



# Safety Circuit Rider Programs

## Best Practices Guide



January 2009  
FHWA-SA-09-019

*Safety Circuit Rider Best Practices*



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

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**TECHNICAL DOCUMENTATION PAGE**

1. Report No. FHWA-SA-09-019		2. Government Accession No.		3. Recipient's Catalog No.	
4. Title and Subtitle Safety Circuit Rider Programs Best Practices Guide				5. Report Date January 2009	
				6. Performing Organization Code	
7. Author(s) Frank Gross, Dan Nabors, Ronald Eck, and Mark Hood				8. Performing Organization Report No.	
9. Performing Organization Name and Address Vanasse Hangen Brustlin, Inc (VHB) 8300 Boone Blvd., Suite 700 Vienna, VA 22182-2626				10. Work Unit No.	
				11. Contract or Grant No. DTFH61-05-D-00024 (VHB)	
12. Sponsoring Agency Name and Address Federal Highway Administration Office of Safety 1200 New Jersey Ave., SE Washington, DC 20590-9898				13. Type of Report and Period Final Report July 2007-January 2009	
				14. Sponsoring Agency Code FHWA	
15. Supplementary Notes The contract manager for this report was Karen Timpone (FHWA Office of Safety). Dan Nabors (VHB) was the Principal Investigator. John Dewar (FHWA) reviewed the Guide and provided valuable feedback. Sandra Guerrero (VHB) along with Michelle Scism (VHB) performed the document design and layout and Vicki Glenn provided editing.					
16. Abstract This Guide is intended to provide state departments of transportation (DOT) and LTAP/TTAP centers with an easy-to-use resource for implementing or enhancing a Safety Circuit Rider (SCR) program. The Guide includes common characteristics of existing SCR programs and the safety circuit riders. The Guide also includes information on the typical duties and services provided by SCR programs, lessons learned by existing programs, and evidence of the effectiveness of existing SCR programs.					
17. Key Words: Safety circuit rider, safety, local technical assistance program (LTAP), local road agencies, training, technical assistance, technology transfer			18. Distribution Statement No restrictions.		
19. Security Classif. (of this report) Unclassified		20. Security Classif. (of this page) Unclassified		21. No. of Pages 115	22. Price

## **Acknowledgements**

The project team gratefully acknowledges the contributions and insights provided by the following safety professionals and Safety Circuit Rider program staff:

- Arizona Safety Circuit Rider, Mike Blankenship.
- University of California, Berkeley and California LTAP Center, Laura Melendy.
- Connecticut LTAP Center, Donna Shea.
- Delaware Safety Circuit Rider, Alan Kercher.
- University of Delaware, Larry Klepner.
- Florida LTAP Center, Janet Degner, Nina Barker, Tiffany Wise, and Jaime Carreon.
- Florida Safety Circuit Riders, Larry Hagen, Gordon Burlison, and Ed Kant.
- Idaho SCR Program, Bruce Drewes.
- Illinois Embedded Safety Specialist, Opus International, Nicole Thompson.
- Iowa LTAP Center, Duane Smith.
- Iowa Safety Circuit Rider, Tom McDonald.
- Kentucky Safety Circuit Rider, Lance Meredith.
- Louisiana LTAP and National LTAP Association, Marie Walsh.
- Minnesota Department of Public Safety, Cheri Marti.
- Nebraska LTAP Center, Daniel Cady.
- New Jersey LTAP Center, Janet Leli.
- New York State LTAP, David Orr.
- Northern Plains TTAP Center, Dennis Trusty.
- Ohio Safety Circuit Rider Coordinator, Mike Fitch.
- South Dakota LTAP Center, Ken Skorseth.
- Tennessee Safety Circuit Rider Coordinator, Matt Cate.
- Utah LTAP Director, Doyt Bolling.
- West Virginia LTAP, Kim Carr.
- Wisconsin Safety Circuit Rider, Pete Rusch.
- Wisconsin Safety Circuit Rider Program, Steve Pudloski.



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## Chapter 1: Introduction

Local agencies own and operate more than 75 percent of all public roadways in the United States and nearly 80 percent of rural roads. Of the 42,000-plus annual fatalities on the Nation's roadways each year, more than 60 percent occur on our rural roads, which carry less than 40 percent of the total vehicle-miles traveled. To make significant progress in reducing the number of crashes and fatalities nationally, the safety on local roadways needs to improve. This is the primary goal of the Safety Circuit Rider (SCR) program.

***Local agencies own and operate more than 75 percent of all public roadways in the United States.***

The SCR program is designed to provide safety-related information, training, and support to agencies responsible for local roadway safety. While the primary focus is on local roads, and therefore local agencies, SCR support can also assist Local and Tribal Technical Assistance Program (LTAP/TTAP) Centers, State and local transportation agencies, universities, and safety interest groups, all of which can play a significant role in improving road safety. SCR programs can take many forms including technical assistance, training, and technology transfer. In that sense, SCR programs are similar to the LTAP/TTAP Centers; however, the difference is the SCR activities focus on safety. Providing this onsite, safety-related support meets two needs. First, safety on locally maintained roads is a significant issue nationwide. Second, many local agencies lack the resources or technical expertise to properly identify, diagnose, and treat traffic safety problems.

In 2005, the Federal Highway Administration (FHWA) Office of Safety identified an opportunity to enhance safety services through LTAP Centers by funding safety circuit rider positions at three LTAP Centers (Florida, Kentucky, and West Virginia) and one TTAP Center (Northern Plains). Grants were awarded through competitive process. This initiative was a pilot program developed with assistance from the FHWA Office of Federal Lands Highway. The purpose of this pilot study was to assess the feasibility and usefulness of a SCR program. The program was continued for the three LTAP Centers in 2006; in addition, several States have developed their own programs.

### 1. 1 About this Guide

The FHWA developed this Guide to provide State Departments of Transportation (DOTs) and LTAP/TTAP Centers with a resource for implementing or enhancing a SCR program. The most

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important feature of this Guide is that there is no one right way to create a SCR program—there is only the right way for your State.

The Guide focuses on examples of two groups of programs: 1) existing SCR programs, and 2) existing programs that provide services similar to an SCR but which are not technically known as a SCR program. For the purpose of this report, the term SCR program includes both groups and the focus includes:

- Common characteristics of a safety circuit rider and SCR programs.
- Typical duties performed and services offered by existing SCR programs.
- Lessons learned, about what to do and what not to do, by existing SCR programs.
- Evidence of current SCR program effectiveness with testimonials from recipients of SCR support.
- References to publications developed by SCR programs.

Information in this Guide is the result of discussions with staff representing both pilot and established SCR programs.

The Guide emphasizes the importance of safety circuit riders developing and maintaining collaborative partnerships with LTAP/TTAP Centers, State and local transportation agencies, universities, and safety interest groups to improve local road safety.

The Guide has four chapters, each focusing on a different element of the SCR program most relevant to program initiation and enhancement. Each chapter integrates case study examples of existing SCR programs in the United States. Due to the overlapping nature of many topics and to provide flexibility in the use of this Guide, the chapters are not mutually exclusive (i.e., information may be presented in more than one chapter if it is relevant to the topic).

- **Chapter 2: Program Essentials**

The chapter discusses program initiation and sustainability, including information related to funding, partnerships, promoting the SCR program, and how to identify qualified safety circuit riders.

- **Chapter 3: Program Activities**

The chapter highlights various SCR activities, including technical assistance, training, and technology transfer. Examples of each activity are provided as well as the relative time spent on the activity.

- **Chapter 4: Program Evaluation**

The chapter illustrates the effectiveness of current SCR programs. While the true measure of effectiveness is related to real reductions in crashes and their severity, two reasons make it difficult to show reductions for programs: 1) SCR activities are usually related to local roads problems where crash data are often limited, and 2) SCR programs include a broad range of activities and it is difficult to link the activities with specific crash reductions. Instead, this Guide presents qualitative and anecdotal evidence including the number of projects initiated as a result of SCR activities, the number of training and technical assistance sessions provided, and feedback from participants.

- **Chapter 5: Program Evaluation**

The chapter reviews challenges encountered and lessons learned by current SCR programs, as well as changes made as a result of the challenges.

- **References**

This section provides citations from the main body of the Guide.

- **Appendix A: Safety Circuit Rider Programs**

This appendix lists existing SCRs along with contact information.

- **Appendix B: Highway Safety Improvement Program (HSIP) Funding Memorandum**

This appendix provides a memorandum from the Federal Highway Administration's (FHWA) Associate Administrator for Safety to the FHWA Division Administrators describing the eligibility of Highway Safety Improvement Program (HSIP) funds for Safety Engineering Assistance to Locals.

- **Appendix C: SCR Funding Proposals**

This appendix provides sample proposals and contract budgets from California and Wisconsin programs.

- **Appendix D: Safety Circuit Rider Commentaries**

This appendix presents commentaries from existing safety circuit riders about the professional characteristics associated with the safety circuit rider position.

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- **Appendix E. Safety Circuit Rider Activities**

This appendix provides States' experiences with SCR-related activities.

- **Appendix F: Program Evaluation**

This appendix illustrates performance measures in Iowa's SCR program quarterly report.

- **Appendix G: Participant Feedback**

This appendix provides commentary and feedback from individuals who received training or technical assistance through the SCR program.



## Chapter 2: Program Essentials

### 2.1 Program Initiation

#### 2.1.1 Who Benefits from Safety Circuit Rider Programs?

Safety Circuit Rider (SCR) programs are established for a variety of reasons, but the main goal is typically the same: reduce the frequency and severity of roadway crashes by providing safety-related support to agencies responsible for local road safety. While SCR support is not limited to local agencies, local agencies are typically the focus of the SCR because they are more likely than State agencies to need safety-related assistance. Too often, local agency personnel lack formal training or expertise in road safety. For example, few local road agencies have a designated engineer, where State agencies usually have a designated roadway safety engineer. Additionally, local agencies operate with smaller staffs and more limited resources than State agencies. Access to a SCR is an opportunity to enhance available resources of local agencies (e.g., safety-related knowledge and tools), as well as provide additional staff.

*SCR Programs can provide much-needed support to help improve safety on local roads.*

As the focus is on technical assistance and training for those responsible for local roads, the SCR program fits well within existing Local Technical Assistance Program and Tribal Technical Assistance Program (LTAP/TTAP) Centers. In fact, some LTAP Centers have been providing this type of onsite assistance for several years, well before the FHWA funded the pilot SCR programs in 2005. LTAP Centers are not the only option for establishing a SCR program; some States house their SCR program within the State DOT or a university research center.

Before establishing a SCR program, first identify whether there is the demand and the support for the service. It will be difficult to establish a program without both. The need to improve safety on local roads is evidenced by the overwhelming number of crashes occurring on local roads each year. The demand is the need for safety-related technical assistance and training to improve safety, which comes from State and local agencies. Initially, this demand can be measured by interviews or surveys of State and local agencies; however, it may be necessary to conduct a needs analysis because it may be difficult for State and local agencies to gauge what they do and do not know. Figure 1 provides a sample needs analysis survey.

There are other measures to help gauge the level of demand for SCR services as well. One measure is the number of safety-related requests to LTAP/TTAP Centers. LTAP/TTAP Centers

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provide more than just safety-related support to local agencies. If the demand for safety-related support is great, it may be appropriate to establish a position (i.e., SCR) to provide a greater level of safety-related support. Demand for a SCR program may also be generated by the public in response to real or perceived safety problems. Public demand can be measured by the number of safety-related citizen complaints to local road agencies, although complaints can be directed to the State DOT or other safety agency. While it would be difficult to justify a SCR program based solely on public demand, this measure can be used to support the establishment of a SCR program.

It is not only important to identify the demand for a SCR program, but it is also necessary to establish the demand for the various types of support (e.g., technical assistance, training, or both). When training is desired, it is necessary to determine the topics of interest. The needs analysis survey (Figure 1) may be distributed to State and local agencies to determine the level of interest by type of assistance. If training is desired, the needs analysis identifies specific courses of interest.

### ***Sample Needs Analysis Survey***

What types of safety-related assistance would be of greatest use to your agency?

(Check all that apply)

- Training (e.g., low-cost safety improvements)
- Technology Transfer (e.g., how to use safety-related software programs)
- Technical Assistance (e.g., analyzing crash data or conducting road safety assessments)

Does your agency currently allow for professional development (e.g., time away from work and assistance with course registration fees)?

If training is of interest, what courses would be of greatest interest? (Check all that apply)

- ADA/Accessibility Requirements
- Crash Investigation/Reconstruction
- Flagger Training
- Intersection Safety
- Low-Cost Safety Solutions
- Older Driver Issues
- Pedestrian and Bicycle Safety
- Road Safety Audits
- Road Safety Fundamentals
- Roadside safety
- Signs and Pavement Markings
- Stormwater/Ponding/Grates
- Traffic Calming
- Traffic Engineering Fundamentals
- Work Zone Safety
- Other (please specify): \_\_\_\_\_

Figure 1. Sample Needs Analysis Survey.

### **2.1.2 Where to Find Support for the SCR Program**

Support for SCR programs can be found in several ways. For example, while financial support is critical, it is also important to gain institutional support for the program from the State DOT and other partners. Partners can help champion the effort by promoting the SCR program and creating a strong safety culture within the State. Safety culture describes a heightened awareness of transportation safety needs across all levels of government and among the many associated professionals and agencies in which they are employed.

Iowa is regarded as a leader in changing the safety culture within their State. Specifically, the State established a Safety Management System (SMS) circa 1990, as mandated by the Intermodal Safe Transportation Equity Act (ISTEA). The SMS is composed of multi-disciplined professionals, including State and local transportation agencies, law enforcement, insurance representatives, American Association of Retired Persons (AARP) representatives, educators, and others, all with a mutual interest in transportation safety improvement in Iowa. While many States abandoned any safety management system with the expiration of ISTEA, Iowa did not. This multi-disciplinary group continues to meet and plan safety initiatives on all levels of roads in Iowa. The Iowa SCR indicated the positive change in safety culture has been instrumental in providing momentum for its SCR program. In essence, a strong safety culture within a State can drive the need for SCR activities.

As demonstrated throughout the Guide, SCR programs share many commonalities related to why and where a program is established. The typical process for initiating a SCR program includes:

1. Identify level of demand and support.
2. Recruit appropriate partners.
3. Start small – measure and show effectiveness, secure additional funding, then expand.

While many commonalities exist, many differences unique to each program can also be identified. Rather than list the numerous differences, the following examples illustrate the process of establishing a SCR program.

### 2.1.3 Program Initiation Case Studies

#### **Florida**

The Florida SCR program was established as part of the FHWA-funded pilot SCR program in 2005. The Florida SCR program is part of the Florida LTAP Center, which is located at the University of Florida. Initially, SCR activities were limited, but the program expanded as partnerships and relationships were established.

The SCR activities began in Hendry County and were patterned on the successful Mendocino County (California) Road System Safety Assessment Process (see text box). Initial efforts in Hendry County included identifying sites with safety issues and conducting site visits to evaluate and correct the safety issues. As the program expanded beyond Hendry County, crash data were used to select focus counties, prioritize initial efforts, and identify other counties for later efforts. For each focus county, the SCR conducted basic training related to standard highway signs and using ball bank indicators, which the SCR provided.

#### **Mendocino County Road System Safety Assessment**

Mendocino County (California) Department of Transportation (MCDOT) maintains and improves 1,018 miles of secondary roads, including paved and unpaved local roads, major and minor collectors, and one four-lane arterial.

MCDOT has successfully reduced crashes by implementing improved highway signage as a low-cost safety measure. Crashes were reduced by 42.1 percent from 1992 to 1998 at a cost of \$79,260 over the 6-year period. MCDOT refers to its program for evaluating and improving the safety of the county's road signs as Road System Traffic Safety Reviews. The program is similar to typical road safety audits (RSAs), but the focus is primarily on highway signs.

More information on the Mendocino County Road System Safety Assessment Process can be found in the Public Roads Magazine, January/February 2005; view at:

<http://www.tfrc.gov/pubrds/05jan/08.htm>

Currently, the Florida LTAP employs three part-time circuit riders located throughout the State, which helps to minimize travel costs and serves a larger geographical area. Another benefit of employing multiple safety circuit riders is the ability to provide location-specific expertise to different geographic regions. For example, certain areas of Florida may have safety issues related to older road users whereas other areas may need to address different safety situations.

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Florida safety circuit riders interact mostly with County Road Department personnel who may be in highway maintenance or traffic device maintenance. Counties with a traffic operations department typically do not use the SCR services. Counties that contract traffic engineering design, but are responsible for maintenance of the devices, do use the SCR services.

### ***Idaho***

Historically, Idaho has had high fatality rates on its local system, specifically with intersection-related and run-off-road crashes. The Idaho LTAP and the FHWA became involved because of the large number of fatal crashes and a SCR program was suggested as a means to reduce crash costs for local agencies. The Idaho LTAP director champions this effort and helps to promote the SCR to local agencies. Local Highway Technical Assistance Councils (see text box) also work to raise awareness of the SCR program among local jurisdictions. As local agencies learn more about SCR services, the demand for these services increases. The SCR program and championing efforts have resulted in marked success because local agencies now understand the magnitude of the problem in terms of people killed and crash costs. The SCR program provides the local agencies with the resources to address the safety issues.

### ***Iowa***

The Iowa SCR program coincided with the Rural Technology Assistance Program (RTAP) in 1989, and was expanded to urban agencies in the early 1990s. Although not officially known as a SCR, the types of services provided date to the inception of RTAP.

The Iowa SCR program continually reviews its emphasis areas for relevance and worth to customers. Surveys of needs as well as preferences for training are distributed to customers periodically. Work zone safety and flagger training are staples of the training program, but other topics have been added, including roadside safety, permanent signing and pavement markings, and temporary traffic control design.



### **Idaho Local Highway Technical Assistance Council (LHTAC)**

The Idaho LHTAC's mission is to "assist the Local Highway Jurisdictions (e.g., cities, counties, and highway districts) with using the available resources for maintenance and construction of Idaho's Local Highway System in the most efficient and effective manner possible." The LHTAC's focus is to:

- Develop uniform standards and procedures for highway maintenance, construction, operation, and administration.
- Make recommendations to the Idaho Transportation Board for distributing and prioritizing Federal funds for local highway projects.
- Assist the Legislature by providing research and data relating to transportation matters affecting Local Highway Jurisdictions within the State.
- Represent member jurisdictions at conferences, meetings, and hearings relating to highway and street subjects affecting Local Highway Jurisdictions.
- Maintain and disseminate information from other States that would affect the Local Highway Jurisdictions in Idaho.

For more information on the Idaho LHTAC, visit: <http://www.lhtac.org/index.html>

### ***Kentucky***

Kentucky is also one of four SCR programs established as a FHWA pilot program. To initiate the SCR program, Kentucky staff attended an FHWA-sponsored training program on low-cost safety improvements (LCSI) in 2004. They used that experience to customize course materials and develop a 1-day, Kentucky-specific workshop on LCSIs.

The Kentucky program focuses on three primary areas: reducing road departures (run-off-road collisions with fixed objects), intersection collisions, and collisions involving pedestrians. To launch the Kentucky SCR initiative, a steering committee first identified the six counties with the highest crash numbers. Then, each of the six Area Development Districts (ADDs) with the highest crash records hosted a workshop to disseminate best practices and share information on LCSIs. Kentucky is now in the second phase of its program and has identified additional counties for workshops and road safety audits (RSAs). In fact, the workshops and RSAs account for about 25 percent of the SCR's time.

### ***New York***

The New York State SCR program evolved out of necessity. The Cornell Local Roads Program (CLRP) was created circa World War II and operated until the LTAP Center was formally

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established in 1984. The Cornell Local Roads Program used Section 402 funds to create and provide a work zone safety course, which formed the basis of its SCR program.

Although not formally identified as a SCR program, support was expanded to provide additional training as well as technical assistance. A safety engineer on staff provided this training from the late-1990s through 2004. When the instructor left the program, the training was reduced. In 2007, the SCR was officially established with encouragement and financial support from the New York State DOT (NYSDOT). In New York State, the SCR program was referred to as a traffic safety outreach program and offered technical assistance and training to local agencies. With the new outreach program and the need for local training, there was a need to refill the instructor position. After several unsuccessful attempts to fill the position, the program hired consultants to provide training to local agencies. Currently, two of the program's trainers also act as safety circuit riders. Additionally, one senior engineer at the LTAP Center provides safety technical assistance and training across the State as part of his LTAP duties.

### ***Pennsylvania***

The Pennsylvania SCR program was initiated circa 1990 with safety engineers providing training and technical assistance. Through its different bureaus, the Pennsylvania DOT (PennDOT) provides overall SCR program management structure, primary funding, and technical resources. PennDOT also serves as the coordinating agent or liaison between the SCR and different municipalities throughout the Commonwealth, including partnerships with local Metropolitan Planning Organizations (MPOs) and Rural Planning Organizations (RPOs). The MPOs and RPOs provide outreach opportunities to market the SCR program, inform municipalities about safety resources, and schedule classes. Further, PennDOT provides crash data when needed and hosts safety-related classes at its district facilities.

The current SCR joined the Pennsylvania LTAP program in 1997, which was then managed by the Pennsylvania State University. In 2006, the Pennsylvania State Association of Township Supervisors (PSATS) assumed management of the LTAP program as the prime contractor to PennDOT. PSATS is responsible for the primary administrative duties including:

- Schedule coordination.
- Class logistics (e.g., set-up, handouts, food, etc.).
- Communication link between local government requestors, PennDOT, and the SCR.
- Newsletter production.

- Training evaluations.
- Quality assurance.

PSATS uses a consultant to handle the training and technical assistance aspects of the SCR program. A pool of engineers provide safety-related services; two senior engineers conduct most of the training and technical assistance while four other engineers are available for technical assistance and other support. The safety circuit riders also write newsletter articles or tech sheets upon request and present at conferences and local government meetings. This creates a three-tiered SCR program including PennDOT, PSATS, and the consultant, each with its own roles and responsibilities.

### ***West Virginia***

The West Virginia LTAP also received one of four Federally funded grant programs to establish a formal SCR program; however, the State has provided SCR-type activities for many years. The FHWA grant helped fund programs for technical assistance on rural road safety. The LTAP Center had an established relationship with the traffic engineering unit of the West Virginia DOT because LTAP provided training and informal technical assistance for some of the districts.

West Virginia used the FHWA grant to expand the type and amount of support provided. The LTAP programs tended to focus on run-off-road, intersection, and pedestrian crashes, but the Center also had a strong commitment to providing safety-related support in any area of need. As an example, the State DOT identified a roadway departure crash problem on many two-lane rural roads statewide, but did not have the resources to assess all locations. West Virginia is one of several States that does not have county road agencies and the State essentially serves as the local road agency. As such, the State DOT is responsible for over 90 percent of all public roads in the State. The Federal grant allowed the SCR to assist the State DOT with crash data analysis for two-lane rural roads, conduct field reviews of the locations with the district traffic engineers, and document recommendations for the State DOT. The SCR was able to provide this support for approximately 75 percent of the US- and State-numbered routes that are State-maintained. The State DOT staff completed this process for the remaining US- and State-numbered routes.

