

ITRCC Data Quality Subcommittee Meeting
July 19, 2017 9:00 am
Exec Summary

Purpose: Focus on issues related to Illinois safety data quality including timeliness, accuracy, completeness, consistency/uniformity, integration and accessibility.

Discussion Topics

- Lag in crash data entry into the GIS. 2015 data not finalized until spring 2017. 2016 data still provisional
- Fatal crash information is generally accurate but there are issues with ABCO crash reports due primarily to officer errors and data entry errors.
- BSPE needs access to more crash form fields through the GIS for crash analysis including contributory factors, ped/pedal data, age, and registration state.
- Chicago DOT has concerns with past crash report accuracy and with potential errors in migrating to the new electronic crash reporting system this year.
- Difficulties in obtaining BAC data from hospitals for non-fatal crashes
- Illinois has almost all 39 MIRE Fundamental Data Elements for the state and local system. IDOT/OPP can identify all intersections and is working on a solution to specifically number intersections.
- Data gaps for safety analysis and to demonstrate the value of safety investments
 - Sign inventory (may be in new Maintenance system – AMP)
 - Guardrail (may be in new Maintenance system – AMP)
 - Changes made to crash data elements, reflected in metadata but not directly communicated to users (BSPE will work on this)
 - Other data of potential use – land use data, bike lanes, parks.
- Potential use of state/NHS roadway LiDAR data collection for such items as sign inventory, guardrail inventory, medians, vertical alignment, horizontal alignments. IDOT/OPP reviewing potential applications with costs and benefits.
- Crash report fields/data is undergoing a review with a solicitation for changes (IDOT/BSPE).
- Issues with motorcycle registration data from the SOS. SOS will review.
- Discussion of increasing data accessibility from the Safety Data Portal. A Phase 2 upgrade is currently under review by the BIP Steering Committee.
- Issues with the quality of police officer training for crash reports including greater incorporation of face to face training.
- Future areas –
 - discussion of safety data access capabilities for DOT districts, local agencies and police departments
 - initiatives to address Data Governance concerns raised in the recent Traffic Records Assessment
- The Subcommittee decided to meet every 3 months in advance of the ITRCC meeting

**ITRCC Data Quality Subcommittee Pre-Meeting
Minutes
July 19, 2017 9:00 am**

Attendees

James Hall, UIS, Chair
Katherine Beckett, IDOT/BSPE
Mark Blankenship, IDOT/BSPE
Abraham Emmanuel, Chicago DOT
Rick Ingold, IDOT/BSPE
Jessica Keldermans, IDOT/OPP
Sharon Kelly, IDOT/BIP
Bill Morgan, IDOT/OPP
Dejan Jovanov, IDPH
Kim Kolody-Silverman, CH2M
Dan Lee, IDPH
Dan Leonard, Loyola University
Mehdi Nassirpour, IDOT/BSPE
Greg Piland, FHWA

Absent

Dan Mueller, AOIC
Tom Korty, IDOT/Operations
Paul Lorton, IDOT/ISPE
Jennifer Morton, IDPH
Adelisa Orantia, IDPH
Ruth Kafensztok, Loyola University
Rod Smith, SOS

Opening Remarks – James Hall/Mehdi Nassirpour

James Hall, UIS, opened the meeting. The purpose of the ITRCC Data Quality Subcommittee is to focus on issues related to Illinois safety data quality including timeliness, accuracy, completeness, consistency/uniformity, integration and accessibility. The meeting will focus on a brainstorming session of current issues with data quality.

NHTSA Data Quality Six Pack

1. Timeliness: Information should be available within a specific timeframe to allow for meaningful analysis of the current status of the issue under investigation (e.g., the number of injury crashes at a specific location within a limited timeframe).

