



Developing and Implementing a Pedestrian Safety Action Plan

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BACKGROUND AND PROJECT OVERVIEW

In 2002, 4,808 pedestrians were killed in traffic crashes and another 71,000 injured, representing 11 percent of all roadway-related fatalities in the United States. While these national figures were troubling, it was clear that certain cities and states required additional help in reducing traffic-related pedestrian casualties. Responding to these needs, the Federal Highway Administration (FHWA) began development of a program intended to provide technical assistance to 13 states and 5 cities in the development and implementation of pedestrian safety action plans. The objectives of the program were to:

- Investigate existing material to identify models for state-level and local-level safety plans and guidelines;
- Develop a “How to Guide” and companion presentation that demonstrate how to develop and implement the plans; and
- Fill informational gaps, as needed, by providing technical assistance to the localities identified above as they undertake the development and implementation of a pedestrian safety action plan.

This project was intended to provide technical assistance to high-risk cities and states and to provide guidance for developing effective plans and implementing countermeasures to reduce pedestrian deaths and injuries. “Focus” cities and states were selected based on their pedestrian crash volumes and rates. From the 2002 data evaluated, these included:

- Arizona (Phoenix);
- California (Los Angeles);
- Florida;
- Georgia;
- Hawaii;
- Illinois (Chicago);
- Michigan (Detroit);¹
- Nevada;²
- New Jersey;
- New Mexico;
- New York (New York City);
- North Carolina;
- Pennsylvania;
- Texas; and
- Washington, D.C.²



Figure 1. Technical Assistance in Focus States.

The contract period began in September 2004. Following a kick-off meeting with FHWA and National Highway Traffic Safety Administration (NHTSA) staff, participants reviewed literature on existing pedestrian safety guides, as well as state and local safety plans. Synthesizing these materials, a Guide, *How to Develop a Pedestrian Safety Action Plan*, was created for the purpose of demonstrating the development and implementation of a successful pedestrian safety plan. The Guide content was then developed into a series of presentation modules, which have been

¹ Detroit and Michigan were dropped from the focus list in 2007 due to a reduction in pedestrian crashes.

² Nevada and Washington, D.C. were added to the focus list in 2007 in response to an increase in their pedestrian crashes.

used by a team of instructors to provide training to states and local communities. Paired with ongoing technical assistance, the materials have provided support for local and state officials in the development of their own plans and programs to address pedestrian safety.

PSAP GUIDE DEVELOPMENT

During the summer of 2005, individuals at the Highway Safety Research Center's (HSRC) Pedestrian and Bicycle Information Center (PBIC), with assistance from several project consultants, began drafting the "How-to Guide" for developing a pedestrian safety plan. Reviewed initially by FHWA staff, later drafts benefited from input by Ann Do, Dan Nabors, Hugh McGee, Tamara Redmon, John Fegan, and Rudy Umbs. Once revised, the Guide was sent to 17 participating state and city officials for further review. Comments were received from representatives from several of these agencies and corresponding changes were incorporated into the Guide. The Guide was also updated to reflect new research materials, photos, case studies, and graphics, and designed to be attractive and user-friendly. The final draft, entitled *How to Develop a Pedestrian Safety Action Plan*, was completed in early 2006, and the document was made available online in February (<http://www.walkinginfo.org/library/details.cfm?id=229>). The Guide was featured in detail in the September/October 2006 issue of *Public Roads* (See Appendix A), and has been used as the framework for presentations and support offered to local and state officials.

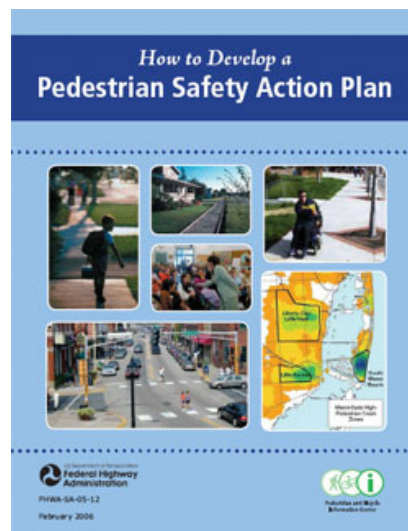


Figure 2. Cover of the How-To Guide.

FOCUS STATE COMMUNICATION

Throughout the development and implementation of the Pedestrian Safety Action Plan (PSAP) program, assistance was provided in the form of monthly conference calls. Participating in the calls were FHWA and NHTSA staff, representatives from focus states, and PBIC and VHB staff. Prior to the completion of the "How-to Guide," meeting time was devoted to answering questions about Guide components, as well as providing an overview of courses to be offered (see Training Development and Implementation section to come). Individuals from targeted states and cities were then able to express interest in holding any combination of the courses, a major source of the technical assistance offered through this program.

Monthly conference calls also gave focus-state representatives the opportunity to voice their pedestrian safety experiences and concerns. The resulting discussions between professionals from different backgrounds and experiences informed a great deal of the course materials as course designers became aware of issues that were of most concern to participants. Subsequent conference calls were then able to revisit past topics of discussion and evaluate the success of certain safety measures.

Once the training courses had been conducted in a majority of the focus states, the monthly conference call proved to be an appropriate venue for the presentation of newly-developed state

and regional pedestrian safety plans. Local officials presented these safety plans and received constructive feedback from other attendees. In addition to pedestrian safety plans, presentations were able to highlight tools and analysis methods, which could then be used by participating states to support the development of their plans. Examples of presentations given during monthly conference calls include:

- *Pedestrian and Bicycle Crash Analysis Tool (PBCAT)*;
- *PEDSAFE: Pedestrian Safety Guide and Countermeasure Selection System*;
- California's Web-Based Training;
- Pedestrian Road Safety Audits;
- Chicago's Crash Data Analysis;
- Pedestrian Crash Reduction Factors;
- Washington, D.C.'s *Pedestrian Safety Problems and Improvement Plan*;
- *Pedestrian and Bicyclist Intersection Safety Indices*;
- Georgia's *Pedestrian Safety Action Plan*;
- Phoenix's *Pedestrian Safety Action Plan*; and
- New Jersey's *Pedestrian Safety Action Plan*.

TECHNICAL ASSISTANCE

PSAP project team members provided detailed technical assistance to the City of Chicago as part of the project activities. In order to better understand pedestrian safety locally, PSAP consultants completed a comprehensive macro-level analysis of pedestrian crashes in the city. PSAP consultants conducted a detailed analysis of pedestrian collision factors using five years of complete pedestrian crash data. Two years of geo-coded crash data were also available and were spatially analyzed for high frequencies or densities of occurrences. Intersections and areas near schools with high incidence of crashes were also identified. The City, working with a consultant, has drawn extensively from the data, analyses, and findings of the report in development of the first stage of their pedestrian safety action plan, a description of existing conditions, as well as for the second stage of the plan. May 2008 is the target for presenting an "Existing Conditions" report to city officials.

For the second stage, a variety of city departments and stakeholders, including officials, law enforcement, communications, traffic engineers, and outside consultants have continued working together to identify seven locations for further detailed safety assessment as recommended in the report. These locations, a mix of intersections and corridors, were chosen based on crash factors, demographic, and roadway conditions, to represent a variety of situations. Once analyses are completed for these locations, they will serve as models for locations with similar crash problems and other characteristics. Plans have been made to develop tool boxes for addressing the types of conditions existing at the sample locations and others with similar factors. Thus, pedestrian safety improvements may be implemented city-wide, as short and long-range plans for improvements are developed for particular locations.

TRAINING DEVELOPMENT AND IMPLEMENTATION

Several training courses were developed to supplement the “How-To Guide” and provide additional technical assistance. These courses included PowerPoint slides, speaker notes, in-class exercises, and other supporting materials.

Description of Courses

Below is a description of the courses developed:

Developing a Pedestrian Safety Action Plan

This two-day course is designed to help state and local officials, as well as engineers and injury prevention professionals, know where to begin to address pedestrian safety issues when developing a pedestrian safety action plan tailored to their community. It is also intended to assist agencies in further enhancing their existing pedestrian safety programs and activities, including identifying safety problems, analyzing information, and selecting optimal solutions. Following the *How to Develop a Pedestrian Safety Action Plan Guide*, this course outlines effective methods of data collection/analysis, understanding safety-related issues, and involving the local community.

Designing for Pedestrian Safety

Intended to help state and local transportation professionals address pedestrian safety issues through design and engineering solutions, this course is geared toward engineers, planners, and other local decision-makers. Over two days, participants use the *PEDSAFE: Pedestrian Safety Guide and Countermeasure Selection System* to understand the relationships between the built environment, design, and pedestrian safety. A field exercise provides a real-world example of how geometric design, operations, and safety must be included in any discussion of the built environment.

Planning and Designing for Pedestrian Safety

This course is a combination of the key material in the *Developing a Pedestrian Safety Action Plan* course and the *Designing for Pedestrian Safety* course. Combining the *How to Develop a Pedestrian Safety Action Plan Guide* with *PEDSAFE*, the lessons in this three-day course offer a comprehensive look at the development of pedestrian safety plans. Individuals from engineering, traffic safety, planning, and health backgrounds are engaged in the discussion of pedestrian safety as it relates to specific design and behavioral variables. A field visit is incorporated and used as an illustration of examples introduced during the course.



Figure 3. In-class Planning and Design Activity.

Course Marketing

To help promote the training courses to focus states and cities, fliers were developed and distributed at conferences and via email, newsletters, and the PBIC Web site, <http://www.walkinginfo.org>. Flier information included course descriptions, target audiences, course material, and contact information. Several web pages (see <http://www.walkinginfo.org/training/pdps/>) were developed to support the courses, as well. These included course descriptions, instructor bios, success stories (detailing focus city and state pedestrian safety planning activities), materials for hosts and instructors (such as agendas, organizer guides, invitations, and certificates), training course modules (password protected for instructor use), a presentation archive, and contact information.



