



OPERATE A RELIABLE AND CONVENIENT TRANSPORTATION SYSTEM

Paula Gough, District Engineer

Tracker

MEASURES OF DEPARTMENTAL PERFORMANCE



Missourians expect to get to their destinations on time, without delay regardless of their choice of travel mode. We coordinate and collaborate with our transportation partners throughout the state to keep people and goods moving freely and efficiently. We also maintain and operate the transportation system in a manner to minimize the impact to our customers and partners.

RESULT DRIVER:
Paula Gough,
District Engineer

OPERATE A RELIABLE AND CONVENIENT TRANSPORTATION SYSTEM

MEASUREMENT
DRIVER:
Jon Nelson,
Traffic Management and
Operations Engineer

PURPOSE OF
THE MEASURE:
This measure tracks the
mobility of significant state
routes in St. Louis, Kan-
sas City, Springfield, and
Columbia.

MEASUREMENT
AND DATA
COLLECTION:
Data for many state routes
in the St. Louis and Kansas
City regions is continu-
ously collected via roadside
sensors. For other routes,
travel times are collected by
driving routes at least twice
in each direction during the
morning and evening rush
hours. To assess mobility,
MoDOT compares travel
times during rush hour
versus free-flow conditions
where vehicles can travel at
the posted speed limit. The
department also assesses
reliability, measuring how
consistent those travel
times are on a daily basis.

The charts in this mea-
sure show average travel
time compared to the 80th
percentile travel time, which
is the time motorists plan to
allow to reach their destina-
tions on time 80 percent of
the time.

Travel times and reliability on major routes-5a

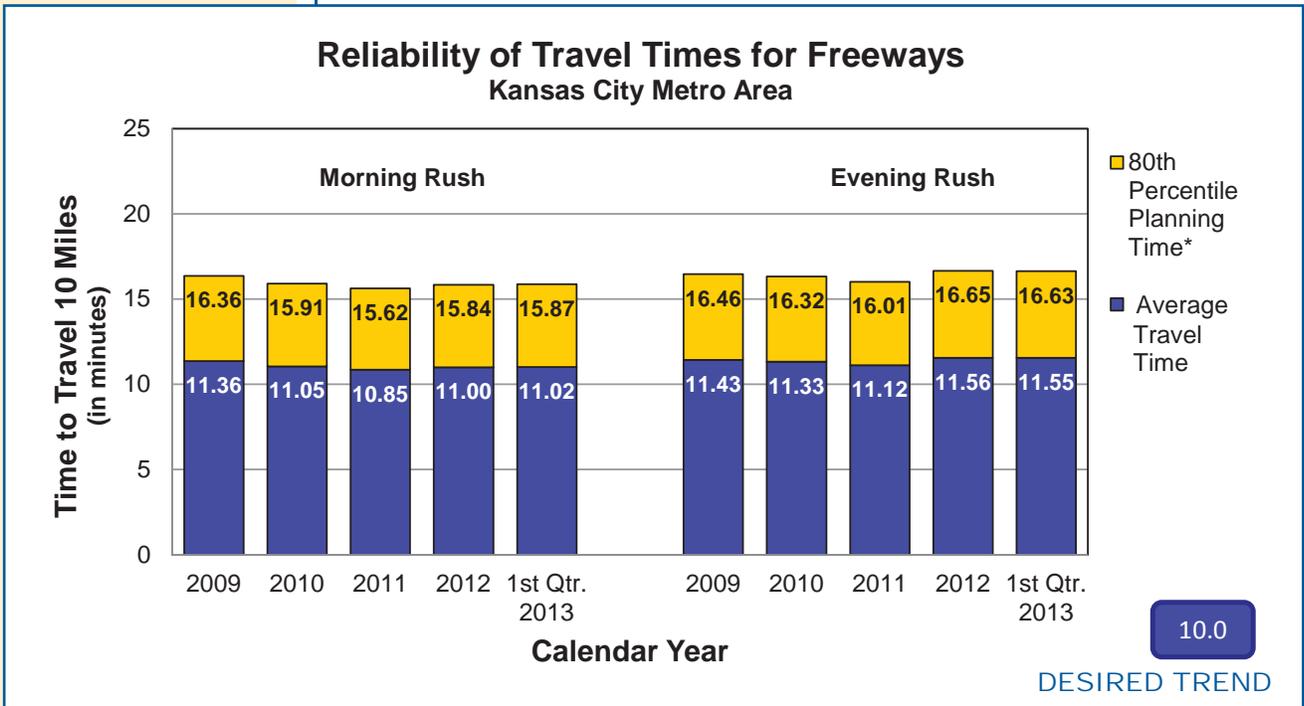
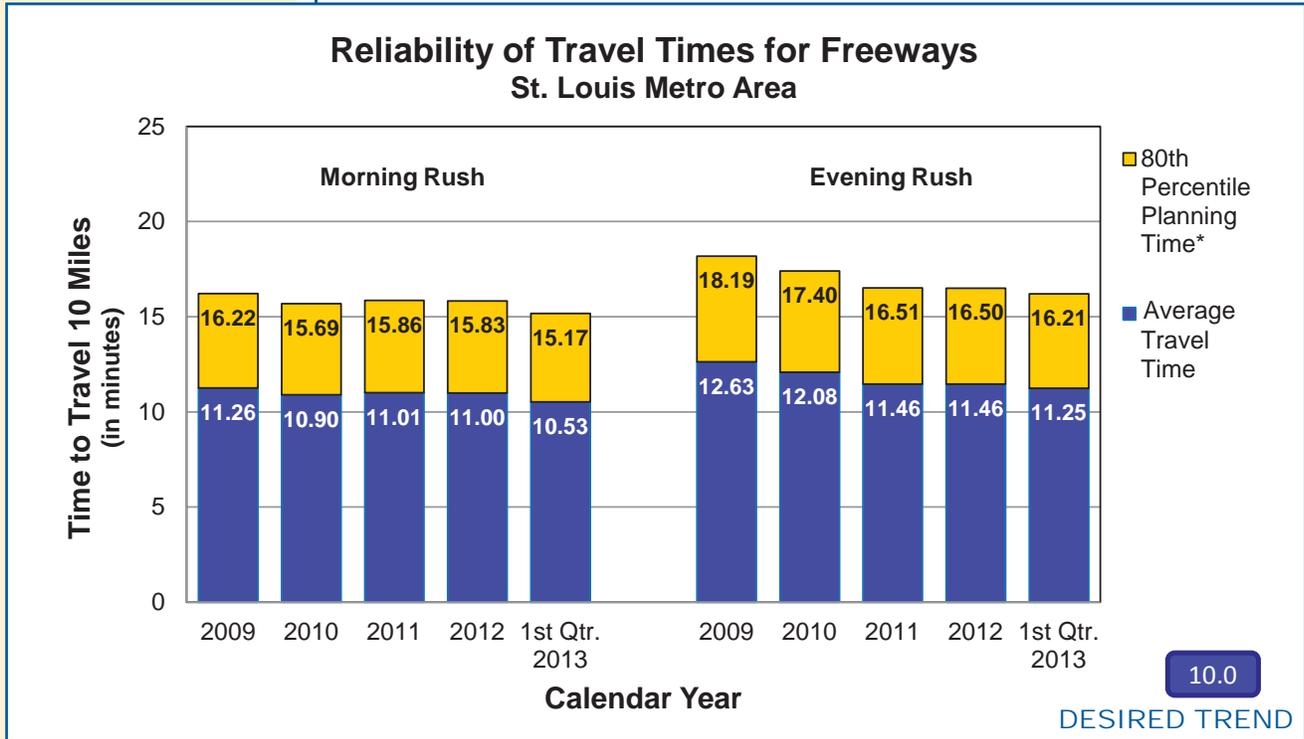
Minimizing travel times and delays on the state's most traveled routes are essential to operating a reliable and convenient transportation system. The desired outcome for traffic conditions on any route is to safely travel at free-flow speeds up to the posted speed limit. The average travel times on free-ways in St. Louis and Kansas City are reasonably close to free-flow speeds. Last quarter, it took customers, on average, anywhere from 10.5 to 11.5 minutes to travel 10 miles on the freeway during the morning and evening rush hours (60 mph speed limit).

