) interim project progress reports covering the following reporting periods:
    - Contract start date – June 30, 2022
    - July 1, 2022 – December 31, 2022
- One (1) final project progress report summarizing major project outcomes completed during the project award period from contract approval through June 30, 2023.

Upon completion of this Master Plan 2023 Update all information, data, documents, photos, computer records, and other materials of any kind acquired or developed by GEI pursuant to this project shall be the property of the HBAC, and can be made publicly available as required by the laws of the State of New Hampshire.

Responsibilities of the HBAC with Support from its Commissioners and the Town of Hampton

The HBAC and the Town of Hampton will support GEI's project efforts by:

- Providing all readily available and relevant data and reports associated with the HBAC Master Plan.
- Provision of all online and on-site meeting facilities for public outreach
- Dissemination of all public outreach materials provided to HBAC from GEI. This may include website postings, print publications, and/or social media, and in compliance with the laws of the State of New Hampshire.

5 Project Schedule

GEI understands that time is money, and we strive not only to complete projects on time, but to expedite the project schedule wherever appropriate. This proactive thinking requires us to maintain close communication with our clients, as such, we can make quick modifications to the work schedule and deadlines as changes in the project occur. Depending on the project needs, we will provide periodic project status deliverables that will apprise the client and other stakeholders of our activities and findings to date. We believe that attention to communications and coordination is the key to keeping the project running smoothly on time, and on budget.

In accordance with the RFP, we understand the project schedule goals as follows:

The selected Lead Consultant shall begin work upon Governor and Executive Council contract approval and complete all tasks by **June 30, 2023**. GEI's proposed Schedule per task is included under the appropriate RFP schedule timelines:

TABLE 2: PROJECT SCHEDULE/TIMELINE

KEY DATE(S)	PROJECT MILESTONE
Winter 2022	
February 1-11, 2022	HBAC Committee review
February 15, 2022	Finalists identified
February 16-23, 2022	Finalist interviews
February 25, 2022	Consultant selected
February 28 – March 7, 2022	Contract negotiation
April 6 - 2022	Target Governor and Council approval
Spring / Summer 2022 - Kickoff Meeting - Within 1 Month of Contract Award	
Summer 2022	Activity 1 - Data and Information Compilation
June 30, 2022	Interim progress report due
Summer 2022 – Winter 2022	Activity 2 - Public Outreach
December 31, 2022	Interim progress report due
Winter - Summer 2023	Activity 3 - Coastal Resilience and Environment Update to the 2023 HBAC Master Plan
June 1, 2023	HBAC Master Plan 2023 Update submitted for review and edits by Commissioners
June 15, 2023	Revisions incorporated for final acceptance and adoption by the Commissioners
June 22, 2023	Commissioners vote to accept final progress report

6 Project Budget

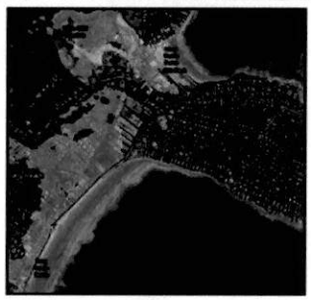
This project is funded by the Hampton Beach Area Commission, State of New Hampshire and NOAA under the Coastal Zone Management Act in conjunction with the NHCP. The maximum budget available for this project is $38,000, inclusive of labor, subcontract, and all project expenses related to the scope of work. GEI proposes to complete the proposed scope of work within this budge for a total lump sum fee of **$38,000**. Project management and coordination with HBAC consultant scope of work will be ongoing throughout the project duration and budgets for these efforts are included under the three primary scope of work activities. Our proposed budget itemized by primary work task Activity is as follows:

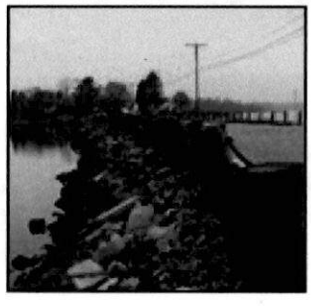
TABLE 3: PROJECT BUDGET

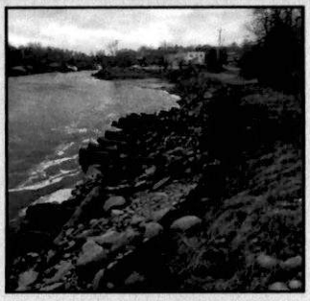
ACTIVITY/MILESTONE	NO. OF MEETINGS
Activity 1 – Data and Information Compilation	$11,000
Activity 2 – Public Outreach	$9,000
Activity 3 – Coastal Resilience and Environment Update to the 2023 HBAC Master Plan	$18,000
Total	$38,000

7 Comparable Projects & References

GEI's team brings great depth of resources, experience, and expertise to this project. We believe that the following projects demonstrate our ability to perform the work necessary for the Hampton Beach Area Commission For full and additional project descriptions, please refer to **Appendix A.**

PROJECT	DESCRIPTION
 **Portsmouth Sea Level Rise Preparation** City of Portsmouth Portsmouth, NH	The City of Portsmouth, population 23,500, is a thriving coastal community with a robust tourist economy based on its rich architectural history with the State's only deep water port it has a unique location along a scenic tidal river mouth. Also situated along the waterfront is the historic Portsmouth Naval Shipyard. GEI was retained by the City of Portsmouth to provide recommendations to address the rising sea level in the City. The project focused on four strategy areas to evaluate the impact of flooding and sea-level rise on historic assets in a variety of land uses and settings. These areas encompassed Strawbery Banke, a national historic monument representing early colonial settlement in northern New England; an older section of the South End neighborhood including private, historically significant homes; a first-period cemetery; and the culturally significant Prescott Park. In the downtown, the study evaluated impacts of sea-level rise for structures on the working waterfront, where both commercial and industrial uses continue to operate and depend on land-side support services.
 **Vulnerability Assessments Southern Maine Planning & Development Commission** Various Locations, ME	GEI completed a series of local and regional vulnerability assessments for communities in southern Maine. The goal was to assist Southern Maine Planning & Development Commission (SMPDC) with their efforts to enhance resiliency in their region. GEI developed inundation boundaries representing areas at risk from storm surge from a 1% chance storm and two different sea level rise scenarios (Phase 1 of project). Phase 2 of the project involved identifying parcels impacted by the inundation scenarios and calculating the potential valuation (building and land) at risk within each town. GEI also used census data to estimate potential populations and demographics at risk. Infrastructure data provided by the towns were assessed based on infrastructure type and the amount to which they were impacted by the inundation scenarios.
 **York Harbor Study** Town of York York, ME	The Town of York retained GEI Consultants in 2019 to undertake a capacity study of the York River and Harbor. The primary goals were to inventory and assess existing uses on the River and evaluate how those uses compare to capacity in order to identify areas of concern, needed infrastructure improvements, and opportunities for improved management. A selection of study recommendations includes: improved mooring field layouts, improving clear navigation channels, expanded dinghy facilities or consideration of shared dinghy program, creation of new public access to better separate uses, improved paddlecraft management, and others. Revisions to the Town's Harbor Ordinance were recommended to improve regulation of dock applications, improve protection for sensitive resources, and provide a more consistent regulatory framework.

PROJECT	DESCRIPTION
 **Stonington Resilience Study** Town of Stonington Stonington, ME	In 2019, GEI was retained by the Town of Stonington for a project that included evaluation of the existing facility and development of a program of improvements for the Municipal Fish Pier facility, with preliminary design for the proposed program of improvements. GEI developed several concepts for facility improvements to address needs for facility expansion, increased skiff capacity, risk of pier overtopping due to storm surge and sea level rise, dredging to improve depth and navigation around the pier, and ADA compliance. Preliminary design plans were prepared for the selected program of repairs. Recommendations for project phasing and funding were provided in order to support the Town's pursuit of State and Federal grants for the project.
 **Maine Living Shoreline Pilot Project** Maine Department of Marine Resources Brunswick and Yarmouth, ME	GEI is currently working as the Engineering Consultant for the Living Shorelines Pilot Project being undertaken collaboratively by the State of Maine Department of Marine Resources, Maine Geological Survey, Casco Bay Estuary Partnership, and other partner agencies as part of a regional Living Shoreline initiative being funded by NOAA. GEI has worked closely with the project partners to develop Living Shoreline treatment designs that are aimed at identifying low-cost solutions to shoreline erosion that beneficially reuse onsite and/or natural materials such as downed logs, bagged oyster shells, and native plantings, in combination with biodegradable (coconut fiber) bagging material or synthetic baskets.
 **Vulnerability Assessment and Transportation Asset Management in Coastal Maine** MaineDOT/NHDOT Various Locations, ME and NH	When Maine's Department of Transportation needed a method to prioritize its road, bridge and culvert assets along the State's coastline, it turned to GEI to assist in vulnerability assessments and create new internal processes to continually address the twin threats of sea level rise and storm surge. GEI developed a a GIS-based means for this incorporation that is sensitive to existing Transportation agency structures and procedures; create new communication avenues among DOT (MaineDOT and NHDOT) programs and affected communities. GEI assisted MaineDOT with incorporation of this evaluation process into ongoing asset management. The goal of this process will be to create an annual evaluation of an expanded set of coastal and inland roads, bridges, culverts and multimodal assets to assess their vulnerability to extreme weather events and rising sea levels.

PROJECT	DESCRIPTION
 **Machias Waterfront Resilience & Renewal Study** Washington County Council of Governments Machias, ME	The Town of Machias' downtown waterfront area faces significant risk of flooding due to coastal storm surge and sea level rise. The areas at greatest risk of flooding include numerous businesses, residences, the Town Office, and the Wastewater Treatment Plant, as well as important transportation infrastructure. The Town received a Coastal Communities grant from the Maine Coastal Program to complete a feasibility study, economic analysis, and conceptual plans to improve flood protection and restore the historic wharf and riverwalk.
 **Downeast Institue Waterfront Improvements** Washington County Council of Governments Great Wass Island, Beals, ME	GEI provided site analysis, concept alternative development, and preliminary design for a program of site improvements for Downeast Maine's premier marine research facility. GEI completed a drone survey of the facility to capture detailed topographic information for the upland and intertidal areas. Aerial photography and video were captured to document conditions at the site. Site specific wind/wave analysis was performed to establish site exposure conditions. The existing 30-foot by 100-foot pier is highly exposed which has resulted in poor berthing conditions and damage to the floating docks. Concept designs were prepared for wave attenuation systems to provide protection for the pier and floats. Alternatives considered included floating concrete wave attenuators, and pile supported fixed wave screens in a variety of layouts. Alternative floating dock layouts were developed to provide improved berthing conditions and increased capacity. An alternatives analysis was prepared to compare the options on technical criteria and relative cost.

