

AGC/ARTBA/AASHTO JOINT COMMITTEE – TASK FORCE 13 FALL MEETING

September 17, 2014
Shepherdstown, West Virginia
Draft Minutes – December 2014

Joint Meeting between Texas A&M Transportation Institute Pooled Fund and TF-13

Rodger Bligh expressed his appreciation for the opportunity to meet with Task Force 13 and thanked Donna Hardy. Durkos welcomed all and echoed Roger's appreciation to WVDOT.

Paul Maddox, Secretary, West Virginia Department of Transportation. Thanked us for attending these important meetings. Motor vehicle crashes cost 230 billion dollars annually. Distracted, drowsy, fatigued driving are significant causal factors. Many run off road crashes involve trees and utility poles. WV has a high proportion of ROR fatalities. Agencies across the country have advocated roadside safety, including clear zones and safety devices. He observes a damaged guardrail section every day on the interstate and cringes. State has numerous low speed, low volume roadways and roadside safety can't be addressed until it is seen as a serious problem. We must make the public, decision makers, and public interest groups, aware of the importance of roadside safety. This requires coordinated efforts of many agencies. Thanked us for our efforts at addressing roadside safety issues.

- Donna Hardy talked about alternatives to weathering steel. WV is 3rd nationally in % of Rwd crashes, or 75%. Appalachian Highway Corridor H project was originally designed to use weathering steel, but excessive corrosion on light poles led them to take it off the Approved Product List. The corridor H project will have stained, painted, coated, products on this highway as a test project. Natina stain will be applied in the field in this project as it will be summer, as they prefer 60 degrees or above for best performance. In cold weather they will coat it in the shop as it needs up to 5 days to cure. [Steel backed timber is not used because they need a TL-3 end treatment.]
- Brian of Natina: Natina Steel is a galvanized steel stain that reacts with the minerals in the substrate and turns it brown. Do not get photo-degradation that you do with other coatings. Product was developed after a request from Caltrans.
- Short Radius Guardrails – Akram Abu Odeh. Referenced the Yuma County Arizona version that was tested to NCHRP 230. Referenced TTI and MWRSF testing under 350. Tested numerous concepts including placing sand barrels within the radius of the guardrail. After a number of iterations a final design was successfully tested to Mash 3-31, 3-32, and 3-33. Tests were run with flat terrain behind the nose, but will do simulations of the system with slope break points at various locations.
- Dean Alberson. Treated Wood Posts. Some states have prohibited the use of posts treated with CCA. TTI will test similar wood posts with different treatments and see how they affect the strength of the post.

- John Durkos: Categorization and selection of crash cushions. Gave presentation he made in New Orleans in 2013. Report 350 and MASH are performance specs and do not address maintenance. Questions:

- What needs to be done on the site?
 - What can be done in a timely manner?
 - What is damaged after a capacity impact?

Should Test 3-31 be the basis of analysis? Reviewed the RDG categories and FHWA Resource Charts. Mike Dreznes set up a matrix with Non Redirective, Redirective Gating, Redirective non gating vs Sacrificial, partially reusable, reusable. Others have used cost-to-repair comparisons to sort them. TXDOT has sorted attenuators on their website. We need an objective and reasonable guideline to allow designers to make proper selection.

- Karla Lechtenberg. MASH evaluation of Report 350 compliant Work Zone devices. Nearly all 350-tested devices only used the small car. Some appeared “tuned” to work best with the small car, and performance with the pickup truck is in question, especially under MASH. Recommended changes to MASH will be covered in TF-13.

Begin Task Force 13 Meeting

Durkos welcomed members to Shepherdstown. Thanked Donna Hardy and the local coordinators and outlined what we would be doing over the next day and a half. Drawing review is important because AASHTO RDG relies on our drawings.

Durkos moved that the minutes of the 2014 meeting in Lincoln be accepted. Seconded by Lance Bullard. Approved.

Subcommittee #1 Publications - Mac Ray Website Status.

RoadsafeLLC tasks collected all guides and homepage on one site, webhosting and content maintenance for all including meeting notices and minutes. Transform hardware guide into BR guide format, and update that guide with content developed in NCHRP 20-7(328.) In the last 6 months have accomplished transition to <http://www.aashtotf13.org> and is no longer an <https> link. Review tools were fixed and the problem with Adobe Acrobat was resolved – review process is functioning again. Minor revisions to guides suggested by Bridge Subcomm were made and implemented across all on line guides for consistency.