### ***Northern Plains Tribal Assistance Program***

The Northern Plains Tribal Technical Assistance Program established their SCR Program in 2004. In December of that year they announced their SCR program to the Tribal Transportation Planners. In January and February of 2005 the SCR program staff determined the level of interest,

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level of need, and tribes' ability to implement road safety improvements. Based on these discussions, the Oglala Sioux (Pine Ridge) Reservation, the Cheyenne River Reservation, and the Rocky Boy Reservation were chosen for a concentrated effort by the SCR program. These reservations were selected because of their knowledge of their transportation safety problems and their ability to team with state, Federal, and local agencies. When the SCR program became one of the FHWA-funded pilot SCR programs in 2005, efforts were focused on conducting RSAs on the three reservations. Highlights from the SCR assistance provided on two of the reservations is as follows:

- **Cheyenne River Reservation:** This program began with road safety audit training in May of 2005. The training included actually conducting an RSA on a road that was chosen because of safety concerns as a result of reported crashes, changing land use patterns, and an increase in vehicular and pedestrian traffic. An RSA report was produced at the conclusion of the RSA.
- **Oglala Sioux Reservation:** This program began in June of 2005 with a planning-stage RSA on a proposed walking path. As a result of this RSA, training was conducted in the local schools on pedestrian and bike safety. The training sessions were administered to over 300 Native American children and adults.

## 2.2 Program Sustainability

### 2.2.1 Funding

The success of any program depends on sufficient funding. For the SCR program, different costs are associated with various aspects of the program and the extent of the program depends on the extent of the funding. Costs to initiate and operate a SCR program include:

- Employing a part-time or full-time safety circuit rider.
- Travel costs associated with onsite training and technical assistance.
- Training materials (e.g., informational guides, lecture notes, videos).
- Equipment (e.g., LCD projector/screen, laptops, retroreflectometer, ball bank indicator, traffic counters, radar unit).
- Administrative costs (e.g., responding to requests, scheduling appointments, scheduling training, budgets, reporting, publicity/promotion, and finding/reserving training facilities).

Although the FHWA has supported the pilot initiative to fund SCR programs with short-term grants, it is unlikely the FHWA will be a primary source of funding for SCR programs. Once the

FHWA grants expired, the pilot SCR programs were required to seek alternative funding to continue operating. For a look at potential funding sources, it is helpful to assess existing SCR programs. Based on interviews with SCR program managers and staff representing FHWA pilot programs, and those who have initiated a SCR program without FHWA assistance, potential funding sources include:

### **Federal**

- ***FHWA Office of Safety:*** Grants are sometimes available for specific types of activities based on solicitation of proposals through FHWA Division Offices or LTAP Centers. For example, the Florida SCR program applied for and received a \$40,000 grant from FHWA for a Local Road Safety Audit (RSA) Program to support RSA activities that are conducted as part of the SCR program. The Delaware SCR program applied for and received a \$10,000 FHWA grant for an Accelerating Safety Activities Program (ASAP). The grant funds a university student to assist with SCR activities.
- ***FHWA Division Offices:*** Funds are available for technology transfer activities. There is a potential to team with Division offices, using a portion of the technology transfer funds to provide safety-related support to local agencies within the Division.

### **State**

- ***State Departments of Transportation:*** State DOTs may have specific funds available for safety-related activities. As the SCR program focus is on enhancing local road safety, SCRs may be eligible to use these funds. However, some State funding is only applicable for projects on State-maintained roads.
- ***Highway Safety Improvement Program (HSIP):*** The HSIP provides Federal funds from the FHWA, however, the program is typically administered within each State by the State Highway Agency (typically State DOT) in partnership with the FHWA Division Office. These funds can be used for safety projects on any public road including engineering services as discussed below:

- *Engineering Services: The following paragraph is taken from the July 14, 2006 memorandum (refer to Appendix B for complete memorandum) from the FHWA Associate Administrator for Safety to Division Administrators:*

*The SAFETEA-LU emphasis on using a data-driven approach to improve safety on all public roads may lead States to conclude that expanding or beginning similar safety programs for local roads is an excellent strategy*

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*for improving safety statewide. Engineering services have always been eligible as part of a Federal-aid project under the broad Title 23 definitions of construction and project, and Section 112 of Title 23 allows the State to contract for these design/engineering services. Engineering assistance programs for local roads was an eligible expense under the previous HSIP program and remains eligible under the new core HSIP program.*

To qualify for HSIP funding, a SCR program should ensure that its engineering activities **support** key strategies within the State's Strategic Highway Safety Plan (SHSP). For example, many States have identified run-off-road crashes or rural roads as key emphasis areas in their SHSP.

For more information on the HSIP, visit the following links:

<http://www.fhwa.dot.gov/safetealu/factsheets/hsip.htm>;

[http://safety.fhwa.dot.gov/state\\_program/hsip/index.htm](http://safety.fhwa.dot.gov/state_program/hsip/index.htm);

<http://safety.fhwa.dot.gov/safetealu/toc.htm>.

Your State's SHSP information can be obtained from the FHWA Division Office.

- *Complete SCR Activities: Safety Circuit Rider activities can be funded using the 10% funding flexibility in HSIP. Under SAFETEA-LU, States can "flex" up to 10 percent of their 23 U.S.C. 148 funds (i.e., HSIP funds) if they meet specific criteria.*

The Wisconsin case study (refer to Funding Case Studies section) provides an example of how flex funding was used to fund a SCR program. For more information on how to meet HSIP flexible funding requirements, contact your FHWA Division Office. The following link provides the December 26, 2006, memorandum and guidance attachment regarding the use of funding flexibility in the Highway Safety Improvement Program:

<http://safety.fhwa.dot.gov/safetealu/>.

- **State and Community Highway Safety Grant Program (Section 402):** Section 402 funds are Federal funds administered by the States. The purpose of the Section 402



program is to assist States and communities to develop and implement behavioral (nonconstruction) highway safety programs designed to reduce traffic crashes and the resulting fatalities, injuries, and property damage. A State may use these grant funds only for highway safety purposes and at least 40 percent of these funds are to be used to address local traffic safety problems. Proposals for 402 funding must be submitted through the State Highway Safety Office (SHSO), which administers the 402 funds for the State. A successful proposal is based on a relationship with the SHSO and an understanding of its priority needs and how the proposal supports the SHSO Highway Safety Plan. For more information on how to apply for Section 402 Highway Safety Funds, States should contact their Governor's Highway Safety Representative. A listing is available at:

<http://www.ghsa.org/html/links/highwaysafetywebsites.html>.

- **Highway Safety Transfer Provision Programs (Sections 154 and 164):** Two sections of Title 23 encourage States to comply with specific laws. Section 154 is intended to encourage States to pass laws that will not allow an open container of alcohol while operating a motor vehicle. Section 164 is intended to encourage States to have stronger laws that enforce stricter consequences for repeat DWI or DUI offenders. Starting October 1, 2002, for noncompliant States, 3 percent of the State's Federal-aid highway construction funds are transferred each year to the State's Section 402 funding. This includes 3 percent for each program; therefore, a State may have 6 percent of its funds transferred. These funds can be used for impaired driving countermeasures, impaired driving enforcement, or Title 23 United States Code, Section 148 Highway Safety Improvement Programs. LTAP activities, including the SCR, are eligible to apply for Section 148 funding. Agencies interested in applying for these funds should develop a relationship with their SHSO as well as the DOT traffic office. Contact your SHSO to learn how the funds are distributed. Application processes vary by State.

#### Local

- **LTAP/TTAP Centers:** Many existing SCR programs are housed at the LTAP/TTAP center within the State. The safety circuit rider provides many of the same services as the LTAP/TTAP center, although the focus remains on safety-related support. LTAP/TTAP Centers may be able to provide partial or even complete funding to support a SCR program using their existing funding mechanisms. In fact, some LTAP Centers

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(e.g., West Virginia) have an agreement where the circuit rider is funded part time under the SCR program and part time as an LTAP employee.

- **Individual Contracts:** A local agency may contract with the SCR program to provide ongoing technical support (e.g., RSAs) or a specified number of training courses.
- **Workshop and Course Fees:** While it is desirable to provide SCR support and services free of charge, it may be possible to charge a fee for training and/or technical assistance, depending on the level of effort.

### 2.2.2 Local Agency Structure

Local agencies vary significantly in size and structure, which often determines the diversity of skills and available resources (e.g., staff, funding, and equipment) for an individual agency. The structure of local agencies may differ significantly by State. Therefore, it is important to first understand the structure in which the SCR will work. Figure 2 shows several potential levels of local government or organizational frameworks that may exist within a State. The larger entities appear at the top and the smaller divisions of the larger entities are listed at the bottom. It should be noted that this is a general representation and actual structures vary by State and the entities may appear in different levels.

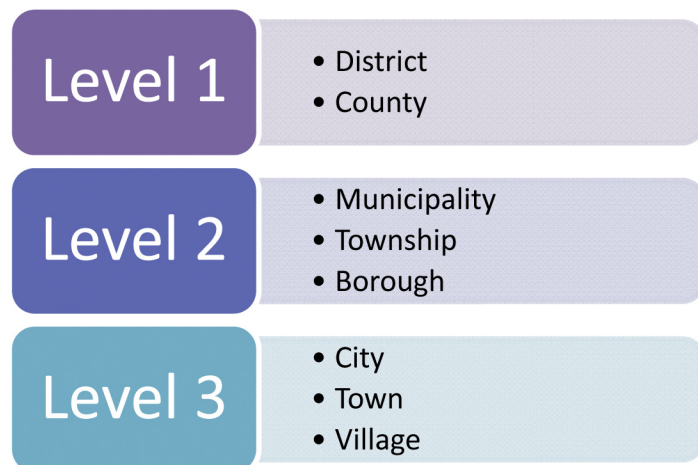


Figure 2. Potential levels of government in states.

Larger local agencies (e.g., counties and large cities) will likely have greater resources available, while smaller municipalities (e.g., towns and villages) often have more limited staff and funding. Therefore the larger entities may be able to help support sustained SCR activities, while smaller local agencies will likely use this service only if it is provided free of charge. For example, the Florida SCRs focus on specific districts. District 7 in Florida has become so involved that it has contributed \$50,000 to the SCR program to continue training efforts and RSA activities. In contrast, Pennsylvania is comprised of more than 2,500 smaller agencies, including townships and boroughs. The Pennsylvania SCR indicated that only a few of these local agencies (i.e., larger metropolitan areas) would have the resources to help support the SCR program.

The technical knowledge of the staff and resources available to the local agency may also affect the nature of training and technical assistance activities provided by the SCR. Larger local agencies may employ a staff to work full-time on roadway and traffic issues (e.g., highway and traffic engineers). Smaller municipalities often employ just a few staff members to handle all general civil engineering issues and these staff may or may not have a background in traffic engineering. For more information on the structure of local government within your State, visit:

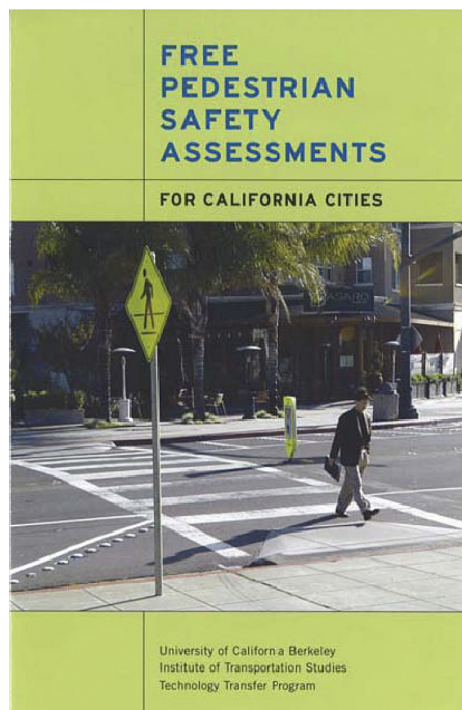
<http://www.loc.gov/rr/news/stategov/stategov.html>

### 2.2.3 Funding Case Studies

#### **California**

The University of California, Berkeley's ITS Technology Transfer Program applied for a grant to perform traffic safety evaluation services for California communities. Funding was secured through a grant from the California Office of Traffic Safety, through the National Highway Traffic Safety Administration. The grant was a two-year agreement and included the following activities:

- Traffic Safety Evaluations: conduct 30 two-day site visits to provide onsite assistance to city and county agencies in California.
- Pedestrian Safety Assessment Tool: create a model pedestrian safety assessment tool based on current best practices.
- Pedestrian Safety Assessments: conduct 18 pedestrian safety assessments in California communities using the pedestrian safety assessment tool.
- Marketing: disseminate information related to the Traffic Safety Evaluations and the Pedestrian Safety Assessments.
- The grant expanded on an existing program with a longstanding and solid track record. The grant included a problem statement, performance measures, objectives, a method of procedure, a method of evaluation, administrative support, and a detailed budget estimate. Further details regarding the grant proposal are provided in Appendix C.1 California SCR Grant Proposal.



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### **Delaware**

Several sources fund the Delaware SCR program. The SCR program is established as part of the LTAP Center and, as such, the LTAP Center is the primary source of funding. The annual budget for the LTAP Center includes LTAP funds from the FHWA, State Planning and Research (SP&R) funds from the FHWA, and State funds. The Delaware LTAP Center has received funds from the FHWA Division Office's technology transfer funds for several years, including once specifically for the SCR program in the amount of \$5,000. While these funds are available annually, an application must be submitted each year for which the funds are requested. Aside from the support from the LTAP Center, additional funding was obtained for the SCR program as a one-time \$10,000 grant from the FHWA's Office of Highway Safety as part of the Accelerating Safety Activities Program (ASAP).

### **Florida**

The Florida SCR program was established and initially funded as an FHWA pilot SCR program. Since its inception, the Florida SCR program has had to obtain sustained funding and has identified and used several sources:

- **Section 402 Funds:** Received Section 402 funds to develop training courses.
- **Workshop Fees:** A fee is charged for workshops and no negative feedback has resulted from this method to date.
- **FHWA Grant:** Applied for additional funding of \$40,000 from FHWA in the form of a grant for a Local Road Safety Audit Program. FHWA funding covers local road safety audit activities conducted as part of the SCR efforts.
- **Florida Department of Transportation (FDOT) Districts:** Some funding comes directly from Florida districts. The SCR program contracted with District 7 for \$50,000 to continue training efforts and RSA activities. This funding was also used as a match when applying for the FHWA grant for a Local Road Safety Audit Program.
- **Cost Sharing:** Cost-sharing represented \$30,000 of the first SCR grant funds. Florida was required to show that the agencies receiving training and assistance were acting on the information and resources provided. In return for the SCR efforts, each agency was asked to submit an itemized list of expenses relating to any SCR suggestions that were implemented. These expenses included such items as the cost of new signs and markings, photocopies, administrative expenses, and even labor costs related to administrative activities and installation and maintenance functions. The expense lists were sent on agency letterhead and forwarded to the University to be recorded

and tallied against the total to be collected (\$30,000), as required by the grant. During one quarter, the SCR program collected and reported \$28,636 in cost sharing. During another quarter, the SCR program collected and reported \$1,189 in cost sharing.

- **State DOT:** The Florida DOT provides important financial and employee support. The DOT hires and funds a Community Traffic Safety Team (CTST) coordinator to work in each of the districts. CTSTs are diverse community groups, which include volunteers representing the four Es of safety: engineering, education, enforcement, and emergency medical services. These teams meet once a month to discuss safety issues within their communities. While CTST coordinators are not officially part of the SCR program, they are important partners involved in several SCR activities each year. The CTST coordinator acts as a liaison between the SCR program and the chairs of each of the CTSTs, assists with contacting team members, and promotes the program during monthly team meetings. Since receiving the additional grant funding (\$40,000) to specifically provide the Road Safety Assessment course for CTSTs, the coordinators have helped to schedule training, find places for training to be held, as well as assist in efforts to obtain follow-up reports on the training. For reporting purposes, the training results must be tracked. While this process is still fairly new, the coordinators have been very helpful and appreciative of services provided.
- **LTAP Center:** The Florida LTAP Center also supports the SCR program. Initially, the Center requested and received funding from the Accelerating Safety Activities Program (ASAP) through FHWA to purchase a retroreflectometer. The retroreflectometer is a useful tool for conducting RSAs because it allows the team to evaluate sign retroreflectivity during daylight conditions, a much safer time for the team conducting the tests.

### **Idaho**

The Idaho SCR program was established initially as part of the LTAP Center, but activities were limited because of funding. The LTAP Center requested additional funding from the Idaho Transportation Department (IDT) through the HSIP or Section 402 funds. At the time, IDT would not provide additional funding through the HSIP because local roads were not included in the State's SHSP and, therefore, did not qualify for HSIP funding to support this effort.

The LTAP Center has continued to pursue funding and the IDT recently agreed to include language in the SHSP to allow funds to be spent on local roads and the SCR program. As soon as

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the SHSP is updated, funds will be available for the SCR program and held by the LTAP Center.

In July 2008, local jurisdictions applied for projects through the Local Technical Highway Assistance Council. A preliminary list of locations will be selected based on the most severe needs and RSAs will be conducted for those projects that are deemed appropriate. The RSAs will be, at least partially, supported by the County Risk Management Group. It is expected that the County Risk Management Group will provide funding to support one staff member to participate in the RSAs. Once the RSAs are complete, the funds from the HSIP can be obligated to correct the safety issues.

Another potential funding source is a local agency insurer, who has realized the potential benefit of improving the road systems. Increased safety would reduce the liability of the local jurisdiction, and as a result, the insurance company has expressed a strong interest in supporting the SCR program financially. Idaho is currently trying to identify an appropriate mechanism for the insurance company to provide funding.

### ***Illinois***

State Farm Insurance has established the Embedded Safety Specialist Initiative in Illinois. While not technically a SCR program, it serves a similar function by providing safety-related support to local agencies (e.g., RSAs, local Highway Safety Plans, and grant applications). This pilot initiative through State Farm Insurance was established in response to the State's Dangerous Intersections Program, which identified hazardous intersections throughout the State. Some local agencies indicated that the Dangerous Intersections Program could have been more effective if they were involved in the selection process so that intersections that had recent improvements made could be removed from the list. As a result, State Farm provided seed money to initiate a SCR-type program to work more closely with the local agencies. The funding provided support for one consultant to work part time assisting a designated local agency. For the first year of the privately-funded pilot program, Champaign County was identified as the designated local agency. A different county was identified as the designated local agency for the second year of the initiative; however, Champaign County established a contract with the original consultant to provide continued support. Champaign County is funding the continued SCR-type activities through its MPO.

### ***Iowa***

The Iowa SCR program initially was funded entirely by LTAP funds. Currently, the program is



funded through a combination of sources. Specifically, the State DOT provides funding from its 0.50 percent road use tax fund, while the Governor's Traffic Safety Bureau and LTAP contribute additional funds.

### ***Kentucky***

During the pilot period, the Kentucky Transportation Cabinet (KTC) recognized the value of the SCR program and pledged sufficient funding to carry the program through 2006, and possibly 2007. The SCR program is now solely funded by the KTC, but the SCR program must reapply annually to renew the KTC funding. The application is submitted to the Secretary of Transportation and approved by the KTC advisory board.

### ***New York***

Initially, New York used Section 402 funds to develop and present the work zone safety course, as previously discussed. With financial support from the NYSDOT, the SCR was expanded. Specifically, the LTAP Center receives funding from the State DOT for safety-related activities. The SCR program falls well within the realm of safety-related activities and the LTAP Center uses the State funds to finance a large percentage of the SCR program. In addition, the SCR program receives funding from the Governors' Highway Traffic Safety Committee to support development of training materials. The SCR program also charges fees for workshops, but these fees only help to recover costs of the training (e.g., meeting room, materials, food). The fees from the workshops do not cover training costs; safety-related funds from the NYSDOT are used to cover the remaining costs. In 2008, typical workshop fees were \$40 for basic training courses and \$75 for engineering-level training (e.g., FHWA courses on pedestrian or roadside safety).

### ***Pennsylvania***

As discussed previously, the Pennsylvania SCR program is a three-tiered program, including PennDOT, PSATS, and a consultant. Funding is available for the overall program through a single fund at the State DOT, including contributions from the FHWA, Bureau of Planning and Research, and the Bureau of Highway Safety and Traffic Engineering, which includes Section 402 dollars. It is estimated that PennDOT adds about \$1,300,000 to the LTAP program, annually. While the funding supports safety training and technical assistance as well as maintenance and marketing/outreach activities, it is estimated that 50 percent of the funding is spent on safety activities. The Bureau of Planning and Research lets a bid to provide LTAP services for a three-year period with the option of a two-year extension. The program appears to be well-established and the outlook for continued funding appears promising.

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### **West Virginia**

As noted previously, the West Virginia LTAP Center has had a SCR program for many years and provides training and onsite technical assistance. The West Virginia SCR program is funded mostly by the State and while the program would likely offer many of the same services had it not received an FHWA grant, the SCR has been enhanced by the grant. Grant monies were particularly helpful for purchasing additional equipment to provide a wider range of services. For example, the West Virginia LTAP owned automated traffic counters, which were available for loan to local agencies. With the additional funding, the SCR program was able to purchase a retroreflectometer for testing sign retroreflectivity. Now, when the SCR identifies potential signing issues and recommends a study to determine the adequacy of retroreflectivity, the SCR can provide the equipment to the agency to perform the task. West Virginia will continue to look for other support to maintain the current level of activity and resources.

### **Wisconsin**

The Wisconsin SCR program was initiated at the University of Wisconsin-Madison in 2008. The SCR program has been established as a two-year pilot program funded at \$280,000 by the State DOT using the HSIP flexible funding option. Its continuation is contingent on the success of the pilot period. Appendixes C.2 Wisconsin SCR Funding Proposal and C.3 Wisconsin SCR Contract Budget include the initial SCR proposal and budget between the State DOT and University of Wisconsin-Madison.

The funding is provided through the State's Highway Safety Improvement Program (HSIP) funds, specifically the 10 percent flex option set forth in 23 U.S.C. 148 section 104(b)(5), described previously under State funding options. To use HSIP funds for non-infrastructure projects, the DOT had to certify that it had fulfilled all of its infrastructure needs for that year. Specifically, Wisconsin certified to the FHWA Division Administrator that it had allocated funding for all HSIP projects. In addition, the SCR program was included in the State's SHSP as an activity to help improve intersection safety and to minimize consequences of run-off- road crashes. SCR activities will specifically support the following SHSP issue areas:

- Issue Area 2: Improve Design/Operation of Intersections.
- Issue Area 6: Keep Vehicles on the Road.
- Issue Area 9: Minimize Consequences of Leaving the Roadway.

According to those involved in the SCR program initiation, the greatest challenge in the process was the certification that the State had met all infrastructure requirements. Another challenge was to convince the Wisconsin DOT that the SCR program was beneficial and worthy of this

funding mechanism. There were 15 proposals submitted to use the 10 percent flex option. As a testament to the perceived benefits of the SCR program, the proposal was one of just five proposals approved to use the 10 percent flex funding. As discussed previously, the use of flex funds requires a match, which cannot come from other Federal sources. Wisconsin developed a clever solution, employing course registration fees and publication sales to obtain the necessary match in funding.

Activities to be performed under the two-year contract include:

- **Conduct crash data analysis (\$100,000)** to provide information and support for local safety improvement programs. Data analysis will include support for safety counter measures, road safety audits, and operations.
- **Provide technical assistance (\$140,000)** to local agencies for safety improvements. Use part-time regional staff experts in cooperation with University of Wisconsin staff.
- **Conduct training workshops and conferences (\$40,000)** on local road safety. Coordinate with University of Wisconsin Traffic Operations and Safety (TOPS) Lab, University of Wisconsin Transportation Information Center (TIC), Wisconsin DOT, and FHWA Safety Programs. For more details regarding the budget, refer to Appendix C.3 Wisconsin SCR Contract Budget.

