

ATSIP 2013 Traffic Records Project of the Year

Best Practices Nomination

Part 1 - Project Summary

Project Title: Crash Data Repository

Project Description:

The Crash Data Repository (CDR) is a collaborative project between the Department of Transportation and Public Facilities (DOT&PF), the Department of Administration's (DOA) Division of Motor Vehicles (DMV), and the Department of Public Safety (DPS) to archive crash reports to meet the State of Alaska retention schedule and to distribute crash reports electronically to qualified recipients. The CDR replaces the current law enforcement paper crash reports with an automated crash data distribution system.

Nominating Person Contact Information:

Name: Jack Stickel

Title: Transportation Information Group Manager

Agency and Office: Program Development Division, Alaska Department of Transportation and Public Facilities (DOT&PF)

Address with City, State, ZIP: P.O. Box 112500, Juneau, AK 99811-2500

Telephone: (907) 465-6998

FAX: (907) 465-6984

E-Mail: jack.stickel@alaska.gov

Project Manager Contact Information:

Name: Jonathan O'Quinn

Title: Data Processing Manager

Agency and Office: Division of Motor Vehicles, Department of Administration (DOA)

Address with City, State, ZIP: 619 East Ship Creek Avenue, Suite 220, Anchorage, AK 99501-1610

Telephone: (907) 269-6723

FAX: (907) 269-5443

E-Mail: jonathan.oquinn@alaska.gov

Lead Agency for Project: Division of Motor Vehicles / DOA

Participating/Cooperating Agencies:

- Division of Motor Vehicles, DOA
- Alaska State Troopers, Department of Public Safety (DPS)
- Transportation Information Group, DOT&PF

- Measurement Standards, Commercial Vehicle Enforcement (MS/CVE), DOT&PF

National Agenda for the Improvement of Highway Safety Information Systems Goals:

2. To involve the coordination among various organizations with a responsibility for highway transportation safety policy:

The Crash Data Repository is a collaborative initiative among State of Alaska agencies tasked with highway safety. The CDR project provides a centralized distribution of crash reports to qualified agencies for safety programs that include:

- Alaska Highway Safety Office grants and programs
- DMV driver history evaluation and driver insurance validation
- Fatality Analysis Reporting System (FARS)
- Federal Motor Carrier Safety Administration (FMCSA) SafetyNet commercial vehicle database management system
- Highway project planning and design
- Highway Safety Improvement Program (HSIP)
- Strategic Traffic Safety Program (STSP)
- Trauma Registry / Emergency Medical Services

4. To represent examples where and managers and users of highway safety information have utilized resources to select the appropriate technology to meet the information needs:

- DOT&PF, DOA/DMV, and DPS developed the Crash Data Repository using an intelligent transportation system (ITS) engineering approach. The Concept of Operations established the CDR vision and work plan.
- The CDR leveraged the TraCS deployment advances and internal quality assurance capabilities to maximize crash data quality.
- DOT&PF funded the CDR project through reimbursable service agreements with DPS and DMV, allowing their information technology (IT) staffs to develop the appropriate IT infrastructure for the CDR and ESB.

6. To promote the use of technical standards for characteristics of highway safety information systems:

The CDR uses established standards and forms that include:

- Crash Data Form, Jan 2013 (MMUCC 4th edition compliant)
- Extensible Markup Language (XML) Schema for Crash Data Transfer

- Model Inventory of Roadway Elements, Fundamental Data Elements (FDE)
- Model Minimum Uniform Crash Criteria (MMUCC), 4th edition (2012)

Reference the priority in your traffic records strategic plan to which this project applies:

Alaska Traffic Records Coordinating Committee (ARTCC) Traffic Records Strategic Plan: October 1, 2013 – September 30, 2014.

