

Crash Data Past, Present, and Future

Andrea Bill



Wisconsin Traffic Operations and Safety Laboratory



Audience



- Law Enforcement?
- Analysts?
- Education?
- IT?
- Dispatchers?
- Other?





Past

- MV4000
- Training
- Paper
- Present
- TraCS
- WisTransPortal
- Future
- Crash Data 2.0









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Paper crash report backlogs in Texas. (GAO-10-454)





People & Training

Law Enforcement Officer's Instruction Manual for Completing the Wisconsin Motor Vehicle Accident Report Form (MV4000)



1998 Edition

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Division of Motor Vehicles Bureau of Driver Services Traffic Accident Section BDS 122 198 According to the CDIPG, one refrain commonly heard from police is that "crash forms are being completed just for insurance companies"

WisDOT MV4000 Instruction Manual Primary training resource for WI officers Last updated in 1998 Brief and vague concerning engineering fields

No baseline definition of when to flag hills or curves

Poor definition of traffic barrier

No discussion of roundabouts



Wisconsin Traffic Operations and Safety Laboratory



Present





Help Screens

TraCS has built-in help screens that can be accessed for a data field by pressing the <F2> key. Help is available for each of the forms in the suite. The Help button on the toolbar brings up information about the TraCS software, in general.





Engineering Elements Data Quality Audit

- Low accuracy for access control at partially controlled facilities indicates a lack of understanding by officers for what qualifies as partial control
- When hills or curves are present on at least one approach, officers are flagging them even when they are not the site of the crash, which is incorrect
- Low traffic-way accuracy is a result of misunderstanding what constitute divided roadways and barriers
- Roundabout-specific inaccuracies were especially
 noteworthy in the horizontal curve and traffic-way fields





WisTransPortal Overview

Objectives

- Archived Data Management
- Real-Time Data Exchange
- Centralize Access to Data
- Data / Systems Integration
- IT Test Bend Environment



Research / Government Shared Objectives





WisTransPortal Overview

- Data Sources
- Traffic Data
- Crash Data
- Traffic Incidents
- Lane Closures
- Traffic Video
- ITS Inventory
- Road Weather Data
- Roadway GIS Inventory







WisTransPortal Software Systems

Crash Data Retrieval Facility

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Query retrieve statewide MV4000 crash data (1994-present) and police crash reports (2000-present). Data is updated on a monthly basis through coordination with WisDOTDMV. Adding highway and local road GIS crash map in 2012.

InterCAD Traffic Incident Data



Wisconsin State Patrol dispatch to Statewide Traffic Operations Center control room traffic incident data exchange. Provides realtime data transfer, GJXDM to IEEE 1512 XML translation, and incident data archiving. Adding Dane and Waukesha Counties in 2012.

V-SPOC Traffic Detector Data



Query and retrieve freeway traffic detector data from the WisDOT Statewide Traffic Operations Center (STOC). Contains a complete archive of detector data from the STOC since 1996. Database is updated on a 24-hour basis.

LINK Freeway Traffic Video



Agency video-sharing and real-time traffic conditions. Provides webbased access to WisDOT traffic video for public safety, emergency services, towing, media, and others. Connects directly to WisDOT CCTV network through the ITS fiber backbone (ITSNET).

Wisconsin Lane Closure System

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Online acceptance and reporting system for lane closures and restrictions statewide. Tracks closure details for all construction, maintenance, permit, special event, and emergency closures on major state highways. Sends closure data in real-time to 511.

TIA Traffic Incident Alerts



Statewide traffic incident notification system. Sends email, fax, and Twitter alerts to the media and others. Also handles traffic related media releases and EOC activation alerts. Jointly administered by the Statewide Traffic Operations Center and Wisconsin State Patrol.





