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# Uninterrupted Traffic Flow

*Tangible Result Driver – Don Hillis,  
Director of System Management*

Missouri drivers expect to get to their destinations on time, without delays. Traffic, changes in weather, work zones and highway incidents can all impact their travel. MoDOT works to ensure that motorists travel as efficiently as possible on the state system by better managing work zones, snow removal and highway incidents, and by using the latest technology to inform motorists of possible delays and available options. Better traffic flow means fewer crashes.



## Uninterrupted Traffic Flow

### *Average speeds on selected roadway sections*

**Result Driver:** Don Hillis, Director of System Management

**Measurement Driver:** Eileen Rackers, State Traffic Engineer

**Purpose of the Measure:**

This measure tracks average speeds on various roadway sections. The desired trend is for the average speed to approach the posted speed limit.

**Measurement and Data Collection:**

Data from the St. Louis area is provided through our partnership with [www.Traffic.com](http://www.Traffic.com). They have installed traffic sensors along five routes in the St. Louis metropolitan area to help monitor traffic conditions. This data is reported for weekdays only, to better represent peak traffic conditions, and is consistent with Kansas City's reporting. The data from St. Louis is for large sections of roadway, while Kansas City and statewide data are shown at specific sensor locations.

**Improvement Status:**

Statewide:

Average speeds in all but one location meet or exceed the past years' averages. The location on Interstate-35 in Daviess County is experiencing construction that began in July. To help improve average speeds, live traffic data for three Missouri metro areas is available on MoDOT's Web site at [www.Modot.org](http://www.Modot.org) in the services section under traveler services. Kansas City Scout provides traffic information for Kansas City, Gateway Guide provides traffic information for St. Louis and Ozarks Traffic provides traffic information for Springfield. MoDOT's Web site also provides a work zone map.

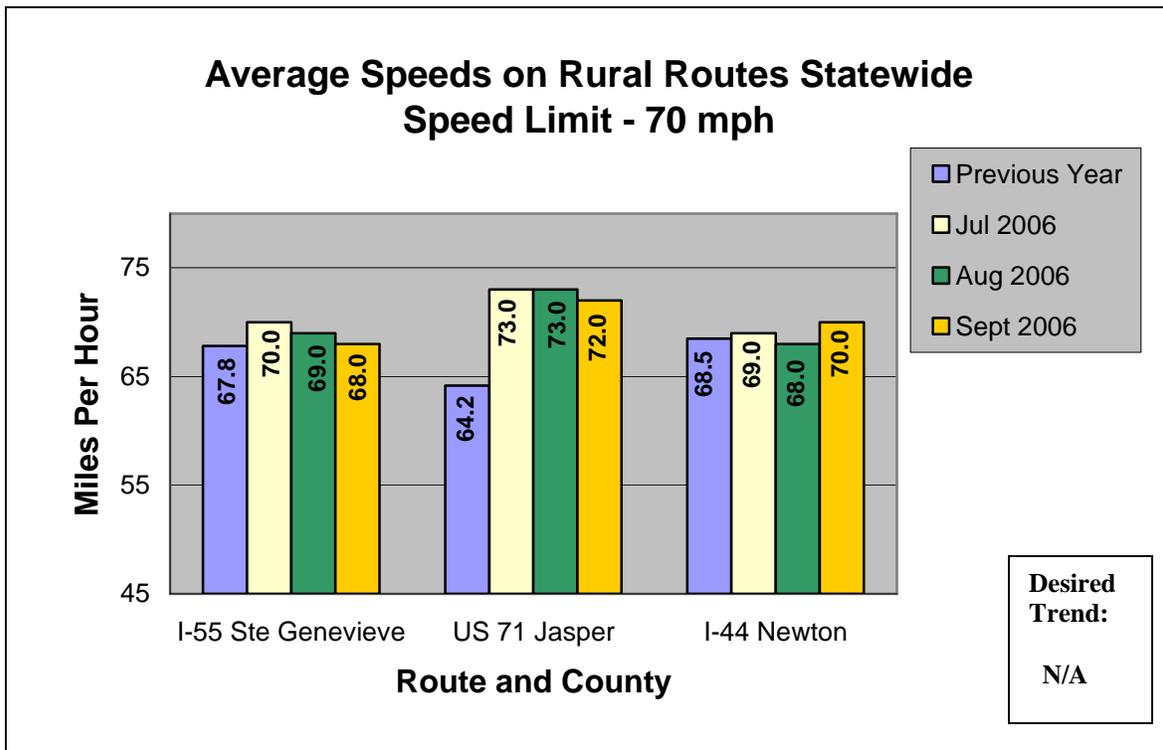
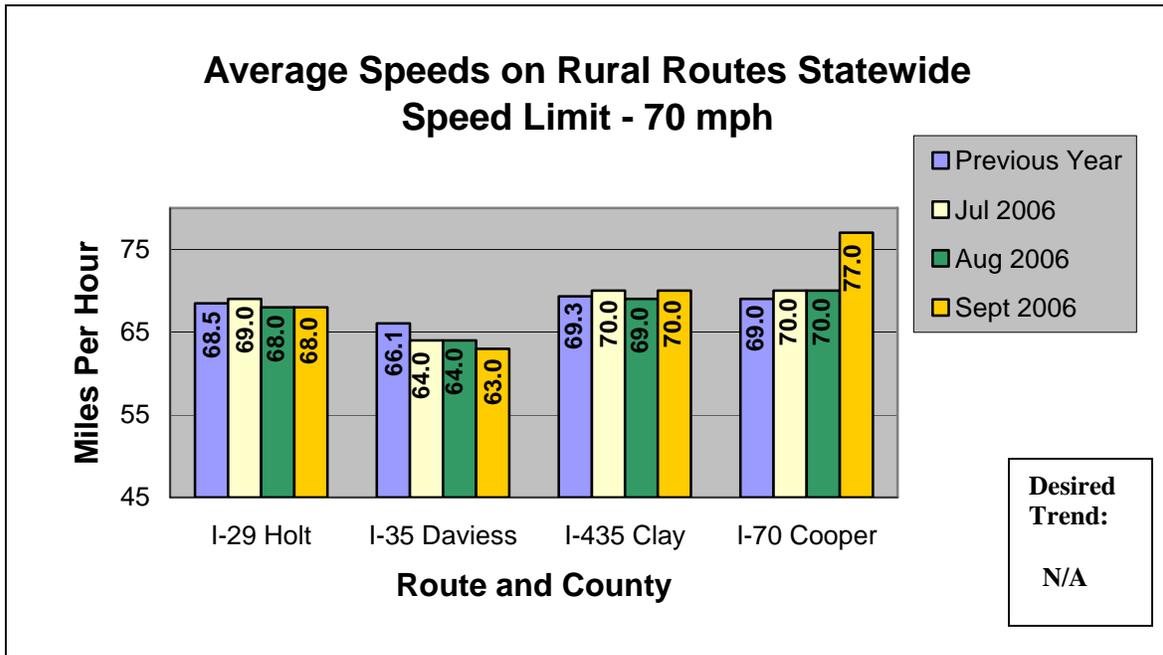
St. Louis:

Generically the average speeds are steady to slightly higher as compared to the previous quarter and are relatively close to the posted speed limits. Afternoon traffic continues to be slower due to increased traffic volumes.

