# State Traffic Records Advisory Committee (STRAC)

## 2018 Traffic Records Forum Notes

*Milwaukee, WI – Aug 12-15*

Traffic Records Forum Report

Many presentations during Traffic Records Forum indicated the importance of data visualization and geographical representations of data. Additionally, there was a heavy focus on data integration and issues associated with it. Primarily these breakout sessions highlighted the importance of being able to pinpoint a problem area and disseminating information in a consumable method to better promote proactive enforcement as opposed to reactive enforcement. However, one of the hurdles here was integrating data when statewide systems did not easily allow this.

Attending sessions at TRF promoted the need for data integration and ideas of data linkages that I had not previously considered. One session that was particularly interesting was entitled "Data Integration: The Long Road Ahead" from North Carolina. This session discussed the linkage of crash data to emergency medical services and hospital encounter data. Although this data integration involved only a smaller subset of crash data the analysis of the linked data was informative.

This same type of data integration initiative would be useful in gaining insight into the impact of Colorado crashes and in particular, impaired driving crashes. Following the conference, I hope to engage with colleagues in that state that are working with state crash and traffic related records to between understand gaps and potential data linkage areas that could better inform traffic safety. Along with understanding gaps, this also includes a better understanding and eventually more uniform definitions and more consistent use of variables.

However, there is buy-in that is necessary for those that are on the frontline performing data entry. It is not simply providing a thorough data dictionary and coding manual, but there is a need to instill motivation to provide quality data. It is critical to improve data quality to provide better insights as bad data in a system can deeply impact the results and numbers produced from the data.

Additionally, the most useful sessions for me involved visualizations of data. The session presented by Louisiana's Highway Safety Research Group titled "Elements of Effective Crash Data Visualization Design" described best practices for presenting data to customers. The presenters discussed the most appropriate graphs to use and how to effectively use colors, which is critical to enable and promote parsing and extracting the appropriate information. One particularly important point is that while tables provide valuable data, these can be overwhelming depending on how many points of data are involved. Second, the ability to create data visualization to place into a one-stop dashboard allows stakeholders to leverage the data and potentially customize the dashboard to their preferences.

For example, a statewide dashboard on crashes that allows filtering down to judicial district or county allows users to freely explore data points on their own. This would alleviate the onus of providing very specialized data requests for stakeholders. However, it is important to note that this would open the data to inappropriate interpretation as well. This point reiterates the need for clear data definitions and an accessible and consistently updated data dictionary that can be easily understood by not only data experts, but citizens as well.

Overall, TRF was a useful conference for me to attend. I learned about how other states are engaging in data integration across departments and this could inform future projects involving traffic records in Colorado. The ability to create new analyses from data integration is powerful, but there is a need for better data quality and more uniform use of variables within the data for the ease of the integration.

COLORADO
**Department of Transportation**
Transportation Systems
Management & Operations

Data Intelligence Unit
2829 W. Howard Pl
Denver, CO 80204

Paul Clayton – CDOT

From August 12th to August 15th, 2018 I attended the 44th annual Traffic Records Forum in Milwaukee, Wisconsin. I attended presentations on topics ranging from the ATSI D.16 Manual to New Zealand's development of a national safety program. I will detail some highlights and some important takeaways.

On Sunday, I attended a meeting of the ANSI D.16 Review Committee. This was part of ATSIP's annual review of the crash classification manual. I thought the most interesting part of this discussion was the definitions that will need to be changed as autonomous vehicles become more prevalent. An example of this is the definition of driver. According to the current manual, a driver is defined as the "…occupant who is in actual physical control of the vehicle…" Obviously, this will need to be re-thought in the future.

On Monday, I attended a very interesting presentation on Michigan's Crash Data Program. An extremely fascinating part of this discussion was their use of an online, portal type of crash form. This type of form could offer several benefits to Colorado. First it could aid law enforcement agencies to submit their records electronically. A portal type form would not require the somewhat complicated record management system interfaces that traditional electronic record submissions require. A portal type form could also provide an online check edit system that would increase the accuracy and completeness of crash records. Also, this type of record would increase the timeliness of reporting by eliminating mail in, paper reports.

On Wednesday, I attended a discussion of fatal crashes in Illinois. One of the important points of this presentation was the need for better cooperation between local law enforcement agencies and the Illinois Department of Transportation. This highlighted the biggest point that I took away from attending this conference. That is that Colorado's traffic records programs are in good shape compared to other states around the country. In all the presentations I attended, the challenges faced by each of the presenting agencies were being either non-existent or being successfully dealt with the Colorado's traffic records stakeholders.

