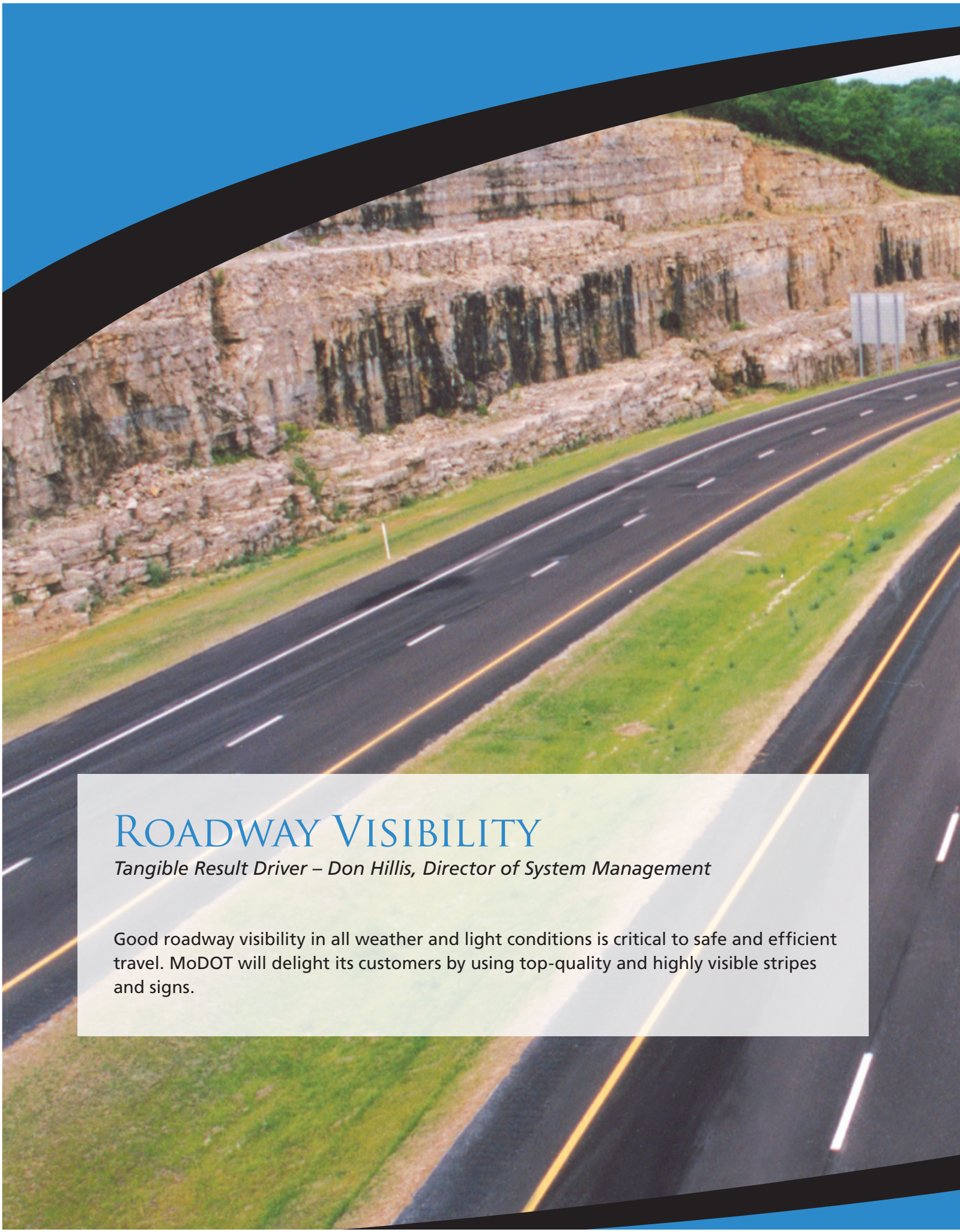
