



STATE OF VERMONT
JOINT FISCAL OFFICE

MEMORANDUM

To: Joint Fiscal Committee members
From: Sorsha Anderson, Senior Staff Associate
Date: June 17, 2026
Subject: Grant Request - JFO #3285

Enclosed please find one (1) item, which the Joint Fiscal Office has received from the Administration.

JFO #3285: \$1,940,715.00 to the Vermont Agency of Natural Resources, Department of Forests, Parks, and Recreation from the Northern Border Commission. Funds will be used to lead a multi-state demonstration project evaluating nanocellulose-enhanced concrete in transportation infrastructure. The full project cost is \$2,499,535.00. Additional funds of \$502,653.00 will be collected through a subrecipient required match. The remaining \$56,167.00 will be covered by the Department of Forest, Parks and Recreation budget. *[Received June 8, 2026]*

Please review the enclosed materials and notify the Joint Fiscal Office (Sorsha Anderson: sanderson@leg.state.vt.us) if you have questions or would like this item held for legislative review. Please submit concerns by **June 30, 2026**, or we will assume that you agree to consider as final the Governor's acceptance of this request.



State of Vermont
 Department of Finance & Management
 109 State Street, Pavilion Building
 Montpelier, VT 05620-0401

Agency of Administration

[phone] 802-828-2376

**STATE OF VERMONT
 FINANCE & MANAGEMENT GRANT REVIEW FORM**

| | | | | | |
|---|--------------|---|--|---|-----------------|
| Grant Summary: | | These grant funds will be used by FPR to lead a multistate demonstration project evaluating nanocellulose-enhanced concrete in transportation infrastructure. | | | |
| Date: | | 3/18/2026 | | | |
| Department: | | Forests, Parks, and Recreation | | | |
| Legal Title of Grant: | | Nanocellulose-Enhanced Concrete Demonstration | | | |
| Federal Catalog #: | | 90.601 | | | |
| Grant/Donor Name and Address: | | Northern Borders Regional Commission, James Cleveland Federal Building, Suite 1501, 53 Pleasant Street, Concord, NH, 03301 | | | |
| Grant Period: | | From: | To: | | |
| | | 2/1/2026 | 9/30/2029 | | |
| Grant/Donation | | \$1,940,715 | | | |
| | SFY 1 | SFY 2 | SFY 3 | Total | Comments |
| Grant Amount: | \$85,815 | \$1,210,937 | \$643,963 | \$1,940,715 | |
| Position Information: | | # Positions | Explanation/Comments | | |
| | | 0 | There are no limited service positions associated with this grant as FPR will use a temporary position for the Forest Products Specialist. | | |
| Additional Comments: | | The amount being received from NBRC is \$1,940,715 with the total project amount being \$2,499,535. | | | |
| Department of Finance & Management | | Adam Greshin | | Digitally signed by Adam Greshin DN: cn=Adam Greshin, o=State of Vermont, ou=Department of Finance & Management, email=agreshin@state.vt.gov | |
| Secretary of Administration | | Nick Kramer | | (Initial) | |
| Sent To Joint Fiscal Office | | Anna Reinold | | (Initial) | |
| | | REVIEWED By Anna Reinold at 2:08 pm, Jun 08, 2025 | | Date | |





State of Vermont
Commissioner's Office
Department of Forests, Parks & Recreation
1 National Life Drive, Davis 2
Montpelier, VT 05620-3801

Agency of Natural Resources
Danielle Fitzko, Commissioner

[phone] 802-828-1534
[fax] 802-828-1399

To: Sarah Clark, Secretary, Agency of Administration and Vermont Joint Fiscal Committee

From: Danielle Fitzko, Commissioner, Department of Forest, Parks and Recreation

Date: 3/17/2026

Subject: Request for Acceptance (AA-1) of Northern Border Regional Commission Timber for Transit Grant

The Department of Forests, Parks and Recreation (FPR) respectfully requests Joint Fiscal Committee approval to accept a grant award from the Northern Border Regional Commission (NBRC) under the Timber for Transit Program.

In Fall 2025, FPR applied for funding to lead a multistate demonstration project evaluating nanocellulose-enhanced concrete in transportation infrastructure. The project will construct eight pilot installations across the Northern Border region to demonstrate the environmental and economic benefits of incorporating timber-derived nanomaterials into infrastructure projects. The initiative is intended to catalyze commercialization of nanocellulose, support regional forestry and manufacturing jobs, and reduce the carbon footprint of transportation infrastructure.

FPR has been awarded \$1,940,715 for the grant period of February 1, 2026 through September 30, 2029.

Approximately \$1.6 million of the award will be distributed to project partners as subrecipient agreements to support research, demonstration construction, and evaluation activities. FPR will serve as the lead entity responsible for project oversight, compliance, reporting, and fiscal management. Approval of this request will allow FPR to initiate project implementation and execute subrecipient agreements.

Thank you for your consideration.

Enclosed for each award:
AA-1 Form and Required Documentation



STATE OF VERMONT REQUEST FOR GRANT (*) ACCEPTANCE (Form AA-1)

| BASIC GRANT INFORMATION | | | | |
|--|---|--------------------|------------------|--------------------|
| 1. Agency: | Natural Resources | | | |
| 2. Department: | Forests, Parks and Recreation | | | |
| 3. Program: | Forest Economy | | | |
| 4. Legal Title of Grant: | Nanocellulose-Enhanced Concrete Demonstration | | | |
| 5. Federal Catalog #: | 90.601 | | | |
| 6. Grant/Donor Name and Address: | | | | |
| Northern Borders Regional Commission, James Cleveland Federal Building, Suite 1501, 53 Pleasant Street, Concord, NH, 03301 | | | | |
| 7. Grant Period: | From: | 2/1/2026 | To: | 9/30/2029 |
| 8. Purpose of Grant: | | | | |
| The Nanocellulose-Enhanced Concrete Demonstration Projects will catalyze the regional use of innovative, timber-derived nanomaterials in transportation infrastructure. This is a multistate project in the feasibility and implementation project category led by the Vermont Department of Forests, Parks & Recreation (VT FPR) with collaborators from the State University of New York, College of Environmental Science and Forestry (SUNY-ESF), the University of Maine (UMaine), and the University of New Hampshire (UNH) in consultation with Oregon State University (OSU) and the USDA Forest Products Laboratory (FPL). The project will result in construction and evaluation of seven demonstration installations with nanocellulose-enhanced concrete at scale and will showcase tangible economic and environmental benefits for the northern border region while addressing the two-sided market failure plaguing nanocellulose commercialization efforts over the last decade. | | | | |
| 9. Impact on existing program if grant is not Accepted: | | | | |
| Without this funding, the multistate demonstration and evaluation of nanocellulose-enhanced concrete would be delayed or significantly reduced in scope, slowing commercialization efforts and limiting the region's ability to validate economic and environmental benefits of this innovative timber-derived material. | | | | |
| 10. BUDGET INFORMATION | | | | |
| | SFY 1 | SFY 2 | SFY 3 | Comments |
| Expenditures: | FY 26 | FY 27 | FY 28 | |
| Personal Services | \$87,354 | \$93,261 | \$93,260 | |
| Operating Expenses | \$17,183 | \$25,127 | \$20,127 | |
| Grants | \$0 | \$1,446,374 | \$716,849 | |
| Total | \$104,537 | \$1,564,762 | \$830,236 | |
| Revenues: | | | | |
| State Funds: | \$0 | \$0 | \$0 | |
| Cash | \$18,722 | \$18,723 | \$18,722 | |
| In-Kind | \$ | \$ | \$ | |
| Federal Funds: | \$0 | \$0 | \$0 | |
| (Direct Costs) | \$85,815 | \$1,210,937 | \$643,963 | |
| (Statewide Indirect) | \$ | \$ | \$ | |
| (Departmental Indirect) | \$ | \$ | \$ | |
| Other Funds: | \$ | \$ | \$ | |
| Grant (source in-kind) | \$ | \$335,102 | \$167,551 | Subrecipient Match |
| Total | \$104,537 | \$1,564,762 | \$830,236 | |

STATE OF VERMONT REQUEST FOR GRANT (*) ACCEPTANCE (Form AA-1)

| | |
|--|---|
| <input checked="" type="checkbox"/> Grant Agreement | <input type="checkbox"/> Form AA-1PN attached (if applicable) |
| <input checked="" type="checkbox"/> Grant Budget | |
| End Form AA-1 | |
| (*) The term "grant" refers to any grant, gift, loan, or any sum of money or thing of value to be accepted by any agency, department, commission, board, or other part of state government (see 32 V.S.A. §5). | |



**Grant Agreement
Between
Northern Border Regional Commission (NBRC)
And
DEPARTMENT OF FORESTS PARKS & RECREATION
VERMONT
December 2, 2025**

Grant EGMS ID:

| | |
|--|--|
| <p>Grantee/Recipient: DEPARTMENT OF FORESTS PARKS & RECREATION VERMONT Authorized Official: Danielle Fitzko, ONE NATIONAL LIFE DR DAVIS 2 Davis 2 MONTPELIER, VT 05620</p> <p>(802) 598-9992 danielle.fitzko@vermont.gov</p> | <p>Grantor: Northern Border Regional Commission</p> <p>Contact: Andrea Smith, Program Director James Cleveland Federal Building, Suite 1501 53 Pleasant Street Concord, NH 03301 admin@nbrc.gov</p> <p>Phone Number: (603) 369-3001</p> |
| <p>Co-Applicant: Contact: Ted GillenJeremy CaronMohammad Uzzal Hossain tedg@rutlandcity.org jcaron@brewermaine.gov mhossa18@esf.edu (802) 773-1800 (207) 989-8430 (315) 470-6835 LDD Organization: LDD Contact:</p> | <p>www.nbrc.gov</p> |
| <p>New Hampshire State Contact: Ian Carmichael ian.m.carmichael@livefree.nh.gov, (603) 271-0252</p> <p>Vermont State Contact: Kristie Farnham kristie.farnham@vermont.gov,</p> | |

