



The State of New Hampshire  
**Department of Environmental Services**

**Robert R. Scott, Commissioner**

5D



November 8, 2017

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

**REQUESTED ACTION**

Authorize the New Hampshire Department of Environmental Services (DES) to amend an existing Cooperative Agreement (PO# 1051000) with the University of New Hampshire, Office of Sponsored Research (VC# 177867-B046), Durham, NH by extending the completion date to December 31, 2018 from December 31, 2017. The original grant was approved by G&C on June 29, 2016, item #82. No additional funding is requested as part of this amendment. 100% Aquatic Resource Mitigation Funds.

**EXPLANATION**

The ARM Fund grant with the University of New Hampshire significantly restores salt marsh habitat, including improvements to the tidal buffer zone, and provides mudflat enhancement measures. The work completed to date includes the removal of 200 linear feet of rock armoring along the Cutts Cove shoreline and the mudflat enhancement in Portsmouth.

The grant presently expires on December 31, 2017. This proposed Amendment extension is requested to extend the contract to December 31, 2018. The extension is necessary for the completion of work which was stalled due to other construction conducted in the area and difficulties encountered in coordinating activities. The work to be completed is final grading and planting of the high marsh located in the upper section of the living shoreline.

We respectfully request your approval.

Robert R. Scott, Commissioner



to this document as **revised** Exhibit B, the content of which is incorporated herein as a part of this Project Agreement.

- Article G. is exercised to amend Article(s) \_\_\_\_\_ of the Master Agreement for Cooperative Projects between the State of New Hampshire and the University System of New Hampshire dated November 13, 2002, as follows:

**Article** \_\_\_\_\_ is amended in its entirety to read as follows:  
**Article** \_\_\_\_\_ is amended in its entirety to read as follows:

- Article H. is amended such that:

- State has chosen **not to take** possession of equipment purchased under this Project Agreement.
- State has chosen **to take** possession of equipment purchased under this Project Agreement and will issue instructions for the disposition of such equipment within 90 days of the Project Agreement's end-date. Any expenses incurred by Campus in carrying out State's requested disposition will be fully reimbursed by State.

- Exhibit A is amended as attached.
- Exhibit B is amended as attached.

All other terms and conditions of the Cooperative Project Agreement remain unchanged.

This Amendment, all previous Amendments, the Cooperative Project Agreement, and the Master Agreement constitute the entire agreement between State and Campus regarding the Cooperative Project Agreement, and supersede and replace any previously existing arrangements, oral and written; further changes herein must be made by written amendment and executed for the parties by their authorized officials.

This Amendment and all obligations of the parties hereunder shall become effective on the date the Governor and Executive Council of the State of New Hampshire or other authorized officials approve this Amendment to the Cooperative Project Agreement.

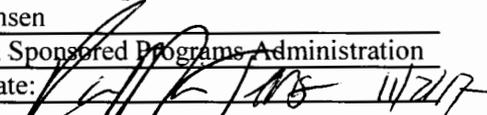
IN WITNESS WHEREOF, the following parties agree to this **Amendment #01** to the Cooperative Project Agreement.

**By An Authorized Official of:**

**University of New Hampshire**

Name: Karen Jensen

Title: Manager, Sponsored Programs Administration

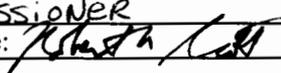
Signature and Date:  11/21/17

**By An Authorized Official of:**

**Department of Environmental Services**

Name: Robert R. Scott

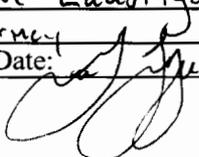
Title: Commissioner

Signature and Date:  9 NOV 14

**By An Authorized Official of:** the New Hampshire Office of the Attorney General

Name: Gordon Landrigan

Title: Attorney

Signature and Date:  11/16/17

**By An Authorized Official of:** the New Hampshire Governor & Executive Council

Name: \_\_\_\_\_

Title: \_\_\_\_\_

Signature and Date: \_\_\_\_\_

**EXHIBIT A**

- A. Project Title:** Habitat Restoration Cutts Cove
- B. Project Period:** 04/01/16 – 12/31/18
- C. Objectives:** No revisions
- D. Scope of Work:** No revisions
- E. Deliverables Schedule:** Complete planting and site work along 200 feet of Cutts Cove by 10/31/18.
- F. Budget and Invoicing:** No revisions