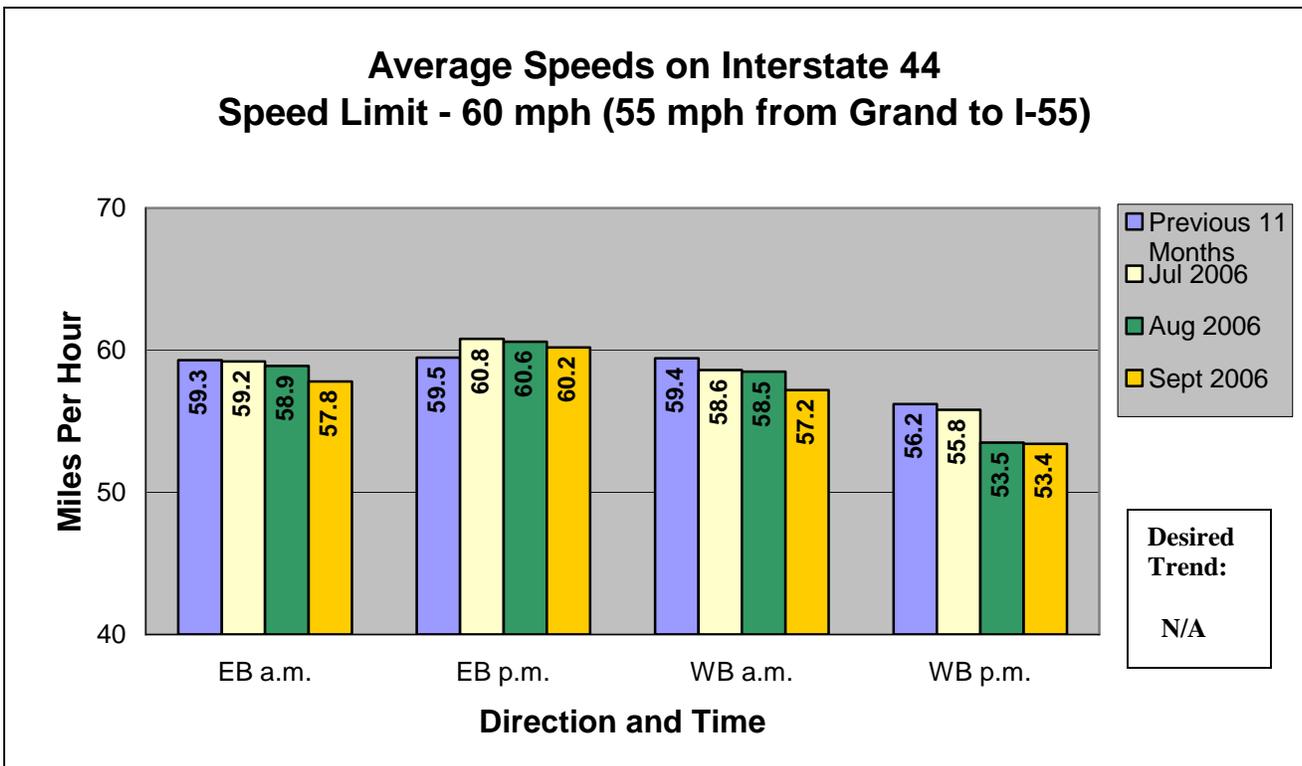
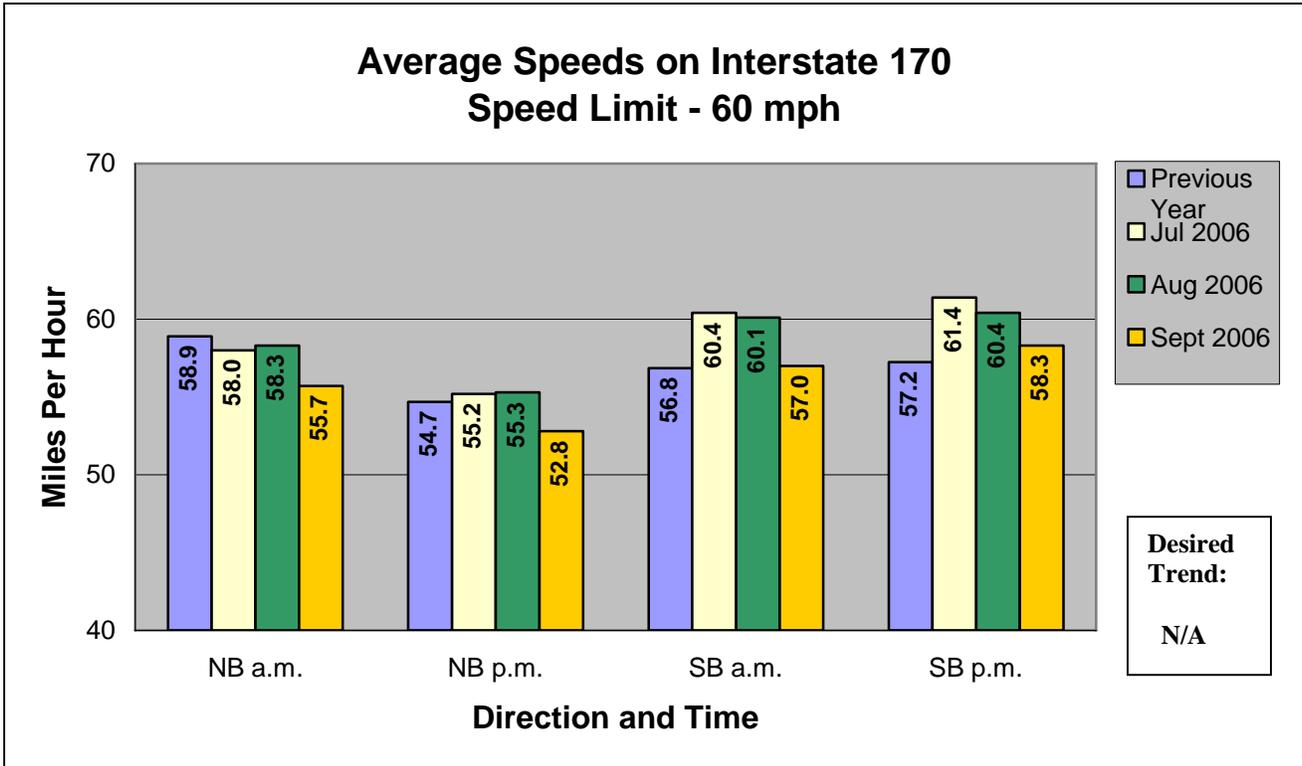
Kansas City:

In Kansas City, eastbound Interstate 435 at 104th Street improvements are the product of a third lane that opened this past summer. The I-35 Paseo Bridge at Armour road is experiencing higher than normal traffic volumes due to the I-435 and I-635 Missouri River bridges each having one lane closed. I-35 at 27<sup>th</sup> Street is being impacted by the staged bridge rehabilitation of 13 bridges just to the north. Fluctuations in the peak hour speeds are due to the various lane closures throughout the construction season. This construction is scheduled for completion by the end of this year.

