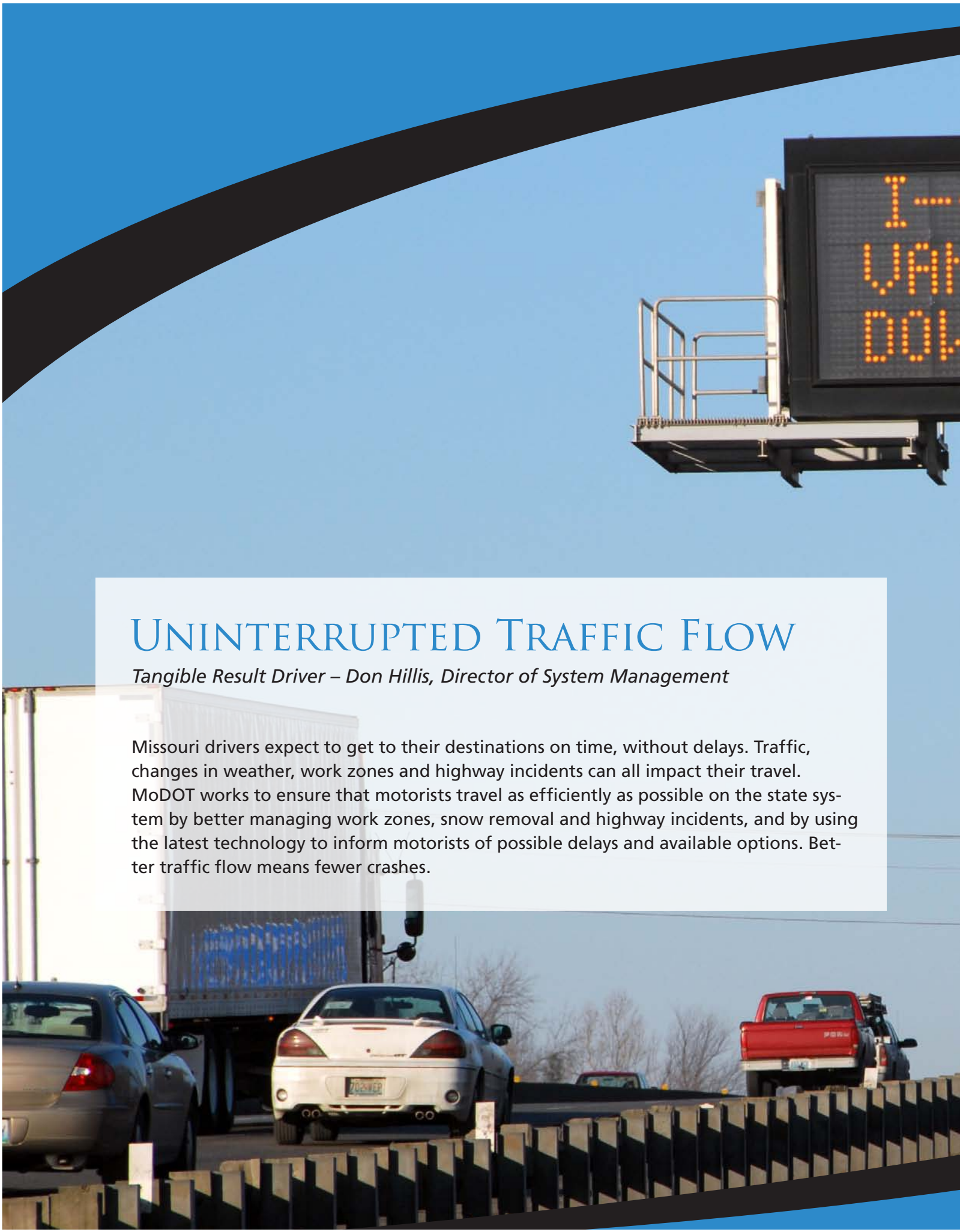


Uninterrupted Traffic Flow

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.

TRACKER

MEASURES OF DEPARTMENTAL PERFORMANCE

Average travel times 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 travel time during the morning and evening peaks on various freeway sections. The desired trend is to travel ten miles per ten minutes on a 60 mph freeway.

Travel Time is calculated based on the following equation:

Travel Time = 10 miles/ (Average speed/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:

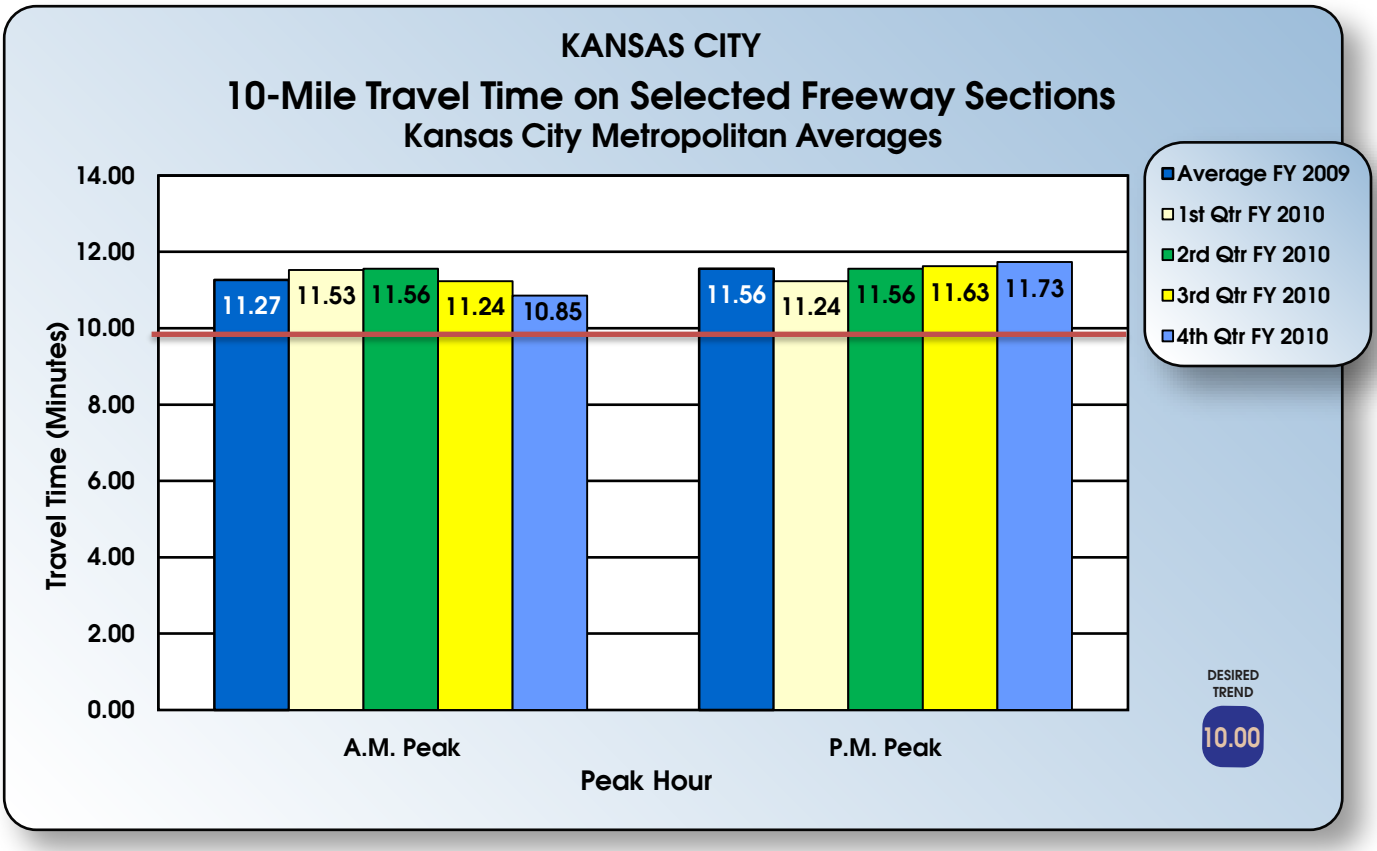
Kansas City metropolitan region:
Travelers experienced only minor delays during their peak commutes. The average ten-mile commute takes 10.85 and 11.73 minutes during the morning and evening peaks, respectively.

Regionally, work zones in the Kansas City area are affecting average speeds and travel time reliability for two major corridors. kcICON on I-35, just north of downtown and I-70 reconstruction, along with the rebuilding of the I-435/I-70 interchange are the major projects in this area.. The peak hours are extended due to the fact that speeds are lower but they are accommodating the same amount of volume, if not increased volume. This adversely affects the peak indices, and through good traveler information and great incident management, the effect to the travelers has been minimal. I-70 is being reconstructed from downtown to past I-435 and this will significantly impact the Blue Ridge peak indices in both directions for the next six months. The kcICON project has made some significant changes in lane configurations on I-35 causing some additional slow downs, specifically in the morning peak in the southbound direction. Construction associated with the Paseo Bridge continues to contribute to some slow downs in the morning commute on I-35 southbound into downtown. This area should see some dramatic slow downs over the next few years due to the KCicon bridge replacement project. Additional information on the construction activities along I-29/I-35 can be found at www.kcicon.org.

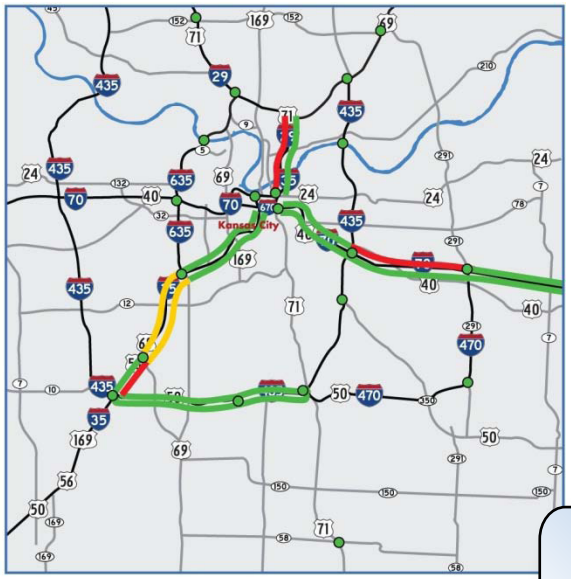
St. Louis metropolitan region:
Travelers experienced only minor delays during their peak commutes. The average ten-mile commute takes 10.93 and 12.16 minutes during the morning and evening peaks, respectively.

The amount of incidents (crashes, work zones, and special events) for this quarter was slightly higher than the previous quarter. However, the average duration and time within a lane for all incidents was almost identical to the previous quarters in fiscal year 2010. Due to the fact that incidents are responsible for about half of all delay in urban areas, and because there were no significant changes in traffic volume in St. Louis, it can be inferred that these are the reasons for the travel index to remain relatively constant this fiscal year.

