

# Safer Driving: Road Improvements May Be Coming to Your Neighborhood Soon

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When driving, are you sometimes unable to read road signs from a distance, especially after dark? Or do you have difficulty turning your neck far enough to see oncoming traffic at a complex intersection? Are you sometimes fearful about making a left turn on a busy roadway?

If so, you have a lot of company. After all, driving is a complex interaction of mind and body. It requires three functions in particular—vision, cognition and physical action. Age brings challenges to all three.

Concerns about the special needs of older drivers surfaced more than two decades ago. That's when the Federal Highway Administration began studying the issue, and in 2001, it produced a thick manual aimed at cities and states. The book, called *Highway Design Handbook for Older Drivers and Pedestrians*, contained more than 200 pages of research data and 109 recommendations for safety enhancement, many of them incorporated into a "Manual on Uniform Traffic Control Devices." Each state is required to follow the federal standards, and to pay attention to additional federal guidelines, as it upgrades its existing signs and road designs over a period of years.

"As people live longer, they're driving longer," says FHWA spokesman Doug Hecox. "Older drivers are a fast-growing roadway population. That's why we're focused pretty heavily on this." The federal government's focus has been on making driving simpler, and safer. While the over-65 population is expected to double to 70 million by 2030, the number of older drivers will also increase. Indeed, annual miles driven is rising faster among older drivers today than among other population groups.



In recent years, you may have seen many of the federal government's safety recommendations begin to appear on local streets, state highways and federal roads all over the country. Some of the most obvious changes are aimed at the visual challenges faced by older drivers. As you age, you need more light to see things. Starting at age 20, the light you require doubles every 13 years. By 72, you need, on average, 16 times more light to drive safely than does a 20-year-old. That's why many new street signs have switched from a dull orange color to a vibrant fluorescent yellow, which makes them stand out even in bright midday sun. In addition to the brighter color—you can compare them to the drab-looking older signs still standing in many communities—the new signs include dramatic enhancements in nighttime reflectivity. Using microprismatic reflectors and tiny glass beads, the surface of the signs throw an intensive “headlight return” to the driver's eyes. As you drive, the signs appear to glow in the dark, catching your attention much earlier, even in rainy conditions. Many of the new signs are at pedestrian crosswalks, and they're pretty hard to miss.

Another useful visual enhancement is larger traffic lights, with lens diameter increased to 12 inches from eight inches so you can see them better from a distance. Sometimes the lights include a dark backplate to make them more noticeable against a bright sky or busy background. Cognition and physical action are just as important as vision. Mentally processing fast-changing information is a special challenge to older drivers, says Dave Morena of the FHWA's Michigan office.

That's where roadway design comes in. Difficult intersections, confusing lane alignments and risky left turns are among the biggest challenges to mind and body. Traffic engineers have long recognized left turns as among the most dangerous of all driving maneuvers. They can also be the most catastrophic because they often involve oncoming traffic moving at high speeds. What makes these turns especially challenging for older drivers is a diminishing ability to judge distance and speed.

To address the left turn challenge, engineers like Morena have recommended increasingly adopted changes such as dedicated left-turn lanes, sometimes offset by a concrete island; new turn-path lines on the pavement; reflectorized markers on curbs; painted traffic islands; and special left-turn lights in traffic signals.

Best of all for the left-turn problem, says Morena, some communities have started using roundabouts modeled partly on France's successful experience with these rotational intersections that eliminate left turns altogether. After all, every turn into a roundabout is a right turn, and every turn out of a roundabout is a right turn, too. Right turns are inherently easier and safer because you do not cross a lane of oncoming traffic.

“Roundabouts eliminate the need to judge gaps in fast head-on opposing traffic,” says Ken Sides, a transportation engineer in Clearwater, Fla., which has the highest percentage of residents age 65 and older of any U.S. city with a population of more than 100,000. Clearwater has installed six roundabouts and eight more are in planning.

Roundabouts have another advantage: When accidents do occur, they happen at angles less severe than most left-turn accidents, with less catastrophic results. This is especially important to older drivers, who are more vulnerable in crashes than younger drivers. Studies by the FHWA and the National Cooperative Highway Research Program show that roundabouts have 75 percent fewer injury crashes and 90 percent fewer fatalities than conventional intersections. The government's safety improvements in general are also yielding positive results for everyone. "In recent years, we've seen a reduction in roadway fatalities and accidents," says FHWA's Hecox. In 2005, there were 43,443 roadway fatalities in the United States, or 1.4 deaths per 100 million vehicle miles traveled by America's 200 million licensed drivers. In 2006, there were 2 million more drivers on the road (an increase of 1 percent), but a decrease in fatalities by almost .8 percent—for an adjusted decline of almost 2 percent in a single year. Over time, this trend will mount.

"Today's fatality rate is five times lower than 30 or 40 years ago," notes Hecox.

When Congress passed the gigantic 2005 federal transportation bill known as SAFETEA-LU (\$286 billion was appropriated through 2009), it called for "such sums as may be necessary" to implement the recommendations of the Highway Design Handbook for Older Drivers and Pedestrians. But in the face of costs for Hurricane Katrina and dramatically rising prices of building materials because of the inflation of oil prices, the funds were not forthcoming. Now with debate heating up for the reauthorization of the bill in 2009, more emphasis may be put on older drivers and safety. The American Traffic Safety Services Association has called for \$90 million per year for a pilot program to assist states in implementing the recommendations of the handbook. "After all, when you do something for older drivers, you're making the roads safer for all motorists," says ATSSA's James Baron.

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