Figure 4. Class Field Visit in Reno, NV.

Course Implementation

From 2005 to 2007, 77 courses were taught (see Table 1). The majority of these were the two-day *Designing for Pedestrian Safety* (39) and *Developing a Pedestrian Safety Action Plan* (21) courses. At seven other locations, participants chose to take part in the three-day comprehensive *Planning and Designing for Pedestrian Safety* course. A number of smaller variations of the course have been offered as well, such as one-day versions of the most popular courses and a series of web-based courses in California. For a complete record of courses taught, locations, instructors, and course hosts, see Appendix B.

Table 1. Number of Courses Taught (by Type).

Course Type	Number
Designing for Pedestrian Safety (2-Day)	39
Developing a Pedestrian Safety Action Plan (2-Day)	21
Planning and Designing for Pedestrian Safety (3-Day)	7
Designing for Pedestrian Safety (1-Day)	5
Developing a Pedestrian Safety Action Plan (1-Day)	1
Distance Learning (web-based courses)	4
TOTAL	77

Of the focus states and cities involved in the program, California and New York have hosted the most courses at 16 and 12, respectively. Additionally, there have been at least six courses held in each of the following states: Illinois, New Mexico, Florida, and Michigan (see Table 2).

Table 2. Number of Courses (by State).

State	Number of Courses Taught
California	18
New York	12
Illinois	6
New Mexico	6
Florida	6
Michigan	6
Texas	5
Arizona	4
Pennsylvania	4
Georgia	3
Hawaii	2
North Carolina	2
New Jersey	2
Minnesota*	1
TOTAL	77

*Minnesota is not a focus state, and PSAP project funds were not used to cover this training event.

Participating Instructors

A total of 18 professionals from around the country have served as consultants and instructors for the training courses. Often working together to lead participants through each course, each of the instructors has assisted with an average of nine courses. See Appendix C for selected bios of non-FHWA course instructors. FHWA instructors included:

- Craig Allred;
- Gene Amparano;
- Aida Berkovitz (now retired);
- Peter Eun;
- Fred Ranck;
- Keith Sinclair; and
- Rudy Umbs (Coordinator for FHWA Instructors).

Non-FHWA consultants/instructors included:

- Peter Lagerwey;
- John LaPlante;
- Michael Moule;
- Dan Nabors;
- Sue Newberry;
- Craig Raborn;
- Michael Ronkin;
- Pete Rusch;
- Ryan Snyder;
- Charlie Zegeer (Coordinator for FHWA Instructors); and
- Paul Zykofsky.

EVALUATION OF TRAINING

In order to measure the effectiveness of the courses and receive valuable feedback from participants, instructors distributed evaluation forms to course attendees. Of the 77 courses offered, roughly 75 percent of hosts/instructors returned course evaluation forms to HSRC/PBIC staff for compilation, providing the opinions of over 1,300 individuals (for course evaluation summaries, see Appendix D).

Participants were asked to rate the course on a scale of 1 to 5 (1=Poor, 5=Excellent) for a number of questions that sought to evaluate the course in five different areas: Course Content, Course Materials, Instructor, Course Impact/Effectiveness, and Venue/Setting. The results were overwhelmingly positive, ranking each of the categories above a level 4 on the five-point scale.

Table 3. Overall Course Evaluation Results.

Category	Course Content	Course Materials	Instructor	Course Effectiveness	Venue/ Setting
Score (Scale: 1-5)	4.41	4.44	4.70	4.33	4.13

In addition to the comprehensive evaluation results listed above, there are a few other notable accomplishments reflected in the evaluation process:

- Participants were asked to rate their knowledge of pedestrian safety before and after the course, with 1 indicating very little knowledge and 5 indicating substantial knowledge. A significant increase in participant knowledge is evident from the results, with an average ranking of 3.48 before the course and 4.22 after the course.
- In the evaluations, the course instructors were repeatedly given a higher rating than all other areas of the course, indicating high participant satisfaction with the diverse group of consultants and FHWA instructors chosen to deliver the course.
- The field visit, while ranking no higher than other categories numerically, was cited most often by participants as the “most valuable part of the workshop.”

Selected Quotes from Course Evaluations

The following are some direct comments we received regarding the training courses:

Quality of Instructors

- Instructors were very knowledgeable and experienced, which added credibility and enhanced meaning to the presentations. They did an outstanding job and were “easy to listen to.”
- Instructors demonstrated great enthusiasm.
- Awesome delivery and expertise in material.
- I was very skeptical about coming to this training but the instructors were top notch and not only made the information interesting but it was also a fun course. A great two days.
- Speakers are knowledgeable, articulate, and approachable. Good pace, not too overwhelming.
- The instructors maintained a friendly and quick learning environment during the presentation, which helped a lot to make the workshop worthwhile to attend.

- Instructor was well versed in subject matter and effectively presented a challenging perspective on pedestrian safety.

Usefulness of the Course

- I learned how to apply new ideas to improve pedestrian safety and make a pedestrian friendly environment.
- Many new options for improving pedestrian safety that I did not know existed: raised medians, Leading Pedestrian Intervals, etc. These new options may help to improve intersections to accommodate many uses more efficiently and safely.
- One of the most useful seminars I've attended. Both instructors are excellent.
- I like that the workshop reviewed the state law in Illinois regarding pedestrian right-of-way. This was information I very much needed and now will be able to share with professionals and the public back in my community. Comparison to other states was good, too. Never get rid of this part.
- It changed my mind on a lot of issues.
- I learned a lot about ways to get pedestrian facilities implemented. I was fascinated by the stories and experiences and how other cities have obtained facilities. The emphasis on safety and reducing crashes also adjusted my approach – knowing that intersections are where the most cost-effective changes can be made.
- Very valuable and will contribute to saving pedestrian lives and increase walkability in all the projects I will be involved in or influence.
- Fantastic workshop! I have so much information to take back to work. Great to have two of the state's leading experts to teach us about pedestrian safety!
- Although I have over 25 years of experience in the transportation field, I still learned new things. This is an excellent course for new and even intermediate professionals and laymen.

Participant Involvement

- Audience always interacted with discussion and topics.
- There was a great interaction between audience members and instructors.
- Best group participation I've seen.
- Lots of excellent ideas.
- The class participants were a good mix from different agencies/organizations. It allowed me to see/hear different perspectives regarding pedestrian safety.

Course Materials

- Report appears to be well researched and well presented.
- Very clear and good for reference.
- Good handouts to compliment exact presentation.
- The images provided in the presentation allowed the audience to have real world examples for every idea/technique that was discussed, this was very useful.
- Nice mix with the videos and exercises.

Additional Information that would be Helpful

- A single-sheet handout that points me in the direction needed to get certain information, such as “statistics on pedestrian crashes, go to www.***.gov,” a sort of reference sheet.

- Examples of funding opportunities, case studies or scenarios where solutions were the result of creative funding opportunities.
- More emphasis on funding - most of us know what's wrong and can figure out how to fix it; the question is how to get money.
- Another follow-up course; Now that I can apply what I've learned, a more advanced course will reinforce this one.
- More research results and critique.
- More specifics on engineering, e.g. how drainage is handled, especially where curb extensions are retrofitted.
- Maybe more insight into bureaucratic issues and barriers.
- Would have liked you guys to hand out a "checklist" for quick reference - showing design elements engineers need to include to make streets and intersections safe for pedestrians.
- More discussion on education/encouragement.

Most Valuable Part of the Course

- Safety data regarding speed and pedestrian injury/death analysis, left turn data, NY laws regarding crossings, road diet analysis—all good fuel to help convince engineering staff and communities that improving pedestrian safety doesn't have to compromise vehicle flow and safety.
- Field observation with subsequent dialog discussing numerous problems facing designers was very helpful.
- The way the instructors would use their PowerPoint to show "before and after" type pictures. Very effective and edifying.
- Policy exercise to identify top priorities as we move forward in the development of a statewide pedestrian safety plan.
- Development of the Action Plan was a good exercise.
- The speakers and real-world examples. Remarkable.
- A new way to think about safety. New, more effective strategies for change. References to people, studies, websites all good. Fabulous instructors.
- Listening to other divisions/departments from other municipalities, especially the state level, and how they have incorporated safety in their projects.
- Field exercise; good examples of various applications presented and included in workshop materials. Presenters seemed to understand various engineering/real world restrictions for implementing some solutions; very practical and offered good suggestions for improvement.
- Detailed knowledge of the instructors, not just materials, but also real life experience.
- I like the "balance;" instructors made very clear with all options that they necessarily didn't work in all conditions, and that some options were not necessarily the best choices for that particular situation.
- The best part was the questions to us (NCDOT) on what we are using or a policy we have in place. It would be good to somehow capture on a flip chart "issues," "things to consider," etc. that we can take back with us to work off of.
- The field visit was great. Having the ability to put the lesson into practice was invaluable.
- The training material. I will share it with my co-workers as a reference for future projects.

- The involvement of local agency members enhanced this learning opportunity. For example, I learned that there are creative and acceptable total solutions to reduce speeds other than just putting up signs.
- The structure of the content. It flowed smoothly and made perfect sense.
- Discussion of the need to consider pedestrian safety as a primary factor in street design.
- I appreciated the statistics and Crash Reduction Factors (CRFs).

Comments on Meeting Venue

- Too warm for a room full of people.
- Thanks for the coffee, water, juice, fruit, and snack.
- Bigger room would have been nice.