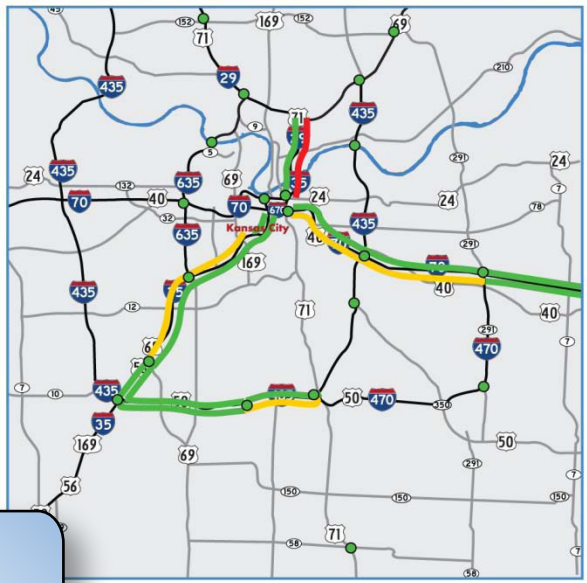
The opening of I-64 greatly decreased the frequency and intensity of congestion on some routes (I-70, I-44, and I-55), but shifting traffic patterns have caused congestion on some routes that had relatively little mobility issues during the I-64 closure (I-64, certain sections of I-270 and I-170). Due to the positive changes in some areas being offset by some of the negative changes in other areas, the total increase in travel index was only marginally higher over the region as a whole.

