



THE STATE OF NEW HAMPSHIRE
DEPARTMENT OF TRANSPORTATION



JEFF BRILLHART, P.E.
ACTING COMMISSIONER

Bureau of Materials & Research
 January 30, 2015

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

REQUESTED ACTION

Authorize the Department of Transportation to amend a **sole-source** Cooperative Research and Development Agreement (CRADA) with the US Army Engineer Research and Development Center (ERDC) Cold Regions Research and Engineering Laboratory (CRREL) (Vendor 177804), Hanover, NH, by extending the completion date from March 31, 2015 to December 31, 2015, effective upon Governor and Council approval. The original Agreement was approved by Governor and Council on November 20, 2013, Item #70. This is a time extension only, requiring no additional funds.

EXPLANATION

The Department is collaborating with CRREL to conduct a cooperative research study evaluating the potential structural benefits of including reinforcement grid in the base course layer or asphalt concrete layer of flexible pavement systems. A number of installations have occurred in New Hampshire; however, to date the actual benefits have not been quantified. CRREL is uniquely qualified to conduct this study because of its comprehensive knowledge of infrastructure including the performance of pavements, concrete and airfields in cold regions, along with testing capabilities and a reputation for an unbiased, science-based approach to complex issues. CRREL has successfully performed other studies for the Department in the past including research related to the causes and mechanics of pavement frost heaving in the vicinity of transverse pavement cracks, synthesizing commonly used and potential test methods for evaluating hot-mix aggregates in term of pavement performance, testing to determine the effective resilient modulus on subgrade soils commonly found in the State for use in Mechanistic AASHTO pavement designs, and developing a test program to characterize the use of reclaimed asphalt concrete as a base course material.

On November 20, 2013, the original CRADA was approved by Governor and Council (Item #70; copy of resolution attached) with a funding allocation of \$120,000 for FY 2014 and \$28,000 for FY 2015.

The currently proposed amendment to the Agreement extends the completion date from March 31, 2015 to December 31, 2015. Field testing performed by the researchers from CRREL was dependent on weather conditions and assistance from highway maintenance crews for traffic control and drillers from the Department's Geotechnical Section. Wet weather predictions and conditions caused delays of field testing along NH Route 101 near Epping/Brentwood. A second round of field tests is planned along Pickering Road in Rochester in March/April to verify that pavement strength captured in the spring 2014

is comparable to the frost conditions noted. Additional time is required for data analysis and final report.

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

Your approval of this resolution is respectfully requested.

Sincerely,



David J. Brillhart, PE
Acting Commissioner

Attachments

**AMENDMENT 1
COOPERATIVE RESEARCH AND DEVELOPMENT AGREEMENT
BETWEEN
U.S. ARMY ENGINEER RESEARCH AND DEVELOPMENT CENTER
COLD REGIONS RESEARCH AND ENGINEERING LABORATORY
AND
NEW HAMPSHIRE DEPARTMENT OF TRANSPORTATION**

This amendment is for the Cooperative Research and Development Agreement (CRADA) approved by the State of New Hampshire Governor and Executive Council on November 20, 2013, Item #70, for the project titled "Impact of Seasonal Conditions and Changing Climate on Infrastructure Structural Performance Pertaining to Pavement and Construction Materials and Geotechnical Engineering". The CRADA is hereby modified by mutual consent of both parties as follows:

Work statement 8.0 Period of Performance in Appendix B "*Assessment of Reinforced Base Course*" to read as follows:

The period of performance for "Assessment of Reinforced Base Course" study will end on or before December 31, 2015 at no additional cost to the State.

Work statement 8.0 in Appendix C – "*Assessment of Asphalt Concrete Reinforcement Grid in Flexible Pavements*" to read as follows:

The period of performance for "Assessment of Asphalt Concrete Reinforcement Grid in Flexible Pavements," study will end on or before December 31, 2015 at no additional cost to the State.

All other provisions remain the same.

