



SESSION #1 MEETING NOTES

Thursday, April 22, 2021 9:00 AM - 11:30 AM (CDT)

- **Introduction, Agenda and General Updates**

25 mins

John Durkos

- Agenda and Virtual Meeting Schedule
- Non-Profit Status Activities
- Vote on Treasurer Nomination / Candidate
 - Eric Smith of Gregory Highway was elected and agreed to serve
 - The treasure balance as of date of meeting is \$32,372.63

- **Task Force 13 Updates...**

- **Sub-Committee #1 Publications/Website Report**

30 mins

Eric Lohrey

- High level overview of guide/drawings enhancements and website modernization
 - Review of new website and location of guides, etc
 - 57 new systems (11 bridge railings, 8 crash cushions, 4 terminals, 17 longitudinal barriers 4 transitions and 13 work zone barriers) have been added to the TF13 Hardware Guide since the Fall 2019 Meeting
 - All new systems have a FHWA Eligibility Letter.
 - 2 new components have been added since Fall 2019 Meeting.
 - Added drawings from 1979 TF13 Guide to the archive section for 81 components to allow cross-reference of designators and verify dimensions.
 - Added company / organization logos and contact information to the contacts section.
 - Future activities:
 - Continue adding MASH systems / components
 - Update and obtain missing guide materials
 - Establish criteria for adding systems with no FHWA letter
 - Plan for needed update of the guide programming (PHP & SQL) before current versions are no longer supported by the web host (GoDaddy).
 - Update will improve & modernize the guide look and functionality as well as graphics, user interface, search capability of website and guide.
 - www.tf13.org will continue to be the main website.
 - Eric Smith gave us a preview of the updated website (non-guide portion), under construction.



TASK FORCE 13 Spring 2021 Virtual Meeting

Sub-Committee #7 Meeting / Report (Certifications of Test Facilities & ILC)

75 mins

Karla Lechtenberg

o ILC Update

- Determining Critical Impact Point for longitudinal barriers Bob Bielenberg
 - Reviewing MASH Section 2.3
 - Case No. 1 Modified Thrie Beam (MwRSF Lead)
 - 34" mounting height, 46" embedment length of post
 - W14x22# notched HDG steel blockout.
 - OAL of tested system was 176 LF
 - All ILCs participants used option 2 (rail / post properties) to determine CIP. Option 1 is computer simulation.
 - Selection point should be upstream of a post as well as a splice.
 - ILC participants responses as to the CIPs varied by only 2.5'.
 - Case No. 2 NJ Shaped Portable Concrete Barrier (MwRSF Lead)
 - I-section and slotted tube connection, 20' long segments
 - All ILCs participants used option 2 (Table 2-7) to determine CIP. Option 1 is computer simulation.
 - ILC responses were generally consistent at 4.3', using Table 2-7.
 - Labs will need to review their own results and work within their accreditation / audit team to ensure consistency / consensus.
 - One suggestion is to provide additional clarification and how to utilize the MASH graph. This will be incorporated by MwRSF into the ILC summary report & recommendations.
- Future ILCs and lead organization – dates to be updated – delays during the last 12 months, due to pandemic:
 - Lab interpretation of test results ... MwRSF
 - Impact speed and angle, Exit speed and angle, Loss of Contact, WW, Time-film speed ... Safe Technologies
 - Vehicle ballasting ... E-Tech
 - OIV, ORD, THIV, PHD, ASI, Roll, Pitch, Yaw ... TTI
 - Impact speed calculations ... Turner-Fairbank (FOIL)
 - SUT box attachment, ballasting, etc ... SwRI
- Discussion on recent clarification by AASHTO-TCRS regarding acceptable vehicles, etc.
- General Discussion items:
 - Suggestion by end users to standardize the critical test parameters and evaluation criteria within test reports and summary sheets.
 - MASH provides general information, but is lacking in addressing the recent end user requests.
 - Providing the acceptable range of the information reported, next to the value reported.
 - Ensuring all critical values are reported on the summary sheets.
 - Standardization of video views.
 - Karla to reach out to AASHTO-TCRS to discuss how to ensure the items the end users have identified can be incorporated and whether their committee wants to be actively engaged in the discussion.
 - General lab discussions on audits, etc during the pandemic. Most labs experienced that by providing all the information prior to the assessment, the in person assessment itself was shorter. One lab reported the auditor wanted to see a crash test and flew out to see it during the pandemic.



