

# Developing a rural roadside safety program

Tom McDonald, Safety Circuit Rider

*EDITOR'S NOTE: In 1999, almost 30 percent of vehicle fatalities in Iowa occurred off the roadway. This is the second in a two-part series of articles about enhancing the safety of rural roadsides. The first article, in the May-June 2003 issue of Technology News, introduced concepts and resources. This article discusses proactive local efforts.*

The following steps outline the elements of a proactive roadside-safety program for local agencies:

1. Gather support from the public and elected officials.
2. Take an inventory of roadside conditions and identify problem locations using
  - crash records
  - staff observations and public input
  - noted traffic operational difficulties
  - complaints
  - routine inspections of roadsides
3. Develop a list of cost-effective improvements and set priorities.
4. Integrate safety into project improvements where possible.

## Develop public support

Communication is the key. Effective communication efforts include preparing informational news releases for local media about roadside safety, posting information on the county website, and presenting information to local groups, including the board of supervisors, developers, and landscapers. Story County, for example, developed a one-page flier about roadside safety to distribute to individuals and groups.

Whenever possible talk one-on-one with local citizens about your roadside safety program. This is especially important for any adjacent property owners who might be affected by safety improvements such as tree removals.

Story County also developed a roadside right-of-way ordinance. Public hearings regarding development of the ordinance provided opportunities to talk directly with the public and allowed people to voice their concerns or propose revisions. Bob Sperry, Story County engineer, says that comments at the public

hearings resulted in important clarifications in the final ordinance.

## Take an inventory

An inventory of possible safety hazards could be a formal safety audit or simply staff notes made during routine patrols. The latter procedure helps increase supervisors' and staff awareness of unsafe conditions.

Locations with high potential for vehicles leaving the road should be of particular interest.

Each class of roadway—farm to market, federal aid secondary, collector, or local—has unique requirements for clear zones and intuitive priorities for action at locations like sharp curves, T-intersections, narrow roadways, and steep slopes.

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A checklist can be helpful.

Each of the following features is a potential hazard if located in the clear zone:

1. Large trees (over 4-in diameter)
2. Noncrashworthy mail box supports
3. Driveways with steep side slopes or retaining walls

Because of the possibly sensitive public-relations nature of these three features, talk to property owners well in advance of any action. Emphasize the potential hazard for drivers, and negotiate hazard removal or other mitigation.

4. Utility poles and/or guy wire supports, particularly isolated, individual poles

If there is adequate right of way to allow relocation of individual poles, work with the utility company to do so.

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5. Large culverts (> 4–6 ft opening) or any culvert with a headwall extending above the adjacent shoulder surface
6. Unused cattle passes
7. Bridges with inadequate handrails and/or unprotected end posts
8. Guardrails seriously out of date or needing repairs
9. Noncrashworthy sign supports (e.g., wooden posts larger than 4x4 inches)

In some situations, extensive modifications to features numbered 5–9 to meet current standards may not be cost effective. The following low-cost improvements, however, can be made by crews as their schedules permit:

- fill-in of unused cattle passes (with the property owner's agreement)
- some guard rail repairs,
- removal of high culvert headwalls
- drilling of large wooden sign supports to achieve crashworthiness

10. T- intersections without safety ramps
11. Foreslopes with severe erosion
12. Significant, recurring drop-offs adjacent to pavement edges
13. Sharp curves and high fills without shielding

Again, fully mitigating problem areas numbered 10–13 may not be possible from a benefit-cost standpoint. Still, low-cost strategies, like signing, delineating, and repairing erosion with ditch cleanout material, can be accomplished in key areas.

When assessing high-priority routes for possible concerns, be especially attentive for isolated conditions of any type that may be problems for inattentive drivers. Such conditions might include the following:

14. narrow bridges
15. short, narrow width roadway sections
16. sharp curves
17. hills

**Identify cost-effective mitigation measures and set priorities**

Balancing roadside safety needs with other budgetary priorities is a significant responsibility of county engineers. All improvements must be evaluated for cost effectiveness, especially on lower volume roads.

Because many crashes on local rural roads are single-vehicle, run-off-the-road incidents, pay special attention to improvements that create safe, forgiving roadsides and allow driver error without unduly serious consequences.

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**Integrate safety into road improvements**

Safety improvements can often be made most cost effectively as part of construction projects, especially pavement resurfacing, restoration, or rehabilitation activities. When you plan a 3R project, carefully consider if needed safety improvements can be incorporated into it.

The National Highway Institute's training course based on the *Roadside Design Guide* is helpful for designing safety improvements on higher volume roadways. A version of this course has been developed with more application for local agencies and will be available soon. In addition, CTRE is working with the Iowa DOT to modify a workshop addressing safety improvements on 3R projects for local agencies. It is currently planned to offer a two-day workshop on roadside safety issues for both 3R improvements and new construction to interested engineers and technicians later this year.

**For more information**

Contact Tom McDonald, safety circuit rider, 515-294-6384, tmcdonal@iastate.edu. The Local Systems Office at the Iowa DOT and engineers in the district offices can also be excellent sources of information and advice on this topic, as are Instructional Memoranda issued for county engineers. •