General Course Comments/Recommendations for Changing/Teaching Course in the Future

- Do several for GDOT district offices around the state!
- Curriculum changes are needed in our universities to promote these concepts.
- This was a very helpful workshop; I would recommend more of these to local jurisdictions as well as the NJDOT. Far more comprehensive than other pedestrian workshops I've attended. I especially like that it focused solely on pedestrians and didn't include bikes (bikes are vehicles!). The whole thing was very well designed and addressed this topic in an informative, interactive way. Instructors did a great job!
- This was a great experience! I wish it would be mandatory for every planner/engineer in the state!
- We need to look at our policies and how they impact other towns, etc. There is the Ped/Bike Safety Workgroup, but we need a better representation from other agencies and towns across the state. Thank you. Good job!
- Excellent presentation. One of the best training classes I've attended.
- Need to get this to municipalities and developers.
- Have a follow-up meeting to compare and assess projects on developing a pedestrian safety action plan.
- Needs better outreach and pre-workshop info – I didn't know much about content and presenters ahead of time.
- How about a similar workshop for policy makers?
- Additional training opportunities are needed for other people statewide.
- This was a very informative class. Need to get commitment from senior management to adopt some of the recommendations adopted by the group. I recommend bringing some NCDOT planners to the next class.
- Include educators and others who can affect effective education of decision-makers and train the public.
- Hope to see more coordination between entities, e.g. Sun Metro, Metropolitan Planning Organization (MPO), TXDOT, and city, so policies and regulations can be coordinated, especially since city is enlarging.
- Thank you! Please provide this training to every CalTrans district. Also, get more landscape architects and planners to attend.
- Please open these trainings to students! It was incredibly valuable.
- Very important to combine federal, state, and consultants, and was invaluable to get good discussion of multiple points of view.

- Would like to see more Americans with Disabilities Act (ADA) info incorporated into this seminar.
- I found very useful the animated presentation, so I encourage you to use more of that.
- Good site design, land-use planning (work/home/school relationships). Train landscape architects and engineers on good community design and planning.
- All traffic engineers/civil engineers should have to take this course! Building and zoning officials need to be proactively approached.

TRAINING IMPACT AND LOCAL OUTCOMES

As mentioned above, the PSAP project has prompted both immediate and long term action in many of the communities involved. The following sections describe the activities taking place in many of the focus cities and states. Paragraphs following people's names are direct quotes, edited from emails.

Arizona

Arizona has made pedestrian safety a top commitment among transportation agencies and local governments and has begun a number of initiatives in the state to reduce the number of pedestrian injuries and fatalities. Additionally, city and state officials there have been implementing countermeasures and making policy changes based on the outcomes of the training sessions.

Karen M King, FHWA Arizona Division

From the courses held in Arizona, two pedestrian crossing improvements resulted from course field review and one is proposed from Pilot Pedestrian RSA.

In Phoenix, improvements have been made at three midblock crossings where the participants had completed their field reviews. Comments and suggestions were taken into account and improvements were implemented. The City of Phoenix Streets Department improvements include:

- Van Buren Street from 31st Ave to 33rd Ave – Pedestrian Island installed;
- Indian School Street from 19th Ave to 23rd Ave – Pedestrian Island installed; and
- Dunlap Ave from 31st Ave to 35th Ave – Pedestrian Island proposed to be installed (this corridor was used for the Pedestrian Road Safety Audit Pilot).

Other outcomes have included:

- A small group of pedestrian safety professionals in the state developed an Arizona-Specific companion to the "How-To Guide." This brief booklet contains examples from around Arizona and can be found at the Governor's Traffic Safety Advisory Council (GTSAC) Web site:
http://www.gtsac.org/GTSAC/Studies_Reports/PDF/Guide_to_Developing_a_Pedestrian_Safety_Action_Plan.pdf.

- Developing a Statewide Pedestrian Safety Action Plan is a component of the Strategic Highway Safety Plan for Arizona. This can also be found on the GTSAC Web site: http://www.gtsac.org/GTSAC/Studies_Reports/PDF/Guide_to_Developing_a_Pedestrian_Safety_Action_Plan.pdf. This activity is officially kicking off on February 20 with the support of a consultant.

California

California has been implementing countermeasures and making policy changes based on the outcomes of the training sessions, including reexamining its ADA crossing standards.

Ken McGuire, Bicycle Program Manager, California Department of Transportation

My impression is the class has been very well received across the state. Staff members have made an effort to deliver the training to relatively remote regions that don't always get the same attention as the major metropolitan areas.

Richard Haggstrom, Caltrans

The training has been universally well-received, by Caltrans as well as other state and local agencies, as well as by advocacy groups. Discussion during the training often centers on specific local or regional problems and solutions. One specific example is the web-based training received last year by Debbie Bulger of Mission Pedestrian, a Santa Cruz county advocacy group. Her group found Debbie's training very helpful in making practical suggestions, some of which have been adopted by the City of Santa Cruz, including the use of directional curb ramps and crosswalk designs. Mission Pedestrian volunteered to coordinate in-person Designing for Pedestrian Safety training delivery in Watsonville, Jan 31-Feb 1, by Michael Ronkin and Peter Eun. This training was attended by a Who's Who of local traffic engineers and planners, and generated extensive favorable coverage by local media.

Florida

Mary Ann Koos, Florida DOT

From the Pedestrian Design Course that FHWA conducted here, we were able to advance the recommendations developed in the course from our field exercise to our local MPO, who approved the project concept, which was then funded by FDOT with federal funds.

Shortly afterward, a large parcel abutting the project location was acquired for redevelopment, and in conjunction with the permitting of the redevelopment, the City through its development review process and FDOT by making its right of way available, were able to work with the developer to implement several of the pedestrian safety improvements (new sidewalk, realignment of drainage swale) that had been developed as part of the workshop.

Dwight Kingsbury, Florida Department of Transportation

I'm not aware of any mode-specific safety plan actually being implemented at a regional or local level in Florida. There have been specific pedestrian safety projects, to be sure, but not many; most implemented pedestrian safety (engineering) countermeasures have been implemented incidentally as part of signal upgrades, corridor improvements, RRR projects, etc. Major improvements that greatly enhanced conditions for pedestrians have most commonly been sold as “livable community” projects that would benefit safety of all users, improve aesthetics, stimulate redevelopment, etc.; the reconstruction of Bridgewater Way, in University Place, Washington (described in the *PEDSAFE* tool) is a prime example. I don't think it was sold to the taxpayers just as a pedestrian safety project. In Florida, cities such as Orlando that have implemented similar corridor projects have also emphasized the benefits to the general public. In a pedestrian-intensive city such as Seattle or Miami, it may be feasible to implement pedestrian-safety engineering improvements as part of a “pedestrian safety plan.” In typical Sunbelt metro areas, though, most development is low-density suburban and pedestrian crash densities are seldom high enough at any specific location to yield favorable benefit-cost ratios, so improvements tend to be made incidentally in connection with other projects and activities. My sense (from the limited feedback I've picked up) was that most PSAP workshop attendees in Florida were shopping for low-cost pedestrian improvement ideas, rather than looking to develop and administer a pedestrian safety action plan for their jurisdictions.

Georgia

The State of Georgia has also been in the works to develop a state Bicycle and Pedestrian Safety Action Plan, as part of the state's Strategic Highway Safety Plan (SHSP). They formed “Task Teams” for several key emphasis areas and assigned team leaders in December 2006. The Task Team is expected to serve as the state's Bike/Ped Advisory Committee after the completion of the plan. So far, the task teams have:

- Identified all laws related to biking and walking;
- Reviewed GDOT design policies for roadways and pedestrian facilities;
- Identified funding programs at local, regional, and state levels; and
- Analyzed existing conditions and crash statistics.

The group is currently working on developing draft recommendations for treating high-crash areas and expects the plan to be completed and adopted by the SHSP Executive Committee and the Governor by September 2007. For status updates, visit the Georgia Bicycle and Pedestrian Safety Action Plan Web site at http://www.dot.state.ga.us/bikeped/ga_bp_sap/index.shtml. Georgia also has a pedestrian safety project in the PE phase right now that is largely a result of the pedestrian safety training conducted in December of 2005. As a case study, the training used Ponce de Leon Ave, which has the second highest number of pedestrian crashes in the state. The concept plans, currently being developed, include improvements to crosswalks, signal timing, and specifically some treatments that GDOT has never done before but were covered in the training (e.g., HAWK signals and LPIs).

Hawaii

Hawaii has participated in the training courses and is very interested in receiving additional courses geared more at education and enforcement strategies.

Illinois

Illinois has participated in several courses and received technical assistance from project team members (see earlier discussion on Technical Assistance). This has assisted them in analyzing pedestrian crash data in Chicago and identifying priority areas for pedestrian improvement.

Michigan

According to course instructor Peter Lagerwey, “The City of Troy was struggling with whether to install curb ramps at driveway crossings. Turns out, they were building driveways to look like roads. When they saw the correct way to design driveways they suddenly realized that they had also solved their curb ramp dilemma. One engineer thanked me and said the entire course was worth his time for this one insight.”

