AFCC'S FY2022 Legislative Language Request

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Committees:
House Committee on Transportation and Infrastructure
Senate Committee on Environment and Public Works

Federal Agency:
Department of Transportation

Departments:
Federal Highway Administration
Federal Aviation Administration
Federal Railroad Administration
Federal Transit Administration
Maritime Administration

NEW PROGRAM

Program Title:
Removing Obstacles Throughout the Nation to the Use of Innovations for Improved Infrastructure Construction and Repair

Appropriation Required to Enact: $0

AFCC's Justification / Rationale for This Request:
The primary obstacle to being able to implement innovations in infrastructure construction and repair projects that enable high performance, are cost effective, improve infrastructure sustainability and longevity, and allow for the use of recycled materials, are state construction specifications.

These specifications typically prescribe specific steps for construction and repair that must be precisely followed, and which adhere to traditional construction and repair methods.

These specifications in almost every case preclude the use of innovations, unless a state amends or temporarily waives its specifications to allow for the use of an innovation which, in the case of many of such amendments and waivers, may allow only for the use of a single innovation, or only allow for its use in a single project.

To solve this problem, AFCC is suggesting that the language below be implemented at the federal level both as a requirement for the receipt of federal infrastructure funding and as a model for states to follow in being able to use innovations on all federally funded infrastructure projects.

This language is drawn from the "United Facilities Guide Specifications," UFGS-09 97 23.17, prepared by the Naval Facilities Engineering Command, or NAVFAC, for use by NAVFAC, the United States Army Corps of Engineers, Air Force Civil Engineer Center, and National Aeronautics and Space Administration.

Proposed Bill Language:

"The Department of Transportation shall require that all federally funded transportation and infrastructure projects investigate and, to the degree possible, adopt and use innovations that enable high performance, are cost effective, improve infrastructure sustainability and longevity, reduce the use of energy, make use of recycled materials and balanced mix designs, and/or reduce greenhouse gas emissions in the construction and repair of roads, pavements, and infrastructure projects in the Nation.

"The Department shall, for this purpose, encourage states to adopt amendments to their infrastructure construction and repair specifications that will allow for the use of innovations in lieu of standard construction and repair methods.

"Said amendments shall stipulate that innovations can be used in lieu of the construction and repair methods set forth in the state's specifications, providing that the criteria for the use of innovations, as set forth by the state, can be met.

"The Federal Highway Administration shall stipulate that federal highway funds will be available, and won't be revoked, for states and localities using innovative technologies, designs, products, materials, and construction and repair methods.

"The Federal Highway Administration's Center for Accelerating Innovation shall investigate effective ways through its Every Day Counts program and State Transportation Innovation Councils to provide incentives to states to implement innovative technologies.

"The following language shall be taken into consideration by States to amend existing construction and repair specifications to allow for the use of innovations.

> "The State shall require all contractors and vendors who propose to use an innovation in lieu of the construction or repair methods that are set forth in the State's specifications, to submit documentation satisfactory to the State, for the State's review, describing the innovation's prior use, performance, effectiveness, and benefits, including data on improved infrastructure longevity, reduced cost and time to achieve equivalent or better results than standard construction or

repair methods, increased use of recyclable materials, reduced energy use, and/or reduced greenhouse gas emissions.

“Contractors and vendors shall provide the State with any approvals that the innovation has received from or for which technical guidelines have been published by the Federal Highway Administration’s Center for Advancing Innovation, State Transportation Innovation Councils, the American Association of State Transportation Offices, industry organizations such as the National Highways Builders Federation and International Concrete Repair Institute, or other States.

“The State shall use this documentation to make a determination as to whether the proposed innovation may be used in the State’s infrastructure construction and repair projects in lieu of or in combination with the construction and repair methods set forth in the State’s specifications.

“States shall consider amending their specifications to provide for the use of innovations, using the proposed outline delineated below for such amendments. The outline below has been drawn from the “United Facilities Guide Specifications,” UFGS-09 97 23.17, prepared by the Naval Facilities Engineering Command, or NAVFAC, for use by NAVFAC, the United States Army Corps of Engineers, Air Force Civil Engineer Center, and National Aeronautics and Space Administration.

“The amendment outline is as follows:

1.1 PRE-CONSTRUCTION REQUIREMENTS

1.1.1 Preconstruction Submittals

1.1.1.1 List of Proposed Subcontractors
1.1.1.2 List of Proposed Products
1.1.1.3 Health and Safety Plan
1.1.1.4 Testing Procedures and Equipment
1.1.1.5 Environmental Protection Plan

1.1.2 Shop Drawings [as appropriate]:

1.1.2.1 Application Areas
1.1.2.2 Repair Areas
1.1.2.3 Testing Locations
1.1.2.4 Installation Locations and Installation Details

1.1.3 Product Data

1.1.3.1 Manufacturer's Product Description
1.1.3.2 Manufacturer's Storage and Handling Instructions

1.1.4 Test Reports

1.1.4.1 Innovation Selection and Use Plan

1.1.4.2 Pre-Project Test Locations, Methods, Tools
1.1.4.3 Daily Checklists
1.1.4.4 Final Acceptance Test Report and Maintenance Test Procedure