TASK FORCE 13 Spring 2021 Virtual Meeting

Sub-Committee #9 Marketing Report

10 mins

Mauer / Perry

- Items to be covered in next newsletter
- Recent members who have retired
- In memoriam, on the passing of H. Clay Gabler
- Illustrated history of TF13

Sub-Committee #2 Barrier Hardware Report

10 mins

Eric Smith

- Due to pandemic, updating the guide as well as the compressed timelines of the virtual meetings ... little activity to report.
- Eric Smith will be stepping down as co-chair of committee to accept the Treasurer position. Currently looking for a volunteer for this position.

**150 minutes allotted for Session #1, meeting ended one minute late! Thus 1 over par!
Total of 98 participants in Session #1**



SESSION #2 MEETING NOTES

Thursday, April 22, 2021 1:00 PM - 3:30 PM (CDT)

• **Industry, Academia and Task Force 13 Updates...**

End Terminal / Crash Cushion Resource Charts & TF13

15min

Durkos / Boodlal

- The chart for MASH products will be kept updated. The terminal chart has been completed.
- The '350' products will be frozen
- All charts will have the FHWA logo removed and all will be posted on the TF13 website.

Transportation Research Board - AKD20 (formerly 'AFB20') Update / Report

30 mins

John Donahue

- Roger Bligh's term as chair of the committee has expired and John has recently accepted the chair of the committee. Employed (~25 years) by WSDOT, currently in the position of specification engineer. Also holds position of chair of the Roadside Pooled Fund Group and is a member of the AASHTO-TCRS committee.
- AKD20 has been averaging an 80% success rate for acceptance of problem statements for research funding through NCHRP. Awarded Blue Ribbon Award by TRB in 2019.
- Balance of committee – 11 Academia, 12 Governmental agencies, 11 Industry.
- Summer 2021 meeting – coordinated with AASHTO-TCRS/SCOD
 - Week of June 27th & week of July 11th – all virtual, a couple of hours per day.
- Winter 2022 meeting, during annual TRB meeting – January in DC.
- AKD20 Sub-committees:
 - Computational Mechanics AKD20(1) Chair: Sheikh
 - International Research Activities AKD20(2) Chairs: La Torre & Silvestri
 - In-Service Performance Evaluation AKD20(3) Chair: Carrigan
- Website has been updated, by Fadi Tahan, to the new platform.
- AKD20 / TF13 Coordination Opportunities

NCHRP Report / Update

20 mins

David Jared

- Mark Bush on extended medical leave
- David picked up most of Mark's NCHRP projects. Typically begin with "15 / 17 / 20 / 22".
- Been with TRB since Fall of 2019, previously with GDOT since 1994.
- Recently completed and published: 20-07(372) MASH Vehicles and 20-07(401) Hardware Replacement Analysis (NCHRP Web Only Document 292) to support MASH Implementation.
- Completed, pending publication: 17-54 HSM Roadside Features, 22-12(03) Selection of TL2-TL5 Bridge Rails, 22-20(02) TL3-TL5 Barriers on MSE Retaining Walls, 22-27 Roadside Analysis Program Update, 22-28 Criteria for restoration on Longitudinal Barriers.
- Active projects: 17-82 Fixed Objects, 20-07(383) RDG Update, 22-33 Multi-State ISPE, 22-38 Guardrail Deflection Reduction, 22-39 Guardrail – Various Curb offsets.
- Pending RFP Closed: 15-79 Non-Standard Roadside Hardware Installations, 22-32A Side Impact Testing for next edition of MASH, 22-42 Barrier Performance at High Speeds, 22-50 Hardware on Curbed Roadways.
- Recent off-cycle NCHRP projects were approved – panel nominations due April 28th. Note – this announcement was sent to the TF13 contact listing just after the meeting ended.