Overall, I learned a great deal by attending the forum. It was a positive experience, and I was glad to be able to bring back useful information to Colorado to help improve our traffic records quality.

# MEMORANDUM

Chief Matthew Packard
**Colorado State Patrol**

COLORADO
DEPARTMENT OF
PUBLIC SAFETY

DATE:  October 4, 2018

TO:  STRAC Committee

FROM:  Chris Wilson, CSP Sr. Crime Analyst
SUBJECT:  ATSIP Conference

I would like to take the opportunity to thank the STRAC committee for sponsoring my attendance at the annual ATSIP Traffic Records Forum Conference in Milwaukee, Wisconsin from August 12th through August 15th.

Although I was only able to stay for classes on Sunday afternoon, Monday and Tuesday, I learned a lot from the attendees I talked with as well as fellow STRAC members. The main benefit of my attendance was to learn more about how traffic records are managed in other state's law enforcement agencies and to that end, I had very interesting conversations with attendees from the Wisconsin Highway Patrol, Michigan State DOT and New York State DOT.

The classes I attended were on mapping, spatial analysis of data using GIS, safety analytics and community mapping in addition to data visualization and what some university programs were doing to reach out to law enforcement agencies to assist with data mining and mapping. Our unit at the Colorado State Patrol is working to get a working mapping system going and it was helpful to listen to how other agencies were using data. The lunchtime speakers on automated vehicles and some of the futuristic planning going on with autonomous vehicles was very interesting. I also attended the TRCC roundtable and the TRCC annual meeting. The best class I attended was the one given by Becky Bui entitled Impaired Driving in Colorado: First Results from a Data Integration Initiative in which she talked about Colorado's experience with marijuana impaired drivers and some of the data challenges.

The conference was well attended and I highly recommend attendance for anyone interested in law enforcement's use of traffic records as well as innovative uses of GIS. Thank you for the opportunity to attend this event and learn more about traffic records across the US.

Lindsay Markham
Data Services Manager
DMV Driver Control Section
lindsay.markham@state.co.us
303-205-5607

Wednesday, August 15, 2018

ATTN: Colorado Department of Revenue, Division of Motor Vehicles Leadership
**RE: 2018 International Traffic Records Forum for the Association of Transportation Safety Information Professionals (ATSIP) Conference Report**
**http://www.trafficrecordsforum.org/program/program_2018.html**

The following summarizes each of the sessions I attended at this year's ATSIP conference held on Monday, August 13 through Wednesday, August 15, 2018, in Milwaukee, WI.

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**Monday Sessions Attended:**

**Opening Remarks & Plenary** –
This session will describe the association and expectations for the conference. Six individuals presented about Wisconsin and how they are working towards crash information, data, and safety.

Applicability:
- The opening remarks set the tone for the day and gave the group an idea of what to expect for the conference.
- Distracted driving is 4x as much as alcohol related crashes - source DOT.
- Autonomous vehicles need cameras, LIDAR, radar, and GPS all to prevent crashes, but to also function. These vehicles are dependent on how well they are connected to other vehicles. This creates connected and automated vehicles. There are only ten AV proving grounds in the country there is not one in Colorado.
- Head on crash data demonstrates the driver misses the air bags because the vehicle moves laterally essentially moving the driver out of the way of the air bag.

**Making Decisions with Different Levels of Data: Do Better Methods Better**
This session featured safety data systems and data requirements. There is a process in place currently for states to submit traffic volume and they want to improve the data which is included with this deliverable. It focused on methods and how they are used for safety management. FHWA toolbox. SPF-R

Applicability:
- Adopting strategic initiatives and goals which are utilized by all drivers.
- States need to have MIRE FDE on all public roads by 2026. Impact on CDOT.
- Safety data integration step is imperative as it lays the framework to analyze the data collected.
- HSIP funding is available for safety data improvement.
- DDSA methods come from ASHTO.
- New key is not to chase fatal crashes as there is not consistency. Instead look at potential crash areas instead for safety improvements.
- Calculation of the critical rate factor for roadway safety is useful. But there is no account for zero crashes i.e. a safe road.

**Practical Building Blocks of Safety Analysis**

This session discussed a data governance plan and the necessity of a data business plan. This allows further collaboration between technical staff and the data analysis staff. The language of highways is considered to be an "LRS" Linear Referencing System. The session focused mainly on DOT issues.

