SAFETY DATA IN ONE LOCATION

HSIS supports highway safety analysis by enabling users to identify problems, examine the size and extent of a particular problem, and create design models that help predict potential future problems in a given roadway.

HSIS LABORATORY

As a virtual laboratory at the Turner-Fairbank Highway Research Center, the HSIS Laboratory uses state-of-the-practice statistical and virtual collaboration software to provide researchers and educators high-quality safety data, including linked roadway, traffic, and crash datasets.

To support users, HSIS Laboratory staff members provide ongoing data interpretation help, combine files (including defining and interpreting file components and layouts), and merge data from crash and other files as needed. Additionally, they can help users analyze data from the Fatality Analysis Reporting System and National Automotive Sampling System, such as the General Estimates Sampling System and Crash Report Sampling System, and use GIS-based safety analysis tools.[5,6]

GUIDEBOOKS

Guidebooks for each HSIS agency are available to help analysts and programmers use HSIS. Each unique guidebook describes the agency's data system and displays an alphabetized listing of all available variables along with their category and quality. The guidebooks are available in PDF format on the HSIS website.[1]

DATA ELEMENT TABLES

HSIS also maintains data element tables for all the agencies. The tables list the crash- and roadway-related variables side by side for all agencies. These tables enable data requesters to compare the availability of variables between specific agencies and can be accessed through the HSIS website.[3]

HSIS SUMMARY REPORTS

HSIS data are used in a wide variety of research efforts. Results from these efforts are documented in HSIS summary reports. To obtain copies of these reports, visit the HSIS website (https://highways.dot.gov/research/safety/hsis).[1]

REFERENCES

1. FHWA. n.d. "Highway Safety Information System (HSIS)" (website). https://highways.dot.gov/research/safety/hsis, last accessed November 7, 2023.

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5. U.S. Department of Transportation. n.d. "Fatality Analysis Reporting System (FARS)" (web page). https://www.nhtsa.gov/research-data/fatality-analysis-reporting-system-fars, last accessed November 16, 2023.

6. U.S. Department of Transportation. n.d. "National Automotive Sampling System" (web page). https://www.nhtsa.gov/crash-data-systems/national-automotive-sampling-system, last accessed November 16, 2023.
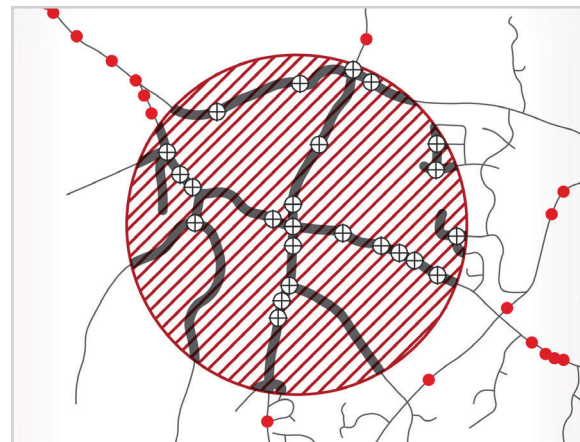
Source: FHWA.

HSIS
HIGHWAY SAFETY INFORMATION SYSTEM

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VISIT HSIS WEBSITE

The HSIS website contains links to HSIS products, such as summary reports, safety analysis tools, and various data request tools.

https://highways.dot.gov/research/safety/hsis/[1]

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Modifications by FHWA to add color.

Suggested print specifications:
8.5 inches by 14 inches (roll fold brochure).

U.S. Department of Transportation
Federal Highway Administration

HSIS
HIGHWAY SAFETY INFORMATION SYSTEM

The Essential Analysis Resource for Making Informed Safety Decisions

U.S. Department of Transportation
Federal Highway Administration

Many elements ensure the safety of our highways, from program policy decisions to roadway and traffic design. To assist safety analysts, researchers, and others involved in the study of highway safety, the Federal Highway Administration (FHWA) operates and maintains the Highway Safety Information System (HSIS).

HSIS provides quality data on many variables, including crashes, roadway, and traffic. Those data are acquired annually from a select group of States and one municipality, processed into a standard computer format, documented, and prepared for analysis.

HSIS supports the FHWA safety research program and provides input for program policy decisions. HSIS is also available to professionals conducting research under the National Cooperative Highway Research Program, universities, and others studying highway safety.