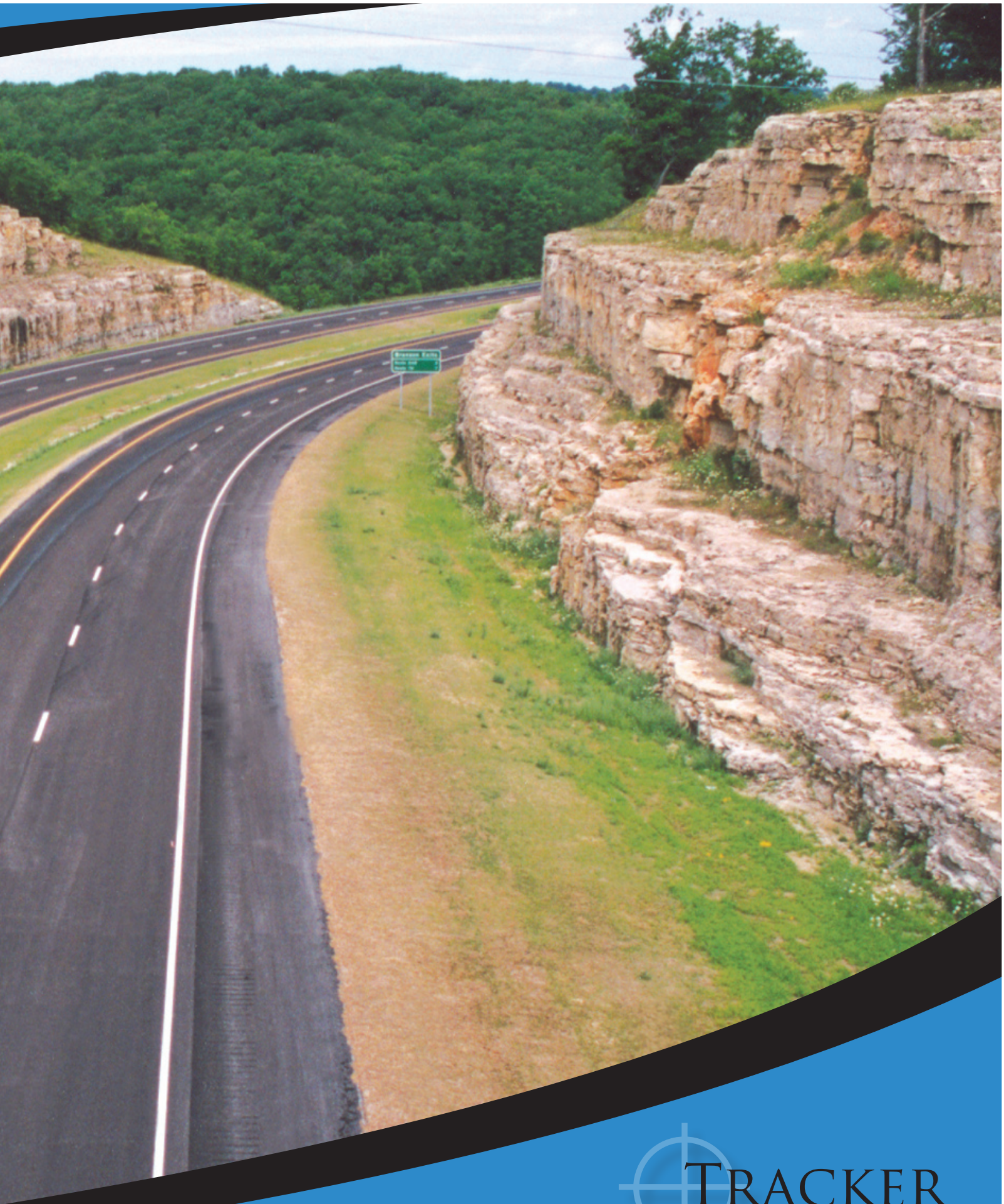


