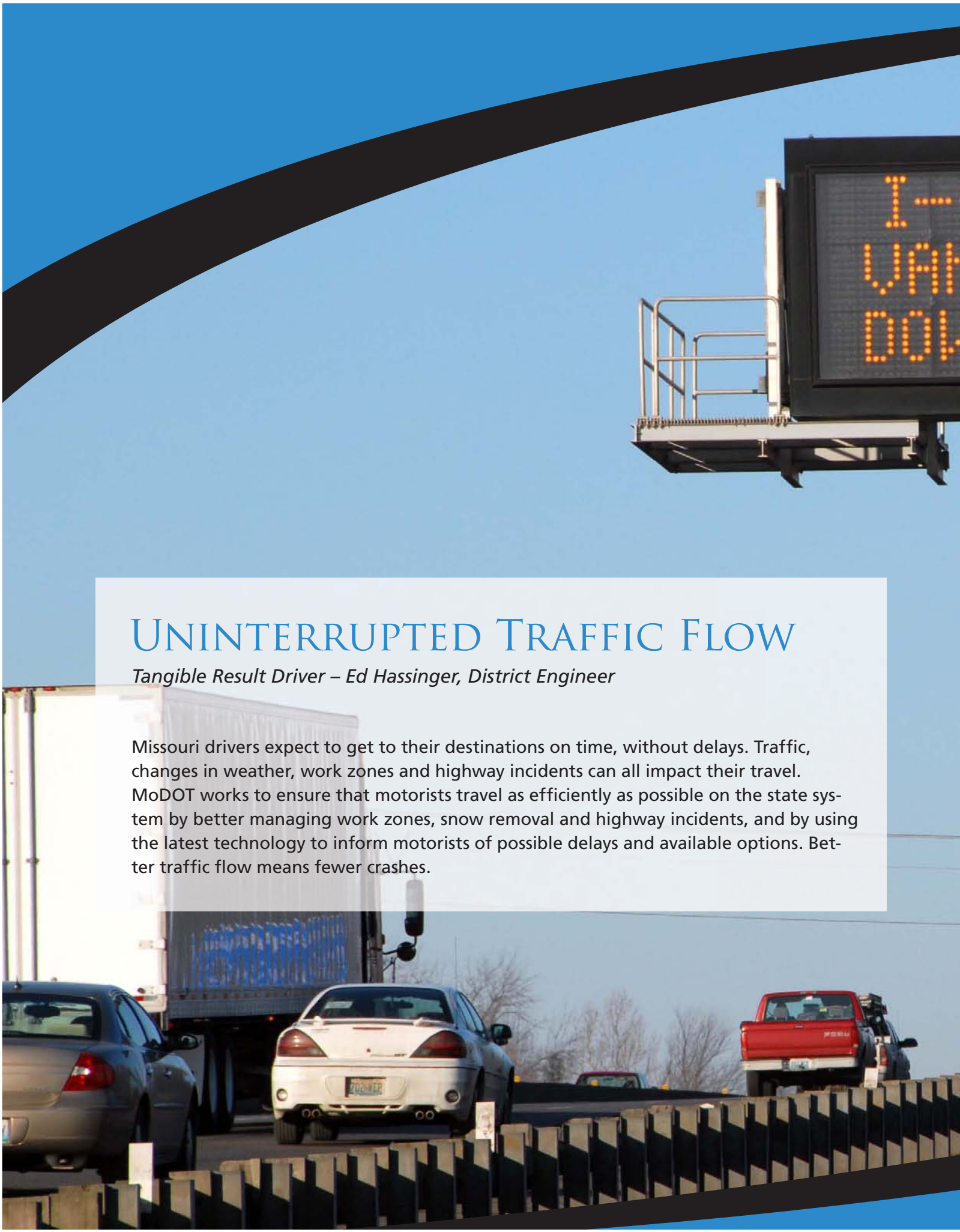


Uninterrupted Traffic Flow

Tangible Result Driver – Ed Hassinger, District Engineer

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: Ed Hassinger, District Engineer
Measurement Driver: Jon Nelson, Traffic Management and Operations Engineer

Purpose of the Measure:

This measure uses the average travel index values to calculate the 10 mile travel times during the morning and evening peaks on various freeway sections. The peak periods have been identified as the 7 a.m. hour and the 5 p.m. hour respectively based on historical values that suggest these hours to be the peak volume periods. The desired trend is to travel 10 miles per 10 minutes on a 60 mph freeway. The desired travel index is 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:

Travel Index = Average speed/Free flow speed

The ten-mile Travel Time is calculated using this equation:

10-Mile Travel Time = 10 miles/Travel Index

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 *www.gatewayguide.com*. Information about the Kansas City Traffic Management Center, KC Scout, can be found at *www.kcscout.net/*. Data for the St. Louis District is also provided through a partnership with www.*traffic.com*. Data for each location is updated quarterly.

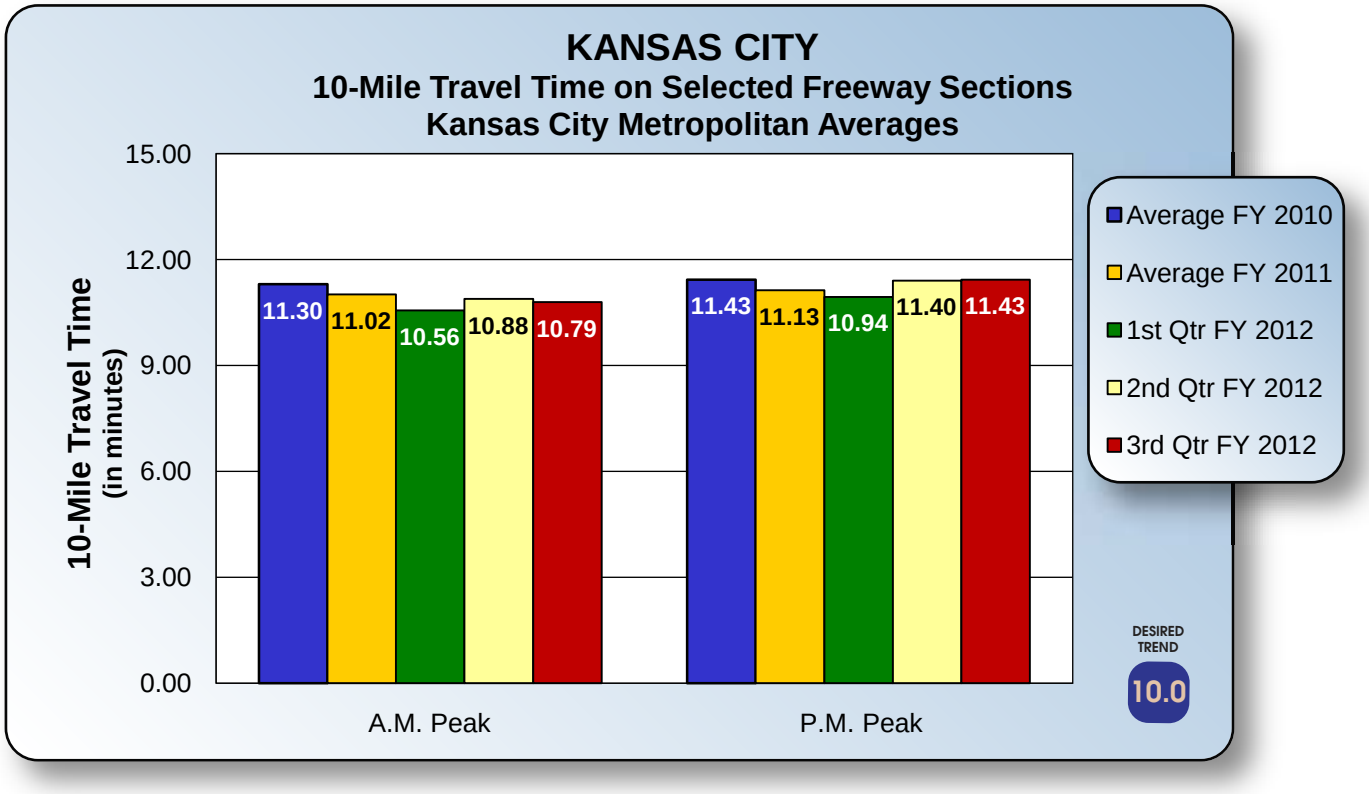
Improvement Status:

Kansas City Metropolitan Region:
In Kansas City, the average morning peak 10 mile travel time for third quarter FY 2012 was 10.79 minutes, down from 10.88 minutes last quarter. This is also a reduction from third quarter FY 2011 (11.43 minutes). The average evening peak 10 mile travel time for third quarter FY 2012 was 11.43 minutes, up slightly from 11.40 minutes last quarter. Likewise, the evening peak travel time for this quarter is higher than third quarter FY 2011 (11.07 minutes).

