MDOT SAFETY TOOLS

JANUARY 2015

Plan Development Tools	Contact	Phone	Email	Description of Tool	Use	Link
Roadsoft (RS)	Heidi Spangler	517.241.4727	SpanglerH@michigan.gov	Roadsoft is a roadway asset management system for collecting, storing, and analyzing data associated with transportation infrastructure. Built on an optimum combination of database engine and GIS mapping tools, Roadsoft provides a quick, smooth user experience and almost unlimited data handling capabilities. Significant input from safety professionals around Michigan have shaped the program into a viable options for basic safety analysis and data retrieval.	Roadsoft is used for obtaining crash information for safety analysis. Analysis includes crash mapping, intersection and segment ranking, UD-10 extraction, and filtering of various crash types. Roadsoft is currently under future development to be used as the primary MDOT crash analysis tool replacing TMS and CRIS in 2016.	http://www.roadsoft.org/
Safety Analyst (SA)	Dean Kanitz	517.335.2855	KanitzD@michigan.gov	An application of Part B of the Highway Safety Manual (HSM) that uses available roadway features, crash and volume information to determine the expected, or excess performance of intersections, segments, ramps and interchange areas. This expected or excess performance measurement allows for determination of locations that have more safety potential than others. MDOT has developed the ability within this program to screen for locations relative to many of the current SHSP focus areas.	Safety Analyst is used to determine a list of locations through network surveillance with an enhanced need for safety. The software applies HSM practices to each intersection, segment and ramp in the respective analysis. Main uses are for the biennial high crash and transparency reports. Currently the software is only established to use Trunkline information.	http://www.safetyanalyst.org/
Transportation Management System - Safety Module (TMS) Crash Reporting Information System (CRIS)	Bob Rios	517.335.1187	RiosB@michigan.gov	This legacy system is the current backbone of obtaining information for safety analysis. The Safety Management System within TMS provides a location by location summary of crash data and a general view of the raw data. The Crash Reporting Information System (CRIS) within TMS provides a more detailed view of the crash data along with the ability to export data files.	TMS is used to extract UD-10 crash reports and one line crash listings for specific locations.	
Michigan Traffic Crash Facts (MTCF)		517.241.1505	mtcf-info@umich.edu	This website is hosted by the University of Michigan Transportation Research Institute (UMTRI) and is mainly funded through the Office of Highway Safety Planning (OHSP). It is a streamlined view of crash data information that can be filtered down and aggregated into maps, tables, lists, charts, calendars. There are ten years of data available that can be viewed in terms of total crashes, vehicular units or people characteristics. The home page provides access to reports that are run on an annual basis and are a great starting point for communicating and reinforcing general concepts.	A quick way to inquire about various types of crash data including year, age, alcohol/drug related, and various other types.	www.michigantrafficcrashfacts.org
ArcMap	Joe Gorman	517.335.2988	GormanJ4@michigan.gov	ArcGIS for Desktop is a complete professional GIS platform, providing users with the ability to compile, manage, and analyze data with a spatial component. The included geoprocessing framework allows users to detect patterns, quantify results, and make predictions. Advanced cartography features facilitate the creation of functional and aesthetic maps. ArcGIS for Desktop may be used to visualize datasets including crash or roadway data.	ArcGIS for Desktop may be used to visualize datasets including crash or roadway data.	
SAFESTAT	Bob Rios	517.335.1187	RiosB@michigan.gov	MDOT's statewide inventory database that provides a system of recording and tracking incoming requests for studies and/or projects to improve the safety and operation of Michigan roads.	Includes analysis of High Crash locations with action plans. Provides access to all traffic signal timing permits, geometric plan reviews, and road friction numbers.	

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Post Plan Analysis Tools	Contact	Phone	Email	Description of Tool	Use	Link
Highway Safety (HSM) Spreadsheet	Heidi Spangler	517.241.4727	SpanglerH@michigan.gov	Michigan's application of the Highway Safety Manual based on state of Michigan localized data. Michigan calibration and distribution values are applied to provide the most accurate view of predicted for expected crashes for your evaluation.	The HSM spreadsheet is used for Safety analysis including the annual Safety Call for Projects on both the Local and Trunkline side. The HSM provides crash prediction values based on proposed design decisions. The HSM provides a method to weigh alternatives and the impacts of possible design exceptions.	http://mdotcf.state.mi.us/public/tands/Details_Web/hsm_analysis(2005-2010).20130418.xls
Time of Return (TOR) Spreadsheet (Local and Trunkline)	Heidi Spangler	517.241.4727	SpanglerH@michigan.gov	The TOR Spreadsheet was created to rate safety projects based on the cost of a safety improvement in relation to the type of improvement and the number of crashes associated with the improvement. The TOR has a trunkline and non-trunkline version which includes crash data from both trunkline and non-trunkline, respectively. The TOR is the Michigan version of a cost/benefit analysis in relation to safety improvements and crash reduction factors.	The TOR is used for the cost/benefit analysis in regards to the safety call for projects for both trunkline and local agency locations.	Local Agency TOR Spreadsheets http://michigan.gov/documents/mdot/Non-TL_TOR_14_427664_7.xls http://michigan.gov/documents/mdot/Non-TL_ROUNDABOUT_TOR_15_459203_7.xls
Interactive Highway Safety Design Manual (IHSDM)	Dean Kanitz	517.335.2855	KanitzD@michigan.gov	Developed by the FHWA, IHSDM provides for a convenient method of utilizing Part C of the HSM for the quantitative / substantive safety analysis of projects. Quickly with the input of a 3D alignment from GeoPak a user can identify where and how to enhance a design to provide a better product to our customers. This software is a free download.	Currently in limited use by MDOT for project level quantification of decisions in regards to safety.	http://www.ihsdm.org/wiki/Welcome