(802) 392-5268
 New York State Contact: Kyle Wilber
 kyle.wilber@dos.ny.gov,
 (518) 473-3355
 Maine State Contact: Charlotte Mace
 charlotte.mace@maine.gov,
 (207) 624-7448

| | |
|---|------------------|
| Grantee’s Employer Identification Number (EIN): | 036000264 |
| Grantee’s UEI Number: | F1SBHQZMKZ3 |
| Date of Award: | December 2, 2025 |
| Date of Amendments | N/A |
| Description of Amendments | N/A |
| Total Project Amount: | \$2,499,535.00 |
| Amount of Federal NBRC Funds Awarded: | \$1,940,715.00 |
| Total Other Funds/Match: | \$558,820.00 |
| Reimbursement Rate: | 80% |
| NBRC CFDA Number: | #90.601 |

OR

| | |
|------------------------------|---|
| USDA CFDA Number: | #10.351 |
| Project Description: | The Vermont Department of Forests, Parks & Recreation has been awarded \$1,940,715.00 to lead a multistate demonstration of nanocellulose-enhanced concrete in transportation infrastructure. The project will construct eight pilot installations across the Northern Border region, showcasing the environmental and economic benefits of using timber-derived materials. It aims to catalyze commercialization of nanocellulose, support regional forestry jobs, and reduce the carbon footprint of infrastructure projects. |
| Approved Indirect Cost Rate: | 25% |
| Period of Performance: | February 01, 2026 - September 30, 2029 |

Grant Provisions

I. STATEMENT OF PURPOSE—This agreement incorporates by reference the recipient’s proposal properly submitted in accordance with NBRC procedures on

or before . The agreement implements a grant/investment made under authorities of Northern Border Regional Commission to provide funding to the Grantee/Recipient and/or the Co-Recipient. Any other recipient of funding shall be funded through an award of a contract or subgrant. The scope of work included within the recipient's proposal constitutes the Grant Agreement purpose. To the extent that this agreement conflicts with the incorporate proposal, the agreement shall govern.

- II. ORDER OF PRECEDENCE—This grant agreement is subject to multiple sources of federal policy. Any conflict between or among these sources shall be resolved using the following order of precedence:
- a. Federal statutes, including 40 USC Subtitle 5;
 - b. Federal regulations including but not limited to 2 CFR Parts 25, [170](#), [180](#), [182](#), [183](#), [184](#), [200](#), and [322](#), in effect at the time the Grant Agreement is signed;
 - c. [NBRC Bylaws](#)
 - d. This Agreement, and
 - e. The most recent [NBRC Compliance Manual](#).

For ease of adoption and clarity, this agreement contains references to specific regulatory provisions that the recipient is required to follow. By signing this agreement, the recipient acknowledges that it has received either paper copies or electronic links to the provisions cited.

- III. FEDERAL AGENCY RESPONSIBILITIES—NBRC has overall responsibility for agency awarded funds including providing oversight for programmatic, financial, and administrative performance. The Federal Co-Chair is responsible for all actions on behalf of NBRC including entering, modifying, suspending, or terminating this Grant Agreement. NBRC may enforce the terms and conditions of this Grant Agreement utilizing procedures identified in 2 CFR 200.208, [2 CFR 200.339](#), [2 CFR 200.520](#), and [2 CFR 180](#).
- IV. RECIPIENT RESPONSIBILITIES—The recipient has full responsibility for the ongoing management of the project or activity supported under the Grant Agreement and for adherence to the federal requirements and Grant Agreement terms documented in this Grant Agreement. Although the recipient is encouraged to seek the advice of NBRC staff concerning the Grant Agreement, that does not diminish the recipient's responsibility for making prudent and sound judgments under the circumstances prevailing at the time that a decision is made nor does seeking advice shift responsibility for operating decisions to NBRC.

- V. NOTICES—All official notices concerning this Grant Agreement are to be delivered to the designated contact personnel whose names appear on the cover sheet of the Grant Agreement at the address designated. Such notices may be delivered in person, by United States Postal Service, by private deliver service, or electronic mail.
- VI. LIABILITY—Nothing contained in this agreement permits the recipient to assert that it is a part of the United States Government or that the United States Government is liable for any of its actions. The recipient shall hold and save the Government, its officers, agents, and employees harmless from any liability of any nature or kind, including costs and expenses, for or on account of any and all suits for damage sustained by any person or persons or property by virtue of performance of this Grant Agreement.
- VII. SEVERABILITY—If any portion of this agreement is determined to be invalid, the remainder of the agreement remains in effect.
- VIII. TERMINATION—Any dispute arising under this agreement shall initially be addressed through good faith negotiation between the parties. However, this agreement may be terminated under terms outlined in [2 CFR 200.340](#).
- IX. STATEMENT OF ASSURANCES (SF 424B—Non-construction; SF 424D—Construction)—As part of the grant application process, the recipient executed a Statement of Assurances which contains a listing of numerous federal laws, executive orders, and regulations which may apply by their terms to this Grant Agreement.
- X. SUSPENSION AND DEBARMENT ([2 CFR 180](#))—The recipient certifies, in accordance with [2 CFR 180.335](#), that neither it nor any of its principals is suspended or debarred from doing business with the Federal Government because of conditions covered under [2 CFR 180](#).
- XI. DRUG-FREE WORKPLACE ([2 CFR 182](#))- Recipient must comply with the drug-free workplace regulations.
- XII. HATCH ACT ([5 CFR 900](#))—The Hatch Act restricts the political activity of executive branch employees of the Federal Government and state or local officers or employees whose principal employment is in connection with an activity that is financed in whole or in part by loans or grants made by the United States or a Federal agency.
- XIII. STEVENS AMENDMENT ([P.L. 101-166, Section 511](#)). When issuing statements, press releases, requests for proposals, bid solicitations and other documents describing projects or programs funded in whole or in part with Federal money, all grantees receiving Federal funds, including but not limited to State and local governments, shall clearly state (1) the percentage of the total costs of the

program or project which will be financed with Federal money, (2) the dollar amount of Federal funds for the project or program, and (3) percentage and dollar amount of the total costs of the project or program that will be financed by nongovernmental sources.

- XIV. USE OF FEDERAL AGENCY AGREEMENT NUMBER - The assigned NBRC Grant Agreement Number as listed for this Grant Agreement. **This Grant Agreement Number must appear in all correspondence, financial claims, and other official communication.**
- XV. OBLIGATION OF FEDERAL FUNDS—The total amount of federal funds obligated under this Grant Agreement is listed on page 2 of this Agreement as: “Amount of Federal NBRC Funds Awarded”. No claims above this amount will be honored by NBRC.
- XVI. NOTICE TO PROCEED—**No work may begin on this project until an official Notice-to-Proceed issued by NBRC. Further, no documented non-federal matching or invoices generated by the recipient will be considered valid charges until the Notice-to-Proceed is issued by NBRC.**

The following items must be completed and submitted to NBRC prior to issuance of a Notice-to-Proceed:

- a. Fully Executed NBRC Grant Agreement
- b. Confirmation that the recipient has an active SAM.gov registration with up-to-date banking details
- c. Documentation of non-NBRC matching funds and cost share form (NBRC Form 1002) listing the total amount of funding and each funding source, necessary to complete the project, together with letters of commitment for each funding source. The form and letters of commitment must be submitted to NBRC as one PDF.
- d. Signed contract with LDD for grant administration services or documentation of approved LDD waiver from NBRC. (This requirement is not applicable to an agency of State Government or an LDD who is the grantee)
- e. Satisfaction of NEPA requirements

These documents should be uploaded within NBRC’s grants management system. If the required documents have previously been provided to NBRC, they do not need to be resubmitted. NBRC must have all these documents in our files before a Notice to Proceed will be issued.

- XVII. PAYMENT PROCEDURES—In order to receive payments, the recipient must submit a Standard Form 270 (Request for Advance or Reimbursement) to NBRC for the applicable period within NBRC’s Grants Management System. NBRC does not process requests for advancement. Requests for reimbursement will be

reviewed and process the request and will make payments based on the methods permitted under [2 CFR 200.305](#).

XVIII. DISCLOSURES—In accordance with [2 CFR 200.113](#), the recipient will immediately disclose to NBRC any violations of federal criminal statutes (18 USC) involving fraud, bribery or gratuity violations. The disclosure must be made in writing to NBRC.

XIX. REPORTING

1. QUARTERLY PERFORMANCE REPORTING—The recipient is required to provide quarterly progress reports within NBRC’s grants management system. **Reports are due from the time of award through to the closeout of the project.** Reports must be submitted along the following schedule, using the Performance Progress Report form.

| | |
|---|------------------------------|
| Reporting Period: (Quarter 1) October 1 - December 31 | Report Due January 31 |
| Reporting Period: (Quarter 2) January 1 - March 31 | Report Due April 30 |
| Reporting Period: (Quarter 3) April 1 - June 30 | Report Due July 30 |
| Reporting Period: (Quarter 4) July 1 - September 30 | Report Due October 30 |

These are not optional tasks for grantees. Progress reports are required even if no activity has taken place during the quarterly period. A final performance report covering the entire project must be submitted no later than 90 days after the end of the performance period. No payment requests will be processed until the progress reports are current.

b. FINANCIAL REPORTS—In accordance with [2 CFR 200.328](#), a completed Federal Financial Report (Standard Form 425) is required within 30 days after the end of the federal fiscal year (i.e., by October 30). In addition, a final Standard Form 425 must be submitted within 90 days after the performance period ends. **No payment requests will be processed until the financial reports are up to date.**

c. CLOSEOUT REPORTING —Five percent (5%) of the NBRC award will be held until all Project Close Out documents are received by NBRC.

d. PERFORMANCE MEASURES—The recipient agrees to report on program performance measures and outcomes as part of its final progress report, and three years after the final progress report using the Government Performance and Results Act (GPRA) information collection document. The measures and outcomes that apply to this Grant Agreement are:

As provided with the NBRC Program application for federal financial assistance submitted on or before .