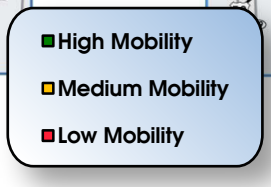


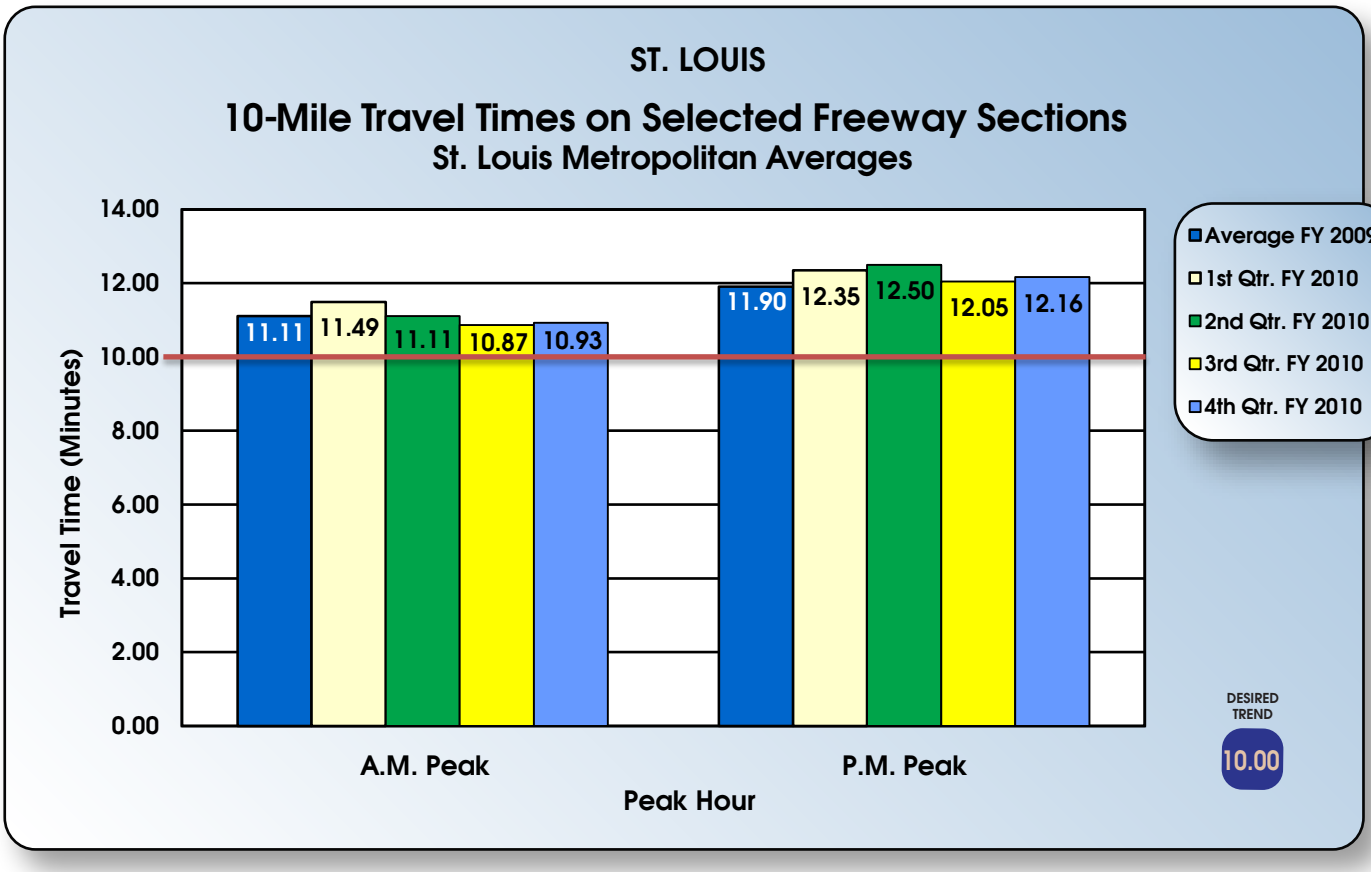
AM – Regional Mobility



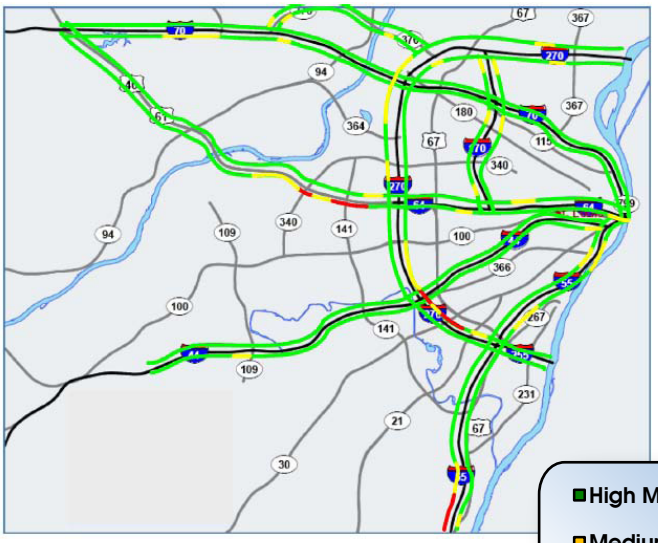
PM – Regional Mobility







AM – Regional Mobility



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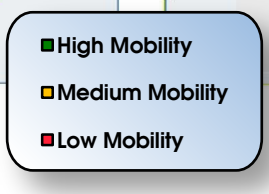


Average rate of travel on selected signalized routes-1b

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.

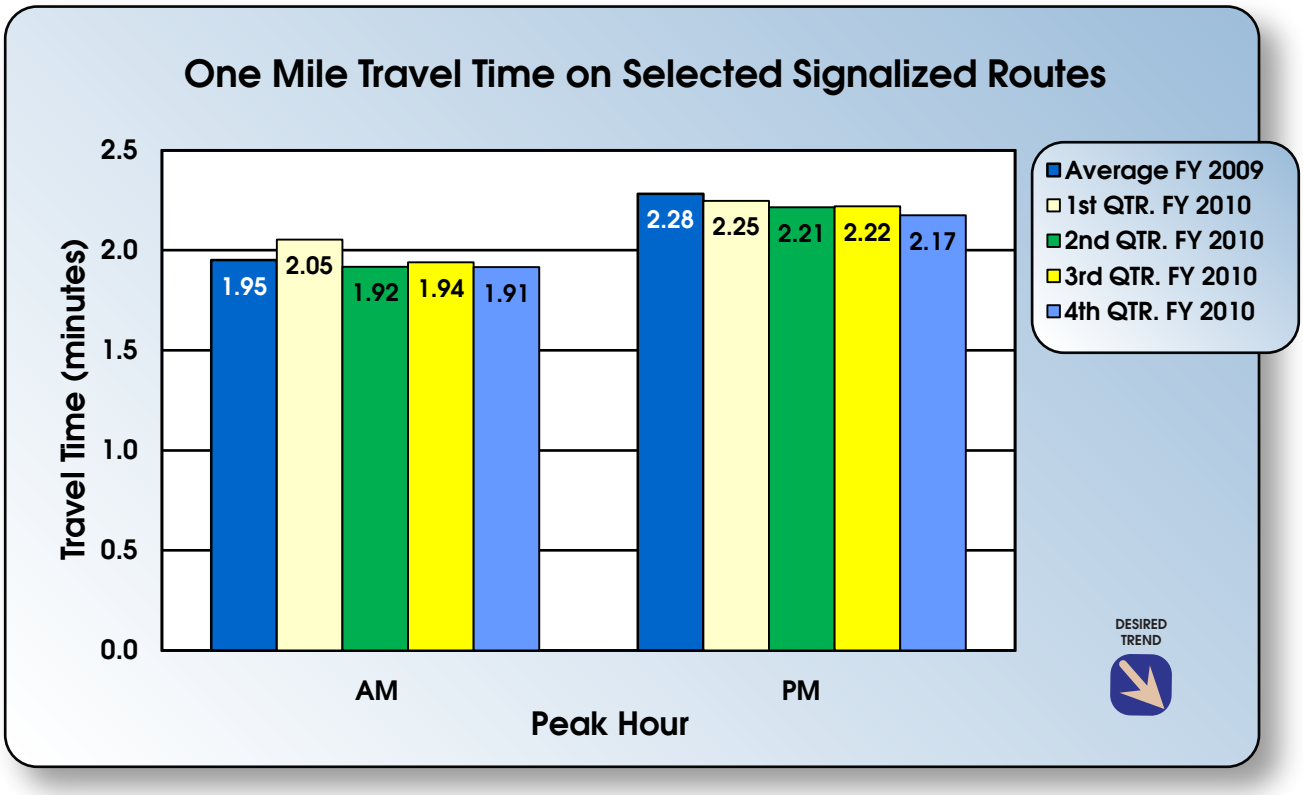
Measurement and Data Collection:

Travel times are measured on various arterials. Travel times are collected by driving each route twice in each direction during a.m. and p.m. peak times and timing how long it takes to traverse the route. The travel time is divided by the length of the route and then all routes averaged together to determine the statewide a.m. and p.m. peak performance for arterials. The measure indicates the time, in minutes, to travel one mile. Data for this measure is updated quarterly.