Applicability:
- A data business plan may be a great value add to our current process and set up.
- All plans should be a living document - there is consistent maintenance of the data business plan with clearly defined roles. A data governance may be a valuable group to set up. (RSDP website).
- Reach out to DRCOG (Denver Regional Council of Governments) as they may have some information related to data and spatial data.
- Massachusetts has a live data portal for crash data however the presenter recommends not to use it as it is "horrible".
- Geocoding of crash data could potentially include live updates to data sets i.e. there is a Walmart now and this intersection no longer exists. A crash geocoder API could potentially link our different crash portals into one crash data server.
- MassDOT will eventually have data available to users through an Open Data Portal coming soon.

## Data Integration: The Long Road Ahead
The session discussed the need for accurate data and definition of attributes when you are integrating multiple data sets. Primarily involved North Carolina's pilot project with integrating health data and crash data. The analysis led to interesting pedestrian/bicycle results. This in turn created additional work to analyze the information for accuracy and value.

Applicability:
- Without stakeholder buy in data integration is very difficult.
- Flexibility in data integration planning is also important as things will change more than once.

## Tennessee's Journey to a Real Traffic Records Strategic Plan
Tennessee gave a presentation on their Traffic Records Strategic Plan and the journey that took place from start to finish. The initial plan was for acquiring funds from NHTSA. These funds are not allocated to all systems which feed data sharing.

Applicability:
- Stakeholder engagement is again mentioned as an issue. This caused some missed opportunities to link and work with other traffic data systems for improvements. Stakeholder engagement could also be representative of weak interagency relationships. Focusing on better interagency relationships should assist.
- Identifying the WIIFM for all stakeholders and agencies is an important step.
- Everyone is a traffic safety stakeholder.
- STRAC should serve breakfast - for more involvement.


**Tuesday Sessions Attended:**

## Issues with Deterministic Linkages and Records Management
This session reviewed the federal laws related to DPPA, and when sharing personal information is allowed. It also reviewed HIPPA and how it affects Wisconsin.

Applicability:
- Anyone who received DPPA is subjected to the federal protection laws.
- HIPPA applies to covered agencies and nobody else. DMV is not truly subjected to HIPPA if we receive the info.
- WI and FL have statutory timeframes for submittal of crash forms. WI has mandatory 10 day submittal for all crash data and a 24 hour turnaround time for fatal accidents. Same as Florida.
- Wisconsin only has electronic crash forms, no paper forms are accepted.
- TRACS data system may be useful for Colorado. eCitations and eCrashes into one single database. Provided free by Iowa. More research should be done.

## Impaired Driving in Colorado
This session presented by Becky Bui with CDPS discussed the first results from the data integration of impaired

driving in Colorado. The focus was primarily on marijuana.

Applicability:
- The data primarily came from state courts and Denver court.
- FRIL is the application used.
- Conviction rates for non thc and alcohol has a lower conviction rate.

**Linear Risk Terrain Predicting Impaired Driving**
GIS Analyst from Washington College on the progress of the predictive impaired linear risk terrain. Demonstrated the model.

Applicability:
- This presentation dealt with linear predictions of DUIs in Maryland. The data presented did not have any true correlation or analysis to understand where DUIs occurred or will happen.

**Elements of Effective Crash Data Visualization Design**
This session was presented by the Louisiana Highway Safety Research Group and discussed data visualization and how it is a key component on interpretation.

Applicability:
- Engagement is an example of why data visualization is important.
- Common scales are important with data visualization.
- Avoid varying colors for a single data set. Chromatic vision and nocoffee as resources
- Text should be black.
- Look at tableau as well as a possible tool.
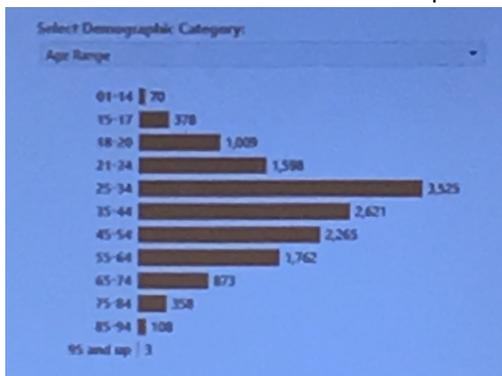


**Improved Efficiencies through Electronic Data and NHTSA's Ped/Bike Assessment**
This session was presented by NHTSA and discussed how data transfer was a greater benefit for accurate crash data versus paper or manual entry. Pre-coding of data elements with electronic data is a cited benefit.

Applicability:
- Look at the new Pedestrian and Bicyclist Safety Program Assessment which NHTSA says will be available this fall.
- The assessment questions for this data set may be useful.

