Annual Meeting Report

**A Collaborative Approach to MASH Implementation**

**11/7/17**

*Roadside Safety Pooled Fund*

|  |  |  |
| --- | --- | --- |
| Alaska | Illinois | Pennsylvania |
| California | Louisiana | Tennessee |
| Colorado | Massachusetts | Texas |
| Connecticut | Michigan | Washington |
| Delaware | Minnesota | W. Virginia |
| Florida | Oklahoma | Wisconsin |
| Idaho | Oregon | Ontario, Canada |

**Background**

*The intent of this letter is to summarize our pooled fund efforts in a way that is helpful to the national dialog regarding the implementation of MASH. Our team has made key decisions directly related to the overall status and feasibility of the implementation of MASH. In doing so, key principles have emerged that are important to understand.*

**Status of Implementation for**

**December 31, 2017 Hardware Categories**

The tools used to track MASH compliance are not comprehensive lists of all systems used by all member states. They have, however, identified systems that it is known will not achieve MASH compliance by the FHWA/AASHTO implementation date. These systems are listed in Table 1, below.

**Table 1 – Known systems in use that will not obtain MASH compliance by deadline**

|  |  |  |
| --- | --- | --- |
| **System** | **Due Diligence or Full Suite Approach** |  |
|  |  |  |
|  |  |  |
|  |  |  |
|  | Pull these from scorecard 1 |  |
|  |  |  |
|  |  |  |

**Team Decision-Making Principles**

*The following principles were used by the team in making decisions.*

**Team Principle #1: MASH Compliance Means:** that an accredited crash test facility has issued a document that states that the system being evaluated has – in their opinion – demonstrated that the system should be considered crashworthy under MASH standards.

**Team Principle #2: The “due diligence” vs. “full-suite” approach** The FHWA memo dated May 26, 2017 requires that a “full suite” of tests be ran in order to obtain an FHWA eligibility letter. The “due diligence” approach basically means that the Pooled Fund continues to do business the way we have for years; crashworthiness is evaluated by establishing the appropriate combination of engineering evaluation, finite-element analysis and crash testing that will allow prudent evaluation of crashworthiness. The program may or may not involve the “full suite” of tests as mandated by FHWA to issue an eligibility letter. The investment that would have been made running unnecessary tests will instead be made in evaluating the many systems in a greater need of evaluation. Part of the “due diligence” approach is determining if crash testing is needed, which tests are critical, and funding and performing those tests.

**Team Principle #3: Professional Opinion Warranted Items:** There are times when a professional opinion is warranted instead of funding a program of modeling and crash testing. It is not practical to crash-test every variation of every system used by every state. Some issues may be satisfactorily evaluated through engineering analysis and professional judgment.

The team relies on the collective experience and proven judgement of the experts at TTI, as overseen and endorsed by the 20 member states and one Canadian province when a professional opinion is warranted. This would be considered a subset of the due diligence approach.

**Team Principle #4: Systems Get Tested:** The crashworthiness of a *system* is generally established through the completion of a program of engineering analysis, finite element modeling, and crash-testing.

* **Components:** Systems are composed of *components*. We generally don’t independently evaluate the crashworthiness of each system component.
* **Variations:** A *variation* of a crashworthy system may not warrant the cost of a full program of modeling and crash-testing, and may instead warrant a professional opinion regarding crashworthiness.

**Team Principle #5: Rigid Barrier:** When it comes to rigid barrier, two things are needed to evaluate crashworthiness:

* 1. The specific shape and height is determined crashworthy when installed rigidly (done by crash-testing)
	2. The barrier has to be determined to be structurally rigid (done through a structural analysis or crash test) throughout the barrier limits.

If these two items are satisfied, it may be appropriate that a variation of the barrier has it’s crashworthiness evaluated through a POW document rather than through crash testing program. This makes the crash-tests associated with bridge rails applicable to median barrier applications as long as the barrier is designed to be structurally adequate for the desired test level.

*Example:* if an F-Shape bridge rail of a given height is successfully crash-tested then the only evaluation required of a median barrier of the same shape and same height would be a strength evaluation of the median version of the barrier.

(NEW)

**Team Principle #6: 8” vs. 12” Blockouts:** 8” and 12” block outs are generally considered interchangeable from a performance point of view when used with the MGS guardrail system.

**Recommendations from the Team**

Develop these at the meeting

**Attachments**

Scorecard 1?