The SCR program involves a partnership with the University of Wisconsin TOPS lab for crash analysis support. The TOPS lab employs students to assist in the crash data analysis under the direct supervision of full-time researchers. The data analysis effort initially identified those counties with the highest number of fatal crashes. Based on the initial analysis, the safety circuit riders will conduct RSAs in six of the 72 counties.

#### **2.2.4 Partnerships**

Partnerships are a crucial aspect of any SCR program. Partners formed by existing SCR programs range from Federal to local governments and can include the general public. The divisions of government will vary across States, but examples of partners include:

- **Federal Highway Administration (Division Office, Office of Safety, Resource Centers):** The FHWA has become an important partner in many States. The Florida SCR program works closely with the FHWA when applying for grants and other types of funding.
- **State Department of Transportation/Highways or Transportation Cabinet:** The

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- State DOT may provide funding and help to identify the need for training and technical assistance. In West Virginia, the main partner of the SCR program is the State DOT, as it manages more than 90 percent of roads in West Virginia. The SCR has formalized and enhanced existing relationships with the safety unit of the Traffic Engineering Division of the State DOT and with the FHWA West Virginia Division Safety Engineer. Based on discussions with the SCR, it is critical to have a traffic engineer on staff or available for questions; the Traffic Engineering Division of the State DOT provides this resource. Individual State DOT districts can also provide support and help to spread the word about the SCR program to local agencies. For example, District 7 in Florida provided \$50,000 to continue training efforts and RSA activities.
- **LTAP/TTAP Center:** Many SCR programs are housed at the LTAP Center and the programs fit comfortably into already-established LTAP Client relationships. To further promote the Florida SCR program, SCR program-related articles are included in the LTAP Center's quarterly newsletter. With a circulation of over 12,000, the publication is respected among Florida's transportation and public works professionals. Articles have included titles such as "Levy County Takes a Proactive Approach to Safety" and "Florida LTAP Center's Popular Workshop: Road Safety Audits for Local Governments." By using the existing and well-established publication, the SCR program saves money and reaches a broad audience.
  - **Universities:** Similar to LTAP/TTAP centers, universities can provide a base of operation and other resources such as part-time staff. In Iowa, collaboration with the university has proven a particularly successful partnership. The SCR often works with the Iowa DOT to evaluate practices and strategies through low-cost research projects. Graduate students at the University perform much of the basic research required and assist in report preparation. Thus the Iowa DOT receives a valuable product, the student receives beneficial research experience, and local agencies gain insight and knowledge of the potential effectiveness of improvements.
  - **County Roadway Department:** The Florida SCR program has worked closely with the county roadway agencies to identify locations for RSAs and identify the need for workshops. The counties have been valuable partners because they provide the personnel and materials for conducting many of the activities; the SCR then provides the initial training.

- **Law Enforcement Officers:** Partnerships with law enforcement can prove a valuable asset to a safety circuit rider program. Counties and local agencies rarely maintain the crash data necessary to identify and diagnose safety issues. Law enforcement agencies, however, do maintain crash data, typically in the form of police crash reports. Law enforcement can also provide insights regarding hazardous locations and potential safety issues based on their observations and response to crashes.
- **Community Traffic Safety Teams (CTSTs):** The Florida DOT supports the community traffic safety teams, which are a major partner of the SCR. The Florida safety circuit riders have worked closely with the CTSTs to train members to better identify road safety issues. There are currently 58 CTSTs throughout the State that provide a means for disseminating information. When sufficient funds are available, the SCR program offers scholarships for CTSTs, which can be used to pay for training. One SCR taught a class on road safety audits in January 2008 to 38 team members representing CTSTs throughout the State. For results of follow-up interviews, see the Participant Feedback section of chapter 3 (Program Evaluation). Other States have similar community safety groups such as the Traffic Safety Commission in Washington.

Other partnerships identified by existing SCR programs include:

- County and City Officials (e.g., mayor, judge, etc.).
- Local Area Development Districts.
- Metropolitan Planning Organizations (MPOs).
- Municipal Workers.
- Safety Advocacy Groups.
- Street Superintendents.
- Professional Organizations (e.g., Institute of Traffic Engineers [ITE], American Public Works Association [APWA], National Association of County Engineers [NACE], Fraternal Order of Police [FOP], American Society of Civil Engineers [ASCE]).
- Public Works Department.
- Rural Planning Organizations (RPOs).

Partnerships may result in several benefits including:

- **Funding or Cost Sharing Opportunities:** The previous section discussed funding options and the role of partners, many of which involved professional relationships. Many agencies benefit directly or indirectly from a SCR program, and as such, there

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are several opportunities for cost sharing. Cost sharing can occur within any aspect of the program and simply helps to spread the costs among partners. For example, West Virginia SCR develops the training materials, distributes electronic copies of the materials to participants, and delivers the instruction. Participants are responsible for printing materials prior to the course, which reduces costs for the SCR program. Technical training seminars are typically conducted in the DOT district training rooms. The SCR offers training free of charge with the stipulation that the district open the training to nearby local agencies. Aside from the cost-sharing benefits, this policy helps to create a healthy mix of State and local participants with various backgrounds and perspectives.

In Pennsylvania, the SCR equivalent is housed with the LTAP Center through a unique arrangement with the DOT, PSATS, and a consulting firm as described previously. Thus, public and private sector partners clearly form the foundation for the program. The FHWA provides funding and technical resources through the State Safety Engineer who participates in classes, provides technical resources, and participates in developing new classes. PennDOT provides the overall management structure for the program, is the primary funding source, and provides technical resources through the different bureaus. PennDOT also often serves as the coordinating agent or liaison between the SCR and different municipalities throughout the Commonwealth. This is accomplished through partnerships with local Metropolitan Planning Organizations (MPOs) and Rural Planning Organizations (RPOs). The MPOs and RPOs provide outreach opportunities to market the program, direct municipalities to safety resources, and schedule classes. Further, the DOT provides crash data when needed, and will host safety related classes at its district facilities.

- **Program Resources:** The SCR needs to have an operation base. SCR programs will also likely need at least part-time staff to provide support for budgeting, marketing, and daily activities (e.g., providing point of contact, scheduling training and technical assistance, assisting with publications). Equipment sharing (e.g., travel vehicle, traffic counters, and ball-bank indicators) is another potential benefit when forming partnerships. The administrative, facility, and equipment costs represent a potentially large cost for SCR programs. Partnerships with the State DOT, LTAP/TTAP Center, or universities may offer staff and equipment sharing opportunities to mitigate these costs.

- **Multidisciplinary Collaborations:** Road safety is a multidisciplinary issue and activities related to road safety should include a variety of professionals, including engineering, planning, public health, law enforcement, emergency medical services, public works, and maintenance. Each group can provide a different perspective of the problem and often critical information. As discussed previously, law enforcement, in particular, is an important partner for SCR programs since law enforcement agencies maintain crash data.
- **Program Support:** For a new SCR program, partners may already have established relationships with local agencies. If this is the case, the partners are particularly valuable for promoting the SCR program, encouraging agencies to use the service, and disseminating information developed by the SCR. In West Virginia, the SCR has developed a relationship with its LTAP Advisory Board. The Advisory Board helps to promote the SCR program by encouraging locals to become involved. Board members can show first-hand evidence of how the SCR has influenced their communities.

The FHWA has promoted the SCR program with the SCR grants. A July 14, 2006, memorandum from the FHWA Associate Administrator for Safety to Division Administrators states (the complete memorandum is available in Appendix B):

*As your State moves forward in developing and implementing a Strategic Highway Safety Plan that identifies specific strategies to improve safety on all public roads, we encourage you to consider the suitability of providing part- or full-time safety assistance to local governments through your State's LTAP Center or some other means. If your data points to engineering safety needs on local roadways, it will be important to assure those jurisdictions have adequate resources to assess and develop safety strategies and projects.*

### **2.2.5 Identifying a Suitable SCR**

One of the greatest challenges to initiating a SCR program, aside from identifying sufficient funding, is identifying an appropriate circuit rider. The New York LTAP Center indicated that hiring safety circuit riders is one of its greatest issues. While several common characteristics were identified among current safety circuit riders, the preferred characteristics of a circuit rider will likely vary based on the scope of the program.

Safety circuit riders perform a wide range of duties including training, technical assistance, and technology transfer. These duties require a diverse knowledge in safety from design and opera-



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tions to specific populations of road users (e.g., pedestrians and the elderly). The SCR may work with people at all levels of government from local officials and local agencies to the State DOT. Therefore, the safety circuit rider must understand the various levels of government; experience and relationships at the various levels is even more desirable. Safety circuit riders are also required to travel regularly to provide onsite training and technical assistance as well as to attend professional development activities (e.g., conferences and seminars). As such, the safety circuit rider must be amenable to travel and comfortable speaking to large audiences. Additionally, good interpersonal communication skills are very important as safety circuit riders must be able to work effectively one-on-one in technical assistance mode. Good written communication skills are also critical as safety circuit riders must be able to prepare reports for a variety of technical and non-technical audiences.

### Characteristics of a Good Safety Circuit Rider

- Diverse technical skills in engineering and operations.
- Credibility with local road and other community organizations.
- Active in professional associations.
- Comfortable speaking before large audiences.
- Good interpersonal skills.
- Good written communication skills.

Interviews were conducted with several current SCRs to identify common characteristics. Appendix D Safety Circuit Rider Commentaries provides thoughts and comments from existing safety circuit riders regarding the most important characteristics of the job. The following items were identified as common characteristics among current safety circuit riders:

- **Diverse skill set:** Safety circuit riders are expected to provide a wide range of technical assistance and training. This may require a general knowledge in traffic engineering, highway design, roadside design, pedestrian and bicycle issues, maintenance, construction, and tort liability, as well as how all of these fields relate to safety.
- **Established relations with local agencies:** Having an established relationship with local agencies helps to bypass part of the *forming partnerships* and *promotional* stage of the program. This is not a critical characteristic, however, because the LTAP Center may have several existing relationships to promote the SCR and references could also be provided by the State DOT, MPO, or RPO. Once the SCR is established, they will likely develop their own relationships. It may also be easier to gain the support and trust of local agencies if they are familiar with the SCR. Former county engineers will certainly have an established relationship and intimate knowledge of

local agencies; however, former DOT staff may also have established relationships with the local agencies throughout their careers. One of the challenges of using former DOT employees is that the locals may have a negative opinion or relationship with the DOT. State and local road issues are often very different and it may be difficult for a former DOT employee to relate to particular situations at the local level.

- **Credibility:** Because of the nature of the position (i.e., providing technical expertise), a certain level of experience is expected. In this regard, it is unlikely that a young engineer will have the necessary skill-set. Even if young engineers have the necessary experience, it may be difficult for them to command the respect of the local agencies. Professional certification, while not necessary, will demonstrate that the SCR has the baseline knowledge in their discipline and will also help with credibility. Pennsylvania safety circuit riders are also encouraged to become certified as a Professional Traffic Operations Engineer (PTOE).
- **Comfortable 'Working the Crowd':** The SCR may work well with individuals on technical assistance, but training often involves a larger audience. Therefore, the SCR should be comfortable speaking to and working with a large audience. A senior engineer at the New York LTAP indicated that this characteristic is not absolutely necessary because people can become comfortable with the task of working with large groups.

### 2.2.6 Part-Time versus Full-Time Safety Circuit Riders

When initiating or expanding a SCR program, it is necessary to determine the number of safety circuit riders needed and whether they will be part-time or full-time employees. Of course, this assumes that the number and types of planned activities are known. In many existing SCR programs, the number of safety circuit riders was initially determined by available funding and the size of the State.

Chapter 3 provides examples of the activities expected from a part-time or full-time SCR.



## Chapter 3: Program Activities

Typical SCR program activities include training, technical assistance, and technology transfer. This chapter provides examples of the types of activities performed by existing SCR programs, as well as the number of activities performed each year and percent time spent on each type of activity.

***SCR Programs activities may include training, technical assistance, and technology transfer. However, the percent time dedicated to each aspect will vary based on client needs.***

### 3.1 Training

Training is one common function performed by safety circuit riders (see Figure 3). Based on responses from current SCR programs, training is offered on a variety of topics including:

- ADA/Accessibility Requirements.
- Crash Investigation/Reconstruction.
- Equipment and Worker Safety.
- Flagger Training.
- Intersection Safety.
- Low-Cost Safety Solutions.
- Older Road User Issues.
- Pavement Markings.
- Pedestrian and Bicycle Safety.
- Risk Management/Tort Liability.
- Road Safety Audits/Assessments.
- Road Safety Fundamentals.
- Roadside Safety.
- Software Training.
- Traffic Calming.
- Traffic Engineering Fundamentals.
- Traffic Signal Basics: Warrants, installation, maintenance (not design).
- Traffic Signs.
- Walkable Communities (different than pedestrian safety).
- Work Zone Safety.



Figure 3. Training Session.

The variety of courses offered will likely vary by program. As discussed previously, many SCR programs start small. They offer one or two courses initially and then expand their course list

### Chapter 3: Program Activities

as the program becomes more established. One reason for only offering a select list of courses initially is the time required to develop course materials. In West Virginia, the SCR typically spends more time on training than on technical assistance because of the time necessary to develop curriculum, which in many cases is highly dependent on the availability of resources. According to the Iowa SCR, it may take four to eight hours or more of preparation time for a one-hour presentation. However, once training materials are developed, the time commitment to update the materials is not as substantial.

***Many SCR Programs start small and add or modify courses as the program develops.***

It is also likely that the need for training will vary from year to year. Therefore, it is necessary to continually assess the demand for various courses and provide training on those topics that are most desired and timely. In general, the assessment of the need for training is similar to the assessment of the need for a SCR program. Important topics to cover during the assessment include the courses of interest, appropriate course length (e.g., half-day, one-day, two-day), desired format (e.g., onsite or web-based), and willingness to pay. Surveys can be distributed to State and local agencies on an annual basis. The Iowa SCR program constantly reviews its emphasis areas for relevance and worth to customers by periodically distributing surveys of customer needs. Idaho provides a one-day training course on Road Safety Fundamentals and Low-Cost/Low-Volume Safety Improvements. The Idaho SCR indicated that the one-day course could be enhanced by expanding it to a two-day format. In a two-day format, the course material would be presented on the first day and the following day could be used to demonstrate a Road Safety Audit/Assessment (RSA).

Training may also be conducted in conjunction with major program initiatives. All local transportation agencies in Iowa are provided with free crash analysis software along with the current five-year crash history. Training is available to help staff use the software and understanding the data. Several counties, where courses were provided, indicated that they are implementing low-cost improvements. The SCR indicated that the counties have seen a real movement toward data analysis and low-cost safety improvements.

The number of course sessions offered per year will likely vary as well. The number of sessions offered will depend on the number and availability of safety circuit riders as well as the demand for training.

- In Kentucky, the number of training courses varies from year-to-year, but plans are in place to conduct 24 training sessions in 2008, which is the most for any year to date.
- The Iowa SCR offers as many as 50 training sessions per year. The case studies

provide several examples of course offerings as well as the number of courses offered per year.

### 3.1.1 Training Case Studies

#### **Florida**

From January through September 2007, the three safety circuit riders in Florida conducted 13 training activities totaling 125 hours and involving 205 participants. The training activities included RSAs for Local Governments, RSAs for CTSTs, Low-Cost Safety Solutions for Rural Roads, and Traffic Engineering Fundamentals. For additional details regarding these training activities, see Appendix E.1 Florida Training Activities.

As an example of market research, the Florida SCR program distributed a survey before developing a course on the Manual of Uniform Minimum Standards for Design, Construction and Maintenance for Streets and Highways, commonly referred to as the Florida Greenbook, a resource for cities and counties regarding design of non-State roads. The course agenda and survey were distributed to members of the Florida Association of Counties and Road Superintendents (FACERS) to better determine the course content, target audience, and their needs.

#### **RSAs for CTSTs Workshop, January 2008**

*The Florida SCR conducted a RSA workshop in Heathrow, Florida. The purpose of the workshop was to provide CTST members with a basic understanding of RSAs and better prepare them to identify safety issues and countermeasures in their communities.*

*Participants had diverse backgrounds and reasons for attending. Participants included State and local employees and even a Senator's assistant. Job titles of participants included Pedestrian and Bicycle Coordinator, Highway Safety Program Manager, and Transportation Planning Section Manager. Additional details related to the participants are provided in the Participant Feedback section in Chapter 3.*

*The workshop addressed three topics:*

- *What are RSAs?*
- *Why do we need RSAs?*
- *Why are RSAs a good fit for CTSTs?*

*Examples of previous RSAs were provided from several counties. The examples illustrated several typical safety issues, including pavement edge drop-offs, fixed-object roadside hazards, sight obstructions, and pedestrian issues. After the classroom portion of the course was complete, the SCR led a field exercise where the team conducted a RSA, which gave participants an opportunity to apply the knowledge they obtained from the course and ask questions.*

## *Chapter 3: Program Activities*

### ***New York***

Training is offered based on demand and feedback from the potential audience. Course topics typically vary from year-to-year and by region, based on need. The SCR has also developed pocket guides and provides them to local agencies to help them identify and address safety issues. The pocket guides are a useful training tool as well. The three pocket guides are:

1. Flagger training: distributed 20,000 guides from 2000 to 2003.
2. Work zone training: distributed 16,000 guides from 2000 to 2003.
3. Traffic signs handbook: distributed 2,933 guides from 2002 to 2003.

The pocket guides have received positive feedback and are very popular with local agencies. The Traffic Signs Handbook was updated in 2008 and 3,500 copies were distributed within the first year.

### ***Pennsylvania***

Training focuses on the latest technology, techniques, and regulations to help local governments maintain and enhance the safety of their local road network. Training is conducted in a classroom setting and several courses are regularly scheduled at three set locations across the Commonwealth. Training is also initiated in response to customer-specific phone call or email requests (local government, planning partner). Following initial training requests, PSATS and the SCR work together to propose dates to the municipality. Evaluation forms are collected at the end of each class to rate the material and instructor. PSATS sends an evaluation to the SCR six months following the completion of a class. In 2007, the SCR conducted 86 training sessions involving 1,500 participants.

### ***West Virginia***

The SCR provides training for State and local road personnel. One of the features of the SCR training was the safety blitz at DOT district offices. The safety blitz events included several courses over three days: Road Safety Fundamentals on Tuesday, Roadside Safety on Wednesday, and Low-Cost Safety Improvements on Thursday. Training also extends beyond the safety blitz and is offered on a number of topics including: roadside safety, intersection safety, signs and markings, accident investigation, crash reconstruction, traffic calming, pedestrian and bicycle safety, road safety fundamentals, low-cost safety improvements, traffic sign retroreflectivity. The SCR conducts 30 to 40 training courses each year. In 2007, the SCR conducted 44 training sessions totaling 78.5 hours and involving 1,139 participants.



### 3.2 Technology Transfer

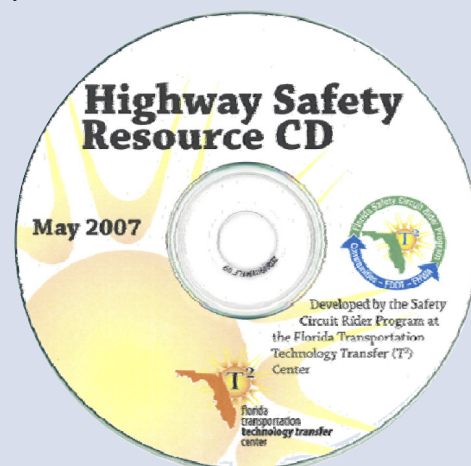
Technology transfer is a combination of training and technical assistance. Technology transfer, for the purpose of this Guide, refers to the dissemination of state-of-the-art and state-of-the-practice methods and tools. Technology transfer often involves onsite, hands-on training. For example, retroreflectivity is an important attribute of signs for visibility during nighttime and poor weather conditions. Retroreflectivity decreases as signs age, creating a potential safety issue. A retroreflectometer can be used to measure the retroreflectivity of signs, but agencies may not have the funds to purchase or skills to use the equipment. In West Virginia, the SCR program was able to purchase a retroreflectometer with funding support from FHWA. As part of a technical assistance activity, the SCR may recommend that the agency conduct a sign study to determine the adequacy of sign retroreflectivity and replace inadequate signs. The SCR may demonstrate the use of the retroreflectometer and allow the agency to borrow the equipment to conduct the study. Iowa's SCR indicated that keeping up-to-date with new technology is one issue related to technology transfer because it changes constantly.

Technology transfer can also involve the dissemination of safety-related resources and information. The Florida SCR program has developed a Highway Safety Resource CD. The CD is distributed to workshop participants and, to date, favorable reviews have been received from CD recipients. Similar to West Virginia, the Florida SCR program has purchased a retroreflectometer and plans to train the local agencies on its proper use. The equipment will mostly be used to support RSA activities.

#### Highway Safety Resource CD

*The Resource CD includes an extensive list of safety resources including the following topics:*

- Highway Design.
- National Cooperative Highway Research Program (NCHRP) Report 500.
- Restraints (Observing occupant restraint use/misuse, increasing use).
- RSAs.
- Safety Management Systems.
- Special Populations.
- Statistics.



### 3.3. Technical Assistance

Technical assistance includes onsite, phone-based, or web-based support to answer technical questions and provide guidance to State and local agencies. Technical assistance can include a number of activities ranging from advice related to appropriate signage and installation requirements to detailed crash analysis with safety diagnosis and countermeasure recommendation. Much of the technical assistance related to design guides and standards can be answered quickly by phone or email. When an agency has concerns related to the safety of a specific site or area, a site visit is typically required, which is much more time-consuming. Many of the SCR programs began on a small scale, offering some onsite assistance, and in some cases, SCR programs initially limited onsite support to specific counties, focusing on those with the greatest need. One benefit to limiting the initial focus is the potential to develop strong relationships (e.g., repeat visits and in-depth assistance). As the programs became more established, they were able to expand services to other counties and offer a wider range of technical assistance.

**Technical assistance can range from advice related to appropriate signage to a detailed safety diagnosis and countermeasure recommendation. SCR programs may offer limited technical assistance initially and then expand their services over time.**

A common type of technical assistance is the RSA. Safety circuit riders successfully use RSAs to improve safety on local roads. A RSA is a formal safety examination of a future roadway plan or project or an in-service facility; it is conducted by an independent, experienced, multidisciplinary RSA team. Figure 4 provides an example of a safety issue identified during a SCR technical assistance site visit and potential countermeasure to address the safety issue. The following case studies provide several examples of technical assistance activities conducted by existing SCR programs.