Cynthia Krupp, MDOT Transportation Planner, Intermodal Policy Division

Michigan already had a PSAP. However, many of the team members of the PSAP took the training and became more familiar with issues. The Michigan team continues to meet and promote pedestrian safety, awareness, and policy changes. Changes that have happen with the increase in awareness in Michigan include:

- a. A change in our state transportation Act 51 law. It now recognizes formally that Michigan can spend part of its 1percent ACT 51 monies dedicated to nonmotorized on pedestrian facilities as well. This seems to have made a big impact on many small communities.
- b. MDOT created its own nonmotorized technical committee to keep lines of communication open on nonmotorized issues across the department. This team meets quarterly.
- c. Rumble strip policy came up at the nonmotorized technical committee. A side committee was formed to look at that policy to be sensitive to nonmotorized issues with rumble strips. Changes were made to better accommodate nonmotorized users.
- d. MDOT’s latest call for projects stresses title II requirements and gives better guidance to our Regions on how to accomplish MDOT’s goal of having all jurisdictional ramps with in each region to be complaint by 2014.
- e. Our Federal Highways staff attended the training. They have questioned many more projects on where accommodations for pedestrians are. They are letting agencies know that the bar has been raised and pedestrian facilities do need to be considered!
- f. This training along with many other programs like CSS have all played a big role in getting the message out in many formats as well as providing training to increase pedestrian awareness in the State of Michigan.

New Jersey

Before New Jersey was deemed a “pedestrian focus state” as part of the FHWA Pedestrian Safety Action Plan project, the New Jersey Department of Transportation (NJDOT) had already begun developing a Pedestrian Safety Plan. The plan, in coordination with the Governor’s Pedestrian Safety Initiative, was quickly adopted by the NJDOT and New Jersey became the first of the 13 focus states to have a plan ready for implementation. Through these initiatives, pedestrian safety issues and needs has become increasingly important to public officials and parents of school age children and have become a regular topic of local news coverage, editorials, and letters to the editor. Pedestrian safety efforts are taking place in three key categories, Engineering, Enforcement, and Education, and are to be financed through a commitment of \$74 million over five years. For details on New Jersey’s Pedestrian Safety Action Plan and other activities, view the *NJ Walks and Bikes Bicycle and Pedestrian Newsletter* at [http://www.njbikeped.org/docslib/NJ Bikes and Walks Newsletter Issue1.pdf](http://www.njbikeped.org/docslib/NJ_Bikes_and_Walks_Newsletter_Issue1.pdf).

Joseph Javier, RA, NCARB, City of Jersey City, Division of Architecture

As far as accomplishments of the training and technical assistance, it has made me a more informed Architect when it comes to traffic and pedestrian safety. I will be able to put this knowledge to good use in projects where I have some involvement in site design. Thus far, I have not had the opportunity to implement my training on paper. However, my training has come in handy in meetings where traffic and pedestrian safety issues do come up in the discussions. Also, I have noticed that Jersey City has been implementing more and more of the recommended striping pattern, signage and new technology at the intersections. I'm not sure if this was the result of some of our Engineers or consultants attending last years’ or previous DOT workshops, but the changes look great.

New Mexico

According to Peter Eun, “New Mexico has been implementing countermeasures and making policy changes based on the outcomes of the training sessions.”

New York

In New York, the NYDOT training coordinator, Chris Hardej, sent out an email to past course attendees, asking for them to provide input on their impression of the course and how they have incorporated course information into their job duties. The following are quotes (derived from emails and edited for this report) from Jim Ercolano, Chris Hardej, and several course participants in New York, describing the changes that have taken place in their communities since participating in the training.

Jim Ercolano, Pedestrian and Bicycle Program, NYSDOT Headquarters

The input that [course participants] are giving is a clear testament to the absolute and essential necessity for this training activity to continue both statewide and on a national level. Our role (the NYSDOT Pedestrian Program) was to simply get the first training sessions to New York

City and State, and therefore serve as a catalyst for other state and local entities (with managerial commitment, staff, agency support, and funding) to learn from our initial efforts and address the multitude of statewide and local government pedestrian safety and engineering issues. I know it's made a significant impact in both NYCDOT and NYSDOT engineering and programming efforts.

Chris Hardej, MPO NYMTC

I also want to send you what NYC is doing about senior zones as mentioned in the feedback. First item on <http://www.nyc.gov/html/dot/html/home/home.shtml> and could be a model.

As for me at the MPO NYMTC, I am the co-chair of the MPO's Safety Advisory Working Group. Pedestrian Safety was the Group's #1 topic, therefore we commenced a study titled "Pedestrian Safety in the NYMTC Region." As I hosted several Designing Pedestrian Safe Streets workshops, I was able to edit many chapters and co-authored the study based on the information from the course, specifically Section V on Countermeasures and Strategies.

Pedestrian Safety is also one of the six emphasis areas in the NYS Strategic Highway Safety Plan. I see NYMTC's role as disseminating information to the implementers to address pedestrian safety as the NYMTC region accounts for 86 percent of the state's Pedestrian injuries and 76 percent of the fatalities. NYMTC does this through these workshops and the distribution of material and the study.

NYMTC held 8 workshop since the end of 2005 (including the two NYSDOT initiated). We max out at 35 per session which would be about 280 transportation professionals mostly traffic engineers, planners, few law enforcement, etc. We announce it as: The training is designed for those professionals that have an impact on the pedestrian system: Elected Officials, Municipal Board Members, Traffic Engineers, Maintenance Personnel, Transportation Planners, Law Enforcement Officers, etc. We are all part of an effort to make our region safer for pedestrians. We do not invite consultants except to fill any last minute vacancies, which are the exception. Consultants are allowed if they are there on behalf of working for a local municipality. We probably had 4 consultants out of the 280.

NYMTC also printed out 1100 copies of our study: Pedestrian Safety in the NYMTC Region. We blanketed our region by mailing this to the DPWs, Highway Departments, and Planning Dept. We also sent it to the hundreds of elected officials to see if we can also get a top down approach. Again, the study contains much of the information gained through the course.

I've teamed up with the NYSDOT Bike/Ped unit and pushed the NYSMPO Assn through my role there to have a statewide training effort with six workshops across the state in 2008 (courtesy of the FHWA Resource Center). I've seen the FHWA Resource Center as instrumental in focusing these resources towards NY. I also see Michael Ronkin and Fred Ranck as a power instructor team that works. We are also hosting two RSA workshops across the state to piggyback on the pedestrian issue. You may want to consider adding a pedestrian module in the RSA course to address the pedestrian prompt list and guidance. Our focus in those June workshops will be pedestrians. Statewide, the NYS MPO Association is producing safety assessment

procedures/process for locals to address problematic locations (similar to RSAs). We will also emphasize pedestrians.

One new twist on this year's training is that we are going to hold a special session. One evening after the day workshop, we will be on the agenda of the Orange County Board biannual meeting. There will be a special session on pedestrian training and issues separate from the participants of the day session. The participants are the Planning, Zoning, and whatever other Boards - those who make decisions that matter. It is fine to train implementers, but we need to address the decision makers. They do not have two days, we are lucky to get two hours to enlighten and address pedestrian issues. I see this test as very crucial as it is a tough crowd that is skeptical and does not see pedestrian issues as a problem because they just drive everywhere.

Jean Celender, Village of Great Neck Plaza, Nassau County, NY

From the training and technical assistance provided at the 2006 PEDSAFE Workshop we implemented or will implement the following as a direct result of examples provided from that session:

- a. To make midblock pedestrian crosswalks safer, we purchased reflective stanchions with the "yield to pedestrian in crosswalk" on the signs, from page 57 of the *How to Develop a Pedestrian Safety Action Plan*. We previously had the older collapsible version that was made of plastic (inverted 'V' shape, like merchant easel) when the previous crosswalk law was in place, "Yield to pedestrian in your half of the crosswalk." When the law was changed several years ago, and having seen the newer, more durable version at the workshop, which are about \$250/ea, we now have purchased and put out permanently about a dozen on North and South Station Plaza near the train station, U.S. Post Office, and near Village Hall on Gussack Plaza. They are placed in the approach of a painted (marked) crosswalk, in the centerline of a road. To achieve proper association in the mind of the motorist, they are placed close to the front or back of the crosswalk. However, on North Station Plaza near the LIRR train station, the right turn off of Middle Neck Road is difficult for MTA-LIRR buses with a long wheelbase, so the devices have to be back as much as 50 feet or they continue to get run over by the buses and large trucks. We highly recommend these and found them to be immediately effective. While we don't have statistics to report, anecdotally people remark, "They feel safer, and motorists actually will yield to them in the crosswalk." We are recommending these devices instead of the traditional post-mounted signs at the curbside because in our dense village with the increasing complexity of the driving environment within the curbs, the post-mounted signs go unobserved as motorists focus all of their attention in the street from curb to curb. These signs lie directly within the driver's line of sight and are thought to be much, much more noticeable and effective to get motorists to pay attention and obey the law.
- b. We added the same reflective signs in the four approaches to the modern roundabout (built in 2003 under the Department's LSSTC program) as well to enhance and improve the motorist visibility of pedestrians in the crosswalks. We have painted "Yield" on the pavement, but these were added to be more in the driver's line of sight. These too have been the same in effectiveness as the other stanchions. They get the driver's attention and it helps them to be aware of pedestrians and to yield to them.