References

Listed below are references for whom we provided relevant services. Detailed project descriptions for these projects are located in **Appendix A.**

TABLE 4 – REQUIRED CLIENT REFERENCES

CLIENT / PROJECT	CONTACT INFORMATION
Portsmouth Sea Level Rise Preparation City of Portsmouth, NH Portsmouth, NH	Peter Britz, Environmental Planner/Sustainability Coordinator (603) 610-7215 plbritz@cityofportsmouth.com
York Harbor Study Town of York York, ME	Drew Donovan, Harbormaster (207) 363-0433 Harbormaster@yorkmaine.org
Maine Living Shorelines Project Maine Department of Marine Resources Brunswick and Yarmouth, ME	Peter Slovinsky, Marine Geologist Maine Geological Survey (207) 287-2801 peter.a.slovinsky@maine.gov
Vulnerability Assessments, Various Locations, Maine Southern Maine Planning & Development Commission Various Locations, ME	Abbie Sherwin, Senior Planner and Coastal Resilience Coordinator (207) 571-7065 asherwin@smpdc.com

A Project Descriptions

GEI Consultants

PROJECT

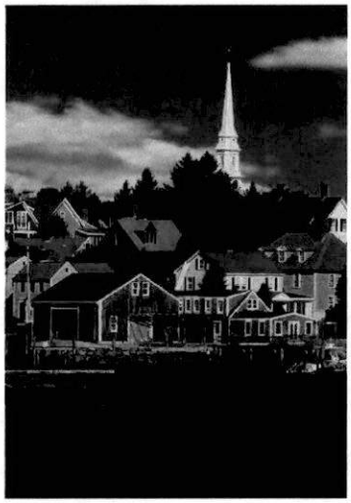
Preparing Portsmouth for Sea Level Rise

Location: Portsmouth, NH
Client: City of Portsmouth, NH

Service Dates

Start: 2017

Completion: 2018



GEI was retained by the City of Portsmouth to provide recommendations to address the rising sea level in the City. The project focused on four strategy areas to evaluate the impact of flooding and sea-level rise on historic assets in a variety of land uses and settings.

The City of Portsmouth, population 23,500, is a thriving coastal community with a robust tourist economy based on its rich architectural history with the State's only deep water port it has a unique location along a scenic tidal river mouth. Also situated along the waterfront is the historic Portsmouth Naval Shipyard. GEI was retained by the City of Portsmouth to provide recommendations to address the rising sea level in the City. The project focused on four strategy areas to evaluate the impact of flooding and sea-level rise on historic assets in a variety of land uses and settings. These areas encompassed Strawbery Banke, a national historic monument representing early colonial settlement in northern New England; an older section of the South End neighborhood including private, historically significant homes; a first-period cemetery; and the culturally significant Prescott Park. In the downtown, the study evaluated impacts of sea-level rise for structures on the working waterfront, where both commercial and industrial uses continue to operate and depend on land-side support services.

PROJECT

Vulnerability Assessments - Southern Maine

Location: Towns of Kittery, York, Ogunquit, Wells, Kennebunk, and Kennebunkport, ME
Client: Southern Maine Planning & Development Commission

Service Dates

Start: December 2020

Completion: Ongoing

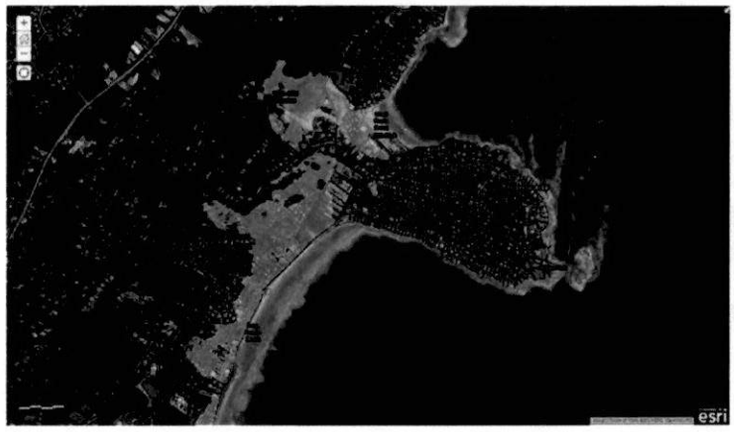
Fees

- GEI Fee: $65,500 (Phase 1 and 2)

GEI completed a series of local and regional vulnerability assessments for communities in southern Maine.

GEI completed a series of local and regional vulnerability assessments for communities in southern Maine. The goal was to assist Southern Maine Planning & Development Commission (SMPDC) with their efforts to enhance resiliency in their region.GEI developed inundation boundaries representing areas at risk from storm surge from a 1% chance storm and two different sea level rise scenarios (Phase 1 of project). Phase 2 of the project involved identifying parcels impacted by the inundation scenarios and calculating the potential valuation (building and land) at risk within each town. GEI also used census data to estimate potential populations and demographics at risk. Infrastructure data provided by the towns were assessed based on infrastructure type and the amount to which they were impacted by the inundation scenarios.

GEI worked with SMPDC to develop a web map for sharing results interactively with each community. The web map enables users to download relevant data for continued use and support of resilient initiatives.



PROJECT

York Harbor Study

Location: York River, Maine
Client: Town of York, ME

The York River is a mixed-use waterway that hosts many marine uses including: over 300 moorings, 83 docks, 2 federal anchorages, 7 working waterfront sites, 2 commercial marinas, a yacht club, and recreational fishing, paddlecraft, and swimming. Rapidly increasing demands for use of the River and development along the shore have increased pressure on limited resources and traditional uses.

Service Dates

Start: July 2019

Completion: December 2019

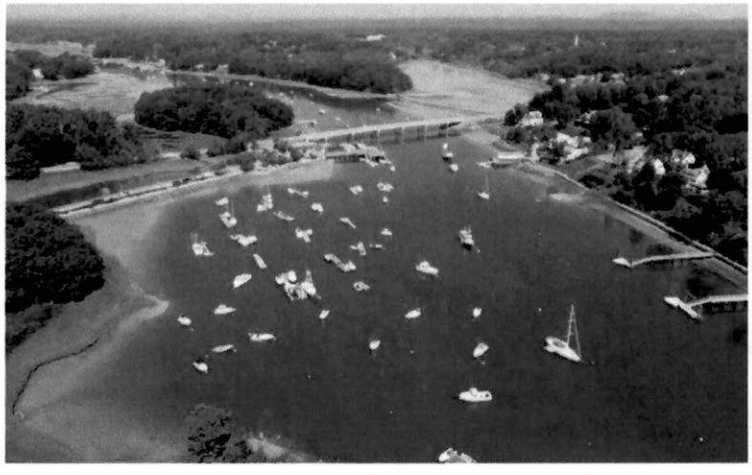
Key Elements

- Drone Survey
- GIS Mapping
- Harbor Inventory
- Boat Demographic Study
- Capacity Assessment
- Public and Stakeholder Input Gathering
- Management Recommendations

The Town of York retained GEI Consultants in 2019 to undertake a capacity study of the York River and Harbor. The primary goals were to inventory and assess existing uses on the River and evaluate how those uses compare to capacity in order to identify areas of concern, needed infrastructure improvements, and opportunities for improved management.

GEI staff observed and documented uses and conditions by boat, from shore, and by drone. A Harbor Inventory was prepared that documented marine uses, infrastructure, environmental and historic resources, land use, and regulatory constraints. GIS maps were prepared for presentation of inventory data. River capacity was then evaluated on a range of spatial, facility, ecological, and social factors. Recommendations were developed to address the near- and long- term issues and goals for improved harbor management.

A selection of study recommendations includes: improved mooring field layouts, improving clear navigation channels, expanded dinghy facilities or consideration of shared dinghy program, creation of new public access to better separate uses, improved paddlecraft management, and others. Revisions to the Town's Harbor Ordinance were recommended to improve regulation of dock applications, improve protection for sensitive resources, and provide a more consistent regulatory framework.



PROJECT

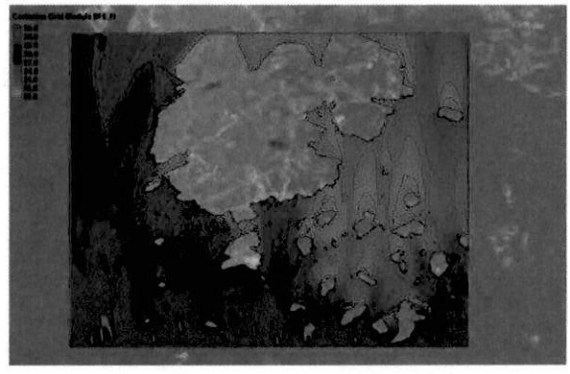
Upgrades and Repairs to Municipal Fish Pier

Location: Stonington, Maine
Client: Town of Stonington

In 2019, GEI was retained by the Town of Stonington for a project that included evaluation of the existing facility and development of a program of improvements for the Municipal Fish Pier facility, with preliminary design for the proposed program of improvements.

The flood vulnerability due to rising seas and coastal storms was evaluated by incorporating sea level rise and storm surge into a wave transformation model to get nearshore critical wave heights during 100-yr storms. Three scenarios of sea level rise were evaluated over three different time horizons to understand the changing risk over time. Recommendations to adapt the Fish Pier to minimize flood risk as a result of the vulnerability study were incorporate into the Fish Pier design. At the Fish Pier, initial site investigations included upland survey, hydrographic survey, dive inspection, and topside inspection of the existing pier and adjacent harbor.

GEI developed several concepts for facility improvements to address needs for facility expansion, increased skiff capacity, risk of pier overtopping due to storm surge and sea level rise, dredging to improve depth and navigation around the pier, and ADA compliance. Preliminary design plans were prepared for the selected program of repairs. Recommendations for project phasing and funding were provided in order to support the Town's pursuit of State and Federal grants for the project.



Service Dates

2019

Fees

- Contract Amount: $60,000

Client Reference

KATHLEEN BILLINGS,
Town Manager

207-367-2351

townmanager@stoningtonmaine.org

Key Elements

- Dive Inspection
- Topside Inspection
- Hydrographic Survey
- Preparation of Design Concepts
- Sea Level Rise and Resilience
- Dredging
- Floating Dock Expansion
- ADA Compliance
- Granite Pier Design

PROJECT

Living Shorelines Pilot Project

Brunswick and Yarmouth, Maine
Maine Department of Marine Resources

GEI is currently working as the Engineering Consultant for the Living Shorelines Pilot Project being undertaken collaboratively by the State of Maine Department of Marine Resources, Maine Geological Survey, Casco Bay Estuary Partnership, and other partner agencies as part of a regional Living Shoreline initiative being funded by NOAA.

The project involves design, regulatory assistance, construction oversight, and long-term monitoring of Living Shoreline installations at three sites on Casco Bay:

- An eroding marsh located on property owned by the Maine DIF&W in the Town of Brunswick. The property is on upper Maquoit Bay adjacent to the Wharton Point Boat Launch.
- An eroding marsh located on the Maquoit Bay Conservation Lands property that is jointly owned by the Town of Brunswick and Brunswick-Topsham Land Trust. The property is on western Maquoit Bay.
- A highly unstable Coastal Bluff located on Lane's Island, an undeveloped, conserved island in the Town of Yarmouth near the mouth of the Royal River that is owned by Maine Coast Heritage Trust.

GEI has worked closely with the project partners to develop Living Shoreline treatment designs that are aimed at identifying low-cost solutions to shoreline erosion that beneficially reuse onsite and/or natural materials such as downed logs, bagged oyster shells, and native plantings, in combination with biodegradable (coconut fiber) bagging material or synthetic baskets.

Construction of the two Brunswick sites was completed in Spring 2020 and initial monitoring is underway. Construction of the third site is planned for Summer/Fall 2020. Ongoing monitoring will be undertaken for a minimum of three years following the installations to assess performance of the treatments under routine tidal exposure, storm conditions, and winter icing.