The State of New Hampshire  
DEPARTMENT OF ENVIRONMENTAL SERVICES

Lori Sommer



Thomas S. Burack, Commissioner

May 6, 2016

Her Excellency, Governor Margaret Wood Hassan  
and the Honorable Council  
State House  
Concord, New Hampshire 03301

APPROVED G & C

DATE 6/29/16  
ITEM # 82

**REQUESTED ACTION**

Authorize the New Hampshire Department of Environmental Services (DES) to award an Aquatic Resource Mitigation (ARM) Fund grant to The University of New Hampshire Office of Sponsored Research (hereinafter "UNHOSR"), Durham, NH (Vendor Code #177867-B046) in the amount of \$134,736 to replace the upper portion of an armored shoreline in Portsmouth with saltmarsh habitat and provide improvements to the tidal buffer zone, effective upon G&C approval through December 31, 2017. 100% Aquatic Resource Mitigation Funds.

Funding is available in the account as follows:

03-44-44-442010-38710000-073-500581  
Dept. Environmental Services, In-Lieu Wetland Mitigation, Grants - Non - Federal  
FY'16  
\$134,736.00

**EXPLANATION**

New Hampshire RSA 482-A:3 requires a wetland permit for any proposed project that involves dredging or filling of a wetland. Before a wetland permit is issued, applicants must show that the proposed project will avoid adverse impacts to wetlands and will minimize and provide compensation for those wetland impacts which are unavoidable.

The DES wetlands program adopted a set of mitigation rules that establish what is necessary for an applicant to provide for wetland compensation. The current department rules spell out ratios for wetland compensation that include creating a new wetland, restoring a former wetland site, or protecting a high-quality aquatic resource by preserving adjacent upland habitat. The newest improvement, begun in 2006, to the mitigation options is commonly referred to as an *in-lieu fee program*. This mitigation option is ideal for projects that have difficulty in locating an appropriate mitigation site. The Aquatic Resource Mitigation Fund (ARM) authorizes the collection of mitigation funds in lieu of other forms of wetland mitigation as part of a Wetlands Permit Application.

The Department issued the request for proposals for ARM Funds available in the Salmon Falls-Piscataqua River watershed in April, 2015. Six applications were received and on October 29, 2015, DES announced the decision to fund this UNHOSR project in the Salmon Falls-Piscataqua River Watershed. The project proposed by UNHOSR was recommended for funding by the ARM Fund Site Selection Committee. Attachment A lists the proposals received and Committee members involved in the decision. The review of the awards by the Army Corps of Engineers and the New Hampshire Wetland Council resulted in full support of the recommendations.

Her Excellency, Governor Margaret Wood Hassan  
And the Honorable Council  
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This project will replace the upper portion of an armored shoreline in Portsmouth adjacent to the new Route 1 Bypass Bridge with salt marsh habitat, include improvements to the tidal buffer zone, and provide mudflat enhancement measures. The project objectives include:

- Removal of 200 linear feet of rock armoring along the Cutts Cove shoreline;
- Creation of an intertidal salt marsh area (5,000 sq. ft.);
- Improved (created) Tidal Buffer Zone (3,000 sq. ft.) with functional connections to marsh and upland areas along 200 linear feet of artificial shoreline;
- Enhancement of mudflat (60,000 sq. ft.) through placement of native shell; and
- Public outreach and interpretation using signage to be developed in conjunction with the City of Portsmouth for their Gateway Park.

Site monitoring will be conducted seasonally and following potentially damaging weather events for five years as part of this project.

In the event that other funds no longer become available, general funds will not be requested to support this program. This agreement has been approved as to form, content, and execution by the Attorney General's Office.

We respectfully request your approval.