Mobility for this quarter showed notable improvement during the morning peak along westbound Interstate 70. Construction of a new auxiliary lane was recently completed in the westbound direction improving traffic flow in the area. For the eastbound direction, this same construction work has resulted in decreased mobility during the evening peak. All work in the area will be completed by July 2012 and mobility along I-70 is expected to improve accordingly.

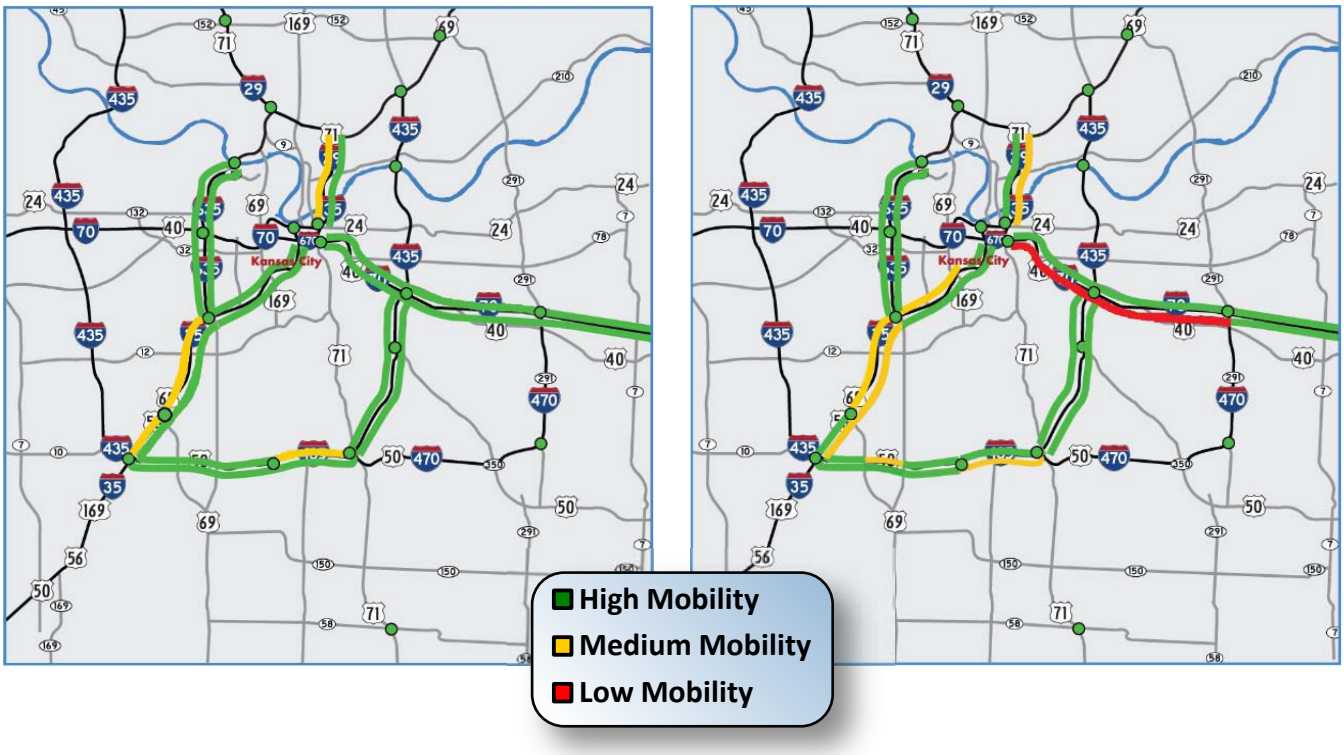
St. Louis Metropolitan Region:
In St. Louis, the average morning peak 10 mile travel time for third quarter FY 2012 was 10.92 minutes, down from 11.36 minutes last quarter. The morning peak travel time for this quarter is the same as it was in third quarter FY 2011. The average evening peak 10 mile travel time for third quarter FY 2012 was 11.29 minutes, down from 11.74 minutes last quarter. When compared to third quarter FY 2011, the evening peak travel time for this quarter is up from 11.12 minutes.

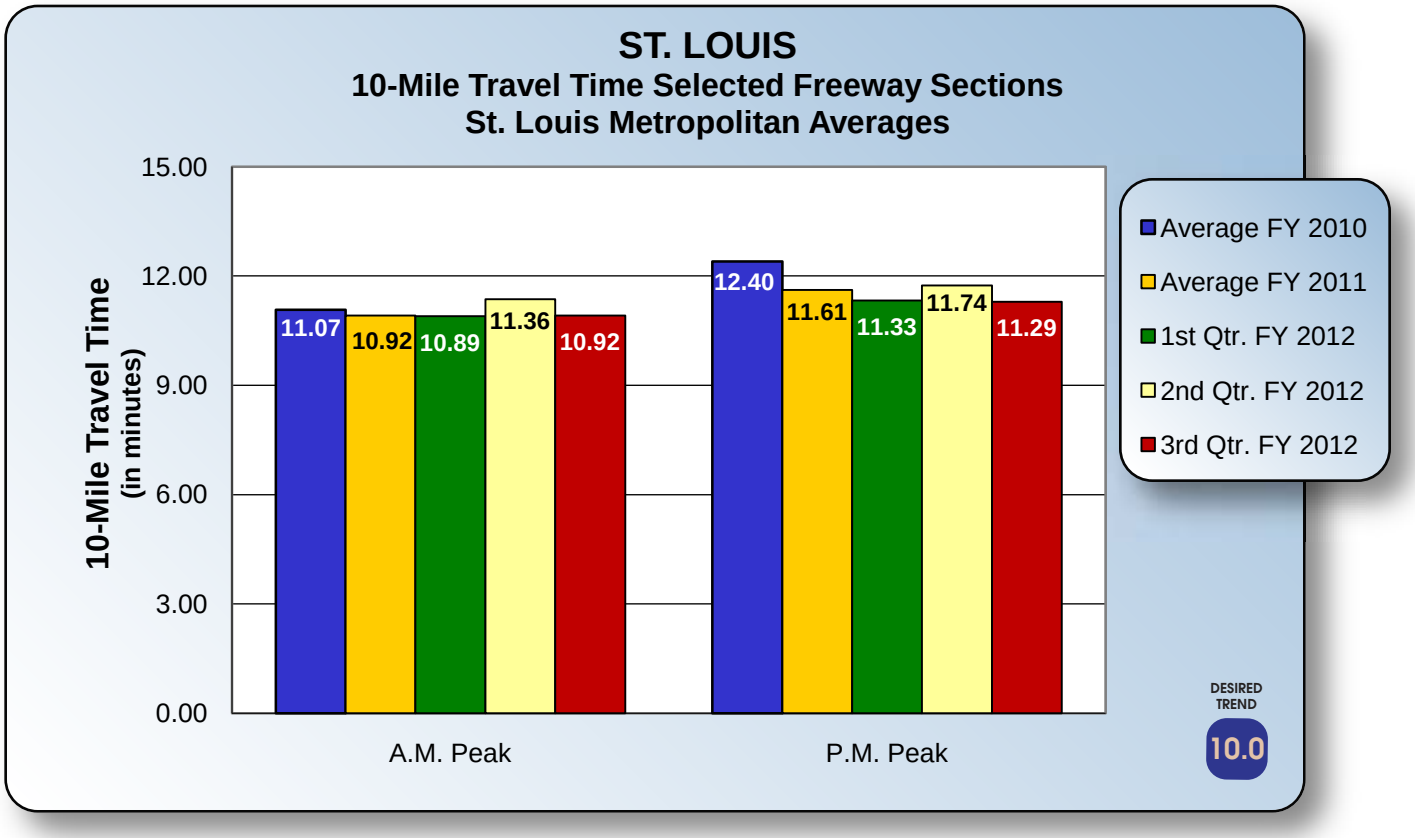
Mobility for this quarter showed notable improvement during the evening peak around the interchange of I-64 and I-270, particularly westbound I-64. Each month, the St. Louis District produces a mobility report and meets as a team to identify specific locations and strategies for improvement. The team has recently focused on the I-64 corridor, specifically from I-270 to the Missouri River. In addition to operational considerations, the district has been working to provide customers with information regarding times of expected low mobility in hopes of changing driver behavior and routine driving schedules. Other identified areas include I-270 from I-64 to I-44 as well as I-64 east of I-170, locations in which recurring congestion has been consistent for the last several quarters.