Service Dates

Design, Permitting, and Construction

2019-2020

Ongoing Monitoring Program

2020-2022

Fees

- GEI Fee: $83,000

Client Reference

KATHLEEN LEYDEN
Director, Maine Coastal Program

207-287-3144

jkethleen.leyden@maine.gov

Maine Department of Marine Resources

State House Station 21
Augusta, ME 04333

Key Elements

- Site Assessment
- Living Shoreline Design
- Regulatory Assistance
- Construction Oversight

Service Dates

Completion: 2017

Fees

- Final Fee: $109,000

PROJECT

Vulnerability Assessment and Transportation Asset Management

Location: Various, Maine, Various NH
Client: Maine Department of Transportation/New Hampshire Department of Transportation

When Maine's Department of Transportation needed a method to prioritize its road, bridge and culvert assets along the State's coastline, it turned to GEI to assist in vulnerability assessments and create new internal processes to continually address the twin threats of sea level rise and storm surge.

GEI's tasks for this project included:

- Evaluation of all coastal bridges, roads, and culverts vulnerable to sea level rise and storm surge. The GEI team identified just a few assets in particular need of design attention to withstand storm surge and sea level rise.
- Ranking and prioritization of these assets according to additional categories of risk (technical, environmental, bureaucratic, and economic).
- Assisting MaineDOT and NHDOT with incorporation of this evaluation process into ongoing asset management. The goal of this process will be to create an annual evaluation of an expanded set of coastal and inland roads, bridges, culverts and multimodal assets to assess their vulnerability to extreme weather events and rising sea levels.
- Development of a GIS-based means for this incorporation that is sensitive to existing Transportation agency structures and procedures; create new communication avenues among DOT programs and affected communities.
- Streamlining these efforts so that structure-specific resilient design approaches shall be cost-efficient for implementation across the state.

SUCCESSFUL OUTCOMES

With these results, MaineDOT and NHDOT:

1. Overlapped these results with other agency priorities that have already been identified for these assets (e.g., economically important corridors, culverts critical for fish passage).
2. Is making significant organizational shifts toward resiliency-based programming, including review of how capital investment planning decisions can evolve to incorporate these types of resiliency-based results.

PROJECT

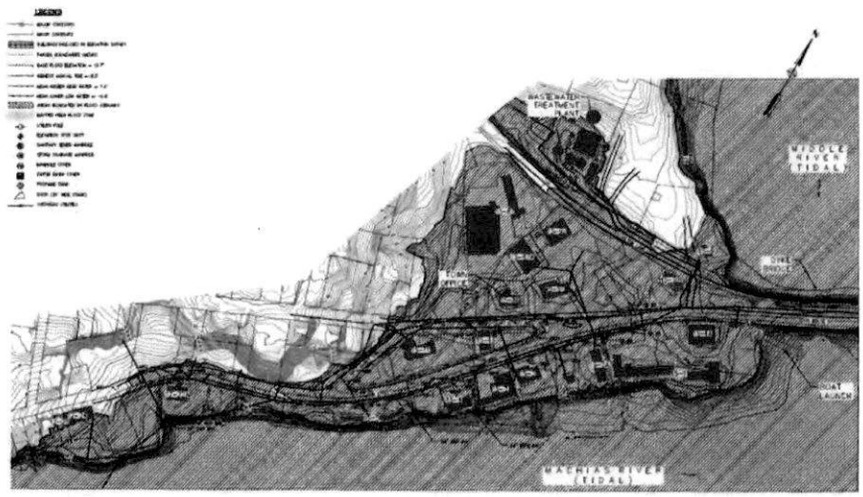
Machias Waterfront Resilience & Renewal Study

Location: Machias, Maine
Client: Washington County Council of Governments

The Town of Machias' downtown waterfront area faces significant risk of flooding due to coastal storm surge and sea level rise. The areas at greatest risk of flooding include numerous businesses, residences, the Town Office, and the Wastewater Treatment Plant, as well as important transportation infrastructure.

The Town received a Coastal Communities grant from the Maine Coastal Program to complete a feasibility study, economic analysis, and conceptual plans to improve flood protection and restore the historic wharf and riverwalk. GEI's Daniel Bannon, P.E., CFM acted as Project Manager for the Prime Consultant prior to joining GEI in 2018. After moving to GEI in 2018, he continued to support the project through GEI as a subconsultant.

A preliminary engineering study was undertaken to design flood protection measures for the Downtown area. A detailed survey was completed for the entire project area using a combination of drone-captured photogrammetry and conventional survey techniques. Inundation scenarios were developed that considered the probability of occurrence of a range of storm events and the associated damages. Preliminary designs were developed for seawall and revetment solutions along the 3,500 linear feet of downtown shoreline that addressed needs for flood protection, drainage, access, and integration with adjacent structures. A boardwalk was incorporated into the designs to provide public access to the shore. Preliminary cost estimates were prepared for alternative design solutions to support the application for grant funding for future project phases.



Service Dates

2018 - 2019

Key Elements

- Drone Survey
- Flood Risk Assessment
- Shoreline Stabilization
- Floodwalls
- Boardwalks
- Pedestrian Access
- Boat Ramp

PROJECT

Downeast Institute Waterfront Improvements

Great Wass Island, Beals, Maine
Washington County Council of Governments

GEI provided site analysis, concept alternative development, and preliminary design for a program of site improvements for Downeast Maine's premier marine research facility.

GEI completed a drone survey of the facility to capture detailed topographic information for the upland and intertidal areas. Aerial photography and video were captured to document conditions at the site. Site specific wind/wave analysis was performed to establish site exposure conditions.

The existing 30-foot by 100-foot pier is highly exposed which has resulted in poor berthing conditions and damage to the floating docks. Concept designs were prepared for wave attenuation systems to provide protection for the pier and floats. Alternatives considered included floating concrete wave attenuators, and pile supported fixed wave screens in a variety of layouts. Alternative floating dock layouts were developed to provide improved berthing conditions and increased capacity. An alternatives analysis was prepared to compare the options on technical criteria and relative cost.

The Downeast Institute (DEI) waterfront also lacks boat launching capabilities. The need to use an offsite launch creates operational inefficiencies. GEI provided preliminary design for a new boat launch at the facility that would provide access through the majority of the tide cycle, while minimizing footprint of impact and required volume of earthmoving.

The completed project allowed DEI to seek grant funding for future implementation that is planned in the coming years.

Service Dates

Project Start: 2019

Project Completion: 2020

Fees

- GEI Fee: $18,000

Client Reference

DIANE TILTON
Executive Director

Downeast Institute

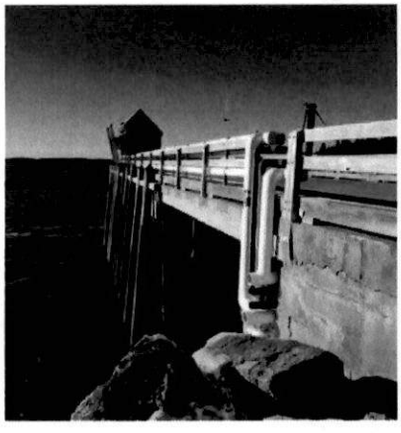
207-497-5769 ext. 9

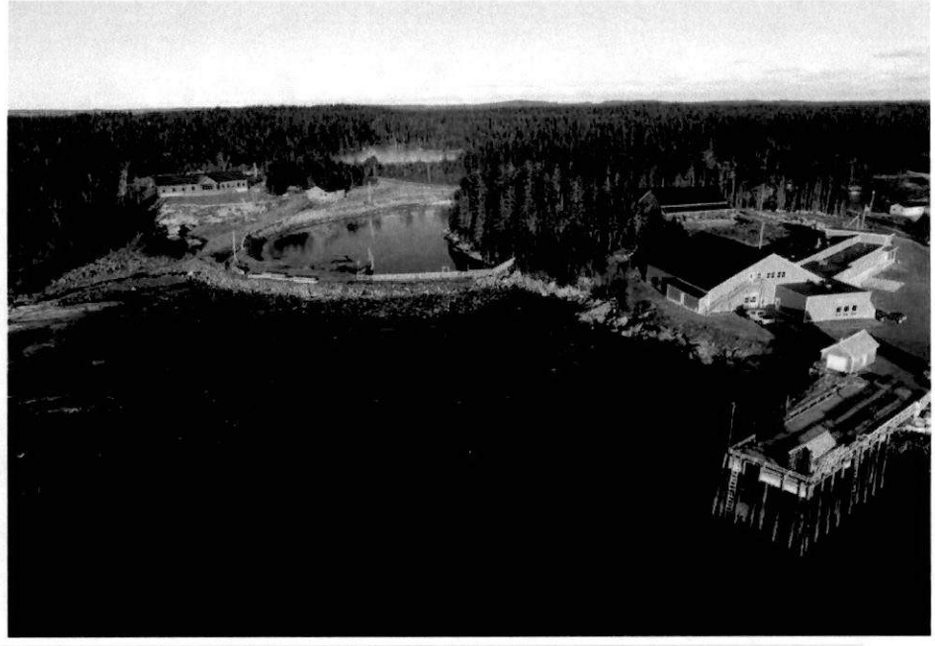
dtilton@downeastinstitute.org

39 Wildflower Lane
PO Box 83
Beals, ME 04611-0083

Key Elements

- Site Assessment
- Drone Survey
- Wind/Wave Analysis
- Wave Attenuation Design
- Boat Ramp Design
- Floating Dock Design

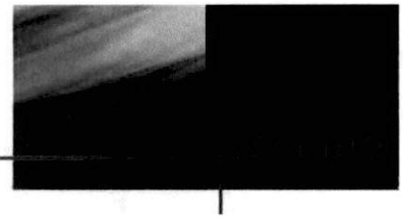




B Resumes

GEI Consultants

Travis J. Pryor, RLA / LEED-AP
Senior Project Manager



Travis Pryor is a Senior Project Manager and Licensed Landscape Architect in GEI's Portland, Maine office. Travis utilizes his training in landscape architecture, community planning and environmental engineering towards the development of sustainable, resilient and context sensitive project outcomes for of a wide variety of infrastructure and development projects. He is also an accredited professional under the U.S. Green Building Council's Leadership in Energy and Environmental Design (LEED).

Mr. Pryor has over twenty years of design and project management experience in land use planning, waterfront development, community revitalization, parks and recreation, bicycle and pedestrian systems, and infrastructure / utility projects for public, private and institutional clients throughout the Northeast and Florida. He has been involved in all phases of project development, from master planning through public participation, design development, permitting, funding assistance and construction.

PROJECT EXPERIENCE

Marine Patrol Headquarters Dock Replacement, Wright-Pierce, Gilford, NH

Geospatial Vulnerability Assessment of Coastal Hazards, Southern Maine Planning and Development Commission, Ten Municipal Project Region, Southern Maine

Bowdoinham Waterfront Plan, Richardson & Associates, Bowdoinham, ME

Town Stone Wharf Assessment, Wright-Pierce, Chebeague Island, ME

Winslow Memorial Park Beach Access, Town of Freeport, Freeport, ME

Multiple Municipal Coastal Infrastructure Projects, Town of Harpswell, Harpswell, ME.