2. Accuracy: Information within the database should be correct and reliable in describing the data element it purports to describe. Accuracy is typically enhanced through the practice of conducting consistency checks and validations on the data being entered into the database.
3. Completeness: Information within the database should be complete in terms of all reportable instances of the event/characteristic being reported and available within the database, and all required data elements within the record should be completed with appropriate responses.
4. Consistency/Uniformity: Information collected should be consistent among all reporting jurisdictions with all reporting jurisdictions using the same reporting threshold and reporting the same information on a standard data collection form(s). Ideally, information will be reported using nationally accepted and published guidelines and standards (Model Minimum Uniform Crash Criteria (MMUCC), ANSI D.16, ANSI D.20).
5. Integration: By using common data elements, information in one database should be capable of being linked with information from other databases. An example of integration is the linkage of crash data with roadway inventory data by having a common location element in each database.
6. Accessibility: Information within the database should be readily available to all eligible users of the information

Mehdi Nassirpour discussed recent assessments and items that needed addressed including data quality. New issues arise as data use grows. He gave an example of speed data in safety analysis and potential sources of this data.

Currently looking at FARS data, Illinois has one of the highest speed-related fatality rates in the country. Based on the data published by NHTSA in 2015, about 37% percent of total fatalities (366 out of 998) are speed-related. Coding speed under the crash report is significantly different from the coding of speed under the FARS reports. There is big discrepancy between FARS and Crash Reports in terms of reporting speed data.

Data Quality Assessment Roundtable – Open Discussion

Hall opened to floor to a brainstorming discussion on current issues in data collection, data management and data usage.

Bureau of Safety Programs and Engineering

Katherine Beckett opened the discussion on several items of interest to the Bureau of Safety Programs and Engineering.

Due to staffing issues, there is a lag in entering crash data. 2015 data was not finalized until spring of 2017, and 2016 data is still provisional meaning it changes on a day to day basis in GIS.

While fatal crash reports are checked to ensure accuracy, ABCO crashes are less accurate – mostly due to errors by the police officer filling them out, or incorrect system data entry

(Examples: Milepost was correct on crash report and milepost number is in GIS, but did not match the milepost given in the crash layer, GIS crash data says crash was an overturned crash but when reading the narrative, it was a fixed object crash, motorcyclists indicated as wearing a seatbelt).

Requesting access to more of the crash form fields in the GIS crash layer which would be helpful in doing crash analysis—contributory causes, ped/pedal location, ped/pedal action, age, state where driver is registered, and model and year of vehicle if possible. Filiberto Sotelo in BSPE was looking into the issue and was given the name of Jim Colon as a contact, but has not contacted him yet. It's unknown how much of an issue would prevent bringing in the additional fields or why certain fields were limited in the first place.

Chicago DOT – Abraham Emmanuel

Abraham Emmanuel discussed issues with City of Chicago crash data reporting. CDOT is concerned with data accuracy since there is an over 30% increase in serious crashes from 2014 to 2015 and. CPD will be moving to all electronic reporting by the end of the summer. It is important to review the reports during the transition. Emmanuel indicated the officers need more training. There is an online training program for crash data entry but there are questions with its effectiveness.

Becket noted that this is a statewide problem with crash reporting errors.

Loyola University – Dan Leonard

Dan Leonard said that all hospitals may soon need to report to the statewide trauma registry which would increase the number of records available by one third.

Questions were raised about usage of trauma registry data. Trauma data is accessed for FARS data, among other uses, to obtain BAC data. However, this updated data is not incorporated into the GIS crash data layers.

There was also discussion that it is difficult to obtain BAC data from hospitals. They cite HIPPA requirements although IDOT is exempt.

The FARS data, in general, is more accurate and verified as opposed to severity level ABCO crashes.

FHWA Division – Greg Piland

Greg Piland noted that all 36 MIRE Fundamental Data Elements (FDEs) are required to be collected and used by IDOT by 2026. Bill Morgan said that all 36 FDE items are in the Illinois Roadway Inventory System (IRIS) for state and local agency roadways. There is one issue. While all intersections can be identified, there is no specific intersection identifier number (Unique Approach Identifier?). This issue is currently under review and will require an enhancement to IRIS. Hall noted that IDOT is further along in this area compared to other states.

CH2M Hill – Kim Kolody Silverman

Kim Kolody Silverman discussed data gaps from a safety analysis perspective. It would be useful to incorporate sign inventory and guardrail inventories into IRIS. Sharon Kelly from IDOT/BIP said that the revamped MMI system (AMP) is scheduled to be completed within the next year. Guardrail and sign inventory data are to be included in the new system which will be spatially tied to IRIS and the GIS. Sharon noted that they are working on standards to assess data quality. There is also a new Construction Management system which will be spatially tied to IRIS which should provide useful data.