**Wednesday Sessions Attended:**

**Updating a State's Crash Reporting Form**
This session spoke about revising the crash reporting form and how Cambridge Systematics revised Colorado's crash form. They focused on how engagement of stakeholders is important to revising the form.

Applicability:
- Colorado has partnered with STRAC and Cambridge Systematics over the past two years to revise their crash form. This update using Colorado as an example provides an insight on how they perceive the process and our status.
- Electronic reporting is increasing and having easier forms just makes sense.
- The data model was the focus for the crash form update, then the form itself.

- Law enforcement trainers were the key to improving the crash form and the fields to capture as well as the manual.
- Our new crash form did use MMUCC guide.

**DOT Technical Assistance Programs**
The session discussed grants available as it relates to crash information, commercial vehicle safety, information technology and data quality improvement. There will be changes to when the data goes into FMCSA and the future state will have additional data quality. An explanation on a variety of technical assistance programs was reviewed as well. Most of the information was related to DOT initiatives.

Applicability:
- The FY19 funds will be communicated this fall.
- Currently the data quality across the country is considered "good".
- FMCSA is looking at a model to predict large truck and bus crashes nationwide. Colorado is not an identified state.
- Scott Valentine is the lead on FMCSA Grants and Data quality (scott.valentine@dot.gov).
- There is a NHTSA-sponsored crash data improvement program (CDIP).

[End of Report]

# *2018 TRF Notes*

## *Milwaukee, WI – Aug 12-15*

*Joe McCarthy*

## *Next Year's Forum – August 4-7(?)*

The 2019 TRF will take place in Austin, Texas, at the Renaissance.

## *2018 Forum Presentations*

The presentations will be posted sometime soon; see http://atsip.org/meetings-events/pasttrf.html for the link to the 2018. I anticipate (based on past tradition) that the presentations will be available via:
http://atsip.org/forum2018/program/program.html

## 1) General Trends

- Seeing several states implementing the Highway Safety Manual (HSM), with some venturing into network-wide (though on-system only). Several use HSM to calculate "Potential for Safety Improvement" based on Actual Crashes – Expected Crashes; using the difference to rank locations for review.
- FHWA is seriously pushing states for the 2026 target for MIRE FDE collection. There was significant encouragement and offers of assistance, as well as underlining the requirements.
- ATSIP is looking for states that would be willing to host (and be involved in) the 2021 TRF.

## 2) Practical Data Integration (Sunday @ 3; Renee Krawiec, Zayno Nixon, Jerry Dildine, Joe McCarthy)

- There were three different presentations covering different aspects of
- Crash / driver data linkage by Renee Krawiec of WYDOT.
  - HWS is using driver data records to
    - correct crash records – DOB (age), class, etc.
    - Provide "exposure" comparison for drivers-in-crashes
  - Driver Services is using crash data records
    - Facilitate insurance verification
    - Influence driver testing
    - Inform re-exam decisions
- Crash/injury linkage by Zeyno Nixon of the Washington State Traffic Safety Commission.

- o Comparing severity by officer vs. hospital records; shows significant deviation
  - o Identify major risk factors (improper restraint, age)
  - o Provide better indication of the impacts of various behaviors (impairment, improper restraint, etc.)
  - o Look at outcomes up to 6 months after crash; especially older occupants can die from crashes after 30 days
- Crash / roadway data integration by Jerry Dildine of ITIS.
  - o Highway Safety Manual relies on many different roadway feature elements
  - o MIRE and MIRE FDE influences what states collect
  - o Location (esp. linear location) allows integration of crashes and the features
  - o The result includes
    - HSM Predictive calculations
    - Safety scoring of any segment or intersection
    - Crash/roadway queries & analysis
    - Benefit / crash reduction calculations for proposed treatments

## 3) Making Decisions with different levels of Data (Monday @ 10:30; Roche, Thomson, Gross, etc.)

- They presenters advocate network screening based on highest PSI ("Potential for Safety Improvement")
  - o Compare actual historical crashes with HSM Expected
  - o Can help focus attention on locations that are getting much more than expected
- Proposed process (from the HSM model)
  - o Establish focus
  - o Identify network and reference population (like locations)
  - o Select performance measures (crash count, crash rate, equivalent PDO, etc.)
  - o Identify partners (planning, design, enforcement, etc.)
  - o Diagnose; identify issues
  - o Select countermeasures (4Es)
  - o Quantify benefits
- FHWA toolbox has various guidance documents and software tools
  - o Search tool: https://safety.fhwa.dot.gov/rsdp/toolbox-tool.aspx?pt=-1&adv=1
- Joe's thoughts:
  - o Could expand HSM to county roads, city intersections if have additional SPFs (could get academic assistance there)
  - o If have Pareto chart of locations, can use spot analysis and treatments for the high bars, and then systemic approach for the lower bars