**STATEWIDE**

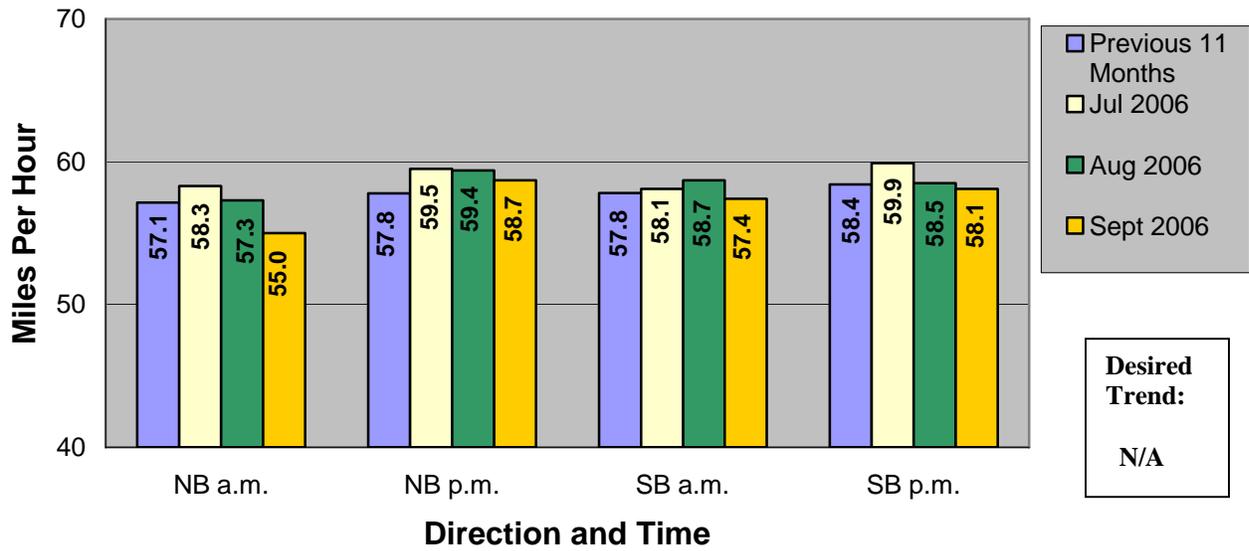


**ST. LOUIS**

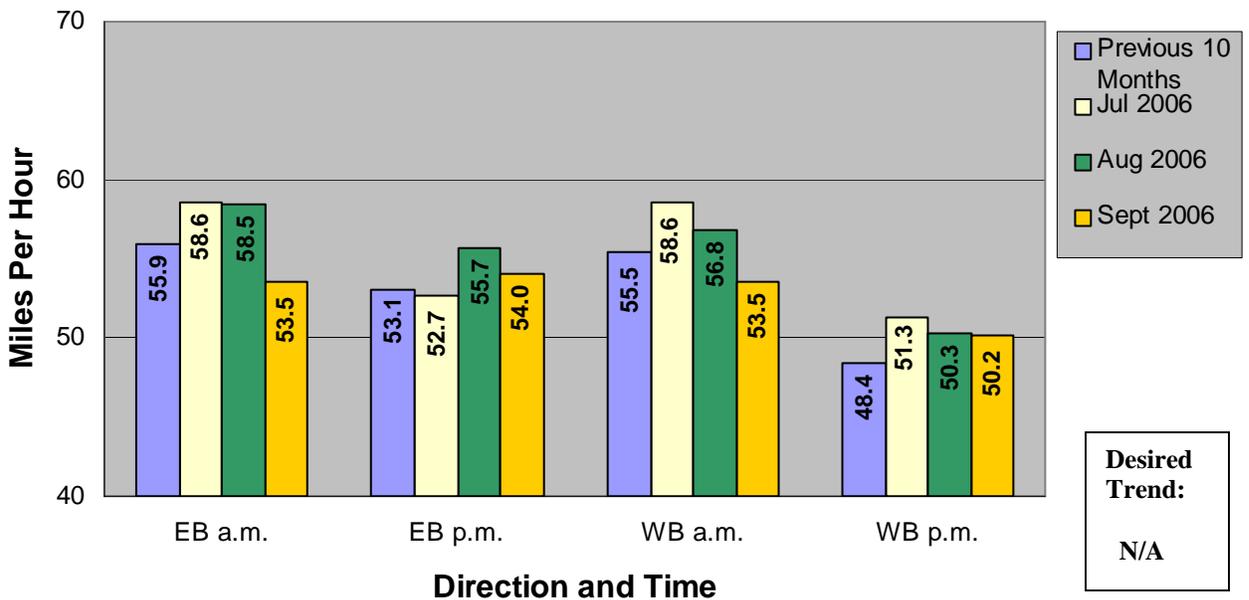


**ST. LOUIS**

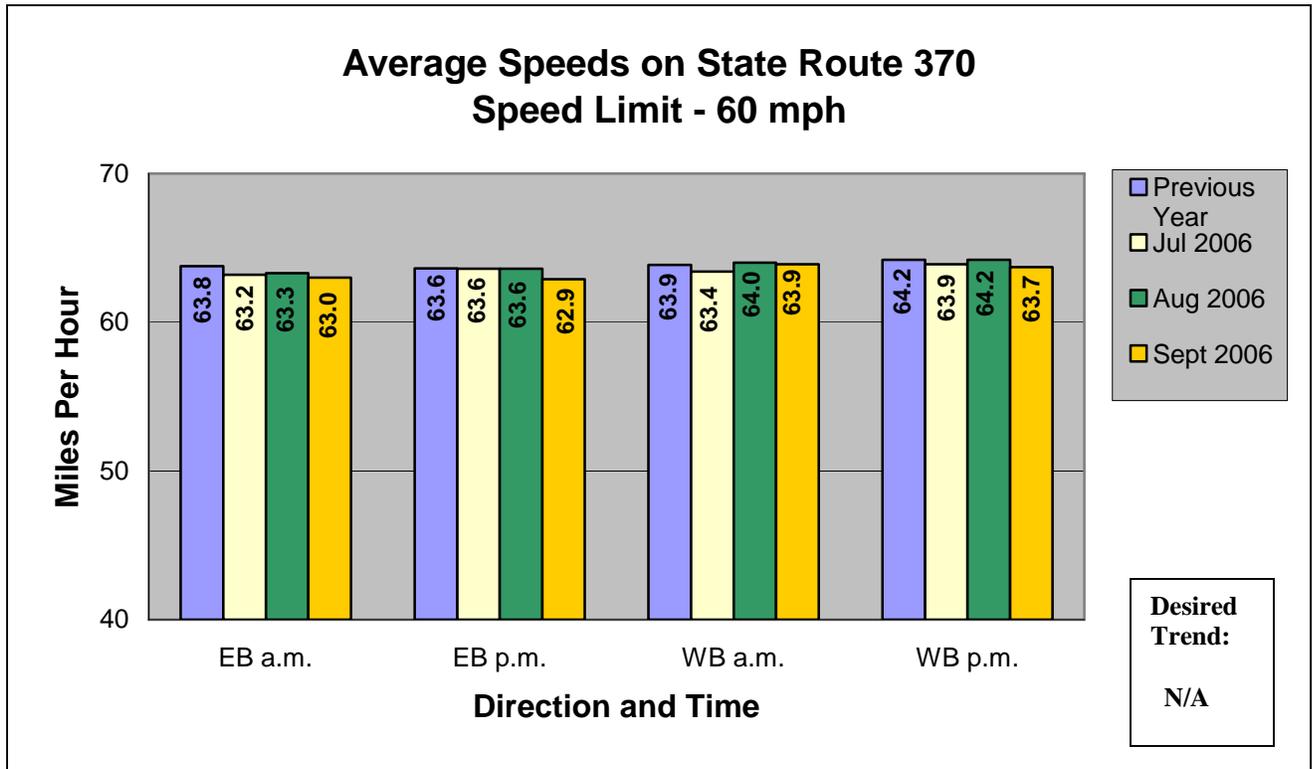
**Average Speeds on Interstate 55  
Speed Limit - 60 mph (55 mph from I-44 to River)**



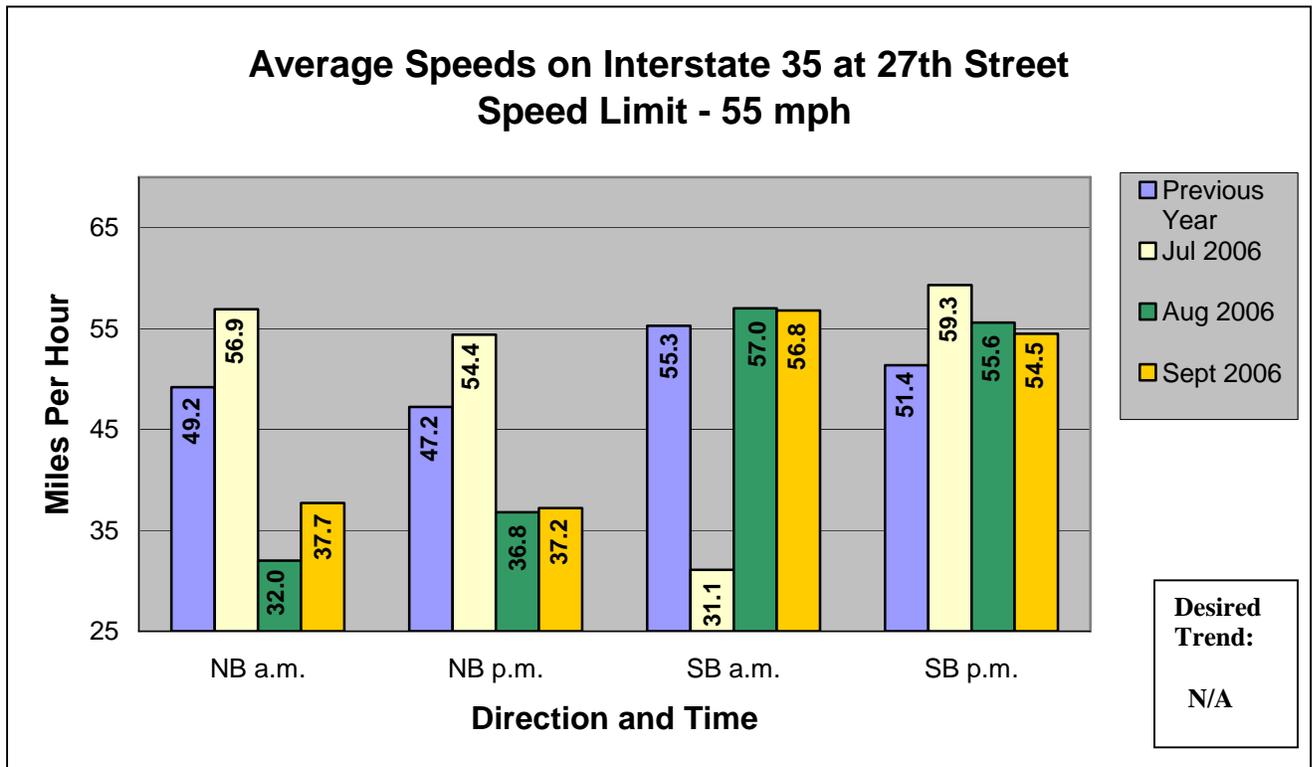
**Average Speeds on Interstate 64  
Speed Limit - 55 mph**