Average travel times, however, do not tell the whole story. On any given day, travel times may be higher due to things such as crashes, work zones, or adverse weather. In fact, for customers to make sure they arrive on time 80 percent of the time, they needed to plan about five additional minutes for every 10 miles traveled on freeways in St. Louis and Kansas City.

The maps in this measure identify locations along specific corridors where traffic is not usually flowing smoothly during the morning and evening rush hours. One major impact highlighted by the maps includes the work zone on I-70 at the Blanchette Bridge near St. Charles. Lane closures in both direc-tions have had an obvious effect on mobility in the area. Other common areas of recurring congestion include I-70 eastbound in Kansas City be-tween I-470 and I-435 during the evening rush hours and I-270 south of I-64 in St. Louis. The regular area of low mobility along I-270 northbound between I-44 and Manchester seems to be less pronounced this quarter, perhaps a result of the recent widening project completed last fall. An additional lane will be constructed in the southbound direction of I-270 this summer.

In addition to freeways in the metro areas, mobility is also tracked along significant routes across the state. Impacts highlighted on the maps below include Stadium Boulevard near I-70 in Columbia where a new diverging diamond interchange and other improvements are being constructed. Con-struction will continue through 2014. Other routes with reduced mobility in-cluded Business 65 (Glenstone) in Springfield during the evening rush hour and US 67 (Lindbergh) in St. Louis. Mobility on these routes is addressed primarily by improvements to signal timing plans and access management practices.

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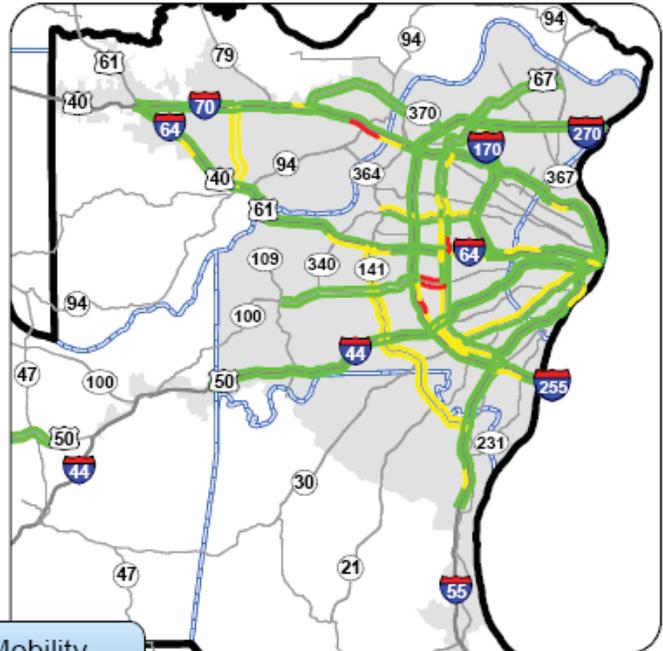
*For this reporting period, the planning times shown are based on 2011 data and are merely an example of how the data will be reported moving forward. For future quarters, actual quarterly data will be used.

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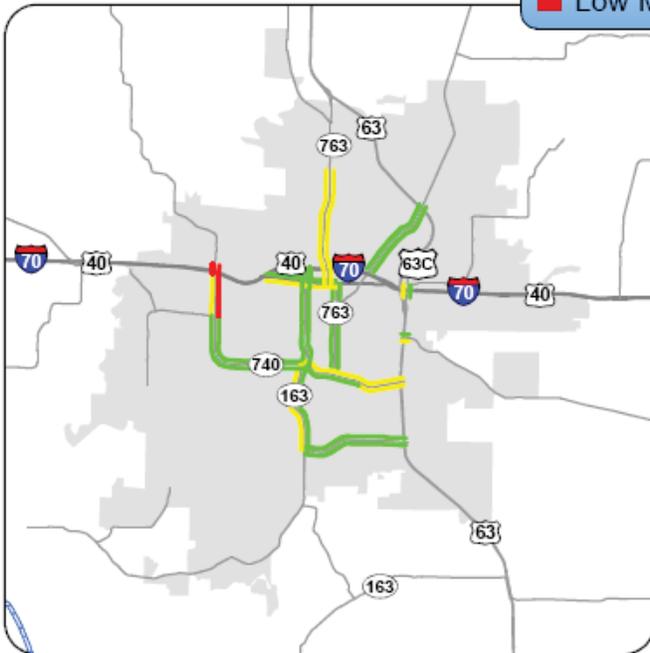
AM Mobility