## 4) Lunch keynotes; Les Mlnsa Wi Patrol)

- Predictive Policing; Les Mlnsa WI Patrol
    - Use historic crashes, citations, and events to identify locations to cover
    - Started with segments in rural; going to area for urban
    - Plan to experiment this year: some troopers to "chase dots", some details to target specific areas and then monitor results
    - Contact info: leslie.mlsna@dot.wi.gov / 608-387-0234
    - Joe's thoughts:
        - Could add other data sets, such as speed measures from counters, drinking establishments (especially those known to over-serve), etc
        - Could allow officers to enter information, too ("crowd source" things like current/future events)
- CDC look at traffic safety
    - Major cause of trauma deaths
    - Web site: https://www.cdc.gov/motorvehiclesafety/
        - Tool: MVPICCS: "This tool, which now includes 2015 state data and a graphical interface, can help state decision makers prioritize and select from a suite of 14 effective motor vehicle injury prevention interventions"
        - https://www.cdc.gov/motorvehiclesafety/calculator/factsheet/index.html
    - MITRE developing a guide to help link crash/injury data; should be out around December, 2018.
    - Fund 10 injury control research centers (academic)
    - For each traffic crash fatality, 8 people hospitalized, 99 people treated and released from Emergency Department

## 5) Practical Building Blocks of Safety Analysis (Monday @ 1:30; FHWA, MassDOT, etc.)

- Roads & Highways is attracting attention, but it's a BIG PROJECT for a state to deploy
- Lots of diversity out there (e.g. ways of building roundabouts); lacking guidance / best practices
- There seems to be a Roads & Highways User group
- Jennifer Inzana of MassDOT
    - Her groups geo-locates crashes
    - Going to a new tool by VHB called IMPACT (Interactive Mapping Portal for Analysis and Crash Tracking)
    - Supports different location methods (at intersection, near intersection, address, route / RM, Lat/Long, ...)
    - Cloud based, API

- o Built in ESRI data portal, uses Jasper Reports
- Joe's Ideas
  - o Might be interesting to get a demo of that system
  - o With ARNOLD and public roads LRS, there's got to be helpful ways to geo-locate

## 6) Data Integration Roundtable (Monday @ 3:30; NHTSA, CDC, MITRE, NGA, etc.)

- Working on a roadmap to help state governor's rep / HSO on traffic safety
  - o Learning labs
  - o Integration a priority
  - o Leveraging the TRCC
  - o Robust inventory of data sources / data sets
  - o Challenges: ROI, technical staff, agency silos
- Creating a guide to start/enhance state system
  - o Focus on integrating crash / injury data
  - o "Linked Info for Non-fatal Crash Surveillance
  - o Several states have "chief data officer" they can help provide info, but don't help drive the process
  - o Will come out at end of year

## 7) Locating Crashes with SQL and DotSPATIAL (Tuesday @ 8; Jeff Dicky from LSU)

- Louisiana DOT (LaDOT) has z-coordinates on their LRS (in Roads and Highways)
- LaDOT is still evolving their Roads & Highways implementation; has been going on for a while (it's an on-going learning process)
- Tool helps extract location data from crashes, helps operator select the geo-location (GPS, route / MP, on/at)
- Use student resources; quality/pace varies but low cost

## 8) SPFs for Roadway Departure crashes (Andrea Bill of WI)

- Have identified critical parameters
- Have generated suite of SPFs
  - o By 4 facility types
  - o By functional classification
  - o By various injury severity grouping
  - o Resulted in a high number of different SPFs
- Tidbits:

- Found key factors: AADT, percentage of trucks, pavement type, barriers, horizontal curves, and rumble strips have significant contributions
- Remove outlier locations to determine SPF
- They use the difference between Actual observed crashes and Expected crashes to rank locations