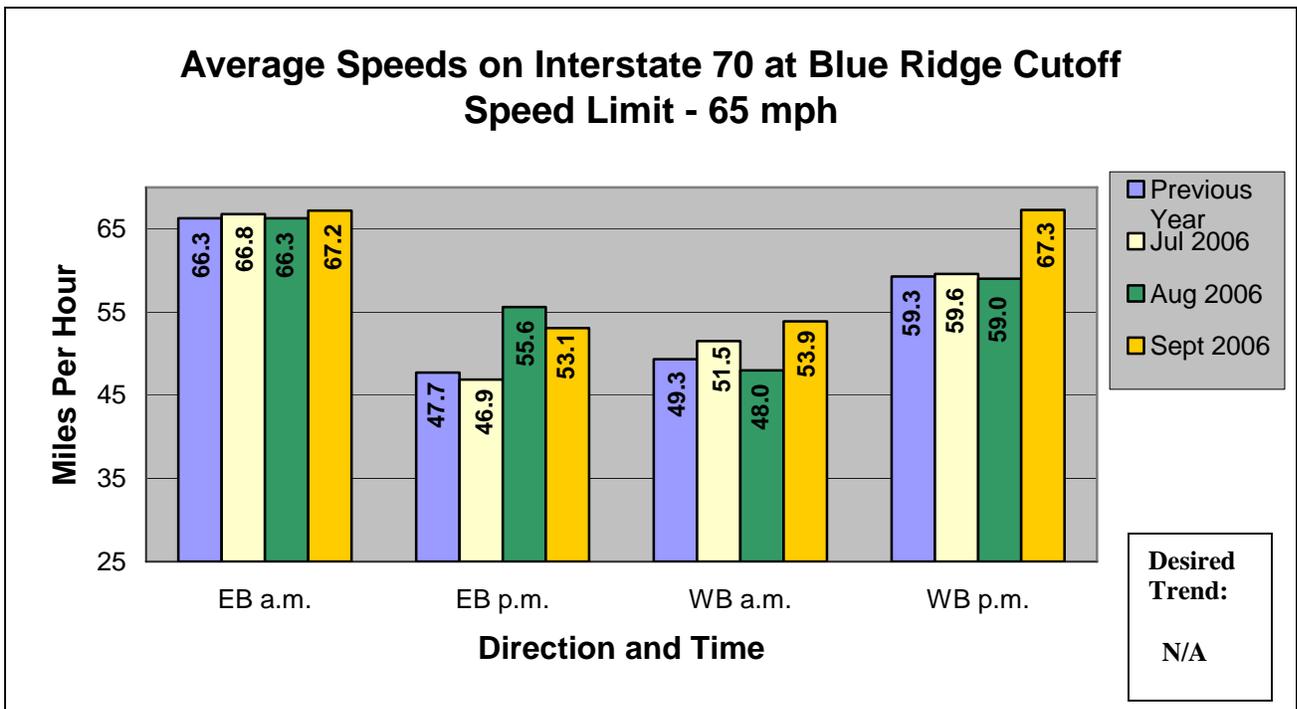
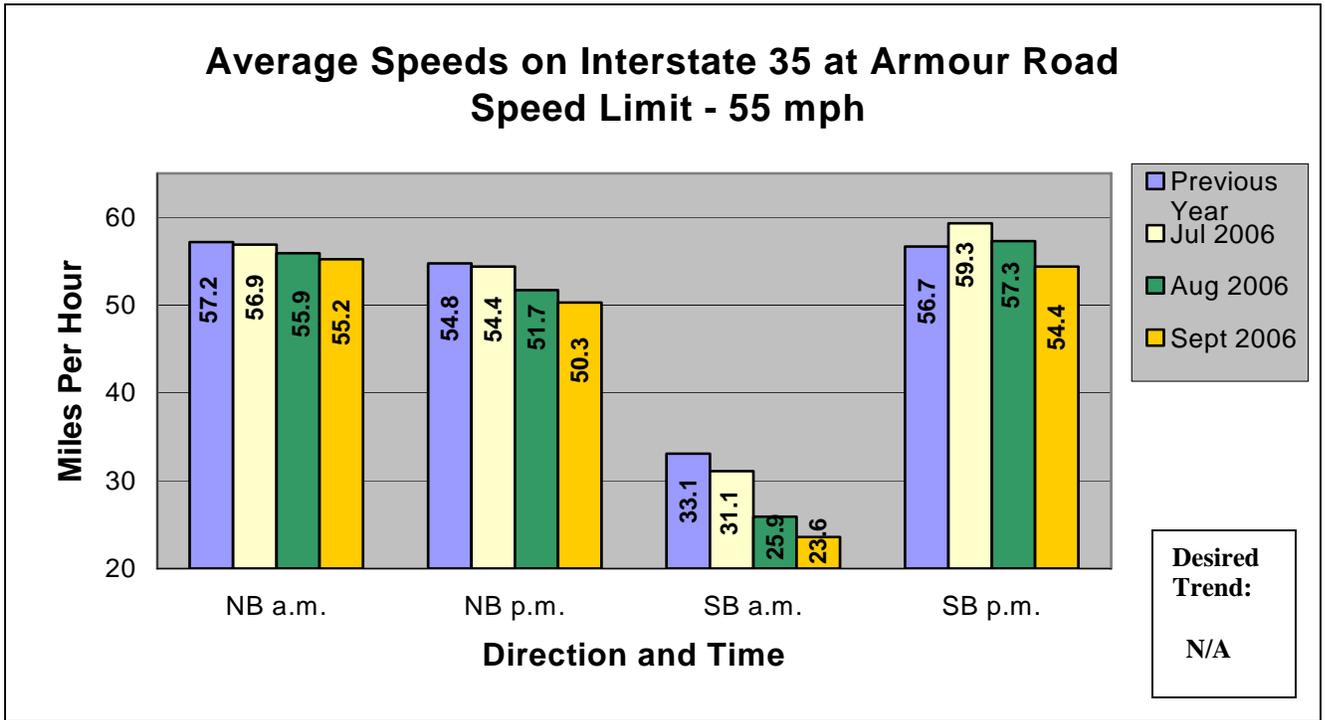
**ST. LOUIS**



**KANSAS CITY**

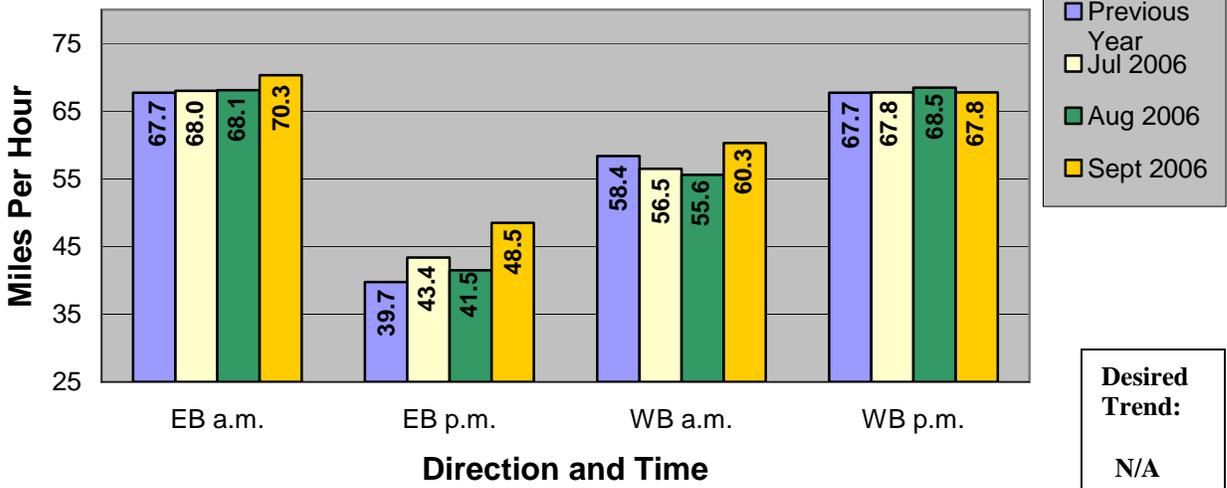


**KANSAS CITY**



KANSAS CITY

**Average Speeds on Interstate 435 at 104th Street  
Speed Limit - 65 mph**



# Uninterrupted Traffic Flow

## *Average time to clear traffic incident*

**Result Driver:** Don Hillis, Director of System Management  
**Measurement Driver:** Rick Bennett, Technical Support Engineer

**Purpose of the Measure:**

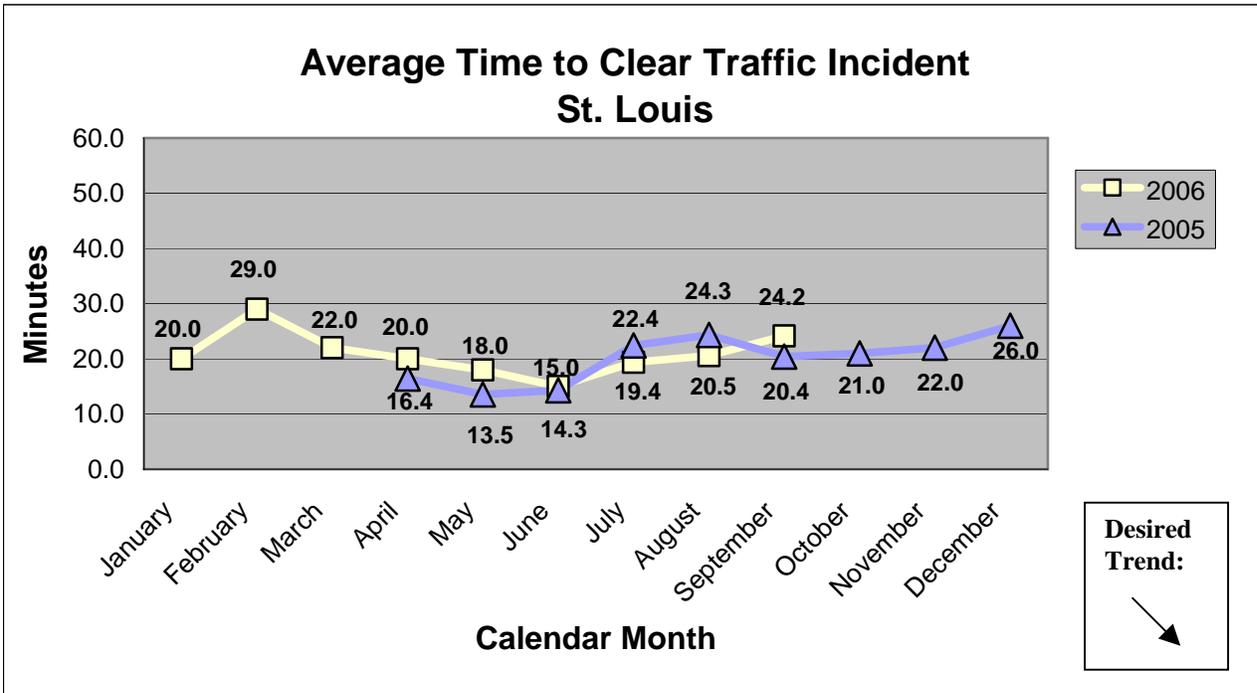
This measure is used to determine the trends in incident clearance on the state highway system. A traffic incident is an unplanned event that creates a temporary reduction in the number of vehicles that can travel on the road. The sooner an incident is removed, the sooner the highway system returns to normal capacity. Therefore, responding to and quickly addressing the incidents (crashes, flat tires and stalled vehicles) improves system performance.