1.1.5 Certificates

1.1.5.1 Manufacturer's Certificate
1.1.5.2 Contractor's Certificate
1.1.5.3 Evidence of Acceptable Variation Certificate

1.1.6 Manufacturer's Instructions

1.1.6.1 Technical Guidelines
1.1.6.2 Safety Data Sheets (SDS)
1.1.6.3 Special Application Procedures for Extreme Temperatures

1.1.7 Closeout Submittals

1.1.7.1 Final acceptance Test Report

1.2 QUALITY ASSURANCE

1.2.1 Qualifications of Contractors, Subcontractors, and Vendors

Submit certificates/certifications documenting prior experience in use of the innovation, including test methods to be performed herein, and qualification statements for review and approval by the State for the contractors, subcontractors, and vendors that will be involved in project execution.

1.2.2 Minimum Performance Requirements.

Submit Manufacturer's certificate and/or adequate documentation of the following, as appropriate:

1.2.2.1 Performance Characteristics in Comparison to Using Standard Construction/Repair Methods
1.2.2.2 Cost of Construction/Repair in Comparison to Standard Construction/Repair Methods to Meet Same Standards
1.2.2.3 Time of Construction/Repair in Comparison to Standard Construction/Repair Methods to Meet Same Standards
1.2.2.4 Structure Life Extension
1.2.2.5 Corrosion Rate Reduction of Reinforcing Steel
1.2.2.6 Water Penetration Rate Reduction of Concrete
1.2.2.7 Pullout Strength Increase of Concrete
1.2.2.8 Other Benefits Compared to Standard Construction/Repair Methods [ability to use recycled materials and balanced mix designs, reduction of greenhouse gas emissions, etc.]

1.2.3 Evidence of Acceptable Variation Certificate

Submit documentation of any variations from this section that certifies that the variation will not prevent the application from achieving the minimum performance requirements.

1.3 REGULATORY REQUIREMENTS

1.3.1 Environmental Protection

Submit an environmental protection plan for the use of the innovation that addresses all requirements of the Safety Data Sheets for the products utilized and assures compliance with all applicable regulations.

1.4 DELIVERY, STORAGE, AND HANDLING

Store and handle products in accordance with the manufacturer's instructions. Submit manufacturer's storage and handling instructions as part of the product data submittal.

1.5 SAFETY METHODS

Comply with all applicable OSHA and local authority standards for personal protection, including the required record keeping and training. Submit compliance plan as part of the Health and safety plan submittal.

1.6 ENVIRONMENTAL CONDITIONS

1.6.1 Weather and Substrate Conditions

Consider present and forecasted weather conditions for each structure prior to product use. The substrate temperature, air temperature, humidity and other environmental conditions must be within the limits recommended by the manufacturer for proper application. Document all relevant environmental conditions and include in the Daily Checklist submittals.

1.7 EQUIPMENT, TOOLS, AND MACHINES

Stipulate that the methods, tools, and equipment approved by the manufacturer shall be used in incorporating innovations into state infrastructure construction and repair projects.

1.8 SEQUENCING AND SCHEDULING

1.8.1 Preparation of [Soil, Surfaces, etc.] Prior to Use of Innovation

1.8.2 Surface Preparation

1.8.3 Other Preparations

1.8.4 Pre-Application Testing

1.8.4.1 Testing Procedures and Equipment

Submit a list of all proposed testing procedures and test equipment within two weeks of the contract award.

1.8.4.2 Testing Procedure Approval

Testing procedures, test equipment, measurement techniques, and locations must be submitted to the

Designer of Record for review and approval prior to testing.

1.8.4.3 Testing and Test Results Report

All test data and the test results must be submitted to the Designer of Record for review and approval prior to proceeding with use of the innovation.

1.8.5 Innovation Selection and Use Plan

Prepare and submit a specific plan for the use of the innovation. Include the product selections, the purposes for the use of the innovation, the project areas in which the innovation will be used, the methods for its use and equipment required, the sequence and timing of each step required in the use of the innovation, and the usage rates that are based on the pre-application testing results.

Include all pre-application testing data and analysis in the plan. Include shop drawings identifying the testing locations. Identify areas that require pre-project and post-project tests. Submit the Innovation Selection and Use Plan for review by the Designer of Record.

1.8.6 Innovation Use

Use the innovation in accordance with manufacturer's specifications and the approved plan.

Monitor and record the quantity, methods, surface and sub-surface temperatures, and any other data or observations required by the plan.

Inspect the project areas in which the innovation was used to ensure proper application and use.

1.8.7 Post-Application Testing and Minimum Performance Requirements

Perform post-application testing a minimum of 60 days after completion of the construction or repair using the innovation.

Perform post-application testing utilizing the same instrumentation and test procedures at the same locations as those utilized during the pre-application testing.

Include the post-application testing results in the Final Acceptance Test Report.

The minimum acceptable performance criteria are included in paragraph MINIMUM PERFORMANCE REQUIREMENTS.