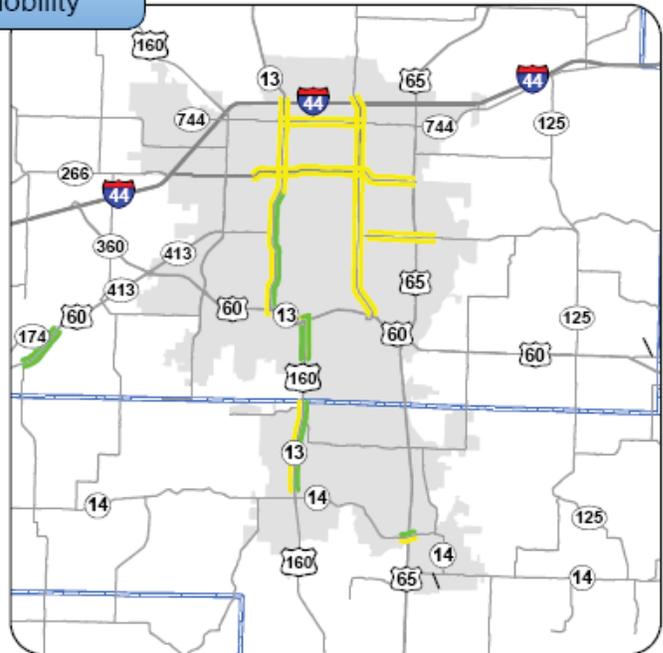
Kansas City Area



Saint Louis Area



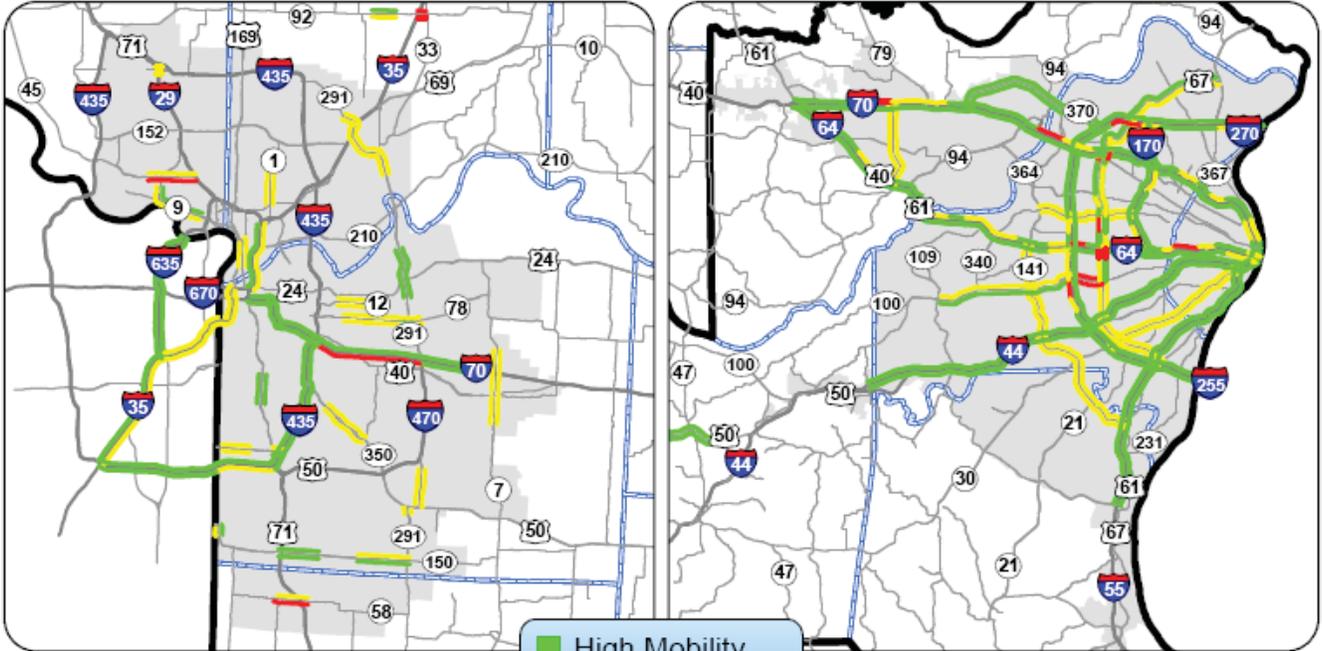
Columbia Area



Springfield Area

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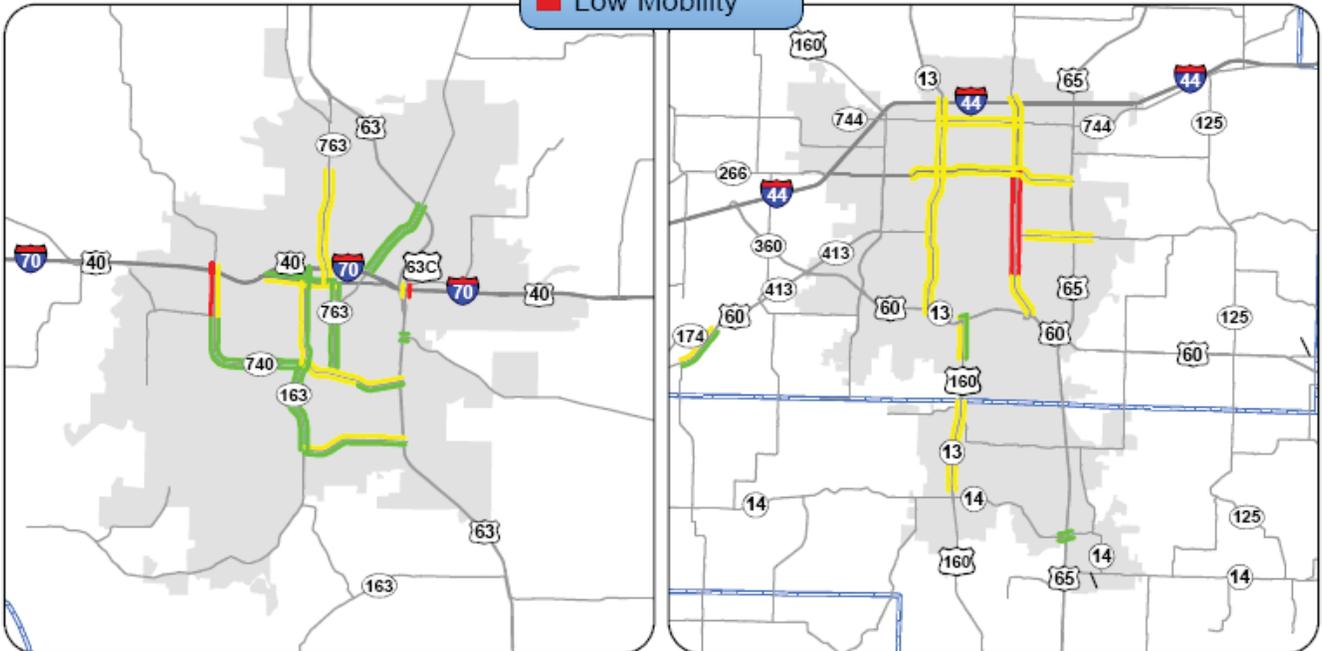
PM Mobility



Kansas City Area

Saint Louis Area

- High Mobility
- Medium Mobility
- Low Mobility



Columbia Area

Springfield Area

RESULT DRIVER:
Paula Gough,
District Engineer

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MEASUREMENT
DRIVER:
Jeanne Olubogun,
District Traffic Engineer

PURPOSE OF
THE MEASURE:
This measure tracks the annual cost and impact of traffic congestion to motorists, in the categories of motorist delay, travel time, excess fuel consumed per auto commuter and congestion cost per auto commuter.