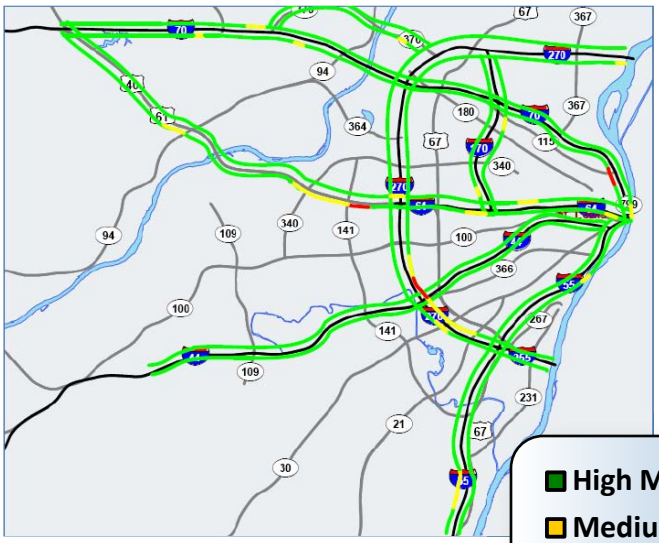
AM Peak – Regional Mobility

PM Peak – Regional Mobility

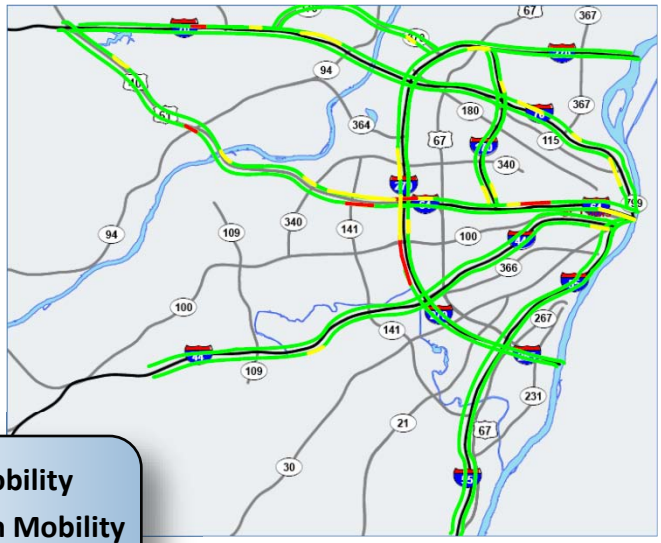




AM Peak – Regional Mobility



PM Peak – Regional Mobility



High Mobility
Medium Mobility
Low Mobility

Average rate of travel on signalized routes-1b

Result Driver: Ed Hassinger, District Engineer
Measurement Driver: Julie Stotlemeyer, Traffic Liaison Engineer

Purpose of the Measure: This measure indicates how well arterials across the state operate during peak traffic times. Statewide, there are approximately 325 arterials. About 180 are randomly selected each year for measurement. As improvements such as signal timing or access management are made, this measure will show the effects those changes and decisions make on the arterial system.

Measurement and Data Collection:
Travel times are measured on random arterials. Travel times are collected by driving each route twice or through automated collection in each direction during a.m. and p.m. peak times and determining how long it takes to traverse the route.

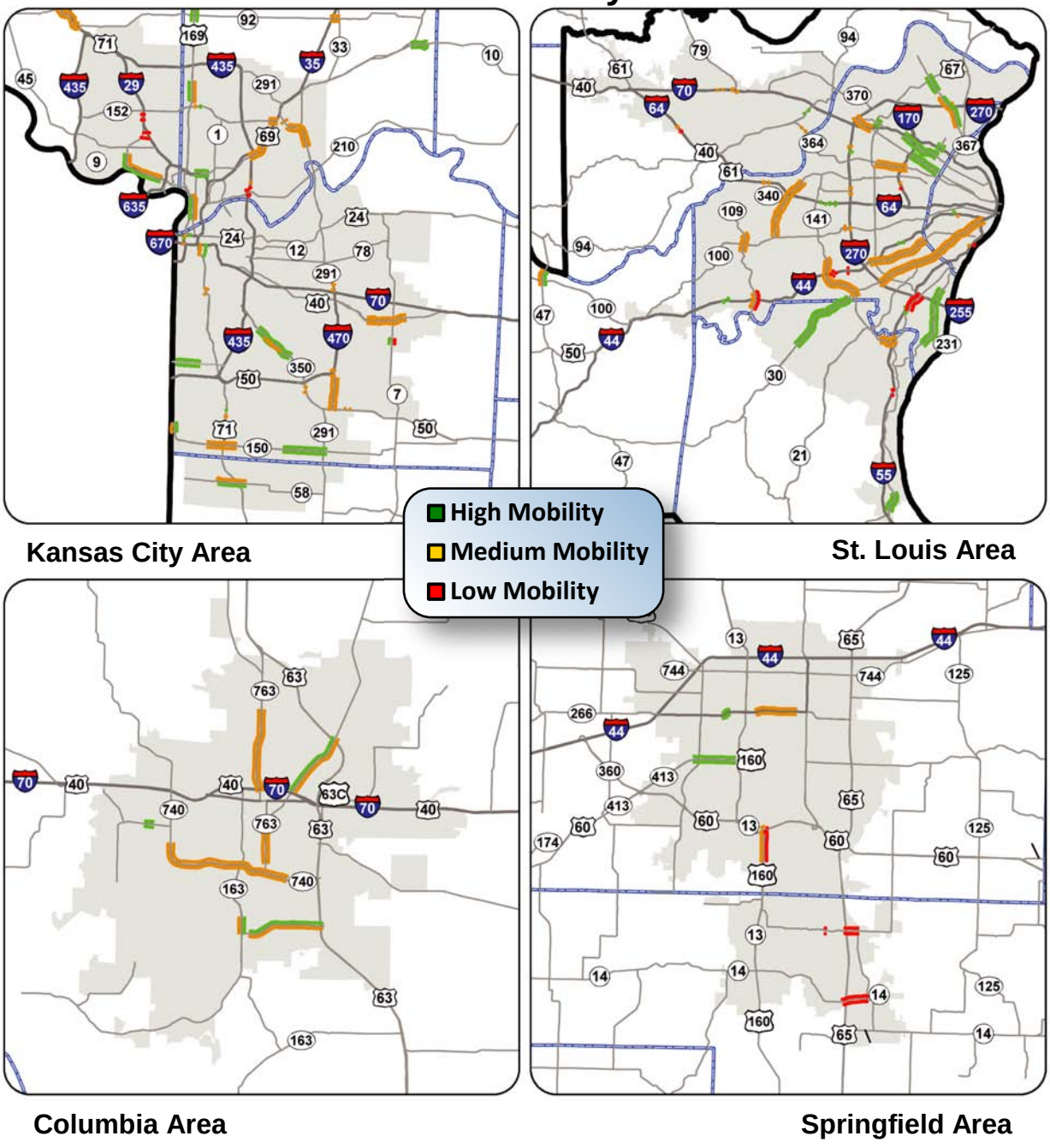
Since speed limits vary for signalized routes, the regional maps show mobility for the a.m. and p.m. peak times as compared to the posted speed limit on the route. High mobility indicates speeds are at 80 percent of the speed limit for the route, medium mobility is 50 to 79 percent and low mobility is less than 50 percent. This measure is updated quarterly.

