Motorcyclist Advisory Council
Meeting #2 Summary
June 7, 2018

The second meeting of the Motorcyclist Advisory Council (MAC) was held on Thursday, June 7, 2018 via Adobe Connect, online web presentation and telephone conferencing. The following document provides a summary of the presentations, discussions, and comments received during the meeting.

Thirty-six people attended the meeting including 10 MAC members, 12 US Department of Transportation staff, 8 members of the public, 3 guest presenters, and 3 contractor staff. Meeting attendees included:

Motorcycle Advisory Council (MAC) Members:

- Mr. Michael Sayre, MAC Chairperson, American Motorcyclist Association (DC)
- Mr. Joel Provenzano, MAC Vice Chairperson, Florida Department of Transportation (FL)
- Mr. James Baron, American Traffic Safety Services Association (VA)
- Mr. Michael Crow, Rocksol Consulting Group Inc. (CO)
- Dr. Chanyoung Lee, University of South Florida, Center for Urban Transportation Research (FL)
- Mr. Eric Line, Michigan Department of Transportation (MI)
- Dr. Shane McLaughlin, Virginia Technical Transportation Institute (VA)
- Ms. Jane Lundquist, Texas Department of Transportation (TX)
- Dr. Craig Shankwitz, Western Transportation Institute at Montana State University (MT)
- Ms. Fay Taylor, Ohio Department of Transportation (retired) (OH)

Other meeting attendees included the following individuals:

- Mr. Randolph Atkins (NHTSA)
- Mr. Alex Berger (Motorcycle Industry Council)
- Mr. Lawrence Crowe (New Hampshire Department of Motor Vehicles)
- Mr. Joshua DeFisher (VHB)
- Ms. Megan Ekstrom (MRF)
- Ms. Beth Franz
- Mr. Neil Gaffney (FHWA)
- Mr. Mike Griffith (FHWA)
- Mr. Jeremy Gunderson (NHTSA)
- Ms. Callie Hoyt (Motorcycle Industry Council)
- Mr. Michael Manser (TTI)
- Mr. Yusuf Mohamedshah (FHWA)
- Ms. Kara Peach (VHB, facilitator)
- Ms. Edith Peters (Florida Department of Transportation)
- Dr. Gabe Rousseau (FHWA)
- Mr. Jude Schexnyder

- Mr. Nathan Schulz (TTI)
- Dr. Bob Scopatz (VHB, facilitator)
- Ms. Eva Shipp (TTI)
- Mr. Nick Shives (Colorado State Patrol)
- Ms. Maria Sikirica (FHWA)
- Ms. Carol Tan (FHWA)
- Ms. Amber Trueblood (TTI)
- Ms. Kathryn Wochinger (NHTSA)
- Ms. Menna Yassin (FHWA)
- Ms. Guan Xu (FHWA)

1. Welcome and Agenda Overview

Welcome

Mr. Michael Griffith (FHWA), who serves as the Designated Federal Officer (DFO), provided an introduction and welcome to the meeting. He stated this was the second meeting of the MAC, with the first occurring in December 2017 in-person in Washington, D.C.

Agenda

Mr. Michael Sayre reviewed the agenda, meeting ground rules, and general housekeeping. He noted time was available for public comment and although no individuals notified FHWA of their interest prior to the meeting and explained how individuals could request to speak. Mr. Joel Provenzano also welcomed the MAC members and thanked guests and attendees for their participation.

Dr. Bob Scopatz, contractor and meeting facilitator, noted time was reserved for a discussion period following each block of presentations for MAC members and any remaining time was designated for members of the audience to ask questions or make comments. Attendees could also make a comment using the comment box function of the online platform.

2. Identifying Infrastructure-Based Motorcycle Crash Countermeasures Workshop

Mr. Michael Manser and Ms. Eva Shipp (both from Texas A&M Transportation Institute [TTI]) presented on *Infrastructure-Based Motorcycle Crash Countermeasures.* Mr. Manser defined an infrastructure-based countermeasure as any device in the driving environment to reduce the rate of motorcycle injuries and fatalities. This project has several important activities. First, TTI identified 25 infrastructure-based countermeasures available across the globe to improve motorcycle safety. Next, they conducted a literature review of the 25 countermeasures and found that only 1 (lighting) had any research on the effectiveness for improving rider safety. The remaining countermeasures are effective safety strategies, but have not been specifically investigated for their impact on motorcycle rider safety. Examples include prohibitive signs, high-friction surface treatment, pavement change warning signs, and guardrail continuous protection systems.