Cape Porpoise Pier Rehabilitation, Town of Kennebunkport, Kennebunkport, ME

Pre-Disaster Mitigation Seawall / Trail, Ransom Consulting, Machias, ME

Breakwater & Main Street Corridor Resiliency Study, Monhegan Plantation, Monhegan Plt, ME

Public Wharf Condition & Resiliency Assessment, Monhegan Plantation, Monhegan Plantation, ME

Fort Popham Pier SHIP Grant Project, Town of Phippsburg, Phippsburg, ME

Head of Tide Park Upstream Boat Launch, Town of Topsham, Topsham, ME

EDUCATION
B.L.A, Landscape Architecture
Virginia Polytechnic Institute & State University

EXPERIENCE IN THE INDUSTRY
20 of years

EXPERIENCE WITH GEI
1st year

REGISTRATIONS AND LICENSES
Licensed Landscape Architect
ME No. 3290
NH No. 103
RI No. 471
USGBC LEED Accredited Professional
MaineDOT Local Project Administrator

TRAINING AND CERTIFICATIONS
10-Hour OSHA
Exterior Computer Lighting Calculations
MaineDOT Construction Documentation

PROFESSIONAL AFFILIATIONS
American Society of Landscape Architects
Boston Society of Landscape Architects
Maine Society of Landscape Architects
Maine Association of Planners
GrowSmart Maine
Freeport Conservation Trust
(Board of Directors)
Maine Island Trail Association

AWARDS

Maine Development Foundation's Maine Downtown Center Program for Outstanding Public / Private Partnership Project – Sutherland Overlook Park, Eastport, ME

GEI Consultants

Topsham Water Access Facilities Feasibility Study, Town of Topsham, Topsham ME

Norcross Point & Public Beach Redevelopment Plan, Town of Winthrop, Winthrop, ME

PREVIOUS PROJECT EXPERIENCE *[Wright-Pierce]*

Multiple Downtown Street Improvements, Berlin, NH

Multiple Downtown Street Improvements, Bow, NH

WTF Lagoon Restoration / Invasive Species Management Plan, Exeter, NH

Multiple Downtown Street Improvements, Lebanon, NH

Town Square Improvements, Waterville, NH

Multiple Lakefront Improvements, Wolfeboro, NH

WWTF Coastal Resiliency Improvements, Barnstable, MA

WWTF Coastal Resiliency Study, Boothbay Harbor, ME

Winslow Memorial Park Coastal Resiliency Improvements, Freeport, ME

Multiple Municipal Coastal Access Improvements, Freeport, ME

Comprehensive Plan, Frenchboro, ME

Fort Foster Pier Rehabilitation, Kittery, ME

Harbor Master Plan, Kittery, ME

WWTF Coastal Resiliency Study, Pleasant Point Reservation, ME

Waterfront Master Plan, Richmond, ME

Ferry Terminal Park, Rockland, ME

Fish Pier Improvements, Rockland, ME

Harbor Walk Trail Master Plan, Rockland, ME

Lower Village Waterfront Access Plan, Topsham, ME

Multiple Municipal Coastal Infrastructure Projects, Wells, ME

FEMA Flood Map Analysis, Wells, ME

Harbor Dredge, Wells, ME

Wells Harbor Master Plan, Wells, ME

Multiple Municipal Coastal Infrastructure Projects, Wiscasset, ME

Waterfront Master Plan, Wiscasset, ME

WWTF Coastal Resiliency Study, Wiscasset, ME

Latham Park Improvements, Barrington, RI

Guiteras School Site Improvements, Bristol, RI

Town Beach Park Improvements, Bristol, RI

PRESENTATIONS

Maine Beaches Conference, 2015 – Damariscotta – Getting Ready for Sea Level Rise and Storm Surge

Varoujan Hagopian, P.E., F.ASCE

Senior Consultant/Coastal and Waterfront Engineering

Varoujan Hagopian is a designer and experienced engineer. Throughout his professional career he has worked on complex, large-scale waterfront developments. For the past 43 years, he has managed, designed, permitted, value engineered and completed the planning, design and construction of a variety of projects that include mixed-use waterfront developments, parks, marinas, offshore recreational islands, beach nourishment, shoreline and edge stabilization, river and lake engineering, wharfs, piers, canals, sea walls, breakwaters, commuter and ferry boat facilities, cruise ship piers, marinas, and harbor protection structures. He has provided complete turnkey services, from conducting feasibility and early planning studies, followed by detail design, permitting and on to final construction.

Mr. Hagopian has also managed and designed projects that require geotechnical, structural, flood control and site engineering as well as environmental permitting services. In addition to his planning, design and project leadership responsibilities, Mr. Hagopian has performed value engineering studies, provided construction management services, and assisted clients with budgeting and contract negotiations. Securing grants and funding for public projects from a large variety of federal government sources is one of Mr. Hagopian's core skills.

EDUCATION
B.S., Civil Engineering, Northeastern University
Coursework, Hydraulics and Hydrology, University of Texas
Coursework, Coastal Engineering, Lehigh University
Coursework, Marina Planning and Design, University of Wisconsin

EXPERIENCE IN THE INDUSTRY
43 years

EXPERIENCE WITH GEI
6.5 years

REGISTRATIONS AND LICENSES
Professional Engineer, MA No. 40230

EXPERIENCE WITH GEI

Former Schaffer Paper Property Landscape Design, Massachusetts Dept. of Conservation & Recreation, Dorchester, MA. GEI is working directly with Department of Conservation and Recreation (DCR) to clean up an old industrial site and redevelop it as an open green space for the local community in Boston. As the project coastal engineer, I am working with the GEI project team to develop shoreline restoration design for the various types of the edge along the Neponset river. The river is tidal and encompasses significant resources governed under the regulatory process. Also, the property is subject to coastal flooding and its development will be impacted with sea level rise and climate change. Therefore, to secure the approval for the redevelopment of the site, I developed "Living Shoreline" edge treatment that withstand future inundation from coastal storms and protect the shoreline from erosion.

Avalon Bay - Sea Wall and River Rdge Park, Avalon-bay Communities, Inc., Great Neck, NY. Scope of the work included conducting an assessment of an existing sea wall for structural integrity and reuse when the project site gets redeveloped for a mixed use high quality residential living. Following the assessment, we developed edge restoration and stabilization options that avoids direct impact on jurisdictional resources and makes securing the environmental permits much less cumbersome and costly.

Seawall Repair Final Design, The Gillette Company, South Boston, MA. Portion of an existing Granite block sea wall along the Four Point Channel which is the property of Gillette Company has

deteriorated from recurrent storms and old age. GEI conducted structural assessment of the wall and developed report and design options to repair the wall. Next step will be to proceed with the necessary regulatory permits and finalize the engineering design to complete the repairs.

Binder Bluff Stabilization, Harry Binder, Lloyd Harbor, NY. Hurricane Sandy impacted the coastline of Long Island and eroded significant portion of the client's property that overlooked Long Island Sound. GEI was retained to address the problem. Working directly with GEI geologists, ecologists and engineers, we designed long term shoreline stabilization slope protection revetment for the 50 feet high embankment. Following the design, we applied and secured all of the necessary permits from the State of New York and the local Village planning board and currently we are working with the contractor to start the repair process.

Dysart Marina Break Water, Northeast Harbor, ME. GEI was retained by Ed Dysart to provide complete coastal engineering services for the design of a fixed breakwater to protect his existing marina from severe coastal storms. The Marina is a full service and marina that caters for the recreational boater during the summer season and for the local commercial marine fleet during fall and winter. GEI prepared site analysis and options based on available resources in the area and the expected hydrodynamic climate. Environmental permit applications were prepared and filed with the regulatory agencies and approval of the permits are expected within few weeks. GEI prepared the final construction package and worked with the selected contractor to commence construction to meet the client's objective.

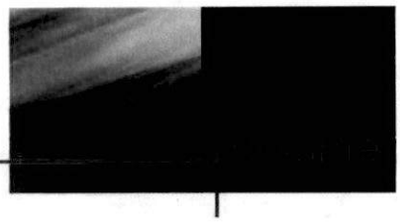
East Beach Revetment Repair and Emergency access ramp, Village of Port Jefferson, NY. GEI was retained to provide complete design and permitting services to repair the East Beach rock revetment and to design and oversee the construction of a ramp that can provide access for emergency and maintenance vehicles as well as for pedestrians during the summer beach season. The project was successfully completed recently. During the process, GEI did review the status of the west leg of the jetty and provided early design sketches on how to implement repairs to protect the beach from severe erosion.

4 Middle Valley Rd, Embankment Stabilization, Nantucket, MA. Coastal erosion from recurring nor'easters and hurricanes are levying heavy erosion on the soft sandy shores and bluffs on the island of Nantucket. Most coastal properties along the islands shores are exposed to high risk and continue to loss property at every storm. Loss of very expensive real estate is creating non sustainable conditions for most waterfront property owners. GEI is provided full coastal engineering services, secured the required permits and supervised the construction on time and within the budget

Sankaty Head Beach Club and Golf Course, Nantucket, MA. The project site is located on the eastern shoreline of Nantucket which is directly exposed to the fury of the Atlantic Ocean. In the past decade, the island has experienced severe erosion to its entire eastern shoreline as much as 60 feet. GEI was engaged to provide environmentally friendly solution to shoreline erosion to slow the rate of beach loss while maintaining the natural littoral drift process. The project is going through the rigors permitting process and construction it is anticipated to begin the fall of 2016.

Merrimack river Shoreline stabilization, Town of Chelmsford, MA. GEI was retained by the Town of Chelmsford in MA to provide turnkey engineering and ecological shoreline restoration for 4000 lenial feet of riveredge that was eroding severly and threatening the communities existing sanitary service line. Due the sensitivity of the river and the heavily forested edge, GEI designed a hybrid Living Shoreline to preserve the ecological value of the edge whiel reducing future potential erosion and river scouwer from flowing ice. The project is currently under construction and expected to be completed in late 2019.

Commonwealth Pier Concrete Deck Evaluation, Massachusetts Port Authority, South Boston, MA. GEI is assisting Bourne Consulting Engineering to perform marine engineering service for Mass Port. The work involved conducting structural integrity assessment for the apron of Commonwealth Pier and developing recommendation for repair and rehabilitation. Inspection was conducted from top side and under the pier to gain full knowledge of the piers existing condition. Following the field work, we developed a report that included recommendation for more in-depth investigation including preliminary cost estimate for projected repairs. Final design to implement partial repairs has been completed and Phase 1 repair work is almost complete.



Lissa Robinson, P.E., C.G., M.C.P.D.
Senior Civil Engineer, Hydrologist, Geologist, Land Planner

Lissa Robinson is a Senior Civil Engineer, Hydrologist, Geologist, and Land Planner at GEI Consultants, Inc. with 30 years of consulting experience. She has worked across Maine, New England and nationally providing expertise in civil and water resource engineering and hydrology disciplines with particular emphasis in the areas of coastal, surface water, and ground water hydrology, and hydraulic engineering.

Her work as a licensed Professional Engineer (Maine) and Certified Geologist (Maine) helps guide facilities and land owners as well as municipal, state, and federal organizations with analysis, modeling, mapping, and reporting of hydrologic and hydraulic studies. She has worked extensively with clients to evaluate the effects of flooding and inundation, and the resiliency of structures, systems, processes, and equipment to impacts such as riverine flooding, extreme precipitation, sea level rise, storm surge, and wave run-up.

Representative clients include municipalities, federal and state agencies, the hydroelectric industry, water districts, as well as residential, commercial, and industrial facilities. As part of the range of analyses for flooding and inundation, her work has included the impact of salt water intrusion on water supply wells. She has also performed dam failure analyses, inundation mapping, and Emergency Action Plan preparation as part of state and federal dam safety programs.

In addition to civil environmental, hydrologic, and hydraulic project work, Ms. Robinson also has experience in coastal engineering in the areas of wave analysis, shoreline protection, and coastal zone impacts. She has performed investigations of flood heights, wave climate analysis, and wave run-up and erosion studies. Ms. Robinson also helps clients bridge the gap between science and land use policy through her knowledge and experience in community planning and development.