**Measurement and Data Collection:**

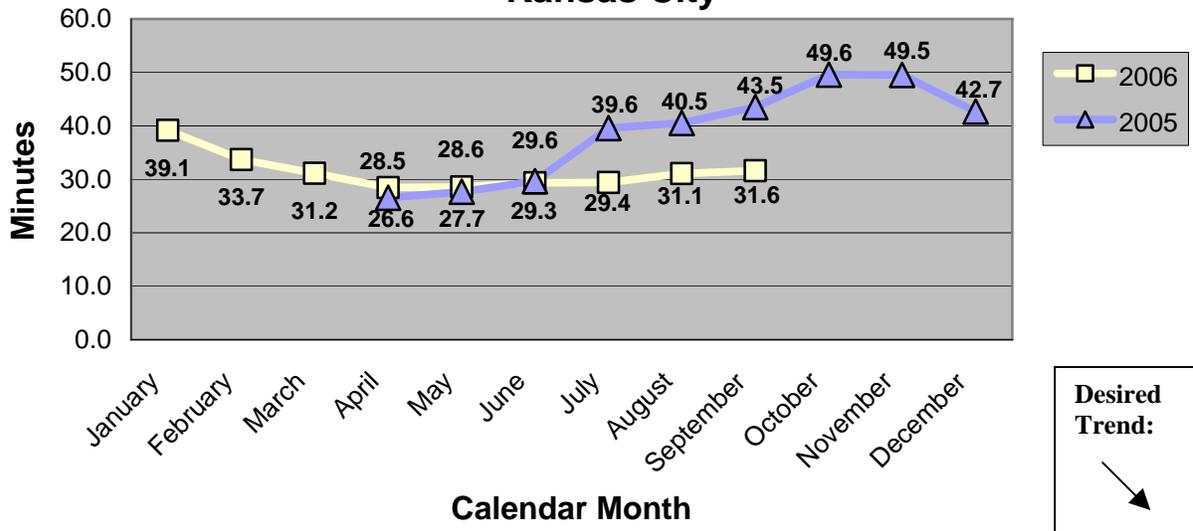
Collection of data began March 1, 2005. Motorist Assist operators and Traffic Management Center staff are recording “time of arrival” and the time for “all lanes cleared.” Average time to clear traffic incidents is calculated from these times. The data includes only those incidents handled by Motorist Assist and urban Emergency Response crews in the Kansas and St. Louis areas.

**Improvement Status:**

Overall, data shows that both St. Louis and Kansas City areas continued to experience consistent incident clearance times. The slight increase in St. Louis during September can be attributed to an operations shutdown due to the death of a Motorist Assist operator and the impact on the St. Louis operators. Renewed efforts in incident management in the St. Louis and Kansas City regions are helping to develop long-term partnerships with local agencies and identify MoDOT’s expectations for quick clearance and open roadways with the ultimate goal of improving clearance times.



### Average Time to Clear Traffic Incident Kansas City



**Desired Trend:**  


# Uninterrupted Traffic Flow

## *Average time to clear traffic backup from incident*

**Result Driver:** Don Hillis, Director of System Management  
**Measurement Driver:** Rick Bennett, Technical Support Engineer

**Purpose of the Measure:**

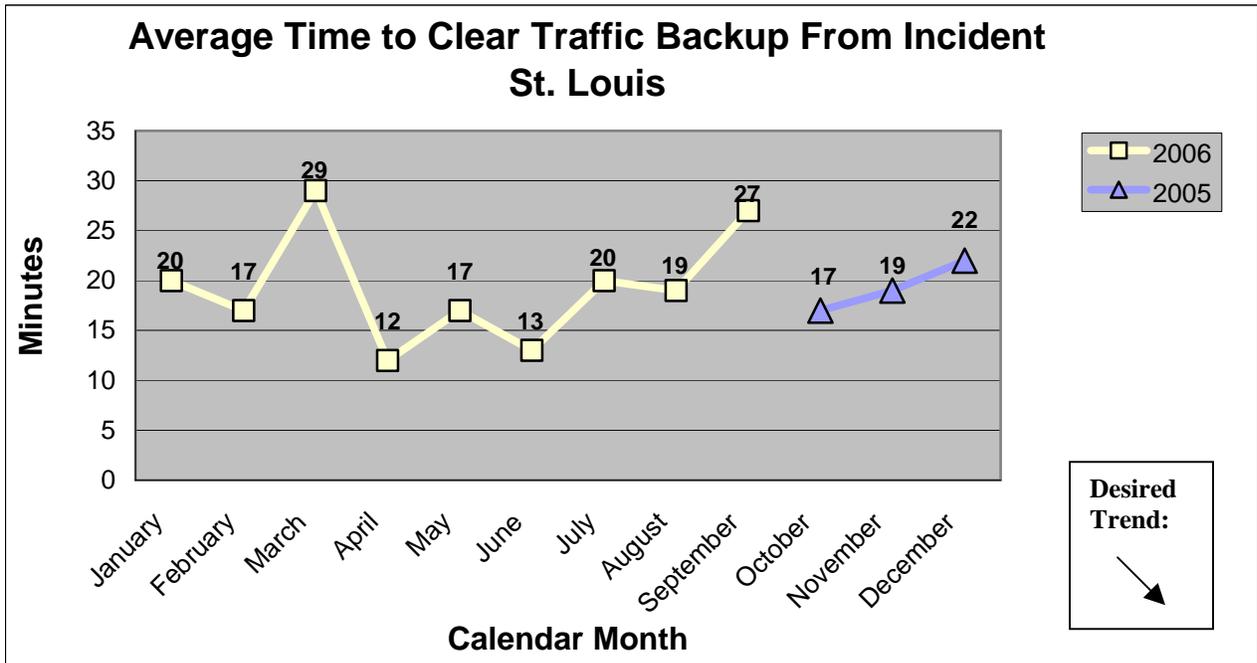
This measure tracks the amount of time it takes to return traffic flow back to normal after a traffic incident. A traffic incident is any unplanned event that creates a temporary reduction in the number of vehicles that can travel on the road.

**Measurement and Data Collection:**

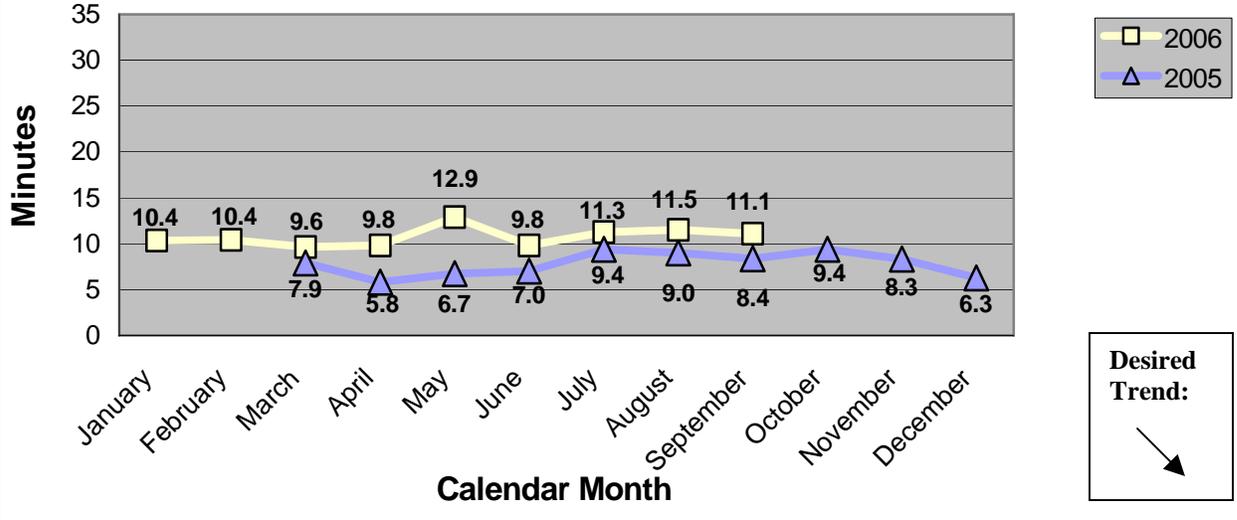
“Lanes cleared” and “clear backup” times are being recorded by the Traffic Management Center operators using automated detection systems. The Kansas City area has devices to collect data along portions of interstates 435 and 70. St. Louis collects data manually using video equipment and verification from Motorist Assist operators. St. Louis will use advanced transportation management system devices and software when they become available. Average times to clear traffic backups are calculated from these recorded times.