Current barrier hardware guide does not have all the components yet but these will be added when the transition to the new format is done. Eventually will have components from other guides included in the Component Guide.

If you had an account on the TTI guide your old username and password will work on the new guide.

Plan to delete the Member Resources page and Online Guide File Submission will be hidden until needed. Review Process is very oriented towards Barrier Hardware Guide and will be rewritten to encompass all guides.

Drawing Comment and Review – Process is similar to what we had before. All members should set up an account so they may comment on drawings that affect them. Materials from 20-7(328) will be categorized by technical group, and the Tech Reps can review the materials and decide which items need to move forward for review. Karla for Barriers, LaTurner for Crash Cushions, Mauthner of Florida was Tech Rep for Terminals but has since retired. Greg Schertz for WZ Devices.

Send comments on new site to olaf@roadsafellc.com

Now want to complete transformation of Barrier Hardware guide into the same format as the other guides. Drawings that show “Comment Period Closed” can be extended upon request. Some were closed when Adobe made some changes that we had to deal with.

To do: Durkos asked all the co-chairs to review their page and make sure it is up to date. Also the list of tech reps and review groups needs to be updated. Tech Reps should review the lists and update them.

We want to eventually get to the point where all reviews are conducted before the meeting and only summarized and voted on at the meetings.

Longstreet discussed the drawing template to ensure consistency. The drawing review process allows us to keep a record of the comments made even once the drawing is approved by the Task Force. All hardware drawings have been taken out of the AASHTO Roadside Design Guide and posted to Task Force 13.

Lance Bullard – MASH Updates

- Changing Vehicle Fleet
 - Vehicle Hood Height – Sloped front end of vehicles makes this a difficult question. Pickups now have the front grille as part of the hood. Also, actual hood heights are now higher than range allowed in MASH. Have proposed a new way of defining the hood height based on the location of the headlights.
 - Track widths are getting wider and approaching the max allowed in MASH.
 - Some pickups are getting shorter.
- TL-3 Minimum Impact Severity is not too hard to meet but the TL-4 is more difficult – just 2 mph slow and 4 tenths of a degree shy puts you on the edge of the envelope.
- TL-4 and TL-5 Bed Height and TL-5 Trailer Length
 - Bed heights are all too low.
 - All trailers are longer.
- Reverse Direction Impact requires the use of the pickup. Cable Barrier terminal, reverse direction testing should specify the use of the small car.
- Stevens asked about impact speeds on high speed highways. Ray noted that RSAP research showed actual impact speeds were still covered by 100 km/hr.
- Bligh noted that TCRS will ballot changes to MASH. TCRS asked TF13 to provide the language so that it can be balloted along with the cable barrier matrices.

Art Dinitz updated the Task Force on the activities of the AASHTO/AGC/ARTBA Joint Committee. Art had been the subcommittee on New Materials and Technologies. The subcommittee has been dormant due to travel funding. Task Force 13 is the only active group. TF44 and 45 were inactive. Bill Toohey and Art came up with the dissolution of the Subcommittee on New Materials and Technologies, and because of the good work we have done since the 1970's, they would make TF-13 a subcommittee of the Joint Committee. The only real problem is the name Subcommittee for the standardization and updating of details of road and bridge hardware (TF-13). This will continue while they look for a permanent solution. Members of subcommittees are supposed to be members of AASHTO, AGC, or ARTBA. ARTBA has a Transportation Safety division, and Education division, Construction Division, Governmental Division. Bylaws also allows persons with expertise in the subject to participate, but not necessarily be members of one of the three. **Will need a written work plan for the coming year. Need a report on accomplishments for the prior year.** Art recommended that TF13 have a home elsewhere that would also house the guides produced by the other task forces over the years. Art suggests these groups be added to NCHRP. Could include guidance on high friction surface treatments. In 2014 the Joint

Committee had papers on State Economies, Where Technology Meets the Road, promoting benefits of the transportation system, using social media to tell the transportation story. Discussed autonomous vehicles and how the infrastructure affects them. TF-13 could look into how the infrastructure can aid these vehicle technologies. Joint Committee also wanted all guides available in digital form to be posted on their own websites. AASHTO's King Gee will be working directly with TF13 to coordinate our efforts with the Joint Committee. Questions or comments can be directed to Art at adinitz@transpo.com.