Roadway Visibility

Tangible Result Driver – Don Hillis, Director of System Management

Good roadway visibility in all weather and light conditions is critical to safe and efficient travel. MoDOT will delight its customers by using top-quality and highly visible stripes and signs.



Tracker

Measures of Departmental Performance

Number of nighttime crashes-4a

Result Driver: Don Hillis, Director of System Management
Measurement Driver: Mike Curtit, Assistant State Traffic Engineer

Purpose of the Measure:

This measure tracks the types of crashes where visibility of stripes and signs may be a contributing crash factor.

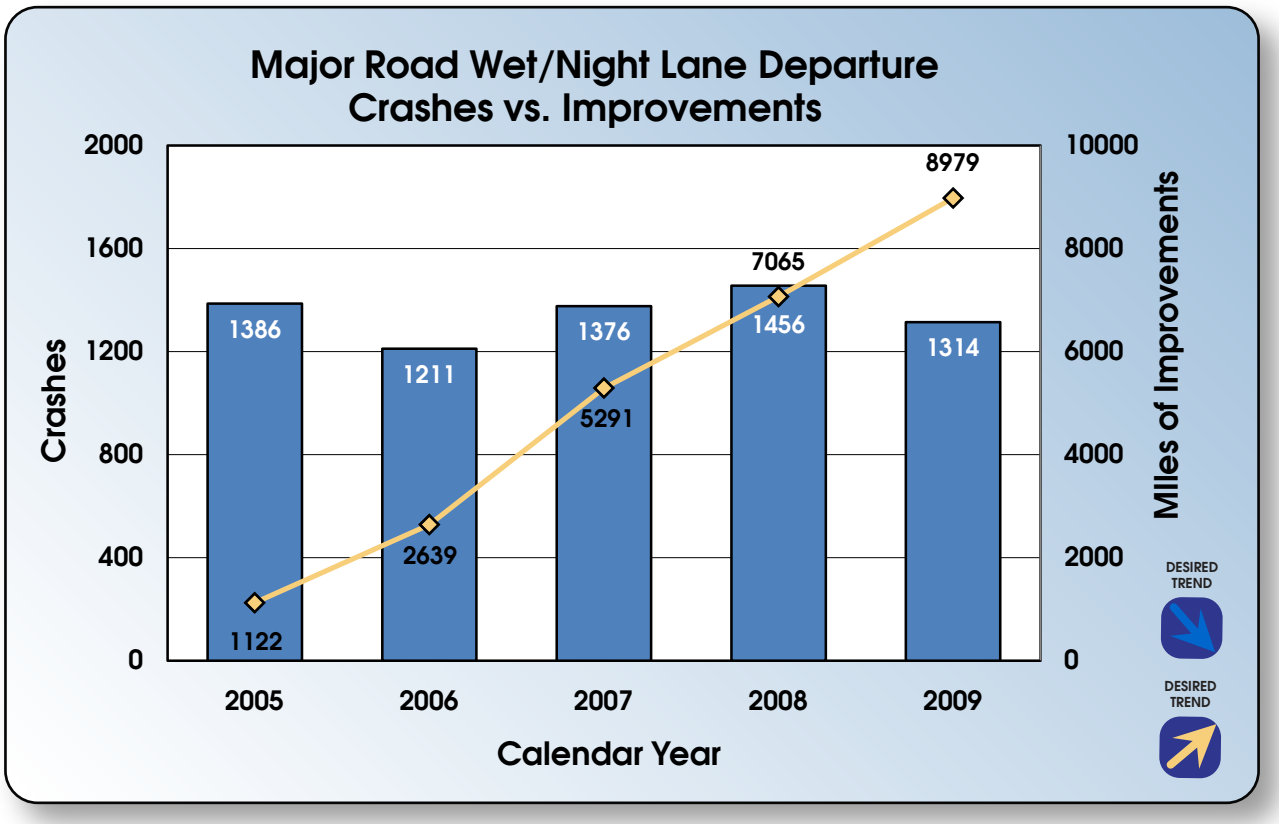
Measurement and Data Collection:

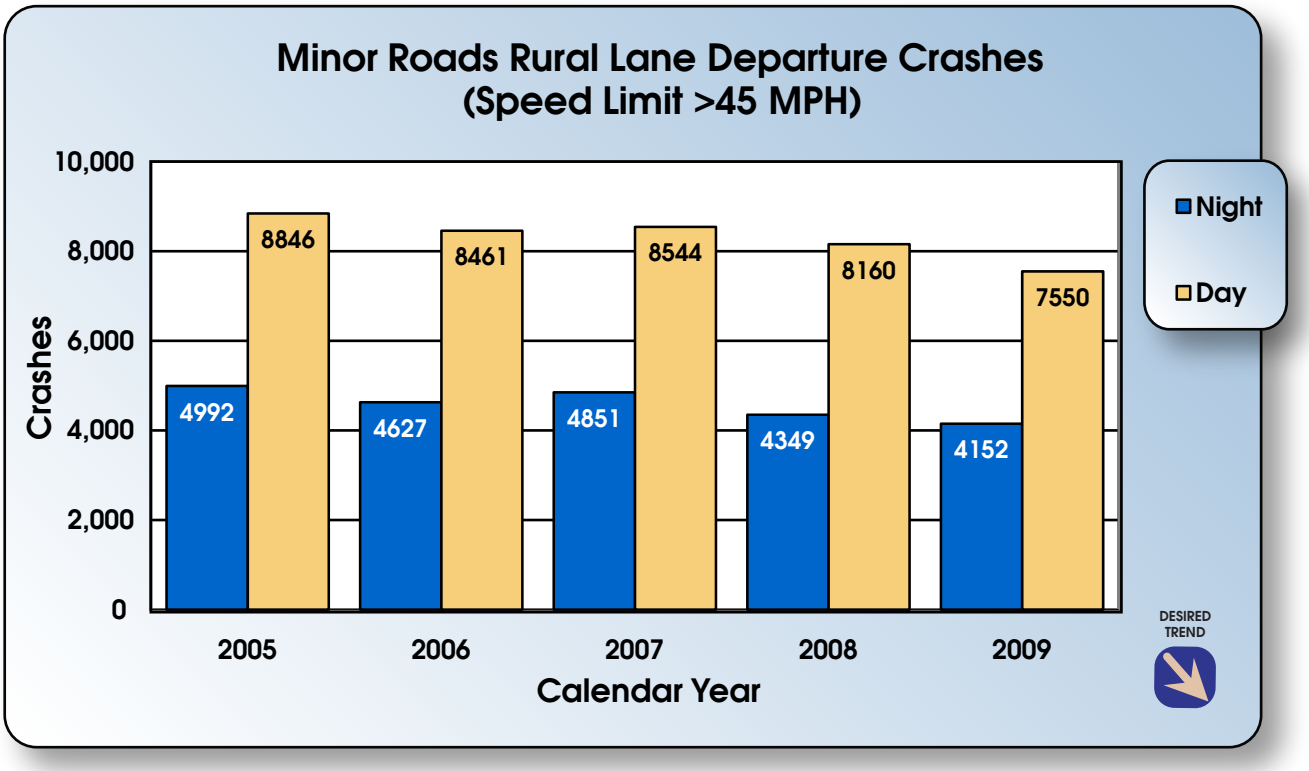
For major roads, data is collected from the statewide crash database to identify and measure the number of lane departure crashes that occur during nighttime with wet pavement conditions. For minor roads, data is collected from the statewide crash database to identify and measure the number of lane departure crashes that occur during daytime and nighttime conditions for rural segments (speeds greater than 45 mph). Major roadways are generally used for statewide or interstate travel and minor roadways are generally used for local traffic needs. This is an annual measure with the data updated each April.

Improvement Status:

Although the number of wet/night lane departure crashes on major roads decreased nearly 10 percent for 2009, the trend for the last five years is increasing slightly. The number of lane departure crashes on rural minor roads continues to decrease. In 2009 crashes decreased 7 percent during the daytime and 4 percent during dark conditions.

