



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.

435
4 BRUNT
INTOWN
4 MIN
6 MIN
10 MIN

KANSAS CITY
SCOUT
getting you there

WWW.KCSCOUT.NET

CAR P

EXIT
70
MILE
12
2

Average travel indices and speeds on selected freeway sections-1a

Result Driver: Don Hillis, Director of System Management

Measurement Driver: Troy Pinkerton, Traffic Liaison Engineer

Purpose of the Measure:

This measure tracks the average travel index values and average speeds on various freeway sections. The desired trend is for the travel index to remain at or near a value of 1.00. A value of 1.00 is representative of a free-flow condition. The travel index is directly related to the average speed and represents the level of congestion by taking into consideration not only average speed but also the traffic volumes. The travel index is calculated according to the following equation:

$$\text{Travel Index} = \text{Average speed} / \text{Free flow speed}$$

Average speeds are taken from sensor data. The free-flow speed is constant and is equal to the highest hourly average speed for any hour in that data set.

Measurement and Data Collection:

Data from the St. Louis and Kansas City regions are provided by MoDOT's traffic management centers. Information about the St. Louis traffic management center, Gateway Guide, can be found at <http://www.gatewayguide.com> and information about the traffic management center in Kansas City, KC Scout, can be found at <http://www.kcscout.net/>. Data for the St. Louis region is also provided through a partnership with *Traffic.com*. Data for each location is updated quarterly.

Improvement Status:

Kansas City metropolitan region:

As shown on the graph, the freeway systems in the Kansas City region are performing in the mid to upper 80 percentile range during the peak hours, as compared to the free-flow condition. The morning peak travel index remained constant at 0.88, a slight increase over the previous fiscal year average of 0.87. The evening peak travel index decreased in comparison to last quarter falling from 0.88 to 0.84. Most of the Kansas City region has been free from significant work zone impacts. However, bridge

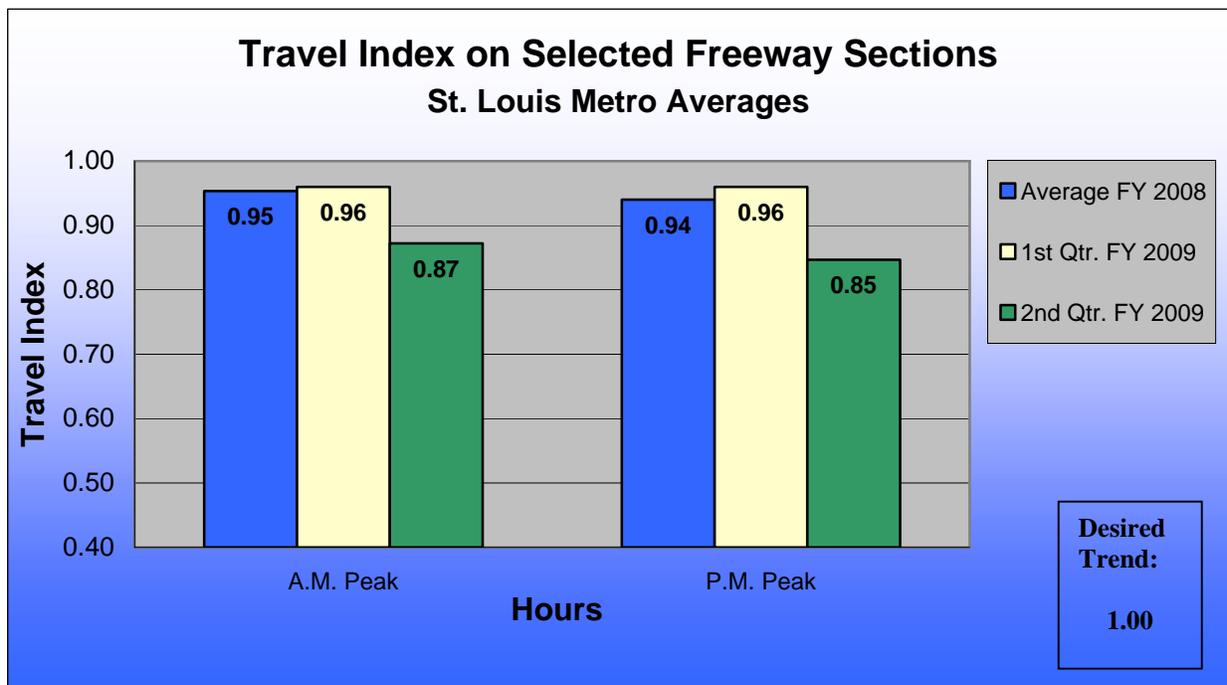
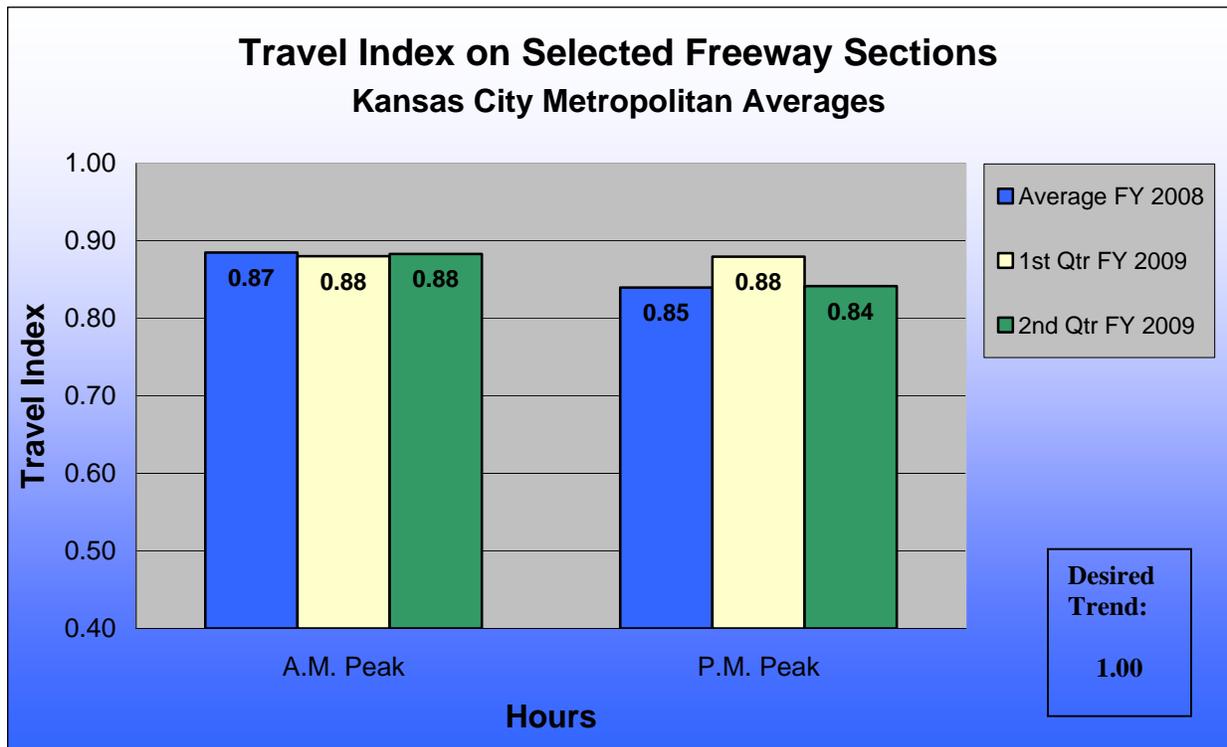
work and resurfacing jobs are being conducted at the Paseo Bridge causing some slow downs in the morning commute southbound into downtown. This area should see some dramatic slow downs over the next few years due to the KC ICON bridge replacement project. Additional information on the construction activities along I-29/35 can be found at www.kcicon.org.