  
Thomas S. Burack, Commissioner

**COOPERATIVE PROJECT AGREEMENT**

between the

STATE OF NEW HAMPSHIRE, **Department of Environmental Services**

and the

**University of New Hampshire** of the UNIVERSITY SYSTEM OF NEW HAMPSHIRE

- A. This Cooperative Project Agreement (hereinafter "Project Agreement") is entered into by the State of New Hampshire, **Department of Environmental Services**, (hereinafter "State"), and the University System of New Hampshire, acting through **University of New Hampshire**, (hereinafter "Campus"), for the purpose of undertaking a project of mutual interest. This Cooperative Project shall be carried out under the terms and conditions of the Master Agreement for Cooperative Projects between the State of New Hampshire and the University System of New Hampshire dated November 13, 2002, except as may be modified herein.
- B. This Project Agreement and all obligations of the parties hereunder shall become effective on the date the Governor and Executive Council of the State of New Hampshire approve this Project Agreement ("Effective date") and shall end on **12/31/17**. If the provision of services by Campus precedes the Effective date, all services performed by Campus shall be performed at the sole risk of Campus and in the event that this Project Agreement does not become effective, State shall be under no obligation to pay Campus for costs incurred or services performed; however, if this Project Agreement becomes effective, all costs incurred prior to the Effective date that would otherwise be allowable shall be paid under the terms of this Project Agreement.
- C. The work to be performed under the terms of this Project Agreement is described in the proposal identified below and attached to this document as Exhibit A, the content of which is incorporated herein as a part of this Project Agreement.

**Project Title: A Multi-Habitat Restoration in Cutts Cove**

- D. The Following Individuals are designated as Project Administrators. These Project Administrators shall be responsible for the business aspects of this Project Agreement and all invoices, payments, project amendments and related correspondence shall be directed to the individuals so designated.

**State Project Administrator**

Name: Lori Sommer  
Address: NH Department of Environmental Services  
29 Hazen Drive  
Concord, NH 03302  
Phone: 271-4059

**Campus Project Administrator**

Name: Dianne Hall  
Address: University of New Hampshire  
Sponsored Programs Administration  
51 College Rd. Rm 116  
Durham, NH 03824  
Phone: 603-862-1942

- E. The Following Individuals are designated as Project Directors. These Project Directors shall be responsible for the technical leadership and conduct of the project. All progress reports, completion reports and related correspondence shall be directed to the individuals so designated.

**State Project Director**

Name: Melinda Bubier  
Address: NH Department of Environmental Services  
29 Hazen Drive  
Concord, NH 03302  
Phone: 271-0727

**Campus Project Director**

Name: Dr. David Burdick  
Address: University of New Hampshire  
Natural Resources  
James Hall Rm 266  
Durham, NH 03824  
Phone: 603-862-5129

F. Total State funds in the amount of \$134,736 have been allotted and are available for payment of allowable costs incurred under this Project Agreement. State will not reimburse Campus for costs exceeding the amount specified in this paragraph.

Check if applicable

Campus will cost-share \_\_\_\_\_ % of total costs during the term of this Project Agreement.

Federal funds paid to Campus under this Project Agreement are from Grant/Contract/Cooperative Agreement No. \_\_\_\_\_ from \_\_\_\_\_ under CFDA# \_\_\_\_\_. Federal regulations required to be passed through to Campus as part of this Project Agreement, and in accordance with the Master Agreement for Cooperative Projects between the State of New Hampshire and the University System of New Hampshire dated November 13, 2002, are attached to this document as Exhibit B, the content of which is incorporated herein as a part of this Project Agreement.

G. Check if applicable

Article(s) \_\_\_\_\_ of the Master Agreement for Cooperative Projects between the State of New Hampshire and the University System of New Hampshire dated November 13, 2002 is/are hereby amended to read:

H.  State has chosen **not to take** possession of equipment purchased under this Project Agreement.  
 State has chosen **to take** possession of equipment purchased under this Project Agreement and will issue instructions for the disposition of such equipment within 90 days of the Project Agreement's end-date. Any expenses incurred by Campus in carrying out State's requested disposition will be fully reimbursed by State.