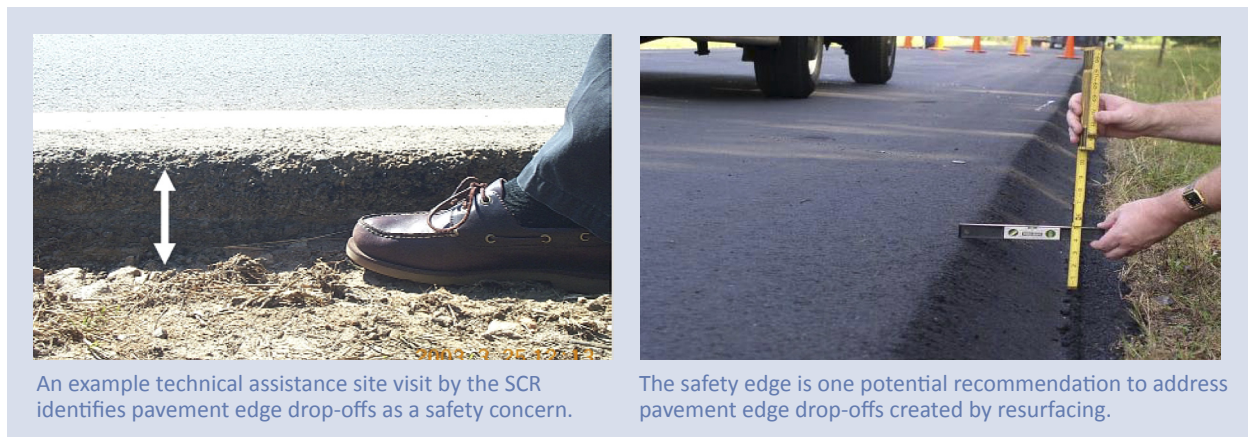


Figure 4. Examples of SCR Technical Assistance.

### 3.3.1 Technical Assistance Case Studies

#### Florida

In Florida, the safety circuit riders have worked with nearly a dozen counties to review crash data and identify locations with safety issues. Once locations are identified, the safety circuit riders conduct site visits or formal RSAs to diagnose safety issues. Florida safety circuit riders have been conducting RSAs for over three years.

District 7 has become so involved with the SCR program that it has developed a five-year work plan for conducting RSAs and Road Safety Audit Reviews (RSARs). Based on a safety diagnosis, the safety circuit riders work with the agency to identify low-cost solutions to:

- Improve signing and pavement markings.
- Install appropriate signs and rumble strips.
- Trim vegetation to improve sight distance and the visibility of signs.

Figure 5 provides an example of issues identified during RSAs in Pasco County and the actions taken to remedy the issue. A more detailed example of a Pasco County RSA is provided in Appendix E.



Figure 5. Examples of Issues Identified during Pasco County RSAs.

## *Chapter 3: Program Activities*

### ***Pennsylvania***

The Pennsylvania SCR Program provides six types of technical assistance services to local governments.

1. Participating in “local safe roads communities” reviews to assist municipalities in developing an ongoing safety improvement program.
2. Conducting “walkable communities” reviews to assist municipalities in improving pedestrian safety and walkability in their communities.
3. Conducting road safety audit reviews to improve safety on local roads.
4. Providing local agency staff with customized technical assistance to address roadway safety issues.
5. Providing customized advanced technical assistance to municipalities who regularly use LTAP services.
6. Participating in “technical assistance for a day” (Visiting Engineer Program) to reach out to those municipalities who have not utilized LTAP.

As there is some overlap within these services, it is up to PennDOT, PSATS, and the SCR consultant to determine the appropriate service for each municipal request. For example, one site examined as part of the Local Safe Roads Communities may end up being a Road Safety Audit Review because of the lack of reportable crashes. For additional details on each type of technical assistance, refer to Appendix E.

In addition to the in-person technical assistance, the SCR also publishes technical information sheets (i.e., technical articles) through the Pennsylvania LTAP Center. The technical information sheets are relatively short (no more than a few pages) and focus on a specific topic (e.g., curve warning versus turn warning signs). An example of a technical information sheet is provided in Appendix E.

### ***Utah***

The Utah SCR program uses Safety Software Suite to provide technical assistance and RSAs to local agencies. The Safety Software Suite is described further in Appendix E. As part of the RSA training and technical assistance, the Utah SCR developed a mailing list of those local agencies that have received RSA training. In addition, the SCR facilitates the organization of teams for locals requesting RSAs. The local agency is responsible for providing preliminary studies and per

inent information for the location of interest, as well as lunch for the RSA team. The Utah SCR also uses the FHWA RSA Peer-to-Peer program for additional assistance in conducting the RSAs.

#### **FHWA Road Safety Audit Peer-to-Peer (RSA P2P) Program**

*To provide assistance to agencies either considering the use of or actually conducting RSAs, the FHWA Office of Safety established a peer-to-peer (P2P) program. The RSA P2P program is provided at no cost to State, local, and Tribal transportation agencies, and it's easy to access the support of a knowledgeable peer.*

*A State, local, or Tribal agency can request assistance either by email or by calling the toll-free number describing their needs to the FHWA-sponsored P2P coordinator. The coordinator will match the agency with a transportation professional that is experienced and knowledgeable in RSAs, including expertise with particular issues or types of RSAs.*

*The matched peer will then contact the agency to work out the details of the assistance to be provided within the program framework, which can include a site visit as needed.*

#### **West Virginia**

As reported in the LTAP Program Assessment Report (PAR), the majority of the technical assistance in West Virginia includes five types of activities.

1. Participating in the Community Design Team and First Impressions programs, which enhance community development.
2. Conducting onsite visits to assess and make recommendations in dealing with issues such as hazardous roadways, on-street parking, crosswalk location, and intersection safety for a variety of agencies and associations.
3. Setting up automated traffic recorders and conducting speed and traffic counts for local roadway agencies.
4. Conducting sidewalk and walkability assessments for communities.
5. Providing one-on-one instruction to individuals on topics ranging from proper calculation of sight distance to developing PowerPoint displays and public relation pieces.

The West Virginia LTAP center tracks all technical assistance requests, including those conducted by the SCR. The technical assistance requests are tracked separately under Highway Safety Technical Assistance and Worker Safety Technical Assistance. The information recorded for each technical assistance request includes:



### Chapter 3: Program Activities

- Description and date of request.
- Name and contact information of person requesting assistance.
- Action taken to satisfy request.
- Keyword to classify request topic (e.g., work zone, roadside safety, pedestrian/bicycle, and tort liability).

In West Virginia, onsite technical assistance has typically focused on safety issues that can be addressed with low-cost safety improvements such as sight distance and signing (see Figure 6). As a separate focus area, walkability audits have been conducted in several towns and neighborhoods to identify pedestrian issues. The following provides a short list of examples of technical assistance activities. Further details are provided in Appendix G Participant Feedback and additional technical assistance activities are presented in Appendix E.

- **Technical Assistance for City of Fairmont Public Works:** The Public Works Department requested technical assistance from the COTR on two occasions. In November 2006, the Department requested a review of parallel parking along the street to see if it could be safely converted to angle parking. In May 2007, Public Works was concerned about increasing vehicle speeds in the vicinity of the college campus (Fairmont State University). The SCR provided technical assistance to address this problem.
- **Walkability Audit of Concord University and Town of Athens:** At the request of a faculty member at Concord University, the West Virginia SCR led a walkability audit on October 18, 2006, to assess the walkability of portions of the Town of Athens and the Concord University Campus. The University was interested in providing a more pedestrian-friendly campus and the community was interested in enhancing pedestrian safety, particularly for elementary and high school students.
- **Technical Assistance for Local Homeowners Association:** A faculty member at West Virginia University requested the services of the SCR on behalf of a local homeowners association concerned with pedestrian safety.

Top left and right photos show a marked crosswalk before a technical assistance activity from the West Virginia SCR. Crossing is difficult to see from a driver's perspective.



Bottom left and right photos show the same marked crosswalk after a technical assistance activity from the West Virginia SCR. Pavement markings have been repainted and a retroreflective sign has been installed to increase conspicuity.



Figure 6. Example of Technical Assistance Activity in West Virginia.

### 3.4 Time Spent on Activities

The time spent on various activities depends on the services offered by the SCR program, as well as the demand for the various services. Table 1 provides a breakdown of the relative amount of time spent on major SCR activities (i.e., training, technology transfer, and technical assistance).

Table 1. Time Spent on Major SCR Activities by State.

SCR Program	Time Spent on Activities			
	Training	Technology Transfer	Technical Assistance	Other*
Florida	35%	10%	55%	--
Iowa	40%	20%	10%	30%
Kentucky	10%	15%	75%	--
Pennsylvania	45%	5%	45%	5%
West Virginia	25%	0%	75%	--

\*Note: Iowa other activities included research. Pennsylvania other activities include special event presentations at county conventions, APWA meetings, and conferences.



### 3.5 Resources to Develop/Obtain Materials

There is extensive literature related to road safety and it is unlikely that a SCR program would need to produce any new material. Therefore, it is necessary for the SCR to be familiar with the latest safety information including practices, ideas, methods, guides, and standards and stay current with the state-of-the-practice. The SCR should be familiar with the differences between policy, standards, guidance, and research. The safety circuit rider should be familiar with the current policies and standards of the AASHTO *A Policy on Geometric Design of Highways and Streets (Green Book)*, the *Manual on Uniform Traffic Control Devices (MUTCD)*, and *Highway Capacity Manual (HCM)*. Section 3.5.1 provides examples of how these and other documents were utilized. Much of the safety-related literature, such as the NCHRP 500 Series Guidebooks, is not prescriptive; rather it offers recommendations to address specific safety issues.

***The SCR should be familiar with the difference between nominal and substantive safety. Design policy and standards set the baseline, while careful research provides insight on potential safety impacts.***

#### 3.5.1 Reference Section

Several current SCR programs have developed reference materials for local agencies. These quick-reference guides include excerpts from the MUTCD or AASHTO Green Book that are specific to local roads. To develop training documents, many of the SCR programs have used material from existing courses offered by the FHWA or the National Highway Institute (NHI). Aside from FHWA and NHI courses, the following list includes several references that may be applicable:

- *A Policy on Geometric Design of Highways and Streets (Green Book)*. American Association of State Highway and Transportation Officials (AASHTO), Washington, DC. (2004). Available for purchase at the following address:  
[https://bookstore.transportation.org/Item\\_details.aspx?id=110](https://bookstore.transportation.org/Item_details.aspx?id=110)
- Desktop Reference for Crash Reduction Factors. Federal Highway Administration Report No. FHWA-SA-07-015, Washington, DC. (2007).  
[http://safety.fhwa.dot.gov/tools/crf/desk\\_ref\\_sept2008/index.htm](http://safety.fhwa.dot.gov/tools/crf/desk_ref_sept2008/index.htm)
- *Guide for the Planning, Design, and Operation of Pedestrian Facilities*. American Association of State Highway and Transportation Officials (AASHTO), Washington, DC. (2004). Available for purchase at the following address:  
[https://bookstore.transportation.org/item\\_details.aspx?id=119](https://bookstore.transportation.org/item_details.aspx?id=119)

- *Highway Capacity Manual (HCM)*. The National Academies, Washington, DC. (2000). Available for purchase at the following address:  
[http://www.trb.org/news/blurb\\_detail.asp?id=1166](http://www.trb.org/news/blurb_detail.asp?id=1166)
- Institute of Transportation Engineers. *Manual of Transportation Engineering Studies*, Washington, DC. (Publ. No. TB-012). (1994). Available for purchase at the following address:  
<http://www.ite.org/emodules/scriptcontent/orders/ProductDetail.cfm?pc=TB-012>
- Low-Cost Local Road Safety Solutions. American Traffic Safety Services Association, Fredericksburg, VA. (2006).  
[http://docs.mvrpc.org/safety/Low\\_Cost\\_Local\\_Roadway\\_Safety\\_Solutions.pdf](http://docs.mvrpc.org/safety/Low_Cost_Local_Roadway_Safety_Solutions.pdf)
- Low Cost Traffic Engineering Improvements: A Primer. Federal Highway Administration, Report No. FHWA-OP-03-078, Washington, DC. (2003).  
[http://ops.fhwa.dot.gov/publications/low\\_cost\\_traf/low\\_cost\\_traf.pdf](http://ops.fhwa.dot.gov/publications/low_cost_traf/low_cost_traf.pdf)
- Low-Cost Treatments for Horizontal Curve Safety. Federal Highway Administration, Report No. FHWA-SA-07-002, Washington, DC. (2006).  
[http://safety.fhwa.dot.gov/roadway\\_dept/pubs/sa07002/index.htm](http://safety.fhwa.dot.gov/roadway_dept/pubs/sa07002/index.htm)
- *Manual on Uniform Traffic Control Devices (MUTCD)*. Federal Highway Administration, USDOT, Washington, DC. (2000). <http://mutcd.fhwa.dot.gov>
- National Cooperative Highway Research Program (NCHRP). Report 486: Systemwide Impact of Safety and Traffic Operations Design Decisions for 3R Projects, National Academies, Washington, DC. (2003).  
[http://onlinepubs.trb.org/Onlinepubs/nchrp/nchrp\\_486\\_full.pdf](http://onlinepubs.trb.org/Onlinepubs/nchrp/nchrp_486_full.pdf)
- National Cooperative Highway Research Program (NCHRP). 500 Series Reports, National Academies, Washington, DC.  
[http://www.trb.org/news/blurb\\_browse.asp?id=2](http://www.trb.org/news/blurb_browse.asp?id=2)
- National Cooperative Highway Research Program (NCHRP). Synthesis of Highway Practice 321, Roadway Safety Tools for Local Agencies, National Academies, Washington, DC. (2003).  
[http://onlinepubs.trb.org/Onlinepubs/nchrp/nchrp\\_486\\_full.pdf](http://onlinepubs.trb.org/Onlinepubs/nchrp/nchrp_486_full.pdf)
- Pline, J. *Traffic Engineering Handbook, 5th Ed.*, Institute of Transportation Engineers, Washington, DC. (1999). Available for purchase at the following address:  
<http://www.ite.org/emodules/scriptcontent/Orders/ProductDetail.cfm?pc=TB-010A>

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- *Roadside Design Guide*. Third Edition. American Association of State Highway and Transportation Officials, Washington, D.C. (2002). Available for purchase at the following address:

[https://bookstore.transportation.org/item\\_details.aspx?ID=148](https://bookstore.transportation.org/item_details.aspx?ID=148)

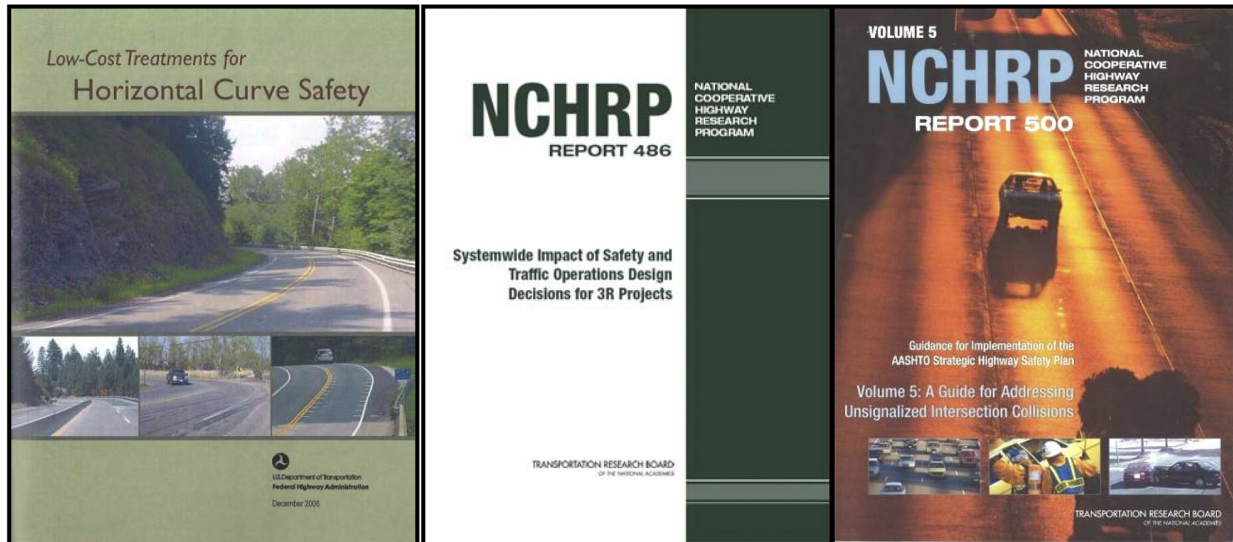


Figure 7. Examples of Safety Resource Documents.

### 3.5.2 Resource Materials Case Studies

#### Florida

Florida has its own version of the Green Book, which is a general guideline for non-State road design and is a primary resource for cities and counties. The Florida SCR program is developing a workshop to provide a broad overview using the Florida Green Book as the main resource. In addition, a Florida SCR regularly attends the statewide Green Book Committee meeting to exchange ideas about the course.

NHI courses are another useful resource for obtaining materials. The RSA training presentation, offered through the Florida SCR program, was adapted from the FHWA RSA course. Two safety circuit riders, as well as staff from the Florida LTAP Center, attended a FHWA RSA train-the-trainer workshop in November 2006. Based on materials from the train-the-trainer course and assistance from the FHWA, the safety circuit riders began offering RSA workshops. The workshops were refined and materials added, including Florida-specific issues. The Florida SCR program currently offers two different RSA classes—a full two-day course and a modified one-day course for CTSTs. The RSA course for CTSTs is a compressed version of the two-day class with a discussion of the relevance to the CTSTs. In another example, a SCR attended a train-the-trainer course for Design and Maintenance of Paved Low-Volume Roads. The course materials will be

evaluated for possible incorporation into current SCR workshops and possibly used to develop a new workshop.

### **Iowa**

The Iowa SCR provides several manuals for various topics including pavement markings, signing, and work zone traffic control. FHWA training materials are an excellent resource for developing SCR materials. The MUTCD, State Department of Transportation, and various web sources are other useful resources for developing materials.

### **New York**

The New York SCR distributes three different pocket guides to provide a supplemental tool to local agencies. The pocket guides were developed by staff at the Cornell Local Roads Program and based on a number of resources including:

	<ol style="list-style-type: none"><li>1. Flagger training: Uses North Carolina flagger handbook and updated with the New York standards.</li><li>2. Work zone training: Uses North Carolina work zone handbook and updated with New York standards.</li><li>3. Traffic signs handbook: Uses the MUTCD as well as the New York MUTCD supplement. Includes additional input from the State DOT. <a href="http://www.t2.unh.edu/pubs/sign_handbook.pdf">http://www.t2.unh.edu/pubs/sign_handbook.pdf</a></li></ol>	
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### **Pennsylvania**

Most of the training courses are developed in-house using a variety of resources. The safety circuit riders distribute many State-specific manuals for work zone, signs, traffic studies, tort liability, and flagging.

### **Utah**

The Utah SCR program uses Safety Software Suite to provide technical assistance and RSAs to local agencies. Safety Software Suite is a royalty-free, GIS-based, safety analysis tool, which incorporates several modules to assist with sign management, crash analysis at segments and intersections, RSAs, and Americans with Disabilities Act (ADA) compliance. Appendix E provides further details regarding select modules. The crash analysis capabilities of the software include calculations of equivalent property damage only (EPDO), crash rate, and weighted hazard index

## *Chapter 3: Program Activities*

(WHI). Using a GIS-based platform, the software is also capable of locating crashes and crash statistics to specific segments or intersections. The tool can also incorporate existing crash data with crash reduction factors (CRFs) to estimate the expected reduction in crashes. The CRFs are obtained from the FHWA Desktop Reference for Crash Reduction Factors. In addition, the software can generate a benefit-cost analysis for proposed treatments based on the expected reduction in crashes and cost of treatment.

The SCR program uses other existing resources, in addition to the Safety Software Suite, to facilitate RSAs for local agencies. In particular, the SCR program uses the Desktop Reference for Crash Reduction Factors, developed by FHWA, as well as a Cost- Benefit Analysis Worksheet, developed by the Utah DOT, in conjunction with Iowa.

### **3.6 Agency Requests for SCR Activities**

In most cases, the process for requesting SCR activities is relatively informal. Requests are typically handled on a first-come-first-served basis and can be submitted by letter, telephone, email, or in-person to the SCR or the LTAP/TTAP Center. The West Virginia SCR indicated that requests often result from personal contacts at workshops, meetings, and conferences. Requests are also generated through involvement with community development (e.g., the Community Design Team) and other similar organizations. The West Virginia SCR indicated that its involvement with the Community Design Team is the most common source of technical assistance requests. At this point, many SCR programs are relatively new and usually do not often have a long queue for requests. While the number of requests is relatively limited, the requests can be tracked manually. As SCR programs become more established, it may be necessary to modify the request process, including an automated system to receive the requests and track the progress until the request is closed. The Pennsylvania case study provides an example of a web-based tracking procedure.

#### **3.6.1 Requesting SCR Activities Case Studies**

##### ***Pennsylvania***

There are over 2,500 local governments in Pennsylvania, including cities, townships, and boroughs. Each of these local governments owns and maintains a roadway network, which range in size from all roads within an area of one square mile to roadway networks covering more than 125 linear miles. Municipal government employees (e.g., elected officials, road crews, planners, engineers) can submit a request to the PennDOT Central Office, PSATS, PennDOT Municipal Services representative (i.e., PennDOT District liaisons to local governments

who help administer liquid fuels funds), the MPO/RPO, or directly to the safety circuit riders.

- ***PennDOT LTAP Website:*** If the request is made by an individual at a local government through its account on the PennDOT LTAP website, that request is immediately forwarded to PSATS. PSATS then sends it to the SCR consultant point-of-contact who decides to whom the request should be assigned.
- ***Phone/Email/In-Person:*** If the request is made by an individual at a local government through the toll-free phone number, email, or in-person, then the PennDOT or PSATS representative will submit the request through the website and the process will proceed as described previously.
- ***Directly to the SCR:*** If the request is made directly to the SCR, then the SCR will submit the request through the website. In this case, however, the SCR will accept the assignment request and complete all required documentation.

Once PSATS notifies the SCR consultant point-of-contact of a request, the consultant point-of-contact assigns the technical assistance based on the location and nature of the request. The assignment to a particular SCR is completed by phone, email, or on-site and PSATS is copied on the assignment to start the web-logging and assignment process. All contacts are tracked through the website.

Regarding the timeframe, the SCR contacts the requesting municipality within three working days from receipt of the request. Once the SCR agrees to send follow-up material, it is sent within five business days of the agreement. The on-site visits are scheduled based on the availability of the SCR and requesting municipality. The SCR performs the technical assistance and documents all applicable technical and administrative information until the tech assist is considered complete or inactive. Again, all information is tracked using the existing LTAP website. The SCR provides final documents and information to the requesting agency within 10 business days of the on-site technical assistance. After the technical assistance is complete, the SCR closes the request on the website within 10 business days.

PSATS is responsible for administration activities to ensure all requests are met in a timely fashion and closed to the satisfaction of the requesting municipality. Copies of all technical assistance correspondence, which must include the assigned technical assistance number, are maintained by PSATS.



## Chapter 3: Program Activities

### 3.7 Typical Audience

The typical audience of SCR-related activities may range from State employees to members of volunteer safety groups. It is likely that technology transfer will apply mostly to engineers, while the audience for training and technical assistance will be much broader. Florida safety circuit riders conduct training workshops and provide technical support, but do not pro-

vide engineering services or detailed design recommendations. The typical audience in Florida includes elected officials, law enforcement, municipal workers, safety advocacy groups, roadway designers, street superintendents, public works employees, directors, CTSTs, and engineers. In Pennsylvania, the typical audience includes elected officials, roadmasters, law enforcement personnel, street superintendents, public works employees, and public works directors. Engineers are welcome to attend but the focus is on the non-engineer.



Figure 8. SCR Speaking to Group in West Virginia.