TASK FORCE 13 Spring 2021 Virtual Meeting

ATSSA Report / Update

20 mins

Eric Perry

- Donna Clark, Jessica Scheyder and Eric Perry of ATSSA were all online
- 1,500 member companies, 28 chapters.
- New CEO in 2020 – Stacy Tetschner ... Roger Wentz has retired.
- Pushing rural roads safety infrastructure bill.
- Working with members on shortages and pricing volatility of raw materials.
- August 18-20th, 2021 Mid-Year meeting – determination as to in-person or virtual event will be made soon.
- ATSSA Expo is scheduled for February 11th – 18th, 2022 in Tampa, FL

Update to ATSSA GR Committee – Universal QPL Form

15mins

John Durkos

- Industry, through ATSSA, is attempting to standardize the submittal of new products to DOTs.

AASHTO – Activities & MASH Conversion Scoping Update / Report

30 mins

Jim McDonald

- Scoping study contractor is TTI.
- MASH is intended to provide a level playing field for comparison purposes. But some confusion exists and tests may be conducted differently from facility to facility.
- Study is to determine the steps necessary, time involved and cost to convert MASH to a performance specification – IF the decision is made to proceed.
- Initial report was just issued this week – on a high level ... TTI recommended to reorganize MASH content by type of device, rework language to be more concise / direct, extraneous information (history, rationale, etc) would be placed into appendix. One issue identified would be whether this conversion (if implemented) should be staged or all-at-once – or perhaps a “hybrid”?
- Next steps: AASHTO-TCRS review, input from industry, make a decision, identify funding and research required. Expected that these steps will be completed late summer 2021.

Discussion concerning SC#10 (Computational Mechanics)

20 mins

Durkos / Sheikh

- As information, SC#10 has been “on hold” for a number of years and before a vote to discontinue this SC was made, this discussion was initiated to determine if there was actually a need for this SC within TF13.
- Naumen provided background / history of V&V and indicated it is available for states to utilize for support of hardware approval.
- Naumen concluded that AKD20(1) subcommittee is better suited, due to the mix of participants, to continue to move V&V / computational mechanics forward – rather than TF13.

**150 minutes allotted for Session #2, meeting ended two minutes early. Thus, one under par.
Total of 91 participants in Session #2**



SESSION #3 MEETING NOTES

Friday, April 23, 2021 9:00 AM - 11:30 AM (CDT)

- **Industry, Academia and Task Force 13 Updates...**

- **Midwest Pooled Fund Program – Update**

- 10 mins

- Bob Bielenberg

- Midwest Pooled Fund Program meeting (21 states) held earlier this week, now on 32 years.
 - Research into MGS utilizing blockouts deeper than 12”.
 - Research into Surface Mounted Strong-Post MGS – single post or multiple post location.
 - Research into (2nd phase) MASH TL-3 Portable Barrier System – will conduct full scale test.
 - Develop a Median Approach Guardrail Transition(s) to Concrete Median Barrier(s).
 - Midwest (F-Shape) PCB – Anchored Median Installation – develop alternative pinning.

- **George Mason University CCSA – Research Efforts / Activities**

- 20 mins

- Fadi Tahan

- MASH TL3 Stone-faced Concrete Median Bridge Rail, used typically in NPS, State Parks, scenic travel areas – such as the George Washington Parkway.
 - Phase 1: Concept Development ... Two 820C tests were conducted to evaluate the effects of stone walls on vehicle stability. These tests were used to calibrate the computer models.
 - Phase 2: Perform Simulation Analysis ... 2270P simulations (MASH 3-11) on 24”, 26”, 28” and 31” height walls
 - Phase 3: Perform Design and Detailing ... 31”H wall detailing of structure
 - Phase 4: Perform Crash Test ... Two full scale tests (MASH 3-10 & 3-11) conducted at FOIL. MASH 3-11 (2270P) last Tuesday, one scheduled for next week. Offered to send a link to view the test live.
 - Phase 5: Final Report ... Will be submitted to FHWA / NPS for review, when project is completed.
 - Questions and clarifications. Possibility of presentation being posted to TF13 participants, if acceptable to GMU. FOIL is receptive to attendees to next week test.