Ms. Shipp next detailed the Motorcycle Crash Causation Study (MCCS) Analysis project, which estimated the potential benefits of implementing specific infrastructure-based countermeasures at the national level. The MCCS was a comprehensive study on the causes of motorcycle crashes using data from Orange County, California. TTI determined that the crashes in the MCCS needed to be calibrated to specific variables to be representative of motorcycle crashes on the national level. Then, they identified infrastructure-based countermeasures that would have prevented or

decreased severity of crashes within the MCCS and calculated the potential benefits of those countermeasures.

TTI combined the results of the literature review with the MCCS analysis and conducted a workshop with researchers and subject matter experts. Prior to the workshop, the experts pared the list of 25 countermeasures down to 11 for further discussion and prioritization at the in-person workshop. The experts emphasized the importance of preventing crashes first, then mitigating severity in the event of a crash.

FHWA reviewed the top 11 countermeasures and prioritized the following 5 countermeasures for further research:

- High friction surface treatment (HFST)/textured pavement markings.
- Limited sight distance warning signs.
- Pavement change warning sign.
- Curve speed warning.
- Prohibitive signs.

After the presentation, Dr. Scopatz opened the remaining time to discussion, first for MAC members. Mr. Line praised the researchers for calibrating the MCCS to the U.S. Mr. Crow noted he had just been on a ride in Arkansas and observed that the DOT had made proactive pavement improvements leading up to the busy weekend, which made for a better riding experience. He felt that pavement conditions/improvements are an important consideration in the research.

Mr. Baron asked the speakers where the continuous guardrail protection system, which prevents a motorcycle rider from sliding under the guardrail and contacting the guardrail barrier posts, fell within the FHWA ranking. Mr. Manser replied that it was unclear if FHWA prioritized all 11 countermeasures or just the top 5. However, he noted again the workshop participants reached a general consensus that prevention was more important that mitigating crashes. The third guardrail is more focused on mitigating injury rather than preventing crashes, which may be one reason why that treatment did not enter FHWA's top five. Mr. Sayre noted that one of the MAC's objectives is to focus on barrier design and is not limited to the findings of this effort. Mr. Manser agreed and said TTI prepared countermeasure summaries that they will share with the MAC.

The discussion was open to the public. No comments were received.

3. Investigation of Roadside Barrier Concept to Mitigate Motorcycle Injury in Upright Impact

Mr. Nathan Schulz, of TTI, presented 5 years of research on the crash worthiness of roadside barriers. He noted the *Manual for Assessing Safety Hardware (MASH)* provides standards for measuring crash worthiness, but there is no discussion of motorcycles within the guide. Mr. Schulz also noted there is little research related to the following issues: motorcycles and roadside barriers; upright riders that are vertical upon impact, and occupant and passenger fatalities are decreasing but no similar trend for motorcyclists.

For this project, TTI developed a method to replicate a motorcycle crash with an upright dummy into a traffic barrier. They also developed a computer model based on motorcycles and dummies to run multiple simulations at a time and cost savings. The computer simulation also allows researchers to explore the impact of several variables individually and in combination, such as impact angles, speed, different types of roadways, and various barrier designs.

Both the computer simulations and crash tests using dummies show that upright riders are positioned to fall over a roadside barrier when a collision occurs. This is obviously problematic if this occurs on median barriers with oncoming traffic on the other side or in an overpass scenario. The simulations explored crashes at 37 mph with containment railings and injury risk parameters. Results showed that as speeds increase, the injuries to the head and chest increase although there was no significant increase for the neck or femur.