- e. OTHER REPORTING—The recipient will submit the following additional reports at the end of the project:
- i. 5-10 photos describing the project results must be submitted with the final progress report.
 - ii. An inventory of any equipment purchased as part of the project must be submitted with the final progress report. Equipment is defined as an item of tangible personal property having a useful life of more than one year and a unit cost of more than \$10,000. A depreciation schedule may be used for determination of fair market value.
 - iii. Standard Form 429A concerning any real property purchased as well as any recorded deed restrictions associated with the property must be submitted with the final progress report. Any leases of real estate developed as part of the project must also be submitted at that time.
- XX. APPROVED BUDGET—The total budget for this project is established as provided in the application and supporting documentation for federal financial assistance submitted on or before .
- XXI. PROGRAMMATIC AND BUDGETARY CHANGES—Under 2 CFR 200.308(i), NBRC exercises its option to restrict cumulative transfers among direct cost categories or programs, functions, or activities to ten (10) percent of the total budget as last approved whenever it has designated the recipient as subject to special conditions pursuant to [2 CFR 200.208](#).
- XXII. NON-NBRC SHARE—Prior to issuance of a Notice-to-Proceed and any disbursement of grant payment, the recipient must identify the total project costs including any required match/cost share necessary to complete the project as presented within the application for federal financial assistance. Failure to satisfy any requirement for non-NBRC match by the conclusion of the project may lead to disallowance of federal funds already drawn and spent.
- XXIII. PROGRAM INCOME—If program income is earned as a result of expenditures under this Grant Agreement, it must be spent on allowable eligible costs of the project and must be disbursed prior to draw down of additional federal funds. Under the award, program income shall be added to funds committed to the project by NBRC and recipient and used to further eligible project activities. Under this Grant Agreement, program income will be applied under the addition method as outlined in [2 CFR 200.307\(b\)\(2\)](#). As outlined in [2 CFR 200.307\(c\)](#), the recipient is not accountable for program income earned after the period of grant support unless NBRC requires otherwise.
- XXIV. SUBAWARDS—Subawards of federal financial assistance are awards to lower tier organizations that assist them in carrying out a public program. Pursuant to [2 CFR 200.308\(f\)](#), NBRC approval is required for the recipient to subaward a portion of the funds under this Grant Agreement unless approved in the Federal

award. Prior to making the subaward, the recipient must, using the criteria identified in [2 CFR 200.331](#), make a case-by-case determination that the nature of activity being carried out constitutes a subaward (as opposed to a contract) and that the entity to which the subaward is to be made is an eligible entity under the NBRC authorizing legislation (i.e., a state or local government, Indian tribe, or public or private organization described in Section 501(c) of the Internal Revenue Code of 1986 and exempt from taxation under Section 501(a) of that code). The recipient must prepare a subaward agreement to govern the programmatic and administrative activities of the subrecipient. The subaward agreement must contain the data elements identified in [2 CFR 200.332\(b\)](#) and incorporate applicable provisions of this agreement including those identified in the applicable Statement of Assurances (SF 424B or SF 424D). The recipient shall carry out mandatory oversight and enforcement actions as outlined in [2 CFR 200.332\(e\)](#) and [\(g\)](#) and may carry out discretionary oversight actions as outlined in [2 CFR 200.332\(f\)](#). Subawards by NBRC grantees, funded with NBRC funds, also fall within BABAA. Please see additional guidance on BABAA provided below. **If your project includes a subaward component, please contact NBRC staff prior to making such awards.**

- XXV. **PROCUREMENT**— Procurement actions involve the purchase of goods and services needed to support the grant award. Government-wide regulations contained in [2 CFR 200.317](#) govern procurement actions. These regulations allow grantees to follow their own procurement procedures so long as they meet the minimum standards identified within [2 CFR 200](#). Procurement of goods and services will be carried out following the recipient's own procurement procedures provided they meet the minimum standards established in [2 CFR 200.317-327](#) and Appendix II of [2 CFR 200](#).

Methods of procurement must conform to procedures identified in the recipient's own procurement procedures and those identified in [2 CFR 200.320](#). The recipient must take all affirmative steps identified in [2 CFR 200.321](#) to assure that small businesses, minority businesses, women's business enterprises, veteran-owned businesses and labor surplus area firms are solicited and utilized when possible. The recipient must develop and maintain a written code of conduct for officers, employees, and agents which prohibits financial and familial conflict of interest and curtails solicitation or acceptance of gratuities in accordance with [2 CFR 200.318\(c\)](#).

- a. This agreement requires that all services necessary for design and engineering phases of the project be discharged by qualified personnel. Contracts for architect and engineering services shall be arranged using the competitive procedures identified in [2 CFR 200.320\(b\)\(2\)\(iv\)](#) under which price may not be used as a selection factor. Also, the recipient may not enter into a cost-plus percentage of cost or a cost plus a percentage of construction cost contract.

- b. In accordance with [2 CFR 200.318\(b\)](#), the recipient will exercise oversight to assure that contractors perform in accordance with the delivery requirements of the contract and that they comply with all terms and conditions. The recipient shall enter into a sound and complete agreement with any contractor which is enforceable in the jurisdiction where the contract is to be performed and which contains the applicable clauses of [2 CFR 200, Appendix II](#).
- c. The Build America, Buy America Act (hereafter “BABAA”) – enacted on November 15, 2021 – sets forth a domestic content procurement preference (“Buy American Preference” hereafter referred to as “BAP”) for infrastructure programs funded with Federal dollars. [Specifically, IIJA §70914\(a\) of Pub. L. 117-58](#), instructs Federal agencies to ensure that “none of the funds made available for a Federal financial assistance program for infrastructure, including each deficient program, may be obligated for a project unless all of the iron, steel, manufactured product, and construction materials used in the project are produced in the United States.”

The IIJA’s definition of infrastructure is expansive and in some specific way the NBRC definition of “infrastructure” may not apply to BABAA applicability. While some projects conceived within the community infrastructure classification would not conform to BABAA, others would. Further, sub-awards by NBRC grantees, funded with NBRC funds, also fall within BABAA.

Most NBRC “infrastructure” projects fall within BABAA, especially when considering the definition provided in [2 CFR § 184.4\(c\)](#)

The IIJA’s definition of “infrastructure” encompasses public infrastructure projects. Thus, the term “infrastructure” includes, at a minimum, the structures, facilities, and equipment for, in the United States, roads, highways, and bridges; public transportation; dams, ports, harbors, and other maritime facilities; intercity passenger and freight railroads; freight and intermodal facilities; airports; water systems, including drinking water and wastewater systems; electrical transmission facilities and systems; utilities; broadband infrastructure; and buildings and real property. Agencies should treat structures, facilities, and equipment that generate, transport, and distribute energy -including electric vehicle (EV) charging as infrastructure.

Additional guidance on if BABAA can be found on NBRC’s website at <https://www.nbrc.gov/content/BABAA>

NBRC reserves the right to review the procurement procedures of the grantee at any time during the application review process or during performance of the grant in accordance with [2 CFR 200.325](#). Recipients must keep all procurement documents in their project file in the event the project is monitored and/or audited for programmatic

compliance. Grantees funded with USDA dollars will be required to provide copies of procurement procedures during the performance of the grant.

It is the responsibility of the grantee to review and understand these applicable procurement requirements and ensure that the process is conducted properly.

XXVI. PROPERTY TITLE, USE AND DISPOSITION—Title to real property, equipment, and supplies acquired by the recipient using funds from this agreement vests with the recipient. These assets shall be used for their original purposes if they are needed. The following policies apply to the different classes of property identified:

- a. REAL PROPERTY—Real property shall be used for its original purpose as long as it is needed. If no longer needed for its original purpose, the recipient must obtain disposition instructions from NBRC. Options available under [2 CFR 200.311\(d\)](#) are retention, sale, or transfer to a third party. In each case, a settlement of residual financial interests will be made. If real property is retained by the recipient, it shall be treated as being encumbered for a period of 20 years.

If the recipient is not a state or local government, such encumbrance must be recorded as a deed restriction (Notice of Federal Interest) and a copy of the filed restriction must be provided to NBRC prior to the first request for a reimbursement of the NBRC award.

The recipient must also prepare a Standard Form 429A with respect to each piece of real property acquired and submit a copy of NBRC in accordance with the reporting requirements of this agreement.

- b. EQUIPMENT—Equipment as defined in [2 CFR 200.1](#) is an item of tangible property having a useful life of more than one year and a unit acquisition cost of \$10,000 or more. Equipment may be used for its original purpose as long as it is needed and may be used on other activities of the recipient provided activities under this Grant Agreement receive first priority.

However, such equipment is not to be used in a manner that competes unfairly with private commercial firms. An inventory of equipment purchased under the Grant Agreement will be submitted to NBRC at close-out. Items of equipment with a current fair market value of \$10,000 or less may be retained without compensation to the federal government.

Other items of equipment will be subject to disposition instructions as provided in [2 CFR 200.313\(e\)](#) and include retention, sale, or transfer to a third party. In each case, a financial settlement of residual financial interests will be made.

The recipient must also prepare and execute a SF428 Tangible Personal Property report on equipment being purchased with NBRC funds and submit a copy of NBRC in accordance with the reporting requirements of this agreement.