Goal 2 – *Improve the timeliness of traffic records data collection and sharing.*

Objective 2 – *Improve the timeliness of Crash Records Data System data collection and transmittal by December 21, 2014*

Project Cost: planned \$: 515,218 actual \$: 515,218

Extent of Project Implementation:

The CDR improves upon the previous law enforcement paper crash report form business processes. A new MMUCC 4 compliant law enforcement crash report form was deployed 1 January, 2013. The Anchorage crash reports, which are approximately 55 percent of Alaska’s crash reports, have been received for 2011 and 2012 with the previous crash form. When Fairbanks implements their proprietary electronic crash reporting system in 2013, all but significant local governments will be submitting crash reports electronically. When the CDR implements the MMUCC 4 compliant crash form later this year, approximately 95 percent of the Alaska’s crash reports will be electronic.

Summary of Project Benefits:

Electronic crash reports are available in a matter of months rather than the 18-24 months for the paper report. This timeline is critical to DOT&PF developing crash countermeasures in the Highway Safety Improvement Program (HSIP) project selection to reduce major injury and fatal crashes and for addressing unsafe commercial vehicle operations. The multi-stakeholder Strategic Traffic Safety Plan emphases area performance will benefit from the improved crash records. The CDR will remove significant delays for DMV in financial responsibility evaluation, mandatory insurance checks, at fault driver determination, and unsafe driver removal from the road. The CDR will significantly improve the DOT&PF and DMV crash program operations. Estimated savings for the first full year of operation are \$100,000-\$150,000 for DMV staff time and \$30,000 for the DOT&PF data entry contract.

Part Two: Project Detail

Project Description:

Overview

The Crash Data Repository (CDR) is a collaborative project between the Department of Transportation and Public Facilities (DOT&PF), the Department of Administration Division of Motor Vehicles (DMV), and the Department of Public Safety (DPS) to archive crash reports to meet the State of Alaska retention schedule and to distribute crash reports electronically to

qualified recipients. The CDR replaces the current law enforcement paper crash reports with an automated crash data distribution system that leverages the Traffic and Criminal Software (TraCS) and other proprietary automated crash reporting systems.

Key Participating Agencies

Transportation Information Group (TIG), DOT&PF. The TIG crash processing staff quality checks each report, assigns a route/milepoint crash location in a linear reference system (LRS), and stores the crash elements in the Department's crash database for use by anyone with the proper credentials.

Measurement Standards/Commercial Vehicle Enforcement (MS/CVE), DOT&PF. MS/CVE is required by the Federal Motor Carrier Safety Administration (FMCSA) to upload all commercial motor vehicle related crashes to the SafetyNet, FMCSA's database for reducing the number and severity of crashes involving commercial motor vehicles. On the state level, MS/CVE analyzes crash data to assist in planning deployment of enforcement efforts.

Division of Motor Vehicles, DOA. DMV is the official State of Alaska repository for crash reports. Alaska Administrative Code (AAC) 04 AAC 59.015, Agency Records Retention Schedule, requires DMV to prepare a retention schedule and retain crash reports for seven years. The reports provide for driver safety analysis, minimum insurance requirement checks, and providing copies to the public upon request. The current paper forms are difficult to quickly retrieve, consume considerable storage space, and require extensive staff time.

Alaska State Troopers (AST), DPS. AST manages the TraCS program and maintains a TraCS server to manage the electronic crash reports from both the DPS detachments and local governments participating in the TraCS program. These agencies use the TraCS capabilities to complete multiple forms at the crash scene, which include the crash and citation forms.

Project Scope

The CDR project provides capabilities for multiple agencies and multiple independent systems work together to facilitate electronic crash reporting, routing, storage, retrieval, and publishing. The CDR architecture consists of:

Automated Crash Reporting Systems. The CDR leverages the TraCS and proprietary law enforcement crash reporting systems. TraCS law enforcement agencies submit their reviewed crash reports to a centralized TraCS server, which routes the crash reports to the CDR. The proprietary crash reporting agencies have developed export applications to electronically submit crash reports to the CDR.

