Arizona aims to improve safety of rural roads

Arizona's highways are safer than ever, but when Arizona families hit the road over Labor Day weekend, they will confront one of the state's most nagging traffic-safety problems — deadly rural roads. Every year, more people die on rural roads and highways than on urban ones. The state's rural fatal-crash rate, the number of deaths per miles traveled, ranks among the highest in the nation, according to a national report released Thursday by the Arizona Department of Transportation.

Arizona's roads are the highest risk for drivers in the state. And the rural rate is triple the average. Nearly twice as many people die in Arizona's rural areas in single-vehicle accidents as in multivehicle ones. In 2010, 205 people were killed in one-car crashes, compared with 107 in multicar ones, according to data released earlier this week by the Arizona Department of Transportation.

On state-managed highways, about six in 10 deaths were in solo-car crashes, an analysis of federal data by the Arizona Republic found. Five highways accounted for two-thirds, or 225, of the deaths in solo crashes statewide from 2004 to 2009. Stretches of those highways, both winding and straight roads around the state south of Interstate 40, have fatality rates dozens of times above the state average.

"I'm amazed. It means there is something going on with those roads," said Alberto Gutierrez, executive director at the Arizona Governor's Office of Highway Safety. He cited 2010 figures showing most drivers of single-car crashes hit pedestrians or fixed objects such as trees, or they overturned.

Several roads around the state south of Interstate 40, have fatality rates dozens of times above the state average.

To address the problem of road fatalities, Arizona is participating in a federal experiment to systematically predict future trouble spots rather than react to crash reports. Arizona also has joined Nevada and Utah in a regional campaign that promotes the goal of reducing highway fatalities to zero by 2050.

In recent years, ADOT engineers also have pioneered their own safety improvements.

This week, ADOT reported a 5 percent drop in the crash rate, the number of deaths per miles traveled, from 2009 to 2010, continuing a six-year downward trend. Here and nationally, highway crash rates are at their lowest in 60 years.

The numbers are no solace for Mary Dutton of Green Valley. On Oct. 27, 2009, she and her husband, Jack, were headed up U.S. 191, the Coronado Trail, on a scenic drive destined for the Hannagan Meadow Lodge. The truck fishtailed as Jack overcorrected, and it tumbled several times down a 400-foot cliff.

Two days later, an ADOT snow-plough operator came up on the scene, and his wife noticed a steel memorial marker and no guardrail. Jack Dutton, 63, was dead. Mary, then 59, suffered broken bones but had survived freezing, snowy weather. Both had been ejected. Neither wore a seatbelt, state patrol officers concluded.

Their truck had come to rest on top of another wrecked vehicle.

Terry Corrigan, an editor at the White Mountain Independent, said the road is one of the curviest, scarcest in the area.

The problem

A national research advocacy group for highway investment, The Road Information Program, or TRIP, released a report Thursday ranking Arizona's rural crash rate the eighth worst in the nation. TRIP researchers found the crash rate was 20 percent higher on rural roads and highways, not including interstates, than the national rate. And the rural rate is triple the average.

The study looked at all rural roads, including county and tribal roads.

On roads built by ADOT maintains, six in 10 crashes involved single vehicles. Five highways in particular highlight the issue. On those roads, the number of fatal solo crashes remained unchanged at between 35 and 40 a year from 2004 to 2009.

The roads include Arizona 87, 86 and 260, plus U.S. 191 and 60, covering everything from flat desert to rugged mountains. More than 16 miles of the roads are anywhere from 27 to 548 deaths per 100 million miles traveled. The state average is 1.27.


"There are many places like this where the roads are narrow and the weather can come up on you out of nowhere: wind, snow, sleet, dust, anything. You have to be extremely vigilant," Arizona Department of Public Safety spokesman Bart Graves said.

Engineers at ADOT caution against reading too much into the figures.

"Traffic or fatality rate can be utterly misleading," said ADOT safety engineer Kohinor Kar, citing causes such as speeding, fatigue, inattention or distractions.

"The crash or fatality rate alone cannot give us the actual safety performance of the facilities concerned," he said.

ADOT has its own method for isolating hot spots. ADOT typically looks at one-mile stretches and identifies those where high numbers of serious crashes occur over three years. Based on its data, for example, the agency determined that vehicles stray off the road at certain spots along two of the five deadliest rural roads for single-car crashes.

On state-managed highways, about six in 10 deaths in solo crashes statewide from 2004 to 2009.

ADOT's traffic-safety efforts can only tackle part of the problem. Better-designed cars, stronger enforcement of road laws, improved driver's education and better driver habits have been shown over decades of research to save lives. Arizona's highway-safety plan highlights five areas: impaired driving, seatbelt compliance, teen driving, speeding, and intersections and lane departures.

ADOT can only control one, by designing safer roads. "If we don't get to the soft stuff, behavioral issues, we won't get to zero," ADOT engineer Michael Manthey said.

Instead, Arizona highway engineers have turned to three new approaches, a combination of their own initiatives and work on the federal experiment, which involves five states:

- Predictive modeling. ADOT examines road conditions, predicts common crashes and estimates how many can be eliminated with specific improvements.

- Median barriers reduce crashes by 43 percent. ADOT at first used the use of a rumble strip, a series of grooves cut into the pavement like an alligator's back, to jar drowsy drivers when they stray off the road. Shoulder rumble strips have been found to reduce run-off crashes by as much as 43 percent. ADOT made them standard on all highways.

- Each engineering approach has its own effectiveness ratings. For instance: Median barriers reduce crashes by as much as 43 percent. ADOT made them standard on all highways.

- ADOT has seen a 5 percent drop in the crash rate.

- ADOT is also developing new flexible reflector poles on the sides of highways. Because the poles are made of plastic, a car will survive hitting one. ADOT has calculated the correct spacing on curves, so drivers can gauge the arc of a road, and has added red reflectors to the back of the poles so people know when they are driving the wrong way.

ADOT has set the goal of each enhancement reducing crashes at 12 percent a year and the overall crash rate at 15 percent a year. Manthey said.

Gutier praised ADOT's effort but said improving driving habits remains a challenge. "On rural highways, people just aren't paying attention."