Kolody-Silverman noted that good progress has been made in integrating data from various sources and will continue to evolve. This data is critical to assess the effectiveness of safety investments, to develop Crash Modification Factors specific to Illinois and to estimate the appropriate benefit/cost for future strategies. It can be difficult to track funding sources to link investments to specific safety improvements and associated crash and roadway data changes.

Nassirpour said it is important to use the data and to have a means to make corrections immediately when they are identified.

Kolody-Silverman also expressed interest in linking known and available data sources so that they could be used to improve analysis such as land use data, bike lanes, and parks.

Regarding communications, she indicated it would be helpful to enhance communication of crash reporting so that when changes are made we better understand the implications. For example, when a field is added it would be good to understand where this would have been assigned previously so that we analyze trends appropriately as the crash reporting continues to evolve to meet user needs. Blankenship noted that all changes are reflected in the metadata but IDOT could do a better job of communicating changes when they occur.

LiDAR Data Collection, ITAG and VMT – Bill Morgan, IDOT/OPP

Bill Morgan noted that IDOT is now collecting LiDAR data under the CRS contract for the state and NHS roadway systems. IDOT is reviewing the costs/benefits associated with collecting signs, guardrails, and median data from the LiDAR. Kolody-Silverman expressed an interest in horizontal and vertical curve information.

Bill Morgan also discussed the activities of the Illinois Technical Advisory Group (ITAG). They are looking at ways to integrate data and reduce siloed information. They are reviewing proposals to develop a functional data warehouse.

Nassirpour discussed concerns with the consistency of reported VMTs. Morgan noted that USDOT receives monthly travel information from IDOT ATR sites (primarily outside the Chicago area) which they uses to estimate VMTs. Annual VMTs are finalized with the HPMS reporting to FHWA and VMT data should not then change.

Crash Report Update – Jessica Keldermans, IDOT/OPP

Jessica Keldermans said that suggestions for updates to the Crash Report Form are currently underway with the goal to finalize by fall 2018 for incorporation into the 2019 crash reports. Current suggested changes are to add autocycle and Uber/Lyft category vehicles. Nassirpour said

changes would be MMUCC compliant for the fourth edition. Changes would be necessary for CIS and XML scripts for vendors. Keldermans will schedule an initial meeting and solicitation of changes.

Vehicle Registration – Donna Cooper. SOS

Nassirpour discussed concerns with the quality of motorcycle registration data which is now lumped into an “other” category. Donna Cooper will address this concern. Nassirpour will send a list of items to review.

Safety Data Portal – Jessica Keldermans

There was discussion on who has access to data through the Safety Data Portal. All county engineers have access. Some MPOs have requested access. There is a request to the BIP Steering Committee to develop Phase 2 of the Safety Data Portal. It was noted that it is important to survey users to know who uses the data and how they use it.

Training – Mark Blankenship, IDOT/BSPE

Several members of the subcommittee expressed concerns with the quality of training. Mark Blankenship said it is important to go to the source and there is a need for a permanent training staff. Emmanuel said that training should be continuous and face to face is important. Rick Ingold mentioned importance of reviewing data as the reports come in.

Regarding ISP training, Greg Gifford of BSPE should be able to help. If/when training occurs, officers should also be shown why accuracy matters, uses of crash reports, and specific products for decision making (heat maps, RSAs, HSIP projects).

Future Topics

There was discussion of reviewing the safety data access capabilities of local agencies, DOT district offices and law enforcement. Counties currently have access to heat maps displaying emphasis areas. Districts have access to the safety data through GIS. Is this access sufficient? What could be improved?

Nassirpour noted that Data Governance is a significant issue as identified in the recent Traffic Records Assessment and that this topic should be investigated further.

The Data Quality Subcommittee agreed to meet on a 3-month cycle, in advance of the ITRCC meeting. The agenda could focus on specific data quality topics. Others could be invited depending on the topic.