- c. SUPPLIES—Supplies acquired under this Grant Agreement shall be used only for purposes allowed under the Grant Agreement. If a residual inventory of unused supplies remains at the end of the Grant Agreement that has a fair market value of more than \$10,000 in the aggregate and the supplies are not needed for any other federally financed program, the recipient shall repay NBRC for its share of the fair market value.
- XXVII. EMPLOYMENT—The recipient shall use its regular recruitment, hiring, and employment practices consistent with federal, state, and local law including but not limited to various non-discrimination policies which apply because of the status as a federal assistance recipient or as an employer. However, the recipient agrees that it will not employ, offer any office or employment to, or retain for professional services any person who (1) on the date that NBRC executed this Grant Agreement or within a one period ending on that date served as an officer, attorney, agent, or employee of NBRC and (2) occupied a position or engaged in activities which the Federal Co-chair determines involved discretion with respect to the Grant Agreement by NBRC.
- XXVIII. NON-RELOCATION—By signing this agreement, the recipient attests that the NBRC funding is not intended to assist efforts by the recipient to induce the relocation or movement of existing jobs from one geographic region to another in competition for those jobs with the following exception: Financial assistance may be used as otherwise authorized by this subtitle to attract businesses to the region from outside the United States per [40 USC, Subtitle V §15501 \(f.\)](#) If NBRC determines that its assistance was used for such purposes, NBRC reserves the right to pursue appropriate enforcement action including suspension of payment and possible disallowance and recovery of funds from the recipient.
- XXIX. COST ALLOWABILITY—Cost charges to this Grant Agreement, whether direct or indirect, will be determined in accordance with Subpart E of [2 CFR 200](#). These principles apply uniformly to state, local and tribal governments, institutions of higher education, and nonprofit organizations. The principles contain certain general tests of allowability that apply to all types of costs charged to the Grant Agreement and a list of selected items of cost that represent types of cost that are typically encountered by recipients and subrecipients in the course of administering a federal award or types of cost that, by their nature, the federal government refuses to allow. The detailed text of the cost principles identifies which the costs are allowable, which are not allowable, and which are allowable under certain circumstances or allowable. The proposed budget of the award was reviewed by NBRC to determine that the costs that are included therein are

allowable. However, if, during the performance of this award, a cost occurs that is not included in the budget, it may still be allowable, based on the language in the cost principles. The recipient should take special care to review the listing contained in [2 CFR 200.407](#) which identifies costs that require prior approval, under certain circumstances.

- XXX. RECORDS RETENTION AND ACCESS—The recipient shall retain all financial and programmatic records that are pertinent to the Grant Agreement. The records shall be retained for at least three years following submission of the final financial and performance reports for the Grant Agreement. If any audit, claim, or litigation started before the expiration of the retention period, the recipient shall retain the records until such matters are fully resolved. If the recipient is subject to any other more rigorous retention period for the records, the records must be retained to meet that requirement. During the period of retention, the records are accessible to the Comptroller General of the United States, the federal awarding agency, an inspector general, independent auditor performing audits under the Single Audit Act and any of their duly authorized representatives for the purpose of audit, examination, and copying. The rights of access do not expire with the designated retention period but shall last as long as the records are retained. Records in the hands of the recipient are not subject to disclosure to the general public under the federal Freedom of Information Act. However, any records transmitted to NBRC are subject to that statute. Methods for collection, transmission, and storage of the records shall be consistent with instructions contained in [2 CFR 200.336](#).
- XXXI. AUDIT REQUIREMENTS—The funds made available under this agreement are considered to be a federal award within the meaning of [2 CFR 200.502](#). Accordingly, the expenditures that the recipient makes from this Grant Agreement count toward meeting the threshold amount of expenditures necessary to trigger an audit pursuant to the Single Audit Act and [2 CFR 200, Subpart F](#). Thus, if the recipient organization expends more than \$1,000,000 in covered federal awards during its fiscal year, it will arrange for an independent audit conducted by a qualified auditor or firm. The resulting audit report along with a completed SF-SAC and additional documents identified in [2 CFR 200.511](#) must be submitted to the Federal Audit Clearinghouse not later than nine (9) months after the end of the recipient's fiscal year. Information about how to accomplish single audit submissions is available at <http://harvester.census/facweb/Default.aspx>.
- XXXII. CONTINUING ACCOUNTABILITY—The recipient must assume continuing accountability for several matters that extend beyond the performance period. These include custody and maintenance of property that has been retained, records retention and access for records, and the discretionary right of the federal government to conduct audits and investigations on an as needed basis.



Northern Border Regional Commission

Grant Agreement Between Northern Border Regional Commission (NBRC) And DEPARTMENT OF FORESTS PARKS & RECREATION VERMONT

December 2, 2025

Grant EGMS ID:

| |
|---|
| Danielle Fitzko, |
| Recipient's Authorized Representative Name and Date (print) |
| Danielle Fitzko Date: 01/06/2026 |
| Recipient's Authorized Representative (signature) <i>(By signing this document, you affirm that you have read this document and are prepared, and shall maintain the capacity, to carry out all the obligations that come with these Investment funds).</i> |

NBRC Program Manager
Northern Border Regional Commission

Date: 01/09/2026

Andrea Smith, Program Director
Northern Border Regional Commission

Date: 01/09/2026

Revised 20250211

Docusign Envelope ID: 2573FD12-A5DD-433C-8AB8-FA919B64A7F0



Application - Nanocellulose-Enhanced Concrete Demonstration Projects

| | | |
|-------------------------------|-------------------------------------|--|
| EGMS ID AP-NBRC-430 | Status Converted to Award | Application Due Date and Time 10/10/2025 5:00 PM |
|-------------------------------|-------------------------------------|--|

Overview

Information

| | | |
|---|--|---|
| Applicant Organization DEPARTMENT OF FORESTS PARKS & RECREATION VERMONT | Address ONE NATIONAL LIFE DR DAVIS 2 MONTPELIER VT 05620 USA | EIN 036000264 |
| UEI F1SBHQZMKZ3 | SAM Expiration Date 07/10/2026 | Organization Type US State Government |

Opportunity Overview

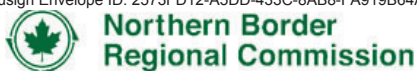
| | | | |
|--|--|--|--|
| Opportunity ID AN-NBRC-017 | Opportunity Title Timber for Transit Program Fall 2025 | Funding Organization Northern Border Regional Commission | Estimated Project Period Start Date 02/01/2026 |
| Estimated Project Period End Date 09/30/2029 | Match Required? Yes | Revisions Allowed? Yes | |

Application Overview

| | | |
|--------------------------|--|---|
| Application Title | Funds Requested \$1,940,715.00 | Total Project Amount \$2,499,535.00 |
|--------------------------|--|---|



Docusign Envelope ID: 2573FD12-A5DD-433C-8AB8-FA919B64A7F0



Nanocellulose-Enhanced Concrete
 Demonstration Projects

[Does this application have a co-applicant?](#)

Yes

Project Information

[Project Abstract](#)

- Provide a description of the proposed project.

The Nanocellulose-Enhanced Concrete Demonstration Projects will catalyze the regional use of innovative, timber-derived nanomaterials in transportation infrastructure. This is a multistate project in the feasibility and implementation project category led by the Vermont Department of Forests, Parks & Recreation (VT FPR) with collaborators from the State University of New York, College of Environmental Science and Forestry (SUNY-ESF), the University of Maine (UMaine), and the University of New Hampshire (UNH) in consultation with Oregon State University (OSU) and the USDA Forest Products Laboratory (FPL). The project will result in construction and evaluation of seven demonstration installations with nanocellulose-enhanced concrete at scale and will showcase tangible economic and environmental benefits for the northern border region while addressing the two-sided market failure plaguing nanocellulose commercialization efforts over the last decade.

The Nanocellulose-Concrete Demonstration Project is being submitted as a feasibility and implementation project. The project is intended to show how advanced wood materials (nanocellulose) can be used in concrete through transportation infrastructure demonstration projects such as sidewalks, parking lots, and precast concrete (e.g. culvert). The project directly and strongly aligns with [every Timber for Transit](#) program investment priority.

Nanocellulose-enhanced concrete produced from regional wood fiber has been proven outside the region in both lab and small-scale demonstrations. Studies show that incorporating cellulose nanocrystals (CNCs) can improve concrete’s compressive strength by 15% and flexural strength by 36% at optimal dosages, enabling more efficient and durable transportation structures. While the initial material cost increases slightly (about 3% per cubic meter), these costs are offset by reduced need for steel reinforcement, faster construction, and lower long-term maintenance (Rajendran et al, 2025). Environmental gains include lower greenhouse gas emissions over the lifecycle compared to conventional concrete, reducing the carbon footprint of infrastructure projects. Use of regional timber products strengthens local economies, supporting forestry jobs and related industries (Huzita et al, 2020; 2022). As the global nanocellulose market is expected to grow from \$700 million in 2024 to \$4.6 billion by 2034 (Market Research Report, 2025), this expected growth provides a strong economic opportunity for utilization of readily available regional pulpwood to drive economic activity in our rural regional communities.

The project comprises four progressive steps: in year 1 a northeast formulation of nanocellulose-enhanced concrete will be developed by UMaine and the





FPL to meet state standards and address regional variations in aggregate source and admixture suppliers; year 2 will focus on construction of seven public demonstration projects – 2 per state in VT, NY, and NH and 1 in ME and each below 2,000 square feet – which will include training ready-mix concrete producers to install truck scale batches and as well as production and distribution of precast nanocellulose-enhanced concrete units; and year 3 will see a comprehensive lifecycle assessment and techno-economic analysis to assess the environmental impacts and economic feasibility of nanocellulose-enhanced concrete production compared to conventional counterparts. Year 3 will also focus on outreach and technical transfer efforts, emphasizing training for public transportation entities and private contractors and engagement with the forest products sector. This project directly and strongly aligns with every NRBC Timber for Transit investment priority and represents a regional effort, incorporating initiatives and collaborators across the northern forest to advance innovative timber market development and demonstrate practical pathways for the northern border region to build greener, more resilient and cost-effective transportation assets.

As a multistate effort, the following teams will be responsible for meeting critical aspects of the project:

Project Administration and Coordination: Elise Schadler (PI-lead, VT FPR); Project Coordinator, to be hired (VT FPR)

Formulations (technical team): Eric Landis (UMaine); Mohammad Uzzal Hossain (SUNY-ESF); Philippe Kalmogo (UNH); Jason Weiss (consulting, OSU); Robert Moon (consulting, FPL)

Demonstration Projects: Katharine Servidio (lead, VT FPR), Adam McCullough (VT FPR); Andrew Fast (UNH); Mohammad Uzzal Hossain (SUNY-ESF); Shane O'Neill (lead, UMaine)

Techno – Economic Analysis/ Lifecycle Assessment: Mohammad Uzzal Hossain (lead, SUNY-ESF); T. Reed Miller (UMaine); Naveenkumar Rajendiran (consulting, FPL)

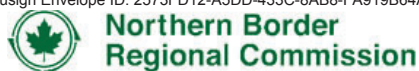
Outreach and Technical Transfer: Andrew Fast (lead, UNH), Katharine Servidio (VT FPR), Adam McCullough (VT FPR); Megan Davin (VT FPR), Paul Crovella (SUNY ESF), Scott Moxham (NY DEC), Shane O'Neill (lead, UMaine)

Project Goals & Outcomes

- What are the project goals and expected project outcomes and outputs? Explain the anticipated economic outcomes and outputs of the project. See Program User Manual for additional instructions on completing this section.