## 9) Impaired Driving – Data integration results (Tuesday @ 10:00; Becky Bui CDPS)

- A study has been published
- She had integrated data from multiple sources (citations, drug test results, etc.)
- Findings:
  - THC absorbed (and influences) at different rates
    - Smoking (20%) – quick high, wears off quickly
    - Edibles (concentrates) – slow burn, stays active much longer
  - Impaired driving convictions (with positive test results)
    - 92% with alcohol
    - 89% overall
    - Only 75% with multiple drugs (not alcohol, not marijuana)
  - When drunk, very drunk:
    - 95% had BAC .08 or over
    - About half had .16 or over
- Tidbits
  - Used FRIL to link disparate data sets through "close matches" on names, etc.
- Joe's Ideas
  - The FRIL tool could be applied to driver data and crash data to resolve incorrect DL#s
  - Academic background details: https://www.ncbi.nlm.nih.gov/pmc/articles/PMC2656092/
  - Download the tool:
    - https://sourceforge.net/projects/fril/
    - https://github.com/J535D165/data-matching-software

## 10)   New Zealand – Data Driven National Safety Program (Tuesday @ 10:00; Paul Durdin)

- I only saw the tail end, but have asked for the presentation
- They produce a "stack" of proposed safety treatments for urban roads, and are able to identify the B/C ratio for each

- They found that in New Zealand, a significant portion of the fatal / serious injury crashes occurred at urban intersections, with a relatively steep Pareto curve.
- Specifically, the number of $880 M$ could be invested to reduce fatal/serious injury crashes, with an aggregate B/C ratio of 3.3

## 11) TRCC Round Table (Tuesday @ 1:45; NHTSA et al)

- There was some discussion about getting visibility of the TRCC – and what they do – on social media
  - o UMTRI (Michigan) uses extracts from the crash facts to "make data sexy" by using infographics and some text
  - o Link to partner concerns
- Tidbits
  - o NHTSA doesn't like "hit counts" as a performance measure for accessibility since it doesn't indicate whether the data is used or is useful
  - o The CDIP Guide is available as a PDF: https://crashstats.nhtsa.dot.gov/Api/Public/Publication/812419
  - o There is some guidance for Crash Data performance measures (page 145)
- Joe's thoughts
  - o If all safety data / report requests went through a web site, could track how many requested, by whom, etc. Could also capture the user and their email address
  - o Could also ask – when they download a file – to enter some info
    - ▪ Did they find the data to meet their needs? Applicable, sufficient quality
    - ▪ Could ask that they rate
    - ▪ Could include a "QC poll" link on each download report to allow the user to input feedback

## 12) Colorado's new Crash Form (Wednesday @ 8; Ryan Klitzch & Joe McCarthy)

- Discussed the approach used to update Colorado's crash form
- Some of the key points:
  - o Triple focus on Data Model, Form, and Investigator's Manual
  - o Workshops focused on particular sections of the report / particular user needs
  - o Facilitator prepared each meeting with review, MMUCC research, and recommendations

- - Capturing decisions live in meeting
  - Make a decision or set an action item
  - Ground rules
- Discussion with audience highlighted the need for regular communication to the large community (law enforcement, users, etc.)


## 13) Connecticut Safety Management (Wednesday @ 8; CT Transportation Safety Research Center)

- The CTSRC has developed a portal for the state that implements some of the steps outlined in the Highway Safety Manual, with plans to develop other components
- The whole network is processed
- Network Screening
  - The network screening provides a high level of flexibility, allowing the user to select one or more of each:
    - Crash type
    - Emphasis area
    - Injury severity
- There is some diagnostic tool support
- The rest (treatment selection, benefit calculation) is pending

# *David Bourget - CDOT*

Sunday – <u>TRCC Round-table</u>      <u>TR Strategic Planning guide</u> – Karla Houston –TRC from Louisiana; Luke Johnson – NHTSA, Richard – VHB

This session meant to get feedback to complete writing a guide to write a TR Strategic Plan as a meaningful plan for the state. Pilot of guide should be available fall - 2018

Priorities should be based on vision & mission; do we follow and use them?

Goals & Objectives – SWOT analysis – Strengths, Weakness, Opportunities, Threats

Use the guide when update Strategic Plan to develop a process to bring all stakeholders in.

Plan is not just 405C; states can request Go-Team to provide technical assistance for state. Or CDIP – is more in-depth

Each TRCC meeting address one objective/goal and exchange file reports


<u>Pragmatic TR Linkage</u> –Joe McCarthy;

Integrate data for safety projects; Link TR with safety and HSO

Linkage – match a data element between 2 files

Renee Krawiec – WyDOT –Link – DL # - Name – DOB

Benefits both sides – TR and Safety unit; used for insurance

Consider 5 years of crashes and citations; set limit like 10 crashes / 5 years

DR. Zeyno Nixon –WA – link Inj. Severity with Hospital Records- Link name (include MI) – DOB – crash date

Many units contribute to crash records; ISS –Injury Severity Score (1 to 75)

Age attributed to most of people who died later in hospital who were minor or moderate injury at scene

Almost half of people who died later in hospital were minor or moderate injury at scene

Jerry D. -WY. - Roads to Crash – Highway Safety Manual. (HSM) – predict what the crashes should be.

