

**Monitor Aggressively, Manage Proactively**

**GuidePost**

- A morning rush hour crash on October 17, 2012, involving three tractor trailers on westbound I-44 was met with a total team response from incident and arterial management, mitigating the travel impact
- Arterial peak travel times remained fairly stable for the fifth month in a row
- Freeway congestion varied with some minor improvements but ultimately too many decreases
- Major travel time improvements resulted from signal optimization efforts along Route 100 in St. Louis City
- Incident data on I-70 near the Blanchette Bridge from August thru October 2012 confirms importance of quick response



Effort to restripe, remove signal heads, install a concrete island, and add signs to make the right turn from MO 364 eastbound a free channelized movement into their own lane on SB 141 partially completed with positive results.

**Mobility Snapshot**



Indicates Improving Trend



Indicates Worsening Trend



**Freeway Mobility**

Continued Decrease Overall



**Arterial Mobility**

October 2011 → 1.72 min/mile avg.

October 2012 → 1.72 min/mile avg.



**Major Incidents**

September: 11 → October: 6

2012 Total → 53 Monthly Avg. → 5.9



**Average Incident Duration Sep → Oct**

Lane clearance 30:46 → 30:24



**Major Impact Work Zones**

September: 4 → October: 0



**Moderate Impact Work Zones**

September: 3 → October: 5



**October Mobility: 2011 → 2012**

No change in major incidents, major/moderate work zones. Freeway mobility worsened compared to last year.

**ZONING IN**



2011 vs. 2012 TMS Work Zone Comparison:  
October 2011: 424 October 2012: 429



TMC observed work zones breakdown: 362

- ◆ Major Impact on Travel: 0 – 0.0%
- ◆ Moderate Impact on Travel: 5 – 1.4%
- ◆ Minor Impact on Travel: 357 – 98.6%



SL District Work Zone Inspections:

- ◆ September 2012: 19%
- ◆ October 2012: 26%
- ◆ Goal: 50%



SL District Mobility Rating:

- ◆ September 2012: 96%
- ◆ October 2012: 92%
- ◆ Goal: 91%



Visibility levels:

- ◆ September 2012: 94%
- ◆ October 2012: 89%
- ◆ Goal: 91%



Work zone crashes in October: 14

\*Impact Levels described in Data Key

TMC Observed Work Zones September 2012	
Level of Travel Time Impact	Number of Work Zones
Major Impact	0
Moderate Impact	5
Minor Impact	357
<b>Total</b>	<b>362</b>

**Major Impact (15 Minutes or Above Additional Travel Time)**

\*\*\*\*\*No Additional Travel Time Major Impacts This month\*\*\*\*\*

**Moderate Impact (10-14 Minutes Additional Travel Time)**

**10/6 (Saturday) Overnight/Early AM Eastbound I-70 Mississippi River Bridge Project -- Total Closure**

- Two complete closures for sign pole installation lasting 10-14 minutes each with a 5 minute queue.
- Cleared at 5:06 am.
- All mitigation efforts were in full use during these closures

**10/12-10/13 (Friday/Saturday) PM / Overnight Westbound I-70 Mississippi River Bridge Project – Total Closure**

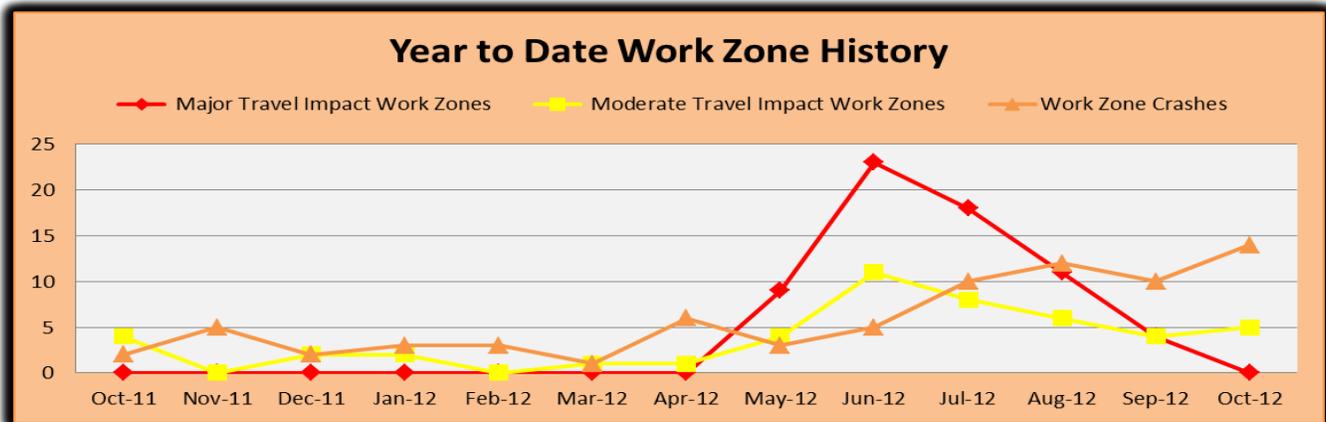
- Total closure of westbound lanes multiple times to set girders, each with a duration less than 14 minutes
- Westbound I-70 Traffic queued past the exit to the Poplar Street Bridge (PSB) from NB I-55.
- Traffic coming from Illinois (on PSB) merging onto westbound I-70 was queued on the bridge.
- All mitigation efforts were in full use during these closures

**10/15 (Monday) AM Rush Eastbound I-44 at Lewis Road --Two Left Lanes Closed**

- An additional travel time of 10 minutes
- All mitigation efforts were in full use during these closures

**10/22 (Monday) AM Rush Eastbound I-64 from Jefferson Avenue to I-55 -- Two Left Lanes and a Right Lane Closed**

- Drivers experienced 10 minutes of additional travel time
- All mitigation efforts were in full use during these closures