EDUCATION
M.S., Community Planning and Development, University of Southern Maine
Post Graduate Studies, Geology, University of Southern Maine
Post Graduate Studies, Engineering Hydrology, Imperial College
B.S., Civil Engineering, Tufts University

EXPERIENCE IN THE INDUSTRY
30 years

EXPERIENCE WITH GEI
8 years

REGISTRATIONS AND LICENSES
Professional Engineer, ME No. 6839
Professional Engineer, NH No. 14286
Professional Engineer, VT No. 0100451
Certified Geologist, ME No. 341

TRAINING
Computational Fluid Dynamics (CFD) Workshop with Flow-3D
Risk Informed Decision Making Level 2, FERC Division of Dam Safety
ASDSO Hydrologic Modeling Using Geospatial Information
ASDSO Loss of Life Consequences for Dam Failure Scenario
ASDSO Legal Responsibilities of Dam Owners, Operators, and Regulators
Erosion and Deposition Modeling with RiverFLO-2D
Princeton Training in Ground Water Pollution & Hydrology
NWWA Ground Water Geochemistry
40-Hour OSHA Hazardous Materials Training
Professional Liability Education Training
Harvard Negotiation Training
ASFE Institute for Professional Practice

PROFESSIONAL ASSOCIATIONS
Geological Society of Maine

PROJECT EXPERIENCE

COASTAL ANALYSES

Tidal Restoration Feasibility, West Branch Pleasant River, Town of Addison, Maine, Addison, Maine. Performed feasibility analysis of the removal of an earthen dam and tide gates, and the reintroduction of tidal flow to the West Branch of the Pleasant River. Evaluated hydraulic flow conditions and water elevation data to assess impacts to the shoreline and structural features, particularly from erosion and scour. Work also included an inventory and evaluation of the potential impacts on water supply wells, septic systems, roads, culverts, and other features at risk. An assessment of well location and depth relative to tidal influence and the collection and evaluation of water quality samples provided a basis to understand the potential impacts of restoring tidal flow.

Beach Erosion Potential, Lobster Cove, York Sewer District, York, Maine. Evaluated and quantified the potential for shoreline retreat at proposed sewer district pumping station. Analysis included the compilation of maps showing historic shorelines and tide levels, aerial photograph interpretation of shoreline trends over time, seismic refraction survey to assess the top of the bedrock surface and its role in slowing potential shoreline

retreat, shoreline mapping to evaluate land cover, and FEMA floodplain map review. Evaluation provided information on the potential rate of landward migration of the top of the beach berm, and provided a basis for Sewer District Officials to make decisions about the proposed pumping station site.

Wave Runup and Rates of Erosion, Stone's Point, Cushing, Maine. Evaluation of coastal shoreline erosion and development of shoreline protection. Work included project review with regulatory staff, shoreline survey, compilation of tidal data, flood elevation assessment, wave climate analysis, grain size analysis of bank material, and slope stability analysis. Assisted in obtaining permit approvals for shoreline protection.

The Cost of Storm Surge and Sea level Rise, Confidential Client, New England. Performed analysis to evaluate the impact of sea level rise and storm surge on vulnerable New England coastal peninsula and associated infrastructure. Work included analysis of historic sea level rise and storm surge data, compilation of FEMA flood mapping and LiDAR data in geographic information system (GIS), inundation mapping for current and future scenarios, and economic damage estimates using the Army Corps of Engineers depth damage functions.

LAND USE PLANNING

Land Use Ordinance Revision, Bar Harbor, Maine. In response to strong interest in the protection of natural resources from the impacts of residential development, developed recommendations for changes to the Land Use Zoning Ordinance for the Town of Bar Harbor. Work included development of water quality standards, establishment of applicant submission requirements, and the preparation of application review guidelines for the Bar Harbor Planning Board.

Wells Landfill Redevelopment, Wells, Maine. Performed a needs and feasibility assessment for the re-use of a former municipal landfill site. Project objectives included an evaluation of technical constraints and attributes of the 47-acre site, and meeting facilitation to identify needs and interests of stakeholders.

Maine Yankee Land Use Plan, Wiscasset, Maine. Performed an inventory of site features to identify site constraints and attributes for future site redevelopment. Project included land use analysis to identify areas of high, medium and low development potential. Mapping and analysis on this project served as the foundation for the redevelopment planning of the site.

HYDROLOGIC AND HYDRAULIC ANALYSIS

Dam Failure Analyses, Multiple Dams, Confidential Hydropower Owner, California. Conducted hypothetical sunny day and Probable Maximum Flood dam failure and flood wave routing for more than 50 dams using the U.S. Army Corps of Engineers HEC-RAS 1-dimensional and 2-dimensional software. Studies were performed in accordance with FERC Engineering Guidelines and included multiple downstream hypothetical dam failures and sensitivity analyses of breach parameters and Manning's n-values. Work included the preparation of inundation maps and final report.

Hydraulic Model of Structure Remediation, Ohio River, Ohio. Developed 2-dimensional hydraulic model to evaluate flow characteristics associated with remediation of structure at FERC licensed hydroelectric generation addition to pre-existing USACE lock and dam. Work was conducted under both USACE and FERC regulatory requirements. Project included preparation of Temporary Emergency Action Plan for construction activities.

Confidential Project, Metropolitan District Commission, Connecticut. Performed rainfall runoff analysis and reservoir routing to evaluate the inflow and storage at a confidential project as the basis for understanding the effect of initial water surface elevations on peak elevations and peak outflow during the 100-year storm event.

NHDES, Alton Dam and Milton Three Ponds Dam, multiple towns, New Hampshire. Hydrologic and hydraulic (H&H) analyses to estimate the inflow design floods HEC-HMS and hydraulic modeling of hypothetical dam failure to evaluate inundation boundaries resulting from modeled gate operations and changes in reservoir elevation.

Daniel J. Bannon, P.E., CFM
Project Manager/Senior Engineer (Waterfront Structures)

Daniel Bannon is a Project Manager and Senior Engineer in GEI's Portland, Maine office. He specializes in projects involving waterfront structures, shore access, flood protection, recreational and commercial boating facilities, waterfront planning and development, and bridges in coastal settings.

Mr. Bannon is experienced in all aspects of project development including field inspections, concept planning, life-cycle analysis, project management, design, permitting, and construction administration. He is very familiar with the Federal, State, and Local regulations that govern development in coastal high hazard areas and sensitive environmental habitats, with a primary focus on the Maine coast.

An experienced structural engineer, Mr. Bannon has expertise in design of concrete, steel, aluminum, timber, and FRP composite structures and foundations in a range of applications.

Mr. Bannon is also familiar with a number of the funding programs available for waterfront planning, design, and construction. He has experience with State and Federal grant programs, often assisting clients with obtaining project funding.

EXPERIENCE

York Harbor/River Study, Town of York, ME. Capacity assessment and usage study of the York Harbor and River. Work included inventory of waterside features including moorings, docks, boat launches, commercial marinas, and working waterfront sites; review of land use and zoning in shoreland areas; review of environmental resources along the River Corridor; GIS mapping of the inventory; study of boat demographics; characterization of River segments by uses and development trends; and field assessment with landside and waterside observations and drone based surveys. Concepts for harbor improvements were developed to increase mooring capacity and improve channel conditions and recommendations were presented for improved waterway management.

Living Shoreline Pilot Project, Towns of Brunswick and Yarmouth, ME. Project manager for a pilot study that is investigating the use of low-cost living shoreline treatments for shoreline stabilization in Maine. The pilot study involves installations on three sites on Casco Bay, two on Maquoit Bay in Brunswick, and one on Lane's Island in Yarmouth. The pilot treatments use a combination of bagged oyster shell, coir mesh, marine baskets, downed logs, and plantings to stabilize bluff and marsh face erosion at the three sites. Installation was completed in spring 2020, and a three-year monitoring program is planned.

Downtown Waterfront Resilience Preliminary Engineering Study, Town of Machias, ME. The Town of Machias' downtown waterfront area faces significant risk of flooding due to coastal storm surge and sea level rise. The areas at greatest risk of flooding include numerous

EDUCATION
M.S., Structural Engineering
University of Maine
B.S., Civil Engineering
University of Maine

EXPERIENCE IN THE INDUSTRY
14 years

EXPERIENCE WITH GEI
3.5 years

REGISTRATIONS AND LICENSES
Professional Engineer
ME No. 13033
FL No. 87648
ASPFM Certified Floodplain Manager
MaineDOT Local Project Administrator
Transportation Worker Identification Credential (TWIC)

TRAINING AND CERTIFICATIONS
MaineDOT Construction Documentation
USCG Auxiliary Boating Safety
Advanced Offshore Navigation Training
American Red Cross First Aid/CPR/AED

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businesses, residences, the Town Office, and the Wastewater Treatment Plant, as well as important transportation infrastructure. A preliminary engineering study was undertaken to design flood protection measures for the Downtown area. A detailed survey was completed for the entire project area using a combination of drone-captured photogrammetry and conventional survey techniques. Inundation scenarios were developed that considered the probability of occurrence of a range of storm events and the associated damages. Preliminary designs were developed for seawall and revetment solutions along the 3,500 linear feet of downtown shoreline that addressed needs for flood protection, drainage, access, and integration with adjacent structures. A boardwalk was incorporated into the designs to provide public access to the shore. Preliminary cost estimates were prepared for alternative design solutions to support the application for grant funding for future project phases.

Downeast Institute Waterfront Improvements, Beals, ME. Design of a program of improvements to the DEI waterfront research facility on Great Wass Island. Work included drone survey, site assessment for wind and wave exposure, design of a boat launch, floating dock improvements, and wave attenuation systems consisting of fixed wave screens or concrete attenuator floats.

Harbor Management Plan, Town of Brunswick, ME. A Harbor Management Plan was prepared for the Town of Brunswick. The plan began with a comprehensive inventory of harbor features, including GPS survey of each of the approximately 300 moorings in the Town's waters, and development of a GIS database of existing piers, boat ramps, access points, moorings, aids to navigation, and other maritime features. After a detailed review of inventory data and a stakeholder input process consisting of 3 public meetings, and meetings with local groups and marina owners, recommendations were developed for a range of harbor related issues. The plan was formally adopted by the Brunswick Town Council in 2014, and as an outcome of the study, the Town's Rivers & Coastal Waters Commission was created to implement study recommendations, and many of the recommended revisions to the Town's Harbor & Waterfront Ordinance were instituted.

Town Landing Masterplan, Town of Yarmouth, ME. The Yarmouth Town Landing provides access to the Royal River for commercial and recreational vessels with a boat launch, upland parking, separate recreational and commercial docks, dinghy storage for the adjacent mooring field, and a harbormaster's office. A masterplan of improvements was developed that included many components aimed at providing improved facility capacity and function. Recommended improvements included revised vehicular circulation with one-way traffic flow and a make-ready area for the launch, reconfigured parking with passenger car and truck/trailer spaces, an expanded boat launch, a separate hand carry launch to minimize conflicts between user groups, a new harbormaster's office in an improved location, and expansion of the adjacent mooring field.

Wells Harbor Dredging, Town of Wells, ME. Project Manager and Lead Engineer for design and permitting of the proposed maintenance and improvement dredging of Town anchorage areas adjacent to the Wells Harbor Federal Navigation Project.

