



William Cass, P.E. Commissioner

THE STATE OF NEW HAMPSHIRE DEPARTMENT OF TRANSPORTATION





Bureau of Materials & Research November 3, 2023

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

REQUESTED ACTION

The Department of Transportation requests placing this item on the Consent Calendar.

Authorize the Department of Transportation to amend a **SOLE SOURCE** Cooperative Project Agreement (CPA) with the University of New Hampshire Sponsored Programs Administration (Vendor #315187), Durham, New Hampshire, by extending the completion date from January 31, 2024, to January 31, 2026, to provide a cooperative evaluation to reduce runoff and improve water quality at the Welcome and Information Center rest area along Interstate 89 southbound in Sutton, NH, effective upon Governor and Council approval. No additional funding is involved in this time extension. The original contract was approved by Governor and Council on May 5, 2021, Item #27.

EXPLANATION

The Department is collaborating with UNH to conduct a cooperative research study, "Water Quality Test Site and Public Outreach at the Sutton Rest Area", for a cooperative evaluation of green stormwater infrastructure implementation with monitoring of the existing site runoff characteristics and water quality. The research study addresses an immediate Department need; is unique to New Hampshire's environment and conditions, thereby requiring substantial local experience; and is directly aligned with a particular area of University expertise.

On May 5, 2021, the original CPA was approved by Governor and Council (Item #27, copy of resolution attached). Construction at the rest area has been delayed to spring of 2024 with monitoring needed through winter 2024/2025. This requested action extends the completion date of the research study. The construction project has experienced delays and, as a result, a no-cost extension is requested. Essential to meeting the requirements and objectives of this research project, the time is needed to continue the site monitoring planned for this project.

Authorization is requested to allow the Department to enter into this amended CPA with the recipient to ensure compliance with Federal Aid requirements and to permit State personnel to supervise the project and the Department to expend Federal Funds.

In the event that Federal Funds become unavailable, general funds will not be requested to support this program. All other provisions of the agreement shall remain in effect.

This amended Agreement has been approved by the Attorney General as to form and execution. A copy of the fully executed amendment is on file at the Secretary of State's Office and the Department of Administrative Services, and subsequent to the Governor and Council approval will be on file at the Department of Transportation.

It is respectfully requested that authority be given to amend this Agreement.

Sincerely,

William J. Cass, PE Commissioner

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Attachments

AMENDMENT #1 to

COOPERATIVE PROJECT AGREEMENT

between the

STATE OF NEW HAMPSHIRE, Department of Transportation

and the

University of New Hampshire of the UNIVERSITY SYSTEM OF NEW HAMPSHIRE

The Cooperative Project Agreement, approved by the State of New Hampshire Governor and Executive Council on 5/5/21, item #27, for the Project titled "Water Quality Test Site and Public Outreach at the Sutton Rest Area (SPR 42372H)," Campus Project Director, Dr. Tom Ballestero, is and all subsequent properly approved amendments are hereby modified by mutual consent of both parties for the reason(s) described below:

Article F. is amended to change the source of Federal funds paid to Campus and will read:

	Grant/Contract regulations re accordance with and the Unive	Is paid to Campus un et/Cooperative Agreement N equired to be passed through the Master Agreement for rsity System of New Hamps whibit B, the content of which	No. Igh to Cam or Cooperati Shire dated N	from pus as p ive Proje Novembe	under part of this ets between er 13, 2002, a	CFDA# Project Agreen the State of Nev are attached to the	Fed Fednent, and Hamps is docun	d in shire ment
b		cised to amend Article(s) of New Hampshire and the				nt for Cooperating the shire dated N		
	Article Article	is amended in its entirety t is amended in its entirety t						
• A	Article H. is amer	nded such that:						
[State has chose issue instruction	en not to take possession of sen to take possession of e ons for the disposition of successes incurred by Campus State.	equipment p ch equipme	ourchased nt within	d under this 90 days of t	Project Agreem he Project Agree	ent and ement's	end-
• [Exhibit A is a	mended as attached.						
• [Exhibit B is an	mended as attached.						
411 c	other terms and co	onditions of the Cooperative	e Project A	greement	remain unc	hanged.		
cons supe	titute the entire a	previous Amendments, the greement between State and any previously existing and adment and executed for the	d Campus r rangements	egarding, oral and	the Coopera d written; fu	ntive Project Ag rther changes he	reement,	, and
and	Executive Counc	l all obligations of the partie il of the State of New Ham oject Agreement.	es hereunde pshire or of	r shall be ther auth	ecome effect orized offici	ive on the date tals approve this	he Gove Amendr	ernor ment
	WITNESS WHE	REOF, the following partie	es agree to	this Am	endment #1	1 to the Cooper	ative Pro	oject
•	An Authorized niversity of New				Authorized ment of Tra	Official of: nsportation		
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Sig	nature and Date:		Page 2 of 3		e and Date.			



