



NORTH CAROLINA BOARD OF TRANSPORTATION  
**Innovative Technologies and  
Products Awareness Plan**

NORTH CAROLINA DEPARTMENT OF TRANSPORTATION

## **EXECUTIVE SUMMARY**

The vision set forth by the North Carolina Department of Transportation (NCDOT) is to be a global leader in providing innovative transportation solutions. One way NCDOT is striving to fulfill their vision is to increase the use of innovative technologies and products by bringing greater visibility and public awareness to NCDOT's Product Evaluation Program. This will occur by reimaging product-related websites and streamlining product application processes into one web portal that will assist product vendors, distributors, producers and suppliers. The one-stop shop web portal will supply pertinent information and the ability to submit product information for evaluation while learning about opportunities to do business with NCDOT. The new, outreach focus will shift the current passive business model to an active pursuit of new technologies and products bringing additional awareness to the program. An Innovative Technology and Products Oversight Committee will monitor, refine and guide the comprehensive plan to bring greater visibility and public awareness to the Product Evaluation Program. A monthly status update on technologies and products will be given to the Board of Transportation. Instituting measures that direct, track progress and implement strategies demonstrates the Department's commitment to identify and implement new, effective innovation into the transportation infrastructure of North Carolina.

## BACKGROUND

NCDOT coordinates the review of new and innovative products through the Product Evaluation Program. This program is managed by the Value Management Office of the Transportation Program Management Unit, Technical Services Division.

The Product Evaluation Program provides a comprehensive evaluation of products that vendors and distributors propose to use on NCDOT projects and maintains an *Approved Products List*. NCDOT personnel, municipalities, utility owners, contractors and other external entities rely on the *Approved Products List* as assurance that a product has been thoroughly evaluated for acceptable use within the transportation infrastructure. In addition, NCDOT has a Producer Supplier Program through the Materials and Tests Unit of the Division of Highways for qualification of suppliers and producers. Lastly, specialized technical units maintain legacy qualified product lists outside of the current Product Evaluation Program.

Technical Work Groups conduct NCDOT's evaluation effort and consist of subject matter experts either within specialized units of NCDOT or as part of a cross-functional team. NCDOT's current Technical Work Groups are as follows:

- ADA Detectable Warnings
- Anti-Graffiti
- Asphalt Pavement Related
- Brand Certification\*
- Coatings
- Concrete Pavement Related
- Drainage
- Erosion Control
- Field Operations
- Geotechnical Engineering\*
- Geotextiles
- Guardrail
- High Friction Surface Treatments
- Innovative Roadway Lighting
- Intelligent Transportation Systems\*
- Materials and Tests Structural
- Noise Walls and Retaining Walls
- Paint
- Pavement Interlayers
- Physical Testing Laboratory
- Producer/Supplier Program
- Signing and Delineation\*
- Structural Components
- Temporary Traffic Control
- Temporary and Permanent Crash Cushion
- Utilities
- Warm Mix Asphalt\*

\* indicates a unit-maintained list (versus the *Approved Products List*)

In addition to the aforementioned programs, several product evaluations occur on job sites individually in concurrence with construction contracts and the Department. NCDOT also examines new products submitted under the National Transportation Product Evaluation Program (NTPEP).

## DEFINITIONS

An imperative aspect of being able to identify a product versus an innovative technology is to have a Departmental definition of each. For this purpose, NCDOT will use the following definitions:

**Technology** is an application of knowledge used to improve the functionality of a given product or process.

**Product** is a tangible item available for sale and distribution by a manufacturer or producer to meet the need of a consumer.

## STRATEGY

NCDOT will initiate a three-pronged approach to bring more innovative technologies and products to North Carolina. The three strategic areas of focus are:

- 1. Marketing and Communications—expanding the mass appeal of new innovation, technologies and products while marketing for innovative solutions NCDOT needs**—To achieve greater visibility and public awareness, enhanced marketing and communication efforts are critical. To date, the program uses a highly efficient passive process where the Department reacts to products as they are submitted. The new approach will include an active solicitation for technologies and products that address Department needs through a more readily accessible web portal. An example would be a continuous Request for Information (RFI) available to address the ongoing need for innovative technologies and products in such areas as erosion control. The Product Evaluation Program Engineer, NCDOT Communications and other key personnel will work together to conduct market outreach to vendors and product suppliers to attract more innovation to North Carolina. Specific, sample strategies include an increased web presence, highlighting approved technologies and products through various internal and external marketing methods and the development of media ready success stories. Sharing innovations across NCDOT will be a positive way to incorporate technologies and products into transportation projects and may encourage vendors to provide information on additional technologies and products for consideration by NCDOT.
- 2. Information Technology—improving NCDOT's internal efficiencies and the evaluation process**—Improved tracking of technologies and products will provide better data and information sharing capabilities both internally and externally. The Product Evaluation Program Engineer will work with Information Technology and other key personnel to develop a more robust Information Technology system which will track, promote and automate aspects of the product evaluation process. This improvement will allow a vendor to go to one webpage at NCDOT for all product needs. Then, based on criteria developed with a team of units reviewing products and the Technical Work Groups, this system will automatically send an acknowledgement of receipt to the vendor and send the product evaluation information to the appropriate Technical Work Group for further action. This initiative will provide one data source for reporting on products being reviewed by NCDOT while allowing the individual units and Technical Work Groups to follow current processes to review, test and approve products. Ultimately, this Information Technology system may tie to other NCDOT systems to assist in tracking and reporting the use of approved products.



*Bridge expansion joint*

**3. Product and Technology Implementation—improving NCDOT’s success rate of implementation and use**—NCDOT will institute a consistent methodology to implement technologies and products into North Carolina’s infrastructure. For example, the current Product Evaluation Program will expand to specifically address new innovative technologies, such as shrinkage reactive additives for Portland cement concrete pavement. In addition, developing Research Needs Statements and research projects with universities will be a method in identifying and implementing technologies and products. NCDOT will collaborate with other state DOTs to benchmark product evaluation programs nationally. Lastly, publishing RFIs to seek industry innovative technologies and products will place NCDOT in an active role to increase the overall use of technology.

If a submittal is identified as an innovative technology, it receives a label and assignment to an innovative technology liaison. This liaison participates in the review process and collaborates with field personnel if the innovative technology is granted a field test opportunity on a NCDOT project. Another important responsibility of the liaison will be to gather feedback from field trials to share with project managers across the state.

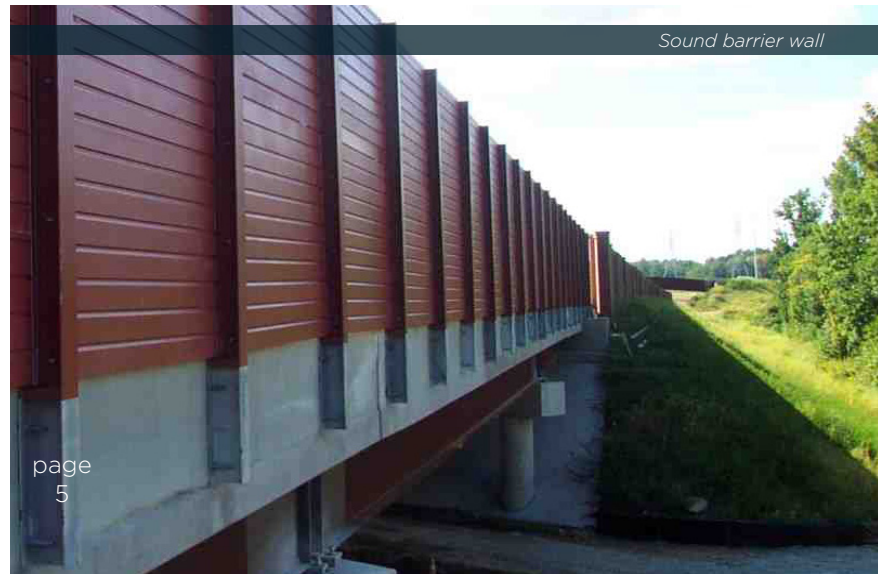
Additionally, innovative ideas come from internal sources. Therefore, processes will be reviewed and developed to capture these ideas so they can also be promoted statewide.