This Project Agreement and the Master Agreement constitute the entire agreement between State and Campus regarding this Cooperative Project, and supersede and replace any previously existing arrangements, oral or written; all changes herein must be made by written amendment and executed for the parties by their authorized officials.

IN WITNESS WHEREOF, the University System of New Hampshire, acting through the **University of New Hampshire** and the State of New Hampshire, **Department of Environmental Services** have executed this Project Agreement.

By An Authorized Official of:  
**University of New Hampshire**  
Name: Karen M. Jensen  
Title: Manager, Sponsored Programs Administration  
Signature and Date: [Signature] 4/28/16

By An Authorized Official of:  
**Department of Environmental Services**  
Name: Thomas S. Burack  
Title: Commissioner  
Signature and Date: [Signature] 5/27/2016

By An Authorized Official of: the New  
Hampshire Office of the Attorney General  
Name: Christopher E. Aslin  
Title: Assistant Attorney General  
Signature and Date: [Signature] 6/2/16

By An Authorized Official of: the New  
Hampshire Governor & Executive Council  
Name: \_\_\_\_\_  
Title: \_\_\_\_\_  
Signature and Date: \_\_\_\_\_

## EXHIBIT A

- A. Project Title:** A Multi-Habitat Restoration in Cutts Cove
- B. Project Period:** April 1, 2016 - December 31, 2017
- C. Objectives:** Our project will replace the upper portion of an armored shoreline in Portsmouth adjacent to the new Route 1 Bypass Bridge with new salt marsh, improvements to the tidal buffer zone, and enhanced mudflat. Our objectives include:
- Removal of 200 linear feet of armoring along the Cutts Cove shoreline
  - Creation of an intertidal salt marsh (5,000 sq ft)
  - Improved (created) Tidal Buffer Zone (TBZ; 3,000 sq ft) with functional connections to marsh and upland along 200 feet of artificial shoreline
  - Enhancement of mudflat (60,000 sq ft) through placement of native shell
  - Public outreach and interpretation using signage to be developed in conjunction with the City of Portsmouth for their Gateway Park.

Because our work is planned on State lands (mudflat) and land dedicated by the City to be a park, the area will be protected from development in perpetuity. The added structure for mudflats using shell will increase heterogeneity of substrate and support greater benthic diversity (Coen and Grizzle 2007), important as prey items for higher trophic levels (including fish). The effects are expected to last more than 10 years past the lifetime of the project as a variety of organisms will be able to colonize and continue to develop structure into the immediate future (Powers and Boyer 2013). Currently the site does not support marsh migration because of the rip-rap wall that extends from the mudflat to several feet above the high tide line.

**D. Scope of Work:**

**Site Manipulation and Protection**

For the mudflat enhancement, shell will be loaded onto JEL's pontoon barge on-site (accessed by Market Street Extension). Shell will be transported and released onto the mudflat area at high tides. An even distribution of shell across the area planned for enhancement will be achieved by use of GPS and low-tide surveys.

For the shoreline re-grading into high marsh and tidal buffer zone, sediment fences of appropriate scale will be installed along the lower edge of the project area to reduce sediments moving from site to mudflat. A geotextile sediment barrier will be placed between remaining rip-rap and upland to stabilize soils and catch sediments moving through the soil. Sand and silt to finish the grading and provide appropriate substrate for tidal marsh will be recycled from bridge building and removal activities or purchased as needed.

Plants will be grown from NH seed by NE Wildflowers and planted at appropriate elevations at 1 foot centers within four weeks of construction. No invasive species that could colonize the intertidal zone were found in Cutts Cove, though common reed has been growing at intertidal locations south of Market Street Extension (by the submarine museum) for over 20 years (personal observation). The plant species and density for the tidal buffer zone will be developed in conjunction with the

landscape plan for the City Gateway Park. Runoff in the high marsh and tidal buffer zone will be reduced by mulching.

Opportunities to utilize local area students for planting will be sought. A smaller project on Mill Pond Way in Portsmouth restored a marsh shoreline through removal of construction rubble and re-grading and planting by students (fifth grade) and adult volunteers (Advocates for the North Mill Pond). Survival after one month was 89% for the low marsh and 84% for the high marsh plants (Burdick 2011).

