

AASHTO Innovation Initiative

[Proposed] Nomination of Innovation Ready for Implementation

Sponsor

Nominations must be submitted by an AASHTO member DOT willing to help promote the innovation. If selected, the sponsoring DOT will be asked to promote the innovation to other states by participating on a Lead States Team supported by the AASHTO Innovation Initiative.

1. **Sponsoring DOT (State):** Missouri
2. **Name and Title:** Randy Hitt, Construction and Materials Liaison Engineer

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State: Missouri

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Innovation Description (10 points)

The term “innovation” may include processes, products, techniques, procedures, and practices.

3. **Name of the innovation:**

Utilizing the NTPEP Compliance to satisfy the material of origin form requirement of Buy America.

4. **Please describe the innovation.**

The current FHWA Buy America policy requires a material of origin form for every steel and iron component of a project. Additionally, it requires a material of origin form for each step in the process

smelting, shipping, coating, bending etc. process. The submittal process for the suppliers and contractors is very onerous. Also, each state has varying requirements and forms which makes compliance very challenging for suppliers. The DOT struggles to receive all the numerous required material of origin forms. The entire process is extremely time consuming and costly to administer. If the steel and iron products for a project cannot be documented as domestic the entire federal funding for a project is jeopardized. Most suppliers of steel and iron products such as rebar and traffic safety components (guard rail and end treatments) are National Transportation Evaluation Program (NTPEP) compliant. Verification of Buy America is part of the evaluation process to be a NTPEP compliant supplier. MoDOT has implemented a programmatic system where if a supplier is NTPEP compliant they no longer have to submit material of origin forms with their steel or iron products.

The Engineering Policy Guidance on its use is as follows:

The "Certificate of Materials Origins" form and supporting documentation required by [Missouri Standard Specifications for Highway Construction, Section 106.9.3.2](#) will not be required for suppliers that are members in good standing with [AASHTO's National Transportation Product Evaluation Program \(NTPEP\)](#). The NTPEP supplier will not be required to submit the material of origin forms with the material. All material of origin forms for supplied steel and iron materials shall be kept on file by the supplier and available upon request. The use of AASHTO NTPEP will be an acceptable standard per 23 CFR 635.410(d). This acceptance will apply to Category 1 and Category 2 items. Items accepted in this allowance shall be designated on the inspection reports as "NTPEP Audited Source, No Certification Required" in the approved inspection report format. An approved list of these suppliers is available from the [NTPEP website](#). The website will provide information on what materials are part of the NTPEP audit program and which facilities have been approved by NTPEP. The website will also indicate the year the facility was approved. Instructions on how to access this information is shown below: **NTPEP Audited Materials** Step 1: Access the NTPEP website Step 2: From the home page select "NTPEP DataMine" located on the left side of the page. Step 3: Select "View Data", the second choice listed. Step 4: Select "Construction" located in the middle of the page. **NTPEP Approved Facilities** Step 1: Access the NTPEP website. Step 2: From the home page, select "NTPEP DataMine" located on the left side of the page. Step 3: Select "View Data", the second choice listed. Step 4: Select "Construction" located in the middle of the page. Step 5: Select the construction material of interest. Step 6: Under the section entitled "Find Facilities", located along the left side of the page, utilize the following filter fields to locate the facility in question: - Manufacturer - Facility Locations - Product Type (e.g., rebar, wire, welded wire fabric, etc.) - Product Specification (e.g., ASTM A615, ASTM A706, etc.). When reviewing reinforcing steel and wire, the following Product Specifications are currently available for selection. Please note the AASHTO equivalent for the ASTM specification is shown in brackets. • ASTM A615 – Deformed and Plain Carbon-Steel Bars for Concrete