- c. We haven't implemented this yet, but we imposed in the site plan approval process from 245-255 Great Neck Road apartment building, the condition regarding access management (Page 23 of the slideshow presentation) that the material of the sidewalk extend across the driveway to favor the pedestrian. In the past we had driveways up to the street apron in the same material. Now we realize it better accommodates the pedestrian to ensure the sidewalk paver is continuous from property line to property line so that it makes drivers more aware that pedestrians may be present. It hasn't been constructed as yet, but it the first such approval incorporating this street transformation and more pedestrian-oriented approach. We are a very pedestrian-oriented community, with the rail road station and many shops and activities in walking distance to our residences (multi-family apartment buildings). Thus, reducing potential conflicts in design avoids having problems, and encourages more appropriate behavior at the outset.
- d. The lessons learned are that there are many ways to increase the effectiveness of our streetscape and signage. Being pro-active by installing signs, putting down paint, and incorporating better site planning design, we can improve pedestrian safety. Our village has been a leader, and innovator in trying new techniques. Some of these have met resistance and controversy with our residents, especially the road diet for Great Neck Road (another LSSTC) project. But counter-intuitive measures can and do work. Elected officials have to have courage to think outside the box and go with the experts, planners and traffic engineers that have implemented these measures elsewhere with great success, and not to be afraid to implement them. It also helps to have a partner like the NSYDOT, which provides wonderful grant programs that help municipalities leverage their tax dollars to get these engineering solutions implemented. Retrofitting roadways and implementing roundabouts are major \$\$\$ and we need grant monies to help us. Thanks so much for all that NYSDOT and NYMTC has done to give us technical assistance and monies to do what we have done, and will continue to do as be implement our on-going LSSTC grants with NYSDOT. It is greatly appreciated. Our residents and the traveling public really do feel safer and appreciate the efforts we have done together. The Sept. 2006 workshop was really great. The two experts were well qualified, excellent presenters and explained all of the proposed approaches, benefits, costs, etc. I learned a great deal and would come again to another workshop. The training definitely was instrumental in influencing decision-making. I had our DPW order the new signs within weeks of the workshop. Within days of having them out on the streets, I received several phone calls of "thanks" from commuters and residents who said, "Boy, these are great. You really are doing a great job to help make our streets safer."



Figure 5. Crosswalk Markings and Sign Improvements in Nassau County.

Josh Orzeck, Manhattan North, NYC Department of Transportation

As a participant in the NYC workshop, I learned that a teamwork approach can bring constructive ideas to any traffic safety planning. One of the more useful tools was the “squaring off” of intersections and the installation of center pedestrian medians can provide a simple solution to a complex problem.

Christine Fetten, Town of Riverhead

I took a great deal of information out of the seminar that was held last spring. The Town has incorporated some of the information, particularly the information on midblock crossings and implemented the strategies at a busy street in Riverhead. The midblock crossing connects two parks. In addition, the Town through the annual requirements contract has installed new sidewalks, and the information obtained at the seminar has been utilized.

Fred Zamparelle, Superintendent of Public Works, Village of Farmingdale

The Village of Farmingdale has just completed a traffic and pedestrian calming project in our town with use of speed tables, reflectorized stripes, high intensity signage, and a lighted pedestrian crosswalk. Any local villages can come by to view our finished project, which came out quite nice. The Town of Brookhaven installed similar measures.

George Wolpert, Rockland County Highway Department

The pedestrian safety workshop was very useful for our county road improvement projects. Pedestrian activity is increasing, and the need for sidewalks is being considered along several of our projects that are now in the design stage. On one project, the Forshay Road improvement, we needed to evaluate whether occasional pedestrians could be accommodated with a shoulder or provide a sidewalk. The decision was made to provide a sidewalk instead of a 5 ft shoulder. The sidewalk will terminate at a proposed roundabout at the north end of the project, and the training material will be helpful in designing the sidewalk.

Ryan Winter, Eschbacher VHB

The workshop has given me new insight and helped develop new ideas on how to come up with pedestrian friendly solutions to various projects. Personally, being a young engineer, most of my experience has dealt with vehicular problems and solutions, but through this workshop I have gained knowledge of how to improve and create pedestrian safety and encourage pedestrian movements. Our firm has tackled multiple projects in the past year or so, where we have been called upon by clients to help improve and encourage pedestrian activity. For one project we used curb extensions in a business district to attempt to slow down vehicular traffic, and shorten the distance to cross the streets. Additionally, with that same project, we helped design a walkway adjacent to a commercial parking lot to give pedestrians walking from their cars a refuge rather than walking in the travel lanes. On another project, on a busy arterial street, with minimal shoulders, we widened the existing sidewalk, installed curb extensions at multiple

locations, and added lampposts near the curb line to create a buffer for pedestrians. Finally, on another project we created a pedestrian walkway that connects a village park with a shopping area which was separated by a parking lot. The walkway is buffered on either side with brick pavers and landscaped to encourage and invite pedestrians to avoid walking through the sea of asphalt to get from the park to the shopping area.

Brian Lenz, Town of Brookhaven

Prior to the training, pedestrian access and mobility was not a major design consideration but was always considered in the Town of Brookhaven. Since the training, we have had other additional seminars and have added an ADA expert to the Division of Traffic Safety's Staff, and have made other improvements:

- a. The Town has considered bike lanes whenever a roadway is resurfacing and restriped;
- b. We have implemented mountable curb raised medians with crosswalks at multiple locations (Hospital Rd, Patchogue and Coram Mt Sinai Rd, and Mt Sinai);
- c. We have installed our first lit crosswalk with automatic detectable bollards (Hospital Rd, Patchogue);
- d. We have worked with the Town Highway Department to design and install sidewalks (narrowing the roadway from 34' to 28')—see example: Mark Drive, Rocky Point;
- e. We have installed marked bike lanes on: Old Town Road, Smith Road, Blue Point Ave, and have a grant for River Road bike lane; and
- f. We are more “picky” about traffic signal designs to include push buttons, ADA ramps, pedestrian signals, and possibly colored crosswalks. All designs now consider additional sidewalk to connect to existing sidewalk up or down stream.



Figure 6. Example Improvements in Brookhaven: Sidewalk, Median Island, and Crosswalk.

NYMTC SRTS & Walkable Communities Coordinator

I learned pedestrian safety islands in intersections is most effective way to reduce accidents, as intersections have most accidents by far and islands reduce crashes by 40 percent. I've added emphasis on traffic island to all workshops and reports.

Lowell F. Wolf, Nassau County Planning Department, Town of Hempstead

Based on the training experience, the Nassau County Planning Department was able to better monitor and critique a contractor's study on pedestrian knockdown clusters in the Village of Hempstead, and the Roosevelt and Uniondale communities. As a result, the consultant was asked to, and indeed produced, a more thorough and detailed study.

NYCDDC

The training was definitely helpful especially in our new designs. Pedestrian safety is taken into consideration prior to us sending our geometric designs to DOT for approval, which really help expedite the process. In instances where we would normally add a pedestrian ramp for crossing with not much regard to safety, now I carefully evaluate the situation and make recommendations based on my acquired knowledge. I am currently in charge of the highway design aspect of Nostrand Ave. in Brooklyn, HWK-1129.

John Saraceno, Town of Smithtown

We have no specifics, however, the workshop reinforced our policy of providing pedestrian indications with countdown timers and advance walk intervals when possible, at new traffic signal installations. We also learned to try to have the crosswalks line up with the sidewalk on the other side of the roadway. We had a traffic calming project, where we shortened the crossing distance but some of the crosswalks ended up slightly around the corner. Future designs will compromise alignment and crossing distance. With Safe Routes to School funding, we may be applying for funding to add pedestrian signal faces and push buttons or rebuilding traffic signals with the latest technologies.

North Carolina

Mary Melitou, Institute for Transportation Research and Education

We held our first round of PSAP workshops in October 2006, shortly after the Bicycle and Pedestrian Working Group (BPWG) was established. This is a sub-committee of the North Carolina Executive Committee for Highway Safety (ECHS), which oversees the development of the Strategic Highway Plan for the state. The BPWG, like the other committees of the ECHS, is tasked with developing strategies to reduce injuries and fatalities. The policy recommendations that came out of the PSAP workshops fit nicely with the mission of the BPWG and good progress has been made in some of these areas.

Several issues were developed into recommended strategies for the ECHS to review. One such strategy has now become a project: the development of a two-hour curriculum for law enforcement officers on the relevant bike/pedestrian/motorist laws and guidance on how to enforce them. This course will be included in the 2009 offerings of NC Justice Academy's annual In-Service Training for all police, sheriffs and other law enforcement personnel as an optional course. Other strategies that are underway, and which were determined to be priority

areas at the PSAP workshops are: revising and expanding the NCDOT Pedestrian Policy, increasing fines for speeding in school zones and for not stopping as directed by crossing guards; revising the bike/pedestrian material in the Driver's Handbook; and, reviewing school siting policies and issues.

Another item that was discussed at the PSAP workshops was to change the law that prohibited NC counties from levying taxes to build or maintain highway infrastructure. This past summer, the General Assembly passed legislation to allow counties to build and maintain infrastructure. Although the BPWG was not involved in this legislative change, there was discussion at meetings and a strategy was under development. Additional training for NCDOT and municipal staff members is also a priority area, but has not yet been put forth as a strategy due to limited staff time and lack of funding.

The workshops were extremely well-received. We look forward to additional workshops and hope to get some of the senior staff and unit heads involved.

Pennsylvania

Dave Bachman, PennDOT Bicycle/Pedestrian Program Manager

Our District B/P Coordinator, Ben DeVore, noted that there was a consensus view from the attendees that the course was one of the best they've ever had.

April Hannon, PennDOT District 4-0 Bike/Ped Coordinator

I have to say that all of our employees who attended this training learned something. They said there were so many issues they didn't even consider when designing. I think it is very beneficial to take this course for all designers including MPT, Signal, Roadway, Bridge, Consultants etc. It was also very good to go out in the field and see for yourself how badly some intersections need pedestrian facilities.

Other participant quotes include:

- Field view exercise brought greater awareness to missing pedestrian connections. I now look to prevent these issues while reviewing Highway Occupancy Permits.
- It provided solutions to existing pedestrian problems in my community. We were able to reduce congestion and provide proper access for disabled pedestrians to transit.
- I am able to give better solutions when a community would contact me with a pedestrian problem.