MEASUREMENT
AND DATA
COLLECTION:
The Texas A&M Transportation Institute produces an annual document titled Urban Mobility Report. In the 2012 report, there are hundreds of speed data points on almost every mile of major road in urban America for almost every 15-minute period of the average day. This means 600 million speeds on 875,000 miles across the U.S. – an awesome amount of information to analyze congestion patterns and accurately determine what solutions can be targeted to specific areas. This measure will use that data to evaluate the St. Louis and Kansas City metro areas as compared to the established baseline of other large urban areas around the country.

Cost and Impact of Traffic Congestion-5b

Recurring congestion occurs at regular times, although the traffic jams are not necessarily consistent day-to-day. Nonrecurring congestion is the unexpected traffic crash or natural disaster that impacts traffic flow. When either occurs, the time required for a given trip becomes unpredictable. This unreliability is costly for commuters and truck drivers moving goods.

Congestion wastes a massive amount of time, fuel and money. Researchers say that the most effective way to address traffic congestion varies from one urban area to another, but that in all cases, a multi-faceted approach must be used to see sustained results. Efficient traffic management, public transportation options, flexible working hours for commuters and new construction are all options to help solve congestions problems.



RESULT DRIVER:
Paula Gough,
District Engineer

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MEASUREMENT
DRIVER:
Jason Sims,
Traffic Center Manager

PURPOSE OF
THE MEASURE:
This measure is used to
determine the trends in inci-
dent clearance on the state
highway system.

MEASUREMENT
AND DATA
COLLECTION:
Advanced Transportation
Management Systems are
used by the Kansas City
and St. Louis traffic man-
agement centers to record
incident start time and the
time when all lanes are
declared cleared.

Average time to clear traffic incident-5c

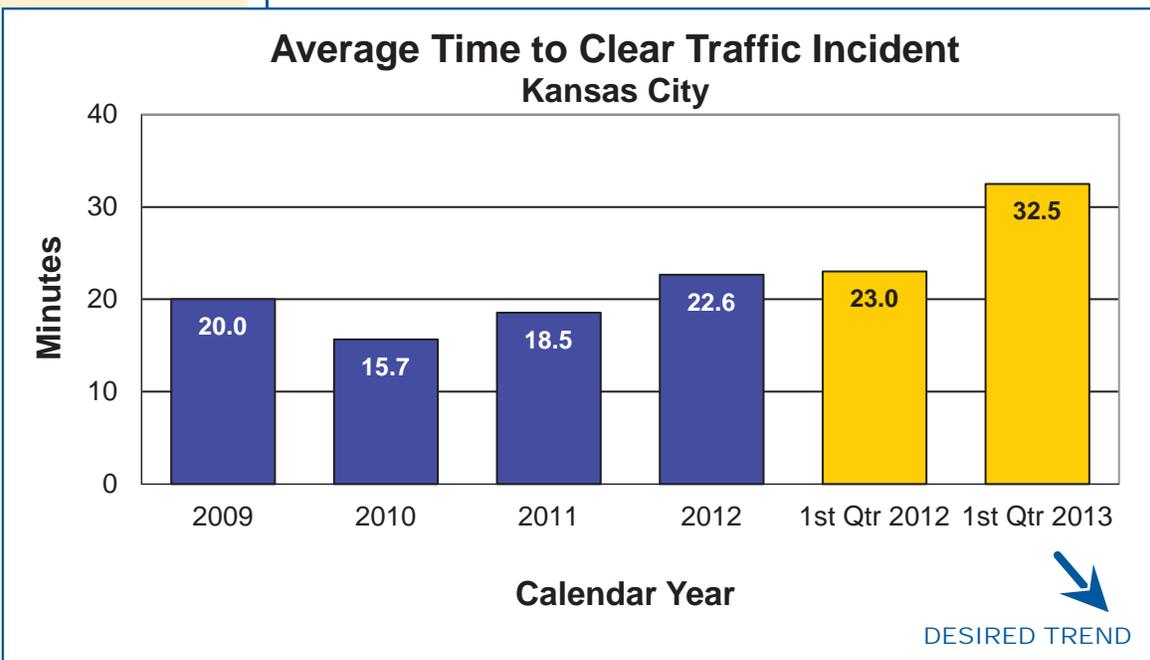
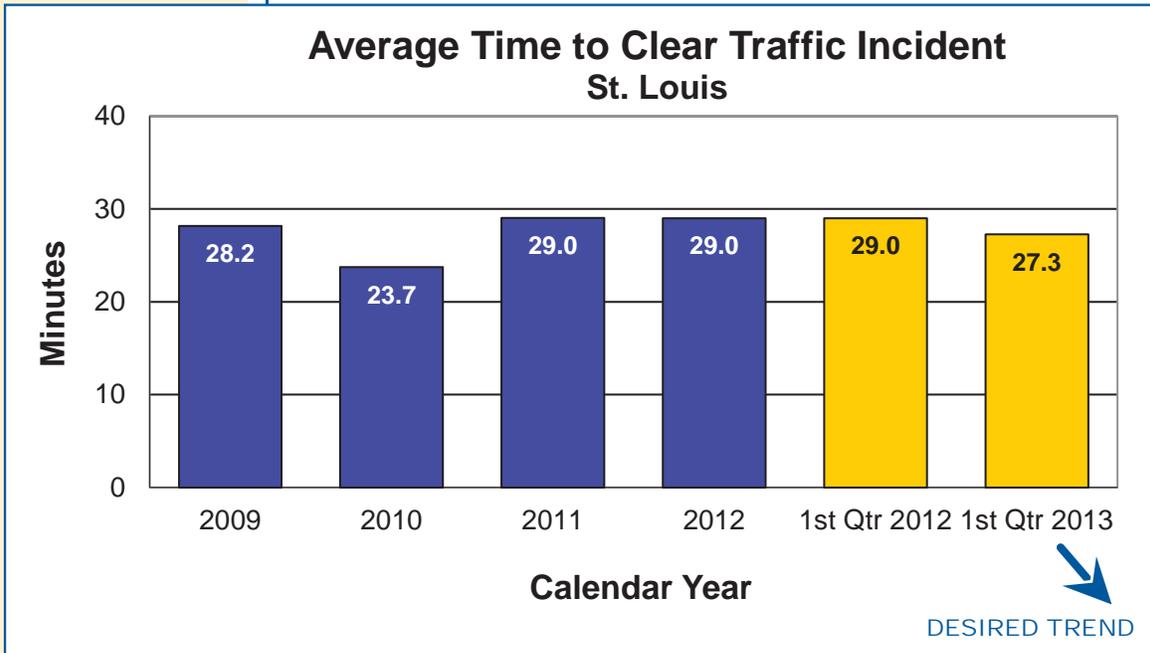
A traffic incident is an unplanned event that temporarily reduces the number of vehicles that can travel on the road. The faster an incident is cleared, the faster the highway system returns to normal. Therefore, responding to and quickly addressing the incident (crashes, flat tires and stalled vehicles) improves system performance.

St. Louis recorded 537 incidents in January, 631 in February, and 620 in March. The average time to clear traffic accidents was 27.3 minutes, a decrease of two percent compared to the first quarter of 2012.