Reinforcement [AASHTO M31] • ASTM A706 – Deformed and Plain Low-Alloy Steel Bars for Concrete Reinforcement [AASHTO M31] • ASTM A996 – Rail-Steel and Axle-Steel Deformed Bars for Concrete Reinforcement • AASHTO M227 – Steel Bars, Carbon, Merchant Quality, Mechanical Properties • ASTM A1064 – Carbon-Steel Wire and Welded Wire Reinforcement, Plain and Deformed, for Concrete [AASHTO M336] • ASTM A995 – Castings, Austenitic-Ferritic (Duplex) Stainless Steel, for Pressure-Containing Parts • ASTM A416 – Low-Relaxation, Seven-Wire Steel Strand for Prestressed Concrete [AASHTO M203] • ASTM A1035 – Deformed and Plain, Low-Carbon, Chromium, Steel Bars for Concrete Reinforcement • AASHTO M334 – Uncoated, Corrosion-Resistant, Deformed and Plain Chromium Alloyed, Billet-Steel Bars for Concrete Reinforcement and Dowels • ASTM A955 – Deformed and Plain Stainless Steel Bars for Concrete Reinforcement Review the [Standard Specifications](#) to determine the proper Product Specification to select for review. Contact the [Construction and Materials Division](#) with questions regarding whether a facility has received NTPEP approval.

5. What is the existing baseline practice that the innovation intends to replace/improve?

The current process is to receive, track and archive steel and iron material of origin forms for every product and process that product goes through.

6. What problems associated with the baseline practice does the innovation propose to solve?

The process requires a lot of time and resources to track. It is also very burdensome for the contractors and suppliers to submit the required documentation. The Buy America policy and all its requirements is very complex. With any complex process there will inevitably be missing documentation. If Buy America requirements are not met for every steel or iron item then the federal funding for the entire project is at risk.

7. Briefly describe the history of its development.

MoDOT has partnered with FHWA, suppliers, and contractors to streamline the process. It was determined that most all of the steel and iron producers are NTPEP compliant. When suppliers are NTPEP compliant they have already been audited for Buy America compliance. A system was developed and implemented to use this programmatic approach. It began as a pilot on just traffic control devices such as guard rail and end treatments (which contain numerous steel parts that require each piece to be individually tracked). The programmatic process was a great success for MoDOT, FHWA, suppliers and contractors. The process has now been expanded to allow the NTPEP compliance process for all steel and iron components on a project.

8. What resources—such as technical specifications, training materials, and user guides—have you developed to assist with the deployment effort? If appropriate, please attach or provide weblinks to

reports, videos, photographs, diagrams, or other images illustrating the appearance or functionality of the innovation (if electronic, please provide a separate file). Please list your attachments or weblinks here.

The implementation was simple. A few minor changes were made to the AASHTOWARE (AWP0 system to accommodate the new process. A short tutorial was sent to materials engineers on the documentation changes.

Attach photographs, diagrams, or other images here. If images are of larger resolution size, please provide as separate files.

State of Development (40 points)

Innovations must be successfully deployed in at least one State DOT. The All selection process will favor innovations that have advanced beyond the research stage, at least to the pilot deployment stage, and preferably into routine use.

9. How ready is this innovation for implementation in an operational environment? Please select from the following options. Please describe.

- Prototype is fully functional and yet to be piloted
- Prototype has been piloted successfully in an operational environment
- Technology has been deployed multiple times in an operational environment
- Technology is ready for full-scale implementation

Click or tap here to enter text.

10. What additional development is necessary to enable implementation of the innovation for routine use? MoDOT has made modifications to our Engineering Policy Guide (EPG) to guide staff, contractors and FHWA on how the process works and walks them through the process.

Click or tap here to enter text.

11. Are other organizations using, currently developing, or have they shown interest in this innovation or of similar technology?? Yes No

If so, please list organization names and contacts. Please identify the source of this information.

Organization	Name	Phone	Email
Illinois Department of Transportation (IDOT)	Tim Kell	217-782-6667	Timm.Kell@illinois.gov
Click or tap here to enter text.	Click or tap here to enter text.	Click or tap here to enter text.	Click or tap here to enter text.
Click or tap here to enter text.	Click or tap here to enter text.	Click or tap here to enter text.	Click or tap here to enter text.