Victoria F. Sheehan Commissioner

THE STATE OF NEW HAMPSHIRE DEPARTMENT OF TRANSPORTATION

G+C #27



Bureau of Materials & Research April 5, 2021

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

REQUESTED ACTION

Authorize the Department of Transportation to enter into a **SOLE SOURCE** Cooperative Project Agreement with the University of New Hampshire Sponsored Programs Administration (vendor 315187), Durham, New Hampshire, for a fee not to exceed \$87,862.00, for a cooperative evaluation of green stormwater infrastructure implementation to reduce runoff and improve water quality at the Welcome and Information Center rest area along Interstate 89 southbound in Sutton, NH effective upon Governor and Council approval through January 31, 2024. 100% Federal Funds.

Funds to support this request are available in the following account for FY 2021 and is contingent upon the availability and continued appropriation of funds in FY 2022, with the ability to adjust encumbrances between State Fiscal Years through the Budget Office, if needed and justified.

04-96-96-962015-3036

FY 2021

FY 2022

SPR Research Funds

046-500464 General Consultants Non-Benefit

\$50,000.00

\$37,862.00

EXPLANATION

The following research study will address an immediate Department need; is unique to New Hampshire's environment and conditions, thereby requiring substantial local experience; and is directly aligned with a particular area of University expertise. In addition, the Principal Investigator is a nationally recognized expert in their field. As such, the proposed work does not lend itself to a selection process that includes private industry or out-of-state organizations, and it is in the Department's and the State's best interest to work directly with the University of New Hampshire, requiring this **sole source** agreement.

This work is part of the Department's Statewide Planning and Research (SPR) program. The Department of Transportation and the University of New Hampshire (UNH) have a long-standing cooperative relationship in transportation research. This relationship has been mutually beneficial, culminating in savings to the State while enhancing work force development and maintaining New Hampshire's position on the leading edge of new technology. Research studies conducted by UNH for the Department have led to numerous innovations in the highway and bridge industry, including improved pavement design, increased use of recycled materials, stormwater management evaluation, and rapid construction techniques.

Statewide-SPR 42372H, Water Quality Test Site and Public Outreach at the Sutton Rest Area

The Department is collaborating with UNH to conduct a cooperative research study, "Water Quality Test Site and Public Outreach at the Sutton Rest Area". NHDOT is reconstructing the outside area of the Welcome and Information Center rest area along Interstate 89 southbound in Sutton, NH. One facet of this reconstruction is the design of green stormwater infrastructure (GSI) that not only improves water quality but also reduces runoff via infiltration. Additionally, there is an unnamed stream under the site that flows eastward to Stevens Brook. The reconstruction project offers the opportunity to investigate improvements to aquatic organism passage along this section of the stream.

The objectives of this research are to: develop GSI designs for the Sutton rest area; estimate costs for GSI systems; investigate aquatic organism passage (AOP) for the buried stream; develop cost estimates for the AOP aspects, monitor existing site runoff characteristics and water quality; monitor post-construction runoff characteristics and water quality; develop maintenance plans; and develop public outreach information for the GSI and AOP designs. For a total fee not to exceed \$87,862 effective upon Governor and Council approval though January 31, 2024, this research could result in water quality measures that will more often fit within the available Right of Way of a traditional highway project. This will result in lower costs to purchase additional land and it will lower the impact on the community. This research may also discover lower maintenance options that will allow our maintenance staff to focus on other highway maintenance tasks that are needed.

The funding is 80% Federal Funds with 20% state match. Turnpike toll credit is being used for the match requirement, effectively using 100% Federal Funds. The Capital Budget Overview Committee approved the use of Turnpike Toll Credits on April 2, 2021.