Kansas City collected data on 639 incidents in January, 691 in February, and 727 in March. The average time to clear traffic incidents was 32.5 minutes, an increase of 17 percent from the first quarter of 2012. Two major weather events in February caused a significant amount of abandoned and stalled vehicles, resulting in a February average clearance time of 49 minutes.



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RESULT DRIVER:
Paula Gough,
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
various traffic impacts.

MEASUREMENT
AND DATA
COLLECTION:
The interstate route clo-
sures that have an actual
or expected duration of one
hour or more are entered
into MoDOT's Transporta-
tion Management System
for display on the Traveler
Information Map on
MoDOT's website.

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Traffic impact closures on major interstate routes-5d

Interstates are the arteries that connect our nation. They keep commerce flowing. When they shut down, the country is literally cut in half. Keeping them open is a top priority for MoDOT. But sometimes nature doesn't let that happen.

There were four winter weather closures on I-70 during the first quarter of calendar year 2013. They were all associated with the Feb. 21 winter storm and were less than 30 minutes in duration. The remaining nine closures that occurred during this quarter were associated with vehicle crashes.

Four winter weather closures occurred on I-44 during the first quarter of 2013. Three were associated with the Feb. 21 winter storm. The fourth was due to the March 22 storm. Each I-44 winter closure exceeded 90 minutes in duration. There was one closure during this quarter caused by debris on the roadway. The remaining 18 closures were associated with vehicle crashes.



Traveler Information Map

For weather-related road conditions and work zone locations, visit MoDOT's Traveler Information Map.

Tips for using the map

- Text Report - Winter road conditions
- Text Report - Road closures and delays

Links to surrounding states

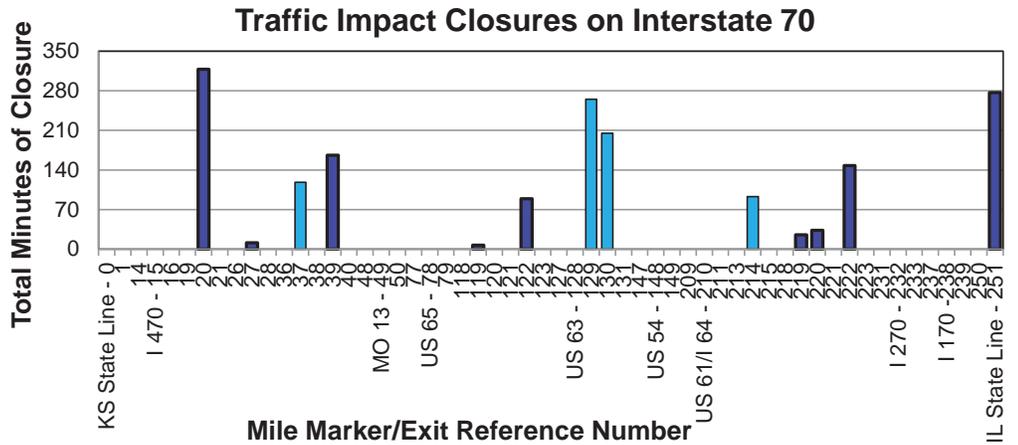
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■ Other (Planned) ■ Police Emergency ■ Vehicle Crash ■ Winter Weather Closure ■ Utility/Bridge/Roadway Damage/Debris



● 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)
☆	JACKSON	W	20.82	22-Jan-13	VEHICLE CRASH	5:18
▲	JACKSON	W	27.12	26-Feb-13	VEHICLE CRASH	0:11
★	LAFAYETTE	W	37.95	21-Feb-13	WINTER WEATHER	1:58
★	LAFAYETTE	E	39.33	30-Jan-13	VEHICLE CRASH	2:46
▲	BOONE	W	119.31	18-Mar-13	VEHICLE CRASH	0:07
■	BOONE	E	122.51	26-Feb-13	VEHICLE CRASH	1:29
★	BOONE	E	129.94	21-Feb-13	WINTER WEATHER	4:25
★	BOONE	W	129.99	21-Feb-13	WINTER WEATHER	3:25
★	ST. CHARLES	W	214.19	21-Feb-13	WINTER WEATHER	1:33
▲	ST. CHARLES	W	219.69	06-Jan-13	VEHICLE CRASH	0:25
■	ST. CHARLES	W	220.23	15-Mar-13	VEHICLE CRASH	0:33
★	ST. CHARLES	W	222.34	24-Mar-13	VEHICLE CRASH	2:28
★	ST. LOUIS CITY	W	251.03	30-Mar-13	VEHICLE CRASH	4:37

RESULT DRIVER:
Paula Gough,
District Engineer

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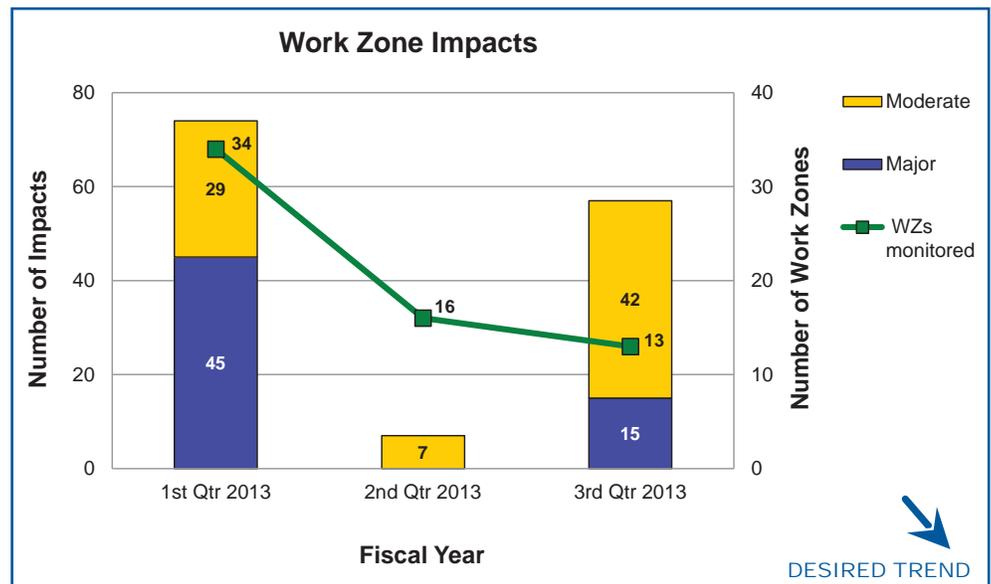
MEASUREMENT DRIVER:
Julie Stotlemeyer,
Traffic Liaison Engineer

PURPOSE OF THE MEASURE:
Work zones are designed to allow the public the ability to travel safely through work areas with minimal disruption. This measure indicates how well significant work zones perform.