Potential Payoff (30 points)

Payoff is defined as the combination of broad applicability and significant benefit or advantage over baseline practice .

12. How does the innovation meet customer or stakeholder needs in your State DOT or other organizations that have used it?

The NTPEP process for Buy America significantly reduces the time and manpower in processing thousands of documents annually. It also assures better compliance with Buy America policy. The process also greatly simplifies the process for our suppliers and contractors saving them time and money. Currently each state has a unique submittal process that suppliers must comply with. This will make the process more uniform for suppliers. FHWA likes the programmatic approach as well. It assists them in auditing projects and creates a uniform process which is currently non-existent.

13. Identify the top three benefit types your DOT has realized from using this innovation. Describe the type and scale of benefits of using this innovation over baseline practice. Provide additional information, if available, using quantitative metrics, to describe the benefits.

Benefit Types	Please describe:
Organizational Efficiency	This process is simple and greatly reduces the time spent on processing and reviewing thousands of material of origin forms. This frees up inspection personnel to concentrate on more critical areas of construction inspection.
Improved Quality	By reducing the volume of paperwork, it will subsequently reduce the likelihood of errors in receiving all the documents necessary. A programmatic approach will greatly simplify and improve the Buy America compliance which can result in the loss of all federal funding on the project if documentation is missing.
Improved Operation Performance	This programmatic acceptance process will help to standardize processes for suppliers. Currently each state has unique forms and paper- work requirements. This will greatly reduce the time and effort needed to submit paperwork with every steel and iron item. This efficiency also benefits our contractors with through whom all of this additional paperwork must flow.

Provide any additional description, if necessary:

[Click or tap here to enter text.](#)

14 How broadly might this innovation be deployed for other applications. in the transportation industry (including other disciplines of a DOT, other transportation modes, and private industry)?

The NTPEP verification for Buy America could be adapted by all DOTs. It also would be of great benefit to our city and county partners who often struggle with the Buy America documentation process.

Market Readiness (20 points)

The All selection process will favor innovations that can be adopted with a reasonable amount of effort and cost, commensurate with the payoff potential.

15. What specific actions would another organization need to take along each of the following dimensions to adopt this innovation?

Check boxes that apply	Dimensions	Please describe:
<input type="checkbox"/>	Gaining executive leadership support	Click or tap here to enter text.
<input checked="" type="checkbox"/>	Communicating benefits	The new process would need to be communicated to suppliers and contractors.
<input type="checkbox"/>	Overcoming funding constraints	Click or tap here to enter text.
<input type="checkbox"/>	Acquiring in-house capabilities	Click or tap here to enter text.
<input type="checkbox"/>	Addressing legal issues (if applicable) (e.g., liability and intellectual property)	Click or tap here to enter text.
<input type="checkbox"/>	Resolving conflicts with existing national/state regulations and standards	Click or tap here to enter text.
<input type="checkbox"/>	Other challenges	Click or tap here to enter text.

16. Please provide details of cost, effort, and length of time expended to deploy the innovation in your organization.

Cost: There is no additional cost to implement this. It saves a lot of time, resources and money over the current policy.

Level of Effort: The effort to implement is minimal. The Missouri model can be utilized by other states. The NTPEP system was approved and endorsed by FHWA Missouri Division who also received concurrence from their National office in Washington, DC.

Time: Very minimal time is taken to implement. Once implemented it will save thousands of hours in receiving, tracking and archiving Buy America Documentation.

17. To what extent might implementation of this innovation require the involvement of third parties, including vendors, contractors, and consultants? If so, please describe. List the type of expertise required for implementation.

It does not require anything additional from outside parties. If the supplier is NTPEP requirement then they no longer have to submit material of origin forms. Suppliers would still need to have material of origin forms available upon request. These requests would be very rare. If a steel or iron supplier is not NTPEP compliant then the current DOT process for Buy America would still be used.