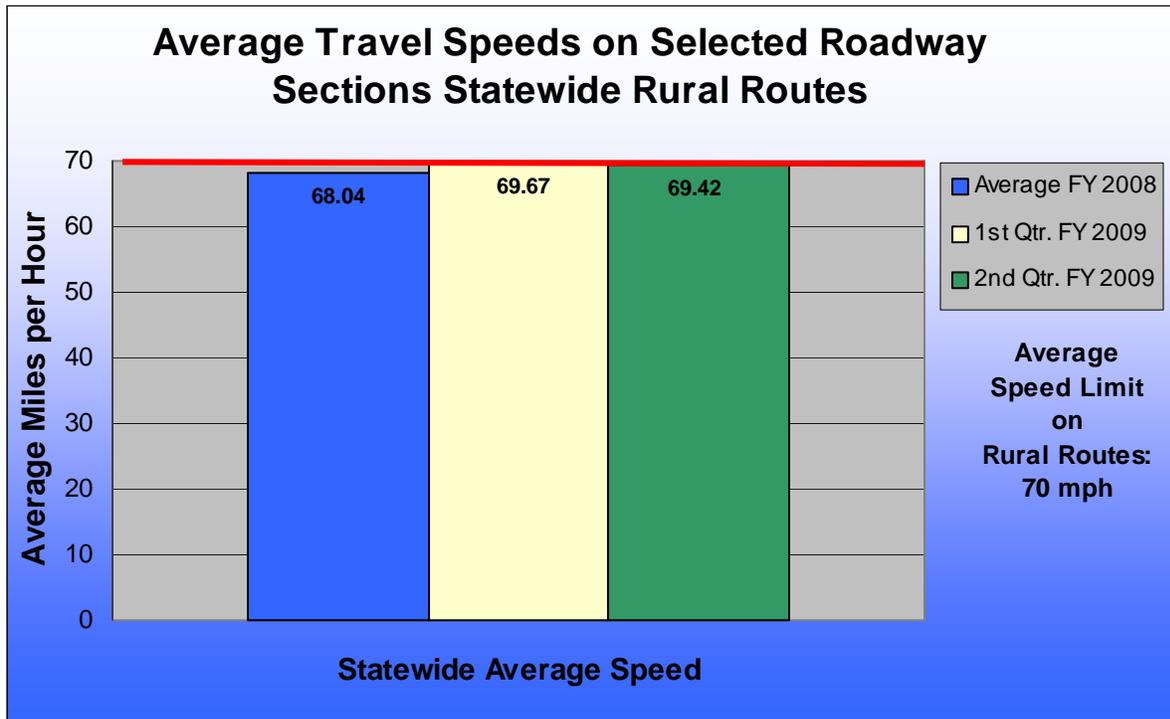
St. Louis metropolitan region:

Data in the St. Louis region shows a significant decrease in the morning and evening peak travel indices. To maintain consistency statewide, specific high-incident locations were chosen in St. Louis for representation this quarter. Previously, the corridor data was averaged utilizing multiple points on the interstate. The morning peak travel index decreased from 0.96 to 0.87. The evening peak travel index decreased from 0.96 to 0.85 for the second quarter fiscal year 2009 when compared to the first quarter fiscal year 2009 peak indices. The decrease in travel index better represents the level of congestion during peak times. This is the fourth of four quarters impacted by the closure of the western portion of I-64. Additional information on the construction activities along I-64 can be found at www.thenewi64.org.

Statewide:

The statewide average speed on rural routes for this quarter is 69.42 mph, which is a slight decrease from last quarter. Historically, we have seen an increase in average speeds in the first and fourth quarters of the fiscal year. Second quarter fiscal year 2008 average speed was 67.42 mph. Improvements continue to be made to the rural interstate corridors. CCTV cameras will be installed on I-70, I-44, I-55, I-29, I-34, I-55 and Route 60 by the fall of 2009.





Average rate of travel on selected signalized routes-1b

Result Driver: Don Hillis, Director of System Management

Measurement Driver: Julie Stotlemeyer, Traffic Liaison Engineer

Purpose of the Measure:

This measure indicates how well selected arterials across the state are operating during peak traffic times. As improvements are made, such as signal timing or access management, this measure will show the effects of those efforts and decisions on the arterial system.

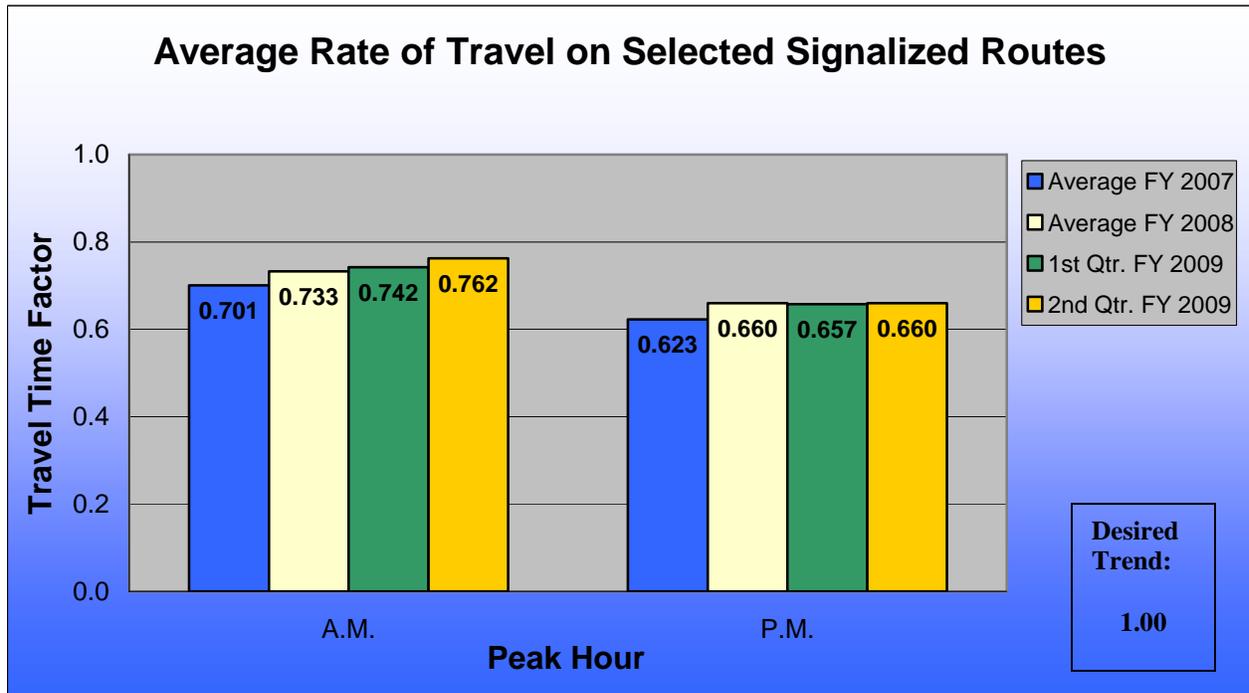
Measurement and Data Collection:

Travel times are measured on various arterials. Data is collected from driving each route twice during a.m. and p.m. peak times and timing how long it takes to traverse the route. The travel time is compared to the speed limit and the travel time factor determined. As the travel time factor approaches 1.00, traffic is moving at the speed limit. Data collection began in the second quarter of fiscal year 2007. Data for this measure is updated quarterly.