MEASUREMENT AND DATA COLLECTION:
Impacts caused by work zones are collected by MoDOT staff driving through work zones, conducting visual observations or using automated data collection. An impact is defined as the additional time a work zone adds to normal travel. They are categorized into three levels: a minor impact lasts less than 10 minutes; a moderate impact lasts 10 to 14 minutes; and a major impact lasts 15 minutes or more.

Work zone impacts to traveling public-5e

Motorists want to get through work zones with as little inconvenience as possible, and 73 percent are satisfied with timeliness when traveling in a work zone. MoDOT makes efforts to minimize the travel impacts by shifting work to nighttime hours or during times when there are fewer vehicles on the road. The department monitored 13 significant work zones this quarter, and major impacts decreased by one-third while moderate impacts increased.



RESULT DRIVER:
Paula Gough,
District Engineer

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MEASUREMENT
DRIVER:
Mike Henderson,
Transportation Planning
Specialist

PURPOSE OF
THE MEASURE:
This measure tracks con-
centrations of pollutants
in on-road mobile source
emissions. In other words,
the department is tracking
pollution caused by vehicles
on the roads.

MEASUREMENT
AND DATA
COLLECTION:
MoDOT is still determining
what pollutants to track and
what concentration lev-
els will align with the U.S.
Environmental Protection
Agency's air quality stan-
dards. The Missouri Depart-
ment of Natural Resources
has placed two air quality
monitors in the state: one
near I-64 in St. Louis, and
one near I-70 in Kansas
City. The St. Louis monitor
has been collecting air qual-
ity data since Jan. 1, 2013.
The Kansas City monitor
will begin collecting data
in May 2013. At this time,
the department is collecting
samples of nitrogen dioxide,
carbon monoxide, particu-
late matter and black car-
bon. Because this measure
is part of the latest federal
surface transportation act's
performance requirements,
the guidance for measure-
ment and data collection will
be established by 2015.

Effectiveness of improving air quality-5f

MoDOT is committed to improving air quality through modifying its daily operations, incorporating employee actions and education, providing information to the public, leading air quality improvements, managing congestion to reduce emissions, providing alternative choices for commuters and promoting the use of environmentally friendly fuels and vehicles.



RESULT DRIVER:
Paula Gough,
District Engineer

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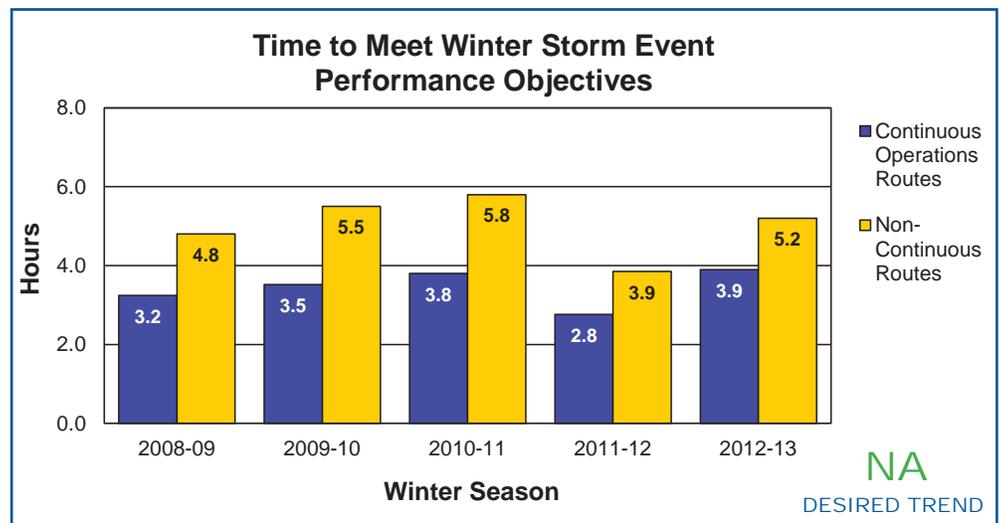
MEASUREMENT DRIVER:
Tim Chojnacki,
Maintenance Liaison
Engineer

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:
For major highways and regionally significant routes, the objective is to restore them to a mostly clear condition as soon as possible after the storm has ended. MoDOT calls these "continuous operations" routes. State routes with lower traffic volumes should be opened to two-way traffic and treated with salt or abrasives at critical areas such as intersections, hills and curves. These are called "non-continuous operations" routes. After each winter event, maintenance personnel submit reports indicating how much time it took to meet the objectives for both route classifications.

Time to meet winter storm event performance objectives-5g

Knowing the time it takes to clear roads after a winter storm can help the department better analyze the costs associated with that work. MoDOT's response rate to winter events provides good customer service for the traveling public while keeping costs as low as possible. The winter of 2012 -2013 was an average winter for Missouri, with an average of 19.6 inches of snow statewide. It took an average of 3.9 hours to meet MoDOT's objective for continuous operations routes, and an average of 5.2 hours for non-continuous routes. These numbers compare favorably with past years.



RESULT DRIVER:
Paula Gough,
District Engineer

MEASUREMENT
DRIVER:
Ron Effland, Non-motorized
Transportation Engineer

PURPOSE OF
THE MEASURE:
This measure tracks
MoDOT's investment in
pedestrian facilities and
progress toward removing
barriers to accessibility for
all users. Completion of
MoDOT's 2010 Transition
Plan Update is necessary
to bring the department
into compliance with the
American's with Disabilities
Act. Accessibility applies
both to right of way (side-
walks and traffic signals, for
example) and to facilities
like buildings, parking lots
and restrooms.

MEASUREMENT
AND DATA
COLLECTION:
Data for MoDOT's invest-
ment in pedestrian facilities
is gathered by querying
total award amounts for the
20 most common construc-
tion elements of a pedes-
trian project. The number of
projects is estimated based
upon those that include the
pay items queried.
The dollar amounts tracked
for the latter two charts are
based on unadjusted esti-
mates made in 2008 and
may not reflect the actual
expenditures in the field.
Rather, as each deficient
segment is upgraded or
reviewed and removed from
the Transition Plan, its 2008
estimated total is accounted
for and shown as progress.
In this manner, inflation and
changing field conditions
have no impact on the rep-
resentation of true progress
toward completion.