**Improvement Status:**

This data shows clearance times in Kansas City average around 11 minutes, while the St. Louis metro area clearance times are higher. The St. Louis data is somewhat skewed because it includes most major incidents on the St. Louis freeway network. The St. Louis data does not necessarily capture short-term incidents that clear before a Motorist Assist operator can get to the scene. The Kansas City data includes all detected incidents on the KC Scout, the Kansas City emergency response unit, instrumented routes. St. Louis area routes also have larger traffic volumes that create more significant congestion problems than in Kansas City. The spike in St. Louis data in March 2006 is largely due to two major incidents during peak periods. There are also minor spikes in May 2006 in both St. Louis and Kansas City again due to major incidents during peak periods. The spiked increase in the St. Louis clearance time in September of 2006 is due to the seasonal traffic increases and increased number of work zones in the area.



## Average Time to Clear Traffic Backup From Incident Kansas City



# Uninterrupted Traffic Flow

## *Number of customers assisted by the Motorist Assist program*

**Result Driver:** Don Hillis, Director of System Management

**Measurement Driver:** Rick Bennett, Technical Support Engineer

**Purpose of the Measure:**

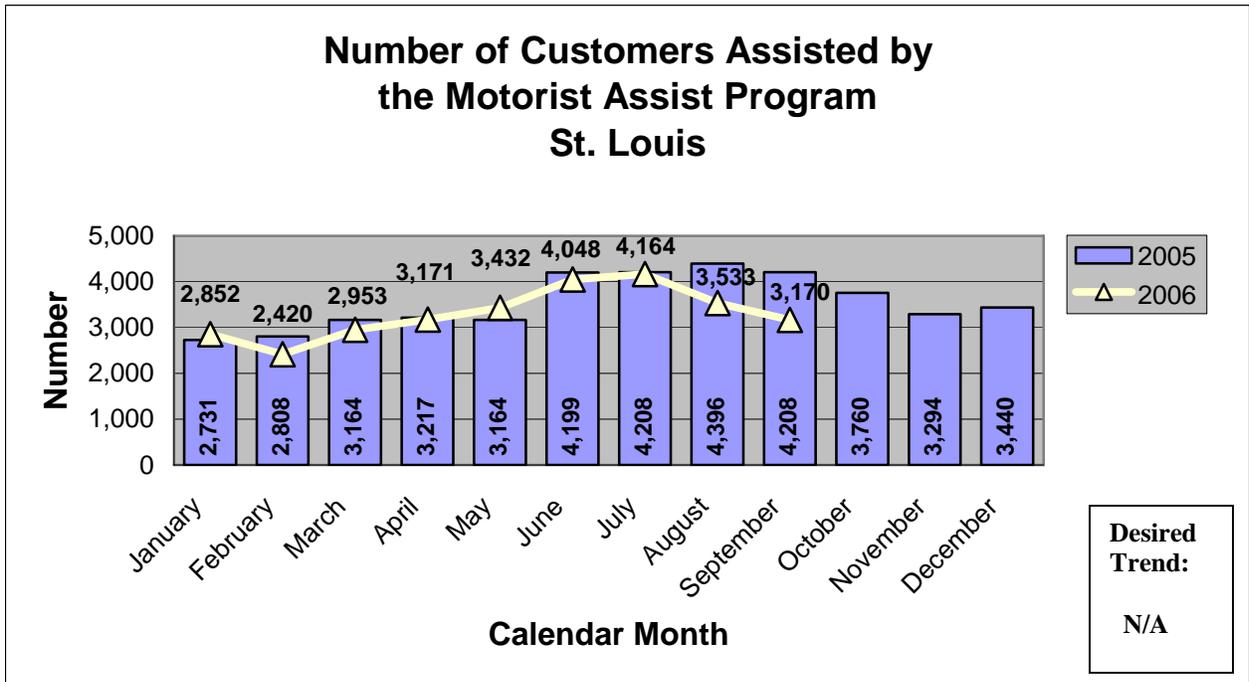
This measure is used to gauge the use of the Motorist Assist programs. Incidents impact Missouri’s transportation system capacity. An incident is any unplanned event that creates a temporary reduction in roadway capacity that impedes normal traffic flow. The sooner an incident is removed, the sooner the highway system returns to normal capacity. Therefore, responding to and quickly addressing the incidents (crashes, flat tires, stalled vehicles, etc.) improves system performance. Our Motorist Assist operators are able to respond to nearly every incident, major or minor, in the areas they cover.

**Measurement and Data Collection:**

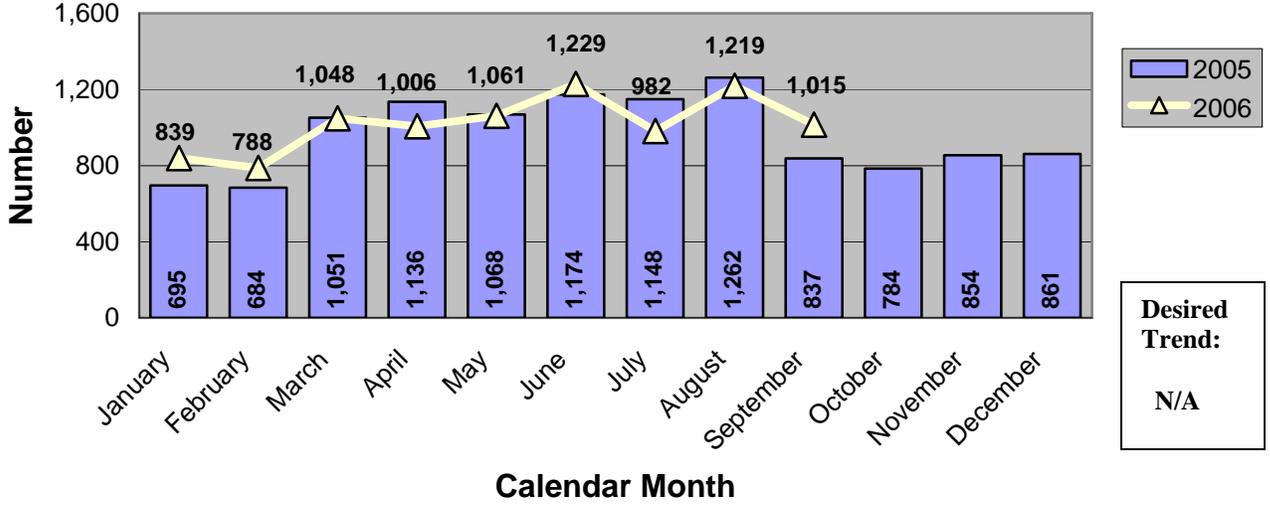
Monthly data collection began in January 2005. The Motorist Assist operators record each assist and then prepare a monthly summary. St. Louis operators patrol approximately 160 freeway miles, while Kansas City operators patrol approximately 60 freeway miles.

**Improvement Status:**

This data demonstrates that the Motorist Assist program in both St. Louis and Kansas City experienced a routine increase in assists due to increased temperatures and roadway volumes. This data demonstrates a typical pattern of increased assists during peak travel season, followed by a decrease in services in late summer and early fall. The decreased number of assists in Kansas City in July is attributed to a decrease in operators available for that time period due to multiple vacations and sick time. The decreased number of assists in St. Louis in the months of August and September is attributed to period of time the operations were shut down due to the death of a Motorist Assist operator in the month of August and its impact on the St. Louis operators.



### Number of Customers Assisted by the Motorist Assist Program Kansas City



# Uninterrupted Traffic Flow

## *Percent of Motorist Assist customers who are satisfied with the service*

**Result Driver:** Don Hillis, Director of System Management  
**Measurement Driver:** Rick Bennett, Technical Support Engineer