Improvement Status:
For the routes selected this quarter in the a.m. peak, 39 percent were high, 55 percent were medium and 6 percent were low mobility. For the p.m. peak, 10 percent were high, 83 percent were medium and 6 percent were low mobility.

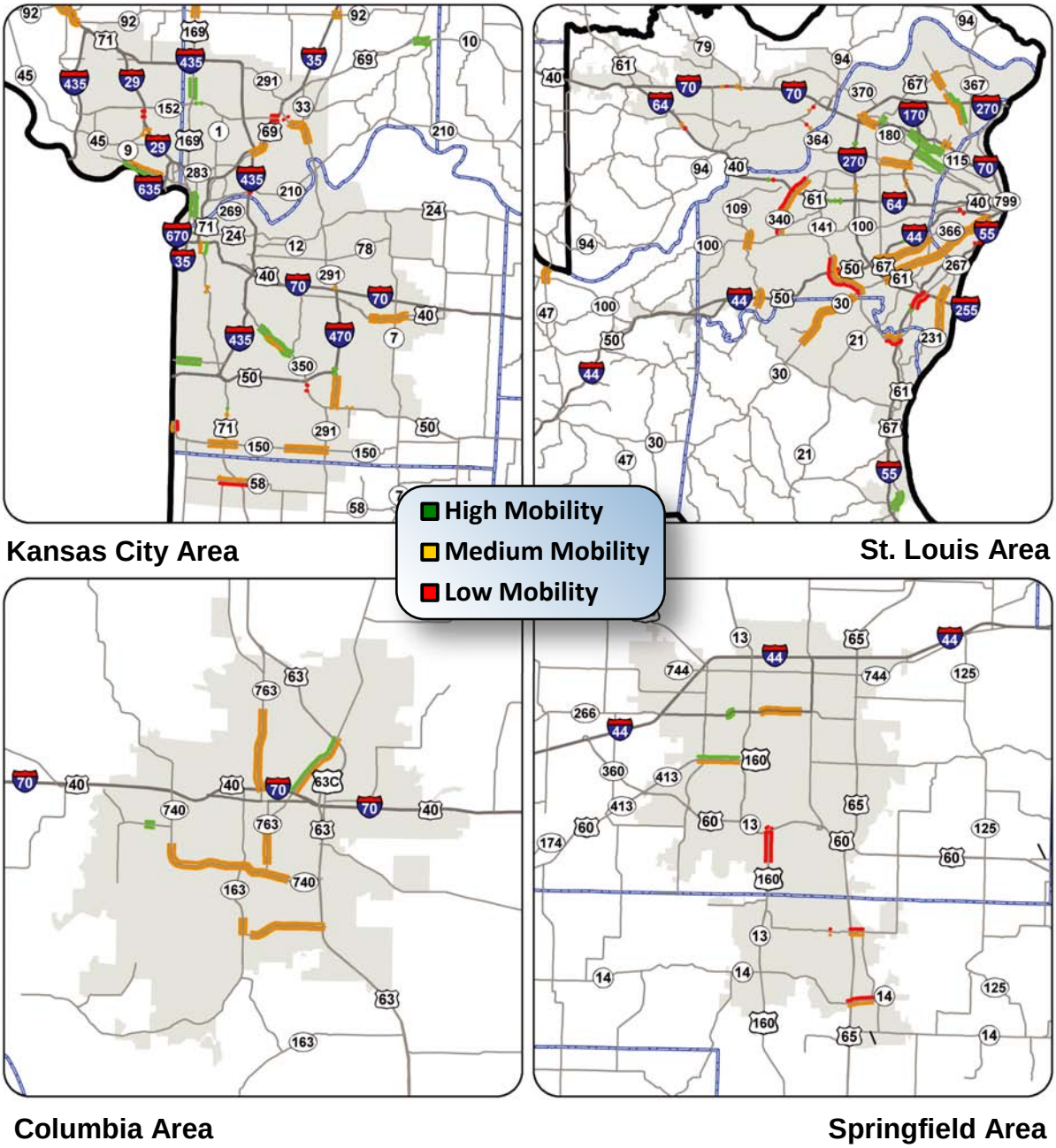
Routes experiencing high mobility increased 3 percent for the a.m. and decreased 12 percent for the p.m. peaks when compared to last quarter. Low mobility improved 3 percent and 9 percent this quarter, respectively. Year-to-date, the mobility on signalized routes is 41 percent high, 54 percent medium and 5 percent low for a.m. and 23 percent high, 67 percent medium and 9 percent low for p.m.

Overall, in the third quarter of fiscal year 2012, statewide mobility increased for the a.m. and p.m. peaks from second quarter of fiscal year 2012.

AM Mobility


High Mobility
Medium Mobility
Low Mobility
Kansas City Area
St. Louis Area
Columbia Area
Springfield Area

PM Mobility


High Mobility
Medium Mobility
Low Mobility
Kansas City Area
St. Louis Area
Columbia Area
Springfield Area

Average time to clear traffic incident-1c

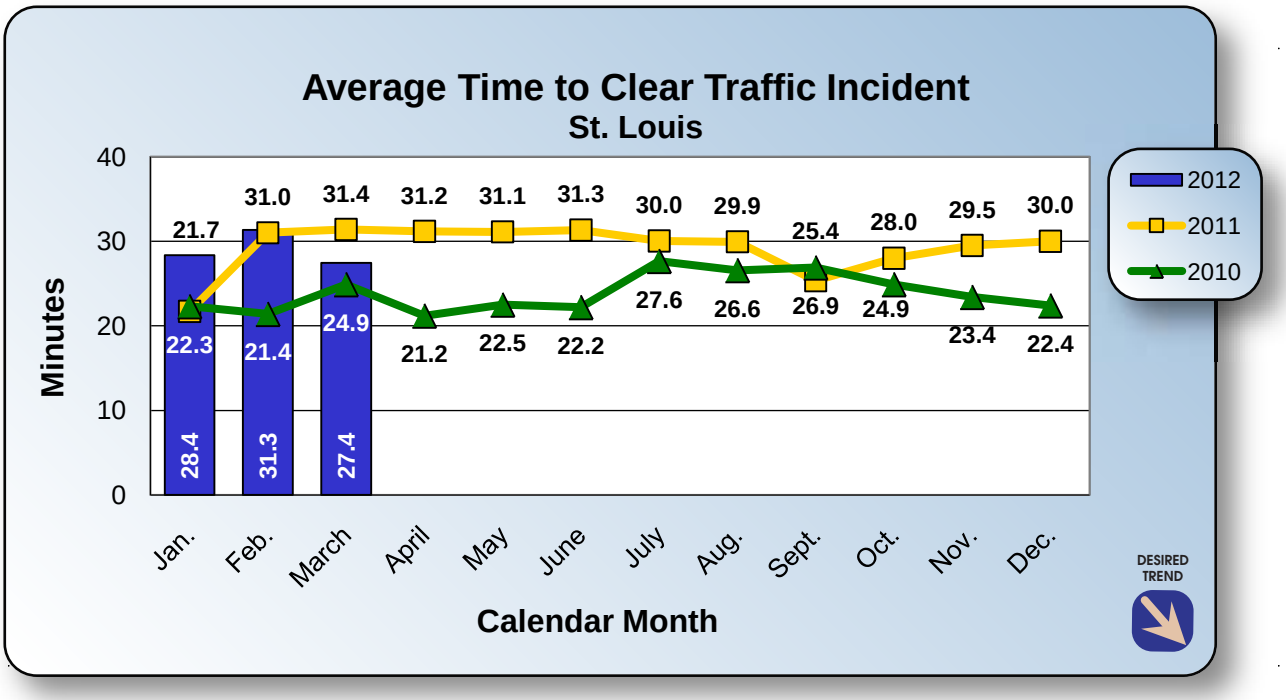
Result Driver: Ed Hassinger, District Engineer
Measurement Driver: Rick Bennett, Traffic Liaison Engineer