Wisconsin MV4000 Crash Data



Wisconsin Traffic Operations and Safety Laboratory The WisTransPortal Project

The WisTransPortal crash database contains information on all reported crashes in Wisconsin from 1994 through the current year. The <u>Crash Data User Guide</u> provides definitions for most data elements available through the online system. Complete information on the WisTransPortal crash database is available from the Crash Database Documentation page. User feedback is welcome. Please send comments to crash-data@topslab.wisc.edu

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Crash Data Retrieval Facility, Version 1.1.16, July 13, 2011

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 Summarize Data
 Show RP Map
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Crash Data User Guide (PDF)

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Department of Civil and Environmental Engineering University of Wisconsin-Madison

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Wisconsin MV4000 Crash Data



Crash Reports (2008) and Statewide GIS Crash Map (2012)











Future

- New Crash Elements and Attributes
- 2012
- Brown County Sheriff,
- La Crosse County Sheriff,
- City of Madison,
- City of Milwaukee,
- Wisconsin State Patrol, and
- Oneida Tribal Police.

MMUCC Guideline Model Minimum Uniform Crash Criteria

Fourth Edition (2012)





Crash Data Work Group

DMV
DSP
DTIM
DTSD
DBM









- Weed out fields that had become obsolete and identify others that were not being collected (i.e. roundabouts or cell phone use)
- Form is more intuitive and that there is a great savings at both the state and local level by gathering correct and accurate data
- Easily describe what happened (i.e., cell phone usage, roundabouts, cross median crashes)





Work Zone

		LANE CLOSURE
		LANE SHIFT/CROSSOVER
NEW	TYPE OF WORK ZONE	WORK ON SHOULDER OR MEDIAN
		INTERMITTENT OR MOVING WORK
		OTHER
		NO
NEW	WORKERS PRESENT	YES
		UNKNOWN
		NO
NEW	LAW ENFORCEMENT PRESENT	OFFICER PRESENT
		LAW ENFORCEMENT VEHICLE ONLY PRESENT





Scene Management

NEW	LANE CLOSUDE	YES				
	LANE CLOSURE	NO				
		FULL CLOSURE				
NEW	TYPE OF CLOSUPE	CLOSURE - ONE DIRECTION				
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		TOW TRUCK				
		EMS				
NEW	DEASON FOR CLOSUDE	MED FLIGHT				
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		SECONDARY CRASH				
		OTHER				
NEW	TIME INITIAL LANE/ROAD	TIME ROAD CLOSED (SAME AS TIME ARRIVED)				
1.2.0	CLOSED (MILITARY TIME)					

CURRENT FIELD #	FIELD NAME	NEW CODES AND FORMATTED VALUES
NEW	TIME ALL LANES OPEN (MILITARY TIME)	TIME ROAD/ALL LANES WERE OPENED
NEW	DATE SCENE CLEARED	DATE THE SCENE WAS CLEARED
NEW	TIME SCENE CLEARED (MILITARY TIME)	TIME SCENE WAS CLEARED





Pedestrian

Non-Motorist Location at Time of Crash
(New MV4000)
→Blank
Intersection – Marked Crosswalk
Intersection – Unmarked Crosswalk
Midblock – Marked Crosswalk
→Median/Crossing Island
Travel Lane – Other Location
Bicycle Lane
Shoulder/Roadside
Intersection – Other
➡Driveway Access
►Non-Trafficway Area
Shared-Use Path or Trail
→ Sidewalk
Other
Unknown





Helmet Use	Unknown	The type of helmet used at the time of the crash		
	Full Face			
	No			
Helmet Compliance	Non Approved	This identifies if helmet was DOT		
	Approved	compliant at time of crash		
	UNKNOWN			
Eye Protection	Yes: Worn	The type of eye protection that was		
	Yes: Windshield	worn at the time of the crash		
	Yes: Worn and Windshield			
	No			
	Unknown			
Tint compliance	Yes	This identifies if helmet was tint		
	No	compliance at time of crash		
	Unknown			
Protective Gear	Reflective	This identifies what protective gear		
	Gloves	was used at the time of the crash		
	Boots			
	Jacket			
	Long Pants			
	None			
	Unknown			





