National Capital Region
Transportation Planning Board

TRANSPORTATION SAFETY SUBCOMMITTEE MEETING SUMMARY

Tuesday, August 13, 2019
1:00 – 3:00 P.M.
COG Meeting Room 1

Chair: Vanessa Holt, Fairfax County Department of Transportation

Attendees:
Tom Dingus – Virginia Tech Transportation Institute (phone)
Andrew Ennis - DRPT
Michael Farrell – COG
Hannah Henn – Montgomery County (phone)
Vanessa Holt – Fairfax County
Adam Larsen - FHWA
Andrea Lasker – Prince George's County (phone)
Toria Lassiter – MDOT (phone)
Andrew Meese – COG (phone)
Eric Randall – COG
Stephen Read – VDOT (phone)
Richard Retting – Sam Schwartz Engineering (phone)
Jon Schermann – COG
Erika Sudderth – Volpe (phone)
Eric Tang – VHB
Nicole Waldheim – Cambridge Systematics

MEETING NOTES

1. WELCOME AND INTRODUCTIONS

Participants introduced themselves.

2. QUANTIFYING CRASH RISKS ASSOCIATED WITH DRIVER BEHAVIORS

Dr. Tom Dingus, Director, Virginia Tech Transportation Institute

The purpose of this meeting was to update the subcommittee on some of the research findings from the Second Strategic Highway Research Program Naturalistic Driving Study, including the extent to which driver-related factors contribute to crashes.

Virginia Tech Transportation Institute (VTTI) has conducted 100s of Naturalistic Driving Studies (NDS) analyses assessing driver behavior and performance. The Naturalistic approach involves inserting unobtrusive cameras, radar, instruments into vehicle and studying a variety of driver behaviors that lead to near crashes and crashes. This enables researches to accurately observe. This approach creates a linkage between experimental and epidemiolocal research studies. This currently largest study funded by the Strategic Highway Research Study. Over a million hours of continues video, and all participants had vehicles equipped for a year. Key findings revealed that distracted driving is at epidemic proportion. An interesting observation included that only 50% of drivers come to a

complete stop when either at a stop sign or making a right turn on red. Any type of distraction increases the odds of a crash by over 52%. The riskiest distractions involve both manual (hands off the steering wheel) and visual (eyes off the roadway). The longer a driver takes eyes off the road, increases the risk of a crash event exponentially. Policy recommendations, handheld cellphone bans while operating a vehicle.

Questions:

Have you been able to make presentations to policy makers about the findings and the possible policy changes based on your study? *Yes, we have done some work on making a handheld ban in Virginia, we were successful in that ban for work zones. A total ban appears to be likely.*

Some clarification on the behavioral differences between handheld versus the handsfree use of the cellphone? *There are several subtasks with holding a cellphone, the manipulation of the smart phone (manual and visual).*

Pedestrian fatalities have gone up over the years, with the growth of cell phone usage, does your study support that trend? *It does, there appears to be both a driver and pedestrian distraction problem. One study showed that pedestrians are immersed in their smartphones.*

Referring to the cognitive disengagement, listening to music and not recalling how you arrived at your destination, is that something observed in this study? *There are several different functions going on with driving, navigation and awareness of surrounds. Both are different, and the cognitive disengagement affects the latter not the former. These crashes are rare.*

Could you talk about what you think are the next steps to understand driver behavior? *We still have active projects; some are more complicated some are simple. We are looking at the more advance safety features coming with newer vehicles.*

3. UPDATE ON THE REGIONAL SAFETY STUDY

Jon Schermann, TPB Transportation Planner
Nicole Waldheim, Senior Associate, Cambridge Systematics

An update the subcommittee on the Analysis of Regional Roadway Safety Outcomes study that is currently underway, and this presentation provided information.

The main objectives of this study are to: Understand factors contributing to crashes in the NCR; Determine where crashes are over-represented; Identify and recommend proven effective solutions; Provide the TPB and member jurisdictions specific suggestions to improve safety; and to Inform future Transportation Safety Subcommittee and Street-Smart efforts. The study is currently working on Task 2 of the overall deliverable. Task 2 is Benchmark Peer Evaluation, which involves the setting of evaluation criteria, proposed peers, and interview questions. Peer MPOs include, Atlanta, Philadelphia, San Francisco, Detroit, and St. Louis. The initial goal was to identify three for peer comparison. A memo was submitted to the TPB about the peer MPOs selected. Interviews will begin soon to gather more detailed information from the peer MPOs. Data collection from the three states is ongoing.

Questions:

How do you plan on conducting the interviews with the peer MPOs, will this be done in person or over the phone? *This will be conducted over the phone.*

4. USING CROWDSOURCED DATA TO ESTIMATE CRASH RISK

Dr. Erika Sudderth, Data Scientist, Volpe National Transportation Systems Center

This presentation updated the subcommittee on a recent Volpe Center study that used machine learning techniques to assess the potential for crowd-sourced roadway data such as Waze alerts to serve as a reliable indicator of police-reportable crashes. This project is part of the Safety Data Initiative under the FHWA. The focus being to integrate existing DOT data with "big data sources," develop predictive insights, and create data visualizations to help policy makers. This project looked at the accuracy of using Waze's data crash events when compared with reportable police crash reports. The pilot project is divided into two phases; State-wide indicators of police-reportable traffic crashes, and State and local applications of Waze analysis pipeline. The findings revealed there is an overestimation and underestimation of crashes. Overestimation during the weekdays, commute times, underestimation during the weekends and non-commute times. Three additional states were also observed, and the results were consistent. Overall, Waze data can provide reliable information for model development. A detailed case study, Tennessee, was then discussed. By integrating Waze data, it did improve their existing predictive model. Second case study involved with the city of Bellevue. Provided less Waze data due to the lack of highways. Major insights included: Crash models using integrated Waze traffic volume, job, and weather data give reliable estimates; Tennessee Highway Patrol will more effectively target high-risk times and areas; and, Crash propensity models will guide city-wide safety investment decisions.

Questions:

On the map, what is the model saying in the red areas, does that mean the model overestimated the amount of crashes? *Yes.*

Has there been an effort to compare your findings to other predictive applications that can be found in the Highway Safety Manual, or will that be considered at a later time? *We have investigated that but was beyond the scope of the study.*

With the high injury network, that network is highly reactive did this tool help the city to revise that list? *They are using it as a comparison map, to see where the high-risk areas are.*

When you did modeling for the different states (Virginia and Maryland), did you compare and contrast the states? Anything statistically significant? Is there any way we (NCR) can access some of that data? *We did not look a comparing and contrasting, that was not in the scope. We can share the data that we do have. In terms of the Waze data, that can be done with a partnership, and some of the Waze data can be shared.*

5. ROUNDTABLE UPDATES

The roundtable updates were postponed due to lack of time. The meeting was adjourned at 3:00 pm.