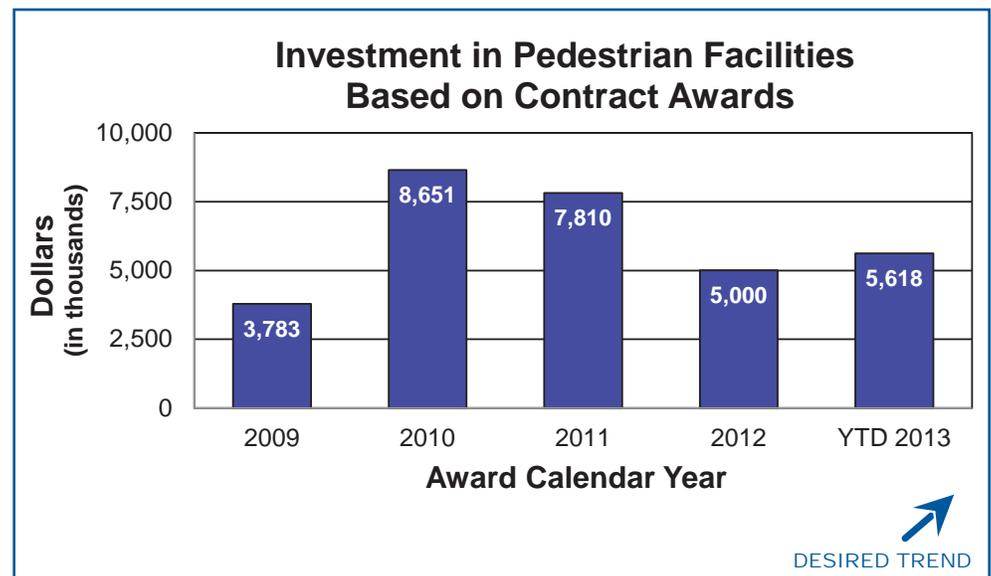
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Bike/pedestrian and ADA Transition Plan improvements-5h

MoDOT's latest Transition Plan Update was published in 2010 and reported an inventory of needed ADA improvements that was developed in 2008. Since then, MoDOT has made a determined effort to improve pedestrian travel by considering accessibility issues on all projects. MoDOT has been responsive to public requests and has been proactive in many areas to make system wide improvements when opportunities arise.

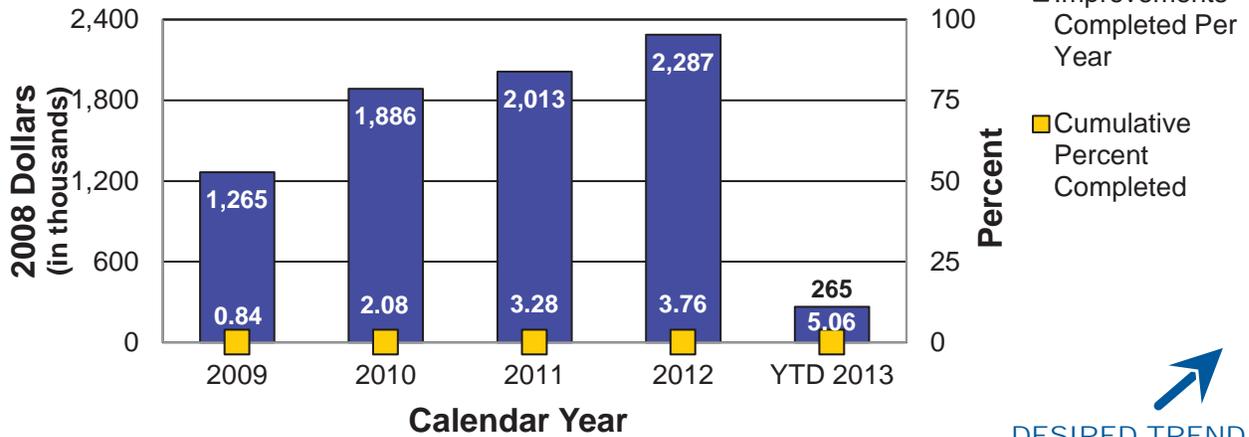
MoDOT's investment in pedestrian facilities reflects its commitment to providing a comprehensive transportation system that meets the needs of all users. Sidewalks around the state are being improved to meet accessibility requirements. MoDOT is adding sidewalks, traffic signals and marked crosswalks where needed to provide safer and more convenient transportation options.

Investment in pedestrian facilities decreased in 2012. Investment in the first quarter of 2013 is 12 percent higher than the total invested in the system in 2012 and shows the department's renewed commitment to improving pedestrian facilities.

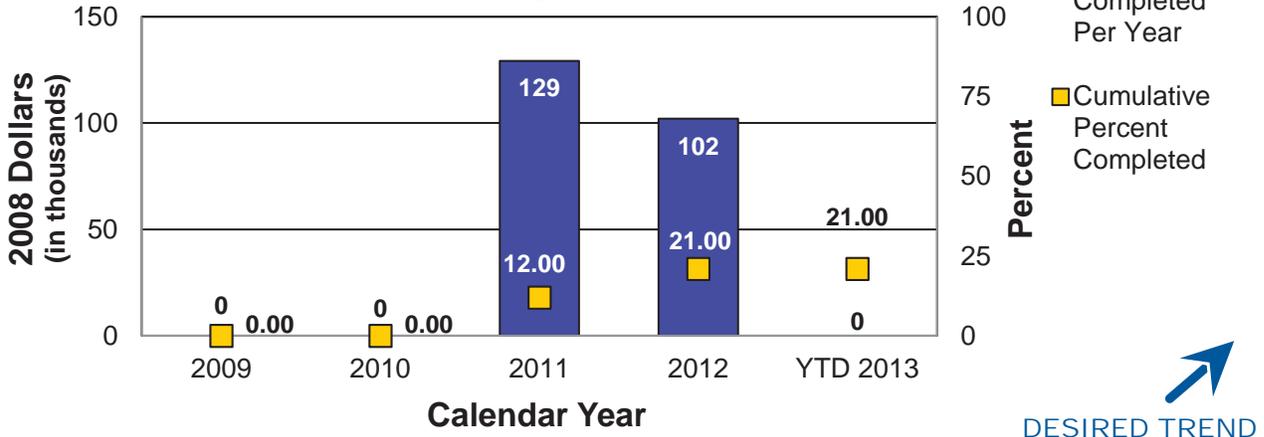


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Progress Toward Completion of Transition Plan Right of Way



Progress Toward Completion of Transition Plan Building Facilities



RESULT DRIVER:
Paula Gough,
District Engineer

MEASUREMENT DRIVER:
Amy Ludwig,
Administrator of Aviation

PURPOSE OF THE MEASURE:
This measure tracks passenger use of modes other than highways in Missouri. It includes the number of commercial airline passengers, state-supported ferry-boat service users, Amtrak Missouri River Runner customers and the number of metro and non-metro transit passenger boardings.

MEASUREMENT AND DATA COLLECTION:
Airline passenger counts are obtained from the Federal Aviation Administration's annual October report and from individual airports' preliminary statistics. Washington is the benchmark state due to its comparable population. Ferry passenger data is compiled from monthly reports from the New Bourbon and Mississippi County ferryboats, services owned and operated by Missouri public port authorities. Monthly Missouri River Runner passenger counts are supplied by Amtrak. Transit passenger data is provided by urban and rural transit services and is reported annually. Wisconsin is the benchmark due to its comparable population. Aviation and transit data is updated annually – in January and October, respectively – while ferry-boat and rail data is updated quarterly.