Durkos asked about our guides – there is no stand-alone digital form as all of them are fluid and posted on line. The Joint Committee would like to have a PDF to post each year as an official document. Even though the three organizations could link to our website, they want a “final product” to post. **We will work with King Gee to see how this would work out best for all parties.**

We will survey our members to see who belong to AASHTO, AGC or ARTBA . Art suggested that an “associate membership” status could be granted. Counties and cities can become members of ARTBA Governmental division.

Subcommittee #2 Barrier Hardware

Lechtenberg: Technology that Adobe used to save our drawing comments in The Cloud will go away 1/1/2015. Comments did not show up when she used the latest Adobe – had to uninstall and re-install Adobe 9 in order to see the comments. Then showed the TF the drawings that had completed the review process and are now marked “Approved.”

Systems:

- SGM29
- SGM34
- SGR41
- STG03a-b

Components

- PDB21
- PDB22
- PWE11
- PDE19

A number were Partially Reviewed and will be re-sent through the review process for a final shot at providing comments.

When you go on the website “Drawing Comment and Review” section there is currently no way to save the page that shows who has reviewed and approved a drawing. **Lechtenberg asks reviewers to add an “Approved” or “Not Approved” stamp to the drawing itself – comments may also be added to the Approval stamp.** Drawing comments, and approval, will be embedded in the drawing file.

Longstreet noted that the TF-13 drawing should complete this review and approval process so that the final drawing may be included with the manufacturer's request for FHWA Review and determination of eligibility.

Durkos asked for one of the Terminal Review Group members to step up and be the Tech Rep. Question was asked "how much review can you give to a proprietary drawing?" Just review the 3D drawing and contact info and back up details. Not really much you can say about another manufacturer's drawing.

Subcommittee #3 (Bridge Railing and Transition Hardware)

Fall 2014 Meeting Minutes (With thanks to Kurt Brauner.)

Roger Bligh opened the meeting by welcoming the participants and reviewing the purpose of the subcommittee and the various working groups. Bligh announced that William Williams would be stepping down as leader of the steel bridge rail working group and asked for volunteers to take his place. Bligh also mentioned that Ron Faller has turned over the leadership of the "Other" bridge rail working group to Scott Rosenbaugh.

Bligh asked the participants to volunteer for one or more of the working groups and passed a signup sheet around the room (see attached). He then briefly went over the online Bridge Rail Guide and the drawing review process for any new volunteers.

The subcommittee then reviewed a "wish list" of items we would like to see added to the online guide. These included deleting the "Not Reviewed" category and only using "In Review" or "Task Force 13 Reviewed". This change would have to be carried over to the search feature as well. Other "wish list" items included an online, automated submittal process for new bridge rail systems, an automatic e-mail notification for the working group leaders to alert them that new rails have been added to the guide for review, removing or updating the "History" section of the guide, and other small text changes/corrections that were found on various pages. Bligh is forwarding the list to Malcolm Ray for consideration and action. Ray currently has a contract with TF-13 for website and guide maintenance.

Bligh then introduced Kurt Brauner who gave an update on the progress of the concrete bridge rail working group. While there had not been much progress since the last meeting, Brauner identified several rails that could be accepted after minor corrections were made. He suggested that volunteers start with these systems so that we can show more progress by the next meeting. Brauner also pointed out that some of the links to FHWA's list of eligibility letters were broken and suggested that a copy of the letter be stored within the online guide and that all links should point to that copy instead. This would avoid future problems if the FHWA website changes.

Next, Scott Rosenbaugh gave an update on the status of the "other" bridge rail working group. He showed that several more systems had been reviewed and suggested that one system be broken up into separate systems based on height and rail shape. Rosenbaugh then volunteered to take over the steel bridge rail working group if no other volunteers could be found.

After the working group updates, Bligh discussed the differences between the Bridge Rail Guide and the Hardware Guide and demonstrated the guide's search function to highlight the various features associated with the bridge rail systems. During this demonstration, there was a suggestion to have all search fields default to "any". There was another suggestion to include a keyword search feature. This prompted another suggestion to have descriptive and relevant names for the bridge rail systems.