Improvement Status:

For fourth quarter fiscal year 2010, the average statewide travel time is 1.91 minutes for a.m. peak and p.m. peak is 2.17 minutes. This equates to an average speed of 31 mph for a.m. and 28 mph for p.m. The a.m. peak travel time is three mph faster than p.m. peak travel time. Fourth quarter data shows the a.m. peak and p.m. peak for arterials operating better than the average for fiscal year 2009. For fiscal year 2010 the average a.m. peak travel time is the same as the average a.m. for fiscal year 2009 (31 mph) and the p.m. travel time for fiscal year 2010 (27 mph) is one mph greater than average for fiscal year 2009 (26 mph).

The average rate of travel on selected signalized routes has changed due to construction, timing/controller changes, variations in traffic flow, installation of a traffic adaptive system, and the opening of a Diverging Diamond Interchange (DDI).



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:

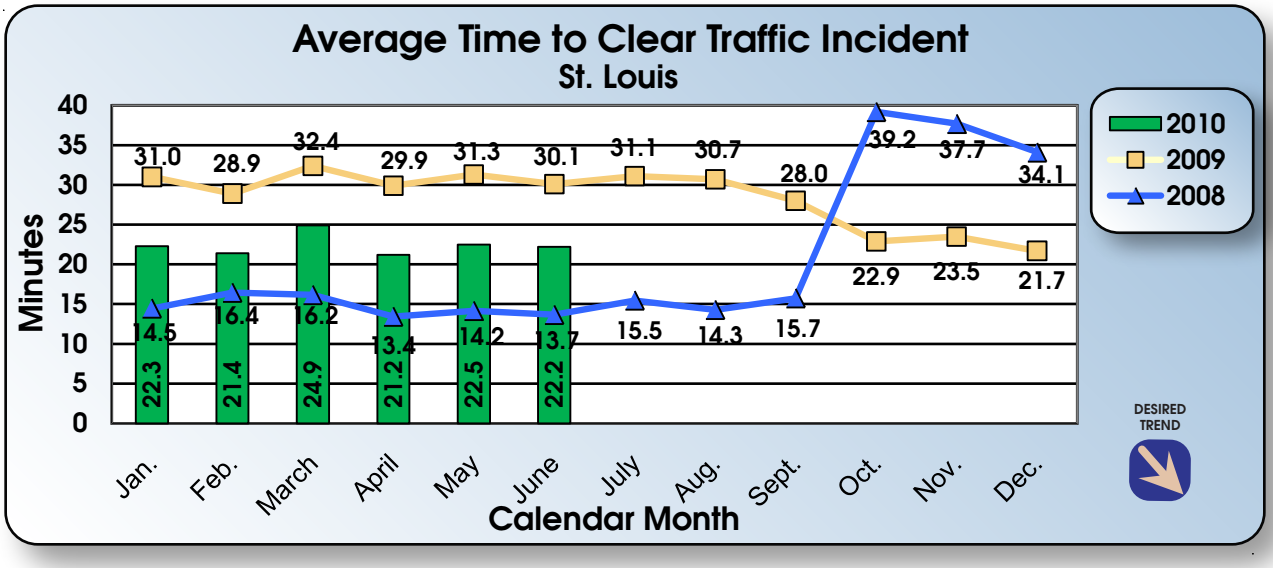
Advanced Transportation Management Systems (ATMS) are used by both the Kansas City and St. Louis traffic management centers to record "incident start time" and the time for "all lanes cleared." In October of 2008, St. Louis switched from using motorist assist arrival times as the "incident start time" to utilizing the time the incident was confirmed in the ATMS usually via CCTV, prior to any responder arriving on the scene, as the "incident start time." Average time to clear traffic incidents is calculated from these times. In January of 2009, about 20 additional miles of I-70, I-470, and I-435 were added and became operational in the Kansas City urban area.

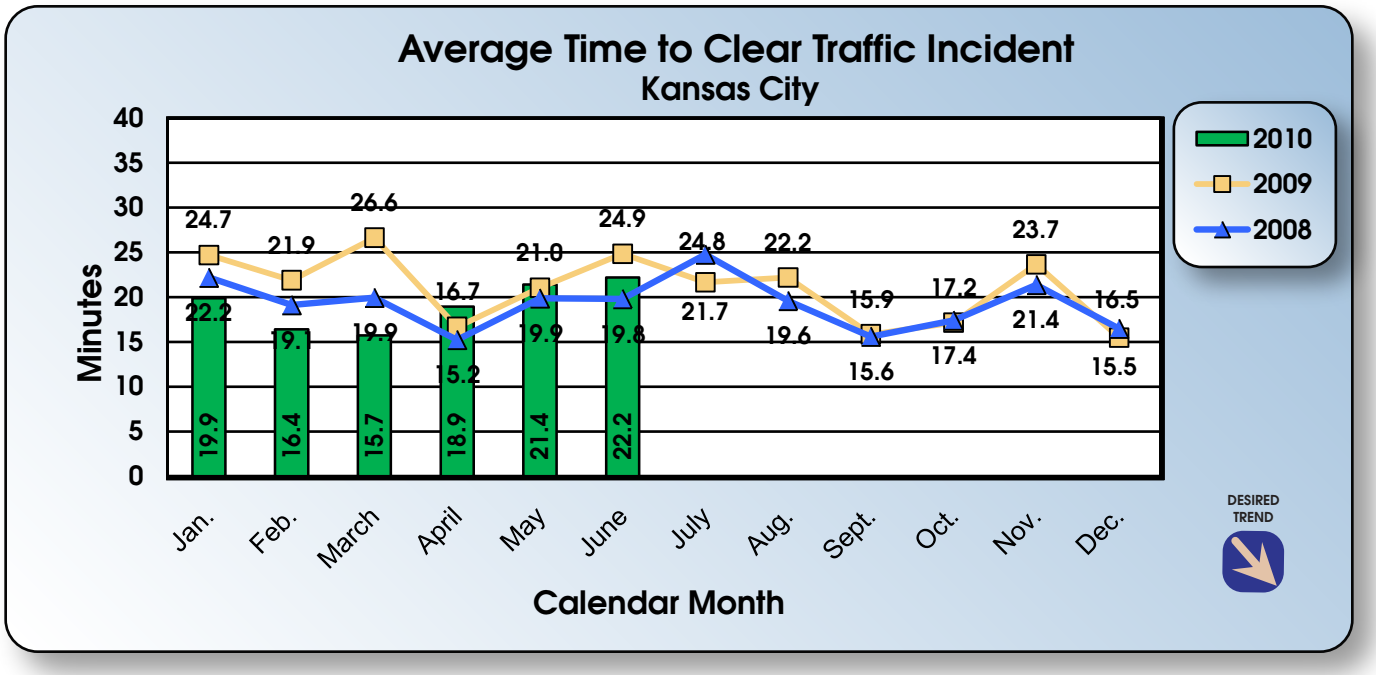
On September 1, 2009, Kansas City moved to a new software and hardware platform, (TranSuite and SQL), giving them the ability to do more detailed tracking of time to clear incidents, Motorist Assist activities and interoperability with Operation Greenlight and the arterial signal systems.