Portland Street Pier, City of South Portland, ME. After GEI had completed an initial phase of inspection, analysis, development of concept alternatives, and economic analysis – the City of South Portland awarded an extended contract for development of 40% design plans for the preferred alternative. To address structural deficiencies, functional limitations, and increased flood risk (the pier was rezoned from A to VE with an increased Base Flood Elevation), the city elected to move ahead with a full pier replacement. Design plans were prepared for a new concrete pile-supported pier and associated upgrades to the marina floats, bulkhead, and upland parking to address anticipated uses of the facility.

Snow Marine Park Boat Ramp and Masterplan, City of Rockland, ME. Lead a consulting team to prepare a masterplan for 14-acre, city-owned waterfront park. The plan included improvements to the boat launch, expanded parking, recreational trails, and layout of sports fields on the upland property. As a separate task, a replacement design was prepared for the facility boat ramp that provides public access to Rockland Harbor. The ramp is used by vessels up to 50-tons. A replacement ramp was designed that incorporated two 20-ft wide ramp lanes constructed with heavy duty precast concrete planks, a concrete ramp abutment, and center floats.

Alexander G. Gray
GIS Analyst/FAA UAS (Drone) Pilot

Mr. Alexander Gray is a GIS Analyst and FAA Certified UAS (drone) Pilot in GEI's Portland, ME office with more than 8 years of industry experience, specifically in GIS-related analyses. Alexander uses GIS and various modeling software programs to assist clients with compiling, manipulating, analyzing and visualizing different types of spatial data. Mr. Gray has experience leading teams of GIS professionals to deliver high quality maps and data analyses for clients and project partners. Alexander also has experience conducting vulnerability assessments for state agencies and local communities concerned about long-term damage from sea level rise and storm surge. Additionally, he has worked on multiple hypothetical dam failure modeling projects and developed inundation boundaries and maps for Emergency Action Plans. His graduate school research in coastal community vulnerabilities was cited in the Northeast Chapter of the 2014 National Climate Assessment report and responsibilities after graduate school included training municipal code enforcement officers on coastal hazards. Mr. Gray earned a BA in Environmental Studies from Connecticut College and an MS in Ecology and Environmental Sciences from the University of Maine.

EDUCATION
M.S., Ecology and Environmental Science, University of Maine
B.A., Environmental Studies, Connecticut College

EXPERIENCE IN THE INDUSTRY
8+ years

EXPERIENCE WITH GEI
6+ years

REGISTRATIONS & LICENSES
Remote Pilot (UAS), Cert. No. 4089047

CERTIFICATIONS
American Red Cross Adult CPR

PROFESSIONAL ASSOCIATIONS
American Society of Adaptation Specialists
Maine GIS User Group Member

PROJECT EXPERIENCE

Southern Maine Planning & Development Commission Vulnerability Assessments (Phase II), Saco, Maine, 2021-Ongoing
Using GIS to develop inundation boundaries from storm surge and sea level rise for six southern Maine towns and assess potential impacts on parcels, populations, and infrastructure.

Kalamazoo River Superfund Site, Allegan County, Michigan, 2020-Ongoing
Managing a team of GIS professionals to assist in data analysis and development of maps and data visualizations to assist with a cleanup project for an EPA superfund site on the Kalamazoo River.

Southern Maine Planning & Development Commission Vulnerability Assessments, Saco, Maine, 2020.
Developed approach to assess community vulnerability to sea level rise using GIS methods, publicly available data, local municipal assessor tables, and GIS data.

York Harbor/River Study, York, Maine, 2019.
Created GIS maps and GIS-based analysis for boat and dock development capacity assessment. Completed drone flights to assist with assessment and presentation material.

Stonington Flood Vulnerability Study, Stonington, Maine, 2018-2020. Created inundation boundaries representing 1-percent chance storm made worse by sea level rise using modeling outputs. Developed maps and graphs to display levels of flooding and overall community vulnerability.

Hazard Inundation Mapping, Confidential Dam Owner, California, 2018-2020.
Updated HEC-RAS models to align with California Division of Safety of Dams regulations for hypothetical dam failures. Used RAS-Mapper to generate inundation boundaries and edited inundation shapefiles to assist with Emergency Action Plans for County officials.

Ranking Vulnerability of Large Culverts for Maine Department of Transportation, Augusta, ME, 2019.
Developed methodology for assessing the vulnerability of large culverts using GIS database inputs and State bridge design standards. Methods were developed for inland culverts susceptible to riverine flows and coastal culverts threatened by storm surge and sea level rise.

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Preparing Portsmouth's Historic District for Sea Level Rise, City of Portsmouth, NH, 2018. Created an ESRI Story Map for public awareness and engagement. Used a Digital Elevation Model to analyze maximum flood depths at historic building footprints and created a risk map for the City that categorizes relative flooding for historic buildings.

Racine Hydro 2-Dimension Model, Appalachian Power Company, Meigs County, OH, 2018. Developed several different Digital Elevation Models using LiDAR and soundings data. Edited LiDAR point clouds to represent changing conditions during and after construction activities to evaluate velocities near construction areas. Developed a Temporary Construction Emergency Action Plan for the project using several design and health and safety plans.

Spillway Channel Adequacy Evaluation, Confidential Dam Owner, California, 2018. Edited LiDAR point cloud and created Digital Elevation Models. Georeferenced base maps and created maps of inundation and velocity scenarios based on current and proposed spillway improvements.

Brasfield Dam Inflow Design Flood Study, KEI (USA) Power Management, Inc., Chesterfield County, VA, 2017. Assembled and edited Digital Elevation Models (DEMs) used in HEC-RAS software for dam failure analysis. Edited inundation boundaries of different failure scenarios and assisted with creating maps and other deliverables.

Incorporating Coastal Risk into Asset Management at Maine Department of Transportation, Maine Department of Transportation, Augusta, ME, 2017. Used GIS to analyze and determine asset inundation from sea level rise and storm surge. Developed method for ranking assets based on relative vulnerability across sea level rise and storm surge scenarios. Identified data gaps for the Department that limits the accuracy of vulnerability rankings. Presented findings to Division leaders within the Department.

Hypothetical Dam Failure Inundation Analyses, Confidential Dam Owner, California, 2017. Modelled downstream impacts from hypothetical dam failures using GIS and HEC-RAS 1D and 2D software packages. Developed modeling parameters based on dam specifications and FERC requirements. Created tables, graphs and inundation boundary shapefiles for emergency action plans.

Belmont Forum G8 Initiative Metropole, University of South Florida, South Portland, ME, 2016. Used GIS to develop shapefile databases and manipulate LiDAR and other elevation-related data used in the COAST software. Created modeling parameters using various national and international sea level rise curves, storm surge reports and depth-damage functions from USACE. Created maps and other visual tools.

Implementation of Federal Highway Ecological Assessment, Maine Department of Transportation, Augusta, ME, 2016. Used the COAST software to model lifecycle costs for various bridge and culvert designs proposed by Maine Department of Transportation. Manipulating LiDAR files and creating digital elevation models (DEMs). Creating modeling parameters for extreme rainfall scenarios and depth-damage functions for bridge designs. Producing graphs and other visual outputs for State decision-makers.

PUBLICATIONS

Marengo, J., L. Nunes, C. Souza, J. Harari, F. Muller-Karger, R. Greco, E. Hosokawa, E. Tabuchi, S. Merrill, C. Reynoolds, M. Pelling, L. Alves, L. Aragão, S. Chou, R. Moreira, S. Paterson, J. Lockman and A. Gray (2017). A globally deployable strategy for co-development of adaptation preferences to sea-level rise: the public participation case of Santos, Brazil, *Natural Hazards,* doi: 10.1007/s11069-017-2855-x.

Dhakal, N., S. Jain, A. Gray, M. Dandy, and E. Stancioff (2015). Nonstationarity in seasonality of extreme precipitation: A nonparametric circular statistical approach and its application, *Water Resources Research, 51,* doi: 10.1002/2014WWR016399.

Michael Koontz
Senior Urban Design/Waterfront Planning Practice Leader

Michael Koontz is a Senior Urban Design/Waterfront Planning Practice Leader in GEI's Huntington Station, NY office. He is an accomplished Landscape Architect with quality design, project, staff, and client management experience, with a focused expertise on Resilient and Sustainable public works on the waterfront and in urban environments.

PROJECT EXPERIENCE

Waterfront Restoration, Cold Spring Harbor Lab, Cold Spring, NY. Managing the restoration of a historic sea wall and esplanade for a facility that incorporates the best practices for resilient design. The Lab is a community leader that addresses the needs of the present with plans that include a means for the students and the community to enjoy this unique habitat and interpret their environment.

PREVIOUS PROJECT EXPERIENCE

Hunter's Point South Park, City of New York, Queens, NY. From a contaminated industrial railyard, a prototype for resilient park design in the 21st Century was created. Active and passive recreation was successfully launched into a park that incorporates the best practices of sustainable design and has proven resilient from Superstorm Sandy to the present.

Riverside Park South, City of New York, Manhattan, NY. Transformed a contaminated industrial port, in a Uniform Land Use Review Procedure spanning three decades, into a preeminent regional park for Manhattan, providing a vital link between the historic Riverside Park and the evolving Hudson River Park, and infusing principles of resiliency and sustainability that have withstood the test of time.

Yankee Stadium Redevelopment, City of New York, Bronx, NY. Led the design team effort to transform a contaminated industrial site, in a sequenced series of open spaces enhancing the community of the South Bronx, and phased effort spanning three decades, into a preeminent regional park for Manhattan, providing a vital link between the historic Riverside Park and the evolving Hudson River Park.

Soundview Park, City of New York, Bronx, NY. As the lead consultant, repurposed a park that was encumbered by its history as a contaminated dumping site into resilient and sustainable park that accommodates the needs of the community, as well as the greater region. While preserving the essential ecology of the park, environmental safety was greatly improved. Several new amenities were enhanced or added, such as a track and field facility, interpretive play area, ball courts, and a spacious amphitheater for local events.

EDUCATION
B.S., Landscape Architecture, Virginia Tech

EXPERIENCE IN THE INDUSTRY
30 years

EXPERIENCE WITH GEI
Less than 1 year

REGISTRATIONS AND LICENSES
Registered Landscape Architect, NY

TRAINING AND CERTIFICATIONS
Leadership in Energy and Environmental Design Certified

PROFESSIONAL AFFILIATIONS
American Society of Landscape Architects (ASLA) Member

AWARDS
Hunter's Point South Park - Honor Award, ASLA National; Design Excellence Award, NYC PDC
Riverside Park South - Design Excellence Award, NYC PDC
Macombs Dam Park - Merit Award, ASLA NY
Downtown Tampa Curtis Hixon Waterfront Park - Honor Award, ASLA Florida
Portland South Waterfront Greenway - Honor Award, ASLA
Tottenville Shoreline Protection – Special Recognition Award, NYC PDC
Chaos Garden Park - Visionary Landscapes Award, Landscape Architecture Magazine
Ruins on the Prairie Park - Once and Future Park Award, Walker Art Center
Woolen Mills Art Park - Stanley Abbott Award for Best Senior Project, Virginia Tech

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Owl's Head Control Plant Campus, Brooklyn, NY.
With the concerns of resiliency posed by the Bay of New York, a system of porous bike trails, pedestrian promenades and a garden meant to be enjoyed by both visitors and highway motorists, a rich tapestry of open space was sewn into the fabric of a highly industrialized urban environment. The Campus has withstood the test of time, withstanding and thriving after multiple storm events.