A question was raised about what to do with a system that has finished the review process. Bligh answered that reviewers should contact their working group leaders who will notify Malcolm Ray to update the guide accordingly. They can also transmit any missing files or photos at that time.

Before closing the meeting, Bligh briefly mentioned that the Transition Guide is on hold until further progress can be made with the Bridge Rail Guide.

Meeting adjourned.

Subcommittee #4 (Drainage Hardware)

Did not meet.

Subcommittee #5, Sign & Luminaire Supports, Meeting Minutes:

(With thanks to Eric Lohrey)

- Eighteen (18) attendees present.
- Keith Fulton of WYDOT has changed work responsibilities, and will no longer be the government employee co-chair of the subcommittee. An invitation to any interested person from FHWA or a state DOT who wishes to serve as co-chair was presented to the group. One person expressed interest, and he will contact Eric when he decides whether to pursue the position.
- The subcommittee currently maintains two (2) TF13 guides:
 1. A Guide to Small Sign Support Hardware.
 2. A Guide to Luminaire Supports.
- At the last meeting, the following Technical Representatives were assigned to coordinate review activities for Subcommittee #5:

Small Sign Supports (less than 9 lbs/ft)

Joe Frazzetta, Nucor Highway Products, joe.frazzetta@nucor.com.

Medium Sign Supports (9 - 45 lbs/ft)

Eric Lohrey, P.E., ECL Engineering, PLLC, Eric@ECLengineering.com.

Luminaire Supports

Barry Sladek, P.E., Valmont Structures, bsladek@valmont.com.

- A sign-up sheet was passed around, and 11 individuals volunteered to review materials for the 2 guides. The number of volunteers to date per review group:
 - Small Sign Supports: 7.
 - Medium Sign Supports: 4.
 - Luminaire Supports: 3.

- Since the last meeting, 23 designators flagged as "In-Review" in the Sign Support Guide were identified. Minor revisions for 7 of them were submitted to RoadSafe, LLC and are now up-to-date in the Guide. TF13 review of these materials is expected to be completed by the next meeting. Status of the remaining designators was discussed, and 5 individuals volunteered to contact owners of these systems to request that TF13 materials be submitted for inclusion in the Sign Guide. Materials will be collected and posted to the Guide for review as they are received.
- It was noted that only 2 pole system manufacturers are currently represented in the online Luminaire Support Guide. By the next meeting, the subcommittee hopes to contact some additional pole manufacturers to solicit more participation in the Guide.
- There was also a discussion on the quality of materials needed from manufacturers and DOT's in order to have their systems appear in the guides. Some may want to simply post a link to their website, and not create TF13-compliant drawings. Whether this is acceptable is a question for TF13 as a whole, and should be discussed at the next meeting.

Subcommittee # 6 Work Zone Hardware - Greg Schertz and Tony Capella are co chairs.

Reviewed mission statement. Have not had any drawing reviews yet. Have worked on problem statements, and have been a forum for discussing WZ issues. Summarized topics from last meeting:

- TMA Delineation: Note from NCUTD that this is on their list of proposed problem statements. The National Committee meets every January. Dave McKee noted that NC is trying to minimize the areas that the MUTCD covers and may pull that section from the Manual. This is still an open issue and the industry can comment when the NPRM comes out – but it is better to be involved in the process before the changes are proposed. Greg asked Mauer to get on the NCUTD agenda to bring this issue before them.
- Standardized sign mounting on portable barriers. Two papers on TTI website about this.
- Message board may be used in lieu of Arrow panel – this is actually allowed in MUTCD.
- TMA Roll Ahead Distance. TTI is developing a new procedure for establishing a recommended roll ahead distance. Draft will be available for review at the next meeting.
- WZ Barriers Resource Chart. Steel barriers were reviewed by manufacturers. Plastic barrier charts are out for review now. Concrete barrier chart is still in progress. There is plenty of data showing superior performance for the F shape, constant slope, etc, over the Jersey barriers.
- Work zone devices in MASH, Follow on to Karla's presentation. Defer to NCHRP project 03-119. NCHRP Project should consider the parameters for a portable sign that will pass MASH and allow manufacturers to build and validate testing with bogie.
- Determination of Safety Effects of Damage to Portable Concrete Barriers and procedures to assess damaged barrier. Pricilla Tobias is going through IL DOT R&D to look into this.
- Tony brought up the subject of TMAs attached to pickup trucks and other light vehicles. New Roll Ahead charts will help.