In Iowa, the typical audience includes employees of county and city agencies, utility companies, and private contractors. Specific examples include the county engineer, city administrator, local safety representatives, and staff from these local agencies. The Iowa SCR indicated the importance of a multidisciplinary focus in training efforts (e.g., involve other local agencies such as public works, law enforcement, and elected officials). Iowa has a very good relationship with several local law enforcement agencies and a great relationship with the Iowa State patrol, and these agencies have provided valuable input and assistance. It is beneficial to develop relationships and include public safety and law enforcement officials in the training and technical assistance efforts because they are responsible for documenting crashes and are a valuable resource when conducting safety studies and road safety audits.

The majority of technical assistance will probably be requested by State and local engineers, but the West Virginia SCR has received and responded to several requests from local communities as well. In West Virginia, there are no county-maintained roads; all roads are State maintained except those that are in incorporated municipalities. There are, however, county headquarters staffed by State personnel. The primary recipient of SCR support is the State DOT including central office, districts, and county headquarters. Other SCR activities include local road agencies and communities. When possible, the SCR tries to involve elected officials, public health, and law enforcement agencies, but this is the exception rather than the rule. The SCR indicated that pedestrian and bicycle advocacy groups are more responsive to these requests.



## Chapter 4: Program Evaluation

### 4.1 Anecdotal Evidence

Many SCR programs are relatively new and based on their recommendations; local agencies may have only recently installed safety countermeasures. Few, if any, crash-based evaluations of SCR programs have been conducted to determine program effectiveness. However, several other indicators can be used in lieu of crash-based statistics to assess the strength and effectiveness of the program.

Other indicators may include:

- Number of training and technical assistance sessions.
- Number of projects initiated as a result of the SCR activities.
- Number of requests for SCR support.
- Anecdotal evidence and feedback from those who have requested SCR support.

*While formal safety evaluations of SCR programs are limited, there is plenty of other evidence to indicate the success of existing SCR programs.*

Based on interviews with several States, there is evidence that the SCR program has been successful.

#### 4.1.1 Anecdotal Evidence Case Studies

##### **Florida**

Local agencies do not have adequate funding to evaluate roadway improvements; however, the safety circuit riders are optimistic about their efforts. Ed Kant, Florida safety circuit rider, indicated that two locations recently improved in Hendry County included restriping and installing turn lanes. The projects have been completed for less than a year, but it appears that the identified safety issues have been corrected.

##### **Idaho**

With help from Local Technical Councils, the SCR is working to raise awareness among local jurisdictions. The effort has met with a good deal of success because local agencies now understand the magnitude of the safety problem (e.g., crash statistics and crash costs) as well as available resources to address the problem. This has also generated significant interest from the insurance organizations and State DOT to develop and support the program. The insurer of local road agencies sees the potential for the SCR program to reduce liability.

## *Chapter 4: Program Evaluation*

### ***Iowa***

The SCR program is evaluated on an annual basis and results are reported to the Center for Transportation Research and Education (CTRE), at Iowa State University. In addition, LTAP provides quarterly reports to the DOT to show how funds are being used, particularly for the SCR program. An annual report is also provided to the LTAP Advisory Committee. Finally, there are periodic surveys to identify customers' needs as well as any suggestions they have for training.

While there are several annual evaluations of the SCR program, as mentioned above, many of the oversight groups use similar metrics for evaluation. At CTRE, annual goals are set and discussed during the program evaluation with the CTRE Director. The annual report to the LTAP committee is essentially a summary of the quarterly reports to the Iowa DOT, with an added listing of contacts and technical information sharing. Participant evaluations were used for several years following individual workshops, but were discontinued because the results were mostly redundant and not worth the effort. Appendix F.1 Quarterly Report to Iowa DOT provides an example of a DOT quarterly report summary.

To date, Iowa's SCR program has demonstrated results as anticipated and appears to be very successful. The continued interest in training and an increasing number of requests for technical assistance indicate the program's value. Feedback from local agencies has also been positive. Iowa provides a series of safety workshops for rural agencies every year. These include workshops related to older driver safety, intersection safety, and run-off-road crashes. This year a number of attendees indicated they were implementing specific spot improvements on their own (e.g., shoulder widening and slope flattening). The spot improvements are typically implemented with in-house funding and staff.

One noteworthy aspect of Iowa's SCR program is the opportunity for involvement in safety-related research. The research offers a good basis for technology transfer in topics of interest to local agencies.

### ***New York***

There has not been a formal evaluation of SCR activities in New York, but a review of the overall LTAP program was conducted in 2007. Currently, the program appears to be effective because there are several requests for training and technical assistance, and the training sessions are always full. From 1997 to 2003, the traffic safety outreach program trained 2,341 participants in 105 workshops on seven topics. In addition, safety-related videos were loaned to local agen-

cies 525 times. Among these, work zone training was the most popular. Technical assistance was requested and filled 143 times on issues of traffic safety, traffic control, and sign management. An example of a successful technical assistance effort follows. A school zone speed limit sign with flashing beacons was installed prior to a school zone to warn motorists to slow down when flashing. The sign created a safety hazard, however, because it was located on the outside of a horizontal curve and mounted on a 2.5-ft-high concrete base. The SCR conducted a site visit, confirmed that the fixed object was a hazard, and recommended a better installation location. The beacon was relocated beyond the curve and installed with the concrete base at ground level.

### ***Pennsylvania***

The Pennsylvania LTAP submits a quarterly report to the Bureau of Highway Safety and Traffic Engineering (BHSTE) in fulfillment of their grant requirements. The quarterly report summarizes the activities conducted by the SCR, including progress to complete activities proposed in the grant. Specifically, the report summarizes the number of sessions, the number of attendees, and the number of site reviews that resulted from training sessions. For each individual training course, the report indicates the date, duration, instructor, and location as well as the number of registered students, number of students attended, and number of students that passed. For technical assistance activities, the report summarizes the number of contacts by response method (i.e., office or on-site) as well as the number of safety improvement recommendations and number of safety improvements implemented as a result of the recommendations. Specific details are provided for the Local Safe Roads Communities and the Walkable Communities efforts, including the number of communities contacted, progress made in each community, and number of communities completed. For each individual technical assistance activity, the report provides information for the date completed, description of the type of activity (e.g., delineation and marking), location, method of contact (e.g., phone or field visit), information requested, actions taken, and time spent on the activity.

Several of the SCR activities were summarized in Chapter 2 and Appendix E, including the number of training sessions and participants as well as the number of technical assistance activities and resulting improvements. While these summaries provide some indication of the penetration of the SCR Program, they do not provide a specific measure of the quality or safety effectiveness of the program.

To evaluate the quality and effectiveness of SCR technical assistance activities, a safety technical

## *Chapter 4: Program Evaluation*

assistance evaluation analysis was conducted. The following points summarize the results of 17 evaluations received during a single reporting period:

- 100% indicated that the technical assistance adequately addressed the request.
- 88% reported using the information immediately, if not within six months of the date of the technical assistance.
- Most respondents reported numerous benefits from the technical assistance provided.
  - o 76% reported being able to do their job better.
  - o 71% reported increased safety for their communities.
- 82% rated the technical experts highly – 4 on a scale of 1 to 4, one being low.
- Materials when provided and the time allotted remain highly rated.

While most agencies were unable to quantify the safety effectiveness of the technical assistance and resulting improvements, two agencies did provide noteworthy information:

1. ***Town of Bloomsburg:*** Requested information related to the conversion of a street from two-way to one-way operation. The SCR provided the town staff and council with the necessary information to make a sound, justifiable decision. The one-way operation was implemented and the town reported improvements in traffic operations and pedestrian safety.
2. ***Lynn Township:*** Requested technical assistance regarding speed limits. The agency reported increased safety as follows: “You cannot put a price on public safety. Reducing the speed limit in one area has saved a child’s life. An accident occurred but because it was at a reduced speed limit the child on a bike was not killed.”

### ***West Virginia***

The West Virginia SCR indicated that it is too early to determine whether the program is operating as envisioned in terms of crash reduction goals. Local agencies often implement the recommended safety improvements, but it is difficult to show an associated crash reduction because the location of interest is usually only one point on a relatively low-volume road. Similarly, the State DOT has either programmed or recently implemented recommendations and sufficient time has not passed for a formal evaluation.

Anecdotally, the SCR program has exceeded expectations. This is evidenced in the training area by the number of requests for workshops. In fact, the SCR program receives more requests for workshops than they can facilitate. For technical assistance, the SCR noted that the large-

scale data analysis, road review, and countermeasure identification effort for the State DOT is a noteworthy aspect of the program. The State DOT has programmed several recommendations related to roadway departure countermeasures and has implemented several intersection and pedestrian countermeasures identified in five focus cities.

## **4.2 Available Before-After Data**

While many of the existing SCR programs complete an annual program review, only one included a detailed review of crash data to determine the effectiveness of the program. The following describes the overall status of the SCR program in Kentucky and details the safety effectiveness in regard to crashes.

### **4.2.1 Kentucky Before-After Case Study**

According to the Kentucky SCR, the program is exceeding expectations. By the end of the first phase of the program in June 2005, Kentucky helped to improve 39 roads as a result of the workshop and RSA activities, spending only \$235,000 on the safety improvements. The involved counties in Kentucky have seen a marked improvement in safety through reduced injuries and fatalities. Roadways included as part of SCR activities recorded a 49.9 percent crash reduction in 2006. This reduction is based on crash data from sites that were improved in 2005 as part of the SCR efforts. The reduction was determined by comparing the average number of crashes per year in the before and after periods. The before period included five years of data and the after period included crash data from the time of implementation in 2005 through 2006. The public and media also responded well to the visible improvements in local roads.

## **4.3 Secondary Benefits of SCR Activities**

Secondary benefits are those benefits that cannot be quantified in terms of a crash reduction. While the SCR can provide recommendations to enhance safety, the recommendations do not necessarily include the implementation of some countermeasure or program. The recommendation can include advice against implementation if it is counter to good safety practice and recognized engineering guidelines (e.g., installing CHILDREN AT PLAY signs). Political expediency is an issue at all levels of government, particularly at the small, local government level. Elected officials, public works directors, and street supervisors are often under public pressure to install or implement some device, even though it may not be in the best interest of safety. The SCR can provide these people with safety-related evidence to support or refute the public request.

Secondary benefits also include the increased awareness of manuals and guidelines (e.g., MUTCD, Roadside Design Guide). By working with the local agencies, the SCR can demonstrate

## Chapter 4: Program Evaluation

the purpose of using these manuals and guides. If the agency continues to refer to these materials after their experience with the SCR, this should lead to increased uniformity of the roadway and roadway features (e.g., signs, markings, work zone traffic control), better information to motorists, and reduced liability exposure for the local agency. While it is difficult to quantify the safety effectiveness of secondary benefits, they should not be ignored because they can lead to significant long-term safety benefits.

*Increased awareness of safety and better adherence to design manuals and guidelines are benefits of SCR programs.*

### 4.3.1 West Virginia Secondary Benefits Case Study

As discussed in Section 3.3.1 Technical Assistance Case Studies, the City of Fairmont requested assistance from the West Virginia SCR to evaluate the potential to convert on-street parallel parking to angle parking. The request for angle parking was proposed to the City of Fairmont City Council by retail merchants with the hope of increasing available parking. The West Virginia SCR evaluated the situation and provided advice to the City of Fairmont recommending against the conversion to angle parking because of restricted sight distance on the street. The public works director, armed with the recommendation from the SCR, presented the advice and supporting evidence to the City Council. The City Council took into account the data provided by the SCR and turned down the request from the business community.

In another case, a new city administrator in a small town (Ronceverte, WV) asked the SCR to review the town's plan to convert several streets in a residential area to one-way traffic flow. The SCR examined the area and noted the presence of pedestrian traffic with relatively low traffic volumes. The SCR recommended against the one-way conversion (i.e., the streets remain two-way) because the conversion to one-way pairs would likely increase speeds and make the streets more attractive as shortcuts, thereby increasing traffic volumes in a residential area where pedestrians are present. The administrator took the advice of the SCR and, two years later, commented that he was glad he had listened to the SCR. Since then, the SCR has provided traffic-related assistance to the town on three other occasions. This indicates that the town respects and values the advice of the SCR, even though the first contact involved the rejection of their idea.

A number of other examples exist where the West Virginia SCR has recommended against proposals for installing CHILDREN AT PLAY signs or mid-block crosswalks where safety was an issue.

## 4.4 Participant Feedback

While much of the evidence of program success has been quantitative (e.g., number of training and technical assistance activities, number of requests for activities, and implementation of recommendations), participant feedback can also be an indicator of the strength and success of a program. Participant feedback represents customer satisfaction, which is important for the sustainability of a program.

***A great deal of information can be gleaned from client feedback. While crash reductions are the ultimate goal of the SCR program, client satisfaction provides important insight on the success of a program.***

Florida and West Virginia were two States where thorough case studies were conducted. Because of the large number of SCR activities in these States, ample opportunities were available to obtain feedback from course and workshop participants as well as those requesting technical assistance. The remainder of this section provides an overview of activities performed and related feedback regarding the satisfaction with the SCR program. More details on participant feedback are provided in Appendix G.

### 4.4.1 Participant Feedback Case Studies

#### ***Florida***

In January 2008, one of the Florida SCRs instructed a RSA workshop for CTSTs in Heathrow, Florida. The purpose of the workshop was to provide CTST members with a basic understanding of RSAs and better prepare them to identify safety issues and countermeasures in their communities. The free workshop attracted participants with very different backgrounds and reasons for attending. Follow-up interviews were conducted with several participants determined their reasons for attending and their satisfaction with the workshop. Each participants interviewed had positive comments regarding the workshop. The Pedestrian and Bicycle Coordinator for the City of Gainesville, Florida, indicated that he had attended prior RSA training, but this workshop was very useful and provided a different perspective on RSAs. A recently promoted Highway Safety Program Manager for District 1 indicated that he now has a good understanding of the RSA process and within one month of the training had already conducted an RSA. The Transportation Planning Section Manager for the Lake County Public Works Department indicated that the RSA workshop was very good overall and provided information from many different perspectives. Regarding the length of the workshop, he indicated that it was sufficient for senior management, but a two-day course may be more appropriate for those who are involved with RSAs on a regular basis. Additional comments are presented in Appendix G.



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### ***West Virginia***

The West Virginia SCR has conducted numerous technical assistance activities including activities related to parking, traffic calming, walkability, and pedestrian and bicycle safety. These activities have been conducted both in- and out-of-state. Participants consistently indicated that the SCR was extremely helpful and very pleasant.

A participant involved in the walkability audit of Concord University and Town of Athens, West Virginia, noted that the study helped to spark interest in pedestrian issues throughout the university and community. The community has since applied for a grant through Safe Routes to School to implement several recommendations from the walkability study. Officials included several portions of the SCR's report in their application and were awarded the grant.

## Chapter 5: Program Evolution

### 5.1 Challenges and Lessons Learned

For those agencies that would like to initiate or enhance a SCR program, several lessons from other SCR programs may be of use. The following points were identified as challenges that have arisen or lessons learned during the initiation and evolution of existing SCR programs. The issues are summarized by the chapters presented in this report.

#### 5.1.1 Program Initiation

Chapter 2 discussed program initiation and program sustainability. The chapter includes information related to funding, partnerships, promoting the SCR program, and how to identify qualified circuit riders. Many of the obstacles identified by existing SCR programs were encountered during the program initiation stage. During program initiation, one must determine the need for a SCR program and

***Many obstacles identified by current SCR programs were encountered during program initiation including contract administration, initial funding, and identifying appropriate SCRs.***

at the same time identify sources of funding to support the program activities. This is why most existing SCR programs started small and expanded as the program became more established. Another challenge is identifying a qualified SCR once the program is funded or in obtaining funding to initiate or continue a program. Although it took several years, Wisconsin's program provides valuable insights as to how funding may be obtained to start a SCR.

West Virginia had no challenges of a technical nature, but did encounter some drawbacks related to program administration. Administratively, it took a long time to process the contractual paperwork through the State DOT because this effort was different from the normal Highway Planning and Research (HP&R) projects.

#### 5.1.2 Funding

The SCR program has been very popular in Florida, but as a result of the substantial population (18.5 million), transportation funds are spread thin. Hurricanes, reduced property taxes, and budget cuts have also reduced the available funding for safety projects. With reduced funding, local agencies are interested in SCR activities because they do not have the funds to implement the recommended improvements or pay for workshops and training. Also, with funding shortages, training was the first program to be cut. Much of the time spent developing relationships and buy-in has been negated by the lack of funding.

## Chapter 5: Program Evolution

### 5.1.3 Promoting/Sustaining a SCR Program

The State of Iowa has been a leader in changing the culture of highway safety. Specifically, they have stressed the significance of the highway safety problem and have established support from State and local agencies as well as the public to address this issue. This has helped sustain the SCR program in Iowa because agencies and the public can see a real benefit to the activities performed.

In terms of continuity, West Virginia had some difficulties related to turnover within the SCR program and within local agencies. The original circuit rider left West Virginia after the first year of the program, so a new circuit rider arrangement was worked out for year two and beyond. Because of high turnover in local governments, continuous effort is necessary to promote the SCR program as a resource.

### 5.1.4 Identifying/Hiring Safety Circuit Riders

The New York LTAP Center indicated that one of its biggest challenges has been finding personnel to provide training and technical assistance. One potential hire did not accept the position because of concerns about the long-term status of the SCR program, among other reasons. Currently, the program contracts with eight private consultants to provide training when needed. Two of the consultants also serve as SCRs and provide technical assistance.

## 5.2 Issues Related to Safety Circuit Rider Support

Chapter 3 highlighted various activities performed by the safety circuit riders. Activities include technical assistance, training, and technology transfer. The main issues related to safety circuit rider activities include the time to develop materials, travel time, and staying current with client needs.

*Issues related to SCR activities include travel time and the time to develop and update materials.*

### 5.2.1 Training and Technical Assistance

The Iowa safety circuit rider cited the amount of time necessary to develop course materials. It can take 4 to 8 hours to develop materials for a one-hour presentation, depending mostly on the availability of materials and resources. Staying up-to-date with new technology is also an issue because it is constantly changing.

The Idaho safety circuit rider indicated that travel time for training and technical assistance is an issue because of the State's large geographic area. Flying was considered as an alternative mode

of transportation, but has not proven to be a viable solution because of the amount of training materials necessary for the workshops.

### **5.2.2 Limitations of Support**

Based on conversations with the West Virginia safety circuit rider, it is important to realize the limitations of the safety circuit rider duties. The safety circuit rider is intended to provide support to State and local agencies, not to perform the duties of the agencies or consultants. This is a sensitive issue because the safety circuit rider can make recommendations, but they cannot always help agencies implement the recommendations. For example, the SCR program in West Virginia was able to purchase a retroreflector with the additional FHWA funding support. As part of a technical assistance activity, the safety circuit rider may recommend that the agency conduct a sign study to determine the adequacy of sign retroreflectivity and replace inadequate signs. The safety circuit rider may then provide technology transfer to the agency, demonstrating the use of the retroreflector. However, the agency is responsible for completing the majority of the work, not the safety circuit rider.

### **5.2.3 Lack of Local Agency Resources**

Local agencies often have very limited resources to implement the recommended changes, including staff, materials, equipment, and budget. The low-cost improvements are beyond the scope of what the local agency can do, but the magnitude is also too small a job to justify all of the paperwork, time, and hassle of hiring a contractor. Therefore, the work may not get done. If there was a statewide or district-wide contract to cover the low-cost improvements, then small work orders could be issued to the contractor with minimal effort and delay in response to each SCR visit. One safety circuit rider in Florida strongly recommended an on-call contractor to implement the relatively low-cost recommendations from SCR-related activities as they are completed. If a contractor could handle the simple low-cost improvements (e.g., add a sign, refurbish pavement markings), everyone would see an immediate improvement from the SCR efforts, including the local agency, the public, and the elected officials. This would have a significant effect on program visibility and should lead to more timely safety benefits. In Florida, one district currently uses FHWA funding to purchase materials (e.g., signs, Qwik Kurb, solar-powered flashers) for the local agencies, but the local agencies are responsible for installation and maintenance.

### **5.2.4 Requests for Safety Circuit Rider Support**

In West Virginia, the SCR program has had a minor backlog of requests for assistance from local agencies, but mostly related to scheduling issues. Site visits often require two to three months

## Chapter 5: Program Evolution

advance notice to work out the logistics. Every year, the local agencies are given more responsibility (e.g., new signals, widened roads, more signs, etc.) and asked to cut their budgets. The common theme of do more with less has not been conducive to the SCR program.

### 5.3 Changes to SCR Programs

Over time, it may be necessary or beneficial to make changes to a SCR program. As discussed previously, many SCR programs start small and expand the number and types of training and technical assistance offered. Starting small allows a program to establish relationships with local

***Start small and expand as resources become available. Many existing SCR programs have found success in this method.***

agencies and thoroughly develop materials for those activities that are offered. As a program becomes established, it may be necessary to adjust training and technical assistance based on the need of local agencies. Some larger States have also added SCRs to more efficiently cover the various regions of the State. Funding, however, is the primary factor in determining the level of safety circuit rider support. As funding changes, particularly if funding is reduced, it may be necessary to adjust the type or level of support. The following points are offered as examples of changes that were made out of necessity or proactively to enhance existing SCR programs.

#### 5.3.1 Modify SCR Support

At the inception of its SCR program, Kentucky offered limited support related to data collection and analysis. After the program was established, the State was able to expand its data collection and analysis efforts. It has also expanded the number of items monitored using the data.

In Iowa, the SCR program constantly reviews its emphasis areas for relevance and worth to customers. Surveys of needs and preferences for training are distributed to customers periodically and topics are added as needed.

The Florida SCR program has enjoyed great success with the RSA course. The full two-day course was modified to a one-day version for the CTSTs in the State because CTST members are volunteers and do not have time to attend a two-day session. Of the 57 CTSTs that would greatly benefit, many have not yet received the training because funding is not adequate to meet the demand.

When the FHWA grant for the West Virginia SCR program expired, the intense work on data analysis and road reviews also ended. Other safety circuit rider activities continue and the

potential to increase data analysis and road review activities depends on whether additional funding is identified. For example, the State DOT may fund an initiative on intersection safety that involves the safety circuit rider.

### **5.3.2 Enhance Efficiency**

The Florida SCR program includes three safety circuit riders, located strategically throughout the State to help cover the large geographic area in Florida. Although multiple safety circuit riders requires greater funding, the funds are actually better used because travel time and travel costs are reduced. This leaves more time and funds available for actual safety circuit rider activities. All three safety circuit riders are also part-time, which helps to reduce costs.

The New York SCR program created separate contracts for safety circuit rider training and safety circuit rider technical assistance. Although the same person may be involved with both aspects of the program, the separate contracts make the paperwork easier. This is particularly useful for the New York SCR program because it contracts with consultants to provide the majority of the safety-related training.

The New York safety circuit rider also indicated that travel can be very time consuming due to the large geographic area of the State. To minimize costs and travel time, the safety circuit rider combines trips whenever possible.





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<http://www.uttc.edu/hr/jobs/job0186.asp> [accessed May 2, 2008].

