TSP
TRANSPORTATION SAFETY PLANNING
planning it safe

DIRECTIONS
IN ROAD SAFETY

Vol. 5, Issue 5, June 2009

Nine Proven Safety Countermeasures

The Federal Highway Administration (FHWA) Office of Safety has identified nine countermeasures that have been proven to be effective in reducing traffic related crashes, fatalities, and injuries. Those countermeasures include the following:

- **Road Safety Audits (RSA) –** An RSA is a safety performance examination of an existing or future road or intersection by an independent, multidisciplinary team.
- **Rumble Strips and Rumble Stripes –** Rumble strips are ground into the pavement outside of the travel lane. Rumble stripes are ground into the pavement and painted over with the appropriate striping.
- **Median Barriers –** Median barriers separate opposing traffic on a divided highway and are used to redirect vehicles striking either side of the barrier.
- **Safety Edge –** The Safety Edge is a paving technique where the interface between the roadway and graded shoulder is paved at an angle to eliminate vertical drop-off.

Photo courtesy of CH2MHill

- **Roundabouts –** Roundabouts are circular intersections with specific design and traffic control features that ensure low travel speeds (<30mph) through the circulatory roadway.

- **Left- and Right-Turn Lanes –** Installation of turn lanes reduces crash potential, motorist inconvenience, and improves operational efficiency. Rear-end crashes are the most frequent type of collisions at intersections.
- **Yellow Change Intervals –** Yellow change intervals should be appropriate for the speed and distance traveled at a signalized intersection.
- **Median and Pedestrian Refuge Areas –** These areas provide additional protection for pedestrians and lessen their risk of exposure to oncoming traffic.
- **Walkways –** Pathways, sidewalks, or paved shoulders should be provided wherever possible, especially in urban areas and near school zones where there are high volumes of bikes and pedestrians.

For more information, view the guidance memorandum at http://safety.fhwa.dot.gov/policy/memo071008.htm.

HSIP Final Rule

SAFETEA-LU significantly strengthened the Highway Safety Improvement Program (HSIP), doubling its size to approximately $1 billion per year and moving it from a "set-aside" to a core stand-alone program. This necessitated a final HSIP rule, which went into effect on January 23, 2009.

In the policy area, the new rule clarifies the objective of the HSIP which is to significantly reduce the occurrence of and the potential for fatalities and serious injuries, and links HSIP projects to the data-driven Strategic Highway Safety Plan (SHSP). The rule also requires the HSIP to include a process for the planning, implementation, and evaluation of the HSIP and SHSP (rather than "safety programs and projects" as stated in the previous regulation).

More detail is provided in the rule on the individual elements of the planning process, particularly in the data area. Revisions involve the collection, maintenance, and analysis of data on all public roads, which will align the HSIP with the provisions of the Section 408 grant process. Road safety audits and other safety assessments or reviews of hazardous locations are also included.

The rule specifies the process for establishing priorities for HSIP projects and recommends they be based on the priorities in the SHSP. Information is also provided on the correction and prevention of hazardous conditions, and integration of safety in the transportation planning process. This additional information incorporates more key elements into the planning process and is designed to tie transportation systems planning to the SHSP.

For more information, go to http://edocket.access.gpo.gov/2008/pdf/E8-30168.pdf.

What Planners Should Understand About Rail System

By Kimberly Goins, Community Planner
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When most Americans think of transit, cities like New York, Chicago, and Atlanta come to mind. While it is true that cities with heavy rail systems generate the most transit passenger miles, this demographic is changing as cities like Charlotte, North Carolina and Phoenix, Arizona decided that rail is an important transportation option for their citizens. In fact, over the past 11 years, nine new rail systems have been built.

Heavy Rail, Philadelphia, PA: *includes metros, subways, and rapid rail systems; usually with multiple-car trains on fixed, exclusive rights-of-way.*

Since 2003 annual transit passenger miles have out-paced airline miles by over 1,000. Of annual transit passenger miles generated, rail accounts for 59 percent. Additionally, rail transit accounted for 84 percent of U.S. transit passenger-mile growth between 1990 and 2000. Considering this increase in rail travel and the increased presence of transit commuting patterns, transportation planners should be aware of the safety regulations and stakeholders that govern rail transit agencies.