Current examples of transportation technologies and products being used in North Carolina are pictured within this plan and listed below:

- Bus shelters
- Bridge expansion joints
- High friction surface treatments
- Pavement interlayers
- Pavement patching
- Pedestrian bridges
- Sound barrier walls



*Pedestrian bridge*



*Sound barrier wall*



Pavement Interlayer



Asphalt patching

## SUSTAINABILITY

There will be an ongoing effort to monitor procedures and remain nimble as technology changes. To ensure focus areas remain fluid and promotional efforts for innovative technologies and products continue across the state, NCDOT will form an Innovative Technology and Products Oversight Committee. The committee will meet regularly with the primary purpose to monitor and track program metrics, identify strategy to meet implementation goals and provide recurring review of processes at regular intervals to ensure the product evaluation program is up-to-date and steering the Department to be a leader in innovation for the transportation industry. Please see section below for sample metrics. Members of the Innovative Technology and Products Oversight Committee could include employees from the following units:

- Value Management (Facilitator)
- Asset Management
- Division of Highways
- Governance
- Field Support
- Transportation Mobility and Safety
- Transit
- Division of Motor Vehicles
- Communications
- Information Technology
- Purchasing
- Research and Development
- Contract Standards & Development
- Design Build
- Priority Projects
- Federal Highway Administration
- Associated General Contractors Liaison
- Other ad hoc members as deemed necessary

## MILESTONES AND METRICS

The Innovative Technology and Products Oversight Committee will review the national benchmark data and develop specific milestones to implement the strategies outlined in this document.

A review of the Product Evaluation Program will be conducted to streamline and standardize methodology and identify opportunity for greater efficiencies.

The development of a communication and marketing plan will also be one of the first steps to target industry innovation, increase awareness of the program, highlight current use, and encourage submittal of innovative technologies and products.

Application enhancements will be made to increase program efficiency including a web portal creating an open and accessible entry to new products, companies, and technologies. Enhancements will also be made to the product evaluation application, tracking and reporting capabilities.

The Innovative Technology and Products Oversight Committee will set formal success metrics with direction from the Technical Services Division. Sample metrics include:

- Percentage increase of product applications from prior year, three year, five year
- Percentage increase of field trials of new technologies and products from prior year, three year, five year
- Cycle Time (Response Rate)
  - Percentage of acknowledgements sent for product applications within 10 business days of receipt of the application
  - Percentage of product evaluation responses within 60 days of receipt of application
  - Percentage of product evaluation responses within one year of receipt of application



## IMPLEMENTATION

To support the Department's commitment to bring effective innovation to North Carolina transportation infrastructure, the implementation timeline delineates the three-pronged strategies identified in this plan. In the first quarter of 2016, initiation of each strategy will occur along with an inaugural meeting of the Innovative Technology and Products Oversight Committee. Monthly appearances will occur before the Board of Transportation via updates, presentations, and results tracking the year-long evaluation time period specification.

### 1. Marketing and Communications

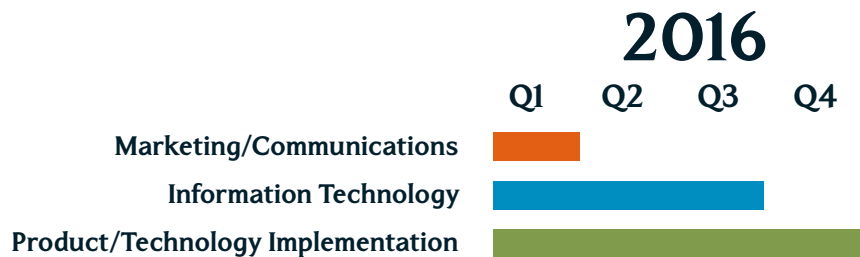
**First Quarter 2016**—The initial marketing and communication plan will include an active solicitation for technologies and products that address Department needs on an ongoing basis through an accessible web portal. The Innovative Technology and Products Oversight Committee will develop a communications outreach plan to ensure that up to date information is provided to vendors and the public through all of the Department's media outreach channels.

### 2. Information Technology

**On-going 2016**—The new technologies and products web portal system will be completed in phases during 2016. As part of the initial web portal development, vendors will create a North Carolina Identification account (NCID) to be able to access information related to individual technology and product submittals. After the initial implementation, there will be further enhancements to the web portal that include product tracking and automation of certain aspects of the product evaluation process to improve access to technology and product related information.

### 3. Product and Technology Implementation

**Early 2016**—Streamline processes by way of a standard methodology to reflect a new direction for the program. New processes will be capable of meeting the one year evaluation time limit. The Innovative Technology and Products Oversight Committee will meet regularly to monitor and track program metrics, identify strategy to meet implementation goals and provide recurring review of processes at regular intervals to ensure the product evaluation program is up-to-date and meeting the needs of the Department to be a leader in innovation for the transportation industry.





*Transportation*

**North Carolina Department of Transportation**

1 South Wilmington Street  
Raleigh, NC 27601

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