**Other Websites:**

[http://www.ence.umd.edu/mdt2center/training/on\\_request.htm](http://www.ence.umd.edu/mdt2center/training/on_request.htm)

<https://www.dot7.state.pa.us/LTAP/>

[http://personalweb.smcvt.edu/vermontlocalroads/New/circuit\\_rider/circuit\\_rider.htm](http://personalweb.smcvt.edu/vermontlocalroads/New/circuit_rider/circuit_rider.htm)



## Appendix A: Safety Circuit Rider Programs

Table A.1. Contact Information for Existing SCR Programs

State	SCR(s) or Point of Contact	Phone	Email
Arizona	Mike Blankenship (SCR)	602-712-7601	mblankenship@azdot.gov
Connecticut	Donna Shea	860-486-5400	shea@engr.uconn.edu
Delaware	Matheu Carter (SCR)	302-831-7236	matheu@udel.edu
Florida	Gordon Burleson (SCR) Larry Hagen (SCR) Ed Kant (SCR) Nina Barker	352-213-8315 229-237-3269 239-598-3123 352-392-2371	burleygator@bellsouth.net larry@LarryHagen.com ejkpe@comcast.net nina@ce.ufl.edu
Idaho	Bruce Drewes		bdrewes@uidaho.edu
Indiana	Richard Domonkos (LTAP Training Specialist)	765-494-4225	rdomonko@purdue.edu
Iowa	Tom McDonald (SCR)	515-294-6384	tmcdonal@iastate.edu
Kentucky	Lance Meredith (SCR)	859-257-7405	meredith@engr.uky.edu
New Jersey	Janet Leli	732-445-5236	jleli@rci.rutgers.edu
New York	David Orr (SCR)	607-255-8033	dpo3@cornell.edu
Northern Plains	Dennis Trusty Theodore Danks (SCR)	701-255-3285 701-255-3285	dtrusty@uttc.edu tdanks@uttc.edu
Ohio	Mike Fitch (SCR) Dave Weir (SCR)	614-387-7358	Mike.Fitch@dot.state.oh.us
Pennsylvania	Mark Hood (SCR)	814-238-1170	mhood@pennoni.com
South Dakota	Ken Skorseth (SCR)	605-688-4185	ken.skorseth@sdstate.edu
Tennessee	John Tidwell (SCR)	615-855-1755	jorjtidwell@bellsouth.net
Utah	Doyt Bolling	435-797-2931	doyt@cc.usu.edu
Vermont	Steve Jerome (SCR)	800-462-6555	sughouse@sover.net
West Virginia	Ron Eck (SCR)	304-293-3031	ronald.eck@mail.wvu.edu
Wisconsin	Steve Pudloski Pete Rusch (SCR)	608-262-8707	pudloski@epd.engr.wisc.edu peterlic@charter.net



# Appendix B: Highway Safety Improvement Program (HSIP) Funding Memorandum



## Memorandum

SENT VIA ELECTRONIC MAIL

Subject: INFORMATION: Eligibility of HSIP Funds  
for Safety Engineering Assistance to Locals

Date: July 14, 2006

*/original signed by/*

From: Jeffrey A. Lindley  
Associate Administrator for  
Safety  
Associate Administrator for Safety  
Washington, DC

Reply to  
Attn. of: HSA-20  
HSA-30

To: Division Administrators

Local agencies own and operate over three quarters of the Nation's public roadways. Over 60 percent of fatalities occur on rural roads (79 percent of which are owned by local agencies) even though they carry less than 40 percent of the VMT. In order to achieve meaningful safety results, we as a Nation need to improve safety on local roadways.

The Local Technical Assistance Program (LTAP) works with local highway jurisdictions, providing technical assistance and training. Currently the LTAP Centers provide more than 4,000 training events to over 115,000 participants annually, and a number of Centers currently have safety programs. Last year, the FHWA Office of Safety identified an opportunity to support an expanded role for safety services through LTAP Centers by funding four "Safety Circuit Rider" positions at three LTAP Centers and one Tribal Technical Assistance Program (TTAP) Center, with assistance from Federal Lands. These positions provide assistance in advancing safety through training, technical support, and other activities that will reduce roadway fatalities and injuries. This program has been continued for the three LTAP Centers this year and some States are initiating their own programs.

The SAFETEA-LU emphasis on using a data-driven approach to improve safety on all public roads may lead States to conclude that expanding or beginning similar safety programs for local roads is an excellent strategy for improving safety statewide. Engineering services have always been eligible as part of a Federal-aid project under the broad Title 23 definitions of construction and project, and Section 112 of Title 23 allows the State to contract for these design/engineering services. Engineering assistance programs for local roads was an eligible expense under the previous HSIP program, and remains eligible under the new core HSIP program.

As your State moves forward in developing and implementing a Strategic Highway Safety Plan that identifies specific strategies to improve safety on all public roads, we encourage you to





## *Appendix B: (HSIP) Funding Memorandum*

consider the suitability of providing part- or full-time safety assistance to local governments through your State's LTAP Center or some other means. If your data points to engineering safety needs on local roadways, it will be important to assure those jurisdictions have adequate resources to assess and develop safety strategies and projects.


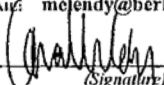
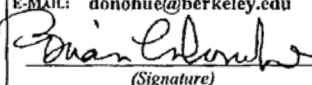
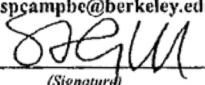
If you have any questions on the Safety Circuit Rider Program, or other ways to improve infrastructure safety on local roads, please contact Ms. Leslie Wright, manager of local road safety programs in the Office of Safety Programs at 202-366-2176 or [Leslie.Wright@dot.gov](mailto:Leslie.Wright@dot.gov).

cc: Associate Administrators  
Director of Field Services  
Resource Center Director and Operation Managers  
Federal Lands Highway Division Engineers

# Appendix C: SCR Funding Proposals and Budgets

## C.1 California SCR Grant Proposal

The following is a copy of the cover page of California's grant proposal. The bulk of the proposal was dedicated to the grant description, which is described in further detail on the next page followed by a copy of the proposed budget for the program.

 <p>State of California</p> <p><b>OFFICE OF TRAFFIC SAFETY</b></p> <p><b>GRANT AGREEMENT</b></p>		<p>GRANT NUMBER</p> <p><b>PT0829</b></p>
PAGE 1 (To be completed by applicant Agency)		
1. GRANT TITLE <b>TRAFFIC SAFETY EVALUATION SERVICE FOR CALIFORNIA COMMUNITIES</b>		
2. NAME OF APPLICANT AGENCY <b>THE REGENTS OF THE UNIVERSITY OF CALIFORNIA</b>		4. GRANT PERIOD Month - Day - Year
3. AGENCY UNIT TO HANDLE GRANT <b>ITS TECHNOLOGY TRANSFER PROGRAM</b>		From: <b>10/01/07</b>
		To: <b>09/30/09</b>
5. GRANT DESCRIPTION (Provide an overview of the grant activities that will address the problem statement, in approximately 100 words. Space is limited to six lines.)		
<p>To reduce the number and severity of crashes, and the number of pedestrian injuries and fatalities due to collisions, on local streets and highways in California by providing free expert technical assistance to local enforcement and engineering staff aimed at improving efficiency and effectiveness of local traffic and pedestrian safety programs and recommend solutions for high crash sites. Thirty (30) Traffic Safety Evaluations will be performed; a Pedestrian Safety Audit tool will be developed; eighteen (18) Pedestrian Safety Audits will be performed. University staff oversee and evaluate performance of teams, market the services to cities and counties, and disseminate appropriate best practices.</p>		
6. FEDERAL FUNDS ALLOCATED UNDER THIS AGREEMENT SHALL NOT EXCEED:		<b>\$ 879,493.00</b>
7. APPROVAL SIGNATURES		
A. GRANT DIRECTOR		B. AUTHORIZING OFFICIAL OF APPLICANT AGENCY
NAME: <b>Laura Melendy</b> PHONE: 510-665-3608		NAME: <b>Brian Donohue</b> PHONE: 510-642-3128
TITLE: Director FAX: 510-665-3454		TITLE: Business Contracts Admin FAX: 510-642-8604
ADDRESS: UC Berkeley, ITS Technology Transfer Program 1301 S 46 <sup>th</sup> Street, Bldg 155 Richmond CA 94804		ADDRESS: UC Berkeley, Business Contracts Office 6701 San Pablo Avenue #218 Berkeley CA 94704-5600
E-MAIL: <b>melendy@berkeley.edu</b>		E-MAIL: <b>donohue@berkeley.edu</b>
 _____ 12/12/07 (Signature) (Date)		 _____ (Date)
C. FISCAL OR ACCOUNTING OFFICIAL		D. OFFICE AUTHORIZED TO RECEIVE PAYMENTS
NAME: <b>Steven Campbell</b> PHONE: 510-642-3587		NAME: <b>The Regents of the University of California</b>
TITLE: Assistant Director FAX: 510-643-3955		
ADDRESS: UC Berkeley, Institute of Transportation Studies 109 McLaughlin Hall Berkeley CA 94720-1720		ADDRESS: ITS Technology Transfer Program 1301 S 46 <sup>th</sup> Street, Bldg 155 Richmond, CA 94804
E-MAIL: <b>spcampbe@berkeley.edu</b>		
 _____ 12/12/07 (Signature) (Date)		

## **C.2 California Grant Proposal Description**

**Problem Statement:** This section includes a background of safety statistics in the State, emphasizing the number of pedestrian- and bicycle-related fatalities as well as the State goals for reducing these fatalities. The problem statement also outlines the role of local agencies in reducing pedestrian- and bicycle-related fatalities and makes a case for additional support at the local level.

**Grant Goals:** The section listed two specific goals of the program, indicating the target audience (i.e., local engineering and enforcement agencies) and specific dates of completion. The following is an example of one of the two goals:

To enhance traffic safety in California cities and counties that receive Traffic Safety Evaluations by working with local engineering and enforcement agencies and recommending practical ways to improve the efficiency and effectiveness of local traffic safety programs by September 30, 2009.

**Grant Objectives:** Several objectives were listed under each anticipated activity. Activities included traffic safety evaluations (TSE), pedestrian safety audits (PSA), and media outreach. Three of the nine TSE objectives are listed below as an example.

To conduct 30 2-day site visits on request from cities or counties in California focused on benchmarking local traffic safety programs against similar communities in California and recommending solutions for locally identified problems by September 30, 2009.

To assist local police and traffic engineering staff in their efforts to design coordinated traffic safety programs and locate resources to fund their implementation by September 30, 2009.  
To produce a report of findings for each site visit that documents recommendations by September 30, 2009.

**Method of Procedure:** This section outlined the tasks to be completed during each phase of the program as well as the anticipated start and completion dates for each phase. There were a total three phases:

1. Phase 1 (Program Preparation): This phase included training as needed for new expert team members, preparing and distributing a new press release to announce

continuation of the project, and reviewing SWITRS data to identify those cities and counties in the top quartile of crash statistics.

2. Phase 2 (Program Operations): This phase consists of four parts including outreach and project marketing, performing the community traffic safety evaluations, performing the pedestrian safety audits, and development and broad distribution of traffic and pedestrian safety best practices.
3. Phase 3 (Data Gathering and Reporting): This phase consists of collecting the necessary data to evaluate the progress and success of the program. This phase occurs throughout the project, resulting in Quarterly Performance Reports (QPRs).

**Method of Evaluation:** This section described how the grant manager would evaluate the program based on the data compiled in Phase 3. Specifically, the grant manager will evaluate: (1) how well the stated grant goal and objectives were accomplished, (2) if all the activities outlined in the “Method of Procedure” were performed in accordance with the grant agreement, and (3) the cost-effectiveness of the grant.

**Administrative Support:** This section outlined the administrative support available through the University Of California Berkley Institute Of Transportation Studies and its Technology Transfer Program.

**Proposed Budget:**

TRAFFIC SAFETY EVALUATION SERVICE FOR CALIFORNIA COMMUNITIES October 1, 2007 through September 30, 2009			
Cost Category	Year One*	Year Two**	Total
In-house staff, salaries & benefits	166,515	172,343	338,858
Circuit riders, salaries & benefits	166,749	211,534	378,283
Development of PSA tool & technical guide	45,000	-	45,000
Travel	23,250	26,000	49,250
Graphic Design	1,750	1,000	2,750
Printing/Duplication	15,100	5,700	20,800
Communications (Phone/Fax/Postage/Shipping)	2,400	2,400	4,800
Office supplies/Computers/Equipment/Misc	7,250	5,000	12,250
Overhead	13,318	14,184	27,502
	441,332	438,161	879,493

\*Year One: 15 Traffic Safety Evaluations, 6 Pedestrian Safety Assessments  
 \*\*Year Two: 15 Traffic Safety Evaluations, 12 Pedestrian Safety Assessments

### **C.3 Wisconsin SCR Funding Proposal**

#### **Scope**

In an effort to improve intersection safety and to minimize consequences of run-off-the-road crashes, the UW-Madison based Transportation Information Center (LTAP) and the Traffic Operations and Safety (TOPS) Laboratory are proposing an outreach strategy to assist local agency partners.

In Wisconsin, 66 percent of intersection crashes occur on local roads and 90 percent of the fatalities from run off the road crashes occur on rural roads. Evidence from other LTAP Centers indicates that reductions in crashes at intersections and rural roads can be achieved with a coordinated outreach approach to local agencies that includes safety engineering analysis and on-site technical assistance provided by safety circuit riders. This proposal envisions two part-time traffic engineering professionals who would perform the tasks listed below.

Additionally, the TOPS Laboratory is engaged in numerous safety engineering projects with WisDOT that could serve as a basis for providing local road safety information, such as:

- Intersection Safety Countermeasure Plan Development.
- Road Safety Audit Program Support and Coordination Services.
- Run-off-the Road Safety Counter measures Plan Development.
- Unique indications for improving signalized intersections.
- Hosting TransPortal which includes query tools to access over 13 years of historical crash data and a variety of other transportation operations information (e.g., weather, volumes, etc.).
- Assist circuit riders in organizing before and after crash effectiveness studies to evaluate safety improvements resulting from this program.

The project includes two components: back office traffic safety engineering analysis and outreach oriented safety circuit riders. In coordination with LTAP, the TOPS Laboratory will process requests for local crash data and provide summary data and a customized catalog of appropriate countermeasures to the circuit riders who will work with local governments.

The Safety circuit riders will:

- Assist local agencies in using crash data to identify opportunities for crash reduction at intersections and run off the road locations.

- Develop relationships with local agencies staff and County Traffic Safety Commissions to achieve the use of crash data to make appropriate safety improvements.
- Provide technical assistance to local agencies to assist in selection and design of safety improvements.
- Assist communities conduct before and after crash effectiveness studies to evaluate safety improvement programs on local roads.
- Provide technical assistance to local agencies to assist in implementation of upcoming requirements for sign retro-reflectivity.
- Develop curriculum for safety training intended for local agency staff and law enforcement officials.

### **Benefit**

Using the single automated statewide crash mapping application, TOPS can perform traffic safety analyses to identify critical locations and crash causes for the purpose of decision support. Using the safety analysis produced by TOPS, safety circuit riders can provide hands-on technical assistance to local officials thereby implementing safety measures to mitigate safety problems and ultimately save lives and the loss of property.

### **Cost**

Total funding for the two year pilot is anticipated to total \$280,000. Approximately \$50k per year is designated to support the local roads-oriented analysis at the TOPS Laboratory and \$90k per year would be allocated to support two, part-time safety circuit riders.

### **Source of 10% match funds**

The Wisconsin Transportation Information Center (LTAP) source of the 10% matching comes from publications sales and course registration fees.

### **Support relevance to SHSP emphasis area**

Activities would specifically support SHSP Issue Area 2: Improve Design/Operation of Intersections and Issue Areas 6&9: Keep Vehicles on the Road and Minimize Consequences of Leaving the Roadway.

**C.4 Wisconsin SCR Contract Budget**

The following is a copy of the Wisconsin contract budget. It should be noted that this budget was amended to reduce the academic salaries and fringe benefits in an effort to increase the SCR salary and travel budget by \$23,000.

<b>2007-2009</b>		
<b>LOCAL ROAD SAFETY INITIATIVE BUDGET SUPPLEMENT</b>		
<b><u>EXPENDITURES</u></b>		
<b><u>Salaries</u></b>		
Academic	\$96,000	
Classified	5,000	
Student Help	<u>15,000</u>	
TOTAL SALARIES		\$116,000
<b><u>Fringe Benefits</u></b>		
Academic @ 37.5% - \$36,000		
Classified @ 46.5% - \$2,325		
Student @ 2% - \$300		
TOTAL FRINGE BENEFITS		38,625
<b><u>Technical Materials</u></b> - Textbooks, Reports, Videos		2,000
<b><u>Mailings</u></b>		2,000
<b><u>Printing</u></b> – Fact sheets, brochures		4,000
<b><u>Travel and Workshop Expenses</u></b>		19,000
<b><u>Circuit Rider</u></b>		60,000
<b><u>Other</u></b>		
Office Supplies	400	
Telephone	300	
Photocopy	200	
Equipment	800	
Miscellaneous	<u>153</u>	
TOTAL OTHER		<u>1,853</u>
<b><u>Total Direct Costs</u></b>		24,3478
<b><u>Indirect Costs</u></b>	15% of (Direct Costs)	<u>36,522</u>
TOTAL		\$ 280,000
<b><u>REVENUE</u></b>		
FHWA - HSIP/WisDOT	252,000	
Course Fees/Publication Revenue-UW	28,000	
TOTAL	\$280,000	
<b><u>CONTRACT BUDGET</u></b>		\$280,000



## Appendix D: Safety Circuit Rider Commentaries

This appendix provides commentaries from existing safety circuit riders about the important characteristics and qualifications for safety circuit riders.

### **Florida**

Florida currently employs three safety circuit riders, 1) a former public works director, 2) a retired DOT engineer, and 3) one with a diverse background. The following commentaries are from current Florida safety circuit riders related to the desired characteristics of a SCR.

#### SCR #1 (Ed Kant):

To be proficient, a safety circuit rider should have a good relationship with local agencies, background in traffic engineering, good knowledge of how government works (e.g., budgeting, public law, and local ordinance requirements in terms of what it takes to get projects funded and completed), and be comfortable speaking to groups.

A SCR also needs to understand how to bypass the typical engineering process to implement low-cost countermeasures. Many of the situations encountered by a SCR can be enhanced through simple measures such as improving signs and pavement markings or trimming trees to improve sight distance. These types of improvements do not require a complete engineering study.

#### SCR #2 (Gordon Burleson):

Safety circuit riders should have some public speaking skills and a professional background specifically related to the area in which the clients work. The SCR must be able to communicate to field maintenance personnel, engineers, and politicians. If the SCR's background is closely related to the field personnel and engineers, their suggestions are more likely to be accepted. If the SCR is a professional engineer, their suggestions are more likely to be accepted by politicians (county commissions).

In regard to having a background in traffic engineering, it is best if the SCR has field implementation and/or maintenance experience rather than design experience. It also helps if the SCR has over 15 years of experience; being under the age of 35 may not be desirable due to issues with credibility and experience.

## *Appendix D: Safety Circuit Rider Commentaries*

SCR #3 (Larry Hagen):

A safety circuit rider must be a person with a passion for reducing crashes and the resulting injuries and fatalities, a strong traffic safety CHAMPION. The safety circuit rider must have the ability to communicate with people at all levels within the hierarchy of a transportation agency from the maintenance worker to the engineer, as well as with other people including law enforcement officers, elected officials, the press, and the public. The SCR must have a few gray hairs gained from the school of hard knocks, and ideally would have a broad and diverse background that may include design, operations, and/or maintenance responsibilities.

Above all, the most important thing that a SCR must bring to the table is a spirit of cooperation. To be effective in making the changes that are necessary to bring about any improvement, the SCR often has to bridge jurisdictional issues that exist between agencies. It could be responsibility issues between state and city/county agencies, or long-standing discord between traffic engineering and law enforcement. The SCR's focus must be on getting the right players to the table to bring about effective change. All of the players have a part in making our roadways safer, but no one player has the whole; all of the E's (engineering, education, enforcement, EMS, encouragement, everyone else, etc.) must work together to make substantive safety improvements.

### ***Iowa***

According to the Iowa SCR, the most essential characteristics for a safety circuit rider are credibility, the ability to communicate well, and a passion for roadway safety. Retired county engineers have an established relationship with local agencies and also command a certain level of respect and credibility from local agencies because they are seen as "one of their own." County engineers, however, often do not have a strong safety background and it is often necessary to provide them with this skill set through train-the-trainer or similar programs. A background in traffic engineering and/or safety would be valuable for safety circuit riders, but is not mandatory because a person with a passion for safety can obtain this knowledge through professional development or training.

The Iowa SCR has never been a county engineer, but has worked with local agencies extensively throughout his career with the Iowa DOT. This has helped build a degree of credibility among local agencies. Also, the SCR has been involved in a considerable amount of research throughout his career. While the research activities are mostly an interest of the Iowa SCR, and not necessarily a requirement of the SCR position, the results of many of these studies have

provided excellent opportunities to share safety information with local agencies and develop resources such as handbooks and manuals.

### ***Pennsylvania***

The following commentary is from a current SCR in Pennsylvania related to the desired characteristics of a SCR.

Mark Hood:

It is important for a SCR to have a technical knowledge in traffic engineering, operations, and traffic safety with an understanding of design, maintenance, and liability issues. It is best if the SCR has field implementation and/or maintenance experience rather than design experience. More importantly, they should know if something will work in the field and how to get it implemented in the field. It is also helpful for a SCR to have a good understanding of State law, operation of local government, and existing resources and manuals. It is important for a SCR to be a registered professional engineer, but the age of the SCR is secondary to experience. To be effective, the SCR should be able to explain engineering concepts in a useful manner to a non-engineering audience (i.e., they must be able to relate to all audiences: law enforcement, elected officials, designers, and road laborers). Finally, the SCR must be willing to travel as part of the job and be comfortable and effective at public speaking.

### ***West Virginia***

The West Virginia SCR program identifies circuit riders based on the required characteristics. According to the SCR, desired characteristics include adequate knowledge of design and operations (e.g., guides, policies, and issues), diverse knowledge in safety, willingness to travel, ability to communicate and work with others, public speaking skills, and ability to work in the field and provide hands-on assistance.



## Appendix E: Safety Circuit Rider Activities

### E.1 Florida Training Activities

The three safety circuit riders in Florida are focusing on 10 of the 67 counties (see Program Initiation for additional details). Table E.1 provides an example of the number of training activities that occur during a typical year. These training activities include those conducted from January through September of 2007.

Table E.1. Overview of 2007 Training Activities in Florida (January to September)

Name of Session	Number of Sessions	Number of Hours	Number of Participants	Participant Hours	Date of Workshop
RSAs for Local Governments	4	14	14	196	2-23-07
		14	10	140	4-19-07
		12	15	180	6-5-07
		12	10	120	7-19-07
RSAs for CTSTs	6	4	15	60	2-12-07
		4	13	52	2-27-07
		8	18	144	6-27-07
		8	30	240	6-28-07
		8	22	176	8-7-07
		8	22	176	8-8-07
Low Cost Safety Solutions for Rural Roads	2	6	16	96	4-3-07
		6	10	60	7-31-07
Traffic Engineering Fundamentals	1	21	10	210	3-13-07
<b>Total</b>	<b>13</b>	<b>125</b>	<b>205</b>	<b>1850</b>	

## Appendix E: Safety Circuit Rider Activities

### E.2 Pennsylvania Training Activities

Table E.2 provides an example of the number of training activities that occur during a typical year in Pennsylvania. These training activities include those conducted from 2006 through 2008.