The project team has identified three primary goals that support the primary purpose of the grant proposal. **Goal 1** develops 1 new commercially viable forest product and demonstrates nanocellulose-enhanced concrete formulated for the northeast, US through seven ready mix concrete installations covering 6,000 – 10,000 sq. ft. in total through different projects across the NBRC region and at least 50 additional precast concrete units to demonstrate application in that market. **Goal 2** evaluates the viability and environmental sustainability of demonstration projects across the region through 1





techno-economic analysis and lifecycle assessment (TEA-LCA) of the products. **Goal 3** is technical transfer whereby the project team uses the full suite of outreach tools and programs to engage at least 3 potential future nanocellulose manufacturers, 8 precast concrete and/or ready mix producers, at least 20 municipalities, as well as at least 500 additional stakeholders and the public.

The outcomes of the goals, activities and deliverables are to (1) directly support needed transportation infrastructure projects across the northern border region, (2) work at sufficient scale to draw interest and attention from the forest products supply chain, private concrete products manufacturers, and anchor customers to generate momentum for these products, and (3) generate tools, such as TEA-LCA, that inform policy development, guide incentives and procurement strategies, and foster stakeholder engagement to support broader adoption of the technology throughout the region.

Project Beneficiaries & Community Context

- Describe the project beneficiaries including the service area and demographic data. See Program User Manual for additional instructions on completing this section.

The primary project beneficiaries are direct users of the nanocellulose-enhanced concrete transportation infrastructure that will be installed within northern border region communities. State and municipal government, as well as universities, are beneficiaries to the extent that the projects defray some of their direct transportation infrastructure costs. The forest products industry is a deferred beneficiary as nanocellulose-enhanced concrete becomes more viable and associated nanocellulose products benefit from supply chain efficiencies.

Statement of Need

- What is the challenge or problem the project seeks to address? See Program User Manual for additional instructions on completing this section.

The Northern Border region's pulp and paper sector, once an anchor of the region's rural economies, continues to contract as traditional paper markets decline, leaving mills underutilized and forestland owners with limited viable markets for low-grade wood. At the same time, the concrete industry faces urgent pressure to curb its sizable share of industrial CO emissions. Nanocellulose-enhanced concrete is a 15-year-old technology with verified improvements in properties, durability, lower carbon footprint, with proven utility in field trials of sidewalks, slabs, parking lots, bridge decking, and a dam spillway. However, the northeastern US has been excluded from this technology despite the critical need for regionally tailored concrete formulations that



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account for local material chemistry variations and climate conditions. This economic and technical gap directly hinders NBRC goals to strengthen forest-based economies, advance climate-smart infrastructure, and revitalize rural communities facing economic distress. This proposed Timber for Transit project will address the above issues by bringing together national R&D leaders in this field (from FPL, OSU, UMaine) with regional commercial concrete entities to develop appropriate nanocellulose-enhanced concrete mixture ratios and install transportation infrastructure demonstration projects in highly visible locations through New England and New York. NBRC funding will underwrite pilot batching, field installations of sidewalks, parking lots, and precast concrete elements like culverts, plus comprehensive industry outreach that de-risks adoption for ready-mix producers and transportation partners. Regional demonstration projects are critical as:

1. Concrete formulations and chemistry vary by region within the US (and the world), and the nanocellulose-enhanced concrete formulation mixture must be tailored to optimize performance.
2. "Hands-on" proof that the processing and installment of nanocellulose-enhanced concrete formulations behave the same as the traditional formulations build confidence that this new technology can be used routinely, consistently, and is cost effective.
3. Monitoring of the final demonstration project in real application sites subjected to local seasonal environments builds confidence in the durability of the product.

Acting now positions the region to capture a rapidly growing low-carbon concrete market while creating new, high-volume outlets for underutilized pulp fiber from distressed regional mills. By leveraging NBRC's unique federal-state partnership and focus on domestically sourced timber utilization, this project will unlock private investment, accelerate commercial scale-up, and generate durable jobs along the forest-to-infrastructure supply chain at a critical moment when both sectors need innovative solutions for economic and environmental sustainability.

Program Investment Priorities

- Explain how your project aligns with Program Investment Priorities. See Program User Manual for additional instructions on completing this section.

This proposed project directly addresses the NBRC Timber for Transit program priority to advance the use of domestically produced wood-based materials and composites through applied research and demonstration projects to demonstrate their suitability in various transportation adjacent infrastructures. This proposed project will utilize domestically sourced wood fiber to formulate a regional nanocellulose-enhanced concrete. Outreach and



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technical transfer will be the focus of year three of this project, and the demonstration projects will be utilized as a tool for university and industry education and training. The project will support, benefit, and engage communities impacted by specific socio-economic indicators; the eight demonstration projects will all occur in communities within distressed counties as defined by NBRC.

As a multistate effort, this project advances priorities and goals of each state within the northern border region:

- **Maine:** This nanocellulose-enhanced concrete demonstration directly advances Maine's 10-Year Economic Development Strategy by showcasing the "quantum leap" potential of nanocellulose technology identified in the forest products thematic area, transforming Maine's abundant wood resources into advanced building materials that intersect forest products with manufacturing innovation. The project also aligns with Maine Won't Wait's infrastructure resilience goals by developing climate-friendly building materials that can strengthen transportation and community infrastructure against extreme weather events and flooding. Furthermore, the demonstration supports the Maine Jobs & Recovery Plan's innovative investments in forest products research and development, creating new market opportunities for Maine's heritage industries while generating good-paying jobs in the emerging bio-based materials economy.
- **New Hampshire:** This project aligns with the Forest Based Economy Goal of the NH Forest Action Plan. Specifically, the plan calls for development of new forest products markets (Strategy 29) further identifying UNH and partners as integral to the work.
- **New York:** The project is directly aligned with the Scoping Plan of New York State. The 2019 Climate Leadership and Community Protection Act (CLCPA) is one of the most ambitious climate laws which issued a comprehensive Scoping Plan in 2022 to reduce greenhouse gas emissions of 40% by 2030 and 85% by 2050 from 1990 levels, by providing a variety of regulatory and legal framework, market mechanisms, technologies essential, and strategies to achieving the goals. Some strategies were highlighted, such as advancing bio-based products research, development, and demonstration, expanding markets for sustainably harvested durable wood products, and increasing market access for New York low-carbon products under the theme of "promote a climate-focused bioeconomy".
- **Vermont:** This project directly aligns with the Vermont Forest Future Strategic Roadmap, a 10-year strategic plan to strengthen, modernize, promote, and protect the forest products sector. Specifically, it aligns with the Strategies for Research, Innovation, and Technology: (1) Pursue new development opportunities for Vermont forest products, and (2) Accelerate the adoption of technical innovation. The project also contributes to Vermont's Forest Action Plan, aligning with Goal 6: Maintain and enhance a sustainable forest products infrastructure, which adds value to the Vermont economy.

[Have you previously received NBRC funds?](#)

- If yes, please provide NBRC grant number.

The applicant and four of the co-applicants on this project have previously received NBRC funds.



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- VT Department of Forests, Parks & Recreation: NBRC23GRF09
- University of New Hampshire: NBRC23GRF02
- University of Maine: GT-24SFM-00001; NBRC23GRF05; GT-CAT00020; GT-25SPT-00002
- SUNY – ESF: NBRC23GRF08
- City of Rutland, Vermont: AP-NBRC-236

Does this project serve a rural community with a population of less than 5,000?

Yes

Does this project benefit an underserved community?

All seven demonstration projects proposed through this project will take place in communities within Distressed Counties, as defined by the NBRC criteria. Specifically, and broken down by state:

Maine:

- Brewer is in Penobscot County and aligns with certain underserved metrics. Brewer has the following statistically significant census data, according to the US Census Bureau: (1) lower median household income rate than the median state average, (2) higher poverty rate than the median state average, (3) lower educational attainment rate than the median state average, and (4) disability rate higher than the median state average.

New Hampshire:

- Gorham is in Coos County and aligns with certain underserved metrics. Gorham has the following statistically significant census data, according to the US Census Bureau: (1) older populations (65 and older) relative to the NH average, (2) median household income is below the median state average, (3) lower educational attainment relative to the NH average.
- Newport is located in Sullivan County and aligns with certain underserved metrics. Newport has the following statistically significant census data, according to the US Census Bureau: (1) median household income is below the median state average.

New York:

- Wanakena is in the town of Fine in St. Lawrence County, New York, represents a small and historically significant hamlet within the Adirondack Park. Wanakena has the following statistically significant census data, according to the US Census Bureau: (i) median household income falls below



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the state median, aligning with broader rural and underserved community, (ii) significantly older community compared to the state, (iii) higher poverty rate and (iv) lower educational attainment rate than the median state average.

- Town of Newcomb, which lies in western Essex County, New York, and aligns with certain underserved metrics. Town of Newcomb has the following statistically significant census data, according to the US Census Bureau: (i) significantly older community compared to the state, and (ii) median household income is below the median state average.

Vermont:

Both Vermont demonstration projects will take place in Rutland City, which is in Rutland County. Rutland City has the following statistically significant census data, according to the US Census Bureau: lower median household income rate than the median state average, (2) higher poverty rate than the median state average, and (3) lower educational attainment rate than the median state average.

