NHTSA Request for Information

Data Standardization and Modernization of Information Technology

Connecticut Department of Transportation

(1) What are the State's current methodologies for collecting and standardizing statewide crash data electronically in a central repository?

The Connecticut Department of Transportation (CTDOT) uses the Traffic Records Coordinating Committee to assist the state in standardizing the form. In 2012, the State setup a project to create an electronic form and submission system. The CTDOT partnered with the University of Connecticut (UConn) to accomplish this. A form was created using MMUCC 4th edition and an XML schema was established which software vendors in the State had to conform to when submitting data. A central repository was setup at CTDOT to collect, validate, and QA/QC the crash data. Crash data vendors can collect the data in any way they wish as long as their XML export conforms to the XML schema and has been validated using the edit and validation rules. XML files that do not meet this standard are rejected and returned to the police department as well as the software vendor with an email stating why the report was rejected. CTDOT is waiting for MMUCC 6th edition to be released to revise the crash form and database again.

(2) NHTSA relies on MMUCC to establish a standardized data set. What steps are required for the State to meet this standardization?

Connecticut is 97.9% MMUCC 4th edition compliant. We updated our form in 2015 to the latest MMUCC standard at the time, adopting nearly 100% of MMUCC guidelines. We did not add County to the form as Connecticut does not use a county system, and PDs refused to add Toxicology test results to the crash form as it is information relevant to criminal cases and they claimed HIPAA protection. We are planning to update the crash form to the MMUCC 6th edition once it is released.

    a. **Please provide an estimated timeline to implement MMUCC standardization.**

    Connecticut is looking to start MMUCC 6th edition planning and updates as soon as it is released. We expect that it will take 2 years of planning and revisions to implement MMUCC 6. We have a tentative go live date of January 1, 2025. Connecticut just passed legislation HB 5288 in the spring 2022 session to establish a task force to plan the timeline and scope of changes to the state crash report form and system. https://portal.ct.gov/-/media/DOT/documents/dhighwaysafety/TRCC/Bill-No-5288_Task-Force-for-Vehicle-Accident-Form.pdf

b. What would it cost the State to move toward this data standardization?

When Connecticut made this update in 2015, we updated the form, database, collection methods, edit and validation rules, analysis tools and reports, and then had to retrain the entire police force in the state to collect crash data. The estimated cost for this update was $3M in 2015.

(3) If the State does not have a centralized statewide crash data repository, describe what the State will need to establish the infrastructure; processes and procedures; information technology requirement; and training, to support this data modernization effort?

Connecticut already has a central repository for all crash data. We are working on a central repository for the other six pack data systems. To achieve this UConn has setup a data warehouse to store and link this data.

(4) Explain what the State will need to establish the infrastructure; processes and procedures; information technology requirement; and training to implement an electronic data transfer protocol.

Connecticut already has 100% electronic crash collection. But we are working on 100% electronic citation data collection. The State is also looking to make the fatal crash report supplement (PR2) fully electronic as well. Connecticut is an EDT state and transfers data to NHTSA nightly.

(5) How long would it take for the State to establish a centralized statewide crash data repository and to implement an electronic data transfer protocol?

This already exists in Connecticut but will need to be substantially updated when the new crash form is designed and deployed in January 2025.

(6) What are the State's estimated costs associated with establishing a centralized statewide crash repository to support an electronic data transfer protocol?

Establishing the database is minimal cost. The major cost comes in when edits to the form are needed. We expect that the changes to the crash report form will cost Connecticut roughly $2.5M over the next 2 years to update from MMUCC 4 to MMUCC 6.

(7) Explain the challenges associated with establishing a centralized statewide crash repository that supports an electronic data transfer protocol. Elaborate on the State's needs to overcome those challenges.

In 2015 the major challenges were focused around establishing the new form and then the supporting documentation and processes for electronic submission. The physical IT infrastructure was the easy part but did require substantial funding to purchase the physical servers and the necessary software. The

major challenge was the requirements for electronic submission that needed to be developed. These included the development of:

- Crash Investigator's Guide
- Data Dictionary
- XML schema
- Edit and validation rules
- Database design
- Vendor certification process
- Training materials
- File transfer protocols and SFTP site to collect XML files
- Import and export protocols to transmit and receive crash data
- Data sharing agreements with state, federal, and private partners (FMCSA, NHTSA, Carfax, Experian, etc.)
- Fillable PDF to permit electronic crash data collection even if the PD does not have a vendor

The system is continually maintained by CTDOT IT and issues addressed as they arise, or minor revisions made as necessary.

Law Enforcement Electronic Crash Reporting

(8) What percentage or number of the State's law enforcement agencies collect motor vehicle traffic crash information using an electronic crash report/records management system?

100%

a. Are all law enforcement agencies in the State collecting motor vehicle traffic crash information via an electronic crash report/records management system using the same application?