Table E.2. Overview of 2006-2008 Training Activities in Pennsylvania

Name of Session	Session Length (hours)	Number of Sessions	Number of Participants	Average Participants per Session
Engineering and Traffic Studies	8	6 in 2006	92	15
	7	9 in 2007	133	15
	7	4 in 2008	53	13
Low-Cost Safety Improvements	7.5	1 in 2006	11	11
	•	0 in 2007	•	•
	•	0 in 2008	•	•
Risk Management/Tort Liability	3.5	1 in 2006	18	18
	4	6 in 2007	69	12
	4	6 in 2008	124	21
Road Safety Improvement Program	8	2 in 2006	16	8
	7	4 in 2007	67	17
	7	2 in 2008	15	8
Signing and Work Zone Rules for Local Governments	4	34 in 2006	868	26
	4	16 in 2007	296	19
	4	3 in 2008	67	22
Traffic Calming	•	0 in 2006	•	•
	•	0 in 2007	•	•
	7	3 in 2008	41	14
Traffic Signs	8	16 in 2006	332	21
	7	19 in 2007	279	15
	7	9 in 2008	156	17
Work Zone Traffic Control	4	32 in 2006	662	21
	4	32 in 2007	661	21
	4	24 in 2008	530	22
<b>Total</b>	--	<b>92 in 2006</b> <b>86 in 2007</b> <b>51 in 2008</b>	<b>1,999</b> <b>1,505</b> <b>986</b>	<b>22</b> <b>18</b> <b>19</b>

Note: Some session lengths were shorter or longer in duration.

### E.3 West Virginia Training Activities

Table E.3 provides an overview of presentations made by the West Virginia LTAP in 2007, all of which were provided by the SCR as formal workshops. Training opportunities also include presentations (1 to 2 hours) at state and regional safety venues, community group meetings, and to elected bodies.

Table E.3. Overview of 2007 Training Activities in West Virginia

Session Name	Session Length [hours]	Total Sessions	Number of Participants					Total Number of Participants
			Local	Tribal	State	Federal	Other	
Road Safety Fundamentals	7	7	47		86		3	136
Roadside Safety	6	1			12			12
Low-Cost Safety Improvements	7	4	3		70			73
Flagger Certification	4	2	19		2			21
Work Zone Traffic Control	3	6	114		1			115
Designing Pedestrian Facilities for Access	7	1	4		11		2	17
Common Bicycle Facility Liability Problems	1	1			40	2	3	45
Designing Pedestrian Facilities for Access – Conf. Session	1	1					67	67
Pedestrian/Bicycle Transportation Training Series for Charleston Alliance	3	3	69				7	76
Designing for Accessibility	3.5	1	20		25			45
Safety Impacts of Maintenance	1.25	1	22		28			50



*Appendix E: Safety Circuit Rider Activities*

The What and How of Walkable Communities	1.25	1	30		10			40
Walkable Communities Workshop	3	1	18					18
Designing Trails for Accessibility	3.5	1			75			75
Tort Liability and Risk Management	6	1			14		3	17
Pedestrian/Bicycle Accommodation	7	4	33		63		6	102
Traffic Sign Retroreflectivity	3.5	1			10			10
The FHWA Safety Circuit Rider Program Low-Volume Roads Presentation	1	1			20	5		25
Local Road Safety Workshop	3.5	1			22	3		25
Overview of Accident Reconstruction	2	1					25	25
Walkable Communities : Why, What, and How to	1	1					25	25
Pedestrian Safety Presentation to School Kids	1	1					25	25
Safety Circuit Rider Panel	1	1					35	35
Risk Management Overview	1	1					60	60
<b>TOTAL</b>	<b>78.5</b>	<b>44</b>	<b>379</b>		<b>489</b>	<b>10</b>	<b>261</b>	<b>1,139</b>

## E.4 Florida Technical Assistance Activities

### Pasco County RSAs

Larry Hagen, a SCR for the central region of Florida, has conducted multiple RSAs in Pasco County. Pasco County was one of the first counties in Florida to utilize the SCR for conducting RSAs on a large-scale. To determine the locations of greatest need regarding safety, a preliminary list of intersections was developed utilizing the Pasco County Crash Data Management System (CDMS). Criteria to identify the high-priority locations included: average number of crashes per year, total number of fatalities, total number of injuries, percentage of angle crashes, percentage of left turn crashes, and percentage of crashes occurring at intersections. The list of candidate intersections was then reviewed by Pasco County Traffic Engineering staff and modified to reflect the County’s work program schedule (i.e., locations already scheduled for improvements were eliminated from the list). This process identified the top 10 intersections for a RSA.

The RSA team was assembled by the FHWA with assistance from the Florida DOT Traffic Operations staff. The team included members from the FHWA, Florida DOT Traffic Operations, Pasco County Traffic Operations, Pasco County Sheriff Office, City of New Port Richey, a consultant, Florida SCR (Larry Hagen), and URS Corporation.

The SCR led the RSA using the traditional eight-step RSA process for all 10 intersections. The SCR produced a comprehensive RSA report describing the suggested measures ranging from short-term solutions such as signing and pavement marking modifications to geometric changes such as adding turn-lanes (see Table E.4 below). The SCR also added a step to the RSA process. This was a RSA follow-up one year after the initial RSAs involving the same RSA team members. This enabled the team to not only ensure actions were taken to address potential safety issues, but permitted the review of suggested intermediate and long-term measures.

Table E.4. Example of Issues Identified and Suggestions from Pasco County RSA

Observation	Location	Suggestion
Timing/coordination	Westbound	Coordinate signals between Leo Kidd and US 19
No backplates on traffic signals	Intersection	Install backplates, provide backplates with reflective border westbound
2 signal heads for 3 through lanes	Westbound	Provide one signal head indication per through lane
Left-turn queue spillover	Eastbound	Provide eastbound protected left-turn

## Appendix E: Safety Circuit Rider Activities

Overhead advance street name signs	Westbound	Relocate from overhead span to shoulder
Overhead US 19 signs are different	Westbound	Refurbish signs, provide pavement lane markings
US 19 junction sign is close to intersection	Westbound	Relocate sign farther upstream from intersection
Solid edgeline across car dealership driveway	Eastbound	Convert solid line to skip line
Lane shift through the intersection	Northbound	Provide skip guide markings for northbound through movement
Driveway conflict	Westbound	Install raised median on westbound approach
Pedestrian crosswalks on 2 of 4 legs	Intersection	Provide pedestrian crossing across south leg
Faded crosswalks	Intersection	Refurbish faded pavement markings, upgrade to high-emphasis
No overhead street lighting	Intersection	Provide overhead street lighting

### E.5 Pennsylvania Technical Assistance Activities

#### Local Safe Roads Communities

- A. Purpose: Assist municipalities in developing an ongoing safety improvement program to achieve a measurable impact in improving safety on local roads by reducing crashes at specific locations.
- B. Process:
  - 1) Initiate: PSATS and the SCR consultant are proactively contacting the “top 30” municipalities with high crash rates throughout PA (with reasonable geographic and population distribution as well as type of municipality). Also, any municipality who expresses an interest in the program is considered.
  - 2) Conduct: Once initial contact is made, engineer calls the municipality to schedule an onsite kickoff meeting with municipality, PSATS, Municipal Services Representative, planning commission members and anyone else chosen to be present. Crash data is requested from PennDOT and local knowledge is obtained at the kickoff meeting. An onsite visit is then conducted and a final report is generated with safety improvement recommendations for three to four high-crash locations.

- 3) Follow up: Engineer documents this as an onsite tech assist(s) and PSATS follows up 6 months later to determine if anything has been implemented and if crashes have been reduced following implementation.

### Walkable Communities

- A. Purpose: Assist municipalities in improving pedestrian safety and walkability in their communities.
- B. Process:
  - 1) Initiate: PennDOT Bureau of Highway Safety and Traffic Engineering (BHSTE) provides interested communities with input from District Pedestrian-Bike coordinators.
  - 2) Conduct: Conduct of Walkable Communities varies by the interest of the community. In general, once initial contact is made, engineer calls the municipality to schedule a day for an onsite kick-off meeting with municipal representative. Engineer also conducts a 'walkabout' and takes pictures to assess the community for pedestrian safety and walkability issues. A crash data is requested of PennDOT and local knowledge is obtained at the kickoff meeting. A customized workshop is then presented in the municipality based on the 'walkabout'. Following the workshop, a report is generated summarizing key findings.
  - 3) Follow up: Engineer documents this as an onsite tech assist(s) and PSATS follows up 6 months later to determine if anything has been implemented.

### Road Safety Audit Reviews

- A. Purpose: To improve safety on local roads by performing RSARs on existing roadways in municipalities to proactively identify road safety deficiencies. The selected RSARs will be used to generate more detailed technical assist data for generating technical bulletins, class example materials, newsletter articles, and safety case studies.
- B. Process:
  - 1) Initiate: Municipality requests a safety-oriented technical assist, and PSATS and/or the consultant determine whether it is worthy of further study/documentation.
  - 2) Conduct: Engineer calls the municipality to schedule a day for an onsite visit. An engineer (and possibly a junior engineer) meets with the municipal

## *Appendix E: Safety Circuit Rider Activities*

representatives who together choose a roadway, intersection, school zone, etc. on which to conduct the audit. The team would drive the agreed upon roadways, use PennDOT's Road Safety Audit forms and photos to document what is seen.

A report is generated with findings. Note that this road safety audit review process is defined in the Roadway Safety Improvement Program (RSIP) class.

- 3) Follow up: The municipality is required to respond in 6 weeks to document how they are addressing safety concerns on the roadway. PSATS will follow up 6 months later to determine if anything has been implemented. The consultant will document safety improvements that were made, and conduct a before/after crash study to document safety improvement results.

### Tech Assist

- A. Purpose: Provide local government representatives customized technical assistance in highway safety or highway maintenance issues. As an example, the SCR has provided support related to the appropriate use of pavement markings, warning signs, and advisory speeds.
- B. Process:
  - 1) Initiate: Response to customer-specific request by phone call or email.
  - 2) Conduct: After assignment, engineer provides assistance over the phone or email or schedules an onsite visit to review the situation.
  - 3) Follow up: PSATS sends tech assist evaluation 6 months following completion.

### Advanced Tech Assist

- A. Purpose: To provide further customized training and technical assistance to municipalities who regularly use LTAP services.
- B. Process:
  - 1) Initiate: This service is initiated as part of a scheduled Training Class (Roadshow). Based on the topic of the class requested, the instructing engineer and/or PSATS discuss with the class host the opportunity for the engineer to provide customized onsite technical assistance on this topic. This can occur the day before the class so that the site-specific example may be used as part of the in-class discussion; or it can occur after the class is complete (in the afternoon if it is a half-day class or the next day if it is a full day class) so that participants can see how the

information provided in the class may be applied to a real-life scenario. The PennDOT, PSATS, or a consultant representative who responds to the class request should ask a series of questions to determine whether an onsite tech assist or customized training may better meet the needs of the customer (municipality).

- 2) Conduct: A TOAST is conducted and documented by the engineer in the same manner as a regular tech assist.
- 3) Follow up: PSATS sends tech assist evaluation 6 months following completion.

#### Tech Assist for a Day (Visiting Engineer Program)

- A. Purpose: Expand the LTAP service user base by reaching out to those municipalities who have not utilized LTAP.
- B. Process:
  - 1) Initiate: Similar to the TOAST, prior to travel for an already scheduled Training Course (Roadshow), identify and proactively cold-call municipalities in the area who have not used LTAP services in the last 3 years to determine whether the LTAP Engineer could provide assistance to the municipality. Possibly utilize District Municipal Services Representatives or Planning Partner for suggestions. This assistance can occur the day before the class, or it can occur after the class is complete (in the afternoon if it is a half-day class or the next day if it is a full day class). This may also encourage nearby municipalities to attend the training class. If we do not get any 'bites', PSATS could identify those nearby municipalities who indicated an interest in an onsite tech assist on the class evaluation forms. An analysis could also be conducted on regions of Pennsylvania that are under-represented for technical assists, and targeted for this program.
  - 2) Conduct: This program is conducted and documented by the engineer in the same manner as a regular tech assist. Because we will be at the municipality for an extended period of time, this may result in a number of different tech assists.
  - 3) Follow up: Engineer documents this as an onsite tech assist(s) and follows up with any additional information, letter, or report as necessary. PSATS sends tech assist evaluation(s) 6 months following completion.

Sample Technical Information Sheet: The following is an example of a technical information sheet. The SCR publishes technical information sheets through the Pennsylvania LTAP Center to provide detailed information on a specific topic. The sample technical information sheet focuses on new signing and work zone rules for local governments.



PennDOT LTAP  
**technical**  
 INFORMATION  
 SHEET #126  
 SUMMER 2006

## Manual on Uniform Traffic Control Devices and Chapter 212

### New Signing and Work Zone Rules for Local Governments



On February 4, 2006, PennDOT officially added Chapter 212, Official Traffic Control Devices to Title 67, The Pennsylvania Code. Chapter 212 formally adopts the Manual on Uniform Traffic Control Devices (MUTCD) as published by the Federal Highway Administration (FHWA). To supplement information in the MUTCD, PennDOT has also released two brief publications: Publication 212, Official Traffic Control Devices, and Publication 213, Work Zone Traffic Control.

These documents apply to and provide some new standards and guidelines for the approval, location, installation, revision, operation, maintenance and removal of all traffic signs, signals, pavement markings and other traffic-control devices on all streets and highways in Pennsylvania, including work zones.

This tech sheet will provide a brief overview of these new documents.

#### What's Changed?

The adoption of the MUTCD has eliminated several references used for applying traffic control devices and added new ones. The following table summarizes these changes.

Former Reference	Current Reference
PennDOT Publication 68, <b>Official Traffic Control Devices</b> (Chapter 211 of Title 67)	1) MUTCD 2) PennDOT Publication 212, <b>Official Traffic Control Devices</b> (Chapter 212 of Title 67)
PennDOT Publication 201, <b>Engineering and Traffic Studies</b> (Chapter 201 of Title 67)	1) MUTCD 2) PennDOT Publication 212, <b>Official Traffic Control Devices</b> (Chapter 212 of Title 67)
PennDOT Publication 203, <b>Work Zone Traffic Control</b> (Chapter 203 of Title 67)	1) MUTCD 2) PennDOT Publication 213, <b>Work Zone Traffic Control</b>
Chapter 204 of Title 67, <b>Guidelines to Implement Act 229 of 2002</b>	PennDOT Publication 213, <b>Work Zone Traffic Control</b>
Chapter 217 of Title 67, <b>Posting of Private Parking Lots</b>	PennDOT Publication 212, <b>Official Traffic Control Devices</b> (Chapter 212 of Title 67)

#### Language in the New References

When using the MUTCD and Publications 212 and 213, pay particular attention to the language used. The MUTCD uses the following key terms: standards, guidance, options, and support.

A "standard" is a statement of required, mandatory, or specifically prohibitive practice regarding a traffic control device. All standards are labeled in the MUTCD, and the text appears in bold type. The verb "shall" is typically used.

"Guidance" is a statement of recommended, but not mandatory, practice in typical situations, with deviations allowed if engineering judgment or engineering study indicates the deviation to





be appropriate. All guidance statements are labeled, and the text appears in unbold type. The verb “should” is typically used.

“Option” is a statement of practice that is a permissive condition and carries no requirement or recommendation. Options may contain allowable modifications to a standard or guidance. All “option” statements are labeled, and the text appears in unbold type. The verb “may” is typically used.

“Support” is an informational statement that does not convey any degree of mandate, recommendation, authorization, prohibition, or enforceable condition. Support statements are labeled, and the text appears in unbold type. The verbs shall, should, and may are not used in support statements.

Publication 212 simply uses the terms “shall,” “should,” and “may.”

#### Organization of the New References

Publication 212 was constructed to correspond with the structure of the MUTCD as much as possible. Chapter titles and the Part/ Subchapter equivalencies between the MUTCD and Chapter 212 are presented in the table at right:

Publication 213 includes updated typical figures for work zone traffic control. These figures will help local governments comply with the work zone provisions of the MUTCD, Chapter 212, and Pennsylvania Act 229. It is simply organized in numerical order by figure.

MUTCD	CHAPTERS/ TOPIC	Publication 212
Part 1	General Provisions	Subchapter A
Part 2	Signs	Subchapter B
Part 3	Markings	Subchapter C
Part 4	Highway Traffic Signals	Subchapter D
Part 5	Traffic Control Devices For Low-volume Roads	N/A
Part 6	Temporary Traffic Control	Subchapter E
Part 7	Traffic Controls For School Areas	Subchapter F
Part 8	Traffic Controls For Highway-rail Grade Crossings	N/A
Part 9	Traffic Controls For Bicycle Facilities	Subchapter G
Part 10	Traffic Controls For Highway - Light Rail Transit Grade Crossings	N/A
N/A	Special Events	Subchapter H
N/A	Engineering and Traffic Study Elements	Appendix

#### Where Can I View These Documents?

- The MUTCD can be found at <http://mutcd.fhwa.dot.gov/>;
- Chapter 212 can be found at <http://www.pbulletin.com/secure/data/vol36/36-5/179.html>; and
- Chapter 213 can be found on PennDOT’s Web site at <http://www.dot.state.pa.us>. Click on Forms and Publications, PennDOT Publications and Maps, and the link for 213.

You can also order a hard copy of MUTCD from one of the following organizations:

- AASHTO: <https://www.transportation.org/publications/bookstore.nsf/>;
- ITE: <http://www.ite.org/bookstore/>; and
- ATSSA: <http://www.atssa.com/store/>.

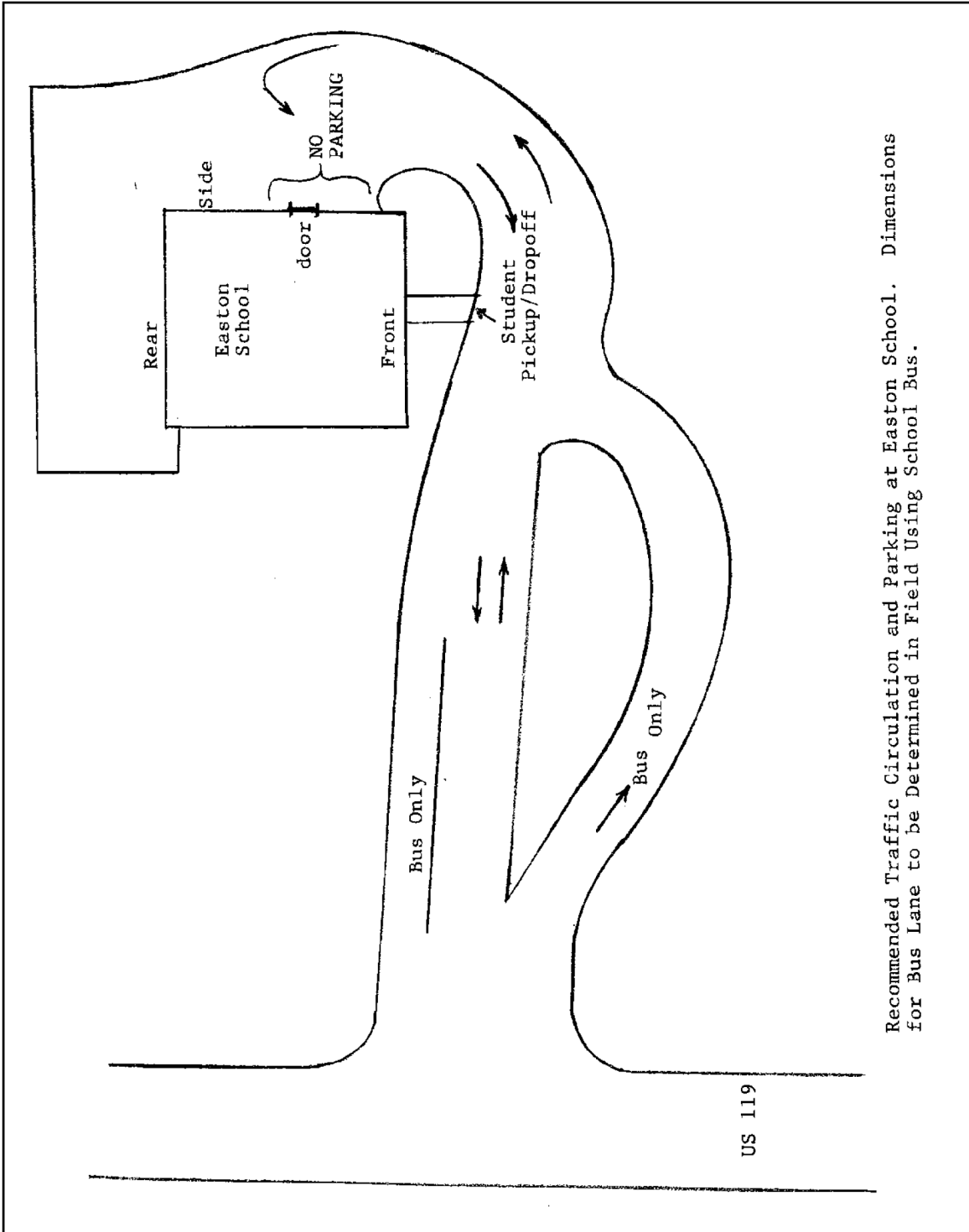
#### LTAP Classes

Now that there are new signing and work zone rules for local governments, including new PennDOT publications, LTAP has updated training materials and handouts. New Signing and Work Zone Rules for Local Governments classes were presented at over 20 locations throughout the state. This training provided information on how local governments will be affected by these new state regulations and federal standards, including changes to sign installation and maintenance requirements, engineering and traffic studies, and work zone traffic control. Also, adoption of these new rules has impacted the Traffic Signs, Work Zone Traffic Control, Risk Management/Tort Liability, and Engineering and Traffic Studies classes, so call to schedule one today! Remember, all of our classes are free of charge. **Call 1-800-FOR-LTAP.**

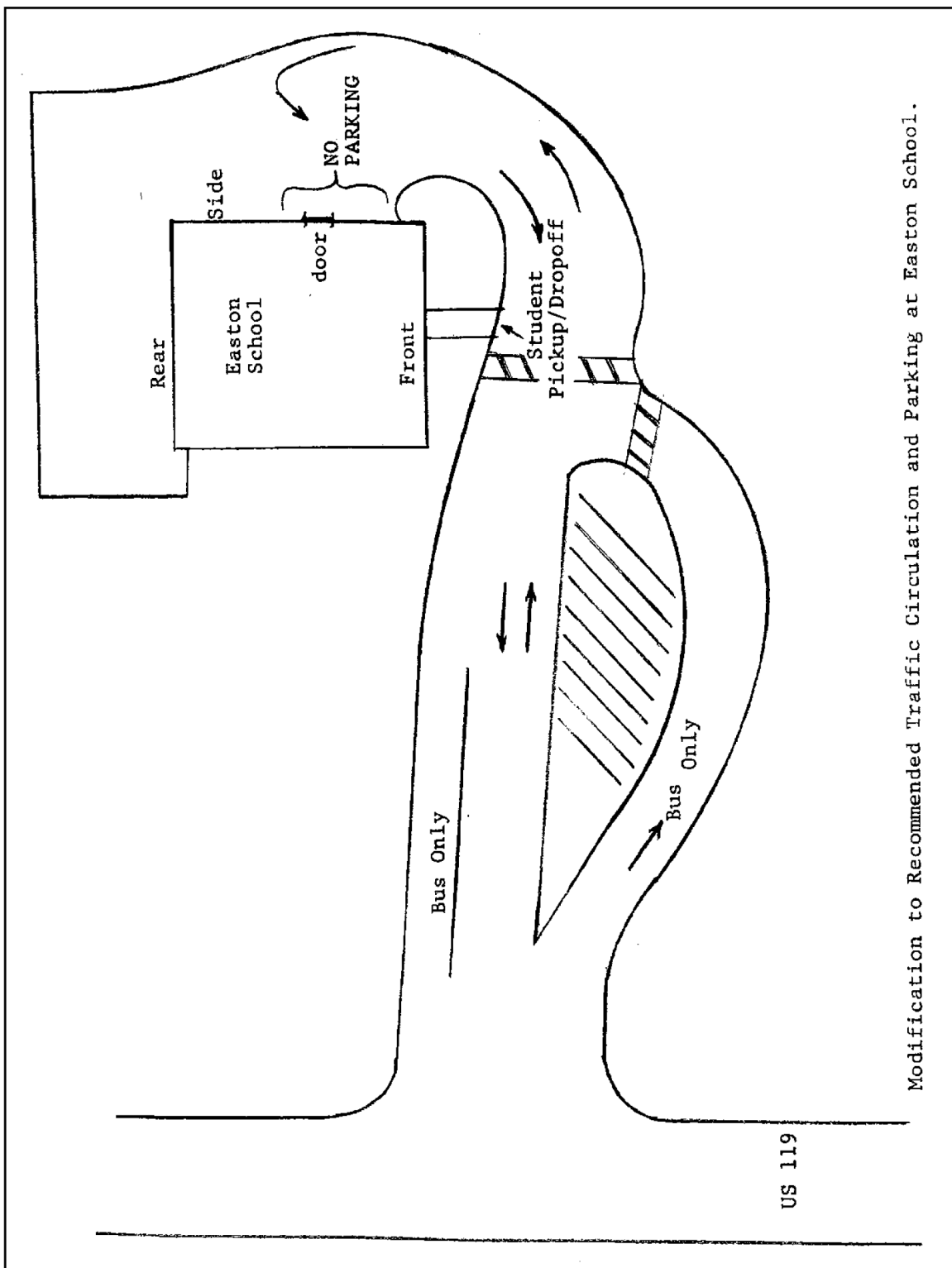
## **E.6 West Virginia Technical Assistance Activities**

On September 7, 2005, West Virginia LTAP (Local Technical Assistance Program) engineers Ron Eck, Mike Blankenship, and Brad DiCola met with Easton Elementary School officials and parents to discuss the traffic circulation of buses and teacher/parent vehicles entering and exiting the school property. School representatives included Principal Hlad, student parents Sherry Williams and Donna Weems, and bus driver Joe Boyles. Based on our discussions, an on-site review, and a bus turning radius demonstration, we developed the following recommendations with student safety in mind.