IN WITNESS WHEREOF, the Parties have caused this CRADA to be amended, as above, and to be executed by their duly authorized representatives as follows:

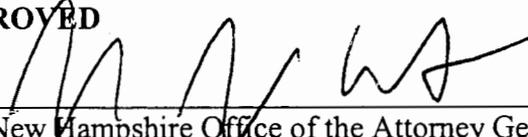
For U.S. Army Cold Regions Research and Engineering Laboratory (CRREL)

By: Robert E. Davis 1/23/15
Robert E. Davis, Ph.D. Date
Director

For New Hampshire Department of Transportation (NHDOT)

By: William J. Cass 1/30/15
William J. Cass, P.E. Date
Director of Project Development

APPROVED

By  _____
For: New Hampshire Office of the Attorney General Date 2/20/15

APPROVED

By _____
For: New Hampshire Governor and Executive Council Date _____



DEPARTMENT OF THE ARMY
ENGINEER RESEARCH AND DEVELOPMENT CENTER, CORPS OF ENGINEERS
COLD REGIONS RESEARCH AND ENGINEERING LABORATORY
72 LYME ROAD
HANOVER, NEW HAMPSHIRE 03755-1290

REPLY TO
ATTENTION OF:

February 13, 2015

Executive Office

Ms. Ann M. Scholz, P.E.
NH Department of Transportation
Materials & Research Bureau
Box 483, 5 Hazen Drive
Concord NH 03302-0483

Dear Ms. Scholz,

This letter is in response to your request for information concerning the United States Government and specifically, the U.S. Army Engineer Research and Development Center (ERDC) –Cold Regions Research and Engineering Laboratory (CRREL), being self insured. The following rules are equally applicable to any official government activity:

1. The Government is a self-insurer with respect to loss or damage to government property and the liability of government employees. In the absence of express statutory authority, appropriated funds are not available to purchase such insurance coverage. (Rule summarized in GAO B-158766, Feb. 3, 1977.)

2. The Federal Tort Claims Act (28 USC 2671 et seq.) provides the exclusive remedy for tort claims against the United States. Under it, the Government agrees to assume responsibility for negligent acts or omissions of ERDC-CRREL employees acting within the scope of their employment.

3. The Government may not accept "hold harmless" or "indemnification" clauses in its agreements because the law prohibits the Government from entering into agreements where the Government's liability is indefinite, indeterminate, or potentially unlimited. Such agreements violate both the Antideficiency Act, 31 USC 1341 and the Adequacy of Appropriations Act, 41 USC 11, the latter because it can never be said that sufficient funds have been appropriated to cover the contingency.

Please e-mail Mr. Gary Pasternak at gary.a.pasternak@usace.army.mil if you need further information on this subject, but I hope this satisfies your needs regarding the issue above.

Sincerely,

ROBERT E. DAVIS, PhD, SES
Director

Attachment
USACE Delegation Letter dated Feb. 1, 2000



DEPARTMENT OF THE ARMY

U.S. Army Corps of Engineers
WASHINGTON, D.C. 20314-1000

REPLY TO
ATTENTION OF:

DELEGATION OF AUTHORITY TO ENTER INTO
COOPERATIVE RESEARCH AND DEVELOPMENT AGREEMENTS
AND TO LICENSE, ASSIGN, OR WAIVE RIGHTS TO INTELLECTUAL PROPOERTY

1. Pursuant to the authority contained in 15 United States Code (U.S.C.), Section 3710a, Executive Order 12591, Section 1 (b)(1) dated 10 April 1987, and Army Regulation (AR) 70-57, Army Domestic Technology Transfer, paragraph 1-8, and pursuant to the authority redelegated to me by the Assistant Secretary of the Army (Research, Development and Acquisition) on 4 December 1987, I hereby delegate (1) the authority to enter into, on behalf of the Department of the Army, Cooperative Research and Development Agreements, and (2) the authority to license, assign, or waive rights to intellectual property developed by or assigned to the Department of the Army to:

Director, U.S. Army Engineer Research and Development Center
Director, U.S. Army Engineer Coastal and Hydraulics Laboratory
Director, U.S. Army Engineer Geotechnical Laboratory
Director, U.S. Army Engineer Structures Laboratory
Director, U.S. Army Engineer Environmental Laboratory
Director, U.S. Army Engineer Information Technology Laboratory
Director, U.S. Army Engineer Construction Engineering Laboratory
Director, U.S. Army Engineer Cold Regions Research and Engineering Laboratory
Director, U.S. Army Engineer Topographic Engineering Center

2. This authority may not be redelegated further.

3. The foregoing delegation of authority becomes effective on 1 February 2000.

A handwritten signature in black ink, appearing to read "Joe N. Ballard".