Improvement Status:

For second quarter fiscal year 2009, the average statewide travel time factor for a.m. peak is 0.762 and p.m. peak is 0.660. Overall performance is 0.711. The a.m. peak travel time factor is ten percent higher than p.m. peak travel time factor. Second quarter data shows the a.m. peak for arterials operating higher than the average for fiscal year 2007 and 2008 while the p.m. peak for arterials operates higher than the average for fiscal year 2007 but the same as the average for fiscal year 2008. For second quarter fiscal year 2009, the a.m. peak travel time factor is three percent higher and the p.m. peak travel time factor is the same as the second quarter fiscal year 2008 a.m. and p.m. peak travel time factors, respectively.

The average rate of travel on selected signalized routes has improved due to increased retiming of signals.



* The average FY 2007 data is from the last three quarters in FY 2007. The 1st quarter FY 2007 is unavailable.

Average time to clear traffic incident-1c

Result Driver: Don Hillis, Director of System Management

Measurement Driver: Rick Bennett, Traffic Liaison 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:

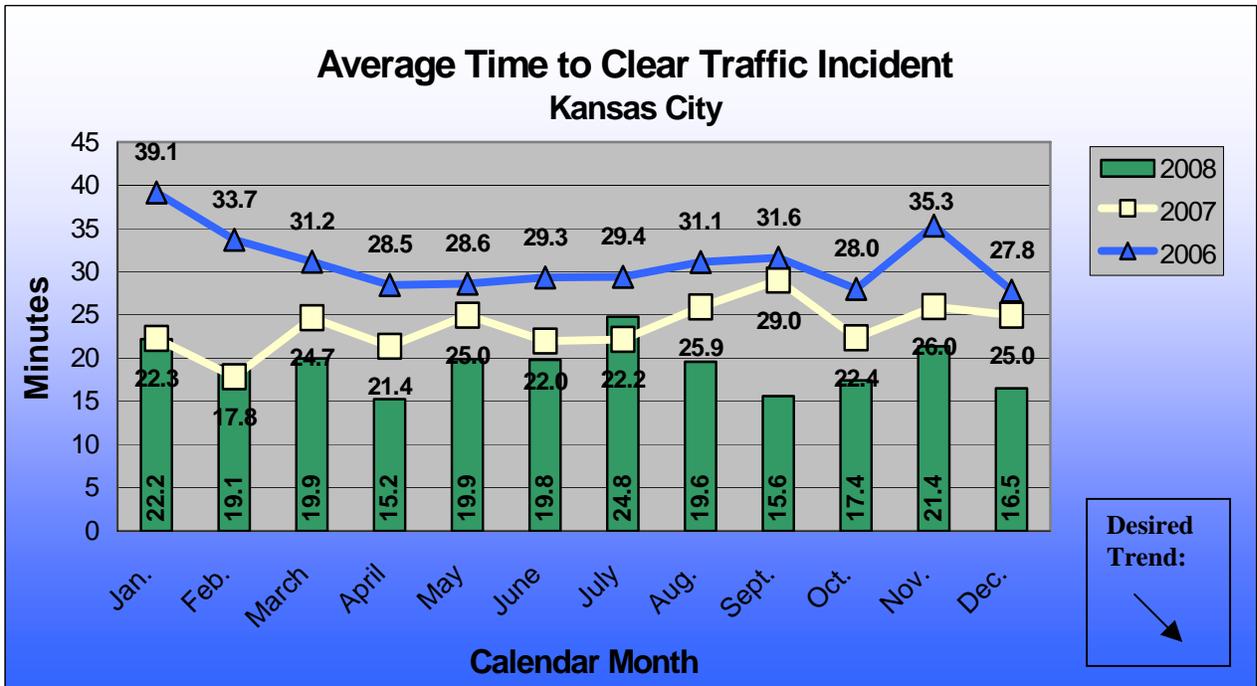
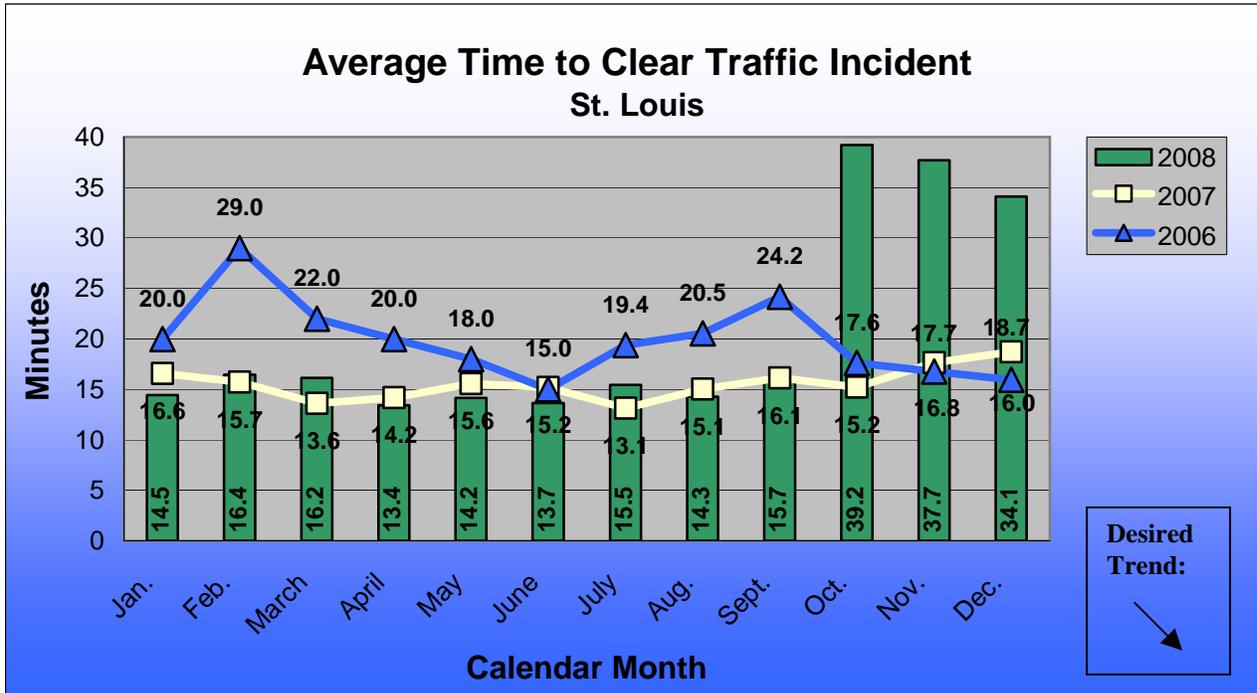
Advanced Transportation Management Systems (ATMS) are used by both the Kansas City and St. Louis traffic management centers to record “incident start time” and the time for “all lanes cleared.” In October of 2008, St. Louis switched from using motorist assist arrival times as the “incident start time” to utilizing the time the incident was confirmed in the ATMS as the “incident start time.” Average time to clear traffic incidents is calculated from these times.