Improvement Status:

St. Louis recorded 562, 570 and 554 incidents respectively for the months of April, May and June utilizing ATMS. Fifty percent of St. Louis incidents were cleared in less than 15 minutes. The average time to clear has been relatively consistent for the past nine months and lower than the first nine months of 2009. Efficient actions taken by both the TMC staff and field responders have been contributing factors in this stabilization of the clearance time. St. Louis' data includes more incidents because St. Louis monitors more freeway miles than the Kansas City area.

Kansas City collected data on 166, 104, and 149 incidents respectively for the months of April, May and June. The average time to clear is reducing slightly but maintaining a consistently low average. One notable contributing factor to time to clear an incident this quarter is construction zones. Kansas City has major construction going on I-70 from downtown to I-435, as well as the kcICON Missouri river bridge construction on I-35. This construction does contribute adversely to emergency responder's time to get to the incident scene, provide traffic control and clear the incident.




Average Time to Clear Traffic Incident
Kansas City
Minutes
40
35
30
25
20
15
10
5
0
2010
2009
2008
24.7
21.9
26.6
16.7
21.8
24.9
24.8
22.2
15.9
17.2
23.7
16.5
22.2
19.1
19.9
15.2
19.9
19.8
21.7
19.6
15.6
17.4
21.4
15.5
19.9
16.4
15.7
18.9
21.4
22.2
Jan.
Feb.
March
April
May
June
July
Aug.
Sept.
Oct.
Nov.
Dec.
Calendar Month
DESIRED TREND


SUPERVISOR
MoDOT
MOTORIST ASSIST

Number of closures on major routes-1d

Result Driver: Don Hillis, Director of System Management
Measurement Driver: Rick Bennett, Traffic Liaison Engineer

Purpose of the Measure:

This measure tracks the number of closures on major routes due to traffic incidents. A traffic incident is any unplanned event that creates a temporary reduction in the number of vehicles that can travel on the road and includes floods, winter weather and traffic impacts such as traffic crashes, utility damage, bridge and pavement damage, special events and police emergencies.

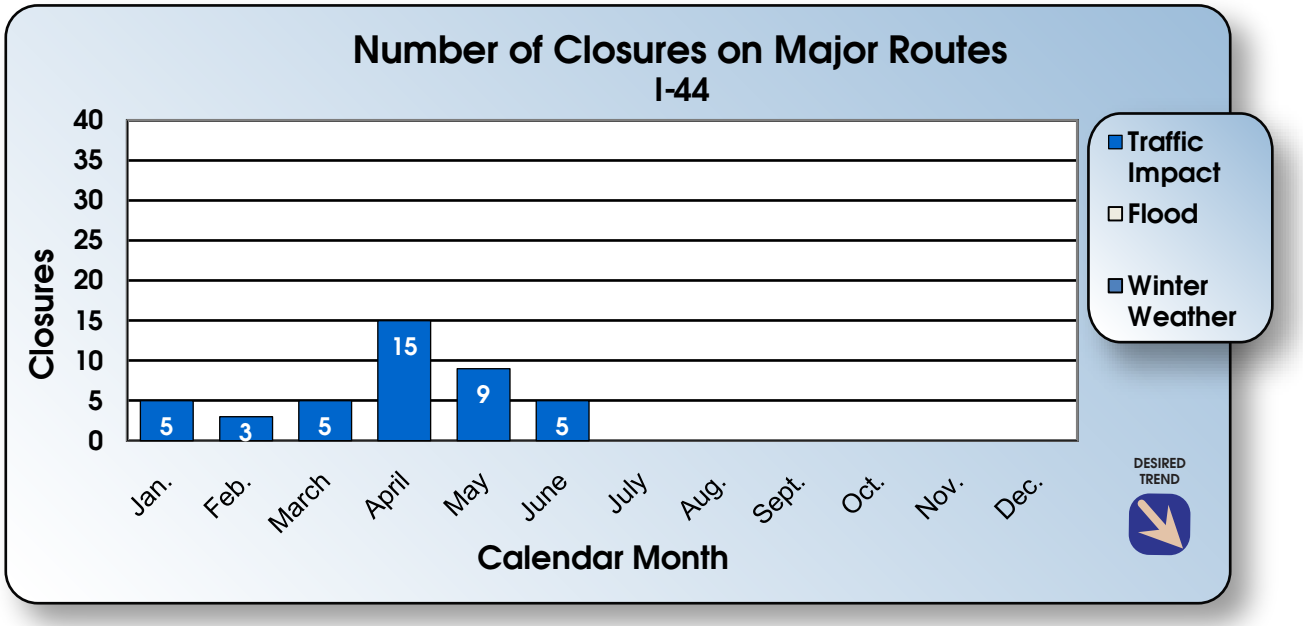
Measurement and Data Collection:

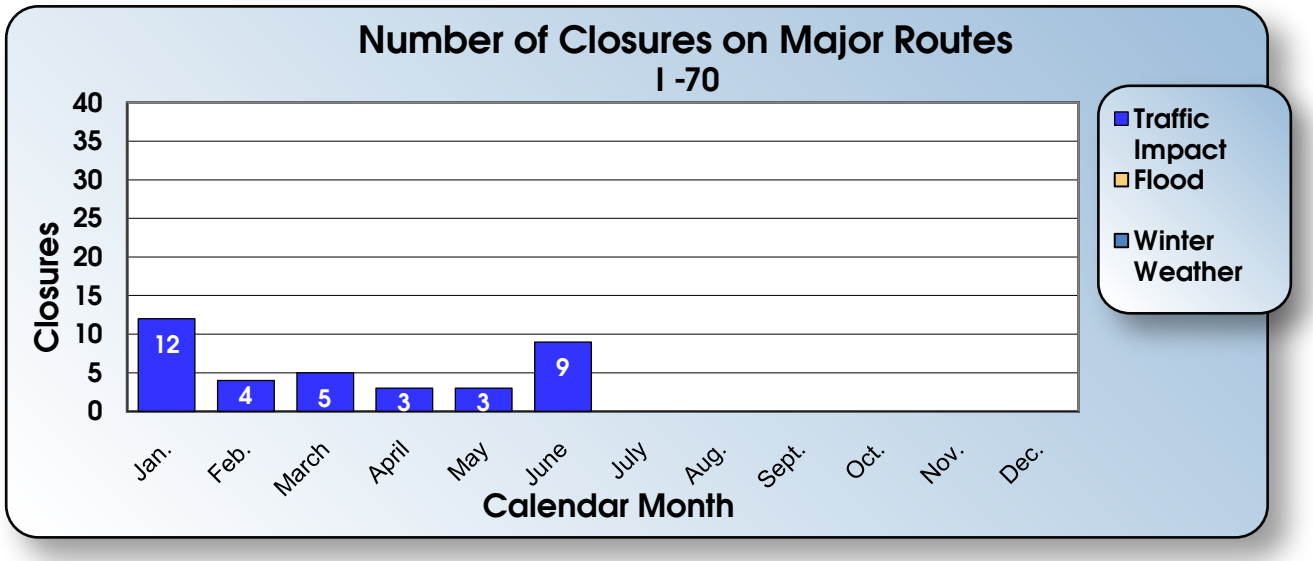
Major route closures that have an actual or expected duration of one hour or more are entered into MoDOTs Transportation Management System (TMS) for display on the Traveler Information Map on MoDOT's Internet. The numbers of closure events are tracked in the TMS system.

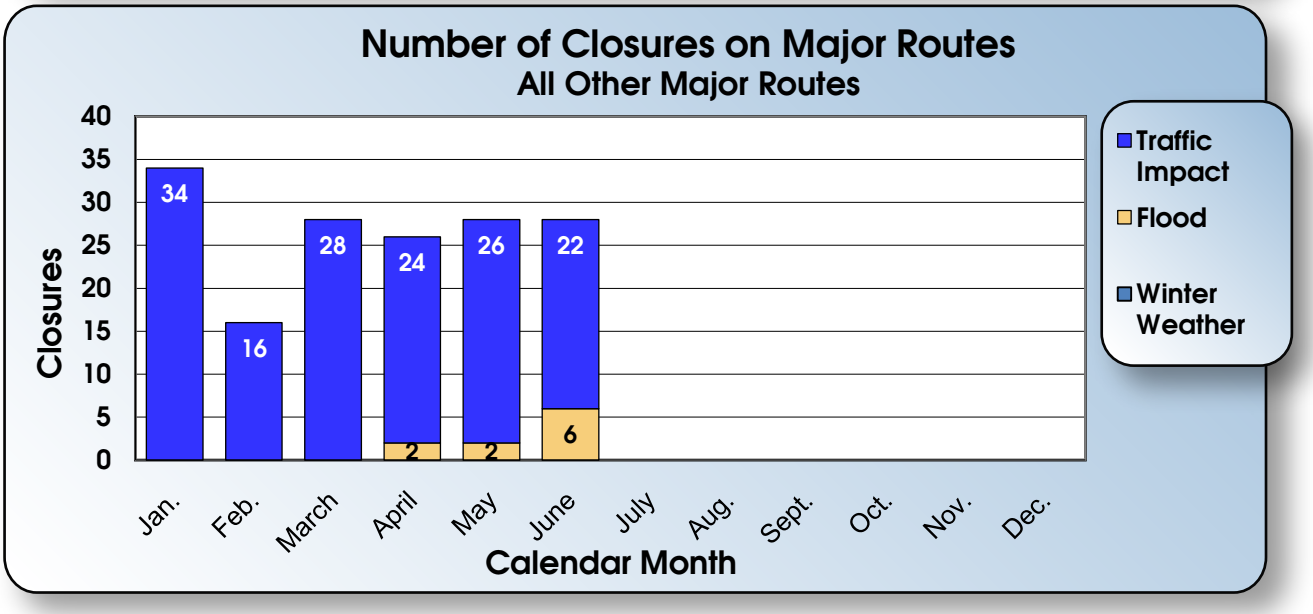
Improvement Status:

On I-44, traffic crashes where the cause of all but two of the traffic impact closures in April, May and June. The two exceptions were closures for police emergencies.