Nevada

In Reno, NV, the Washoe County Regional Transportation Commission will appoint a task force to implement the Highway Safety Plan; they will follow up on the recommendations resulting

from the course. Their 3-day course was modified to incorporate the Nevada Strategic Highway Safety Plan elements relevant to pedestrian safety.

Texas

According to Peter Lagerwey, “On the field trip in El Paso, TX, everyone observed how dangerous it was to cross the street where the bus stops were located. The direct relationship between bus stops and the need to cross the street was driven home as we observed older pedestrians struggling to cross the street. We left the workshop with a commitment from several participants to immediately address this issue by moving bus stops and improving the crossings.”

OVERALL PROJECT ACCOMPLISHMENTS

This project accomplished its overall goals and objectives, including:

- Project team members investigated existing material, identified models and best practices for state-level and local-level safety plans, and developed the Guide, *How to Develop a Pedestrian Safety Action Plan* and companion training materials.
- Technical assistance, ongoing communication, and training courses helped fill informational gaps and encourage localities to undertake the development and implementation of a successful pedestrian safety plan.

Additionally, there were several other positive outcomes of the project. The following sections describe more specific accomplishments.

Bring Attention/Focus to Pedestrian Issues and Build Commitment

One of the most noted accomplishments is how the project has contributed to building a discussion of pedestrian issues nationwide and encouraging local and state officials to make a stronger commitment to pedestrian safety. As course instructor Peter Lagerwey noted, “The biggest accomplishment is how the discussion is changing. No one is questioning whether pedestrian safety is an important or legitimate issue. At some level, most state DOTs are accepting the fact that it is their responsibility to reduce pedestrian crashes through good roadway design and by providing pedestrian infrastructure.”

The monthly conference calls provide a forum for the discussion of pedestrian issues for those invested in making improvements, and the training courses—open to a wide range of professionals—help raise awareness of pedestrian issues to professionals who may not have had formal training in this area. Below are the comments of several course participants and hosts:

- “The course helped shape the ped/bike plan they are poised to finalize. They felt the course raised awareness and generated interest that resulted in more interest in pedestrian safety.” —Course participant, Farmington, New Mexico
- “The training was useful in raising the level of discussion about pedestrian safety issues within the New York City context by providing a baseline of information to a large number of DOT and other city employees.” —Matthew Roe, New York City Department of Transportation

- “I think the main accomplishment of the training from my perspective (someone who was already pretty familiar with pedestrian safety issues) was that it educated many of our engineers, who don't tend to be as aware of pedestrian-oriented engineering as for motor vehicles. It would be great to have more similar education efforts aimed at traffic engineers, as so many design and review decisions ultimately get made by them.” — Mike, New York City
- “The overall training opened my eyes to pedestrians needs and the efforts that must be taken in order to provide a safe passageway. This training will no doubt have a positive effect on how I design traffic signals going forward.” —Jeff P. Lindgren, Nassau County Department of Public Works
- “The training came just in time. The new DOT Commissioner made it her policy to highlight pedestrian and bike safety as a priority. All of our projects we have to make sure pedestrian safety are part of the design solution.” —Dino, New York City Department of Design and Construction

Provide Pedestrian Design Details and Opportunities to Apply Knowledge

Another key accomplishment of the project was that it synthesized best practices for pedestrian design and engineering in the Guide and training materials. Many engineering agencies and individuals benefited from specific design concepts covered in the training. Moreover, the field exercises included in the training provided an opportunity for engineers and transportation professionals to apply these concepts and practice making pedestrian improvements. Below are some comments from course instructors, hosts, and participants regarding the usefulness of the design-specific content:



Figure 7. Participants Explore Pedestrian Safety Issues in Field Visits.

- “The City of Troy, Michigan was struggling with whether to install curb ramps at driveway crossings. Turns out, they were building driveways to look like roads. When they saw the correct way to design driveways they suddenly realized that they had also solved their curb ramp dilemma. One engineer thanked me and said the entire course was worth his time for this one insight.” —Peter Lagerwey, course instructor
- “The training provided important information related to pedestrian-friendly facility design. The NYCDOT’s Office of Research, Implementation, and Safety applied information from the training session directly to the recently-announced Safe Streets for Seniors project. This citywide project will implement many features discussed during the briefing, including bulb outs and longer clearance phases. These were considered in part because they were recommended and discussed in the training sessions.” —Matthew Roe, New York City Department of Transportation
- “The workshop has given me new insight and helped develop new ideas on how to come up with pedestrian friendly solutions to various projects. Personally, being a young

engineer, most of my experience has dealt with vehicular problems and solutions, but through this workshop I have gained knowledge of how to improve and create pedestrian safety and encourage pedestrian movements.” —Ryan Winter, Eschbacher VHB

- “As part of the Intersection Design group in Region 8, the functional use of an intersection for all users is an integral part of a safe engineering design. The workshop incorporated how pedestrians use transportation facilities with the roadway design. It also reiterated FHWA’s approved layouts for intersections and land service roadways and where proposed sidewalks should be placed. I have been in the civil/highway industry for thirteen years, and changes have occurred as pertaining to ADA compliance.



Figure 8. Courses Cover Design Issues Such as Push button Location.

The workshop presented ideas and standards that incorporated new federal regulations that are less discriminating. The viewpoints presented were objective. Engineers have to remember to design for all pedestrians, not just the select few.” —Claudine A. Scozzari, E.I.T., New York State Department of Transportation

Provide Information to Stimulate and Inform Planning and Policy Decisions

Similar to providing design detail, the project Guide and training courses were successful in presenting best practices for planning and policy making. Classroom exercises in developing and prioritizing policy changes led many local agencies to reevaluate their current plans and design standards. See Appendix E for examples of policy recommendations made during selected training courses. Most encouraging were the common policy changes that participants voted for in the design workshops; these included:

- Redefining Level-of-Service (LOS) to deemphasize throughput of vehicles;
- Adopting a Compete Streets policy;
- Putting pedestrian safety at the forefront of design practices; and
- Adopting simple, low-cost engineering fixes (such as pedestrian countdown signals, better crosswalk markings, and median islands) as a matter of course.

By emphasizing certain policies, principles, and countermeasures during the course presentations, course instructors can inform participants and influence the outcome of the policy exercise and the priorities of the course participants. According to Richard Haggstrom, a course host at Caltrans, “At Caltrans, I think the training is helping change the culture to raise awareness of pedestrian safety and mobility concerns, particularly in certain Districts. On the state policy

level, the training has strongly influenced the measures adopted by California’s Strategic Highway Safety Implementation Plan (SHSIP). One high priority proposed SHSIP action is to form a task force to initiate a state-wide Pedestrian Safety Action Plan (PSAP), and to assist local agencies in developing their own PSAPs.”

Many agencies and individuals, having taken part in the project’s monthly conference calls and training courses, have reported making swift strides in developing pedestrian safety action plans and evaluating existing policies. For more specifics on the planning activities undertaken, see the section on Training Impact and Local Outcomes.

Bring Local Professionals Together to Share Perspectives

Another achievement of the project has been its ability to bring a diverse group of professionals together to share perspectives and ideas for improving pedestrian safety. The monthly conference calls were attended by local and state engineers and planners from around the nation. Engineers, planners, public health officials, law enforcement officers, educators, advocates, and others participated in the training courses. This provided participants a venue to discuss controversial pedestrian issues with local authorities and national experts, collaborate with others to explore solutions, and develop partnerships for future work in the community. Below are some comments from course participants and hosts regarding the importance of diverse perspectives offered through the training and technical assistance:



Figure 9. Courses Offered a Forum for Diverse Perspectives.

- “The City of National City attended the 3-day course in San Diego. They contracted me to prepare some recommendations for pedestrian crossings at uncontrolled locations. While they are relying on me to prepare these, the city traffic engineer who attended the course fully understands what I am doing and why, especially when we discuss it. I don't think he would have understood, or even accepted some of my recommendations otherwise.” —Anonymous
- “Mixing state DOT, city/county staff, and consultants in the classes has provided forums for the participants to better understand others’ perspectives.” —Anonymous
- “Having attendees from a range of organizations provides valuable perspective on the training objectives. State and federal agencies develop programs while local agencies are more likely to know the specifics on successful implementation. Just getting attendees to appreciate the pedestrian angle is an accomplishment.” —Ken McGuire, Sacramento, California
- “I guess that the biggest accomplishment of the workshop was allowing me to work with a group of individuals who had never worked together previously to develop solution(s)

to the challenges presented by the Brooklyn Bridge interchange at Centre Street. Those of us, who work in Nassau and Suffolk Counties, as well as the other areas outside of New York City, generally don't have to deal with intersections of that complexity. The benefit to us was that working in that kind of environment and achieving a certain amount of success instills a great deal of confidence in our ability to overcome challenges that we face in developing projects of less complexity.” —Jack, Town of Smithtown, New York

- “The training worked really well with a diverse group of attendees. For the second round of training sessions we were able to get a diverse group including law enforcement, landscape architects, roadway design, pedestrian advisory committee members, and others. It was great, but the course still had a very engineering-focused agenda. It was still a great learning experience and excellent to have their perspectives.” —Karen King, FHWA Arizona

Lead to Immediate and Long-Term Action

The project is most significant in that it has served as a stimulus for communities and state DOTs to take both immediate and long-term action for improving pedestrian safety. Some actions take place within the same day that the training occurs, as course participants observe issues in the community during the field visit and commit to making improvements:

- “On the field trip in El Paso, TX, everyone observed how dangerous it was to cross the street where the bus stops were located. The direct relationship between bus stops and the need to cross the street was driven home as we observed older pedestrians struggling to cross the street. We left the workshop with a commitment from several participants to immediately address this issue by moving bus stops and improving the crossings.” —Peter Lagerwey, course instructor
- “During each of the workshops (Chicago, Illinois; Flint and Detroit; Michigan, Los Angeles; California), the participants were making calls back to their offices to correct a pedestrian deficiency identified during the field exercise. Several issues were corrected that day.” —Rudy Umbs, course instructor
- “On the field trip in Redding, California, we observed a marked crosswalk that was so challenging, most participants choose not to cross the street. As a result of the subsequent design exercise, the local engineers committed to immediately proceeding with installing a crossing island, moving a driveway, and installing fresh paint and signs.” —Peter Lagerwey, course instructor

Project team members and course instructors consistently hear of examples of changed designs for projects based on the recommendations given in the workshops. Most courses are followed up with emails asking for guidance, and instructors often hear back from participants that they made the recommended changes. For more specifics on the immediate and long-term activities undertaken, see the section on Training Impact and Local Outcomes.