1. Backing maneuvers by the buses are extremely hazardous and should be eliminated. One way to accomplish this is to make the front parking lot a one-way loop in the counterclockwise direction as shown on the attached drawing. Buses can make a continuous loop with out backing maneuvers and park along the guardrail beside the field. The parking lot will need pavement markings to show the “bus lane” around the lot.
2. The safest student drop-off/pick-up is for parents to drive to the front of the school with the passenger side of the vehicle at the curb so students don’t have to cross paths with vehicles. This can be accomplished by the parent driving to the back of the school and making a loop, continuing to the front of the school to let students out. To facilitate these vehicular movements, no parking must be enforced for some of the parking stalls on the side of the school (all stalls to the left of the door, and one stall to the right of the door, as one faces the school from outside).
3. Parking for faculty/staff at the rear of the building can be enhanced by relocating the picnic tables (possibly to the field area). This should more than make up for the decrease in parking stalls on the side of the school building.
4. Prohibit parking in the front lot during the morning and afternoon hours. This will be used for bus maneuvers, and it will decrease the student/vehicle conflicts. If the pavement in the middle of the lot is not needed for parking during evening events, consideration should be given to removing the pavement and landscaping this center “island.” If this is not an option, additional measures will need to be taken to prohibit parking in this area during bus operations (signing, pavement markings, educating the parents about the parking prohibition).
5. During the afternoon student pick-up hour, parents’ vehicles will queue from the front of the school to the back of the school. To reduce the queue lengths, students can be released at staggered times, by grade or last name.
6. If the above recommendations are not considered feasible, the following modifications are offered, as shown on an attachment. Mark the parking lot for the bus lane, as described above. Continue to allow automobile parking in the middle of the lot, but provide parking stall markings for more orderly and efficient parking maneuvers. Provide highly visible crosswalks from the school building to this parking lot for students to use in going to and from their parents’ vehicles and the school.



Recommended Traffic Circulation and Parking at Easton School. Dimensions for Bus Lane to be Determined in Field Using School Bus.



Modification to Recommended Traffic Circulation and Parking at Easton School.

## ***Walkabout of Port Marion, Pennsylvania***

### **Introduction**

As a follow-up to the Walkable Communities Workshop held in April 2005 in Point Marion, Pennsylvania, a walkabout was conducted on June 25, 2005. A number of Point Marion residents participated in the walkabout conducted by Ron Eck, West Virginia Local Technical Assistance Program. Before the walk started, residents noted their desire to connect key neighborhoods/destinations in the community with non-motorized (pedestrian and bicycle) links. These included Downtown Point Marion, the riverfront park and the McKinley Hill and High School Hill neighborhoods.

The walkabout began at the 5-way intersection near the center of town and proceeded south along US 119 (Morgantown Avenue). Although there are a number of surface deficiencies, there are sidewalks along this section of US 119. The sidewalks are relatively narrow and abut the street. On-street parking on the west side of the street helps to provide a buffer between vehicular and pedestrian traffic. However, the sidewalk ends abruptly in the vicinity of Camp Run Road. Residents suggested that an alternative pedestrian route was needed to bypass US 119 and cross Camp Run to reach the McKinley Hill neighborhood.

### **Riverfront Area**

Grant Street and Fourth Street are residential streets linking US 119 with the riverfront area, notably the former glass plant, the riverfront park and the rail-trail. From this area, it is approximately one mile south to the Mason-Dixon line and the well-developed Mon River/Caperton/Deckers Creek Rail-Trail System in Monongalia County, West Virginia. This trail connection should be made as soon as possible since Point Marion would become the gateway to Pennsylvania from the trail system to the south. There would also be opportunities for active transport between Point Marion and the greater Morgantown area.

The riverfront park is an important community resource (and pedestrian destination) with ballfields, basketball court, playground, pavilion and boat ramp. There are plans to upgrade and enhance the park. The park is adjacent to the rail-trail and therefore could be accessed by both trail and street. However, currently, there are no sidewalk connections to the Park. It was mentioned that in the future, a "riverwalk" might be considered.

The group walked on South Main Street from the park to the center of town. It was noted that the existing Monongahela River bridge (to Greene County) will be replaced by a new structure south of the existing one. A traffic signal may be installed at the intersection of Main Street and Penn Street (at the Post Office). In fact, the Post Office will be removed to accommodate the new traffic pattern. It would be desirable to establish a non-motorized connection between the new bridge and the rail-trail.



## *Appendix E: Safety Circuit Rider Activities*

### **Cheat River Area**

Walking north along US 119 from the intersection of Main and Penn Streets, there are sidewalks on both sides of the street. However, at the Cheat River crossing, the only sidewalk is on the east side of the bridge. The walkway on the bridge is 6 feet wide. Considering the railing and traffic barrier, the effective width of the walkway is less than five feet. The sidewalk ends at the north end of the bridge.

Nilan Road parallels the north bank of the Cheat River to the Lake Lynn Dam (approximately four miles) and beyond. Evidently, there are coke oven complexes in this area as well. A ped/bike route could possibly follow Nilan Road, although the walkabout did not include this area.

The former railroad bridge across the Cheat River has been removed. Plans are to have the rail-trail pass behind Green's Garage and then connect to the US 119 Cheat River bridge via a path located between Cheat Street and the riverbank. Work remains to be done to make this a reality.

### **Business District**

The group followed the above-mentioned route back to the rail-trail and then to the business district. The trail passing through the heart of town is an asset and provides a variety of opportunities. Wouldn't it be nice to restore the old Rexall Drug Store (which apparently has a soda fountain in it) as a trailside establishment? One issue where input is desired from the CDT team is what to do with the former railyard area (also known as The Ramp) between the rail-trail and the Ford dealership.

### **The Neighborhoods**

Given the heat and humidity of the day, the McKinley Hill and High School Hill neighborhoods were toured by automobile rather than on foot. The municipal library (a destination) is located at the old high school. On McKinley Hill, Highland Avenue continues to the Cemetery. However, there is currently no connection between McKinley Hill and High School Hill. Connection possibilities between these two neighborhoods should be examined.

### **Concluding Remarks**

Point Marion has the potential to be a very walkable community. The rail-trail, both in town and south to the state line, should be completed as soon as possible. The trail links downtown and the riverfront park and offers potential as a gateway to the state and region.

Using the trail as a spine, within town, other connections should be developed, e.g., between the new bridge and rail-trail. Connection should be developed between the McKinley Hill and High School Hill neighborhoods and between these neighborhoods and the trail.

Throughout town, there are a number of sidewalks. However, most of these are old and have not been maintained. Consequently, many sidewalk sections are cracked and spalled, contain heaved up slabs, and contain settled/raised/inadequate utility covers. This not only discourages walking, but presents safety hazards for those who do walk. Lack of compliance with ADA requirements is also a concern. The Borough should begin addressing these issues on a systematic basis, i.e., identifying and correcting the highest priority sections first.



## E.7 Utah Resources

The following are screen captures from the Safety Software Suite, which the Utah SCR utilizes to provide technical assistance and RSA activities. Figure E.1 is a screen capture from the sign management module. This module allows agencies to track the location, date of installation, and condition of their signs. Figures E.2 and E.3 are screen captures from the RSA module. Figure E.2 shows a tool that is used during roundtable discussions when conducting RSAs. The team can utilize this module to easily track the location and details of each issue identified during the RSA process as well as the relative severity and recommended actions. Figure E.3 shows a sample report that is automatically produced based on the inputs from the roundtable discussion. The report includes a summary of the issue identified, the location, recommended actions, and even a picture to illustrate the issue.

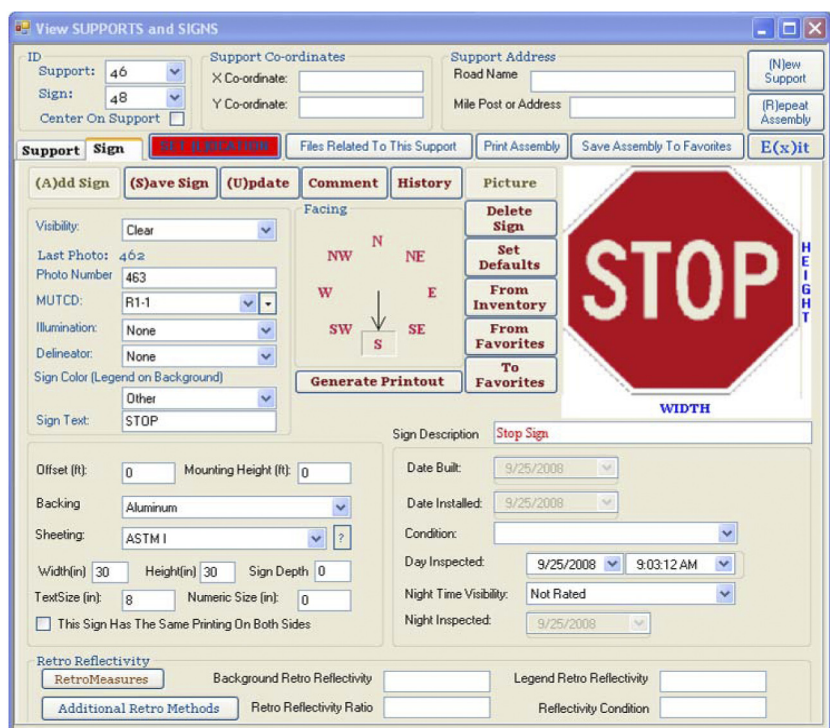


Figure E.1 Screen Capture from Sign Management Module

**Auditor Entry**

**Checklist**

- Pedestrians, bicyclists
- Lighting
- SIGNS AND LIGHTING**
- Lighting
- General signs issues
- Sign legibility**
  - In daylight and darkness; are signs satisfactory regarding visibility? clarity of message? readability/legibility at the required distance?**
  - Is sign retroreflectivity or illumination satisfactory?
  - Are signs able to be seen without being hidden by their background or adjacent distractions?
  - Is driver confusion due to too many signs avoided?
- Sign supports

**Location**

Select a location: Pleasant Street & Ladds Lane or New Location Description:

Buttons: Set Map Position, Delete Location, Add new Location, Pictures from Selected Location, Pictures Of Current Issue

**Discussion**

Issue (1 of 1): Sign not visible

Recommendation: Cut shrubs

Estimated Cost: 200 Agency Responsible for Issue: State

**Proposed Work and Cost Benefit Analysis**

Proposed Work Description: Traffic Growth Factor

Install Sign:  1%

Study Start Date: 10/24/2004 Study End Date: 10/24/2007

B/C = 659.16

Buttons: Add, Remove, Add Proposed Work Type, Edit, Find Best Benefit/Cost Ratio, View Roadway Safety Improvement Worksheet

**Safety Evaluation**

Exposure: Very Low  
 Probability: Very Low  
 Consequence: Very Low  
 Safety Risk: Very Low  
 Implementation Period: Less than 6 months

Buttons: Save, Close

This Issue Was Corrected on: 10/25/2007 Final Cost: 0.0000

Figure E.2 Screen Capture from RSA Module – Data Entry Tool

**Project Title: Carbon County**  
**Date: 5/21/2007**  
**Auditors: ,**

**ROAD FUNCTION, CLASSIFICATION, ENVIRONMENT**

**General road function, classification, environment**

Location: east leg (1825075, 7027423) 1550 W 1.07856350178555  
 Description of Safety Issue: sight distance  
 Exposure: Low, Probability: Very Low, Consequence: Medium, Safety Risk: Medium  
 Recommendation: cut scrubs

**Pictures of project location(s):**

**east leg**



Figure E.3 Screen Capture from RSA Module – Reporting Tool



## Appendix F: Program Evaluation

### F.1 Quarterly Report to Iowa DOT

**Safety Circuit Rider Quarterly Report  
Fiscal Year 2008 - Quarter Number 2  
October through December 2007**

Safety Circuit Rider

Scheduled and participated in several progress meetings for research projects including safety corridors in Iowa, installation and evaluation of rumble stripes on local roads, and crash analysis on very low volume rural roads. Participated in the 2007 MINK conference on October 23rd and 24th in St. Joseph, MO, LTAP Advisory Committee meeting, Midwest Transportation Consortium Symposium in Ames, Traffic Safety Alliance meeting in West Des Moines, STRCC meeting in Ames, and Traffic Safety Forum in West Des Moines. Scheduled and participated in three Local Road Safety workshops with 100 participants in Ames, Car roll, and Iowa City. Participated in two road safety audits in eastern Iowa. Presented work shops on registered flagging with 21 participants and DOT flagging with 8 participants. Scheduled and participated in a teleconference and video conference for the Smart Work Zone Deployment Initiative Board of Directors. Participated and made presentation in a web conference on safety circuit riders.



## Appendix G: Participant Feedback

### G.1 Participant Feedback in Florida

Community Traffic Safety Team (CTST) Meeting in Heathrow, FL: In January 2008, Larry Hagen (FL SCR) instructed a RSA workshop for CTSTs in Heathrow, FL. The CTSTs are important partners of the SCR program, acting as local road safety advocates. The purpose of the workshop was to provide CTST members with a basic understanding of RSAs and better prepare them to identify safety issues and countermeasures in their communities. The workshop was offered free of charge and of the participants that attended the workshop, most had very different backgrounds and reasons for attending. Follow-up interviews were conducted with several participants to determine their reason for attending and satisfaction with the workshop.

**Participant #1:** Dekova Batey is the Pedestrian and Bicycle Coordinator for the City of Gainesville, FL and also serves on a community advisory board. The CTST to which he belongs would like to perform RSAs in the future, but does not yet have any specific projects in line. He attended the RSA workshop for informational purposes. While he had attended prior RSA training, he indicated that this workshop was very useful and provided a different perspective on RSAs. He appreciated the training opportunity and felt that it was useful knowledge to bring back to the CTST. He felt the knowledge would also be useful when dealing with public concerns and reviewing future pedestrian and bike projects. The participant noted that the instructor-led training was a benefit compared to distance learning because it allowed for in-field experience and a very interactive atmosphere with input from several individuals with different backgrounds.

**Participant #2:** Michael Kautz had recently been promoted to Highway Safety Program Manager for District 1 of the Florida DOT, but was unfamiliar with RSAs. He attended the workshop to learn about the RSA process. He indicated that the course provided an appropriate amount of information and he now has a good understanding of the RSA process. Within one month of the training, they had already conducted an RSA, including multijurisdictional inputs. He noted that the instructor-led training was beneficial because it provided an opportunity for actual field experience and dealt with local issues.

**Participant #3:** Noble Olasimbo is the Transportation Planning Section Manager for the Lake County Public Works Department and is responsible for their Traffic Safety Team. He attended the workshop for continuing education purposes to be better prepared in his supervisory role. He noted that his county had conducted a few RSAs, but they may ask the SCR to attend a future

## *Appendix G: Participant Feedback*

RSA to identify opportunities for improvements in their process. He indicated that the RSA workshop was very good overall and provided information from many different perspectives. He had a relatively good background in safety before the workshop, but the workshop helped to enhance his current knowledge. He added that he has a much better understanding of the RSA process and purpose after attending the workshop. He mentioned that it was very helpful to go into the field as part of the workshop, but did not feel that online training would hinder the field exercise because a lot could be done with technology. He indicated that it is more important to have a diverse group of participants because the input from various perspectives helps to enhance the learning experience. He felt that the target audience is also an important factor for determining the structure of the workshop. He indicated that younger participants may be more amenable to online training while older professionals may prefer the hands-on and in-class approach. He noted that travel costs could play a factor in the type of training, particularly for local governments that do not have a large travel budget. Regarding the length of the workshop, he indicated that it depends on the responsibilities of the participants. For senior management, he felt that the workshop was sufficient; however, for those who are involved with RSAs on a regular basis, it may be more appropriate as a 2-day course. While the course was offered free of charge, the participants had to donate their time and the participant mentioned that it would be nice if the training counted toward professional development.

**Participant #4:** Linda Spivey works for a Florida Senator and attends CTST meetings on behalf of the Senator. The participant had attended the workshop to learn more about RSAs and would like to take a more active role in safety as a private citizen after her job with the Senator.

### **G.2 Participant Feedback in West Virginia**

Technical Assistance for City of Fairmont Public Works, WV: The public works department in Fairmont, WV has requested technical assistance from the SCR on two different occasions. In November 2006, there was a request for the SCR to review parking along Monroe Street in Fairmont, WV. The request was made to determine if parking could be increased by converting the parallel parking to angle parking. Based on a review of the literature, it was determined that angle parking is more hazardous than parallel parking. Based on a review of the site conditions, it was determined that the street was too narrow to provide angle parking and no changes were made. While there were no changes as a result of the technical assistance, the public works representative indicated that the SCR was very helpful and provided the necessary guidance to determine the feasibility of increasing parking. Had the parking been converted without consulting the SCR, safety issues may have arisen as a result of the narrow roadway width and hazards associated with angle parking.

In May 2007, the public works department once again contacted the SCR for technical assistance. The concern was that vehicle speeds are increasing in the vicinity of the college campus (Fairmont State University). Residents contacted the public works department and requested speed bumps for their neighborhood. The city has a policy to avoid the use of speed bumps, but was amenable to the installation of speed humps if necessary. The SCR provided drawings of typical speed humps, including dimensions, and discussed potential issues with drainage and snow plows. There was not enough local support to install the speed humps, but the city is currently monitoring the situation and is prepared to install speed humps if necessary. The representative indicated that the SCR was extremely helpful in both situations and the technical assistance was greatly appreciated.

Walkability Audit of Concord University and Town of Athens, WV: At the request of a faculty member at Concord University, the West Virginia SCR led a walkability audit on October 18, 2006 to assess the walkability of portions of the Town of Athens and the Concord University Campus. The university was interested in providing a more pedestrian-friendly campus and the community was interested in enhancing pedestrian safety, particularly for elementary and high school students. The SCR identified several opportunities for improvements to the current facilities to promote walking and perhaps even enhance safety for pedestrians. The SCR also provided a formal written report documenting the findings and recommendations.

The technical assistance was deemed a success, according to the faculty member. They noted that the walkability study helped to spark interest in pedestrian issues throughout the university and community. Also, the community applied for a grant through Safe Routes to School to implement several of the recommendations from the walkability study. They included several portions of the SCR's report in their application and were awarded the grant. While the community is waiting to receive the grant funds before implementing many of the recommendations, there have been a few changes made. For example, there was one location where cars were allowed to park on part of the sidewalk, causing an obstruction for pedestrians and forcing them into the street to avoid the parked cars. The SCR suggested repainting the stalls as angle parking. This recommendation was implemented and now the parked vehicles do not create an obstruction for pedestrians.

Technical Assistance for a Local Homeowners Association, West Virginia: A faculty member at West Virginia University requested the services of the SCR on behalf of their local homeowners association. The homeowners association was concerned with pedestrian safety. The SCR



## *Appendix G: Participant Feedback*

conducted a walk-through of the community to determine if additional signing and pavement markings were necessary. The SCR recommended the installation of a standard pedestrian warning sign near the entrance to the community. The SCR also recommended the installation of a turn warning sign with an advisory speed plate in both directions in advance of a sharp curve. The Board of the homeowners association approved the purchase of the signs, but the signs have not yet been purchased.

Other recommendations included a speed hump to maintain low speeds in the area and drainage improvements to prevent further roadside erosion. While the recommendations have not yet been implemented, the requesting faculty member indicated that the SCR was very helpful and the technical assistance was greatly appreciated. Specifically, they noted that the SCR provided detailed design and installation criteria for the signing, which would be useful when the signs are finally ordered and installed.

Walkability Workshop and Audit in Point Marion, Pennsylvania: A participant of the walkability workshop and audit indicated that Point Marion became involved with the SCR as part of a Community Design Team (CDT) application to West Virginia University. As part of the application process, Point Marion conducted a First Impressions workshop as well as a Walkability workshop and study. The SCR conducted the Walkability workshop and led a walkabout in the town of Point Marion. The SCR pointed out several opportunities to improve the walkability and connectivity within the town and between neighborhoods. Unfortunately, the recommendations have not yet been implemented in full due to funding limitations and competing needs in the town. However, as the town's water distribution system is updated, the surrounding roadways and sidewalks are also improved, which is helping to enhance walkability. The participant indicated that the SCR was very helpful and aside from the recommendations provided by the SCR, the experience has helped to "heighten awareness" of pedestrian and bicycle issues within the town.

Continuing Education for Virginia Section of the Institute of Transportation Engineers (VASITE): A member of the VASITE Board of Directors indicated that she had taken a course on pedestrian and bicycle safety, which was instructed by the West Virginia SCR. After the course, the member followed-up with the SCR on various occasions for technical assistance. She indicated that the SCR was always very helpful and responsive. For example, they had a question regarding the design of the width, buffer, and driveway considerations for a sidewalk along a suburban road. The SCR provided his thoughts on the topic as well as links to several FHWA and AASHTO resources that contained additional information.

The member was also responsible for identifying and scheduling continuing education for VASITE. She indicated that the SCR has instructed a pedestrian and bicycle safety course for VASITE and they have been very satisfied with the training.