



U.S. Department
of Transportation
**Federal Highway
Administration**

Virginia Division

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In Reply Refer To:
HDA/VA

Garrett Moore, P.E.
Chief Engineer
Virginia Department of Transportation (VDOT)
1401 E. Broad St.
Richmond, VA 23219

Dear Garrett:

The purpose of this letter is to follow up and provide additional information to the May 3 letter from FHWA Acting Deputy Administrator to Commissioner Kilpatrick regarding VDOT's usage of and experience with the Lindsay X-LITE. We are requesting your assistance in collecting more data and information to further assess the in service performance of roadside hardware, including this particular guardrail terminal.

As you know, FHWA recently gathered information on Lindsay X-LITE from all 50 States plus District of Columbia and Puerto Rico. Based on this data collection, FHWA has determined that, nationwide, although 33 States have the X-LITE on their qualified products list, only 29 have the device installed on state-owned roadways. With a total of about 14,000 devices nationwide, over 80% of the X-LITE devices are found in seven States, including Virginia. The other 6 States are WV, MA, TN, MD, TX, and NC. Additionally, six States (GA, MO, OR, TN, VA, and AZ) reported that they have removed the X-LITE from QPL. Five States indicated they are in process of gathering information on the X-LITE and three States expressed some concerns with the device, including constructability challenges and overall quality concerns.

To conclude FHWA's review of ISPE and to ensure all State DOTs are engaged on this issue, we are asking your assistance with the following items to be submitted to the FHWA Office of Safety, *through our Division Office, by May 19, 2017.*

1. Identify if VDOT has In-Service Performance Evaluation (ISPE) and/or plans to collect and analyze ISPE information on roadside hardware.
2. Conduct an analysis of VDOT installation and maintenance practices and report findings.

Additionally, we encourage VDOT to formally share any in-service concerns with particular roadside hardware. You can find information on Roadside Hardware, including the letters from Tennessee and Delaware documenting their recent in-service concerns, in the FHWA Safety website under Roadside Hardware.

For your information, attached is additional information from FHWA Office of Safety stating the need for ISPE, importance of rigor in hardware installation and maintenance and a list of resources. Please consider leveraging current and future training and technical assistance opportunities such as FHWA Resource Center technical assistance with ISPE and the central clearinghouse highlighted in the attachment.

If you have any questions or need additional information, please do not hesitate to contact the Division Safety Engineer, Karen King at (804) 775-3363 or me. Thank you in advance for your assistance and your attention in this important matter. I look forward to continuing our dialogue to make our roads safer.

Sincerely,



FOS Jessie Yung, P.E.
Division Administrator

cc: Mohammad Mirshahi, P.E. – VDOT Deputy Chief Engineer
Susan Keen, P.E. – VDOT State L&D Engineer
Ray Khoury, P.E. – VDOT State Traffic Engineer
Branco Vlacich, P.E. – VDOT State Maintenance Engineer

Enclosure

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Need for In-Service Performance Information

Determining the initial crashworthiness of roadside hardware begins with rigorous laboratory testing, using very specific vehicles, installations, impact speeds and angles. This controlled testing provides industry, accredited laboratories and public agencies with a minimum level of assurance that the devices meet a basic standard of crashworthiness, as defined by AASHTO's MASH. However, all parties know the standard, idealized laboratory crash test conditions cannot capture how a device performs in the vast array of real-world collisions. For these reasons, FHWA and AASHTO encourage the owners and operators of the highways to collect and assess ISPE data of roadside hardware and take appropriate action thereafter, if needed.

We cannot overemphasize the importance of the ISPE. In 1993, the National Cooperative Highway Research Program (NCHRP) Report 350, *Recommended Procedures for the Safety Performance Evaluation of Highway Features*, was published and included a chapter dedicated to ISPE. A subsequent NCHRP Report 490, *In-Service Performance of Traffic Barriers*, was published in 2002 and provides detailed instructions and tools for conducting ISPEs. Similarly, AASHTO's MASH initially distributed in 2007, and updated in 2016, communicates the importance of ensuring roadside hardware devices are functioning properly in real world conditions. Finally, an AASHTO-FHWA task force published a report in 2015 on *Guardrail Terminal Crash Analysis*. This document recommended ISPEs be performed at the national and state level and suggested that public agencies carefully document guardrail crashes.

In addition to the 4 State Pilot ISPE targeted for completion in 2019, FHWA can and will provide new information to States on ISPEs in the next quarter. We plan to develop and deliver webinars and tools that support a range of State efforts in collecting and assessing ISPE data.

Importance of Rigor in Hardware Installation and Maintenance

The technical documents cited above, and fact that ISPEs are an important piece of our information stream, highlight the importance of proper installation and maintenance of devices. FHWA has, and will continue to, provide technical support to local, State, Federal and tribal organizations that own and are ultimately responsible for the installation, maintenance, and inspection of roadside hardware.

Since 2010, FHWA had made available State-specific training on roadside hardware design, inspection, and maintenance. My office issued a memorandum in November 2016 on guardrail terminal installations and repairs and requested that you share this information with your State partners.

To date, we have conducted training in 15 states. In the Fixing America's Surface Transportation (FAST) Act (Sec 1417), we received additional funds to expand guardrail safety training. New, state tailored training will be made available beginning with two initial offerings in the 4th quarter followed by an aggressive delivery schedule in FY18. We anticipate a total of 23 States will receive the individualized, classroom training by the end of 2019. In addition, these FAST Act funds will support the development and distribution of other technical assistance materials supporting guardrail inspection, maintenance, and installation.

Resources

In an effort to promote States' collection and analysis of ISPE information and use of guardrail system installation and maintenance training opportunities and resources, please direct our stakeholders to

https://safety.fhwa.dot.gov/roadway_dept/countermeasures/reduce_crash_severity/guardrail_ispe.cfm.

Information on that site includes, but is not limited to:

- NCHRP Reports on conducting ISPEs;
- Current data/information from the four state Pilot ISPE;
- Guardrail installation and maintenance training opportunities
 - webinars, technical briefs, inspection checklists; technical assistance products and services from FHWA's Office of Technical Services)
- Information from State DOTs on in-service performance information