- **Sub-Committee #3 Bridge Railing / Transitions**

- 10 mins

- Kurt Brauner

- Goal is to identify, develop and maintain online guides of these products. SC#3 railings are divided into concrete, steel and other (i.e. aluminum and timber) designs.
 - 133 bridge rails in the online guide – some are ‘350’, some are undocumented, some are MASH. Going forward, only MASH (22 currently) systems will be reviewed and updated.
 - Since last meeting (2019), 10 (2 feature sound walls associated with them) new MASH bridge railings have been added to the online guide – all have FHWA letters.
 - A Texas system was mentioned in the “chat box”. Kurt requested information be sent to him.



TASK FORCE 13 Spring 2021 Virtual Meeting

Sub-Committee #5 Sign, Luminaire & Traffic Hardware

10 mins

Lohrey / Jollo

- Report provided by Scott.
- NCHRP 03-119 in process still within GMU.
- NCHRP 22-43 Implementation of MASH is in process by MwRSF. Goals are to establish testing protocols, “families of related devices”, etc.
- Two sign support projects being conducted by TTI Roadside Pooled Fund.
 - U-channel and small tubing supports
 - Multi-directional base design for steel beam non-proprietary large sign supports.
- Proprietary devices:
 - Transpo waiting for more guidance on the scope to cover families of structure configurations. Definition of families ... etc.
 - Xcessories Squared – several products are MASH compliant. Finishing devices to cover most sign sizes.
- Oregon DOT perspective – no issues identified with ‘350’ devices, interested in research, possibly use a pooled fund method for testing for non-proprietary items.
- Florida DOT Testing – presentation followed next (Joshua Steelman of MwRSF).
- Question on “International Energy Absorbing Collapsible Poles” (from Europe) ... SC#5 has seen some initial details, but not aware of any tested to MASH, and it may require some MASH testing modifications since they are energy absorbing vs designed to reduce the delta V.

MASH TL-3 Testing of Florida Small, Single Sign Support Systems

10 mins

Joshua Steelman

- Aluminum single-column pipe support testing. 12 tests planned, 4 conducted.
- 2” to 3.5” in diameter, buried in soil
- 4” or larger use cast aluminum frangible bases.
- Also considering testing to 25degree angles vs 0degree.
- FL 3.5” frangible base MASH 3-61 / 3-62. Intrusion into windshield of 1100C (3-61) – Failed.
- FL 4” slip base MASH 3-61 / 3-62. Intrusion into the rear window of 1100C (3-61) – Failed.
- Observations:
 - Pass/Fail may be sensitive to combination of vehicle and sign.
 - 25degree orientation is important.



TASK FORCE 13 Spring 2021 Virtual Meeting

TTI / Roadside Safety Pooled Fund – Research / Activities

30 mins

Nathan Schlutz

- Roadside Safety Pooled Fund Activities
 - MASH TL4 evaluation of critical flare rate for CIP of Concrete Barrier.
 - Single slope, 40" height, 20:1 flare rate, no fixed object.
 - MASH TL4 matrix completed – 4-10, 4-11, 4-12, all passed
 - MGS with reduced post spacing
 - Quarter point, half post spacing and transition testing
 - Quarter post spacing 3-10 and 3-11 passed
 - Half post spacing 3-11 failed
 - Transition system failed 3-21
 - Conducted computer simulations
 - Half post spacing system w/ 10" length block vs 14" length block – still 8" depth
 - MASH 3-11 was successful
 - NO quarter point or full post spacing testing has been completed and no project currently in the works to do so.
 - No small car testing conducted on this configuration.
 - Transition System – extended transition to make change from various post spacings more gradual
 - MASH 3-11 was successful
 - Barrier Gap Rail for MASH TL3 Concrete Barriers
 - 8ft gap maximum wide gap
 - MASH 3-10 was successful
 - MASH 3-11 was successful
- TTI Research Activities – Sponsored by TxDOT
 - Median Guardrail Transition to concrete barrier – symmetrical
 - Initial MASH 3-21 conducted – failed.
 - Reconfigured the lower rubrail attachment point, reran MASH 3-21, passed
 - Ran MASH 3-20 close to the concrete barrier as well as upstream (wide post spacing area) – both successful.
 - TxDOT MASH TL4 Guardrail System
 - Uses larger posts – W6x25#.
 - Angle bracket attachment to a top rail (HSS 5 x 4 x 1/4").
 - MASH 4-10, 4-11 and 4-12 all passed. MASH 4-12 rolled 90degrees on impact side, which is acceptable within MASH criteria.