After the presentation Dr. Scopatz opened the remaining time to discussion, first for MAC members. Mr. Provenzano asked what a 50th percentile dummy represented, to which Mr. Schulz clarified the dummy represents the average male height and weight. Mr. Provenzano then asked if the researchers explored how speeds impact the distance riders were ejected over the barrier. Mr. Schulz explained the current research did not consider this factor, although some research in Europe may have investigated this issue. TTI focused on the specific speed and angle that cause a rider to fall to the other side and this may be an interesting factor for future research. Mr. Provenzano also asked if there had been any research on chain link instead of acrylic sheeting and any long-term environmental exposure impacts on acrylic sheeting. Mr. Schulz responded that the research has explored the cost-benefit and constructability of acrylic sheeting but not on the long-term environmental impacts. Mr. Provenzano would be interested in the results of the chain link investigations.

Mr. Sayre asked if there were future plans to investigate the safety impacts of cable barriers and the perception that these types of barriers are more dangerous for riders. TTI confirmed they are aware of the public perception of cable barriers and noted the danger is in the metal posts and not the cable itself. There are some studies that have started to explore foam protections around the posts. It was noted that the foam protectors were on the original list of topics in the preceding presentation, although the issue was filtered out.

The discussion was open to the public. No comments were received.

4. Discussion of State Strategic Highway Safety Plans: What Has Been Done and How Effective Has It Been?

Dr. Craig Shankwitz and Dr. Changyoung Lee co-presented on the results of a scan of State Strategic Highway Safety Plans (SHSPs). This effort was a result of the previous meeting where the MAC decided to review what actions States are planning with regard to motorcycle safety. Dr. Shankwitz reviewed the SHSP and Dr. Lee evaluated State statistics to determine effectiveness of the strategies.

Dr. Shankwitz reviewed the most recent SHSPs and summarized the approaches into the following categories: education; engineering infrastructure; data collection and processing; legislation and policy; enforcement and adjudication; incident management and EMS; and goals and objectives. He also noted that SHSPs include some behavioral safety issues which would be outside of the MAC's scope. Then, he ranked each State's plan from 'no mention of motorcycles in the SHSP' to 'clear goals and objectives are provided.' The States with the highest ranking included South Carolina and Delaware, which rose to the top for clearly delineating goals and objectives for motorcycle rider or vulnerable user-related strategies across several of the evaluation categories.

Next, Dr. Lee reviewed NHTSA's annual crash data, which revealed 3 States are responsible for 30 percent of motorcycle fatalities. However, he noted that the statistics do not account for exposure. To understand the true magnitude of the issue requires examining different data sources and variables. For instance, one State may have strong safety measures for motorcycles, but motor vehicle crashes as a whole are higher. Similarly, the SHSP alone does not equal "safety," but rather one should also explore a State's investments in motorcycle safety-related issues. Dr. Lee also explained that motorcycle fatalities correlate closely with all traffic fatalities, but not as well with motorcycle registrations. Motorcycles account for a small percentage of vehicle registrations and vehicle miles traveled, but riders amount to about 15 percent of all traffic fatalities.

After the presentation Dr. Scopatz opened the remaining time to discussion, first for MAC members. Mr. Baron asked if Dr. Shankwitz could review the highlights of the Washington, D.C. plan, as they will be hosting National Work Zone Awareness Week in April 2019, which may be an opportunity to promote their motorcycle safety strategies. Dr. Shankwitz did not have talking points available at the time of the presentation but reminded MAC members of the Excel documentation he circulated prior to the meeting. Washington, D.C.'s SHSP was strong for motorcycle safety but lacked quantifiable goals.

Ms. Lundquist asked Dr. Lee if controlling for variables such as length of riding season and population variance would make for more comparable statistical analysis. Texas has one of the highest number of motorcycle crashes but also has a year-round riding season. Dr. Lee agreed that Texas cannot be compared to all other States. Dr. Lee explained that Texas has a smaller portion of traffic fatalities compared to the national average but motorcycle registrations are similar to that of Florida and California.

The discussion was open to the public. No comments were received.

5. Discussion of MAC Progress and Goals

After a brief break, Mr. Sayre (with assistance from Mr. Provenzano and Dr. Scopatz) facilitated a discussion with the MAC members to determine how the MAC should proceed. Mr. Sayre reviewed the scope of the MAC and noted the group has discussed both roadside barrier design and road design but has not addressed ITS to this point. Mr. Provenzano encouraged the MAC members to continue to identify topics for future presentations.