In addition to traffic crashes, police emergencies, roadway damage, bridge damage, debris on the roadway and utility damage attributed to the traffic impact closures on all other major routes.







Traveler Information Map

For work zone location, flooding information and weather-related road conditions visit MoDOT's **Traveler Information Map**. It's your first source of information when planning your trip across the Show-Me state.

Statewide text report of road closures

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

Result Driver: Don Hillis, Director of System Management
Measurement Driver: Dan Smith, Traffic Management & Operations Engineer

Purpose of the Measure:

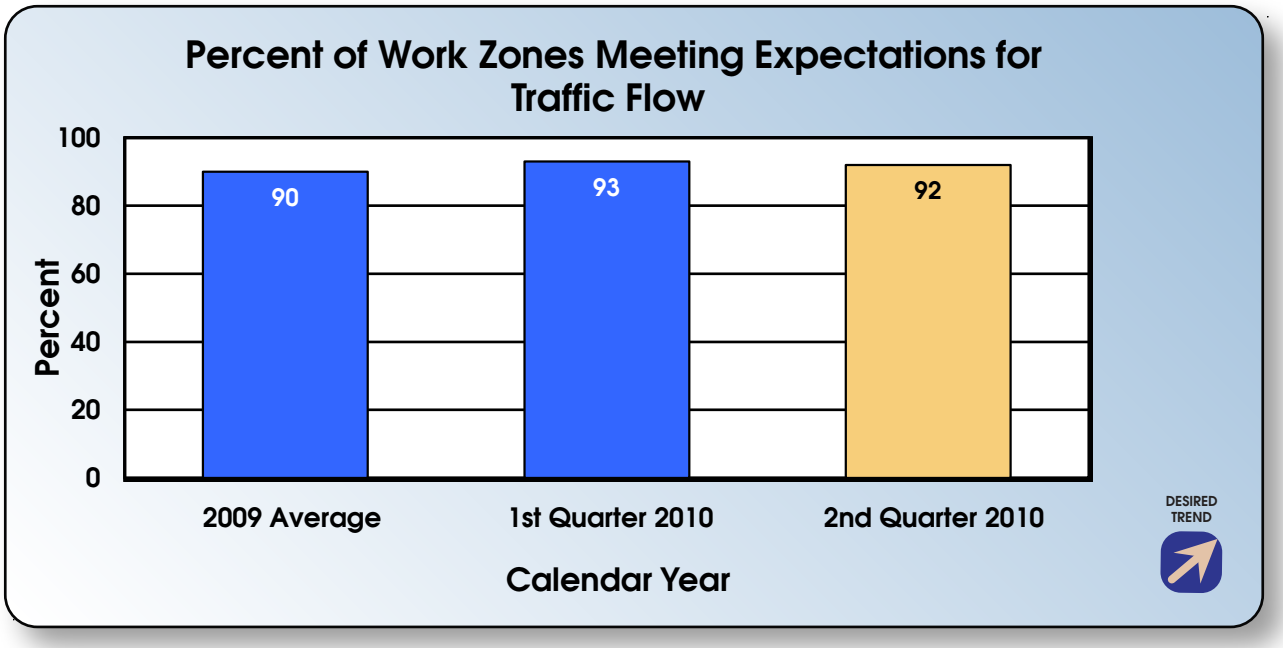
An important factor in evaluating the department's performance in temporary traffic control design, deployment, operation and maintenance is the measurement of work zones' affect on the mobility of highway users. This measure tracks how well the department meets customer expectations of traffic flow in, around and through work zones on state highways.

Measurement and Data Collection:

On January 1, 2009, MoDOT provided a Work Zone Customer Survey for the traveling public to provide evaluation of the mobility in work zones across the state. Each survey has several questions that address the sign and flagger instructions, speed limit, travel time, and travel safety. The evaluator assigns a yes, no, or n/a rating to each of the questions. The overall ratings are compiled quarterly and reported via this measurement. The survey is on the MoDOT website at the following address: http://www.modot.gov/workzones/Comments.htm.

Improvement Status:

Compilation of the 1,100 surveys performed by the traveling public and MoDOT staff between April and June of this calendar year resulted in a positive satisfaction rating of 92 percent for work zone traffic flow. This is a one percent decrease in customer satisfaction from the first quarter's 93 percent, but a two percent increase from last year's average of 90 percent customer satisfaction.



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

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.

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. 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 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. Data collection for this measure runs from November through March of each winter season, and is updated in the January and April Tracker reports. The time in hours is the statewide average for the entire winter season.

Improvement Status:

The average time to meet the performance objectives on the major highways is 0.3 hour more than the previous winter. The average time to meet the performance objectives on the minor highways is 0.7 hour more than last winter. The time to meet the performance objectives will vary based on the amount of snow received, the duration and the intensity of the storm. This winter has produced several major storms with near blizzard conditions requiring additional time to meet the objectives. Strategies to improve these numbers include implementing best practices, pursuing equipment enhancements, testing new materials and continued training of snow removal employees.