Enterprise Server Bus. An enterprise server bus (ESB) routing tool accepts electronic crash reports from the TraCS server and proprietary crash reporting systems. When the crash reports are committed to the CDR, the ESB distributes electronic crash reports to authorized subscribers. The two DOT&PF work centers are the only end user to receive the reports at this time.

Crash Data Repository (CDR). DMV’s CDR receives and archives all crash reports and provides access tools for DMV staff to manage the electronic crash reports and access as needed for their business processes

DOT&PF Interfaces. The TIG and MS/CVE have developed automated interfaces that accept crash reports that have been electronic transferred by the ESB. The TIG interface receives the data automatically, commits the report to a relational database, performs initial crash data processing, and makes the crash report available to DOT&PF staff for validation, editing, and commitment to the transportation databases. The MS/CVE interface automatically accepts the crash reports and stores the reports to allow MS/CVE staff to select those reports involving commercial vehicles for analysis and reporting.

Describe the major process steps for your project, including any unique aspects that enhanced success:

1. A multi-agency working group composed of DPS, DOA/DMV, and the two DOT&PF work centers designed the CDR. DOA/DMV and DPS developed and deployed the CDR. The working group collaborated throughout the life of the project.
2. DOT&PF, DOA/DMV, and DPS developed the Crash Data Repository using an intelligent transportation system (ITS) systems engineering approach. The Concept of Operations addressed stakeholder needs, system architecture, operational roles and responsibilities, system constraints, a work plan, cost estimates, and scenarios demonstrating the functionality of the deployed system.
3. DOT&PF funded the project through reimbursable services agreements with DPS and DMV. The sources of the funds include safety sanction 402 and the surface transportation program. DOT&PF developed their CDR interfaces through internal resources.
4. The project leveraged the TraCS deployment advances and built-in quality assurance capabilities. To the extent possible, the agencies are working with the proprietary system developers to establish a consistent quality assurance approach with their systems.

Provide the evidence and reasoning used to determine the success of the project:

The success of the Crash Data Repository project can be viewed in terms of the National Highway Traffic Safety Administration’s (NHTSA) six-pack of measures for crash data quality:

1. Accessibility
 - Provides electronic access to crash records for analysis and form generation rather than the laborious, time consuming manual search through paper forms.
 - Reduces personnel time in not managing and storing paper forms.
 - Allows authorized DMV employees in 17 Alaska locations access to crash reports instead of the current one in Juneau.

2. Accuracy

- Leverages the quality assurance in TraCS and other proprietary electronic crash reporting systems
- Improves reporting in downstream information systems by avoiding erroneous entry from hand-written forms and human error redundant data entry

3. Completeness

- Provides access to the collision narrative and collision diagram in addition to the crash data elements for crash analysis and highway safety programs.
- Provides measures of report completeness and feedback to law enforcement to improve their reporting processes.

4. Integration

- Improves crash locations in a LRS (route/milepoint) through standardized collision diagrams, improved legibility, and TraCS spatial coordinates for crash locations
- Integrates with the DOT&PF geographic information system and digital image application to meet the MAP-21 crash analysis on all public roads requirement.

5. Timeliness

- Improves the timeline to have crash reports available from 18-24 months to less than two months for the STSP, HSIP, SafetyNet, and DMV operations.
- Eliminates the DOT&PF/TIG data entry step for most law enforcement crashes.

6. Uniformity/Consistency

- Eliminates legibility and internal field consistency issues
- Leverages the TraCS and other proprietary electronic crash reporting drop down menus and internal field edit checks.

Why should this project be recognized as a best practice in traffic records?

The CDR collaborative project provides significant outcomes: reduced contractual and personnel costs, improved internal business operations and work flow, and better crash data. The most significant achievement for the CDR project is the sharply improved timeliness of having crash reports available in less than two months rather than 18-24 months. Additionally, the use of intelligent transportation system engineering principals provided project focus and vision, and provided an in-depth analysis at the constraints.

I would like to have this project considered for presentation during one of the forum sessions

 X Yes, oral presentation X Yes, poster presentation _____ No