Next, the group discussed the idea of preparatory work groups as mechanisms to research and gather information between meetings to share at the larger meetings. The following section briefly summarizes the proposed preparatory work group topics and discussion.

Candidate Roads: Mr. Crow proposed an effort to explore applying several motorcycle crash prevention countermeasures on one location. Mr. Provenzano noted that simple queries of State crash databases should reveal high crash locations. He also described a before-after effort to evaluate curve signs and feedback signs along a popular roadway in Florida. The MAC members proposed the preparatory work group could identify potential locations, potential partners, or explore NCHRP proposals to fund the research. Mr. Manser said TTI's research will result in evaluation and implementation plans for five countermeasures, which could be a good starting point for the group.

Barrier Design: Mr. Provenzano suggested the group would be tasked with summarizing the presentations, anecdotal data and experiences, other research, and data and make recommendations for further research or implementation of specific design types.

Data-driven Guidance: Mr. Sayre reminded the MAC of a previous conversation on issues related to data, including law enforcement crash reports. Dr. Lee stated that a group in Florida is identifying common errors law enforcement make when documenting motorcycle crashes. Though Mr. Line noted that many law enforcement agents do not feel comfortable reporting on areas outside their expertise, such as injury types, types of motorcycles, and so on. The proposed purpose of this group is to develop data-driven guidance or make recommendations for collecting, accessing, or analyzing motorcycle crash data from State systems.

HSFT/SCRIMM: Prior to the meeting, Dr. Shankwitz provided the MAC information on FHWA's HFST testing vehicle. Mr. Line and Mr. Manser discussed the need to develop CMFs for proven motorcycle safety countermeasures. MAC members then discussed State efforts to collect friction data with Mr. Crow reporting Kansas collecting friction data in road surveys and Mr. Line stating that Michigan collects data in straightaways and primarily focused on wet-friction crashes. Mr. Sayre proposed the MAC have a guest speaker on the topic at the next meeting and Dr. Shankwitz volunteered to contact FHWA for a speaker as well as contact States to identify who is collecting friction data and their methods. Mr. Griffith will work with Dr. Shankwitz to coordinate the speaker.

SHSP Motorcycle Focus Areas: The MAC discussed the State SHSP process, noting the plans include the 4Es (engineer, enforcement, education, and emergency) and many include some behavioral elements. Dr. Shankwitz proposed developing a set of recommendations for States to use when considering motorcycle-related issues in their SHSP. MAC members agreed and suggested the guidelines be high-level enough to provide guidance for States who are then responsible for developing specific solutions. The intention is to create more awareness of motorcycle-related issues to elevate the topic to a priority Emphasis Area within SHSPs. Mr. Gunderson volunteered to provide the MAC with additional information on NHTSA's guidelines.

6. Public Comment

Time was designated for public comment. The Federal Register announcement required commenters to send an email prior to the meeting to reserve time to speak; however, at FHWA's direction, any person present who wished to speak was allowed to request to speak using the comment box. FHWA did not receive any requests prior to the meeting and the remaining scheduled time for public comment was opened to any of the public in attendance, with 3 minutes allotted for each speaker. No comments were received at the time of the meeting. Written comments can be submitted to MAC@fhwa.dot for consideration.

7. Next Steps

The MAC will hold the third meeting (in-person) in approximately 6 months, likely in December 2018. Mr. Griffith proposed holding the meeting at the same location as MAC Meeting #1 and did not receive objections.

MAC members will continue to identify potential speakers and presentation topics, in addition to the HFST topic previously identified in the meeting.

Mr. Griffith noted the MAC minutes and presentations will be available for the MAC members and public Summer 2018.

Mr. Sayre will coordinate with the MAC members following the meeting to solicit volunteers for the proposed preparatory work groups. He will also provide a PDF of the meeting agenda at that time.

Mr. Sayre once again thanked the meeting participants, presenters, and MAC members. Mr. Griffith echoed the gratitude and formally adjourned the meeting.

Adjourn ***12:50 p.m.***