

**GUIDANCE**  
**HIGHWAY SAFETY IMPROVEMENT PROGRAM**  
**23 U.S.C 148(c)(1)(D)**  
**“5 PERCENT REPORT”**  
**April 5, 2006**

**INTRODUCTION**

Section 1401 of SAFETEA-LU amended Section 148 of Title 23 USC to create a new **Highway Safety Improvement Program** (HSIP) as a “core” FHWA program with separate funding, replacing the Hazard Elimination Program in 23 USC Section 152, effective October 1, 2005. The purpose of the HSIP as stated in Section 148(b)(2) is to reduce traffic fatalities and serious injuries<sup>1</sup> on public roads<sup>2</sup>. As part of the new HSIP, States are required to submit an annual report describing not less than 5 percent of their highway locations exhibiting the most severe safety needs [Section 148(c)(1)(D)]. The intent of this provision is to raise the public awareness of the highway safety needs and challenges in the States. This guidance has been prepared to assist the FHWA Division Offices and the States in the preparation and review of this required report. (It is noted that, while references are made in this guidance to the “5 percent report,” it is understood that the legislation requires reporting on a minimum of 5 percent of the locations with the most severe safety needs.)

**LEGISLATIVE REQUIREMENTS**

Section 148(c)(1) provides four conditions that a State’s HSIP must meet in order for a State to fully obligate HSIP funds. Included in these conditions are the development and implementation of a Strategic Highway Safety Plan (SHSP) and submission of an annual report to the Secretary of Transportation.

Sections 148(c)(1)(A) and 148(c)(2) discuss development and implementation of a SHSP that identifies and analyzes highway safety problems and opportunities on all public roads. As part of its SHSP, a State must have a crash data system with the ability to perform safety problem identification and countermeasure analysis. The analysis must identify hazardous locations, sections and elements and, “using such criteria as the State determines to be appropriate, establish the relative severity of those locations in terms of accidents, injuries, deaths, traffic volume levels, and other relevant data.” Guidance on development of SHSPs has been issued and is available at <http://safety.fhwa.dot.gov/safetealu>.

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<sup>1</sup>Serious injuries are those incapacitating injuries defined in the Model Minimum Uniform Crash Criteria as “any injury, other than a fatal injury, which prevents an injured person from walking, driving, or normally continuing the activities the person was capable of performing before the injury occurred (often described as “needing help from the scene”).

<sup>2</sup>Section 101(a) of Title 23, *United States Code*, defines a public road as “any road or street under the jurisdiction of an authority maintained by a public authority and open to public travel.”

Section 148(c)(1)(D) requires submission to FHWA of an annual report that, using criteria noted above established through the SHSP process, describes not less than 5 percent of locations exhibiting the most severe safety needs. The report must also contain a discussion of:

- Potential remedies of the hazardous locations identified;
- Estimated costs of the remedies; and,
- Impediments to implementation of the remedies other than costs.

In accordance with the “Transparency” provisions of Section 148(g)(3), the “5 percent reports” are to be made available to the public on a State DOT web site and by “...such other means as the Secretary determines to be appropriate.” At this time, no other means have been identified.

### REPORT PREPARATION

This report should address locations exhibiting the most severe safety needs on all public roads. The FHWA recognizes that many State DOTs may not immediately be able to identify and rank hazardous locations of their State Highway Systems, and/or may not be able to rank the relative severity of the locations by fatalities and serious injuries. The “5 percent reports” should specify the extent of coverage of public roads in the State, along with identification of the methodology used to determine the ranking. States that are unable to either include all public roads or to use fatalities and serious injuries as a basis for their analyses of the most severe safety needs in their initial “5 percent report” submissions should provide an explanation and an estimated schedule of when such full coverage can be expected. This information should be submitted to the applicable FHWA Division Office prior to, or along with, the submission of the initial “5 percent report.” State reports that are due by August 31, 2009 (see **REPORT SUBMISSION** section below) should cover all public roads. It is noted that improvements in the collection and analysis of crash data in the States are eligible activities under the HSIP and several other USDOT programs – refer to [www.dottrcc.gov/pages/funding.htm](http://www.dottrcc.gov/pages/funding.htm).