Improvement Status:

St. Louis recorded 734, 702, and 806 incidents respectively for the months of October, November and December. St. Louis’ data includes considerably more incidents because St. Louis monitors more

freeway miles than the Kansas City area. The drastic increase in clearance time is attributed to the response time, the time between when the incident was confirmed and motorist assist or another responder arrived on the scene, which is now included in the duration of the incident. In past Tracker reports, “incident start time” was the time that was recorded when motorist assist arrived on the scene. Starting in October, St. Louis’ ATMS system began measuring the “incident start time” as the time at which an incident was confirmed, usually via CCTV prior to any responder arriving on the scene. There were several incidents of longer duration during the evening hours including a tracker-trailer hazardous materials incident and a water main break. Typically during the overnight hours, the incident is often left in the lane longer than peak times.

Kansas City collected data on 192, 178, and 259 incidents respectively for the months of October, November and December. November experienced a higher average clearance time because 60 percent of the incidents were long-term incidents. However, this did not deter from the fact that incident clearance times continue to show a reduction as compared to those for the same time period last year.



Average time to clear traffic backup from incident-1d

Result Driver: Don Hillis, Director of System Management

Measurement Driver: Rick Bennett, Traffic Liaison 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:

“All lanes cleared” and “clear backup” times are being recorded by MoDOT’s Traffic Management Centers in Kansas City and St. Louis. Average times to clear traffic backups are calculated from these recorded times. Kansas City reports capture when a backup is relieved as an automated process. The Kansas City area has devices to collect data along portions of interstates 435 and 70. In October 2008, St. Louis began using advanced transportation management system (ATMS) devices to collect data. The number of incidents that data is collected on in St. Louis has gone from approximately 50 to 500.

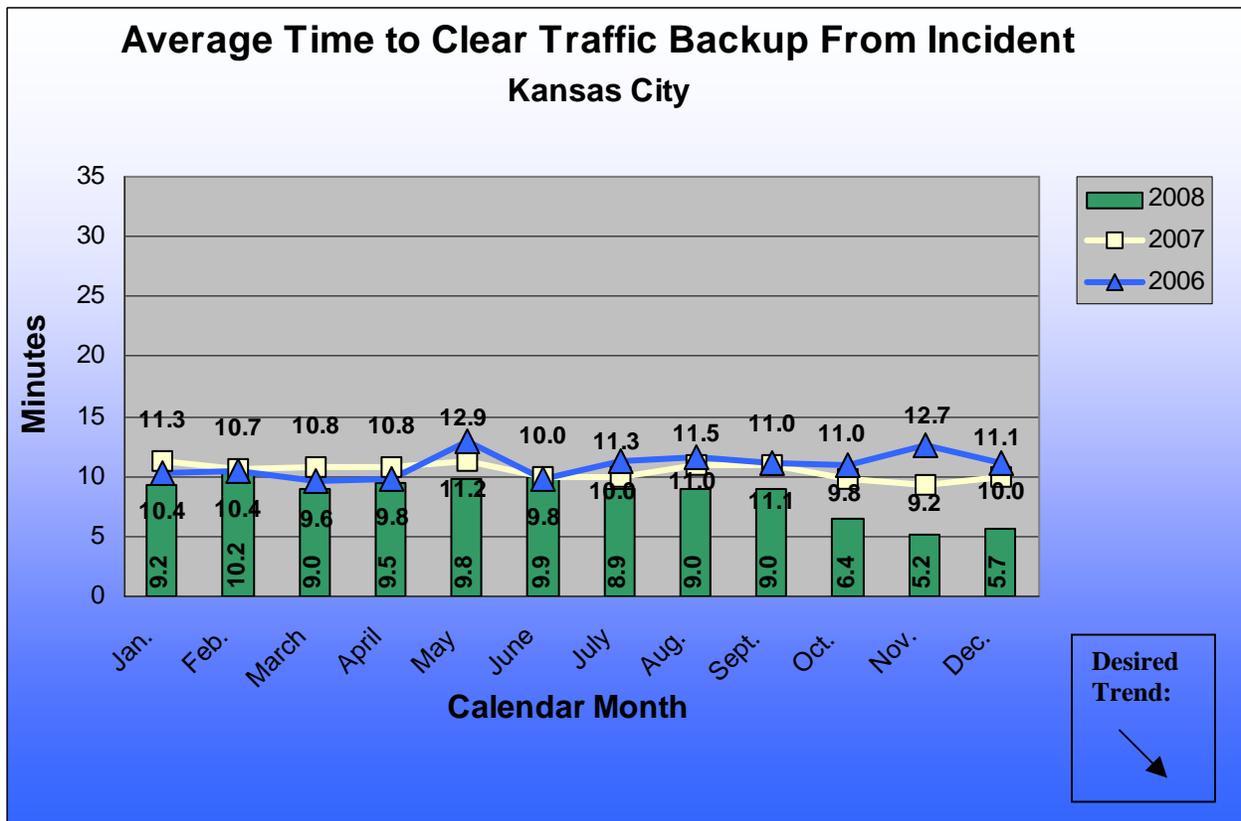
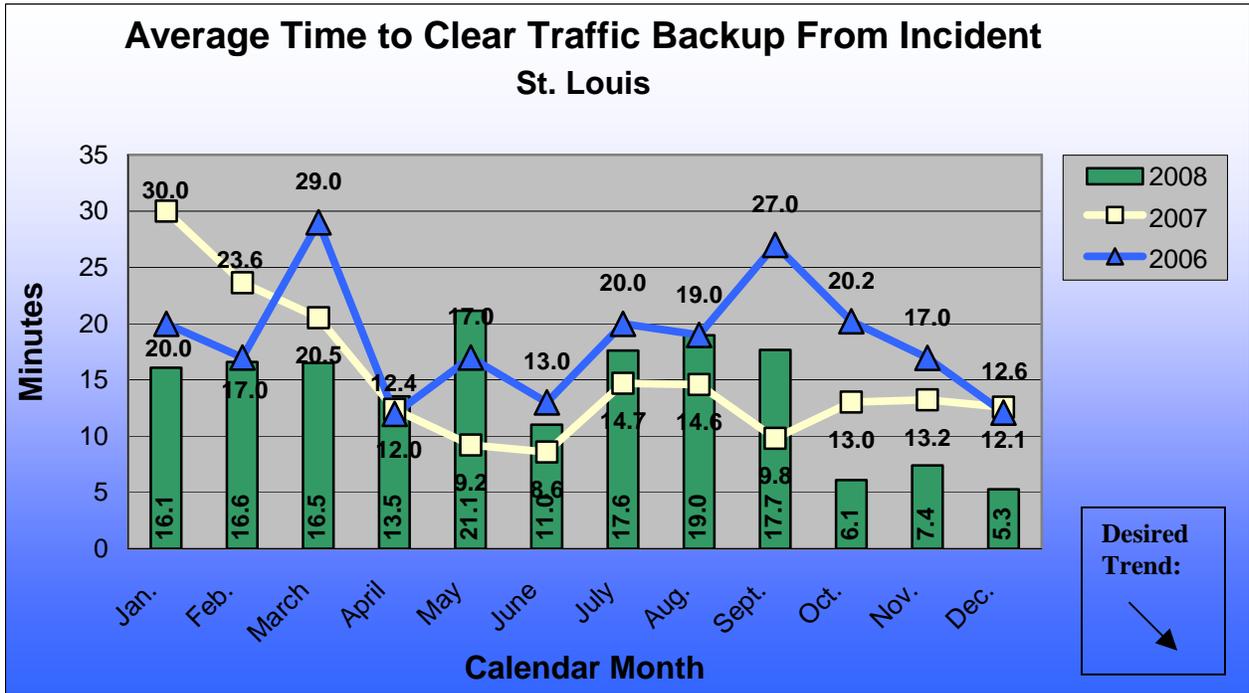
Improvement Status:

St. Louis area routes have larger traffic volumes that create more significant congestion problems than in Kansas City.

St. Louis’ times to clear traffic backup show a marked decrease. This is due to the increase in the number of incidents for which data is being reported. In the past, the only incidents for which data was available were those incidents the TMC could monitor by camera. As a result of the increase in data collected, St. Louis shows a much lower average time to clear traffic backup.

The reduction in the average time to clear traffic backups in Kansas City is due to the increased coordination through Motorist Assist and Incident Management staff at the incident scene to keep critical lanes open so the congestion is minimized. In addition, most of the long-term incidents this quarter occurred overnight when the traffic volumes were lower which allowed traffic to be restored to normal conditions faster.

Renewed efforts in developing long-term partnerships with local agencies and law enforcement have increased the awareness of MoDOT’s expectations for quick clearance and open roadways.



Number of customers assisted by the Motorist Assist program-1e

Result Driver: Don Hillis, Director of System Management

Measurement Driver: Rick Bennett, Traffic Liaison Engineer

Purpose of the Measure:

This measure is used to gauge the use of the Motorist Assist programs on our state roadways, because traffic 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 and stalled vehicles) improves system performance. MoDOT's Motorist Assist operators are able to respond to nearly every incident, major or minor, in the areas they cover.

Measurement and Data Collection:

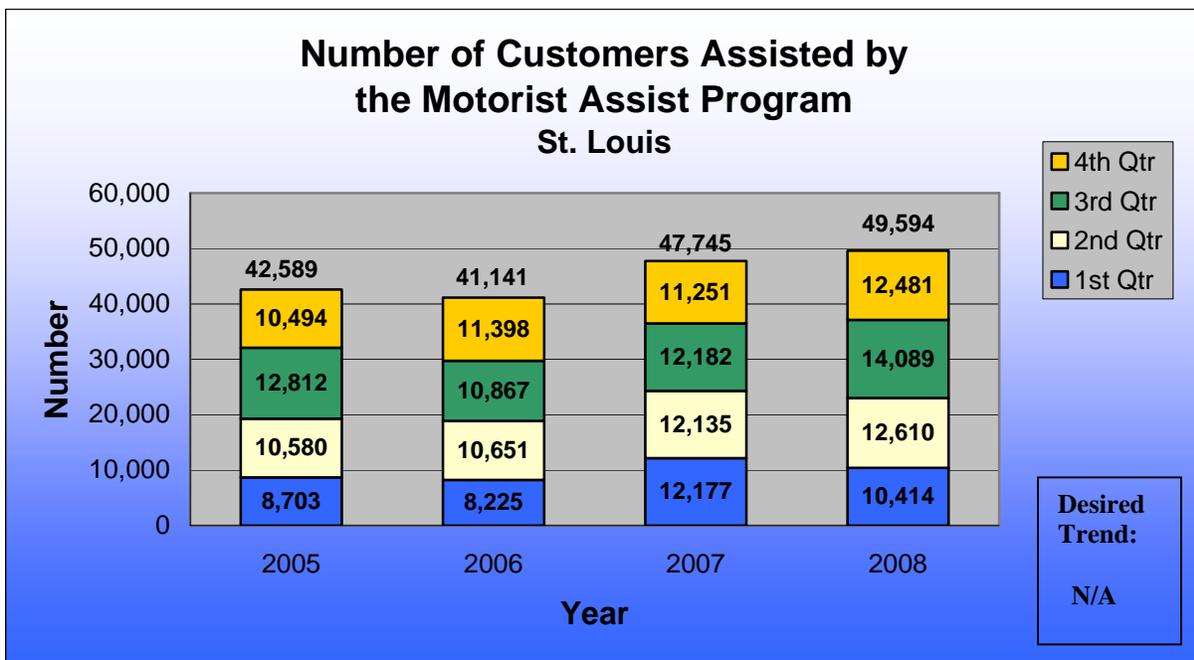
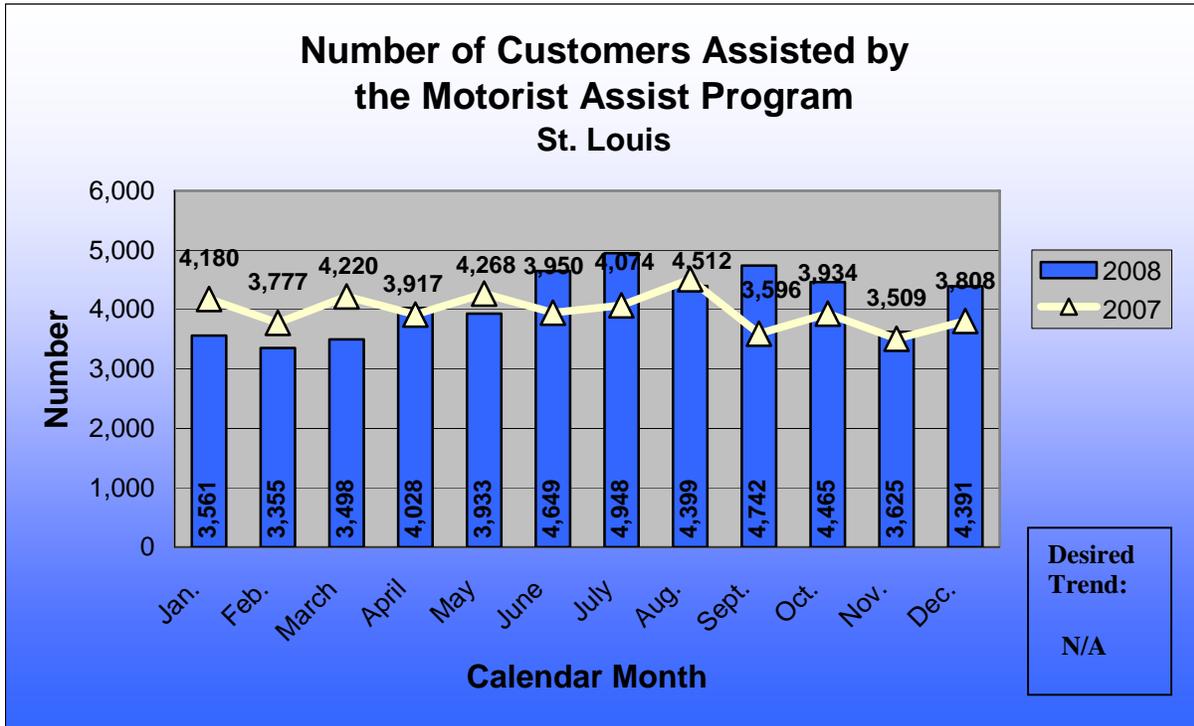
The Motorist Assist operators record each assist and then prepare a monthly summary. Kansas City operators patrol approximately 105 freeway miles. In October 2008, St. Louis added a 22-mile section of I-

55 to their patrol route, which brings the total freeway miles St. Louis operators patrol to approximately 192.