Each state safety oversight agency creates a "System Safety Program Standard" as mandated by the Federal Transit Administration's (FTA) State Safety Oversight Rule (49 CFR 659). FTA developed the State Safety Oversight Rule (SSO) in response to a series of safety recommendations made by the National Transportation Safety Board (NTSB) in the late 1980s and early 1990s. The goal of this regulation is to provide safety and security oversight for rail transit agencies not regulated by the Federal Railroad Administration (FRA).

FTA requires states to designate a state Safety Oversight Agency to oversee the safety and security of all the state's rail transit systems. FTA also specifies minimum safety and security requirements the state must enforce.

Among the implications for planning are: 1) the identification of new stakeholders for states and Metropolitan Planning Organizations to involve in their planning processes; 2) potential cost impacts of grantee compliance with the new safety and security requirements established by those agencies; and 3) the communication and coordination of those requirements among all stakeholders.

When Part 659 went into effect on January 1, 1997, there were 19 SSO agencies designated to oversee safety and security for 36 rail transit agencies. By the end of 2008, the SSO program had grown over 30 percent, with 27 SSO agencies designated to oversee 45 rail transit agencies.

System Safety Program Plan

Oversight agencies are responsible for developing a program standard that meets FTA's requirements and for reviewing the performance of rail transit agencies against that standard. Rail transit agencies must implement safety and security programs that comply with the program standard developed by the oversight agency. Each rail transit agency then develops a system safety program plan based on the program standard that was developed by the SSOA.

Light Rail, Charlotte, NC: *includes light-weight passenger rail cars traveling singly or in short two-car trains on a fixed right-of-way, usually not separated from on-street traffic for much of the way.*

Planners are encouraged to include rail transit safety stakeholders in the transportation planning process. Other recommendations for planners include the following:

- Have a general knowledge of rail system safety. Transportation planners should be familiar with the Rail System Safety Oversight Rule Part 659 to understand the key aspects involved in building a safe transportation system. Visit the Transportation Safety Institute web site at www.tsi.dot.gov.

- Have insight into key players who should be included in the safety planning process, such as the state Safety Oversight Agency.

- Be aware of key transit safety planning documents, including the State Safety Program Standard and System Safety Program Plan even though they have no direct data collection or analysis inputs into the planning process.

Other Rail, Monorail, Seattle, WA: *includes automated guideway/monorail systems, inclined planes or funicular systems, and cable car systems.*

- Be knowledgeable about and leverage awareness of public safety campaigns sponsored by the transit agency and state Safety Oversight Agency.

- Be educated in a broad sense about what makes a transit project safe, understanding that all safety hazards have the potential to be either mitigated or designed out. Planners should understand the system safety culture promoted by the SSO regulation and how transit agencies safety concerns differ from those for highway safety, including the need for grade crossings for rail operators.

For additional information on SSO Rule and FTA rail safety standards, please visit: http://transit-safety.volpe.dot.gov/Safety/Oversight.asp, or contact: Levern McElveen, FTA Office of Safety, 202-366-1651 Levern.McElveen@dot.gov.

Cheyenne MPO Wins Award From AMPO

AMPO presented their National Award for Innovative Practice in Metropolitan Transportation Planning to the Cheyenne MPO for their Transportation Safety Management Plan. The Cheyenne MPO, the planning agency located in Cheyenne, Wyoming, took a leadership role as one of the first MPOs in the country to develop a regional transportation safety plan. The mission of this Plan is to eliminate preventable traffic-related deaths and injuries and the goal is to reduce fatal and injury crashes by 10 percent by 2020. To achieve this, the Cheyenne region will need to eliminate an average of 3.5 fatal and injury crashes every year for the next 13 years. A key step in the development of this plan was a Transportation Safety Summit, convened by the MPO last year, where participants reviewed current safety strategies, identified nationally proven strategies for consideration, and developed new safety approaches. As a result of this Plan, the MPO received grant funding from the Wyoming Department of Transportation. The first is for a summit on safety belt enforcement, which will be held in May; the second is for prioritization of hazardous locations and road safety audits; and the third is for saturation patrols to reduce DUI crashes. The MPO is currently working with stakeholders to implement other portions of the plan. For more information on the plan visit the MPO's web site at http://www.plancheyenne.org/.