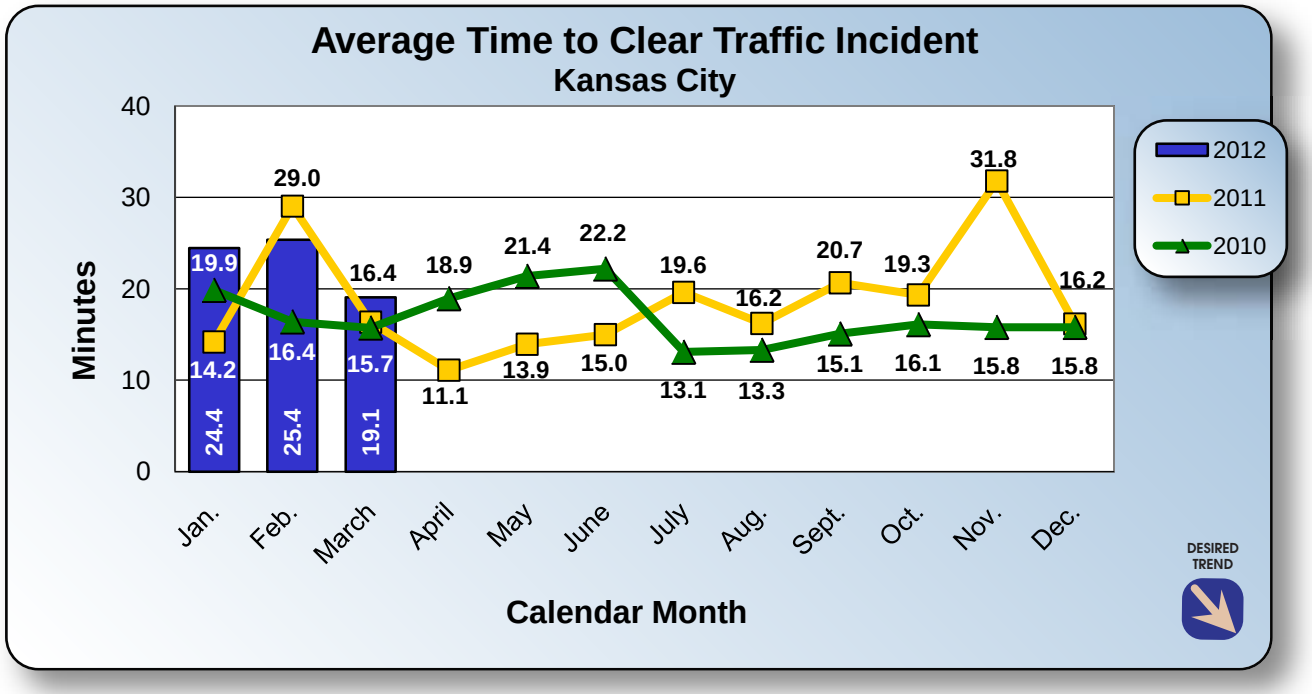
Purpose of the Measure:
This measure is used to determine the trends in incident clearance on the state highway system. A traffic incident is an unplanned event that creates a temporary reduction in the number of vehicles that can travel on the road. The sooner an incident is removed, the sooner the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

Measurement and Data Collection:
Advanced Transportation Management Systems are used by the Kansas City and St. Louis traffic management centers to record "incident start time" and the time for "all lanes cleared." This measure is updated quarterly.

Improvement Status:
St. Louis recorded 410, 341 and 346 incidents, respectively, for the months of January, February and March 2012. The average time to clear an incident in St. Louis remained fairly constant.

The Kansas City District collected data on 602, 647 and 625 incidents, respectively, for the months of January, February and March 2012. In Kansas City the average time of incidents with a duration of more than two hours decreased by an average of 20 percent each month of this quarter.




Average Time to Clear Traffic Incident
Kansas City
Minutes
40
30
20
10
0
2012
2011
2010
19.9
14.2
24.4
29.0
16.4
25.4
16.4
15.7
19.1
18.9
11.1
21.4
13.9
22.2
15.0
19.6
13.1
16.2
13.3
20.7
15.1
19.3
16.1
31.8
15.8
16.2
15.8
Jan.
Feb.
March
April
May
June
July
Aug.
Sept.
Oct.
Nov.
Dec.
Calendar Month
DESIRED TREND


SUPERVISOR
MoDOT
MOTORIST ASSIST

Traffic impact closures on major interstate routes-1d

Result Driver: Ed Hassinger, District Engineer
Measurement Driver: Rick Bennett, Traffic Liaison Engineer

Purpose of the Measure:

This measure tracks the closures on Interstate 70 and Interstate 44 due to traffic impacts. A traffic impact is any unplanned event that creates a temporary reduction in the number of vehicles that can travel on the road and includes traffic incidents such as vehicle crashes, utility damage, bridge and pavement damage, special events and police emergencies.

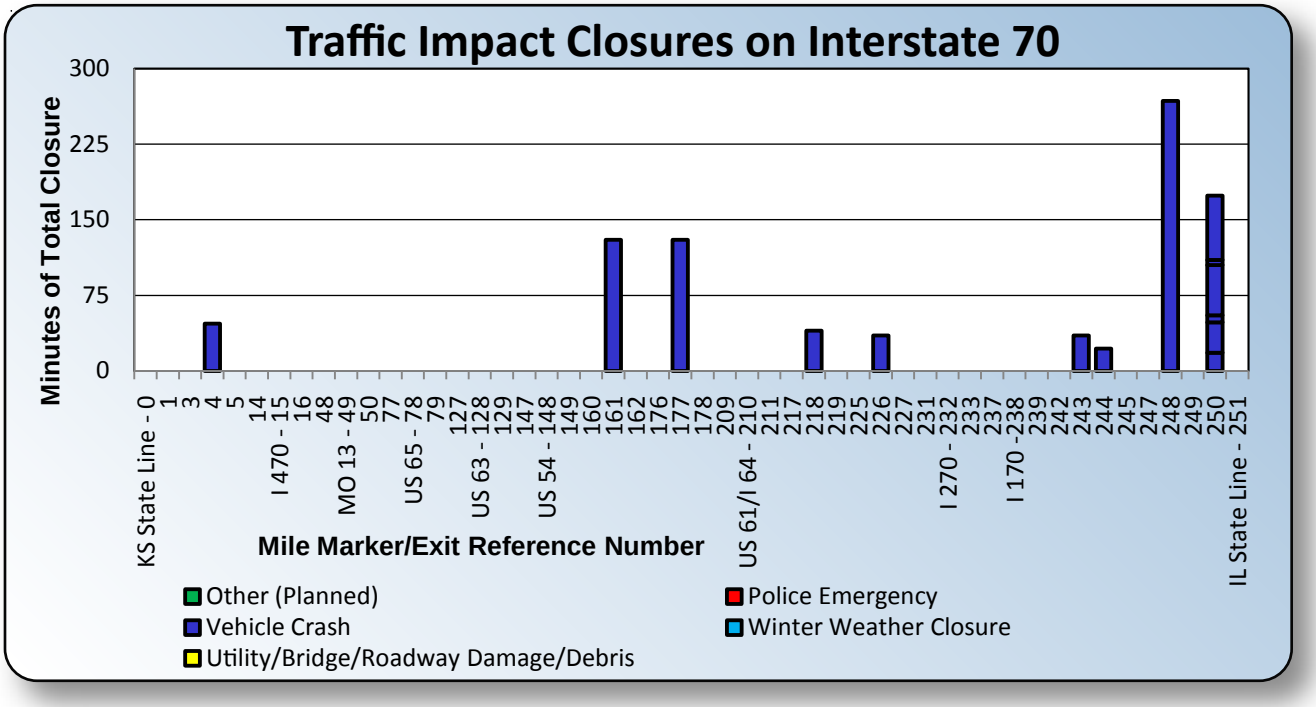
Measurement and Data Collection:

The interstate route closures that have an actual or expected duration of one hour or more are entered into MoDOT's Transportation Management System for display on the Traveler Information Map on MoDOT's website. These closure events are tracked in the TMS system. This measure is updated quarterly.