Segments and Intersections; integrate data to form one database.

Used by WyDOT now – expand this yr. to outside agencies. Start with HI soon.

Joe – Interface -linkage –link driver and crash files by DL # (or other fields if incorrect)

Monday Opening Session –Chris Osbourne – Tenn. SP; J.D. Lind – Wis.SP

David Pabst –Bureau of Transportation Safety- Welcome to Wis.

Wis.-house all safety departments under 1 roof - only 2 states do this

Distracted Driving- "leave your phone alone until you get home"

Dr. David Noyse –connected Vehicle. –Hold red light if detect a red light runner.

Parking and shared vehicle.-create urban space for development

Develop infrastructure as the smart highway

Roadway – solar panel for e-cars

Dr. Frank Pintar – Medical College of Wis. and CIREN Ctr. - focus on patient care

Trauma biomechanics- what happens to whole body during & after crash – funded by NHTSA

      -1 of 7 centers in USA are funded –upload data to share

Many models – use crashes - review occupants; study medical / patient data with crash data

    -    Also use crash dummies

Side airbags- were too aggressive (in the doors) – now in seat-back and less aggressive

Tree crash is hard to protect occupant - study spine impact

Snug belt on impact; limit load on belt & bags – elderly

Camera views to study ped & bike crashes

Side-front quarter- severe head & neck –no front airbag, or pushed sideways to miss airbag

Broadside- far side- no airbag deployed; study degree of oblique angle

2009 Chevy Malibu hits a 1959 vehicle – 2009 much less damage

Kathleen Haney –ATSIP president - Minn.DPS-


Mon-10:30 session – Making Decisions w different levels of data

Stuart Thompson –state safety data system - satisfy HSIP – CDOT's

Data- collect, analyze and integrate; 37 elements MIRE FDEs –required

Collect data on roads to use HSIP –federal aid roads

HSIP available for safety data improvement

Jerry Roche – HSM uses Highway Capacity Manual (HCM)

Network screening- roads with high potential for improvement – SPF analysis

Frank Gross –VHB –Safety Management – expand data for off-system; do not chase fatals

Performance Measure (PM) – look at all crash rates – combine safety, maintenance and use

Crash data, traffic, site conditions, site observations

Consider 4 E's; projects costs - include CMF and maintenance

Injury and fatality costs are available for USA (average)

Before – After –adjust for changes (ADT increase, etc.); use crash rates

Eric Green - accuracy of data – location errors are the most common errors in Kentucky

Critical Rate Factor (CRF) – 1.0 = average; use regressive to mean –empirical bias (EB)

Choose segments by highway attributes


Mon – 1:30 PM – Tribal – Tom Bragan

FARS Native American (NA) – high fatalities – 606 in 2014; American Indians & Alaska Natives (AIAN)

Tribal- tracked fatals only on tribal land; no tribes required to submit data to states or feds

1% of pop – 2% of fatalities; 4 times more likely- NA fatalities; 5 X – more likely for impaired; 4 x more likely -speeding; 5 x more likely - ped fatalities; 7x unbelted;

Population =3.74 mil NA; 7 mil –if include mixed; 567 federally recognized tribes

10 AIAN states; Oklahoma highest % NA; only 12 tribes reported crashes to the state

Golden hour – transport time from crash to hospital;

Tribal TR Assessment – group several tribes –done in person

Sample MOU available; tribalsafety.org

WA tribes want to hide data – not agree on contract

AZ – getting 7 -8 tribes recently send data

Motorcycle (MC) – Yusuf Muhamedshah -FHWA - project MCCS – 6 states – 351 crashes – 702 driver interviews; ID 5 Counter measures and states who agrees to use them

Bob Scopatz -improve MC data –AADT, safety analysis & intersection treatment (signal phasing, warning signs, high friction surfacing)

Need AADT; state can adjust CMF; can use total AADT – gives a decent estimate


3:30 PM– Ped fatalities– NHTSA – Tina Morgan

Data from FARS -2007 – 11% Ped fatalities; 2016 - 16%; ped killed every 88 min.