No. Each police department can use a vendor of their choosing. We also provide a fillable PDF that a PD can use to collect crash reports even if they do not have an electronic crash data software or vendor. This is a free option to police departments. The only requirement is that the police departments are required to submit crash data to the CTDOT within 5 days of a completed report. We worked with each vendor to get them certified and ensured that the XML export from their crash system (or the export from the fillable PDF) conformed to the state standard. Once a vendor was certified to submit data, we monitored their daily submissions for errors or warnings and email the PD and vendor of any reports that fail to import into our system.

b. For law enforcement agencies collecting motor vehicle traffic crash information using an electronic crash report/records management system, what application is used?

Each PD can use a vendor of their choosing. There were 17 different vendors in the state in 2015. We are down to less than 8 now through consolidation in the industry. NEXGEN is a

local Connecticut company that has the majority of PDs including the State police. There is also Hunt, Central Square, and Tritech which have customers in the state. Motorola Premier Solutions is a new vendor in Connecticut which one PD is currently transitioning to.

(9) What percentage or number of law enforcement agencies solely use paper crash reports in the crash reporting process?

0%

a. If so, are these paper reports coded into the centralized statewide crash repository?

   N/A

b. Describe any law enforcement's reservations for participating in electronic crash reporting to document motor vehicle traffic crash information?

N/A

c. Specify the needs and costs for law enforcement agencies to adopt electronic-crash reporting to document motor vehicle traffic crash information?

When Connecticut moved to 100% electronic crash data, we had several PDs that did not have laptops or mobile data terminals in their cars. So they had to hand write the reports and then transpose them into the fillable PDF back in the station at the end of their shift. The e-Crash movement prompted them to update their cruisers to have MDTs.

Data Management

(10) Does the State have a conceptual or notional design of how the data would flow into a centralized statewide crash data repository? If so, please elaborate.

This is the current dataflow for our e-crash system. We hope to update this to a webservice and get away from the FTP model when we update to MMUCC 6.
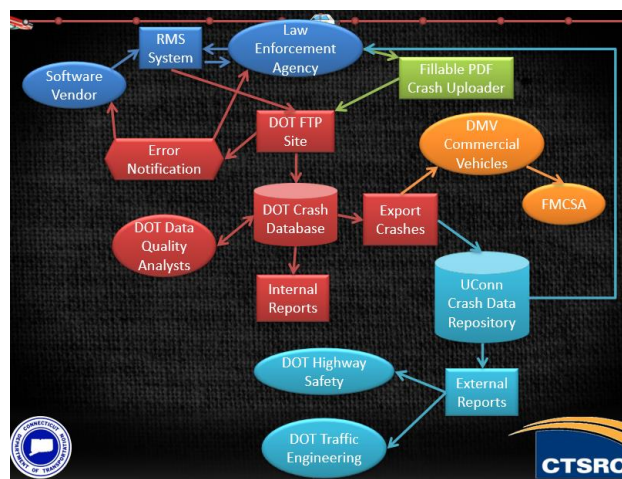
(11) If the State currently participates in NHTSA EDT protocol, does the State have written operating procedures for managing the data flow? If so, please submit the data flow or the operational structure.

Connecticut is an EDT State and submits data to NHTSA on a nightly basis.

(12) Does the State, in its crash data, distinguish between crash types between self-reported and police reported crashes?

Connecticut does not allow for self-reported crashes. 100% are officer reported and investigated crash reports.

(13) Does the State include variables to identify State-reportable vs. non-reportable crashes?

CT Gen Stat § 14-108a (2020) outlines the definition of a reportable crash. Any crash with more than $1,000 in damage or any injury is required to be documented on the PR-1 crash form. We do collect private property crashes if the PD submits them to the CTDOT, but they are not required to do so. Those crashes are marked private property and can be accessed in the database and in our analysis tools.

Data Accessibility to the Public

(14) Please provide recommendations on the format types for publicly available State crash data.

Connecticut makes all our data publicly available with the exception of personal and private information and data fields (this includes the narrative which may or may not include PPI). The public can use our web application called the Connecticut Crash Data Repository (CTCDR) (www.CTCrash.uconn.edu) where crash data from the CTDOT can be queried, analyzed, and downloaded in a number of different formats. Charts, graphs and tables can be exported in PDF, JPEG, EXCEL, and CSV formats. Raw crash data at the summary, vehicle, person and Trailer level can be exported out in a CSV file and then opened in a stats package of the user's preference.

(15) What State products and services that include State crash data does the State find are most helpful to the public?

The crash data repository is very helpful for the general public as well as the media. This has dramatically decreased the requests for data in the CTDOT's Highway Safety Office. People can now get nearly real time crash data as the CTCDR is updated nightly. Under the paper system the back log was 24 months of data entry and only 1/3 of the form was entered into the central database. This access to data has increased the use of data and analysis that are being conducted in the State on a daily basis.

(16) Please advise if the State is interested in modernizing and standardizing its State crash system?

Connecticut is planning to update and upgrade our crash system as soon as MMUCC 6th edition is released and possibly upgrade to a web-based system. This will require an entire rewrite of the crash system from the form to the database and collection methods, all the way down to the crash data repository and analysis methods. This is not a small undertaking and Connecticut plans to perform these updates with every other release of MMUCC, or at 10-year intervals since the lift is so significant for all involved in the update process.