NYC DEP Facility, City of New York, Staten Island, NY.
As the lead site designer, a bio-filtration garden was created as an entrance marker and amenity for employees. Rainwater from the facility's roof and parking lot is directed to the garden, embellished with native plants that can withstand both draught conditions and flooding in a coastal environment.

Living Breakwaters, Staten Island, NY.
As Design Director for NYC Parks, collaborated with NY State to design a layered resiliency approach to promote risk reduction through erosion prevention, wave energy attenuation, and enhancement of ecosystems and social resiliency. Recovering from the devastation of Superstorm Sandy, the southern shore of Staten Island is roaring back to health with the addition of living breakwaters, designed to reduce risk and provide marine life habitat, sand dune replenishment, floating oyster nursery providing active marine bio filtration, and educational youth stewardship programs, for lasting community involvement in the shoreline's restoration.

Freshkills Park, Staten Island, NY.
As Design Director for NYC Parks, collaborated with a team of design consultants to help transform the world's largest landfill into NY City's largest park. A myriad of programing uses, such as nature trails, kayak launches, bike trails, and athletic fields. Close coordination with the Department of Sanitation ensured that the massive subterranean infrastructure of the active landfill was protected and allowed to be phased out in sequence of public park openings, and vital coastal restoration requirements.

Curtis Hixon Waterfront Park, Tampa, FL.
Long thought of as a desolate space, the park was transformed into the iconic identity of downtown Tampa. Chronic flooding issues, which hampered the enjoyment of its users, were eliminated by the strategic implementation of resilient features that sustainably manages Tampa's frequent tropical storms. A playfully organized series of interactive water features, play areas, and adventure dog runs ensure that the community embraces and protects the space as their own backyard. The park has inspired a series of public work ventures that have made it the crown jewel of Tampa's Riverwalk, which covers the entire waterfront of the city.

South Waterfront Greenway, Portland, OR.
Long a challenge to the riparian community, the Willamette River was brough closer to its initial identity as an ecological and social focal point of the Pacific Northwest. An extensive system of bio-geo technology halted the rapid erosion of the site's river bluff. An abundant network of multi-modal trail traverses the site and gives the community a tremendous boost of social engagement. Various works of interpretive art are encountered throughout the site, providing a rich narrative of culture and history.

Hart Plaza, Detroit, MI.
Collaborating with the City of Detroit, a grand revisioning of a failed urban plaza into a verdant model of resiliency was envisioned in the heart of downtown. Beloved elements of the plaza, such as the spray fountain and amphitheater were preserved, but the lack of trees and overabundance of pavement was jettisoned in favor of tree canopies, native gardens, and a bio filtration system that addresses the challenges of the Detroit River and represents the resilient nature of the city and its communities.

PUBLICATIONS

'Chaos Garden Park', Visionary Landscapes, Landscape Architecture Magazine

'Ruins on the Prairie', Once and Future Park, Walker Art Center

Shelley Hazen
Climate Change Specialist

Shelley Hazen brings diverse climate change vulnerability and adaptation expertise to her projects. She provides research and planning support to her clients to help them understand current and future climate and extreme weather impacts, vulnerabilities and opportunities, while providing recommendations for effective adaptation. Ms. Hazen's work spreads across infrastructure, energy, agriculture, natural systems, and other sectors to help clients navigate through climate uncertainty. Her work spans all stages of adpatation, from foundational data analysis to implementing resilience on the ground.

EDUCATION
M.A. Geography, University of Guelph
B.E.S. Biophysical Earth System Specialization, University of Waterloo

EXPERIENCE IN THE INDUSTRY
9 years

EXPERIENCE WITH GEI
3 years

PROJECT EXPERIENCE

Integrating Climate Change into Asset Management Modeling. Project Manager. Collaborating across five municipalities in Ontario, this project involves defining climate events that have historically impacted levels of service (LOS) of water and wastewater infrastructure. The project team obtained climate projections and undertook an event-based frequency analysis out until the end of the century. Adaptation options were applied to each climate impact of concern to mitigate impacts. A decision support system (DSS) model is being used to quantify the financial implications of the climate change adaptation options to support clients with better infrastructure planning.

Urban Flood Risk and Roads Capacity Assessment, Durham Region, ON. Project Manager. This project involves the completion of an innovative urban flood risk assessment and analysis of flood vulnerable road crossings. Deliverables include: 1) flood modeling and mapping, 2) obtaining future climate projections, 3) updating storm return periods to consider climate change, 4) evaluating risk factors related to critical assets, and 5) identifying flood hot spots and priorities for resilience building measures. Ultimately, flooding hot spots are being evaluated against an inventory of all sensitive receptors that require access in the event of extreme weather (e.g., schools, hospitals, etc.).

Coastal Wetland Resilience to Climate Change in the Great Lakes Basin, Environment and Climate Change Canada (ECCC), ON. Project Manager. Research and reporting to support the development of an authoritative report assessing the impacts of climate change and human stressors on coastal wetlands in the Great Lakes Basin. Proposing a suite of recommended adaptation strategies, measures and actions for improved resilience to assist wetland conservation practitioners plan for and address relevant climate impacts.

Integrating Climate Resilience Considerations into Two Wastewater Treatment Plant Environmental Assessments, Region of Peel, ON Climate Expert. Working closely with infrastructure owners and operators, this project involved 1) obtaining

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local historical and future climate datasets, 2) identifying climate impacts of relevant on two wastewater treatment plant expansions, 3) characterizing the implications of the project to climate change at large, and developing short and long term resilience recommendations to reduce risk.

Facilitation and Climate Advisory Services for Niagara Adapts Program, Brock University, ON. Project Manager and Lead Facilitator. Developed and hosted a training workshop with 7 regional municipalities in Niagara Region to support the development of monitoring, evaluation, and implementation strategies as part of their municipal Corporate Adaptation Plans.

Henvey Inlet First Nation Floodplain Mapping Project, Crown-Indigenous Relations and Northern Affairs (CIRNAC), ON. Project Manager. Providing HIFN with the modeling tools and resources to understand the impacts of flooding on the Pickerel River, how different climate scenarios could impact community infrastructure and provide insight into future community planning initiatives that ensure community resilience to future climate projections. This project will produce floodplain mapping through PCSWMM and GIS modeling and mapping.

Henvey Inlet First Nation Fire Hazard Assessment, Indigenous Services Canada, ON. Project Manager. Undertaking a fire hazard risk assessment on HIFN reserve lands. Characterizing current and future climate conditions that contribute to wildfire potential (e.g., precipitation patterns, drought, wind). Applying a best management practice approach to develop a fire management program using Indigenous fire practices that are culturally and ecologically appropriate.

Developing a Climate Resilience Assessment Framework for Municipal Infrastructure and Systems, Regional Public Works Commissioners of Ontario (RPWCO), ON. Technical Lead. In collaboration with 17 municipalities representing over 80% of the population of Ontario, led the development of a framework tailored to assess risk, define critical infrastructure and build resilience at the systems-level. Deliverables anticipated include a guidance document, confirmed framework approach tailored for public works and infrastructure staff, and three facilitated in-person workshops among municipal members.

Renewable Energy Scan Across Inuit Nunangat, Inuit Tapiriit Kanatami (ITK), Ottawa, ON. Project Manager. Led a scan of renewable energy development in 51 communities across Inuvialuit Settle Region, Nunavut, Nunavik and Nunatsiavut to better understand the status of renewable energy implementation and use. Completed 45 interviews with community members for a more fulsome understanding of renewable energy in Inuit Nunangat. This work was done to help advance the Inuit Climate Change Strategy created by the National Inuit Climate Change Committee (NICCC).

National Inuit Climate Change Strategy, Inuit Tapiriit Kanatami (ITK), Ottawa, ON. Climate Risk Specialist and Co-Facilitator. Designed and facilitated the National Inuit Climate Change Committee (NICCC) workshop to gather stakeholder input to draft and advance the Inuit Climate Change Strategy. The workshop brought together Inuit stakeholders and federal funding partners, outlined strategy components of focus, such as infrastructure and food security, and produced an annotated table of contents to contribute to the writing of the strategy, officially released in late summer of 2019.

Landscape Scan of Climate Services Available Across Nunavut, ON. Project Manager. Completed a series of interviews with climate service users from various organizations and sectors across Nunavut. Completed a desktop scan to document and help understand available climate data sources, resource providers, users, and how these climate services can evolve to meet the needs of the Territory.

Inuit Post-Secondary Education Interviews and National Gathering Facilitation, Inuit Tapiriit Kanatami, Ottawa, ON. Technical Lead and Co-Facilitator. Interviewed 40 Inuit Post-Secondary Education (PSE) students across Canada to determine barriers and opportunities for Inuit PSE enrollment and attainment. This work helped to inform the National Gathering on Inuit PSE and involved planning and facilitating of the gathering.

Leila A. Pike, P.E.
Water Resources Engineer

Leila Pike is a Water Resources Engineer in GEI's Portland, ME office. She has worked throughout North America focusing within the coastal, surface water, and groundwater fields. She is a Professional Engineer (Maine) and applies her skillsets to coastal modeling, waterfront design and vulnerability studies, resiliency and adaptation projects, and shoreline change investigations across the country.

She performs comprehensive coastal analyses for municipalities, state agencies, industries, federal organizations, and land owners that includes characterizing storm parameters such as wind speeds and wave heights, performing wave propagation modeling, wave setup analysis, wave runup and overtopping modeling, and mapping of flood inundation extents. Her work supports rezoning of FEMA flood insurance rate maps and provides design inputs for structural marine projects and shoreline stabilization measures. She has managed, analyzed, designed, and permitted multiple shoreline stabilization projects, and has supported municipalities with historical shoreline change analyses.

Ms. Pike is experienced in several coastal modeling programs, including STWAVE, SWAN, ACES, CHAMP, WHAFIS; and programs and methodologies to calculate wave runup, such as TAW, RUNUP2, and the SPM method. She is skilled in HEC-RAS and HEC-RAS 2D for riverine modeling, and she uses the Groundwater Vistas platform to perform groundwater modeling, which runs MODFLOW, SEAWAT, and MT3D modules, among others. She supports her work with ArcGIS.

EDUCATION
M.Eng. Civil Engineering, Water Resources and Hydraulics, McGill University, Montréal, Québec
B.Eng. Civil Engineering, McGill University, Montréal, Québec

EXPERIENCE IN THE INDUSTRY
6 years

EXPERIENCE WITH GEI
2+ years

REGISTRATION AND LICENSES
Professional Engineer, ME No. PE15048

TRAINING
Groundwater Flow and Contaminant Transport Modeling Workshop, Groundwater Vistas
ADCIRC Boot Camp and ADCIRC Surge Guidance System (ASGS) Training
NOAA Adaptation Planning for Coastal Communities

PROFESSIONAL ASSOCIATIONS
American Society of Civil Engineers

PROJECT EXPERIENCE

Bluff Rehabilitation and Erosion Control, Department of Natural Resources Orchard Beach State Park, MI. Performing coastal engineering analysis to support slope stabilization design. Evaluation includes extremal analysis to determine 1% annual chance wave height, surge level, wave period, and wind speed parameters; wave transformation modeling with STWAVE; wave setup and runup evaluations; and shoreline erosion modeling with CSHORE. This is an ongoing project. 2019.