Subcommittee #7 Certification of Test Facilities

- Lechtenberg discussed the video ILC that she will be sending out to the labs in both .cini and .avi format with no compression. Instructions on data to be collected will be included.

- Bullard discussed the vehicle measurement ILC. Since some labs have not run a MASH small car test, they will ask their techs to visit new car lots and take the required measurements. Will focus on hood height. May be useful to measure hood height using both old and new methods.
- Bielenberg discussed MASH occupant risk analysis – flail space. Metric evaluation includes 1 foot and 2 foot flail space. OIV will increase slightly, ORA may go down slightly. Just alert that this slight discrepancy exists, and will include in write up to TCRS.
- Cable tests: Critical cable position. MW and TTI are finalizing new cable test matrix. Small car tests are between posts, pickup test is aimed at post, both try to maximize failure. Should the cables be on the near side or far side? Position of main capture cable may affect barrier performance. ID of critical capture cable on the flat is relatively easy, identifying that critical cable on slope after crossing ditch may be more of a challenge, but simulation and crash history gives labs a good idea of which cable is critical.
- Rosenbaugh: Soil spec in MASH.
- Bullard – any other changes necessary?

Subcommittee #8 - Rail Highway Crossing Hardware

Did not meet.

Subcommittee #10 Computational Mechanics –Inaugural Meeting

FHWA only accepts FEA results from select labs. How do new labs get added to this list, or how do we delete labs? AFB20(1) was charged with writing a TRB circular on what it takes to establish competency. Progress on drafting their assigned chapters has been modest. Goal is to have a draft by 2015 Annual Meeting. AFB20(1)'s circular will be used by TF13(10) to review applications and “keep score.” FHWA would have to accept TRB Circular as the basis for establishing competency, and TF13 as being the record keeper.

Key questions: Is it important to have both expertise and experience in all the critical areas? Who gets listed, Lab or Individual? Do members have to do anything to maintain their participation? What if we required a round robin simulation ILC? Who would pay for that? Or they could meet us at TF13 and present their thesis for our review.

Christine Carrigan – Solicited input for the RoadSafeLLC contract to draft the TCRS Strategic Plan

Executive Board Meeting was held after the Thursday session adjourned.

Present were Schertz, Brauner, Longstreet, Mauer, Durkos, Artimovich, Lechtenberg, Lohrey, Capella, Kelly Hardy, Bullard, Takach, Bloschock, Bligh

Topics to be covered included CoChair seats, Tech Reps, Review Groups, Art's presentation, Agenda set up, Marketing

Art's presentation means we have work to do. Durkos will send out a survey to see who is on AASHTO, AGC, and ARTBA. We should then have a conference call with King Gee and the TF 13 Executive

Committee. Under the Joint Committee, there should be 3 co-chairs, one from each organization. Various members are familiar with ARTBA and AGC and have not found that these organizations offer them much. We could explore becoming part of AASHTO. Many members also have close ties to ATSSA. Past AASHTO exec committee had reservations about TF13 (re. publishing).

Drawing review process – just need to go through Mac’s website and it will look just like we did before. The situation is basically back to normal. Mac’s instructions will clarify this. And they are on the website. Mac will work with Karla.

Agenda overlap – try switching drainage hardware with work zones.

Bob Takach has resigned as co-chair of Barrier Hardware Review Group. Eric Smith has agreed to take over Co chair with Will Longstreet.

Roger noted BR subcommittee hopes to add automated submission process added to the website.

Mac suggested the next priority was to move the hardware guide to the new format, then look at the submission process for all the guides. Mac notes this will come along naturally.

Longstreet noted that balloting at these meetings is critical to the success of the guide. FHWA has not been enforcing the requirement to submit TF13 drawings with their requests for Eligibility. Once FHWA signs the letter with the Designator it could go to Roadsafe and the drawing could be uploaded.

Friday September 19, 2014

Donna Clark – ATSSA Update.