CURRENT FIELD #	FIELD NAME	NEW CODES AND FORMATTED VALUES	
		NOT DISTRACTED	
		MANUALLY OPERATING AN ELECTRONIC COMMUNICATION DEVICE (TEXTING, TYPING, DIALING)	
		TALKING ON HANDS-FREE ELECTRONIC DEVICE	
		TALKING ON HAND-HELD ELECTRONIC DEVICE	
		OTHER ACTIVITY, ELECTRONIC DEVICE	
		PASSENGER	
		OTHER INSIDE VEHICLE (EATING, PERSONAL, ANIMAL, HYGIENE, ETC)	
		OUTSIDE THE VEHICLE (INCLUDES UNSPECIFIED EXTERNAL DISTRACTIONS)	
		VEHICLE TECHNOLOGY	
		UNKNOWN IF DISTRACTED	
		LOOKED BUT DID NOT SEE	
		BY A MOVING OBJECT IN VEHICLE	
	OPERATOR	WHILE TALKING OR LISTENING TO CELLPHONE	
INE W	DISTRACTED BY	ADJUSTING AUDIO OR CLIMATE CONTROLS USING OTHER COMPONENT/CONTROLS INTEGRAL TO	
		VEHICLE USING OR REACHING FOR DEVICE/OBJECT BROUGHT INTO VEHICLE	
		DISTRACTED BY OUTSIDE PERSON, OBJECT, OR EVENT	
		EATING OR DRINKING	
		SMOKING RELATED	
		OTHER CELLULAR PHONE RELATED	
		DISTRACTION/INATTENTION	
		DISTRACTION/CARELESS	
		CARELESS/INATTENTION	
		DISTRACTION DETAILS UNKNOWN	
		INATTENTION DETAILS UNKNOWN	
		LOST IN THOUGHT/DAYDREAMING	
		OTHER DISTRACTION	





Crash Database - Objectives

- Implement the Revised Crash Form
- Streamline Crash Data Processing
- Modernize the Data Management System
- Improve Crash Data Quality MMUCC / MIRE
- Take Full Advantage of the TraCS Incident Locator Tool (ILT)
- Enhance Crash Data Access and Interoperability
- Linking the Old and New Crash Data
- Support More Frequent Updates to the Crash Form



Wisconsin Traffic Operations and Safety Laboratory



Crash Database - National Perspective

- The Performance "Six Pack"
 - Timeliness
- Accuracy
- Completeness
- Consistency
- Accessibility
- Integration



Traffic Safety Information Systems





Crash Database - Components

- Oracle Database 12c Enterprise Edition
- TraCS Web Services
- Web Based Resolve System





Java Application Framework







Crash Database - **Timeline**

Elements and Attributes	March 2015
High Level Requirements	June 2015
Crash Data Dictionary	September 2016
Revised TraCS Crash Form	December 2015
Database System Development	October 2015 – June 2016
Testing and Acceptance	July 2016
Law Enforcement Training	August – October 2016
Law Enforcement TraCS Patch	October – December 2016
Go Live	January 1, 2017





Crash Database - Future

- Improve Crash Mapping and Analysis Capabilities
- Include Photos & Attachments to the Crash Report
- Linkages to Federal Systems (FARS, FMCSA)
- Linkages to External Data (EMS, Roadway)
- Include Additional TraCS Forms
- Research and Innovation
 - To enable analysis and decision making through downstream application





All crash reports will need to be submitted electronically through TraCS 10 as of January 1, 2017 on the new crash report form.

- Agencies that currently do not have TraCS or are not using TraCS 10 should e-mail <u>badgertracs@dot.wi.gov</u> with questions.
- Training will be available and provided to law enforcement agencies across the state in the second half of 2016.



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