Section 148 grants the States considerable flexibility in making determinations of the relative severity of hazardous locations and the locations with the most severe safety needs. Several approaches could be acceptable within the framework of the legislation. No single method, or combination of methods, is necessarily appropriate for all State DOTs.

Methods used by the States to prepare their lists of at least 5 percent of locations exhibiting the most severe safety needs should be primarily based on fatalities and serious injuries. The methods could include, but not be limited to, the use of one or a combination of the following measures:

1. Frequencies of fatalities and serious injuries (e.g. clusters on GIS or other maps, locations above a certain value, etc.);
2. Fatality and serious injury rates per 100 million vehicle miles traveled (MVMT) (e.g. locations either compared to each other or to statewide averages for all public roads or for similar road types or locations in the State);
3. Fatality and serious injury rates per million entering vehicles (intersections);
4. Fatality and serious injury rates per mile (density).

5. Fatalities and serious injuries as a percentage of total crashes;
6. Crash loss (dollars) of;
7. Others that may be identified by the States.

Either fatalities and serious injuries or fatal and serious injury crashes should be used in the analyses at the discretion of a State. It is recommended that the most recent three-five years of crash data be used in identifying the locations with the most severe safety needs to help account for data anomalies, regression to the mean, or unusual years or events. The report should identify the data years used.

Since the use of different measures would likely result in different listings of the locations with the most severe safety needs, a mixture of methods may be appropriate. For example, a low volume road that experiences one or two fatalities and/or serious injuries in a year could show up on the most severe list if rate per 100 MVMT was used as the measure, but may not be on the list if rate per mile was used. Conversely, a high volume facility such as an Interstate highway could possibly have a high severity ranking based on fatal and serious injury crashes per mile but a relatively low ranking based on such crashes per 100 MVMT. States may provide a composite listing based on low volume and high volume roads, or by some other categorization such as functional classification or road type, such that the total of the sub-categories is equal to or greater than the 5 percent of the locations with the most severe safety needs on all public roads.

The determination of the report listings may be based on number of locations, roadway miles, or some other means that a State determines to be appropriate. Intersections may be analyzed and reported separately or included within roadway segments in a State's report. The number of locations in a State's report should be commensurate with the size of the State and should be sufficient to accurately depict the roadway locations that the State DOT believes have the greatest safety needs in the state in order to raise public awareness of those needs.

Some examples of ways to determine the appropriate number of locations to include in a State's report of its locations with the most severe safety needs are: (1) identifying a State's public road locations with the greatest number of fatalities and serious injuries where the cumulative number of fatalities and serious injuries equals or exceeds 5 percent of the annual statewide total number of traffic fatalities and serious injuries; (2) identifying the locations with a fatality and serious injury rate (per 100 MVMT, per mile, etc.) above a statewide average and then determining the 5 percent (or more) of those locations with the highest rates; or, (3) identifying at least the top 5 percent of the locations on a State's hazardous locations list (if it is based primarily on fatalities and serious injuries) that it produces annually for identifying candidate locations for HSIP projects. These are merely examples and should not be construed as requirements.

Section 148(c)(1)(D)(ii) requires that the reports include an assessment of potential remedies, their estimated costs, and impediments to their implementation other than cost for each location identified. Potential remedies may be in any or a combination of the "4 E" areas (engineering, enforcement, education, and emergency medical services). This information will be made available on the USDOT web site and is to be published in a "Section 508" compliant manner (see discussion below and in Attachment 2). States should use a tabular format to present these program requirements on a location-by-location basis, with maps used only as supplemental

information, at a State's discretion. A sample format that can be used is shown in Attachment 1, which also includes a summary listing of information that should be included in or with the States' reports.

It is not expected that detailed improvement remedies and costs will be currently available for all locations on a State's annual "5 percent report". For those locations where no studies have been performed, States should make their best estimate of potential remedies and costs using their experience, statewide average costs, or other available means, including consulting with the staff of the State Highway Safety Office responsible for behavioral safety programs. The remedies and costs may also be presented as typical remedies and costs grouped by roadway or improvement types. It is recognized (and expected) that details and costs of proposed improvements will change during formal project development.