- NWZAW March 23-27 2014 to be in Northern Virginia
- ATSSA Annual Meeting and Traffic Expo Feb 6-10, 2015, in Tampa
- Some ATSSA Chapters will support state DOT employee scholarships to the Traffic Expo.
- Next ATSSA publication will be on preventing roadway departures.
- Have TMA Operator, Sign Installation, Pavement Marking courses under development
- ATSSA Foundation provides scholarships for relatives of workers killed in WZ crashes.

Kelly Hardy – AASHTO Headquarters - Program Manager for Safety

- Transportation funding is the major issue they are focused on.
- Interested in increasing flexibility
- King Gee will be working with TF13 to establish how we will fit in with Joint Committee or help get us a new home. Gee has a strong focus on safety.
- AASHTO is developing a strategic plan which will also focus on safety.
- Will work on making connections with AASHTO Structures and Work disciplines.
- TCRS working on new edition of RDG and will be a couple years out yet.

- MASH changes will be coming, to be reviewed by TCRS, along with Implementation Plan and will be balloted. Will need to do some outreach to the states so they will be aware of the potential impact and what the revised Implementation Plan may cover.

Durkos noted that Jim McDonnell and AASHTO have really helped put TF13 on the map.

April 19-23 2015 will be next NACE meeting. NACE is working with ATSSA on their webinars.

Longstreet discussed the recent changes to the Eligibility form. This form may be found on the FHWA website at

http://safety.fhwa.dot.gov/roadway_dept/policy_guide/road_hardware/forms/request_for_fhwa_acceptance_form_AUG14.pdf

Special Subcommittees

Marketing Rick Mauer –Did not put out a journal this year, but will cover transfer of website to Roadsafe LLC . Durkos noted that we need to ask Dinitz for an article on the situation with TF13 under the Joint Committee of AASHTO/AGC/ARTBA.

New Standardization Areas Dinitz mentioned new areas like High Friction Surfaces, and we need to keep an eye out for new areas to deal with. Computational Mechanics is the newest and will be active with AFB20. SubComm #8 is the next most recent, but they have not been too active as there are other resources on line that are available. Overhead signs, Traffic Signals, Signs on barriers, high mast light supports are some of the areas that have been suggested. Carrigan suggested that In Service Performance Evaluations should be a topic that is discussed. **This should be added to our next meeting's agenda.** States don't have the money. Manufacturers want to know more than anyone but do not have access to the information. How can TF13 aid in the standardization of ISPE?

Research Updates

Mark Bush NCHRP – See Hand Out. Outlined the NCHRP Research cycle process including funding sources from SP&R funds. Overall the 2015 program is about \$30 million. Over \$51 million were submitted in 115 problem statements. Safety category was very successful due to good cooperation among TF13, AFB20, and TCRS. But we are in completion with all the other disciplines.

03-119 \$600K

22-31 \$300k

20-05 \$115k

17-54 additional \$510k

22-12(03) may be sent to TCRS and SCOBS for inclusion to their documents. Report may not be published separately but will be linked on line.

22-30 Being reevaluated by Standing Committee on Research - hope to get it out within a year.

www.trb.org/nchrp/ is a very useful link for seeing status of all related projects.

Roger Bligh Recent Research at TTI:

- MASH TL-2 W-beam with 12.5 ft post spacing. TL-2 is 50% of the Impact Severity of TL-3 so the thought was that they could reduce the number of posts. Earlier testing showed the Pick up sailed over 27" rail at 60 mph with 12.5 spacing. This test was with the 31" strong steel post system. Smooth, stable redirection at TL-2. Splices are mid span. Should work with wood posts also. Is TL-2 OK for 45 mph road? Actual speed of this test was 45.7 mph. Small car test is not an issue since capacity was the reason for the test. [Weak post w beam system meets TL3 with larger post spacing.] What about raising blockout? Would not have a problem with that with steel post systems. Will be submitted to FHWA for eligibility letter.
- TXDOT type T631 TL-3 Bridge Rail Weak post system with w-beam rail at 31" tall 3 1 1/2" post spacing S3x5.7 posts welded to 8x8 base plates thru-bolted to deck. 11 ga bent backup plate bolted to post. Depend on tension in the rail so need anchorages at both ends. Both car and truck tests were successful with no deck damage.
- TXDOT Type T222 Precast Bolt Down Bridge Rail. MASH TL3. Rapid construction. 6" concrete deck (suitable as retrofit on older structures. Vertical concrete wall. Three Thirty-foot precast installation 36 inches tall. Holes just drilled through the deck. Deck cracking was observed after successful pick up test.
- Development of a skid-mounted support system for large guide signs. Need to temporarily relocate a large guide sign, or place temporary sign. Up to 96 sq ft sign. 8 ft tall 12 ft wide on four 4x6 posts. Two 2x4 diagonal braces used on each post, one in front one in back. Plywood platform applied to bottom of skids on both ends and weight it with 44 sand bags. Small car hit two posts and pickup hit three posts. Both passed. Developed chart for sign size, number of posts, etc.