LESSONS LEARNED

Over the course of the project, team members have learned a variety of lessons in developing and implementing training courses and technical assistance. These lessons will help guide future project development and inform the recommendations made in the next section.

Varied Formats Aid in Learning

The formats for providing planning and design information were varied, including phone and web-based conference calls, a written Guide, and interactive training courses. Within the training courses, there were also various methods used for providing information; these included using PowerPoint slides, presenting case studies, conducting outdoor field exercises, leading in-class break out sessions, showing video clips, as well as providing hard copies of reference materials such as *PEDSAFE* and the “How-To Guide.”

The diversity of teaching methods was well-received by participants and instructors alike. Most popular was the field exercise, which provided an opportunity to apply the planning and design principles learned in the course to a real world situation, and often resulted in immediate action. In-class exercises (such as the break-out sessions at the end of each module) seemed effective at encouraging students to start to use what they’ve learned, in keeping their attention, and in helping the learning sink in. In-class exercises were modified over the course of the project to relate more closely to the course material and better apply to participant’s real-world activities.

Below are some comments received that reflect the broad popularity of the field visits:

- “The videos introduced by Rudy proved to be extremely popular. I suggest we formalize this a bit more by making them available to all instructors with some direction on where to use them and how to integrate them into the course agenda. We should also ask instructors to be on the look-out for additional videos.” —Peter Lagerwey, course instructor
- “The field exercises are very important as a learning experience and a mental and physical break from the room and PowerPoints. Everyone gets a change of scene and instructors get the participants to apply what they are learning and start developing relationships and networking opportunities. A field exercise should be conducted each day, weather permitting, to break up the talking and provide/demonstrate real world situations.” —Rudy Umbs course instructor
- “The field visit during the training really brought the whole thing to life. While some may be able to clearly visualize a situation based on explanations, others require the hands-on method. I truly believe that the manner in which the training was conducted was just right, not to say perfect. It catered to our various styles of learning.” —Anonymous, New York City DDC
- “Additionally, the hands-on site visit to a difficult intersection was instrumental in dealing with a particular problem with concrete challenges and geometry.” —Josh Orzeck, New York City
- “Most training content was valuable, with special emphasis on the field visit/site audit. This session enhanced the staff’s ability to conduct pedestrian safety audits, which are being used in the Safe Streets for Seniors project.” —Matthew Roe, New York City Department of Transportation

Below are additional comments received regarding the importance of varied formats for instilling knowledge:

- “The workshop allowed for ‘hands-on’ designing of intersections that were used heavily by pedestrians. Constructive criticism and proactive discussions from the design process that you don’t always receive from your supervisors in a work setting was extremely valuable. Designing for pedestrian use of a roadway is usually met with much resistance in the industry; however, for federal design approval, sidewalks making public right-of-way safe for all users of the transportation facilities are necessary.” —Claudine A. Scozzari, E.I.T., New York State Department of Transportation
- “The training was organized and well presented. The ‘before and after’ scenarios and use of visual materials (pictures, slides, etc.) are a definite for workshops like this. It helps us understand the situation much better and reinforce the lesson learned. The use of a 3-D model might have made the workshop even better for participation. The on-site case study and walk-thru was a plus.” —Joseph Javier, RA, NCARB, City of Jersey City
- “I see *PEDSAFE* as an indispensable reference guide. It is easy to say it is on-line, but it is another thing to have it handy when a thought arises. By giving participants the resource after taking the course, I hope they will strum through it or look something up instead of ignoring it, as you know they will probably not surf the web.” —Chris Hardej, New York City
- “The training continues to improve, particularly with the incorporation of practical exercises on street and sidewalk design. The PowerPoint presentation is a model of continuous improvement!” —Richard Haggstrom, Caltrans

Preparation is Critical

How well course instructors and hosts prepared for a course was essential in the course’s success. Course preparation involved considering many factors, including:

- Determining the appropriate course to be taught;
- Selecting qualified and available instructors;
- Determining class size, make-up, and inviting course participants;
- Selecting an appropriate meeting venue and room;
- Scouting and choosing field visit sites; and
- Modifying material to incorporate local examples and resources.

In determining the appropriate course to be taught in a community, agencies need to have a clear understanding of what to expect before they sign up. To help facilitate good choices in selecting courses to be taught, project team members created several web pages offering course descriptions, course agendas, and other supporting materials. Project team members and course instructors need to continue to communicate with course hosts and potential course hosts to ensure that the appropriate training is provided.

The process to select qualified and available instructors has been made more objective and transparent as the project has continued. It is always a goal to provide instructors with diverse perspectives to enrich a course. As stated by Ken McGuire, a course participant, “I liked having two instructors with expertise in the subject matter. They had different but equally effective methods of delivering the material and complemented each other well.”

Preparation and communication between the local host and course instructors is key to ensuring that the courses involve a diverse group of people who expect the training that is offered. As one instructor mentioned, “Having a mix of state and local agencies participating in the class as well as a mix of disciplines are both key to the success of the course and the classroom dynamic. One type of group that we should reach out to more is the community safety teams. Not every state has them, but many do (e.g., Maryland’s Community Traffic Safety Program Representatives and Florida’s Community Traffic Safety Teams [CTSTs]). Sometimes they are the most enthusiastic participants and certainly reflect the voice of the community.” Local hosts have the primary obligation to ensure that the class mix includes representation from stakeholders at all levels.

Determining class size was another important factor in how well the courses were received. As course participant Lowell F. Wolf shared, “Due to the large size of enrollees and the relatively small size of the classroom, it became difficult at times to concentrate on the in-class training. I would recommend smaller enrollments and/or larger classrooms, and additional breaks. The field experience was excellent and useful hands-on training, but again, I would advise on smaller groups receiving assignments so as to produce greater cohesion among the students.”

As the course implementation progressed, instructors have sought a balance for the right number of participants in the right size room. Having about 30 to 35 participants in a room that will fit 45 seems ideal, so that participants are not cramped but the setting is still intimate and supportive of in-depth discussion. Instructors have managed 40 or more, but in these situations, the room tends to segregate itself into active participants up front and those sitting quietly in the back; instructors also have to limit discussions, and rush through the exercises and the participants’ reports on the break-out sessions.

The room used for the workshops continues to be very important. Course evaluations from participants showed the lowest marks in this area. Course instructors need to be reminded to work closely with local hosts early on in the process, to make sure that the room selected is the correct size, is fully accessible, has temperature and lighting controls, and has a large area for projection.

Coordination between course instructors and local hosts is also critical for selecting appropriate field sites and adapting course content for the community needs. One course instructor remarked, “The quality of the introduction by the local host was inconsistent. Some local hosts did a very good job of providing the context for the course, while others did a very poor job. Again, this is easily resolved by having the lead instructor work with the local host and then covering anything the local host may have omitted.” To further improve the course, instructors need to work with local hosts to select field sites that relate to the content taught and have enough issues to support a thorough discussion, as well as work to ensure a smooth and consistent coverage of course material.

Customizing the Course can Increase its Value

It can be a challenge to develop a course that can be taught nationwide to a broad range of rural, suburban, and urban communities and still retain its relevance to each community. Several course participants, especially those from New York, expressed the challenge of presenting a general pedestrian safety course to an audience with non-typical pedestrian issues:

- “As might be expected, a general approach does not take into account the context of a specific local geographic (and geometric) area and the unique individual challenges. New York City, with its anarchic patterns (or lack of same) does not lend itself to solutions that work in smaller cities or towns.” —Josh Orzeck, New York City
- “The materials used were illustrative, but were not ideal for New York City audiences. The presentations themselves would be more effective if supported by clear explanations of how to accomplish specific pedestrian safety treatments within relevant constraints. Efforts should be made to make these events more collaborative between presenters and participants. Specific research is highly valued; many concerns must be addressed, including concern over quantitative benefits, before such treatments can be implemented.” —Matthew Roe, New York City Department of Transportation
- “I would have liked the training to be more NYC/urban focused. Maybe the other regional representatives could participate together and the more urban areas could be grouped together.” —Steve, New York City Department of City Planning

Several times, instructors have worked with local communities to better tailor a course to local needs. In Reno, Nevada, instructors integrated the State of Nevada Strategic Highway Safety Plan objectives and strategies into the course. This increased interest in the role the course could play in implementing the statewide plan. In New York City, New York, participants were looking for a senior specific module; instructor Michael Ronkin modified the course to highlight senior items throughout the instruction.

Course instructors could work more with local hosts and course participants to determine the different ways that the course can be efficiently customized before each presentation, including:

- Incorporate local data, statistics, research, and laws;
- Include additional case studies to highlight local programs and facilities common to that particular state or city;
- Focus content to relevant safety problems (e.g., speeding, unsafe behaviors) or populations (e.g., older pedestrians, children); and
- Relate content to broader state initiatives, such as the state’s Strategic Highway Safety Plan (SHSP).