**Purpose of the Measure:**

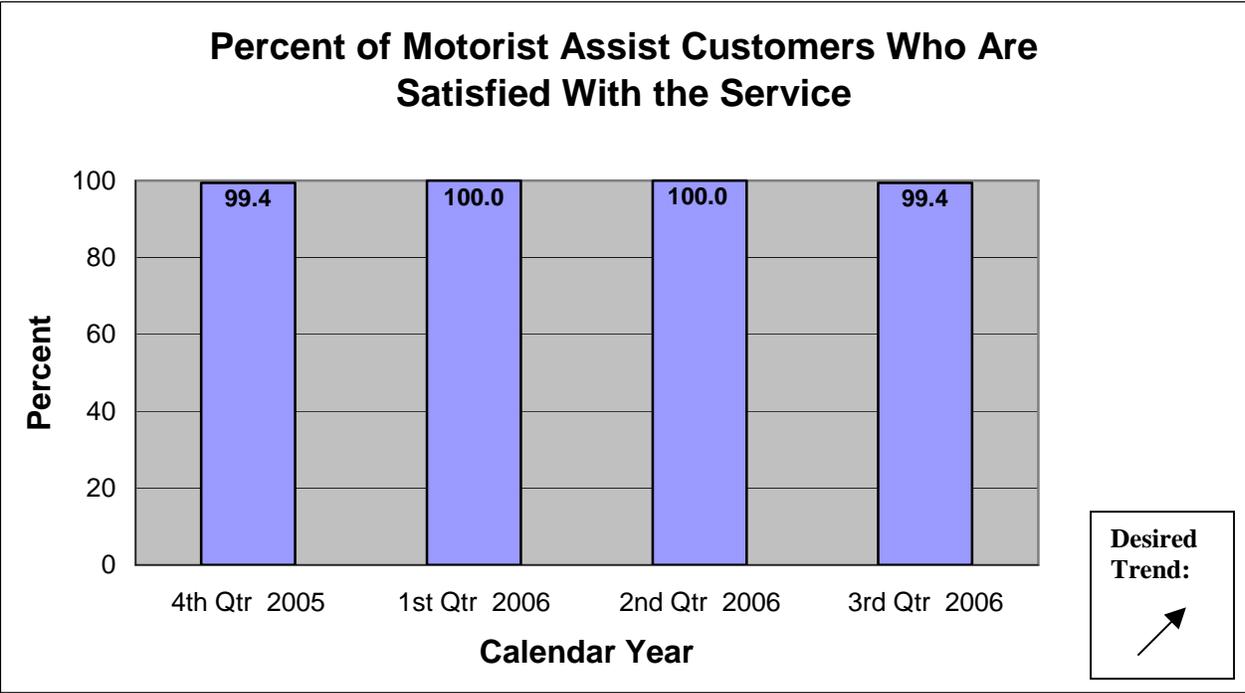
This measure helps evaluate services provided through MoDOT’s Motorist Assist Program, specifically whether the customers who use the program are satisfied with the service. Information received provides direction on how to better serve our customers and keep traffic moving safely and efficiently.

**Measurement and Data Collection:**

Motorist Assist operators distributed survey cards to customers starting June 1, 2005. Data from the cards is compiled and tabulated by the Missouri Transportation Institute. Surveys with selections identifying that the service was “probably” or “definitely” valuable were tabulated as “satisfied” for this measure.

**Improvement Status:**

The data for this measure included responses from 361 surveys in the fourth quarter of calendar year 2005, 380 surveys in the first quarter of 2006, 447 surveys in the second quarter of 2006 and 704 surveys in the third quarter of 2006 by motorists who used the Motorist Assist service in the Kansas City or St. Louis metro areas. This data agrees with information provided by customers on prior comment forms - almost all customers are satisfied.



# Uninterrupted Traffic Flow

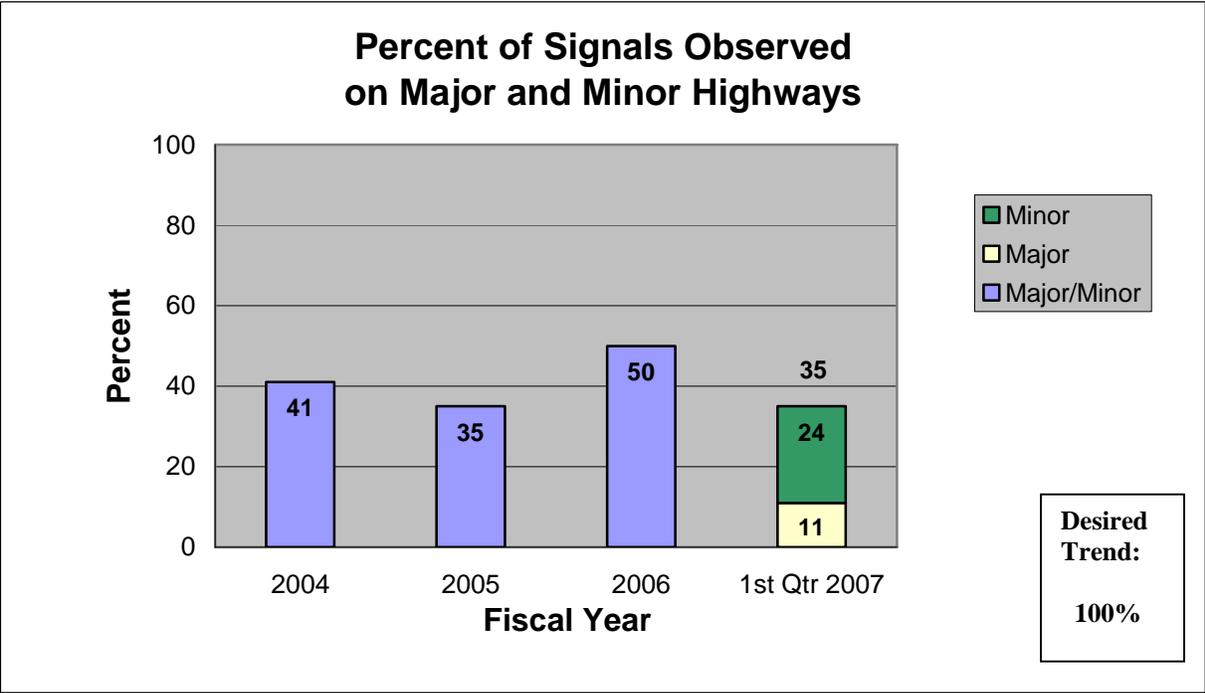
## Percent of signals observed

**Result Driver:** Don Hillis, Director of System Management  
**Measurement Driver:** Julie Stotlemeyer, Signal and Lighting Engineer

**Purpose of the Measure:**  
This measure tracks how well the department is monitoring the signal system to improve traffic flow.

**Measurement and Data Collection:**  
Traffic engineers document observed signal data on an observation sheet and the observation date is recorded in the Transportation Management System database. Data is collected from the TMS database to generate the report. A complete signal observation requires personnel to monitor the signal during four different times of day: a.m. peak, noon peak, p.m. peak and off peak.

**Improvement Status:**  
All signals on major and minor highways should be observed each year to ensure proper operation and verify effective traffic flow. To support the major / minor roadway direction, observations are now tracked accordingly. Observations for first quarter fiscal year 2007 are up 24 percent compared to the same period last year. This continued rate of progress will result in completion of the signal observation program.



# Uninterrupted Traffic Flow

## *Percent of retimed signals*

**Result Driver:** Don Hillis, Director of System Management

**Measurement Driver:** Julie Stotlemeyer, Signal and Lighting Engineer

**Purpose of the Measure:**

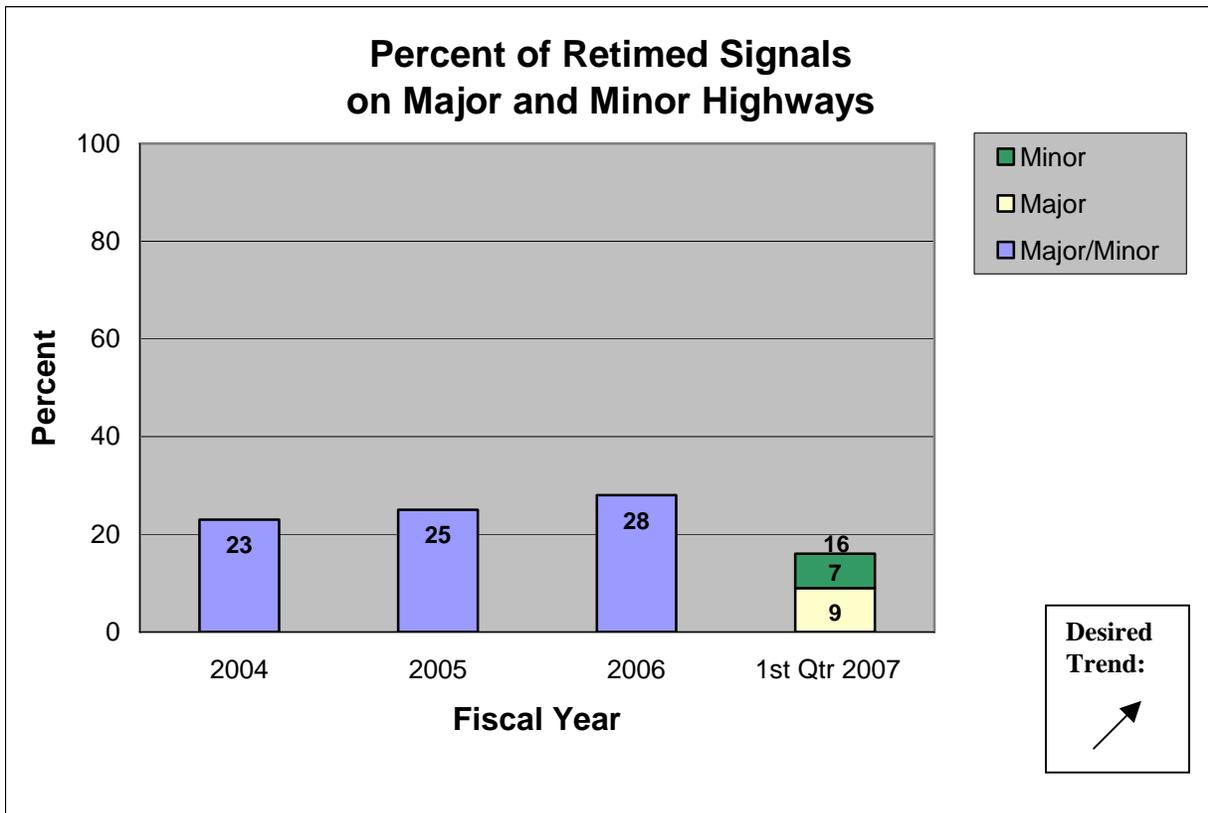
This measure tracks how well the department is adjusting the timing of the signal system to improve traffic flow.