[Which of these is most applicable to the applicant organization?](#)

Has applied in the past and been awarded NBRC funds

| Contacts | | | | |
|------------------------|------------------------|-----------------------------|----------------|---------|
| Project Role | Name | Email | Is Key Contact | Is User |
| Fiscal Contact | Nicole Streeter | nicole.streeter@vermont.gov | false | false |
| Principal Investigator | Elise Schadler | elise.schadler@vermont.gov | false | false |
| Authorized Signatory | Danielle Fitzko | danielle.fitzko@vermont.gov | true | true |
| Co-Applicant | Jeremy Caron | jcaron@brewermaine.gov | false | false |
| Co-Applicant | Ted Gillen | tedg@rutlandcity.org | false | false |
| Co-Applicant | Mohammad Uzzal Hossain | mhossa18@esf.edu | false | false |

Acknowledgement

I hereby certify that the information provided above is accurate and complete.

Acknowledgement
I Agree

Submitted By
Danielle Fitzko

Submitted On
10/08/2025 2:21 PM

System Information



DocuSign Envelope ID: 2573FD12-A5DD-433C-8AB8-FA919B64A7F0



Created By
Danielle Fitzko

Created Date
09/24/2025 4:01 PM

Last Modified By
Marina Bowie

Last Modified Date
12/11/2025 12:05 PM

Locations

Application Match

Match %
20%

Match Justification

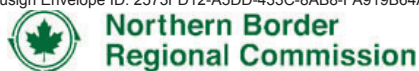
Investment Locations

| Street | City | State | Zip Code | Status |
|------------------------|----------|-------|----------|---------------------|
| 67 Merchants Row | Rutland | VT | 05701 | Sent for Validation |
| 25 Lancaster Road | Gorham | NH | 03581 | Validated |
| 15 Sunapee Street | Newport | NH | 03773 | Validated |
| 142 South Main Street | Brewer | ME | 04412 | Validated |
| 257 Ranger School Road | Wanakena | NY | 13695 | Validated |
| 6312 State Route 28N | Newcomb | NY | 12852 | Validated |
| 1 Strongs Avenue | Rutland | VT | 05701 | Sent for Validation |

Key Performance Indicators



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| EGMS ID | Domain | Title | Unit of Measurement | Measure | Orientation | Target |
|----------|----------------------|---------------------------------------|---------------------|---|-------------|--------|
| KPI-0003 | Economic Development | Businesses Created | Number(#) | Businesses created and/or retained, jobs created and/or retained, private investment leveraged, specific community improvements, non-export (tourism) revenues as a result of an NBRC project. | Increase | 0 |
| KPI-0004 | Economic Development | Communities Improved | Number(#) | Expected number of heritage forest products manufacturing communities to directly benefit from infrastructure, business support or workforce development investments. If not applicable, enter 0. See Appendix E for details. | Increase | 7 |
| KPI-0007 | Economic Development | Jobs Created | Number(#) | The number of jobs (direct hires, excluding construction jobs) resulting from NBRC project, measured from the project period and up to three years after the project end date. Part-time and seasonal jobs are converted to FTEs and reported as whole numbers. | Increase | 1 |
| KPI-0008 | Economic Development | Jobs Retained | Number(#) | The number of jobs that would be lost or relocated without the NBRC project, measured during the project period and up to three years after the project end date. | Decrease | 0 |
| KPI-0009 | Economic Development | Leveraged Private Investment (LPI) | Dollar (\$) | The dollar amount of private sector financial commitments, outside of project costs, that result from a project, measured during the project period and up to three years after the project end date. | Increase | 0 |
| KPI-0013 | Economic Development | Revenues Increased - Export Sales | Dollar (\$) | The increase in revenue in export sales that a business or businesses realize as a result of an NBRC project, within three years of the project end date. | Increase | 0 |
| KPI-0014 | Economic Development | Revenues Increased - Non-Export Sales | Dollar (\$) | The increase in revenue in domestic (non-export) sales that a business or businesses realize as a result of an NBRC project, within three years of the project end date. | Increase | 149200 |



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| | | | | | | |
|----------|-----------|------------------------------------|-----------|--|----------|---|
| KPI-0015 | Education | Workers/Trainees/Students Improved | Number(#) | The # of students who obtain a job in the field they were trained in; receive a diploma, certificate, or career credential; or who successfully complete a course/unit of study and/or graduate to the next grade/level necessary to continue their education. | Increase | 3 |
|----------|-----------|------------------------------------|-----------|--|----------|---|

Budget

Budget Summary

| | | | |
|---|--|--|---|
| Award Floor \$1.00 | Award Ceiling \$5,000,000.00 | Funds Requested \$1,940,715.00 | Recommended Budget \$1,940,715.00 |
| Total Project Amount \$2,499,535.00 | | | |

| Budget Periods | | |
|-----------------------|------------|------------|
| Budget Period # | Start Date | End Date |
| BP01 | 02/01/2026 | 09/30/2029 |

| Budget Categories | | | | | |
|----------------------------|----------------|---------------------|-----------------|--------------|--------------------|
| Category Name | NBRC Share | Other Federal Share | Applicant Match | Other | Total Project Cost |
| Construction | \$0.00 | \$0.00 | \$0.00 | \$0.00 | \$0.00 |
| Consultants | \$12,000.00 | \$0.00 | \$0.00 | \$0.00 | \$12,000.00 |
| Contracts and Sub-Grantees | \$1,648,569.00 | \$6,250.00 | \$0.00 | \$495,153.00 | \$2,149,972.00 |
| Equipment | \$0.00 | \$0.00 | \$0.00 | \$0.00 | \$0.00 |
| Fringe Benefits | \$48,723.00 | \$0.00 | \$17,099.00 | \$0.00 | \$65,822.00 |





| | | | | | |
|--------------------------|-----------------------|-------------------|--------------------|---------------------|-----------------------|
| Indirect Costs | \$43,380.00 | \$0.00 | \$7,981.00 | \$0.00 | \$51,361.00 |
| Other Direct Costs | \$0.00 | \$0.00 | \$0.00 | \$0.00 | \$0.00 |
| Personnel (Direct Labor) | \$168,991.00 | \$0.00 | \$31,087.00 | \$0.00 | \$200,078.00 |
| Supplies and Materials | \$14,000.00 | \$1,250.00 | \$0.00 | \$0.00 | \$15,250.00 |
| Travel | \$5,052.00 | \$0.00 | \$0.00 | \$0.00 | \$5,052.00 |
| Grand Total | \$1,940,715.00 | \$7,500.00 | \$56,167.00 | \$495,153.00 | \$2,499,535.00 |

Budget Narrative

Justification for Project Cost

- Include a cost-justification for each expense over \$5,000 included in the budget table above, otherwise add N/A.

Budget Narrative

1. Personnel:

FPR staff managing and supporting the proposed project include hiring a limited-term Forest Products Specialist. Existing staff support includes the Urban and Community Forestry Program Manager (775 hours over 3 years), the Forest Economy Program Manager (960 hours over 3 years), the Urban Forester (275 hours over 2 years), and the Communications and Outreach Specialist (100 hours over 2 years). The Forest Products Specialist, within the Forest Economy Program, will oversee project implementation, progress, and coordination between the multistate partners on the project. The Urban and Community Forestry Program Manager will lead administration of the project sub-awards. The Forest Economy Program Manager will lead and coordinate the demonstration site project component and support the administration, outreach, and technical transfer components of the proposed project. The Urban Forester will support the demonstration site component of the proposed project. The Communications and Outreach Specialist will support the outreach component of the proposed project. All personnel costs include a 4.8% increase in years two and three
Total Personnel: \$200,078 (NBRC: \$168,991, Match: \$31,087)



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1. Fringe:

Fringe benefits are calculated at 55% of personnel costs (15% for limited-term positions).

Total Fringe: \$65,821 (NBRC: \$48,723, Match: \$17,099)

1. Travel:

Vehicle transportation costs for in-state travel to support the demonstration site and outreach components of the proposed project are estimated at \$3,500 over the three-year grant period (5,000 miles at \$0.70/mile).

Airfare, other, and per diem transportation costs for a site visit at the US Forest Service Forest Products Laboratory in Madison, WI to support the demonstration site and outreach components of the proposed project are estimated at \$1,552 based on the GSA rate for Madison).

Total Travel: \$5,052 (NBRC: \$5,052; Match: \$0)

1. Equipment: N/A

1. Supplies & Materials:

Consumable material costs are estimated at \$6,250 for one 55-gallon drum of nanocellulose to be used in the demonstration site component of the proposed project.

Non-consumable material costs are estimated at \$9,000 for signage and educational materials to support the demonstration site and outreach components of the proposed project.

Total Supplies & Materials: \$15,250 (NBRC: \$14,000; Match: \$1,250)

1. Consultants:

Consultants cost is estimated at \$12,000 as a NEPA Contingency for the demonstration site component of the proposed project.

Total Consultants: \$12,000 (NBRC: \$12,000)

1. Contracts & Sub-Grantees:





City of Rutland, Vermont: \$34,400 is requested for the installation of pedestrian transportation infrastructure using nanocellulose-enhanced concrete at two demonstration sites in Rutland County. Each site will use approximately 10 cubic yards of nanocellulose-enhanced concrete. The City of Rutland will provide \$6,000 in matching funds in the form of in-kind services.

City of Rutland Subtotal: \$40,400 (NBRC: \$34,400; Match: \$6,000).

University of Maine: \$581,507 is requested to support the administration, formulation evaluation and validation, demonstration site, TEA-LCA, and outreach components of the proposed project. The University of Maine will lead and coordinate the testing and determination of nanocellulose-enhanced concrete mix formulation for the northeast region, provide technical assistance for project demonstration sites, facilitate the installation of vehicle and equipment parking transportation infrastructure using nanocellulose-enhanced concrete at two demonstration sites in Penobscot County, collaborate with other sub-grantees to conduct techno-economic analysis and life-cycle analysis of nanocellulose-enhanced concrete, and support outreach efforts. The University of Maine will provide \$227,737 in matching funds, and the City of Brewer will provide \$20,000 in matching funds.