Future courses would especially benefit by having a state representative briefly present the state’s SHSP and the Pedestrian Safety Action Plan (if available). Local hosts can make copies of the SHSP and Pedestrian Safety Action Plan and distribute to the audience. Course instructor Rudy Umbs adds, “During the Introduction, I discuss how this workshop and state and local pedestrian safety activities are linked and a key part of the National Highway Safety situation and improvement programs, the state’s SHSP. We further discuss how the participants fit in, how they contribute, and what their role is in improving pedestrian safety and accessibility and

overall highway safety. Then we reinforce their role throughout the workshop.” Making this a consistent portion of the training course could add further value for the participants.

RECOMMENDATIONS

The following sections provide recommendations on how to improve the content and implementation of the training courses as well as additional steps to take as part of the overall project to provide training, technical assistance, and support to states making pedestrian safety action plans.

Expand and Update Course Content and Resource Materials

The course content has been periodically updated as part of the project, both to include fresh ideas and the results of new pedestrian safety research and to update best practices as they evolve. Through the course evaluations and informal conversations, additional ideas have emerged for updating and expanding course content, including:

- Updating all slides that include curb ramps with ADA compliant curb ramp images;
- Providing brief instruction on the health, environmental, and economic reasons for creating walkable streets;
- Expanding the discussion of pedestrian LOS models and the *Pedestrian and Bicycle Intersection Safety Indices*;
- Modifying the classroom exercises to build on one and another;
- Presenting pedestrian crash reduction factors (CRFs) and identifying missing CRFs;
- Expanding content on signal operations for communities seeking additional detail;
- Developing content to address approaches to institutional and behavioral obstacles;
- Delineating between urban, suburban, and rural settings and describing what countermeasures work best in each setting;
- Expanding discussion of funding sources for pedestrian improvements, particularly sidewalks;
- Providing more detail on education and enforcement, as well as updated best practices from other states and local jurisdictions; and
- Presenting more detailed information about realistic, effective integration of PSAP efforts in general traffic safety planning activities at the local and state level (including SHSPs), and in urban development/redevelopment initiatives.

To support the course, resource sheets could be developed to highlight available products, research reports, and guidelines that are mentioned in the courses, including USLIMTS, Pedestrian Road Safety Audits and workshops, *PEDSAFE*, PBIC’s Web site (<http://www.walkinginfo.org>), the NCHRP report 500 series, intersection workshops and materials, the *Countermeasures Tool Box*, and other pedestrian safety tools.

NHTSA has added funds to the contract to expand the education and enforcement chapters of the Guide (and to expand the corresponding PSAP course modules), which will provide useful information to assist state and local agencies with those important pedestrian safety “ingredients.” For agencies that have a specific need for improved pedestrian safety education

and enforcement, this additional information will be useful in supplementing pedestrian engineering activities.

Improve Course Preparation and Coordination with Local Hosts

As mentioned above, course preparation and coordination with the local hosts is key.

Improvements that can be made in coordination include:

- Communicate course objectives and help communities choose the most appropriate course— Hosts need to better understand what they're asking for, whether design or planning courses. Course descriptions and detailed agendas are available on the Web sites; sample module content can be provided by course instructors.
- Work to ensure a balanced, capable audience—Work with local hosts to ensure a heterogeneous audience of people with decision-making abilities that can affect the development of a pedestrian safety action plan. Given the PSAP's emphasis on the Es (engineering, education, enforcement), include officials in charge of each of these program and policy areas.
- Carefully plan field exercise—A field exercise must be logistically simple (no buses or extremely long walks) and easy for the participants to quickly understand the problem and come up with solutions. Local representatives should provide the aerials and present the pre-field exercise briefing.

Continue to Explore Different Course Formats and Lengths

To open the training opportunities to a broader range of participants, the course could be offered in various formats, such as webinars or other web-based learning formats. More focused, shorter courses could be offered to people (e.g., upper management officials) who don't have the time for the full two- or three-day courses or are in need of one specific area of content, such as signal operations for pedestrian safety. Ideas for other short courses incorporating pedestrian issues and concerns include a course on road safety audits, bicycle planning and safety, and the American Association of State Highway and Transportation Officials (AASHTO) pedestrian and bicycle guides.

Follow Up with Technical Assistance

One of the key recommendations for future steps to take involves defining and providing follow-up assistance to communities that have taken a course. First, there is a need to better articulate the follow-up help that can be provided after a course has been offered. The offer of "technical assistance" needs to be better defined and included in any brochures given to participants or web materials. Second, course instructors and team members should perform more systematic follow-up with communities engaged in the PSAP project. Some ideas for different follow-up activities include:

- In-class activities that ask participants to list what they would like to accomplish over the next 3 to 6 months; these sheets can be used by participants and project team members to monitor action and measure performance.

- Telephone calls or emails (within 3 to 6 months of offering training) to survey previous course hosts and participants, to ask questions such as:
 - Was the training effective in making a difference when they got back to their jobs?
 - What did participants learn and apply? What policy changes have been made?
 - Did participants do what they wrote that they would do? If not, why?
 - What did the participants do differently as a result of the workshop?
 - What aspects of the workshop could be improved?
- A follow-up workshop offered to agencies that want to take the next step in developing a PSAP; this could be something like a two- to three-day charrette that would result in a draft plan, or a more focused and detailed review and re-design of a variety of intersections and problems.

By following up more closely with course participants and host agencies, the focus city and state representatives will be held more accountable, and there will be a more formal record of changes made as a result of receiving PSAP training. This information can be added to the PBIC Web site to help motivate states and cities to show their achievements and learn from other successful examples.

Market and Promote the Course

There is also interest in furthering the marketing activities for each of the courses, to promote the course and better reach interested and intended audiences. Some ideas for marketing activities include:

- Speaking about the courses at conferences and national meetings where decision-makers are present;
- Issuing a national press release, mentioning FARS pedestrian fatality data, describing some of the typical problems (including safety and accessibility), and listing the course as a potential step toward improvement;
- Working with the Association of Pedestrian and Bicycle Professionals (APBP) ADA trainers to market the courses, including handing out brochures; and
- Targeting the pedestrian safety staff person in every state traffic safety office.

CONCLUSION

The FHWA Technical Assistance project on Developing and Implementing a Pedestrian Safety Action Plan has been very successful in many respects since it began in September 2004. The “How-to-Guide” entitled *How to Develop a Pedestrian Safety Action Plan* has been well-received. It was developed by HSRC and consultant team members, with important input from FHWA, NHTSA, and most of the 14 participating focus states and 5 focus cities. Having input from all of the participating agencies was very beneficial in the success of the Guide. Monthly conference calls, organized and led by the FHWA AOTR (Tamara Redmon), have helped provide momentum for the project (and pedestrian safety in general), so that concepts and plans are discussed and remain on the minds of focus state representatives.

The development of three different, but related, training courses as part of this project has provided a good framework for use in presenting relevant pedestrian safety information to the focus states and cities. Having the flexibility to periodically update and improve the courses has helped to provide fresh information, success stories, the latest MUTCD information, the best available safety research (including most appropriate crash reduction information for various countermeasures), and other the type of information that we believe is most useful. As the courses have evolved, we have also added new in-class exercises, short course formats for upper-management audiences (who would not be willing to stay for a full 2-day pr 3-day workshop), new information on pedestrian road safety audits, and we are near completion on the development of a new module on project funding sources.

Establishing a partnership of trainers of consultant and FHWA training teams has been highly successful. It allows courts participants to learn the FHWA safety perspective plus the experiences of the consultant trainers together in a great majority of the courses. As a result, we have repeatedly received very high course ratings and extremely positive feedback for each of the 77 courses taught.

In addition to developing the PSAP Guide and delivering workshops, the project has been able to provide other types of technical assistance, including conducting a detailed analysis of pedestrian crash data in Chicago (which was used to create plans, implement solutions in high-crash locations, and develop toolboxes for city-wide pedestrian improvements), providing technical experts to agencies to meet with state/local officials, and visiting pedestrian problem sites to assist communities with selecting appropriate countermeasures.

While a few of the focus agencies have developed (or are in the process of developing) their own PSAP, most of the agencies have at least incorporated information from the Guide (and workshops) into their SHSP (Strategic Highway Safety Plan) and/or into their design or policy guidelines. For more on what focus agencies have done, see the Training Impact and Local Outcomes section.

The field visits and development of prioritized needs for policy changes in each workshop (see Appendix E) is a valuable course outcome, which can and should be used by each agency as a basis for developing their PSAP, SHSP, and/or design and policy changes within their agency. One state agency (NCDOT) had all of the appropriate pedestrian safety “stakeholders” at one of their PSAP training courses, and they used the results of the policy priority needs exercise as the basis for the statewide SHSP “Bicycle and Pedestrian Working Group.” Many of these recommendations have already been implemented.

Although we have seen much enthusiasm and “buy-in” among most of the focus agencies, there are still obvious barriers to overcome, particularly with upper management among some of the agencies. Offering new course formats tailored to upper management, as well as additional content in existing courses relating to overcoming barriers to implementing pedestrian improvements, will help address this issue in the future.

With the PSAP progress made already, there is still a long way to go. There are currently 25 more weeks of training (more than 40 courses) planned or scheduled to be delivered in 2008, and additional requests continue to be received. Technical assistance may need to further evolve into a format that involves more focused meetings of pedestrian experts (i.e., consultants and FHWA staff) who interact with state and local stakeholders, review specific details of the agency pedestrian safety problems, and work together to develop a framework and next steps for implementing pedestrian safety action plans.