HSIS PARTICIPATING AGENCIES

In 1987, five States were chosen for HSIS: Illinois, Maine, Michigan, Minnesota, and Utah.[2] Michigan stopped participating in 1997 and Utah in 2000 due to changes in inventory data collection.[2] The primary criteria for State selections were data availability (the range of data variables collected), quantity, and quality.[2]

In 1995, California, North Carolina, and Washington were added to increase the available data and to provide better geographic coverage.[2] Charlotte, NC, joined in early 2011 to add urban area data.[2]

The HSIS relational database contains basic crash, roadway inventory, and traffic volume files from these eight agencies.[3] The database also includes information from some agencies about highway intersections, interchanges, lighting, and curves/grades.[3] Additionally, some agencies provide supplementary datasets for vulnerable road user infrastructure, such as sidewalks, greenways, and transit stops.[3] Table 1 details the information available from each of the currently participating agencies.

DATA FORMAT

Data can be extracted in various formats, including comma-separated values, spreadsheets, SAS, geographic information system (GIS) shapefiles, and geodatabases.[4] The data can be acquired by filling out a data request form on the HSIS website.[3]

Table 1.
Data files available from participating agencies.[3]

Data File Type	CLT	CA	IL	ME	MN	NC	OH	WA
Roadway	✓	✓	✓	✓	✓	✓	✓	✓
Crash	✓	✓	✓	✓	✓	✓	✓	✓
Vehicle and other road users	✓	✓	✓	✓	✓	✓	✓	✓
Person	✓	—	✓	✓	✓	✓	✓	✓
Intersection	✓	✓	—	✓	✓	✓	✓	—
Bicycle/pedestrian	✓	—	—	—	—	—	✓	—
Transit	✓	—	—	—	—	—	—	—
Railroad line	✓	—	—	—	—	—	—	—
Interchange	—	✓	—	✓	✓	✓	—	—
Horizontal curve	—	—	—	—	✓	✓	✓	✓
Grade	—	—	—	—	—	—	—	✓
Lighting	—	—	—	—	✓	—	✓	—
Roadside barrier	—	—	—	—	✓	—	✓	—

— **No data. CLT = Charlotte, NC.**

FILE TYPES

- Roadway files contain details about road sections, including lane count, lane and median widths, shoulder width, urban or rural classification, and functional categorization.

- Crash files contain individual case information about crashes, including collision type, involved vehicle types, occupant demographics, fixed object impacts, crash severity, and weather conditions.

- Vehicle and other road user files describe the vehicle-related characteristics and other general road user information (e.g., motorcycle, bicycle).

- Person files contain personal information about individuals involved in crashes, such as demographics and physical condition during the incident.

- Intersection files provide information about traffic control methods, intersection types, median and shoulder types, and lane numbers.

- Interchange files include interchange types and ramp characteristics.

- Horizontal curve/grade files contain data on horizontal curves and vertical grades, including degree of curve, curve length, and grade percentage.

Table 2.
**Data characteristics for participating agencies.[3]**

Agency	First Year	Average Crashes per Year Available	Roadway Mileage Available
California	1991	170,000	16,600
Illinois	1985	294,000	75,200
Maine	1985	32,000	23,500
Minnesota	1985	80,000	52,800
North Carolina	1990	361,000	48,800
Ohio	1997	280,000	66,200
Washington	1993	110,000	15,500
Charlotte	2004	34,000	5,200

- Lighting, roadside barrier, and sign support files detail the presence and types of these supporting elements throughout the road network.

- Bicycle/pedestrian infrastructure and transit files offer insights into the infrastructure for vulnerable road users.

All data are derived from police-reported crash records, maintained highway records, and other supplementary inventories. Table 2 contains summary characteristics.

FOLDING INSTRUCTIONS

1. Lay the brochure flat with the inside panels facing up.

2. Starting with the panel furthest to the right, fold each panel on top of the panel immediately to the left until only the last panel is unfolded.