### **REPORT SUBMISSION**

The States' "5 percent reports" should be submitted electronically to the FHWA Division Offices on or before **August 31** of each year, beginning in 2006. A contact person and/or office in each State should be identified for additional information regarding the reports. The Division Offices will forward the reports to the FHWA Headquarters Office of Safety (HSA) no later than September 30 each year for subsequent inclusion on a USDOT web site.

The reports should be compatible with USDOT web site requirements (see Attachment 2). The USDOT web site will have sufficient explanatory information for readers to know that States have determined their locations exhibiting the most severe safety needs using means they deem most appropriate, which will likely vary among States. The web site presentation for each state will also identify the extent of each State's public roads that is presently covered by their analyses (e.g. all public roads or a portion thereof). The web site should not be used as a means of comparing one State's report to another. For reference, the State contact names/offices will be included in the web site postings.

### **DISCOVERY AND ADMISSION INTO EVIDENCE**

Section 109(g)(4) stipulates that data compiled or collected in the preparation of the "5 percent reports", or related reports published or made available to the public by USDOT, "shall not be subject to discovery or admitted into evidence in a Federal or State court proceeding or considered for other purposes in an action for damages arising from any occurrence at a location identified or addressed in such reports..." The information is also protected by Section 405 of Title 23 USC (discovery and admission of evidence of certain reports and surveys). This legal protection will be noted on the USDOT web site.

### **FUTURE ACTIONS**

FHWA will continuously monitor methods used by the States in the preparation of their "5 percent reports" so that best practices may be identified and shared. States are encouraged to provide feedback on their experiences in implementing this program.

Please address any questions to Ed Rice in the FHWA Office of Safety Design at (202) 366-9064 or ed.rice@fhwa.dot.gov.

**ATTACHMENTS**

1. Sample Report Format and List of Report Requirements
2. USDOT Web Site Requirements

SAMPLE FORMAT

**Highway Segments/Intersections Exhibiting the Most Severe  
Safety Needs**  
*(Minimum of 5%)*

Location	Potential Remedies	Estimated Costs	Implementation Impediments	Comments

**Additional Information Requested:**

Date: \_\_\_\_\_

- 1) Description of methodology used
- 2) Extent of public road coverage
- 3) Schedule for upgrading crash data system to full coverage (if applicable)
- 4) Years used in data analysis
- 5) State contact person/office

## USDOT Web Site Requirements

### HTML Submissions

HyperText Markup Language (HTML) is the publishing language of the World Wide Web. Information submitted in the form of HTML files (i.e. Web pages) need to be coded to meet the industry standards for HTML and the requirements of Section 508 of the Rehabilitation Act.

The standards for HTML are contained in the "Recommendations" of the World Wide Web Consortium (W3C). Submitted pages can meet either the HTML 4.01 (<http://www.w3.org/TR/html4/>) or XHTML 1.0 (<http://www.w3.org/TR/xhtml1/>) standards. The W3C has a free markup validation service (<http://validator.w3.org/>) which should be used to check the files. It is particularly important that any data tables in the Web pages follow the markup standards for tables. The HTML 4.01 specifications for table markup can be found at <http://www.w3.org/TR/html4/struct/tables.html>.

One of the requirements of Section 508 of the Rehabilitation Act is that the information on Federal Government Web sites be accessible to persons with disabilities. The technical standards for Web sites can be found in § 1194.22 "Web-based intranet and internet information and applications." A guide to the standards is available on the U.S. Access Board's Web site at <http://www.access-board.gov/sec508/guide/1194.22.htm>. Again, it is important that the requirements for data tables be followed – these are contained in 1194.22(g) and 1194.22(h). These sections require that row and column headers of data tables are identified and that through markup, the data cells are associated with the connected headers. There are techniques in HTML 4.01 and XHTML 1.0 to meet these requirements.