Roadway Safety Award Winners

The Roadway Safety Foundation (RSF) announced the winners of its Safer Roads: Building Safety into Your Drive public information and education campaign. Winners receive technical assistance in amounts ranging from $15,000 to $75,000 to undertake public information and education campaigns to raise awareness of the safety benefits and the need for infrastructure and engineering roadway safety improvements. The winners include the following:

- South Carolina Department of Transportation for a campaign to educate the public about the safety benefits of paved shoulders and rumble strips.
- University of Delaware's Institute for Public Administration and the Delaware Center for Transportation for a campaign to educate local officials and the public about the importance of roadway modifications to make roads safer for older drivers.
- Michigan Department of Transportation for a campaign to draw attention to the benefits of installing cable barriers along freeway medians.

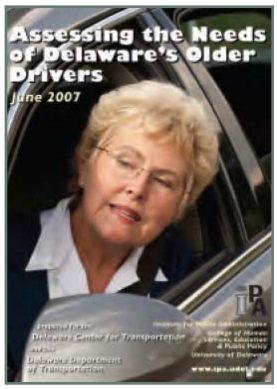


Photo courtesy of the Delaware Transportation Center

- Utah Department of Transportation for a campaign to map a rural road network for the AAA Foundation for Traffic Safety's usRAP (Road Assessment Program), which will work as a public resource and roadway improvement guide.
- Tribal Technical Assistance Program (TTAP) of the Michigan Technological University for a campaign to educate Native Americans about the importance of road safety features.
- Cook County (MN) Highway Department for a campaign to highlight the importance of roadway safety interventions.

For more information on the Roadway Safety Foundation and the next round of awards, go to http://www.roadwaysafety.org/.

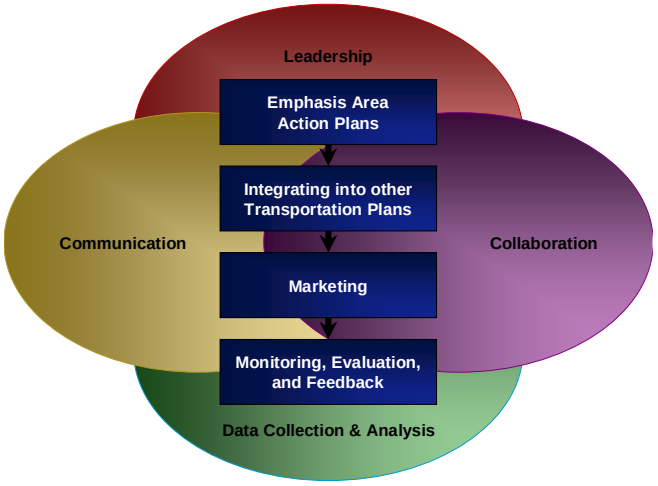
SHSP Implementation Process Model

The FHWA Office of Safety, the FHWA Office of Planning, the National Highway Traffic Safety Administration (NHTSA), the Federal Motor Carrier Administration (FMCSA), and other national safety stakeholders have developed an Implementation Process Model (IPM) to help states implement Strategic Highway Safety Plans (SHSP).

The IPM describes the fundamental elements of leadership, communications, collaboration, and data collection and analysis and the four steps (emphasis area action plans; integration with other transportation plans; marketing; and monitoring, evaluation, and feedback) that can lead to success.

This draft IPM was developed based on reviews of related plans and practices; extensive interviews with a range of SHSP stakeholders from six model states, including representatives from departments of transportation, highway safety offices, motor carrier staff, metropolitan planning organizations, local stakeholders, and others; and the combined knowledge and expertise of the project team.

The second phase of the project began on April 14-15, 2009, with the kickoff of a six-month pilot of the IPM by 10 states to test its feasibility and obtain feedback. Check the FHWA Office of Safety web site for a posting of the draft document at http://safety.fhwa.dot.gov.