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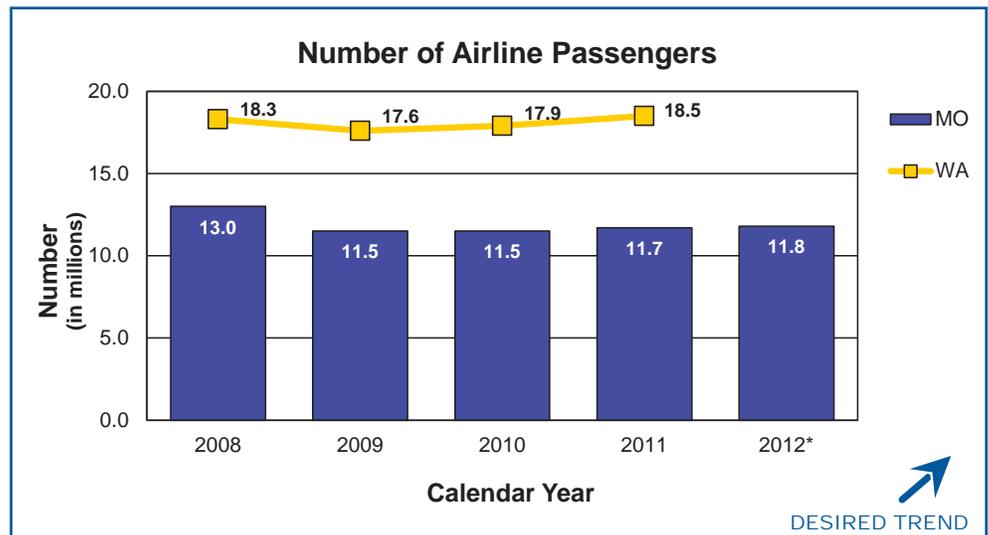
Use and connectivity of modes of transportation-5i

Planes, trains, ferries and transit options are vital means of transport for Missourians. Passengers are returning to commercial airline travel and transit services following Great Recession-related downturns. Bad economic times drive customers away from air travel and can cause cutbacks in transit services. Metro and non-metro transit ridership and air travel counts are up statewide. However, St. Louis accounts for most of the gains. Air travel counts are up and transit customers are returning to routes that had been reduced by the city due to budget shortfalls in 2009.

Weather extremes, such as those experienced in the last several years, affect ferry and train travelers. During this fiscal year, ferry operations temporarily closed when both too much and too little water flowed. Closures disappoint and add to the expense of travelers who avoid long drives to use Mississippi River bridge crossings when the ferries operate.

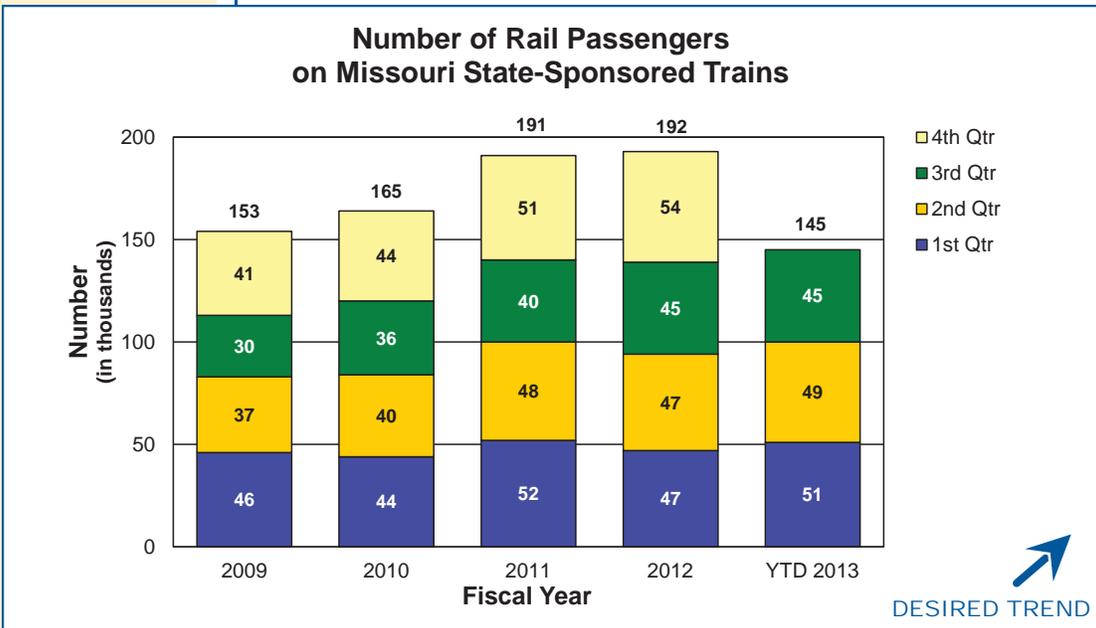
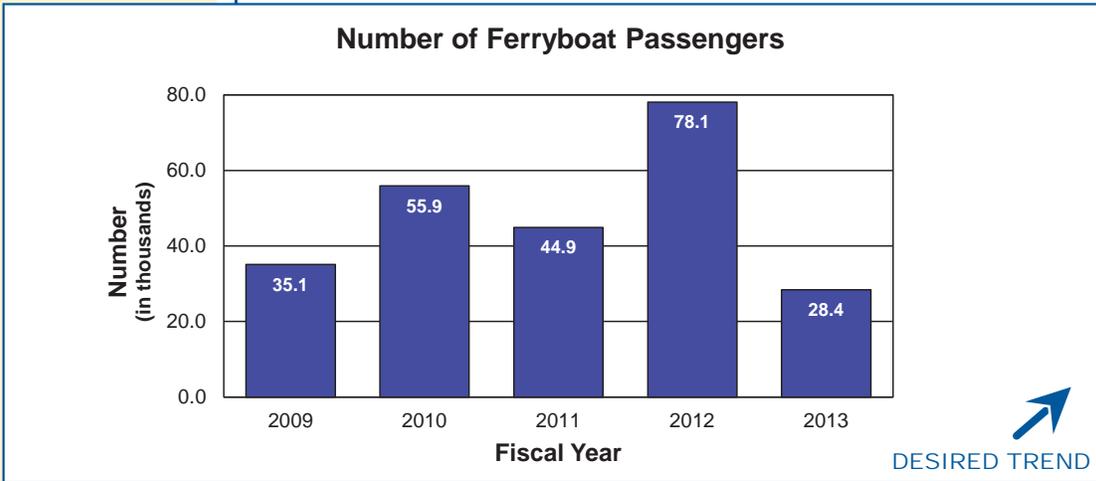
Though the Missouri River Runner achieved 96 percent on-time performance in the third quarter of fiscal year 2013, heavy February and March snowstorms contributed to flat passenger numbers compared to the same time in fiscal year 2012.

MoDOT continues to support these travel modes by administering federal inspection, construction and operational programs, assisting with marketing efforts and educating the public about the benefits these services provide.



*2012 data is based on preliminary individual airport statistics. FAA publishes data in October for the preceding year.

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