**Measurement and Data Collection:**

Traffic engineers recorded retimed signal data and entered the date in the Transportation Management System database. Data is collected from the TMS database to generate the report. MoDOT retimes traffic signals for general observation or in response to a complaint. In most instances, signals are retimed based on observational studies. In order to maintain uninterrupted traffic flow, signals should be retimed at least every three years. Therefore, MoDOT should retime 33 percent of its signal system each year. Retiming signals for efficient operation should involve an in-depth study, and this may not be reflected in this measure.

**Improvement Status:**

Signals on major highways should be retimed every three years and minor highways every five years. To support the major / minor roadway direction, signal retimings are now tracked accordingly. Retimings for first quarter fiscal year 2007 are up nine percent compared to same period last year. Minor roadways are two percent above target for first quarter and major roads are at target.



# Uninterrupted Traffic Flow

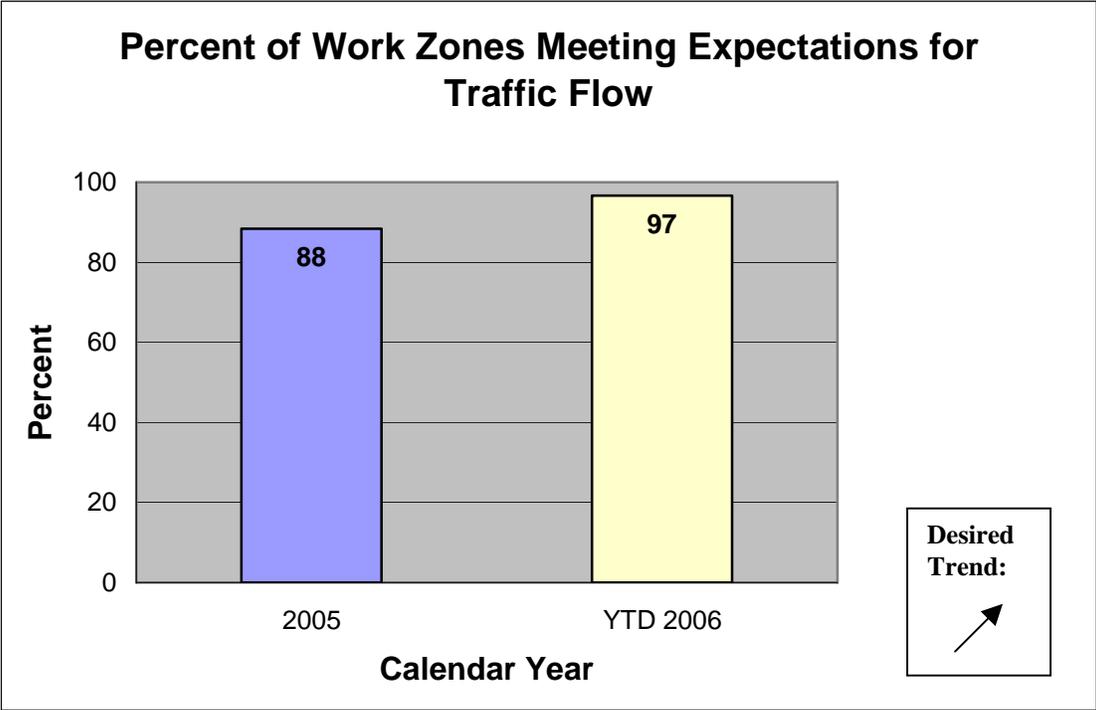
## Percent of work zones meeting expectations for traffic flow

**Result Driver:** Don Hillis, Director of System Management  
**Measurement Driver:** Scott Stotlemeyer, Technical Support Engineer

**Purpose of the Measure:**  
An important factor in evaluating the department’s performance in temporary traffic control design, deployment, operation, and maintenance is the measurement of our work zones affect on the mobility of highway users. This measure tracks how well the department meets customer expectations of work zones on state highways.

**Measurement and Data Collection:**  
Using a formal inspection worksheet, Construction and Materials, Maintenance, Traffic and the district staff evaluate mobility in work zones across the state. Each evaluation consists of a subjective assessment of engineered and operational factors affecting traffic flow. The evaluator assigns a pass, fail or n/a rating to each of these individual factors and a pass or fail rating for their overall perception of traffic flow in, around and through the work zone. The overall perception ratings are compiled quarterly and reported via this measurement. This inspection program began in June 2005.

**Improvement Status:**  
The results of the 1,899 inspections this calendar year (235, 759, and 905 in the first three quarters, respectively) show great progress in this measure, as the percent of work zones meeting mobility expectations rose by 8.3 percent over calendar year 2005 inspection results. The increase may be attributed to MoDOT’s emphasis on creating exemplary work zones by minimizing work zone congestion and delays despite increased traffic demand and volume of work zones in Missouri this year.



# Uninterrupted Traffic Flow

## *Time to meet winter storm event performance objectives on major and minor highways*

**Result Driver:** Don Hillis, Director of System Management  
**Measurement Driver:** Tim Jackson, Technical Support Engineer

**Purpose of the Measure:**

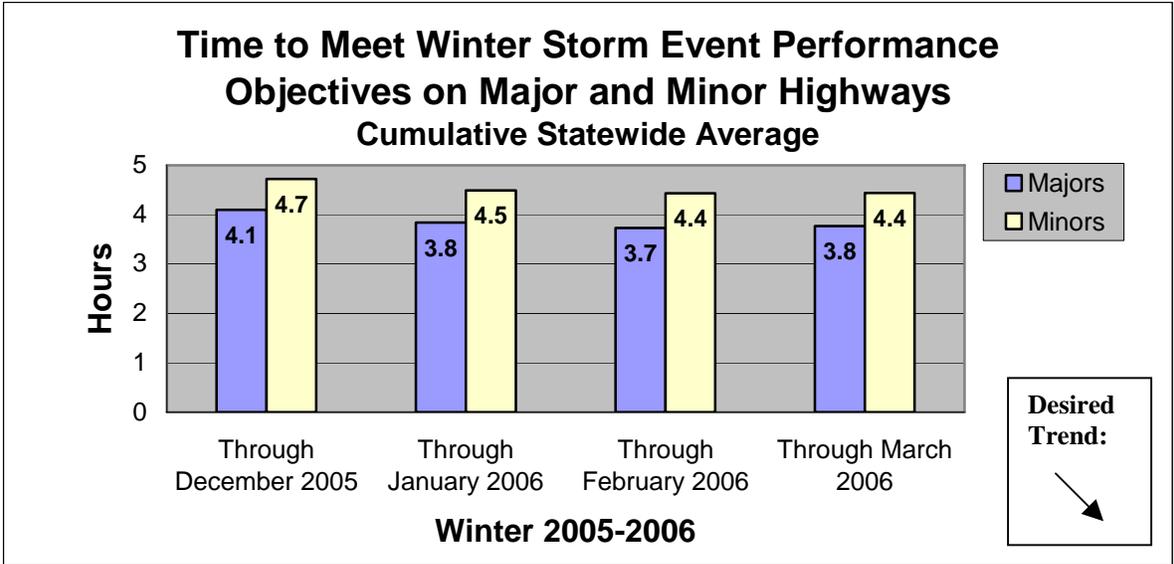
This measure tracks the amount of time needed to perform MoDOT’s snow and ice removal efforts.

**Measurement and Data Collection:**

This data is collected in the Lotus Notes winter event database. This measurement will track the actual time involved in this process so improvements can be made. After each winter event, such as a snow or ice storm, area maintenance personnel submit a report indicating how much time it took to clear snow from the major and minor highways. Data collection began after the first snowfall this winter for inclusion in the January 2006 Tracker. After a storm ends, the objectives are to restore the major highways to a wet or dry condition as soon as possible, restore the higher volume (greater than 1,000 average daily traffic) minor highways to a wet or dry condition as soon as possible, and have the lower volume (less than or equal to 1,000 average daily traffic) minor highways open to two-way traffic and treated with salt and/or abrasives at all critical areas such as intersections, hills and curves as soon as possible. The end of the storm is defined as when freezing precipitation stops accumulating on the roadways, either from falling or drifting conditions.

**Improvement Status:**

The two categories for minor highways were averaged into one number for all minor highways. From December to January, the time to meet the winter storm event performance objectives decreased by a small amount. These times remained relatively fixed for the remainder of the winter season due to the fact that there were very few additional snowstorms in Missouri. This winter was a very mild winter for the state in terms of winter events and below-freezing temperatures. An advanced snow removal-training module is being developed for veteran employees and supervisors to increase consistency and efficiency in this area. MoDOT continues to upgrade equipment by providing wider snowplows and towplows to improve efficiency.



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