Improvement Status:

All of the traffic impact closures on I-70 were vehicle crashes during the first quarter of calendar year 2012. Eleven of the 13 impacts captured in TMS on I-70 occurred in the St. Louis District.

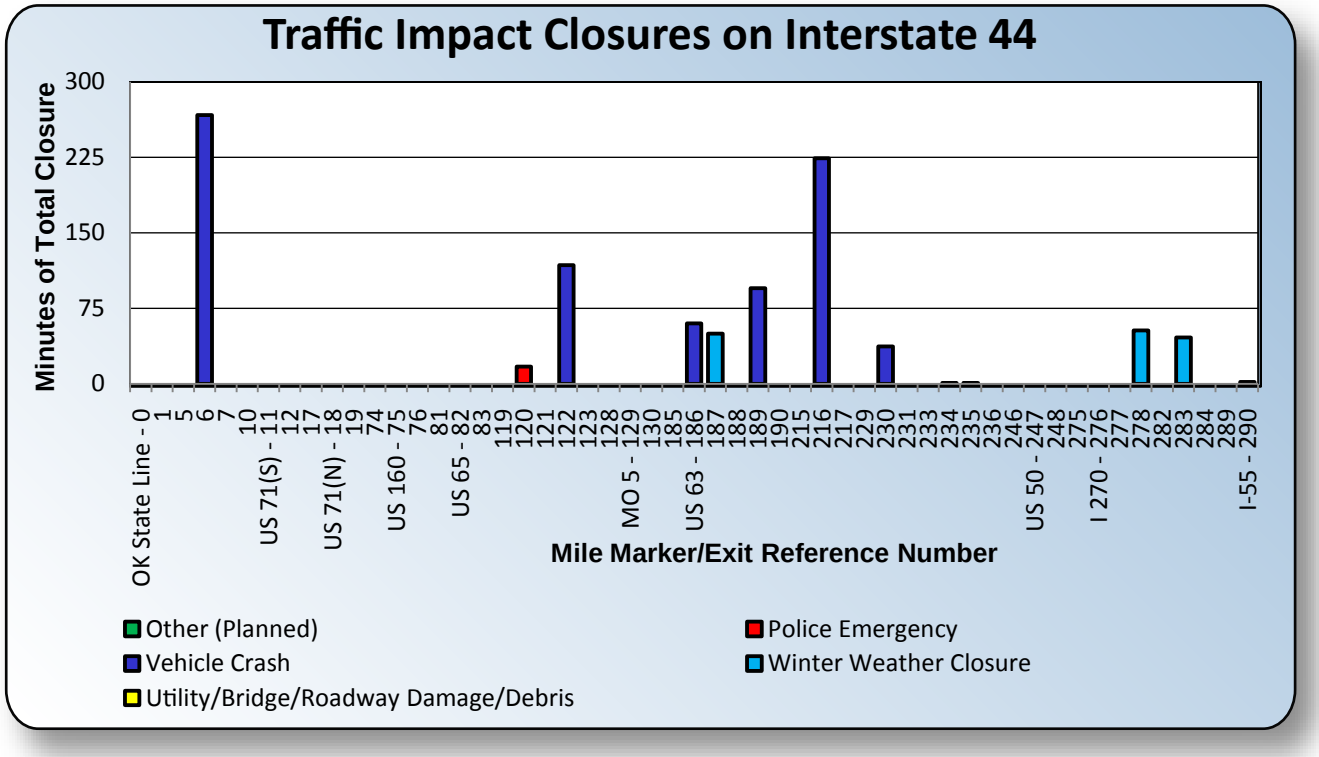
On I-44 the traffic impact closures were vehicle crashes, police emergencies, winter weather closures or other planned events.

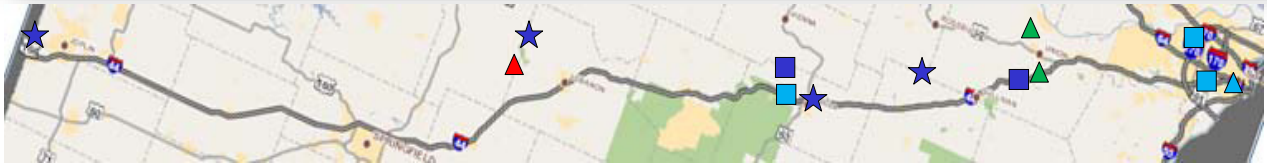


Other (Planned) | Police Emergency | Vehicle Crash | Winter Weather Closure | Utility/Bridge/ Roadway Damage/Debris

△ 0 – 30 Minutes ☐ 31-90 Minutes ☆ 91+ Minutes

SYMBOL	COUNTY	DIR	MILE MARKER	START DATE	TYPE	DURATION (H:MM)
★	CALLAWAY	E	161.33	25-Feb-12	VEHICLE CRASH	2:10
★	MONTGOMERY	E	177.01	25-Feb-12	VEHICLE CRASH	2:10
■	ST. CHARLES	W	218.60	11-Jan-12	VEHICLE CRASH	0:40
■	ST. CHARLES	W	226.16	16-Feb-12	VEHICLE CRASH	0:35
■	ST. LOUIS CITY	W	243.27	14-Jan-12	VEHICLE CRASH	0:35
▲	ST. LOUIS CITY	W	244.72	11-Jan-12	VEHICLE CRASH	0:22
★	ST. LOUIS CITY	W	248.64	02-Feb-12	VEHICLE CRASH	4:28
▲	ST. LOUIS CITY	E	250.06	03-Mar-12	VEHICLE CRASH	0:30
▲	ST. LOUIS CITY	E	250.45	23-Mar-12	VEHICLE CRASH	0:07
▲	ST. LOUIS CITY	E	250.57	22-Mar-12	VEHICLE CRASH	0:05
■	ST. LOUIS CITY	E	250.62	11-Jan-12	VEHICLE CRASH	0:50
■	ST. LOUIS CITY	E	250.69	22-Mar-12	VEHICLE CRASH	1:04
▲	ST. LOUIS CITY	E	250.97	22-Mar-12	VEHICLE CRASH	0:18





Other (Planned) · Police Emergency · Vehicle Crash · Winter Weather Closure · Utility/Bridge/ Roadway Damage/Debris

△ 0 – 30 Minutes · □ 31-90 Minutes · ☆ 91+ Minutes

SYMBOL	COUNTY	DIR	MILE MARKER	START DATE	TYPE	DURATION (H:MM)
★	NEWTON	W	6.13	12-Jan-12	VEHICLE CRASH	4:27
▲	LACLEDE	W	120.30	30-Jan-12	POLICE EMERGENCY	0:17
★	LACLEDE	W	122.97	13-Feb-12	VEHICLE CRASH	1:58
■	PHELPS	W	186.24	12-Jan-12	VEHICLE CRASH	1:00
■	PHELPS	E	187.91	12-Jan-12	WINTER WEATHER CLOSURE	0:50
★	PHELPS	E	189.67	12-Jan-12	VEHICLE CRASH	1:35
★	CRAWFORD	W	216.17	22-Mar-12	VEHICLE CRASH	3:44
■	FRANKLIN	E	230.50	19-Feb-12	VEHICLE CRASH	0:37
▲	FRANKLIN	W	234.98	14-Feb-12	OTHER (PLANNED)	0:01
▲	FRANKLIN	E	235.23	14-Feb-12	OTHER (PLANNED)	0:01
■	ST. LOUIS	W	278.96	12-Jan-12	WINTER WEATHER CLOSURE	0:53
■	ST. LOUIS	E	283.76	12-Jan-12	WINTER WEATHER CLOSURE	0:46
▲	ST. LOUIS CITY	E	290.12	12-Jan-12	WINTER WEATHER CLOSURE	0:02

Percent of customers satisfied with work zones-1e

Result Driver: Ed Hassinger, District Engineer
Measurement Driver: Dan Smith, Traffic Management & Operations Engineer

Purpose of the Measure:

Work zones are designed to allow the traveling public the ability to travel safely through the work area with minimal disruption. This measure tracks how well the department meets customer expectations in nine aspects of work zone design.