The site will be examined for problems with erosion and sediment movement. Evidence of erosion from tides and rainfall will be documented and repaired immediately. Monitoring will be conducted seasonally and following potentially damaging weather events for five years as part of this project. It is anticipated that years 3-5 will be supported by the NH DOT as part of the port functional replacement. Any shoots of common reed will be identified and shoots and rhizomes will be removed and disposed of properly. The tidal buffer zone will be mulched and weeded to remove and control invasive plants.

#### Wetland Functions

Functions of the enhanced mudflat and tidal marshes were discussed previously. Burdick compared the current rip-rap wall to the planned tidal marsh and buffer zone using the Coastal Method. Overall, the differences between the two, shown in Table 2, come from transforming a near vertical rip-rap wall that extends up to three feet above spring high tide with little habitat (Norway rats), aesthetic and educational value to one with a vegetated gentler slope, habitat for fish and birds, improved aesthetic quality and of high educational potential for the life of the project (5 years) and beyond. The Coastal Method did not include mudflat habitat, but we described expected benefits to the habitat earlier.

#### E. Deliverables Schedule:

Deliverable 1 - July 1, 2016: Pre-Construction Planning; Planning meetings, developing final designs and plans, and obtaining permits

Deliverable 2 - September 1, 2016: Mudflat Enhancement: Shell procurement, transport and deposition, including oversight by JEL Staff. -

Deliverable 3 - December 1, 2016: Marsh Restoration; Preparation of site, construction activities and planting and oversight by JEL Staff.

Deliverable 4 - December 31, 2021: Five Years of Monitoring; Five years of monitoring including field analysis, interpretation, and reporting. Reports shall be submitted annually and invoices submitted for costs incurred for annual monitoring each year.

**F. Budget and Invoicing Instructions:** Campus will submit invoices to State on regular Campus invoice forms no more frequently than monthly and no less frequently than quarterly. Invoices will be based on actual project expenses incurred during the invoicing period, and shall show current and cumulative expenses by major cost categories as shown below. State will pay Campus within 30 days of receipt of each invoice. Campus will submit its final invoice not later than 60 days after the Project Period end date.

Budget Items	State Funding	Cost Sharing	Total
1. Salaries & Wages	61,567	0	61,567
2. Employee Fringe Benefits	24,566	0	24,566
3. Travel	400	0	400
4. Supplies and Services	20,400	0	20,400
5. Equipment	0	0	0
6. Facilities & Admin Costs	27,803	0	27,803
Subtotals	134,736	0	134,736
Total Project Costs:			134,736

**Attachment A  
2015 Aquatic Resource Mitigation Fund Grants**

**Applications and Funding Amounts**

<b>Grant Applicant</b>	<b>Location/Town</b>	<b>Requested Funding Amount</b>	<b>Score</b>	<b>Approved for Funding</b>
The Nature Conservancy	Greenland, Newington	\$190,500	42	Yes
University of New Hampshire, Jackson Laboratory	Portsmouth	\$135,000	27	Yes
Society for the Protection of New Hampshire Forests	Durham, Madbury, Lee	\$148,000	61	Yes
University of New Hampshire, Stormwater Center	Dover	\$125,122	33	No
Town of Rye	Rye	\$75,000	45	No
Town of Barrington	Barrington	\$148,000	58	No

(Note: Each Committee member scores the projects and their scores are combined to create the total score.)

**Site Selection Committee List**

<b>Name</b>	<b>Agency/Organization</b>	<b>Title</b>	<b>Years of Experience</b>
Craig Rennie	NHDES, Land Resource Management Program	Land Resource Specialist	19
Peter Bowman	NH Dept. of Resources & Economic Development	Wildlife Biologist	17
Nancy Rendall	NH Association of Natural Resource Scientists	Charter Member	33
Michael Marchand	NH Fish and Game Department	Senior Biologist	12
Rick Vande Poll	New Hampshire Association of Conservation Commissions	Town of Sandwich	37

**Attachment B**  
**Multi-Habitat Restoration in Cutts Cove, Portsmouth**