Karla Lechtenberg MWRSF

- Socketed foundations for cable barrier posts. Cylindrical reinforced concrete foundations evaluated in various soil conditions. Minimal damage or displacement to foundation to minimize maintenance after impact. Sandy soil (60" deep foundation) and stiff soil (36" deep foundation.) Also evaluated 12" diam in asphalt. With 15" diameter foundation in soil you get no concrete fracture but need 50" deep in weak, 30" in strong. Artar noted that many states are requiring geotech analysis and specially designed foundations. Bill Wilson noted the project was to develop foundation for Midwest Cable Barrier system.
- Energy absorbing longitudinal barrier – high containment fully restorable with minimal damage at TL-4. Reduce impact forces for passenger vehicles by 30%. Rubber posts supporting concrete beam. Steel supports on skids between rubber posts. 30" to top of beam 38.5" to top of rail atop of concrete beam. Met TL-3 with car and pickup. TL-4 test is next.

- MGS Adjacent to 2H:1V slope. Six foot Posts placed beyond break point with face of rail at the break point. Got lots of dynamic deflection (76" with 6 foot posts) and some posts pulled completely out of the ground.
- <http://mwrsf.unl.edu> tech transfer tab. Consulting Q&A site.

Dhafer Marzougi – George Mason University – Center for Collision Safety and Analysis

- NCHRP 22-29 CSRS Performance of Long Barriers on Curved, Superelevated Roadway Section. Develop recommendations for design and retrofit. Currently working on FEA and will do full scale crash tests. Most common barriers on super are NJ @32", Strong Post W-beam at 27 ¾ and Strong Post W beam at 31" MGS. Sharpest curve with greatest super with barrier normal to road, NJ barrier, and vehicle redirected.
- Update of Report 350 and MASH vehicle test models. New versions will be posted at <http://ccsa.gmu.edu>

Christine Carrigan – Roadsafellc

- 22-12(03) Recently completed Uses RSAP in the Bridge Railing Selection Process.
- 22-27 RSAP Update www.rsap.roadsafellc.com
- 22-28 Being wrapped up - Guardrail repair project . Field guide is online: Password is fieldguide
- On line guide for luminaire supports on our website but is lacking content from many manufacturers.
- Just starting ODOT Side mounted BR.
- 17-54 incorporate roadside measures into Highway Safety Manual, develop new roadside SPFs
- 12-90,

Technical Presentations:

John Durkos: Case Studies of Impacts Outside Design Parameters

- All systems have been tested to the same condition under controlled environment. SKT wood and steel post systems extrude about 50 feet of w beam. No terminals designed for TL4 and above. Showed examples where more than 50 feet of single w beam got extruded.

Ken Opiela – Effectively Meeting Roadside Safety Analysis & Evaluation Needs with Crash Simulation

- Worked with CCSA at GMU. See Ken's PPT.

To Do List for 2015

- All subcommittee co-chairs should review their pages and make sure they are up to date.
- Also the list of tech reps and review groups needs to be updated. Tech Reps should review and update the lists of review groups.
- Task Force 13 needs a written work plan for the coming year.
- Task Force 13 needs a report on accomplishments for the prior year.
- Task Force 13 will survey our members to see who belong to AASHTO, AGC or ARTBA , then work with King Gee of AASHTO Headquarters to ensure conformity within AASHTO / AGC / ARTBA Joint Committee requirements.
- All members should log on and review relevant drawings. Reviewers should add an “Approved” or “Not Approved” stamp to the drawing itself – comments may also be added to the Approval stamp.
- In Service Performance Evaluations should be a topic that is discussed and added to our next meeting’s agenda.