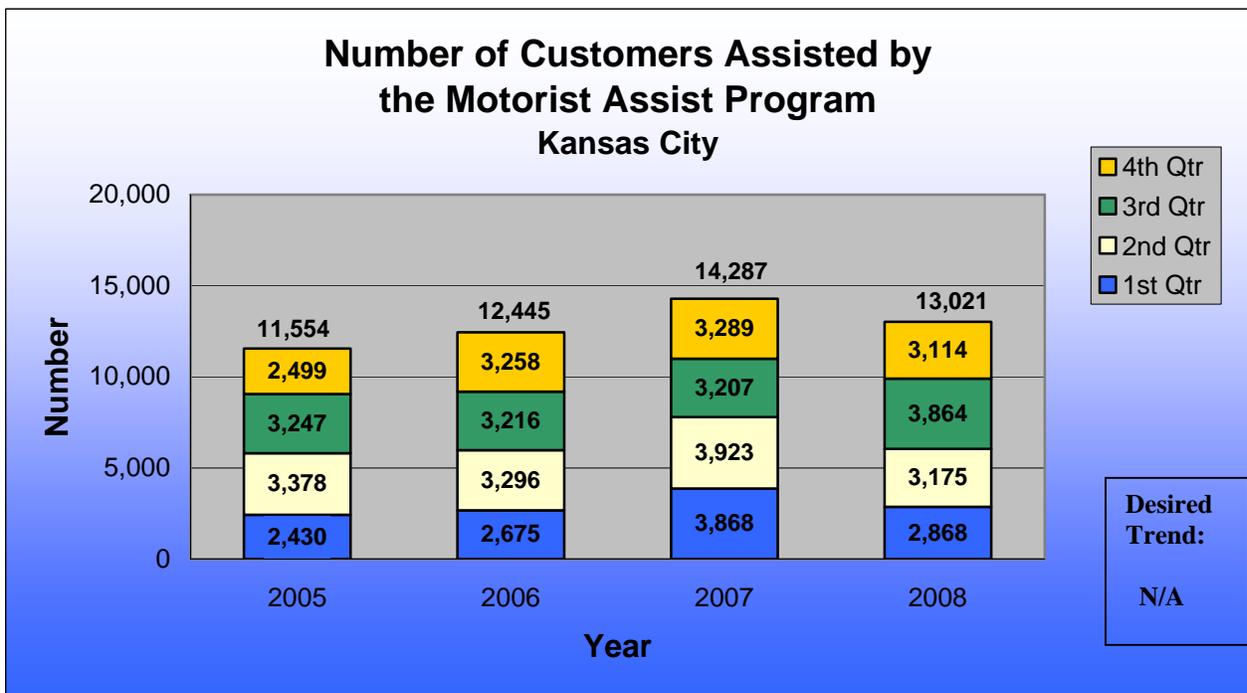
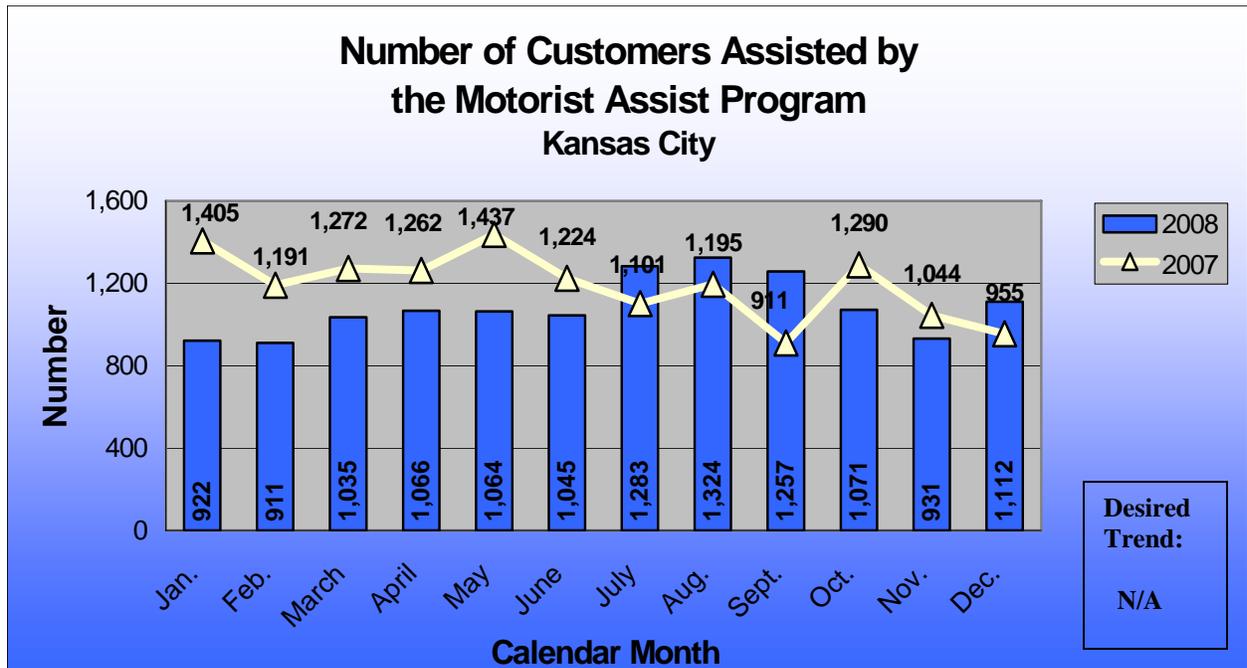
In January 2008, MoDOT partnered with St. Louis County to develop the Interstate 64 Traffic Response Service Patrol to ease congestion created by the reconstruction on the I-64 corridor. The I-64 Traffic Response Service Patrol provides similar services to motorists as the MoDOT Motorist Assist program on the arterials impacted by the closure of I-64. The I-64 Traffic Response Service Patrol records each assist and prepares a monthly report.