This Agreement has been approved by the Attorney General as to form and execution. Copies of the fully-executed Agreement are on file at the Secretary of State's Office and the Department of Administrative Services, and subsequent to Governor and Council approval will be on file at the Department of Transportation.

It is respectfully requested that authority be given to enter into these sole-source Agreement for consulting services as outlined above.

Sincerely.

Victoria F. Sheehan

Commissioner

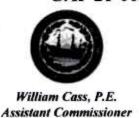
Attachments



Victoria F. Sheehan Commissioner

THE STATE OF NEW HAMPSHIRE DEPARTMENT OF TRANSPORTATION

Approved by the Capital Budget Overview Committee April 2, 2021



Bureau of Materials and Research February 17, 2021

The Honorable Chairman
Capital Budget Overview Committee
State House
Concord, New Hampshire 03301

REQUESTED ACTION

Pursuant to the provisions RSA 228:12-a, Use of Toll Credits, the Department requests the Capital Budget Overview Committee approve the Department of Transportation's use of Toll Credits to meet funding match requirements for seven (7) proposed research projects as described in the federally approved Department's 2021 State Planning and Research Part II (SPR2) Work Program. The estimated cost of research related work is \$863,409.70. Based on the estimated cost, the maximum amount of Turnpike Toll Credit needed is \$172,681.94.

EXPLANATION

As part of the Federal-Aid Highway Program, the Federal Highway Administration (FHWA) requires that 2% of the State's apportioned funds be set aside for State Planning and Research activities with 75% dedicated to planning and 25% to research. This is a federally mandated program and these funds can only be used for these purposes. To meet this requirement, the NHDOT's State Planning and Research Part II (SPR2) annual Work Program includes a blend of in-house and contracted research work.

Research activities included in the requested action are undertaken in accordance with federal regulations and state priorities and were selected by the Department's Research Advisory Council and approved by the NH Division Federal Highway Administration. They include the following:

- Crushed Gravel for Shoulder Leveling 304.32
- Use of Drilling Parameters for Enhancing Geotechnical Site Investigations
- Subsurface Investigations for the 21st Century Advancing our Practices beyond the Borehole
- Water Quality Test Site and Public Outreach at the Sutton Rest Area
- Wildlife Vehicle Collisions Data Gathering and Best Management Practices
- Concrete Slab Jacking
- Bus Stops and Passenger Amenities in Public Highway Right-Of-Ways

Research studies conducted under the SPR2 program have led to numerous gains and innovations in the state's highway and bridge industry, including such successes as improved pavement treatment,

alternative materials and methods for bridge construction and repair, validation of environmental compliance, and forensic analysis of transportation construction activities.

Funding is from the annual State Planning and Research (SPR) program, a mandated federal program set-aside.

The balance of toll credits at the end of federal fiscal year 2020 is \$202.6 million.

Your approval of the above action is respectfully requested.

Sincerely,

Victoria F. Sheehan Commissioner

Attachments

COOPERATIVE PROJECT AGREEMENT

between the

STATE OF NEW HAMPSHIRE, DEPARTMENT OF TRANSPORTATION

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 Transportation**, (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 1/31/24. 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: WQ Test Site & Public Outreach at the Sutton Rest Area (SPR Project # 42372H)