Oct – Dec are highest months; most – dark (75% at night); 70% male

48% - BAC more than .01% driver or ped; 32% increase in urban from 2007 to 2016;

Most non-intersection, as high as 41% in 4 states

Raghavan Srinivasan    Count-down signal (PCS) – ped safety – study – need ped volume to get CMF – look at other changes; B/C ratio as high as 23/1.

<u>Tuesday- 8 AM – Automated Vehicle</u> (AV) – Dr. Joseph Kolly -NHTSA

Advanced Driver Assistance System (ADAS) – auto braking, lane departure and ped warning, self-park

Level 0 – most vehicles on roads – no adaptive cruise control –Requires driver

Level 1 – auto acceleration & braking (adaptive cruise control) –Requires driver

Level 2 – above and steering –Requires driver –monitor at all times

Level 3 – above and monitor environment – gives driver a warning to take control

Level 4 – Self driving – on roads, but not sold to public

Level 5 - Self-driving –programmable to drive to any location – not made, yet

Harold Herrera -NHTSA– brief overview of auto-drive vehicle.

Rapid response teams – crash investigation – any crash of interest to agency – 100 crash/yr.

Tesla hits Tractor-Trailer –auto-pilot; driver responsible to take control; <u>no</u> braking by car or driver

Tesla had radar and visual detection; truck visible for 7 sec – over 1000'

Some cars record data before crash; info restricted – get from car company


<u>Tues – 10AM– Impaired driving in Colorado</u> – Becky Bui

How MJ is metabolized and time until active delta 9 dissipates.

High conviction for Alcohol for BAC >=.08 – 92%; MJ – about 65% > 5 mp


Alicia Shipley – WA College – predict impairment risk terrain – Maryland

Reworked criteria – then 72% prediction rate; try to link to aggressive driving

Need place of last drink – could be bar or liquor store

 See patterns, people repeat behavior; look to predict most likely time and place


<u>Lunch – Awards</u> – New Zealand – 2 –Best Practices and Best Visualization

Next year – Austin, TX – 2019 TR Forum – self-proclaimed live music capital; food trucks on every corner


<u>Tues – 1:45 PM – TRCC roundtable</u> – Luke Johnson - NHTSA, Karla Houston – LA TRC - use social media

Mary C. -data quality group – have analytics and GIS

Marketing needed – sell data & safety; use Facebook; keep TRCC engaged – informed

Count hits on a website as PM for accessibility - Did they use the data?

Go-team will help to write PMs –application for Go-team and manual for TR PM on web

<u>Tues 3 PM – Everyday Counts</u> (EDC) – Jeffrey King -AZ –FHWA;

Traffic Incident Manual (TIM) –safety and congestion benefit

Secondary crash – look for traffic stop, maintenance, or work zone.

Many secondary crash drivers are drunk.

EDC 4 – TIM data collection & analysis, training started in 2012

Use dispatch time, time arrived and cleared, with date – calculate time


Marty Pollock – Tenn. Highway Patrol –Change culture of LE; crash analysis and training

Effective TIM – training required to be on tow call list

Jan. 2015 –law –submit crashes electronically; locate crash accurately with GPS


<u>Weds 8 AM – Crash form revision (Colorado)</u> – Ryan Klitzsch, Joe McCarthy

Herd stakeholders; need to change because of changes in technology –cell phone, auto drive, e-crash

Data model – required elements and attributes; then form; then manual

Training - improve data quality and to use new MMUCC

Plan: ID stakeholders, 6 major workshops; approved by TRCC; then late reviews and refinements

Presently, Colorado needs acceptance by DOR/DMV for implementation

Workshop scheduled for modular review; core team & specialists (domain experts)

Ground rules: use MMUCC 4 to 5; simplify were possible –remove unused items

New elements –use MMUCC; new attributes – keep old numbering system

TRC collected/organized revision; all suggested changes reviewed by team; if discussed too long- table item to keep forward momentum


Dr. Kai Wang – Conn. – Roadway Safety Management System. – HSM (Highway Safety Manual)

Previous –look for hot spots – use # crashes; use many subdivisions and attributes -get segment SPFs

Dr. Shanshan Zhao – Network screening – analysis to find areas with best potential for improvement

Follow HSM – isolate Safety Performance Factor (SPF) wanted by choosing attributes - customize

Conn. has had basic, limited crash queries available to public for about 10 years


<u>Closing – 10 AM</u> –directions for CIREN ctr. Trip – crash test 2:30

Thank ATSIP board members and new president – will be forming committees. Thank this year's forum committee; Bob Scopaz – new secretary

Look to form next year's committee for Austin TX. - looking for volunteers