



U.S. Department
of Transportation
**Federal Highway
Administration**

Memorandum

Subject: **ACTION:** Guidance Memorandum on
Fundamental Roadway and Traffic Data
Elements to Improve the Highway Safety
Improvement Program

Date: August 1, 2011

From: *For* Anthony Furst
Acting Associate Administrator for
Safety

In Reply Refer To:
HSST

To: Division Administrators
Federal Lands Division Engineers
Directors of Field Services

The purpose of this memorandum is to provide guidance on roadway and traffic data elements that can be used to improve safety investment decision making through the Highway Safety Improvement Program (HSIP). I request that your Office share this information with the safety, asset management, planning and other offices of your respective State departments of transportation responsible for collecting, maintaining, and using roadway and traffic data. Also, please share this information with your State's Traffic Records Coordinating Committee (TRCC).

Background

The HSIP relies on a data-driven process to guide States in selecting and implementing effective countermeasures for reducing fatalities and serious injuries on all public roadways. The Federal Highway Administration (FHWA) regulations (23 CFR Part 924) specify that the HSIP planning process shall incorporate the collection and analyses of crash, roadway, traffic and vehicle data on all public roads. While crash data has been a consistent component of the highway safety analysis process, there has long been a need for an increased focus on integrating crash data with roadway and traffic data. This integration empowers States to get the most benefit from a variety of safety analysis processes and tools. By integrating this data, States will be in a position to make better safety investment decisions with their HSIP. This guidance memorandum identifies a core set of roadway and traffic data elements that States should integrate with their crash data to improve HSIP decisions.

Guidance

The purpose of this guidance is: 1) to provide a list of fundamental roadway and traffic data elements that should be integrated with crash data to conduct enhanced safety

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analyses in support of a State's HSIP; 2) to identify prerequisite conditions for using the elements; and 3) to recommend that State and local governments adopt methods of prioritizing the roadway systems for which they will initially collect this data. Although this guidance is not a requirement under the current HSIP, it represents a practice that States should strive to meet.

Fundamental Data Elements

The listing of fundamental data elements for HSIP is as follows:

Roadway Segment	Intersection
Segment ID*	Intersection ID
Route Name*	Location
Alternate Route Name*	Intersection Type
Route Type*	Date Opened to Traffic
Area Type*	Traffic Control Type
Date Opened to Traffic	Major Road AADT
Start Location*	Major Road AADT Year
End Location*	Minor Road AADT
Segment Length*	Minor Road AADT Year
Segment Direction	Intersection Leg ID
Roadway Class*	Leg Type
Median Type	Leg Segment ID
Access Control*	Ramp/Interchange
Two-Way vs. One-Way Operation*	Ramp ID*
Number of Through Lanes*	Date Opened to Traffic
	Start Location
Interchange Influence Area on Mainline Freeway AADT*	Ramp Type
	Ramp/Interchange Configuration
	Ramp Length
AADT Year*	Ramp AADT*
	Ramp AADT Year

*Highway Performance Monitoring System full extent elements are required on all Federal-aid highways and ramps located within the grade-separated interchanges, i.e., National Highway System (NHS) and all functional systems excluding rural minor collectors and locals.

The fundamental data elements are a basic set of elements an agency would need to conduct enhanced safety analyses regardless of the specific analysis tools used or methods applied. The elements are based on findings in the FHWA report "Background Report: Guidance for Roadway Safety Data to Support the Highways Safety Improvement Program (Background Report)" which is available on the FHWA web site at http://safety.fhwa.dot.gov/tools/data_tools/dcag.cfm. Definitions of fundamental data elements may be found in this Background Report. The fundamental data elements have the potential to support other safety and infrastructure programs, in addition to the HSIP.

Prerequisite Conditions for Fundamental Data Elements

As a prerequisite for collecting and using the fundamental data elements, States should have the ability to uniformly locate the collected roadway and traffic data elements to their common location referencing system (e.g. Linear Referencing System, Geographical Information System, etc.). The State referencing system should be inclusive of all public roadways within the State and have the ability to identify crash locations using the same referencing system.

Collection Priorities

While the fundamental data elements should be collected on all public roads, we recognize that resource limitations will likely not permit this comprehensive data collection in the near term. States should select their own methods for prioritizing the collection of the fundamental data elements based on their specific safety analysis needs, available resources and capabilities. To assist States in estimating their data collection costs, the "Market Analysis of Collecting Fundamental Roadway Data Elements to Support the Highway Safety Improvement Program," is available on the FHWA website at http://safety.fhwa.dot.gov/tools/data_tools/dcag.cfm. This report should help States by providing some basic unit cost estimates for roadway data collection.

Methods for prioritization could be based on criteria such as (but not limited to), high crash corridors, high crash counties, high traffic volume roads, and/or the current availability of many of these data elements on certain roadways. As resources permit, collection could be expanded in accordance with the prioritization method developed by the State. The FHWA does not expect these data (outside of those fundamental data elements already required for the Highway Performance Monitoring System) to be reported to the FHWA.

Available Assistance

We acknowledge that full adoption of this guidance will take time and recognize the need for support to States during the process. The Crash Data Improvement Program (CDIP) is offered to provide States with guidance and technical assistance for improving crash data, including assistance in integrating crash and roadway data. Another program that has been initiated is the Roadway State Safety Data Capability Assessment (Capability Assessment) which assesses State roadway data collection, maintenance and integration capabilities. The Capability Assessment began in June 2011 and will eventually be completed with each State by June 2012. We are also developing a Roadway Data Improvement Program to assist States with improving the collection and use of their roadway data. This program will be offered to the States in 2012.

Sources of potential funding support to assist States in collecting and maintaining the fundamental data elements, through FHWA and other U.S. Department of Transportation (DOT) modes, is available on the U.S. DOT TRCC website at http://www.dottrcc.gov/funding_sources/.

We believe that widespread implementation of this guidance can serve to accelerate the achievement of national safety goals.

If you have any questions pertaining to the rule or the project in general, please contact Mr. Robert Pollack at (202) 366-5019 or e-mail Robert.pollack@dot.gov or Ms. Karen Yunk at (609) 637-4207 or email Karen.yunk@dot.gov.

cc: Associate Administrators
Resource Center Manager

**NOTE: THE GUIDANCE ON THIS PAGE HAS BEEN SUPERSEDED
THE CURRENT GUIDANCE CAN BE FOUND AT
<http://www.fhwa.dot.gov/map21/guidance/guidesafetydata.cfm>**