University of Maine Subtotal: \$829,245 (NBRC: \$581,507; Match: \$247,738)

University of New Hampshire (UNH): \$339,720 is requested to support the administration, formulation, demonstration site, and outreach components of the proposed project. UNH will lead and coordinate outreach efforts to increase awareness of and demand for nanocellulose-enhanced concrete in the region, support the testing and determination of nanocellulose-enhanced concrete mix formulation, and facilitate the installation of pedestrian transportation infrastructure using nanocellulose-enhanced concrete at two demonstration sites in Coos County. NH Department of Transportation has committed \$75,000 in matching funds.

University of New Hampshire Subtotal: \$418,470 (NBRC: \$339,720; Match: \$78,750)

State University of NY (SUNY ESF): \$635,660 to support the formulation, demonstration, site, TEA-LCA, and outreach components of the proposed project. SUNY ESF will lead and coordinate the techno-economic and life-cycle analyses of nanocellulose-enhanced concrete, support the testing and determination of nanocellulose-enhanced concrete mix formulation for the NY state, provide technical assistance for project demonstration sites, facilitate the installation of pedestrian transportation infrastructure using nanocellulose-enhanced concrete at one demonstration site in St. Lawrence County and one demonstration site in Essex County, and support outreach efforts. SUNY ESF will provide \$166,415 in matching funds.

SUNY ESF Subtotal: \$861,857 (NBRC: \$692,942; Match: \$168,915)

Total Contracts & Sub-Grantees: \$2,149,972 (NBRC: \$1,648,569; Match: \$501,403)

1. **Construction Costs:** N/A

1. **Indirect:**



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Indirect costs are calculated at 25.67% of personnel.
Total Indirect: \$51,361 (NBRC: \$43,380; Match: \$7,981)
Total NBRC Funds Requested: \$1,940,715
Total Match: \$558,820 (non-fed \$551,320)
Total Project Cost: \$2,499,535

| Funding Sources and Commitments | | | | |
|---|-----------------|--------------|-------------------------------------|---------|
| Funding Source | Type of Funding | Amount | Date of Commitment, Secured/Pending | Status |
| USDA Forest Service, Forests Products Lab | Other Federal | \$7,500.00 | 09/30/2025 | Secured |
| University of Maine | In-kind | \$227,738.00 | 10/08/2025 | Secured |
| New Hampshire Agency of Transportation | In-kind | \$75,000.00 | 10/02/2025 | Pending |
| City of Brewer | In-kind | \$20,000.00 | 09/30/2025 | Secured |
| City of Rutland | In-kind | \$6,000.00 | 10/06/2025 | Secured |
| SUNY-ESF | In-kind | \$166,415.00 | 10/04/2025 | Secured |
| Vermont Department of Forests, Parks & Recreation | In-kind | \$56,167.00 | 10/08/2025 | Secured |
| | | \$558,820.00 | | |

Proposal

Technical Proposal

[Approach & Methodology](#)





- Provide an explanation of the approach and methodology that will be used to meet the project goals and the expected outcomes and outputs.
See Program User Manual for additional instructions on completing this section.

Concrete Formulations for Northeast:

To help gain acceptance with the regional concrete producers, a laboratory testing program will be conducted at the University of Maine with the goal of transporting successful nano-cellulose-enhanced concrete formulations produced in the Pacific Northwest to the Northeast. Each region has regional concrete mixture variations. CNC-modified mixes will be prepared in the laboratory to assure that American Society for Testing and Materials (ASTM) workability, strength, and durability requirements are met. While led by the University of Maine, this work will be done in coordination with state-based partners when it will aid in technology transfer and regional adoption. The outcome of this work will be a documented slate of nano-cellulose-enhanced concrete mixes that meet state performance standards.

Demonstration Projects:

Nano-cellulose-enhanced concrete mixes that meet state performance standards will be installed in 7 public demonstration projects across the 4-state northern border region. State and municipal transportation partners have identified demonstration project locations based on partner infrastructure planning schedules and project selection criteria (see Locations). Ready-mix concrete producers will be trained and install truck scale batches into projects. Each project is expected to be below 2,000 sq. feet (or 2 10-yard cement trucks) to minimize potential environmental impact. At least 2 precast concrete companies will be selected to use nanocellulose in precast concrete products. These companies will be selected consistent with federal procurement standards. The formulations technical team will provide technical assistance throughout the process. Note that 7 separate NEPA Intake Forms will be submitted with this application, in one PDF portfolio.

Lifecycle Assessment and Techno-economic Analysis:

Led by SUNY ESF with consultation from the USDA Forest Products Laboratory and UMaine, a comprehensive lifecycle assessment (LCA) and techno-economic assessment (TEA) will be conducted to evaluate the environmental impacts and economic feasibility of nanocellulose concrete production and demonstration, compared to their conventional counterparts according to ISO standards. A wide range of impact indicators will be considered including impacts used for environmental product declaration and similar materials and products. A comprehensive LCA of nanocellulose concrete production will be first conducted and then extended to 7 individual LCAs for the 7 demonstration projects implemented throughout the four states. TEA will be conducted to compare the effectiveness of CNC versus conventional concrete/ concrete products by following the basic five steps such as (i) process flow diagram, (ii) mass balance, (iii) capital costs estimation, (iv) operating costs estimation, (v) analysis and optimization.

Outreach:

UNH will lead outreach efforts working with and through state project partners, transportation collaborators, and forest industry suppliers. Each state will help identify and develop outreach efforts in their respective states based on local relationships and opportunities. These



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efforts will be supported by and augmented, as requested, by project partners based on programmatic needs and the team's expertise. Education will be conducted to multiple audiences with a combination of delivery methods (i.e. group in-person, workshop, webinar, one-on-one technical assistance, written material, etc.) throughout each phase of the project. The concrete formulation team will disseminate technical aspects of this work to a small group of engineers and academics throughout the region. UNH's Technology Transfer Office (T2), with collaborators, will provide field tours, online education, tech briefs, etc. to public works and transportation entities across the region.

Forest products supply chain education market development will be delivered primarily through each state's forest products utilization and marketing staff and UMaine's Forest Industry Business Development Manager.

Economic Impacts

- Economic Impacts include but are not limited to impacts on: jobs, employment, entrepreneurial activity, and wage growth. Economic impacts should be consistent and, where possible, supported by feasibility studies, and/or local, state, or regional data.

This project will jumpstart the regional use of innovative, timber-derived nanomaterials in transportation infrastructure. By constructing and evaluating demonstration installations with nanocellulose-enhanced concrete at scale, we will showcase tangible economic and environmental benefits for the northern border region. As the global nanocellulose market is expected to grow from \$700 million in 2024 to \$4.6 billion by 2034 (Market Research Report, 2025), this expected growth provides a strong economic opportunity for utilization of readily available regional pulpwood to drive economic activity in our rural regional communities.

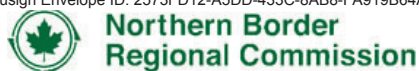
This project will align with NBRC-identified key performance indicators as follows:

- 7 communities will have a measurable improvement as a result of NBRC funding.
- 1 job will be created resulting from the NBRC funding, a new Forest Products Specialist, within the Vermont Department of Forests, Parks & Recreation.
- \$149,200 represents the amount of NBRC funding that will be channeled to concrete suppliers to complete this project and represents an increase in revenue for domestic sales for businesses.
- 3 graduate students will be improved through their participation in the project towards their course of student and graduate degree.

This application includes 21 letters of support, combined into a single PDF portfolio. These letters represent:



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- State Agencies: NY Department of Environmental Conservation, State Forester; VT Agency of Natural Resources, State Forester
- Municipal Partners: City of Rutland, VT, Department of Public Works – *co-applicant*; City of Brewer, ME
- Academic Partners: University of Maine - *co-applicant*, Dept. Of Civil & Environmental Engineering; State University of New York College of Environmental Science and Forestry (SUNY ESF) - *co-applicant*; SUNY ESF's Ranger School; SUNY ESF's Newcomb Campus, the Research Foundation for the State University of New York; University of Wisconsin-Madison College of Agricultural & Life Sciences; University of New Hampshire Cooperative Extension – *co-applicant*
- Industry Partners: Finch Paper, LLC; Professional Logging Contractors of the Northeast; Cersosimo Lumber Co. Inc.; ND Paper – Maine Operations
- Forestry Partners: Granite State Division of the Society of American Foresters
- National Partners: USDA Forest Service Forest Products Laboratory; U.S. Endowment for Forestry and Communities

Taken together, the letters demonstrate the project's widespread geographic impact and sector support for a nanocellulose marketplace in the northeast, bringing benefits to the forest economy sector and promoting rural prosperity while providing a lower carbon option for transportation infrastructure. This project represents a unified and multistate approach to addressing barriers to the commercialization, scaling, and adoption of nanocellulose-enhanced concrete in the northeast and there is considerable excitement for the potential it presents.

Project Readiness

- Describe if the project is ready for implementation or will require additional planning tasks to begin. Provide a detailed milestone schedule for completion of the project, along with an explanation of the applicant's ability to complete the proposed work within the 3 year period of performance. See Program User Manual for additional instructions on completing this section.

Led by Vermont with collaborators from New York, Maine and New Hampshire, and in consultation with Oregon State University and the USDA Forest Products Laboratory, the project team spent 10 months identifying the current barriers to a nanocellulose (CNC) market moving



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forward in the northeast, who should be involved to help overcome these barriers, and what activities would be required. This project unites R&D leaders with regional commercial concrete partners and forestry agencies. The proposed project timeline includes project start-up and is then comprised of 4 progressive steps: (1) northeast CNC formulations (2) demonstration projects (3) lifecycle assessment and techno-economic analysis (4) outreach.

Project Start-Up:

Q01-Q02: NEPA consultations and approval; development and execution of subawards; hiring of project coordinator (Forest Products Specialist).

Northeast CNC formulations:

Q01-Q02: Production and supply of nanocellulose at Forest Products Laboratory (Madison, WI).

Q02-Q04: Calibration of formulation to Northeast conditions.