Measurement and Data Collection:

The Work Zone Customer Survey is located on the MoDOT website at: *www.modot.mo.gov/workzones/Comments.htm*.

Customers indicated whether they agreed that:

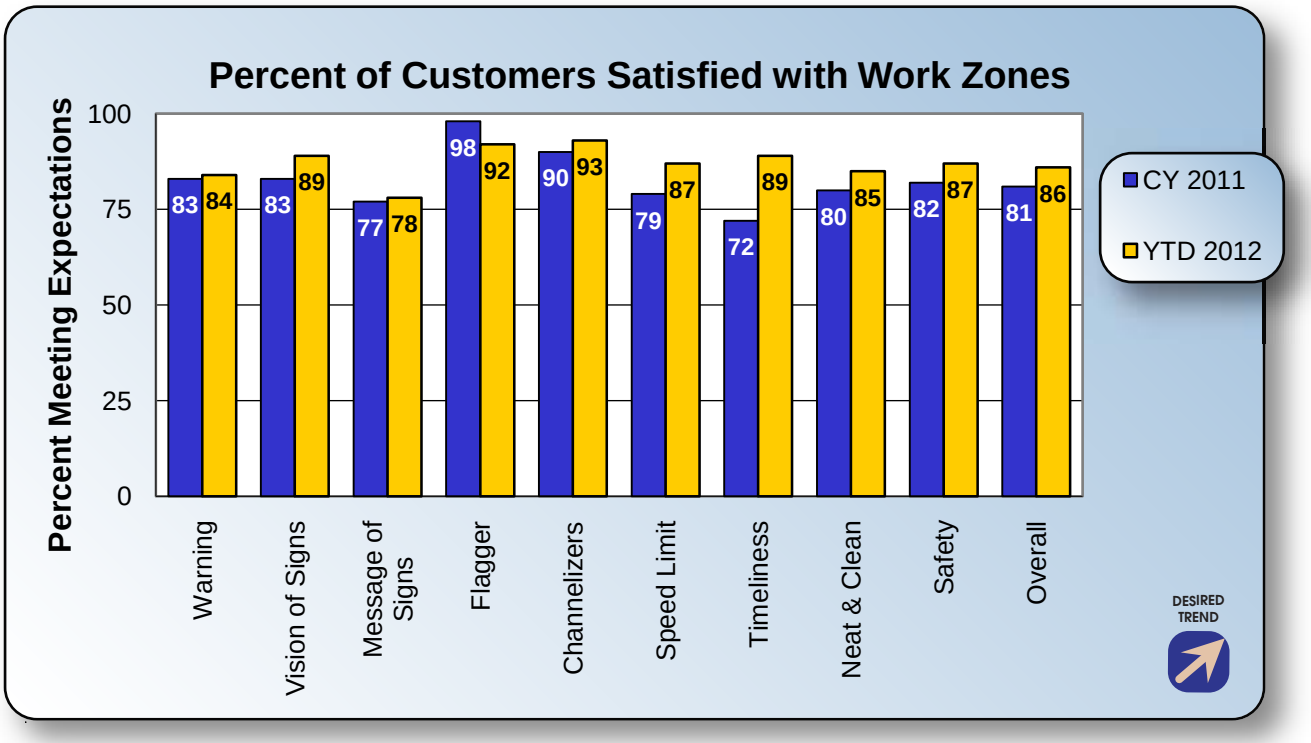
- Signs provided enough warning.
- Signs were easy to see.
- Signs provided clear instruction.
- The flagger provided adequate guidance.
- Channelizers provided proper guidance.
- The speed limit was appropriate.
- Travel through the work zone was timely.
- The work zone was neat and clean.
- The traveler felt safe in the work zone.

Improvement Status:

In first quarter of 2012, data from 57 customer surveys was compiled and separated according to questions within the customer survey.

MoDOT experienced an overall increase of customer satisfaction for the first quarter of 2012. Traveling through the work zone in a timely manner and appropriate speed limits within the work zones received this quarter's largest increase of customer satisfaction.

The continued increase in satisfaction of speed limits and timeliness is due to MoDOT's emphasis on consistent speed limits through the work zones and reducing work zone back-up and travel delay.



Time to meet winter storm event performance objectives-1f

Result Driver: Ed Hassinger, District Engineer
Measurement Driver: Tim Chojnacki, Maintenance Liaison Engineer

Purpose of the Measure:

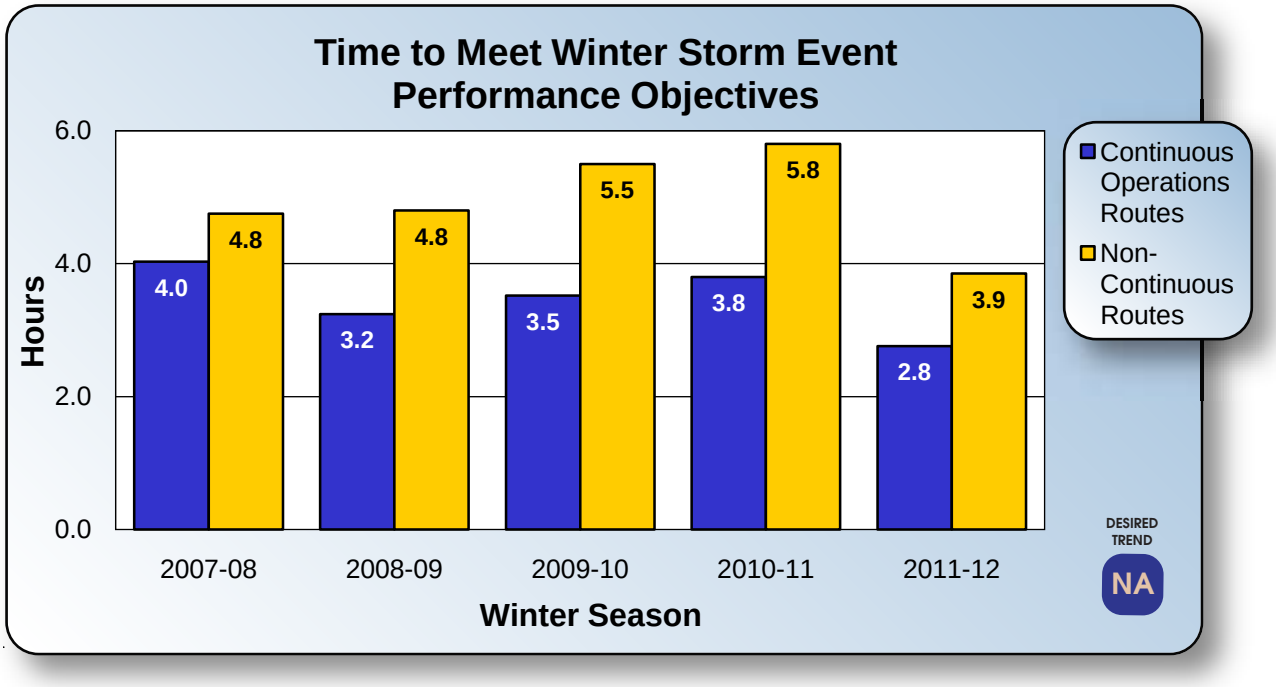
This measure tracks the amount of time needed to perform MoDOT's snow and ice removal efforts.