Sub-Committee #6 Work Zone Hardware

10 mins

Shewmaker / Perry

- Continued uncertainty in industry as to what to test and how to test devices.
- Caltrans update from regional meeting – required to meet subpart 'K' – having more locations with positive protection – by the end of the year.



TASK FORCE 13 Spring 2021 Virtual Meeting

Sub-Committee #11 Delineation Hardware

10 mins

Nathan Schlutz

- 2010 – 2017
 - 16 delineator products tested and evaluated
 - 14 drum / barrel products tested and evaluated
- Updated test standard in 2018 – including high speed and 200 impact tests.
- NTPEP virtual meeting, summer 2020
 - 48% of states indicate they use drum testing. 65% for delineators, 64% for high-speed delineators.
 - Revision to testing standard is proposed and it is balloting. Includes change to vehicle to small sedan from mid-size sedan.

Midwest Roadside Safety Facility – Research / Activities

30 mins

Faller / Rosenbaugh / Lechtenberg

- Ron provided the presentation.
- Flared AGT – Phase II (full scale testing)
 - 15:1 flare rate from buttress
 - Bent Thrie beam bridge shoe and utilizing a connection plate
 - 2270P testing failed – redesign will incorporate changing AGT configuration, such as moving bend location, post size, post spacing, embedment depth, nested 10ga Thrie, etc.
- Evaluation of Bicycle & Pedestrian Rail on concrete bridge rail (MnDOT)
 - 32” NJ shape parapet with “picket” type fencing
 - MASH 2270P TL3 test passed, no small car testing contemplated
- Evaluation of Hybrid (concrete / tube) Bridge Rail (MnDOT)
 - MASH 4-12, 4-11 and 4-10 were successful.
- Roadside 4-Cable Barrier (NYSDOT) to MASH TL3
 - S3x5.7# post, with 5/16” j-hook bolts, 3/4” cables 17” bottom cable, 7” cable spacing, 10ft post spacing. No spring compensators, 1100lbs of tension. All posts were embedded 33” in MASH soil – with soil plates.
 - WW of 8.5ft (MASH 3-11) - passed
 - MASH 3-10 – passed
 - MASH 3-17 - passed
 - All testing conducted on level ground and installations would be as well.
 - End treatment used for testing was a non-proprietary 4cable anchor, using typical components currently being used.
 - There is a project in place to test the NYSDOT terminal ... which is designed to not release.

Open discussion on future “in-person” TF13 Meetings ... Fall 2021?

10 mins

John Durkos

- ATSSA survey:
 - 88% of survey respondents said “hybrid or in-person” meeting preferred.
 - 84% of survey respondents said they were personally comfortable to travel.
- TF13 survey (through chat) results for the Fall 2021 meeting were 21 (45%) for in-person, 20 (43%) for hybrid, and 6 (13%) for virtual.

**150 minutes allotted for Session #3, meeting ended at 11:25am (5mins early) – making us 6 under par!
Total of 93 participants in Session #3**



TASK FORCE 13 Spring 2021 Virtual Meeting

Summary of “to-do” items from the three (3) sessions:

- Karla to reach out to AASHTO-TCRS RE: standardizing critical test parameters / evaluation criteria within test reports / summary sheets.
 - Subcommittee #9 to issue Newsletter (Editor note: off line discussions decided to post TF13 activities on LinkedIn).
 - Need co-chair for SC #2 to replace Eric Smith.
 - Sunset SC#10 (Computational Mechanics)
 - SC #3 to receive information on MASH Texas Bridge Rail system.
 - Communicate with TTI on scheduling TF13 Fall meeting.
 - Obtain speaker permission to allow posting of recordings.
 - Send out PDH certificates, as applicable. Persons indicating they would like to receive PDH certificates are:
Roger Bligh, Nathan Poppe, Eric Lohry, Kurt Brauner, Ron Faller, Ray Minor, Scott Jollo, Nick Bang, Adam Hixon, Mark Anthony, Tracy Borchardt, Tori Brinkly, Bret Eckert, Jennifer Rasmussen, Darrell Kuhn, Gary Lallo & David Jared.
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Respectfully submitted – Gregory A. Neece, Secretary.