Coastal Flood Vulnerability and Adaptation Study, Stonington, ME. Project Manager for an ongoing project to determine coastal flood risk due to storm surge and sea level rise at municipal infrastructure, such as roads, pump stations, outfalls, and municipal buildings. Nearshore water elevation determined using STWAVE. Adaptation options for each asset will be provided along with a timeline of when each asset will need to be adapted in a near-term, medium-term, or long-term timeframe. A cost benefit analysis will be performed to help guide decision makers. This is an ongoing project. 2019.

San Mateo County Climate Vulnerability and Adaptation Project, San Mateo County, CA. Providing an evaluation of shoreline erosion and flood inundation based on USGS COSMOS modeling for various sea level rise and storm return period scenarios in an effort to help the County plan for climate vulnerability. This is an ongoing project. 2019.

Shoreline Stabilization Design, Searsport, ME. Performed site investigation and a coastal wave analysis to determine design heights for a shoreline stabilization project. Designed a revetment wall for the site using the

results of the coastal modeling analysis. Wave conditions, wave runup, and revetment design parameters were evaluated using ACES modeling software. 2016.

Shoreline Stabilization Design, Trenton, ME. Performed site investigation, coastal wave analysis, and design to support a riprap shoreline stabilization project to withstand 1% annual chance coastal storms. Wave conditions, wave runup, and revetment design parameters were evaluated using ACES modeling software. 2016.

Beach Management Plan, Saco, ME. Involved in the creation of a Beach Management Plan in response to ongoing coastal erosion near Camp Ellis. Determined contributing factors and future actions for mitigation and protection and provided a technical report for the regional planning agency. 2014.

Wave Runup Analysis, Port Jefferson, NY. Evaluated wave runup heights for a 1% annual chance coastal storm using ACES modeling software to aid in determining revetment design heights for a shoreline stabilization project. A hindcast analysis was performed on a WIS station to determine 1% annual chance coastal parameters to use in the modeling. 2015.

FEMA Flood Map Appeal, Private Marina, Cumberland County, ME. Served as Project Manager to determine 1% chance coastal flood elevations at a private marina. Performed wave transformation modeling using STWAVE, wave setup calculations with SWAN 1-D, wave runup analyses using the TAW method, and wave crest profiles with WHAFIS. Created final flood extents mapping in ArcGIS. 2018.

FEMA Flood Map Appeal, Private Residence, Cumberland County, ME. Served as Project Manager to determine 1% chance coastal flood elevations at a private residence. Performed wave transformation modeling using STWAVE, wave setup calculations with SWAN 1-D, wave runup analyses using the TAW method, and wave crest profiles with WHAFIS. 2018.

Coastal Flood Vulnerability Study, Vinalhaven, ME. Evaluated the flood vulnerability of the downtown area of the island due to coastal storm surges and sea level rise. The study involved creating a detailed ADCIRC model and simulating over 100 tropical and extra-tropical storms for Penobscot Bay. 2016-2017.

Wave Runup Analysis, LNG Facility, Cameron Parish, LA. Evaluated wave runup heights to aid in determining levee design height around a proposed LNG Facility. Wave runup heights were calculated using PC-Overslag and determined for 100- and 500- year storms. 2016-2017.

Coastal Flood Vulnerability Study, Islesboro, ME. Created a high resolution ADCIRC model of Penobscot Bay to simulate over 100 storms from the U.S. Army Corps' North Atlantic Coast Comprehensive Study (NACCS) data. The model was created to evaluate coastal flood vulnerability at two locations on the island due to storm surge and sea level rise. A probability distribution of sea level rise was used for a complete risk-based analysis. Led and participated in public engagement events and meeting throughout the project. 2016-2017.

Coastal Flood Vulnerability Study, St. Charles Parish, LA. Determined 100-year flood elevations in St. Charles Parish by creating a large and detailed ADCIRC model in an effort to appeal Federal Emergency Management Agency (FEMA) preliminary flood maps. A complete bathymetric and topographic surface was created by combining over 300 bathymetric and topographic data sets and digitizing levee systems. 2016.-2017.

FEMA Flood Map Appeal, Stonington, ME. Appealed FEMA preliminary flood maps in a coastal zone. Simulated 1% annual chance storm conditions using STWAVE, SWAN 1-D, WHAFIS, and RUNUP2. Completed a field survey of shoreline infrastructure and revetments. Mapped the Base Flood Elevations in ArcGIS, and compiled the appeal report. 2014.

FEMA Flood Map Appeal, Camden, ME. Appealed FEMA preliminary flood maps in a coastal zone. Required predicting flood levels using STWAVE, and CHAMP, mapping Base Flood Elevations in ArcGIS, and compiling the appeal report. 2014.

FEMA Flood Map Appeal, Gouldsboro, ME. Appealed FEMA preliminary flood maps in a coastal zone. Required predicting flood levels using STWAVE, SWAN 1-D, and CHAMP, mapping Base Flood Elevations in ArcGIS, and compiling the appeal report. 2014.

Daniel B. Robbins, P.E.
Senior Project Manager/Diver

Daniel Robbins is a civil engineer specializing in waterfront engineering services including above and underwater inspections of over 1,000 structures in 9 countries, design, analysis, and construction administration services on a variety of waterfront structures. He has played an integral role in specialized waterfront design projects including State-of-the-Art concrete research. Mr. Robbins has acted as a resident engineer/construction inspector for multiple pier and bulkhead repair and rehabilitation projects throughout the world.

PREVIOUS PROJECT EXPERIENCE

Hampton Harbor State Marina Waterfront Rehabilitation PDA-Division of Ports & Harbors, Hampton, NH. Project Engineer-Diver providing inspection and design services to rehabilitate a commercial fishing ports' waterfront facilities in Hampton, New Hampshire. Rehabilitation involved installing sheet pile outside of an existing deteriorated wall, floating docks, and utilities including water, electrical, fuel, lighting, and security cameras at an estimated construction cost of $1,500,000.

USCG Waterfront Facilities Inspections and Repairs, District 1 (NJ, NY, CT, RI, MA, NH, VT, ME). Senior Project Engineer assisting with a multi-year ID/IQ A/E service contract with approximately 90 task orders for above and underwater inspection, assessment, and structural engineering and design services of waterfront facilities. Project responsibilities ranged from conceptual design for planning proposals to structural analysis, design of replacement structures, and technical reviews.

NAVFAC EXWC Waterfront Facilities Inspections & Assessments, worldwide including NY. Project Manager - Diver tasked to perform waterfront facilities inspections and assessments worldwide including NAVFAC Facilities in New York. The investigations involved routine-level inspection and asset inventory of the waterfront structures including substructure, superstructure, deck components, mooring/berthing system elements, and appurtenances. The intent of the Routine Inspection was to gather sufficient information to complete an assessment of the general structural condition, and provide recommendations for required repairs and operational capabilities. Subsequent design of repairs, cost estimations, and estimated construction schedules were completed following UFC's and specifications were prepared in SpecsIntact.

USCG Southwest Harbor, Waterfront Facility Rehabilitation Southwest Harbor, ME. Project engineer for the design rehabilitation of the marine facilities at USCG Southwest Harbor. The project included the initial above and underwater inspection and report with a follow-on rehabilitation design for $1,800,000 in marine construction. Project involved an innovative design to stabilize a vintage granite quay wall that supported the existing wharf, floating

EDUCATION
B.S., Civil and Environmental Engineering, University of Rhode Island

EXPERIENCE IN THE INDUSTRY
13 years

EXPERIENCE WITH GEI
Less than one year

REGISTRATIONS/CERTIFICATIONS
Professional Engineer, NH, No. 13648
LEED Green Associate, No. 10727537
FHWA - National Highway Institute - Safety Inspection of In-Service Bridges – Course 130055
ADCI Surface-Supplied Air Diving Supervisor
Emergency First Response, First Aid, CPR & O2 Administration
OSHA 10 & 30 Hour – Construction Safety and Health
Transportation Worker Identification Credential (TWIC)

PROFESSIONAL AFFILIATIONS
American Society of Civil Engineers
Boston Society of Civil Engineers
Propeller Club of America
Society of American Military Engineers; Piscataqua Post Board Member

GEI Consultants

docks, and onsite construction consultation including above and underwater inspections.

Cutler Fuel Pier Inspection, Cutler, ME. Engineer-in-Charge for the routine inspection and assessment of the fuel pier at the Naval Computer and Telecommunications Area Master Station. The purpose of the inspection was to assess the facilities overall condition and provide recommendations on repairs.

Load Transfer Facility and Floating Dry Dock Inspection, Bath Iron Works, Bath, ME. Engineer-in-Charge for the routine inspection and assessment of the load transfer facility and floating drydock at Bath Iron Works. The purpose of the inspections was to assess the facilities overall condition and provide recommendations on repairs. Non-destructive and minimally invasive testing was conducted on the steel, concrete and timber elements.

Hurricane Sandy Damage Assessment at USCG Waterfront Facilities, NY & CT. Waterfront Engineer for the inspection and assessment of eight waterfront facilities in the NY-CT region. The scope required deliverables within 10 working days from award (actual submission was made in 8 working days). The project included providing an assessment on operational capability and collection of damage information in sufficient detail to allow development of construction plans, specifications, and estimates for emergency repairs.

MBTA Temporary Stabilization and 30% Design of Remedial Actions for Quincy Ferry Seawall and USS Salem Bulkhead Wall and Wharf Structure, Quincy, MA. Project Manager/Senior Engineer-Diver for the underwater inspection of the bulkhead and wharf structures located at the MBTA's Quincy Ferry Terminal and USS Salem Wharf, in Quincy, Massachusetts. The objective of the inspection was to assess the structural integrity of the bulkhead and wharf structures. The structure was found to be in critical condition. Follow on work included 30% design efforts for temporary stabilization and repair to the facilities.

Dry Dock No. 3 Caisson Replacement and Concrete Repairs, Portsmouth Naval Shipyard, Kittery, ME. Senior Engineer for the design and construction consultation for the reconstruction of the drydock seats, replacement of the caisson gate, and repair and replacement of dry dock appurtenances. An innovative design was completed to repair the outboard seat in the dry without the construction of a full cofferdam using a mini-cofferdam (limpet). The project was phased and structured around two submarine overhauls and has a total construction value of $27,000,000.

Design of Repairs to Marginal Wharf at Naval Sub Base New London, Groton, CT. Project Engineer-Diver for the inspection and design of repairs to the 56 year old Marginal Wharf at Naval Submarine Base New London. This project consisted of above and under water design level inspections to the approximately 6,600 LF long Marginal Wharf and bulkhead, preparation of a basis of design report with recommended repairs totaling $24,000,000, design drawings, technical specifications, and permit preparation.

Inspection, Design of Repairs & PCAS DESC FISC Fuel Pier 1455 & 111 Jacksonville, FL. Project Engineer for inspection and design of repairs to the Navy's fueling facilities in Jacksonville, Florida. The project included rehabilitation of deteriorated concrete piles, mooring hardware and fender systems, and was detailed to allow the Navy's operations to continue during construction. Project included above and underwater inspections, regulatory permitting, and construction inspection. The project was a success for the Navy and has significantly extended the service life of this facility.

N.H. Department of Transportation Routine Underwater Bridge Inspection. Project Engineer-Diver for NHDOT underwater inspection of bridge structures. Over 100 bridges were inspected underwater as part of the contract. All work was completed in accordance with FHWA and NHDOT inspection requirements. Work included Level I, II, and III inspections, channel assessments, photo documentation, hydrographic surveys, and report preparation.

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