3. Fold the last panel over the other folded panels so that the cover of the brochure is shown as the front.
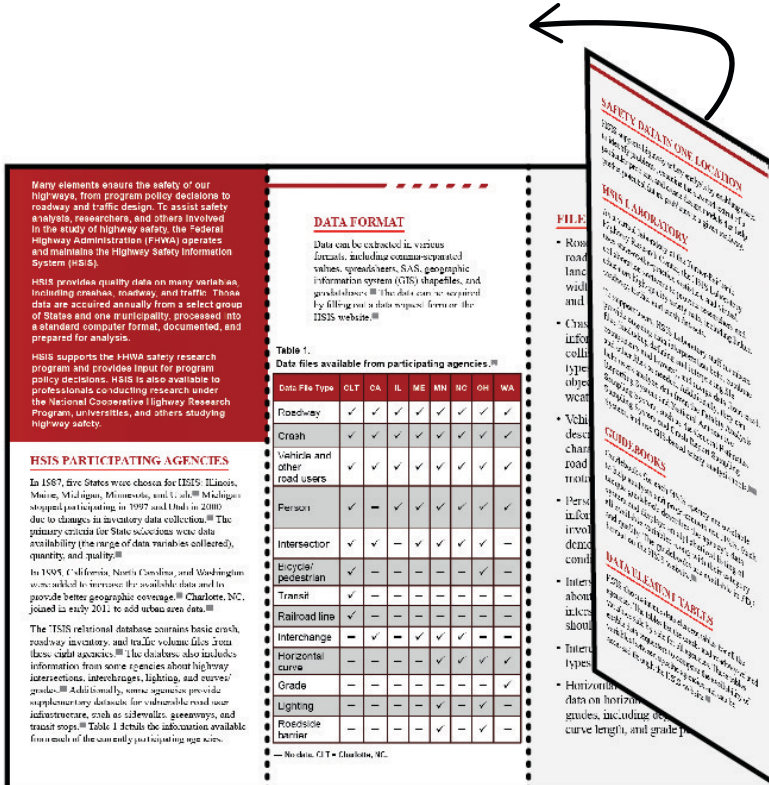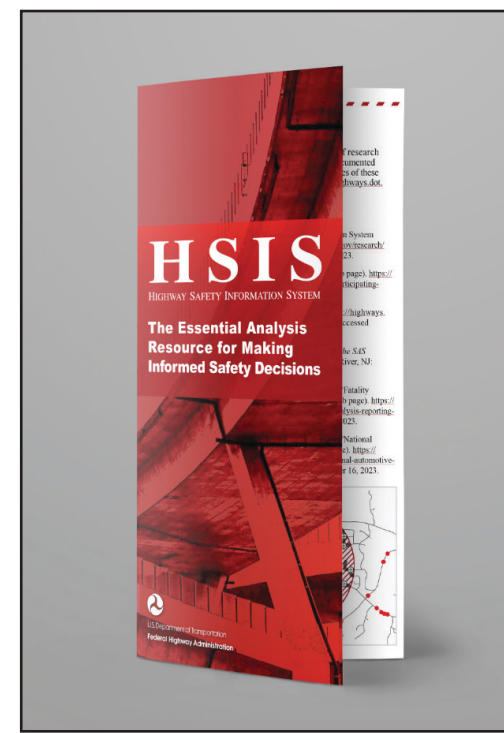

Source: FHWA. Diagram 1.
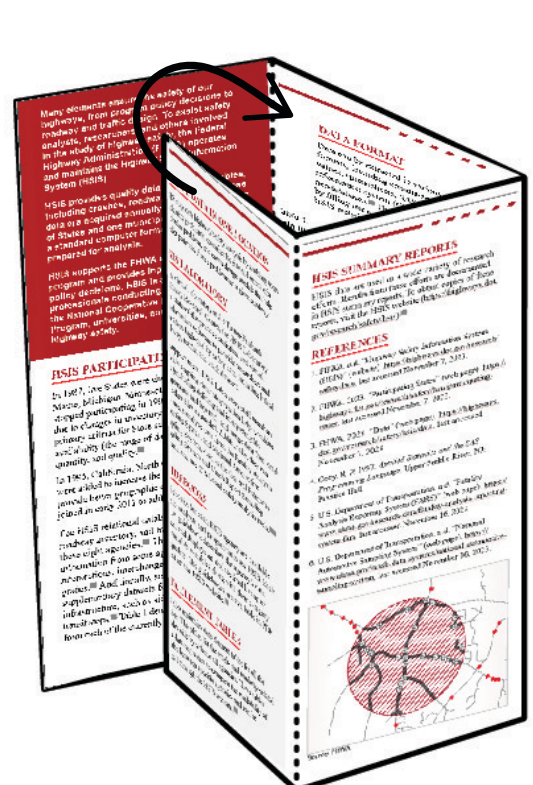
Source: FHWA. Diagram 2.

Final Folded Product (Front)

Source: FHWA. Diagram 3.

Final Folded Product (Back)

Source: FHWA. Diagram 4.