JOE N. BALLARD
Lieutenant General, USA
Commanding



THE STATE OF NEW HAMPSHIRE
DEPARTMENT OF TRANSPORTATION



70

CHRISTOPHER D. CLEMENT, SR.
COMMISSIONER

JEFF BRILLHART, P.E.
ASSISTANT COMMISSIONER

Bureau of Materials & Research
October 21, 2013

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

REQUESTED ACTION

Authorize the Department of Transportation to execute a **sole-source** Cooperative Research and Development Agreement (CRADA) with the US Army Engineer Research and Development Center (ERDC) Cold Regions Research and Engineering Laboratory (CRREL) (Vendor 177804), Hanover, NH, for a total fee not to exceed \$148,000.00, for a cooperative investigation to assess the performance of reinforcement grids in base course and asphalt concrete pavements in New Hampshire, effective upon Governor and Council approval, through March 31, 2015. 100% Federal Funds.

Funding is available as follows:

| | | |
|--|----------------|---------------|
| 04-96-96-962015-3036 | <u>FY 2014</u> | <u>FY2015</u> |
| SPR Research Funds | | |
| 046-500464 General Consultants Non-Benefit | \$120,000.00 | \$28,000.00 |

EXPLANATION

The Department is collaborating with CRREL to conduct a cooperative research study evaluating the potential structural benefits of including reinforcement grid in the base course layer or asphalt concrete layer of flexible pavement systems. CRREL is uniquely qualified to conduct this study because of its comprehensive knowledge of infrastructure including the performance of pavements, concrete and airfields in cold regions, along with testing capabilities and a reputation for an unbiased, science-based approach to complex issues. CRREL has successfully performed other studies for the Department in the past including research related to the causes and mechanics of pavement frost heaving in the vicinity of transverse pavement cracks, synthesizing commonly used and potential test methods for evaluating hot-mix aggregates in term of pavement performance, testing to determine the effective resilient modulus on subgrade soils commonly found in the State for use in Mechanistic AASHTO pavement designs, and developing a test program to characterize the use of reclaimed asphalt concrete as a base course material.

Reinforcement grids within base courses and asphalt concrete layers are purported to provide structural benefits to flexible pavement systems. A number of installations have occurred in New Hampshire; however, to date the actual benefits have not been quantified. This research will provide the Department with a comparative assessment of the performance of such systems in real-world conditions, with the goal of determining whether similar applications can reduce the required asphalt and aggregate thicknesses as claimed by grid manufacturers, thereby reducing the overall cost of pavement reconstruction.

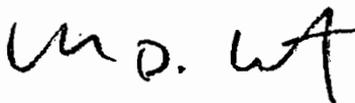
Deflection testing and back-calculation of structural parameters will occur along Pickering Road in Rochester and NH Route 101 near Epping/Brentwood to assess the performance of reinforced base course materials and asphalt pavement sections, respectively. In addition, the ability of the reinforcing grids to reduce or arrest fatigue and reflective cracks caused by traffic loadings, age hardening of the asphalt materials, and temperature cycling will be evaluated. The overall outcome from the proposed study supports an important performance objective, *Improving Asset Conditions*, identified in the NHDOT Balanced Scorecard, by improving the quality and longevity of pavements.

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

Project funding is 80% federal funds with 20% state match. Turnpike toll credit is being utilized for match requirements, effectively using 100% federal funds.

It is respectfully requested that authority be given to enter into a sole-source Agreement for test and evaluation services as outlined above.

Sincerely,

A handwritten signature in black ink, appearing to read "C.D. Clement", written in a cursive style.

Christopher D. Clement, Sr.
Commissioner

Attachments