As part of the improvements included in the Better Roads, Brighter Future program, over 500 miles of edgeline and centerline rumble stripes have been installed. In 2009, just over 2,000 miles of additional minor roads have had an edgeline installed. This year, nearly 100 percent of the stripes on major roads were in good condition prior to Memorial Day. A multi-year program to add advisory speed signs to all curve signs was completed in December 2009.





Edgeline Rumble Strips

Percent of signs that meet customers' expectations-4b

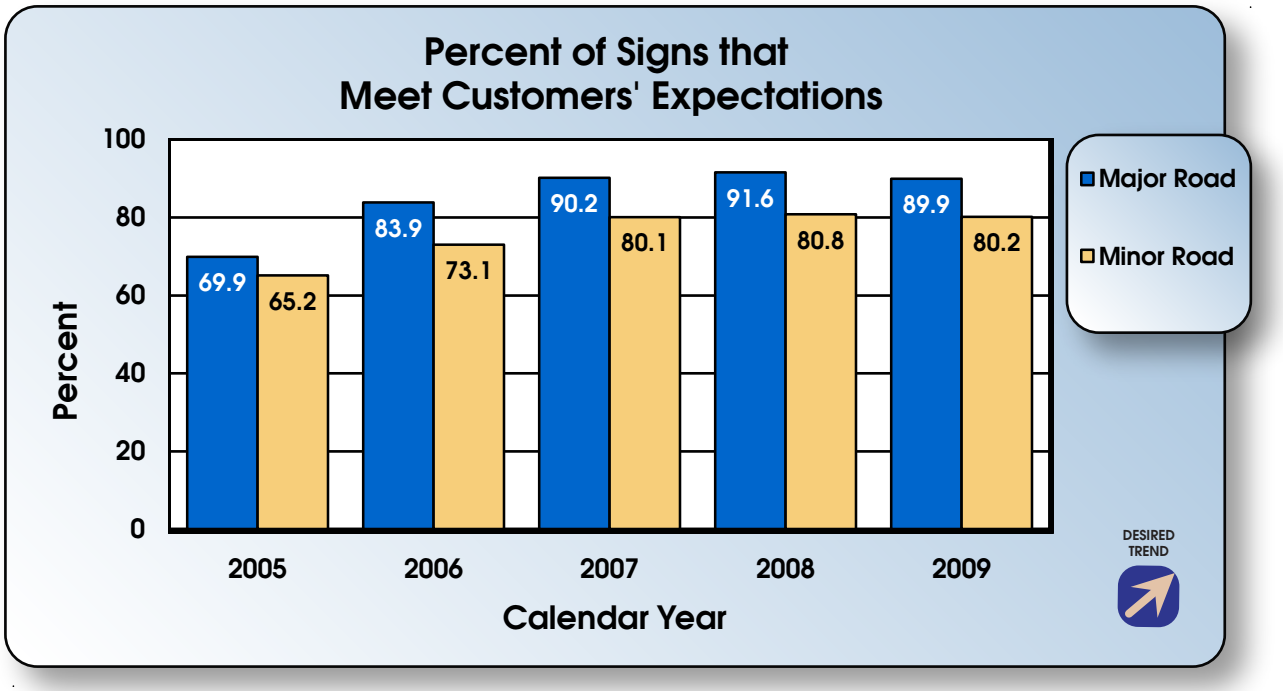
Result Driver: Don Hillis, Director of System Management
Measurement Driver: Mike Curtit, Assistant State Traffic Engineer

Purpose of the Measure:
This measure will track whether the department's sign policy, design standards and sign replacement policy are resulting in visible signs that meet customers' expectations.

Measurement and Data Collection:
Sign-quality attributes that define user expectations have been developed based on an industry-wide literature review. The attributes selected for this measure are those that can be captured during a night sign log. A night sign log is conducted on randomly generated road segments. MoDOT employees drive a road at night, recording the location and condition of the signs, particularly how visible the signs are with headlights. MoDOT employees collect the data annually in the fall, and update it each October.