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: Ann Scholz

Address: NHDOT Bureau of Materials &

Research

5 Hazen Dr. PO Box 483 Concord, NH 03302-0483

Phone: 603 271-1659

Campus Project Administrator

Name: Cheryl Moore

Address: University of New Hampshire

Sponsored Programs Administration

51 College Rd. Rm 111 Durham, NH 03824-2620

Phone: 603-862-1992

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: Tobey Reynolds

Address: NHDOT Bureau of Highway Design

7 Hazen Drive, PO Box 483 Concord, NH 03302-0483

Phone: 603 271-7421

Campus Project Director

Name: Dr. Thomas Ballestero

Address: University of New Hampshire

Gregg Hall, Room 238

Colovos Road

Durham, NH 03824603 862-1405

Phone: 603 862-1405

	,862 have been allotted and are available for payment of allowable ement. State will not reimburse Campus for costs exceeding the
Check if applicable Campus will cost-share %	of total costs during the term of this Project Agreement.
Agreement No. NA from USD Federal regulations required to be in accordance with the Master A Hampshire and the University Sys	der this Project Agreement are from Grant/Contract/Cooperative OT Federal Highway Administration under CFDA# 20.205. passed through to Campus as part of this Project Agreement, and Agreement for Cooperative Projects between the State of New Stem of New Hampshire dated November 13, 2002, are attached a content of which is incorporated herein as a part of this Project
	Agreement for Cooperative Projects between the State of New stem of New Hampshire dated November 13, 2002 is/are hereby
State has chosen to take possession issue instructions for the disposition of	ession of equipment purchased under this Project Agreement. on of equipment purchased under this Project Agreement and will f such equipment within 90 days of the Project Agreement's end- mpus in carrying out State's requested disposition will be fully
Campus regarding this Cooperative F	Agreement constitute the entire agreement between State and Project, and supersede and replace any previously existing herein must be made by written amendment and executed for the
IN WITNESS WHEREOF, the University of New Hampshire and the sexecuted this Project Agreement.	versity System of New Hampshire, acting through the State of New Hampshire, Department of Transportation have
By An Authorized Official of: University of New Hampshire Name: Karen M. Jensen Title:Sponsored Programs Administration, Pre-award	By An Authorized Official of: Department of Transportation Name: Peter E. Stamnas Director Title: Director of Project Development Signature and Date:
Signature and Date: Karen Jensen By An Authorized Official of: the New	3/4/21 J 4/1/21
Hampshire Office of the Attorney Gene Name: Allison Greenstein	ral Hampshire Governor & Executive Council Name: MAY 0 5 2021
Signature and Date: AMM B Hullistin	Title: Signature and Date: 11421
	Page 2 of 6 REPAITY SECRETARY OF STAT

EXHIBIT A

- A. Project Title: WQ Test Site & Public Outreach at the Sutton Rest Area (SPR Project # 42372H)
- B. Project Period: Upon Governor and Council approval 01/31/2024
- C. Objectives: The objectives of this research are to: develop GSI designs for the Sutton rest area; estimate costs for GSI systems; investigate aquatic organism passage (AOP) for the buried stream; develop cost estimates for the AOP aspects, monitor existing site runoff characteristics and water quality; monitor post-construction runoff characteristics and water quality; develop maintenance plans; and develop public outreach information for the GSI and AOP designs.

D. Scope of Work:

Introduction

NHDOT is reconstructing the Welcome and Information Center rest area along Interstate 89 southbound in Sutton, NH. One facet of this reconstruction is the design of green stormwater infrastructure (GSI) that not only improves water quality but also reduces runoff via infiltration. Additionally, there is an unnamed stream under the site that flows eastward to Stevens Brook. The reconstruction project offers the opportunity to investigate improvements to aquatic organism passage along this section of the stream.

Scope of Work

The proposed scope of work focuses on stormwater management and aquatic organism passage designs intended to demonstrate compatibility between NHDOT infrastructure and natural systems.

The watershed area draining to the site from the west is approximately 40 acres (StreamStats) and the present rest area impervious area is approximately 2.2 acres. Given the setting, runoff from the rest area impervious areas from small storms dominates the runoff to the small stream. Impervious area runoff quality aside, the increased runoff from the rest area impervious surfaces can result in stream instabilities.

For stormwater management system designs, the initial efforts shall be to work collaboratively with NHDOT on their design intentions for the rest area transportation and associated infrastructure. Collaboration here is meant to understand the intention of the transportation infrastructure in the framework of stormwater and whether in the planning stage there might be some minor modifications. For example, changing the way the finished surface pitches, leaving some areas unpaved, or simply leaving as many GSI options applicable as possible.

GSI possibilities include permeable pavements, bioretention systems, tree filters/trenches, subsurface gravel wetlands, and subsurface gravel filters. In collaboration with NHDOT personnel, various GSI options will be presented. A very important aspect of these initial collaborations is to include NHDOT maintenance and inspection personnel: GSI practices are only as successful as their maintenance. Lack of maintenance will result in system failures, failure here meaning that the GSI does not meet design expectations. NHDOT personnel will be presented with the maintenance requirements of each type of GSI system, and in turn NHDOT personnel will inform the GSI design

team those practices they routinely perform, and those that might be considered atypical. The intent being to implement GSI systems that fit within the realm of present NHDOT maintenance practice and that NHDOT will maintain the GSI systems long into the future. For example, if permeable pavements are suggested, which require street vacuuming equipment the NHDOT does not possess nor will subcontract for such services, it would be a mistake to include permeable pavements in the design. The permeable pavements could "fail" within a few years. Failure here means that although the pavement is still a solid transportation surface, its stormwater function of infiltration ceases because the surface is clogged.

