



## ZONE GUIDE FOR PEDESTRIAN SAFETY SHOWS HOW TO MAKE SYSTEMATIC IMPROVEMENTS

Public officials are constantly on the lookout for new ways to make the nation's roadways safer for walkers. With increasingly scarce funds, however, it simply is not possible to implement many of these ideas if they must be applied to an entire community. The zone process provides a systematic method for targeting pedestrian safety improvements in a cost effective manner. It involves defining relatively small geographic areas, or *zones*, where a relatively large proportion of the problem occurs. Then, a countermeasure program is applied only in the selected zones, targeting the locations with the biggest crash problems.

The National Highway Traffic Safety Administration (NHTSA) and the Federal Highway Administration (FHWA) sponsored a research study to apply the safety zone concept to reducing crashes involving older (65+) adult pedestrians. That study, released earlier this year, developed procedures for defining pedestrian safety zones, and developed, implemented, and evaluated a countermeasure program in Phoenix, Arizona and Chicago, Illinois (see *TRAFFIC TECH* 174, March 1998). Older pedestrian crashes were reduced by more than 46 percent in target zones.

As a second part of the study, Dunlap and Associates prepared a concise *how-to* document, *Zone Guide for Pedestrian Safety*. The *Guide* describes step-by-step procedures officials can use in applying the zone process to their community's pedestrian safety problems.

### Defining Zones

The first step is to pick the pedestrian crash problem that the community wants to address. Determine if there are excessive pedestrian crashes involving young children, working adults, or maybe the elderly. Then, map the pedestrian crashes either manually or with a computerized mapping system, if one is available.

Since most pedestrian crashes occur within one mile of the victim's home or place of business, circular zones with a radius of one mile are good geometric choices. Decide on a minimum number of crashes within a particular zone for your community. These rates will vary by the size of your community. Linear or rectangular zones that meet a defined rate can also be used.

Finally, calculate an efficiency measure for the selected zones to determine if it is practical to apply countermeasures in the zones. This is really just a calculation of the percentages of both crashes and land area. If the ratio of the percent of the problem to the percent of the land area covered in the zones is much less than three, the zones may need to be reexamined to try to improve their efficiency. An efficiency ratio of three to one or higher (for example, in Phoenix 54.8 percent of the 65+ year old crashes occurred in 4.6 percent of the jurisdiction's land area) will almost certainly have a good benefit.

#### *Steps In Defining Zones*

- Step 1. Select the crash problem*
- Step 2. Map the pedestrian crashes*
- Step 3. Define zones*
- Step 4. Calculate efficiency measure and select final zones*

#### *Steps in Using Zones*

- Step 5. Evaluate zones and identify resources*
- Step 6. Select program activities*
- Step 7. Implement program activities*
- Step 8. Monitor program activities*



## Using Zones

Once the zones are selected, they must be examined to determine how they can be used. The problems and resources in each zone need to be identified. Program activities need to be selected, developed as necessary, implemented, and monitored.

The first step here is to review each zone to assess the pedestrian safety problems that exist and the resources that are available to help solve the problem. Start with a review of the police report for each zone crash to determine the nature of the crash and factors that might have caused it. Then drive or walk through the zones to identify where engineering improvements can be made. The *Guide* includes checklists for these activities.

Activities that can be applied in defined, small areas are best suited for zoning. Some examples are:

- engineering improvements such as new signs or signals; parking setbacks; installing or refreshing crosswalks; improving roadway lighting; or trimming shrubbery or trees
- distributing posters or flyers to homes, businesses, libraries, senior centers, medical offices and other areas in the zone

- targeting enforcement efforts in the zones
- making presentations and giving training programs to target populations that congregate in the zones

Once the countermeasure ideas are in place, it is time to implement the program and to monitor its success.

The *Guide* highlights examples of successful pedestrian safety zone programs and includes charts, checklists, and some sample flyers. In Phoenix, by distributing materials in the zones rather than the entire city, it was estimated that more than \$200,000 was saved. The *Guide* will be useful for any organization seeking to enhance pedestrian safety in their communities, whether it's on a large scale or a smaller neighborhood one.

## HOW TO ORDER

For a copy of *Zone Guide for Pedestrian Safety* (14 pages), write to the Office of Research and Traffic Records, NHTSA, NTS-31, 400 Seventh Street, S.W., Washington, DC 20590, or send a fax to (202) 366-7096. Marv Levy was the contract manager for this project, email: [mlevy@nhtsa.dot.gov](mailto:mlevy@nhtsa.dot.gov)

U.S. Department  
of Transportation  
National Highway  
Traffic Safety  
Administration

400 Seventh Street, S.W. NTS-31  
Washington, DC 20590

TRAFFIC TECH is a publication to disseminate information about traffic safety programs, including evaluations, innovative programs, and new publications. Feel free to copy it as you wish.

If you would like to receive a copy contact:  
Linda Cosgrove, Ph.D., Editor, Evaluation Staff  
(202) 366-2759, fax (202) 366-7096  
EMAIL: [lcogrove@nhtsa.dot.gov](mailto:lcogrove@nhtsa.dot.gov)

FORWARDING AND ADDRESS  
CORRECTION REQUESTED