The SHSP IPM Essential Eight

Intersection Program Guide

FHWA's Strategic Intersection Safety Program Guide provides assistance in planning, developing, implementing, and maintaining an intersection safety program. The guide describes a strategic process for intersection safety improvement needs; the development of strategic goals for an intersection safety program; a scope for intersection safety action plans; and performance-based goals for intersection safety action plans. Information is also provided on the selection and implementation of projects and how to evaluate effectiveness.

This guide can be used to develop and implement a SHSP and to prioritize projects in a HSIP. To view a copy of the guide, go to http://safety.fhwa.dot.gov/intersections/fhwasa09004/.

Countermeasures That Work

The fourth edition of the National Highway Traffic Safety Administration's (NHTSA) Countermeasures That Work: A Highway Safety Countermeasure Guide for State Highway Safety Offices (SHSO) describes major strategies and countermeasures that are relevant to state highway SHSOs; summarizes their use, effectiveness, costs, and implementation time; and provides references to the most important research summaries and individual studies.

The evaluations summarized in the guide allow SHSOs to benefit from the experience and knowledge gained by others and to select countermeasure strategies that either have proven to be effective or that have shown promise. To download a copy of the guide, go to http://www.nhtsa.gov/staticfiles/DOT/NHTSA/Traffic%20Injury%20Control/Articles/Associated%20Files/811081.pdf.

Young drivers are one of the topic areas covered in Countermeasures That Work.

Tribal Road Safety Audits

The FHWA's Office of Safety and the Office of Federal Lands teamed up to offer a series of four road safety audits (RSA) geared at tribal lands, and published the results in a case study report to demonstrate the usefulness and effectiveness of RSAs for tribal road agencies. Each case study includes a project description, a summary of key findings, and lessons learned. All participating tribal transportation agencies volunteered to be involved in this RSA; agreed to nominate the sites for the RSA project; provide the RSA team with the materials (such as volume and crash data) on which the RSA would be based; participate in the start-up and preliminary findings meetings; and contribute at least one tribal staff member to participate on the RSA team. To view a copy of the report, go to http://safety.fhwa.dot.gov/rsa/tribal_rsa_studies/tribal_rsa_studies.pdf.

RSA Software Available

The FHWA has developed software to help team members conduct road safety audits (RSA). The software has automated the RSA prompt lists that help auditors apply their knowledge and experience. This process tracking tool can also promote discussion and assessment, which will help auditors justify their findings. In addition, the software will assist in drafting RSA reports, help verify issues and locations, enable users to record safety issues by prompt and location, and serve as a training tool. To download the software go to http://safety.fhwa.dot.gov/rsa/software/.

Intersection Safety Resources

A flyer from the FHWA identifies the publications, multimedia products, and technical assistance programs that address intersection safety issues along with planned FHWA activities in the future. The flyer makes it easy to see all the available intersection resources, saving valuable time and effort. To view a copy of the flyer, go to http://safety.fhwa.dot.gov/intersections/keyintersaferes.pdf.

Low-Cost Safety Concepts for Intersections

The FHWA has released a report that explores the use of low-cost safety concepts for two-way stop-controlled, rural intersections on high-speed two-lane, two-way roadways.

The improvements include the use of rumble strips on outside shoulders and in a painted yellow median island on major road approaches, and channelizing separator islands on side road approaches with supplemental STOP signs. For a copy of the full report, go to http://www.tfhrc.gov/safety/pubs/08063/08063.pdf.

This photo shows the use of rumble strips on the outside shoulder and a painted median island.

Pedestrian Safety Report to Congress

In its report to the U.S. Congress, the U.S. Department of Transportation reported on effective advanced technology and intelligent transportation systems, such as automated pedestrian detection and warning systems (infrastructure-based and vehicle-based), road design, and vehicle structural design improvements that could potentially mitigate the crash forces on pedestrians in the event of a crash.

The report also includes recommendations on how new technological developments could be incorporated into educational and enforcement efforts and integrated into national design guidelines developed by the American Association of State Highway and Transportation Officials (AASHTO) and the FHWA. To view a copy of the report, go to http://safety.fhwa.dot.gov/ped_bike/pedrpt/pedrpt_0808/pedrept_0808.pdf.