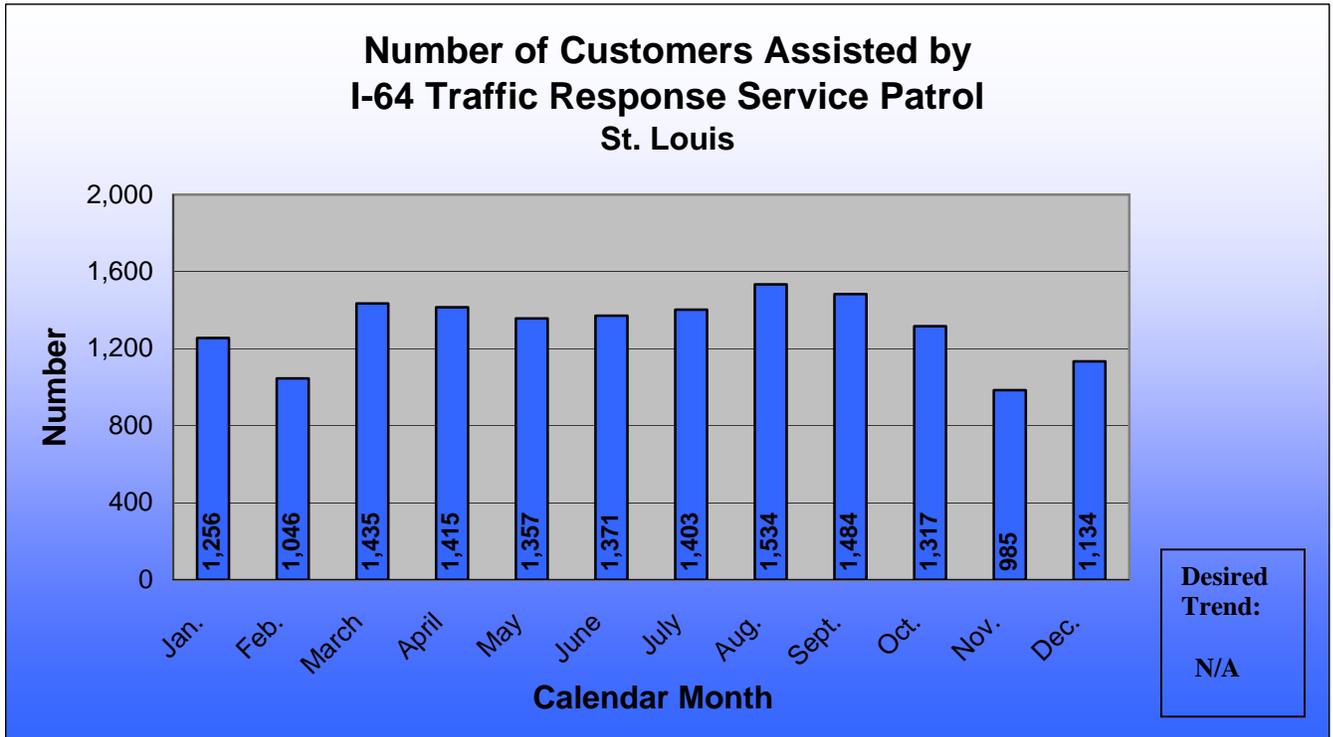
Improvement Status:

This data demonstrates that the Motorist Assist program in both St. Louis and Kansas City continues to provide motorists assistance on the urban freeways in both metropolitan areas.



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Percent of Motorist Assist customers who are satisfied with the service-1f

Result Driver: Don Hillis, Director of System Management

Measurement Driver: Rick Bennett, Traffic Liaison 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:

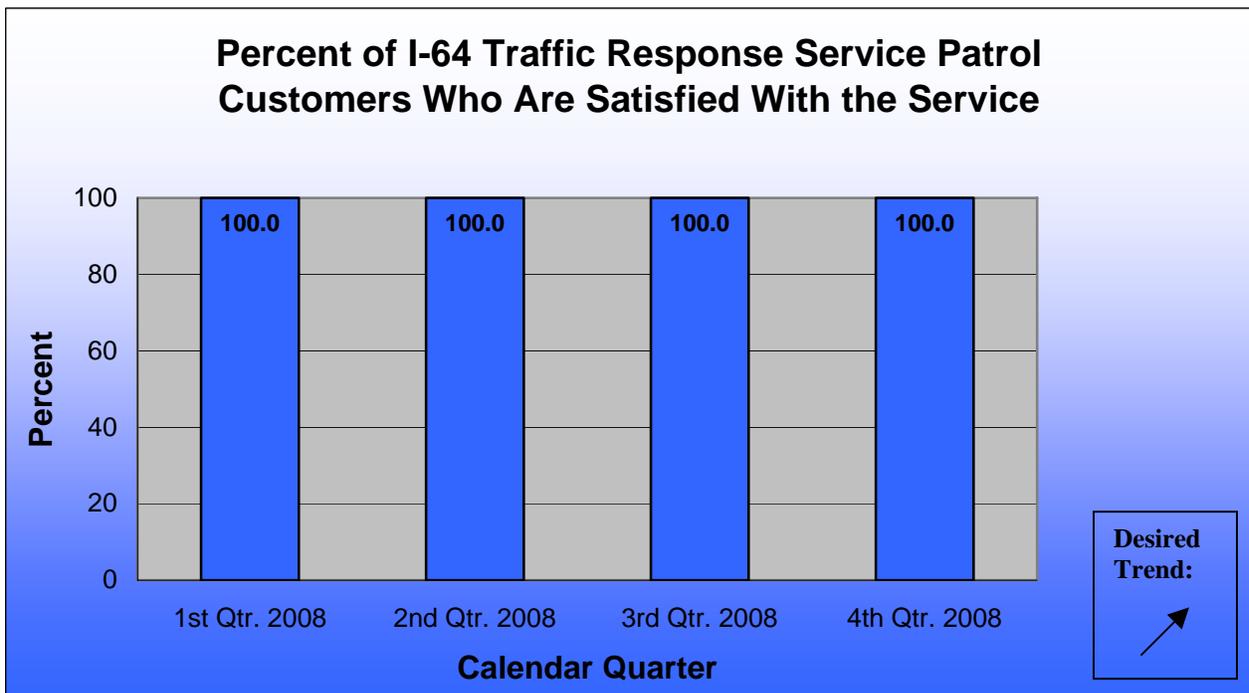
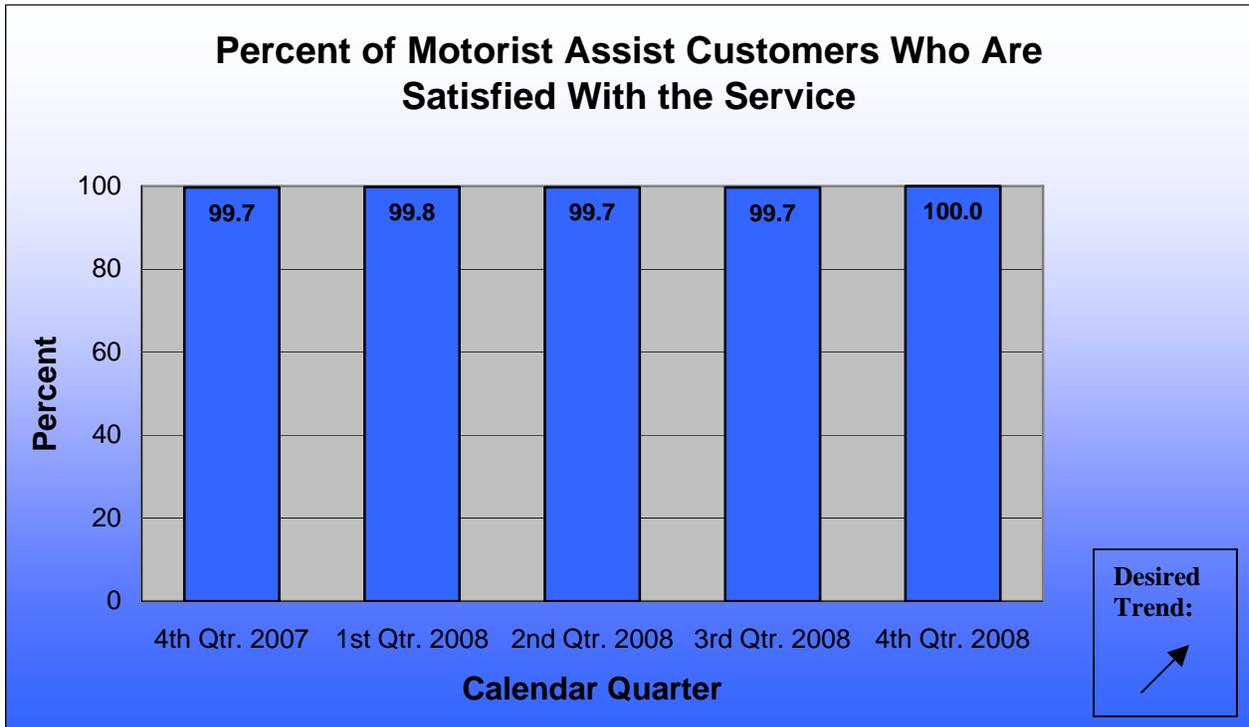
Motorist Assist operators distribute survey cards to customers. Data from the cards is compiled and tabulated by Heartland Market Research, LLC. Surveys with selections identifying that the service was "probably" or "definitely" valuable were tabulated as "satisfied" for this measure.