Improvement Status:
Almost 90 percent of signs on major highways are in good condition. Slightly over 80 percent of the signs on minor roads are in good condition. This represents a 2 percent decrease from last year for major roads and less than a 1 percent decrease for minor roads.

In the last twelve months, MoDOT's sign shop has produced over 110,000 new signs for the districts. MoDOT continues to perform annual inspections of every sign in Missouri and does random quality assurance reviews targeted at signing.



Percent of stripes that meet customers' expectations-4c

Result Driver: Don Hillis, Director of System Management
Measurement Driver: Jim Brocksmith, Traffic Liaison Engineer

Purpose of the Measure:

This measure tracks whether MoDOT's striping policy, processes and materials used are resulting in visible stripes that meet customers' expectations.

Measurement and Data Collection:

Striping quality attributes that define user expectations have been developed based on an industry-wide literature review. The attribute selected for this measure is the brightness of the striping at night.

MoDOT conducts an annual Statewide Telephone Customer Satisfaction Survey. For the 2010 survey, two new questions about pavement markings were included. The survey asked the customers to respond to the following statements: "The striping on MoDOT highways is bright enough for you to see" and "How satisfied are you with MoDOT's effort to: provide visible roadside / centerline striping."

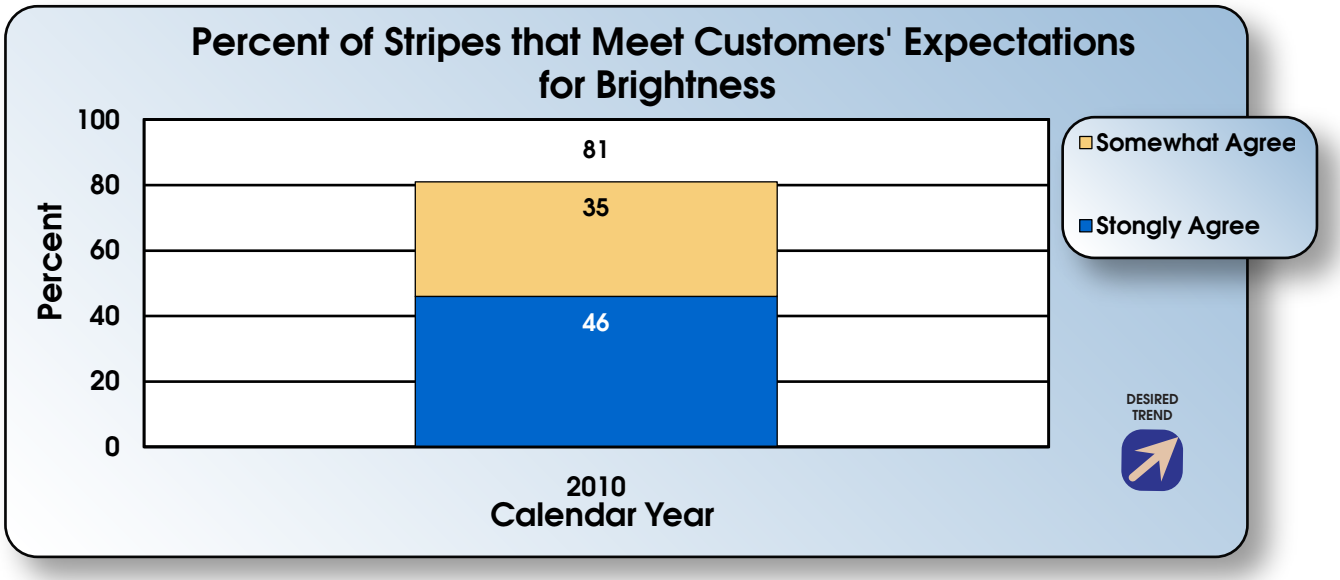
Improvement Status:

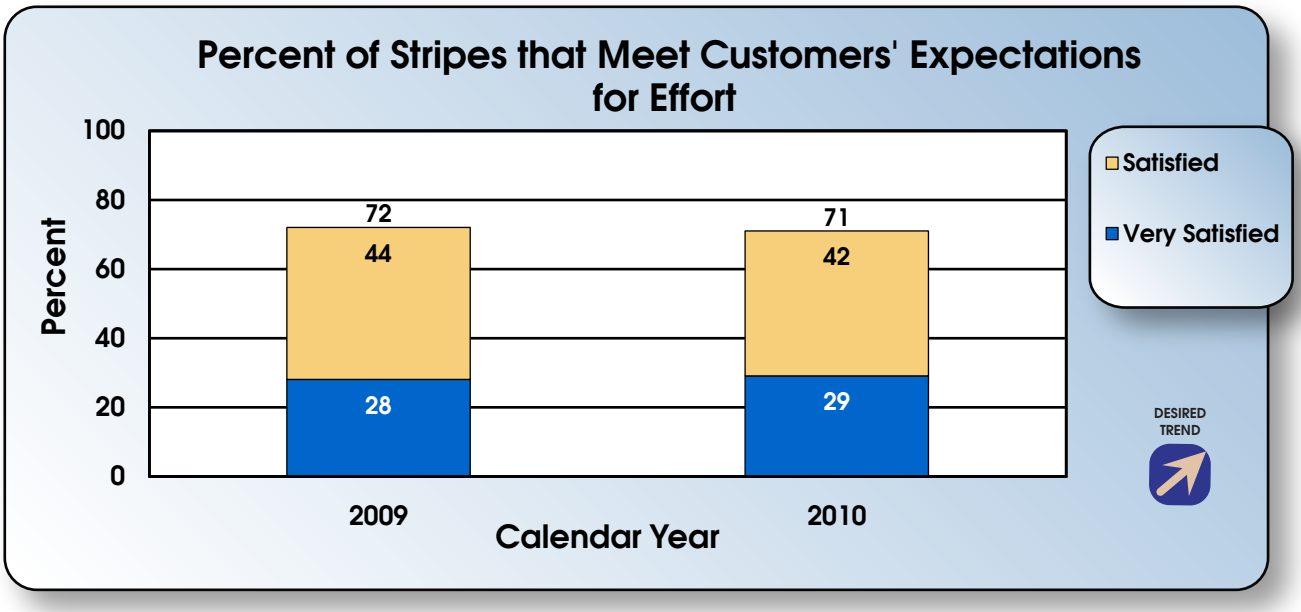
This is a significant revision of the way this measure is reported. In the past retroreflectivity data was collected on random samples of roads to determine how they compared to benchmarks that had been established. Retroreflectivity is measured as the amount of light from vehicle headlights that is returned to the driver. This is the first report of this measure to use the results of the Statewide Telephone Customer Satisfaction Survey to gauge how the traveling public views the quality of MoDOT pavement markings.

The results from the survey were positive. The responses to the brightness question are 46 percent strongly agree, 35 percent somewhat agree, 14 percent somewhat disagree and 6 percent strongly disagree. Overall 81 percent of the respondents agreed that the pavement markings are bright enough for them. The responses from the effort question are 29 percent very satisfied, 42 percent satisfied, 18 percent neutral and 11 percent dissatisfied (this includes both dissatisfied and very dissatisfied). Overall 71 percent are satisfied and only 11 percent are dissatisfied with our efforts.

These results compare favorably to the spring 2009 retroreflectivity readings of 74.2 percent on major roads and 77.8 percent on minor roads meeting expectations.

We continue expanding the use of wet reflective markings on major highways. A new system using a liquid applied pavement marking is being installed in a groove. This system also includes the use of a wet reflective optics system to provide increased visibility on rainy nights. Inlaid pavement markers are being installed on two sections of interstate highways to better evaluate their effectiveness and durability.




Percent of Stripes that Meet Customers' Expectations for Effort
Percent
100
80
60
40
20
0
72
44
28
71
42
29
2009
2010
Calendar Year
Satisfied
Very Satisfied
DESIRED TREND