Q03-Q10: Prepare and deliver technical information and outreach with concrete manufacturers on processing, workability, and other parameters of modified product.

Demonstration Projects:

Q01-Q06: Installation planning of identified demonstration sites; contracts developed and executed.

Q02-Q07: Demonstration sites prepared (grading/base/formwork/reinforcement) by site partner agencies.

Q03-Q09: Demonstration project installation; precast concrete products placed in municipal public areas with signage (e.g. parking bumping in a parking lot).

Q03-Q12: Engagement and programing with municipalities and transportation entities on the products including field trips, tech briefs, professional meetings, etc.

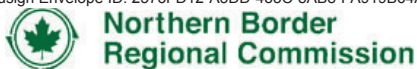
Lifecycle Assessment (LCA) & Techno-Economic Analysis (TEA):

Q02-Q06: Develop lifecycle inventory (LCI) database for CNC.

- Collect LCI data for all other materials.
- Conduct LCA of the CNC-enhanced concrete mixes (after formulation design in each state) in 4 states.



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Q06-Q11: Conduct LCA of demo sites by considering the service life.

Q03-Q11: Conduct TEA of the finalized mix-designs and all demonstrations.

Outreach:

Q02-Q04:

- Education to academics and engineers about technical aspects of the formulation development and testing.
- Pulp mills will be contacted to supply the project and start addressing questions related market potential
- Initial conversations and outreach to the broader forest products supply chain, municipalities, concrete manufacturers and the public about the project. This will include article(s), presentations during annual professional meetings, direct outreach to municipalities from T2, as well as direct communication to private concrete businesses listed in public directories and professional associations.

Q05-Q08:

- Additional targeted outreach to concrete manufacturers to develop a product line. This will include individual outreach as well as targeted sector marketing channels.
- Broad outreach (programs, partner / professional society newsletters, etc.) to municipalities and state public entities (demand drivers) around the product, its potential, and how it aligns with existing state / municipal plans regulatory requirements.
- Distribute precast concrete products with signage to municipalities and states. Conduct programs based on demand.
- Conduct educational programs on demonstration sites.

Q09-Q12:

- Continued guided tours of demonstration sites and precast concrete locations for the full range of audiences, i.e. public, forest products supply chain, concrete manufacturers, and state and municipal workers.



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- LCA/TEA outreach to stakeholders including disseminating written material.
- Evaluate outreach efforts to identify areas of greatest potential for impact and concentrate additional effort in those areas.

Capacity & Qualifications

- Provide an explanation of the capacity of the organization to meet the project objectives, including any partnerships with other entities to support project. Provide an explanation of the qualifications of the personnel as they relate to project objectives. See Program User Manual for additional instructions on completing this section.

Vermont will lead this multistate project, with the involvement of:

- Elise Schadler, Urban & Community Forestry Program Manager, is the PI on the project and will administer all subawards. Elise has served as the lead coordinator on several large grant projects involving multiple parties and subawards.
- Katharine Servidio, Forest Economy Program Manager, will coordinate demonstration sites and assist with outreach, communication, and market development. Katharine is an SAF Certified Forester who provides statewide leadership and expertise in forest economics, applied forestry, wood utilization, and forest markets.
- Adam McCullough, Urban Forester, Urban & Community Forestry Program, will serve as a subject matter expert and will support the demonstration projects in Vermont. Adam is an ISA Certified Arborist with a background as a private arborist and municipal arborist.
- Megan Davin, Communications & Outreach Specialist, will support outreach and communications. Megan has 19 years of experience across the outdoor industry, nonprofits, and mission-driven businesses.

Partners:

UMaine:

Shane O'Neill, Forest Industry Business Development Manager. With 18 years of academic R&D experience, Shane focuses on coordinating



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resources and capacities within the UMaine system with external partners to support forest-focused businesses and communities to advance forest-based innovations and diversify Maine's forest economy.

Eric Landis, Professor of Civil Engineering. Over three decades, Eric has made contributions in characterization of ultra-high-performance concrete and applications of cellulosic nanomaterial applications in cement and concrete. Eric will lead the concrete formulation team and provide technical support to demonstration site concrete manufacturers and users.

T. Reed Miller, Ass. Professor of Civil and Environmental Engineering. Reed's research applies the key methods from the field of Industrial Ecology to tackle sustainability challenges in modern production and consumption systems. These methods include life cycle assessment, environmentally extended input-output analysis, and material flow analysis. Reed will be responsible for conducting LCA and TEA activities under the lead of SUNY-ESF.

UNH:

Andrew Fast, Extension Forest Industry Specialist. Andy's primary responsibility is to provide statewide leadership and support to the forest industry through educational programing, business attraction and retention, economic development and research. He will lead the outreach team to support a viable supply chain and product commercialization.

Marilee Enus, Technology Transfer Center (T2) Director. Marilee will channel personnel and resources into educational outreach support to public works, municipalities and transportation agency colleagues throughout the region in coordination with partners.

Philippe Kalmogo, Assistant Professor of Civil Engineering. Dr. Kalmogo has teaching expertise and a research focus on concrete attributes and design. He will be part of the concrete formulation and outreach teams.

SUNY ESF:

Mohammad Uzzal Hossain, Assistant Professor, Dept. of Sustainable Resources Management. Over the past 15 years, Dr. Hossain has conducted projects related to sustainable concrete development and applications. His research focuses on alternative cementitious materials, sustainable concrete design, bio-based materials, and sustainability assessment.

Paul Crovella, Associate Professor, Dept. of Sustainable Resources Management. Paul will provide support for the project team across the scope and timeline.



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Consultants:

Robert Moon, Materials Research Engineer, USDA Forest Service Forest Products Lab. Dr. Moon is an internationally recognized researcher in cellulose nanomaterials (CN). He is an expert in processing-structure-property relationships as they apply in various aspects of CN research. His role will be to provide technical support and serve as a liaison with the USDA Forest Products Laboratory.

Naveenkumar Rajendiran, Research Scientist, University of Wisconsin-Madison. His research focuses on advancing sustainable technologies in the bioeconomy through integrated techno-economic analysis and life cycle assessment.

Jason Weiss, School of Civil and Construction Engineering, Oregon State University. Dr. Weiss is actively involved in research on cement and concrete materials specifically focused on early age property development, cracking, transport in concrete, and concrete durability. He completed similar demonstration work in the Pacific Northwest and will provide technical expertise on formulation development and lessons learned.

Scott Moxham, Supervising Forester, Private Lands, Utilization, and Climate Forestry Section, NY Department of Environmental Conservation. Scott's role will be to assist and engage with stakeholders, policymakers, and the public on how development and expansion of durable wood products can play a vital role in forest utilization.

Revisions

Revision Request Details

| | | |
|---|---|---|
| Due Date 01/08/2026 | Revision Request Status Complete | Applicant Name Danielle Fitzko |
| Revision Requested Date 12/08/2025 4:06 PM | Revision Submitted On 12/09/2025 3:28 PM | Application Sections for Revision Overview: Primary Place of Performance |
| Match % 20% | Updated Match % 20% | |



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Available Forms for Revision

| Form Name | Needs Revision |
|--|----------------|
| Application for Federal Assistance (SF-424) | false |
| Assurances for Construction Programs (SF-424D) | false |
| Assurances for Non-Construction Programs (SF-424B) | false |
| Disclosure of Lobbying Activities (SF-LLL) | false |

Applicant Response

[Details](#)

Accept negotiations and understand BABAA requirements.

Explanation of Revisions Needed

[Details](#)

No revisions needed. By completing negotiations, you acknowledge the requirements of the NBRC award as identified in the award letter and that you have verified your organization's banking information on file with SAM.gov is accurate.

As indicated in your award notification, please be informed that BABAA applies to this project.

— FYI: BABAA Applicable— This project is determined to be subject to the procurement requirements laid out by the Build America Buy America Act. NBRC will send an invitation for a BABAA-specific training session to help you understand these requirements. See NBRC website for more details: <https://www.nbrc.gov/content/BABAA>

LDD Support

Local Development District Support

| # | Reviewer Name | Organization | Description | Due Date | Allow Record Editing | Status |
|---|---------------|--------------|-------------|----------|----------------------|--------|
|---|---------------|--------------|-------------|----------|----------------------|--------|



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Forms and Files

Application Files

| Title | Classification | File Extension | Description | Created Date |
|-------|----------------|----------------|-------------|--------------|
|-------|----------------|----------------|-------------|--------------|

Supporting Documents Checklist

| Description | Required | Template Link | Grantee Document Link |
|---------------------------------------|-----------|----------------------|-----------------------|
| Authorized Official Resolution | Mandatory | View | View |
| Certificate of Good Standing | Optional | Not Applicable | Not Applicable |
| Debarment Suspension Cert - Form 1001 | Mandatory | View | View |
| Indirect Cost Rate | Optional | Not Applicable | View |
| IRS Determination Letter | Optional | Not Applicable | Not Applicable |
| Letters of Support | Optional | Not Applicable | View |
| NEPA Intake Form | Mandatory | View | View |
| Project Maps | Mandatory | Not Applicable | View |
| RLF Documentation | Optional | View | Not Applicable |
| SF424-cbw | Mandatory | View | View |

All Forms

| Form Name | Mandatory | Percentage | Last Modified By | Last Modified Date |
|---|-----------|------------|------------------|--------------------|
| Application for Federal Assistance (SF-424) | true | 100.00% | Danielle Fitzko | 10/08/2025 2:21 PM |



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| | | | | |
|--|-------|---------|-----------------|--------------------|
| Assurances for Construction Programs (SF-424D) | false | 0.00% | Danielle Fitzko | 10/08/2025 2:21 PM |
| Assurances for Non-Construction Programs (SF-424B) | false | 100.00% | Danielle Fitzko | 10/08/2025 2:21 PM |
| Disclosure of Lobbying Activities (SF-LLL) | true | 100.00% | Danielle Fitzko | 10/08/2025 2:21 PM |

Notes

| Title | Description | Created Date | Created By |
|-------|-------------|--------------|------------|
|-------|-------------|--------------|------------|