In January 2008, MoDOT partnered with St. Louis County to develop the Interstate 64 Traffic Response Service Patrol to ease congestion created by the reconstruction on the I-64 corridor. The I-64 Traffic Response Service Patrol provides similar services to motorists as the MoDOT Motorist Assist program, however, it patrols the arterials impacted by the closure of I-64. The I-64 Traffic Response Service Patrol distributes a separate but similar survey card to its customers.

Improvement Status:

This data agrees with information provided by customers on prior comment forms - almost all customers are satisfied.

- Fourth Quarter 2007, 688 surveys received
- First Quarter 2008,
 - 568 Motorist Assist surveys received
 - 119 I-64 Traffic Response surveys received
- Second Quarter 2008,
 - 1,117 Motorist Assist surveys received
 - 323 I-64 Traffic Response surveys received
- Third Quarter 2008,
 - 1,410 Motorist Assist surveys received
 - 228 I-64 Traffic Response surveys received
- Fourth Quarter 2008,
 - 1,366 Motorist Assist surveys received
 - 142 I-64 Traffic Response surveys received



Percent of work zones meeting expectations for traffic flow-1g

Result Driver: Don Hillis, Director of System Management

Measurement Driver: Dan Smith, Traffic Management & Operations 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 work zones' affect on the mobility of highway users. This measure tracks how well the department meets customer expectations of traffic flow in, around and through work zones on state highways.

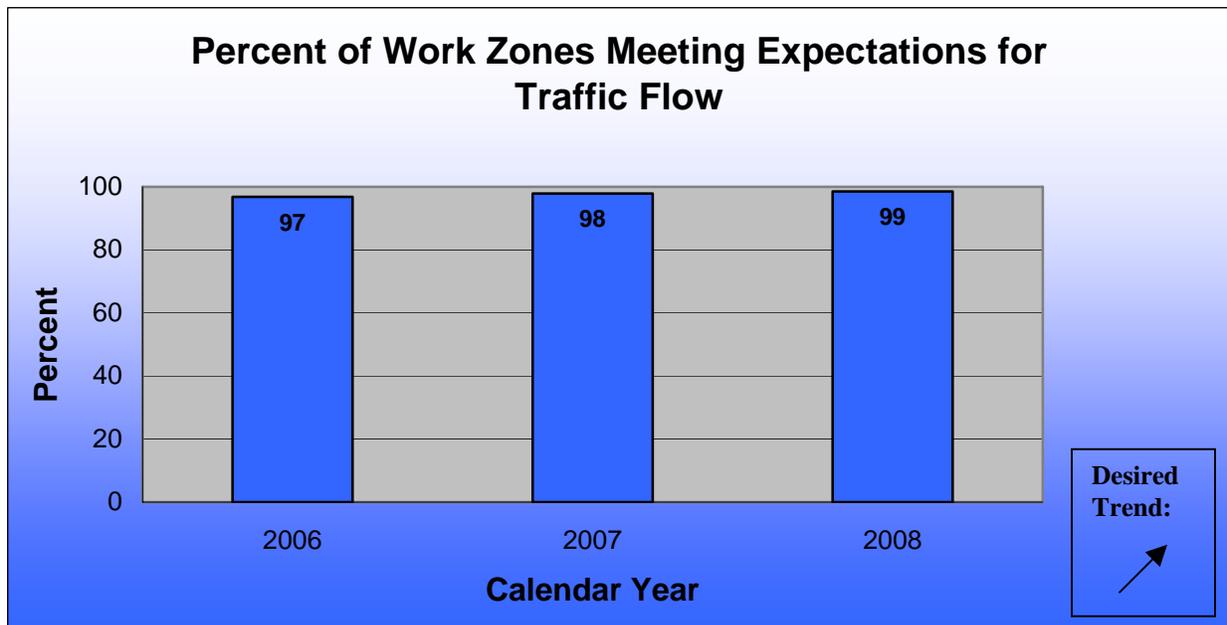
perception of traffic flow in, around and through the work zone. The overall perception ratings are compiled quarterly and reported via this measurement.

Improvement Status:

Compilation of the 4,581 evaluations performed by MoDOT staff between January and December of this calendar year resulted in a 99 percent satisfaction rating for work zone traffic flow (i.e., a negative perception of traffic flow was recorded in 1percent of the evaluations). This rating is consistent with the previous calendar year's rating. Such progress is attributable 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.

Measurement and Data Collection:

Using a formal inspection worksheet, Central Office and district employees 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



Time to meet winter storm event performance objectives on major and minor highways-1h

Result Driver: Don Hillis, Director of System Management

Measurement Driver: Tim Jackson, Maintenance Liaison Engineer

Purpose of the Measure:

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

The time in hours is the statewide average for each month.

Measurement and Data Collection:

This data is collected in the winter event database. This measurement tracks 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 for this measure runs from November through March of each winter season. After a storm ends, the objectives are to restore the major highways to a clear condition as soon as possible and have the lower-volume 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. This data is updated in the January and April Tracker reports.

Improvement Status:

The average time to meet the performance objectives on the major highways varied from 2.9 to 3.7 hours over the reporting period. The average time to meet the performance objectives on the minor highways varied from 3.8 to 5.3 hours. There were two winter events in November and nine in December. The three northern districts and the Kansas City district have received, on average, between seven and ten inches of snow. The remaining districts have received less than three inches of snow. Localized areas have received more than these amounts. There were additional amounts of freezing rain and sleet received all across the state. The time to meet the performance objectives will vary based on the amount of snow received, the duration and the intensity of the storm. Strategies to improve these numbers include pursuing equipment enhancements, testing new materials and continued training of snow removal employees.