Cell Phones and Driving

The AAA Foundation for Traffic Safety report Cell Phones and Driving: A Research Update provides new data on driver's cell phone use and attitudes toward distracted driving. Information for the report was obtained from the Foundation's Traffic Safety Culture Index, a nationally representative telephone survey of the American public, and data on driver cell phone use from a recent omnibus survey conducted for the AAA Foundation.

The reports indicates that over half of U.S. drivers report having used a cell phone while driving in the past 30 days, and one in seven even admits to text messaging while driving. Young drivers were found to be overwhelmingly more likely than older drivers to text message, and somewhat more likely to talk on cell phones while driving. Higher levels of education were also found to be associated with higher levels of cell phone use and text messaging while driving. To view a copy of the full report, go to http://www.aaafoundation.org/pdf/CellPhonesandDrivingReport.pdf.

Nighttime and Daytime Work Zones

A report from the National Cooperative Highway Research Program (NCHRP) (NCHRP Report 627, Traffic Safety Evaluation of Nighttime and Daytime Work Zones) has found nighttime work zones do not result in significantly greater crash risk for an individual motorist traveling through a work zone than do daytime work zones. In addition, the nighttime crashes are not necessarily more severe than those that occur during the day. Work zones that are conducted on moderate- to high-volume roadways also have a lower total safety impact to the motoring public if the work is done at night. The report goes on to provide information on the development of management practices that promote safety and mobility in work zones, and recommendations to further improve the data collected on work zone crashes. To view a copy of the report, go to http://onlinepubs.trb.org/onlinepubs/nchrp/nchrp_rpt_627.pdf.

A Guide for Addressing Collisions Involving Motorcycles

NCHRP has published the latest Report 500 Series guidebook, Vol. 22: A Guide for Addressing Collisions Involving Motorcycles. The guide focuses on the unique characteristics of motorcycles and their needs on the roadway and is designed to reduce the number and severity of motorcycle crashes. Strategies include not only operation of the motorcycle, but also ways of improving both the traveled way and roadside to be more "motorcycle friendly." Topics covered in other guidebooks are included but solely from the viewpoint of how each affects motorcycle users. To view a copy of the guidebook, go to http://onlinepubs.trb.org/onlinepubs/nchrp/nchrp_rpt_500v22.pdf

FHWA Data and Safety Analysis Tools

FHWA has produced a brochure that provides descriptions of the various data and safety analysis tools for state and local practitioners. These tools are designed to help practitioners understand safety problems, link crashes to their roadway environments, and select and apply appropriate countermeasures. Some provide general information; others allow more complex analysis of crashes under specific conditions and/or with specific roadway features. This brochure includes a general description of the tool and where they can be found. To obtain a copy, go to http://safety.fhwa.dot.gov/tools/data_tools/fhwasa09002/fhwasa09002.pdf.

Best Practices for Low-Cost Safety Improvements

Various Iowa maintenance strategies that can ensure safe travel on low-volume roads are the focus of a report from The Center for Transportation Research and Education at Iowa State University. The report focuses on the specific treatments that may go beyond the point of routine maintenance and in fact provide additional safety benefits with a relatively low price tag.

The report groups these practices into the following areas: signing and delineation, traffic "calming," pavement marking and rumble strips/stripes, roadside and clear zone, guardrail and barriers, lighting, pavements and shoulders, intersections, railroad crossings, bridges and culverts, and miscellaneous. To view a copy of the report, go to http://www.ctre.iastate.edu/reports/low-cost-safety-practices.pdf.

Training

National Transit Institute

www.ntionline.com/CourseDates.asp

State and Metropolitan Transportation Programming
June 1-3, 2009, Seattle, Washington
June 8-10, Forest Park, Georgia

National Highway Institute

www.nhi.fhwa.dot.gov/home.aspx

Roadside Safety Design
June 2-4, Salt Lake City, Utah
June 23-25, Baton Rouge, Louisiana

Road Safety Audits/Assessments
June 23-24, Concord, New Hampshire

Directions in Road Safety

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