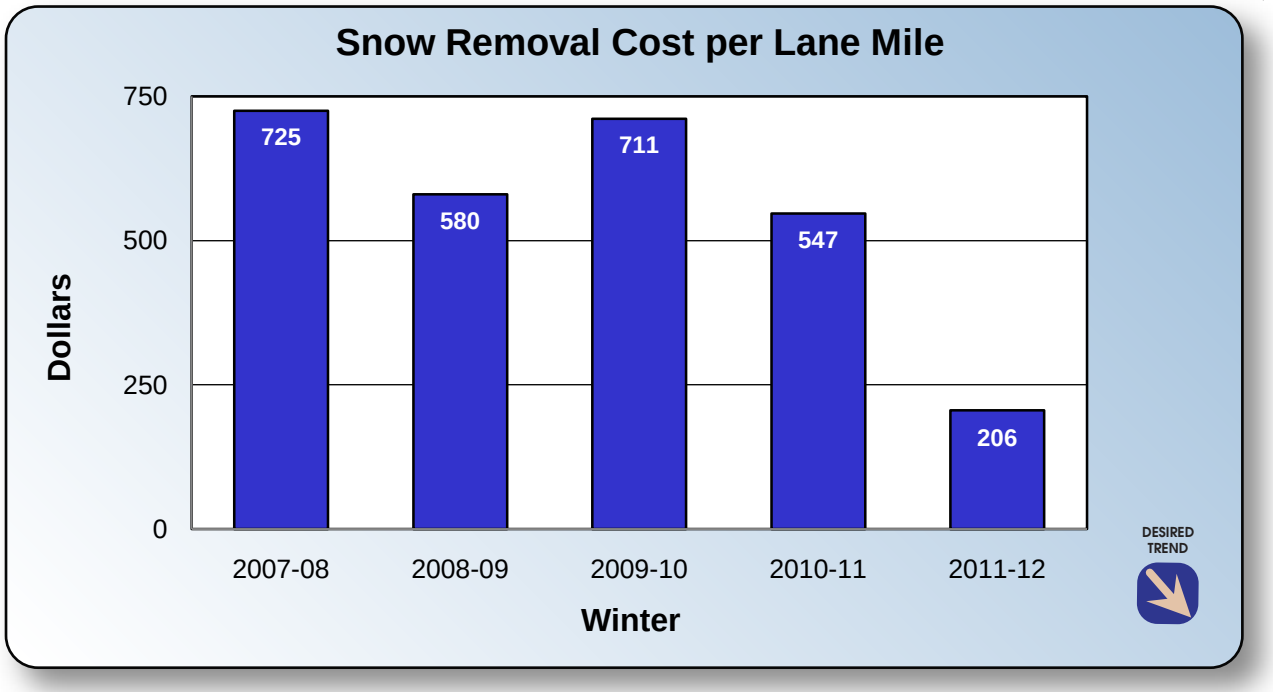
Measurement and Data Collection:

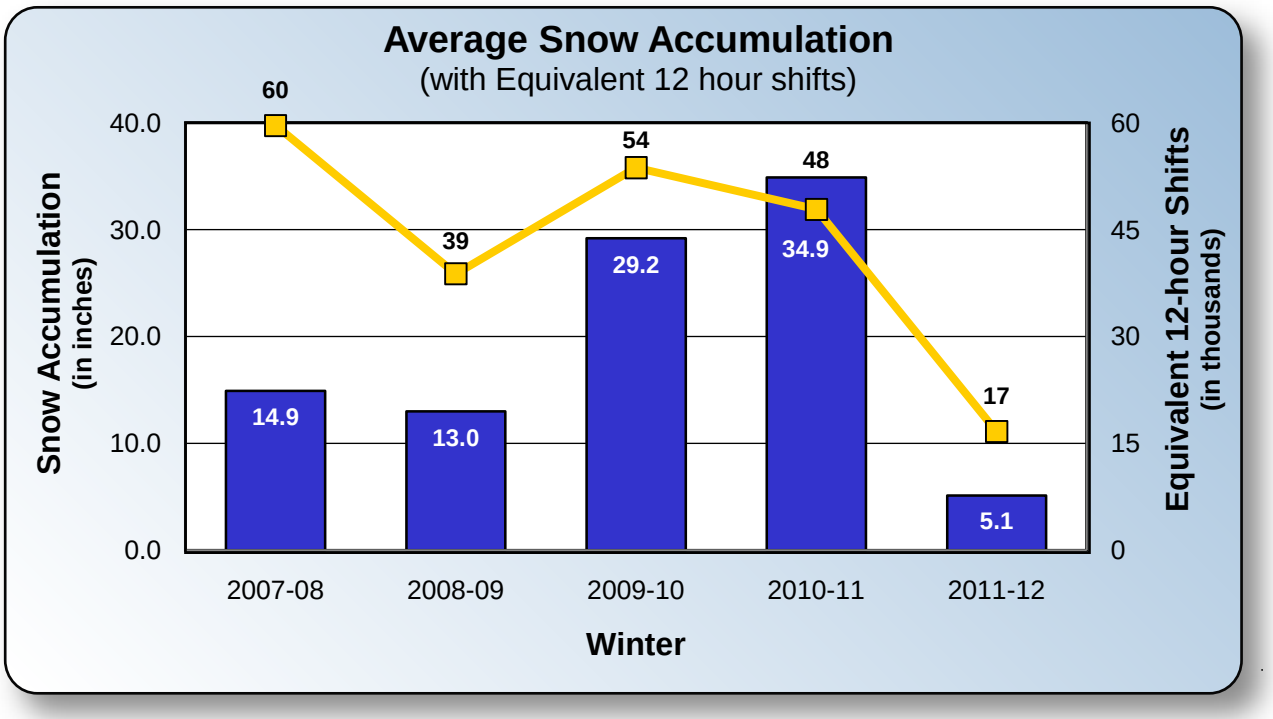
This data is collected in the winter event database. The measure tracks the average time involved in road clearance during winter weather. After each winter event, such as a snow or ice storm, area maintenance personnel submit a report indicating how much time it took to meet the performance objectives for the continuous and non-continuous operations routes. The continuous operations routes consist of all major highways and regionally significant minor highways. The non-continuous operations routes are all remaining lower volume minor highways. After a storm ends, the objectives are to restore the continuous operations routes to a mostly clear condition as soon as possible and have the lower-volume, non-continuous operations routes 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 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 publications. The time in hours is the statewide average for the entire winter season. The costs per lane mile and the average state snow accumulation help evaluate winter performance.

Improvement Status:

The average time to meet the performance objectives on both continuous operations highways and non-continuous operations highways were lower during the 2011-2012 winter season than during previous winters. This winter produced an average of 5.1 inches of snow across the state. The time to meet the performance objectives varies based on the amount of snow received and the duration and intensity of the storm. While several best practices have helped improve response time and reduce costs, this year's exceptional performance was driven by an extremely mild winter and cannot be maintained going forward.




Snow Removal Cost per Lane Mile
Dollars
750
500
250
0
725
580
711
547
206
2007-08
2008-09
2009-10
2010-11
2011-12
Winter
DESIRED TREND


Average Snow Accumulation
(with Equivalent 12 hour shifts)
Snow Accumulation (in inches)
40.0
30.0
20.0
10.0
0.0
Equivalent 12-hour Shifts (in thousands)
60
45
30
15
0
60
39
54
48
17
14.9
13.0
29.2
34.9
5.1
2007-08
2008-09
2009-10
2010-11
2011-12
Winter