Once initial discussions with NHDOT provides guidance and constraints for the GSI designs and locations, the GSI designs will be completed and draft designs submitted to NHDOT for review and comment. When NHDOT comments are then used to modify and adapt the GSI designs, final designs shall be prepared along with cost estimates and maintenance plans.

As feasible, programmable water samplers and real time water quality probes will be installed in the unnamed stream flowing through the site. Rather than tap into electricity onsite or use cumbersome batteries for power, separate research funding will purchase solar panels/batteries for operating the units. One sampler shall be placed upstream of the rest area and one immediately downstream of the site and west of south bound 189 (2 sampling locations). Instream real time water quality instrumentation shall also be set at the same locations. The real-time probes will monitor: temperature, conductivity, water depth and pH. The programmable samples will be set to monitor runoff events (as many as possible until construction starts). Samples from these runoff events will be flow-weighted composite samples from which event mean concentrations are developed for each contaminant in the study. Contaminants analyzed for in samples from the automated samplers shall include: chloride, total suspended solids, nitrate, TKN, Total nitrogen, total phosphorus, and orthophosphate. Additional monitoring shall include precipitation and atmospheric pressure. UNHSC will assist with construction inspection.

The stream flowing under the site will be studied for geomorphic dimensions (bankfull width, bankfull area, riffle particle size distribution). These geomorphic dimensions will be used to either assist NHDOT in sizing replacement culverts at the site or developing instream structures that will transition from the stream to the culverts and back to the stream with limited loss of AOP.

Once the GSI systems are constructed and the site stabilized, the stream shall again be monitored at the same three locations for the same water quality variables as the pre-construction sampling.

E. Deliverables Schedule: Quarterly summary reports will be submitted at the end of each three-month calendar year. The research group will meet with the Technical Advisory Group (TAG) quarterly or at major milestones. Expected project start date is following Governor and Council approval early (spring 2021). A three-year project timeline is envisioned from pre- to post-construction. Office efforts may be completed year-round, whereas field efforts will be constrained to May through October.

Date Deliverable
May 2021 Kickoff TAG meeting
June 2021 Quarterly Report
December 2021 Quarterly Report
Quarterly Report

March 2022 Quarterly Report
June 2022 Quarterly Report
Quarterly Report

June 2022	TAG meeting			
September 2022	Quarterly Report			
December 2022	Quarterly Report			
March 2023	Quarterly Report			
June 2023	Quarterly Report			
June 2023	TAG meeting			
September 2023	Quarterly Report			
December 2023	Draft Final Report			

December 2023 Draft Final Report and TAG meeting

January 2024 Final Report, one-page project tech brief, and poster will be prepared for the

NHDOT website.

F. Budget and Invoicing Instructions:

Cost Item (May 1, 2021 start date)	(\$)		
Personnel	\$	33,495	
Fringe benefits	\$	10,365	
Equipment charges	\$	7,200	
Travel-mileage	\$	3,623	
Supplies	\$	2,000	
Lab costs	\$	8,400	
Total direct costs	\$	65,083	
UNH F&A	\$	22,779	
Total Cost	\$	87,862	

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. 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. State may withhold 10% of funds until receipt of final report from UNH. State will provide final payment within 30 days of receipt of the accepted final report.

EXHIBIT B

This Project Agreement is funded under a Grant/Contract/Cooperative Agreement to State from the Federal sponsor specified in Project Agreement article F. All applicable requirements, regulations, provisions, terms and conditions of this Federal Grant/Contract/Cooperative Agreement are hereby adopted in full force and effect to the relationship between State and Campus, except that wherever such requirements, regulations, provisions and terms and conditions differ for INSTITUTIONS OF HIGHER EDUCATION, the appropriate requirements should be substituted (e.g., OMB Circulars A-21 and A-110, rather than OMB Circulars A-87 and A-102). References to Contractor or Recipient in the Federal language will be taken to mean Campus; references to the Government or Federal Awarding Agency will be taken to mean Government/Federal Awarding Agency or State or both, as appropriate.

Special Federal provisions are listed here: None or X Uniform Guidance issued by the Office of Management and Budget (OMB) in lieu of Circulars listed in paragraph above.