## **Work Zone Related Crashes**

### **10/2 (Tuesday) 9:44 AM Northbound I-270 before Dougherty Ferry Road -- Two Left Lanes**

- A multi-vehicle crash in the left lane involving five vehicles with four injuries
- Kirkwood Police, Fire, EMS, Motorist Assist and tow company responded
- Work Zone Coordinator and Resident Engineer were notified
- All lanes cleared at 10:42 am with no queue
- All work zone signage and mitigation efforts were in full use during this closure

### **10/3 (Wednesday) 7:43 AM Eastbound I-44 at Route 109 -- Left Lane Closed**

- A minor two vehicle crash in a non-active work zone blocked three left lanes and the left shoulder
- St. Louis County, Eureka Fire, M/A responded
- Work zone coordinator, Resident Engineer, Motor Carriers and EOC notified of lane closures
- All lanes cleared at 9:01 am with a 17 minute queue
- All work zone signage and mitigation efforts were in full use during this closure

### **10/3 (Wednesday) 7:57 AM Northbound I-270 at Marshall Road -- All lanes Opened**

- A minor two vehicle crash in the left lane was cleared to the new right lane expansion and all lanes opened at 8:07 am
- Motorist assist responded and no additional impacts to traffic were observed
- Work Zone Coordinator and Resident Engineer notified
- All work zone signage and mitigation efforts were in full use

### **10/4 (Thursday) 8:30 AM Eastbound I-70 before Missouri River --All Lanes Open**

- A single vehicle crash in the advanced warning area
- Motorist Assist, MSHP, Maryland Heights EMS, and a tow company responded.
- Work Zone Coordinator and Area Engineer were notified
- All lanes opened and incident cleared at 8:52 am with no queue
- All work zone signage and mitigation efforts were in full use

### **10/5 (Friday) 3:40 PM Eastbound I-44 at On Ramp for Antire Road -- Right Lane closed**

- A tractor trailer crashed into a ditch with less than a 50 gallon diesel spill
- Motorist Assist, St. Louis County Police, Eureka Fire, DNR, and a tow company responded
- Spill contained to ditch with fuel cleanup socks and a full cleanup was scheduled for 10/9
- Traffic was backed up to Route 109 at onset causing an additional travel time of 4 minutes
- All lanes opened at 5:19 pm with no queue
- All work zone signage and mitigation efforts were in full use during this closure

### **10/9 (Tuesday) 6:34 AM Eastbound I-70 at Missouri River – All Lanes Open**

- A multi vehicle crash involving six vehicles in the left lane with one injury
- Traffic queued to Zumbahl road with an estimated 2,248 vehicles and 2,916 motorists experiencing additional travel time with 132 cars per lane/ minute adding to the queue. The cost of the additional travel time is estimated at \$790 for every minute of additional travel time caused by the crash.
- Motorist Assist, Police and tow company responded
- Work Zone Coordinator, Area Engineer and EOC were all notified
- All lanes opened and the incident cleared at 7:50 am with no queue
- All work zone signage and mitigation efforts were in full use

## **10/13 (Saturday) 8:52 AM Northbound I-270 past Dougherty Ferry Road – All Lanes Open**

- A minor two vehicle crash in the left lane cleared to the new right lane expansion at 9:04 am
- No additional impacts to traffic
- Work Zone Coordinator and Resident Engineer were notified
- All work zone signage and mitigation efforts were in full use

## **10/18 (Thursday) 7:17 AM Northbound I-270 before Dougherty Ferry Road – All Lanes Open**

- A minor two vehicle crash in the left lane cleared to the new right lane expansion at 8:16 am
- No additional impacts to traffic
- Work Zone Coordinator and Resident Engineer were notified
- All work zone signage and mitigation efforts were in full use

## **10/24 (Wednesday) 1:15 AM Northbound I-170 before Scudder Road--Two Left Lanes Closed**

- A two vehicle crash involving a car that struck a contractor's light tower vehicle in the work zone. The driver of the car suffered minor injuries.
- Emergency crews initially closed all lanes causing a backup of approximately 20 vehicles
- Motorist Assist, Christian Northeast EMS, City of Berkley Police and Fire Departments responded
- Work Zone Coordinator was notified
- All lanes opened at 2:22 am with a one minute queue
- All work zone signage and mitigation efforts were in full use during this closure

## **10/24 (Wednesday) 2:05 PM Eastbound I-64 at Jefferson Avenue -- Right and Left Lane Closed**

- A single vehicle crash in the work zone was moved off of I-64 and onto Scott Street at 2:20 pm
- Motorist Assist and Police responded and the Work Zone Coordinator and Area Engineer were notified
- Incident cleared from all lanes at 2:55 pm with no additional travel impact
- All work zone signage and mitigation efforts were in full use during this closure

## **10/25 (Thursday) 12:29 PM Northbound I-270 past I-44 -- Right Lane Closed**

- A two vehicle crash with an overturned vehicle, three injuries requiring two transports
- Notifications were made to the Work Zone Coordinator and Resident Engineer
- Motorist Assist, tow company, Kirkwood EMS, Fire and Police Departments responded
- Maintenance provided two TMA's to assist with traffic control
- All lanes opened at 1:38 pm with a 20 minute queue resulting in additional travel time for an estimated 4,224 vehicles, 5,072 motorists with a 132 vehicles per minute/per lane adding to the queue. The cost of the additional travel time is estimated at \$1480 for every minute of additional travel time caused by the crash.
- All work zone signage and mitigation efforts were in full use during this closure

## **10/27 (Saturday) 3:02 AM Eastbound I-64 past Jefferson Avenue -- Two Left Lanes and Two Right Lanes Closed**

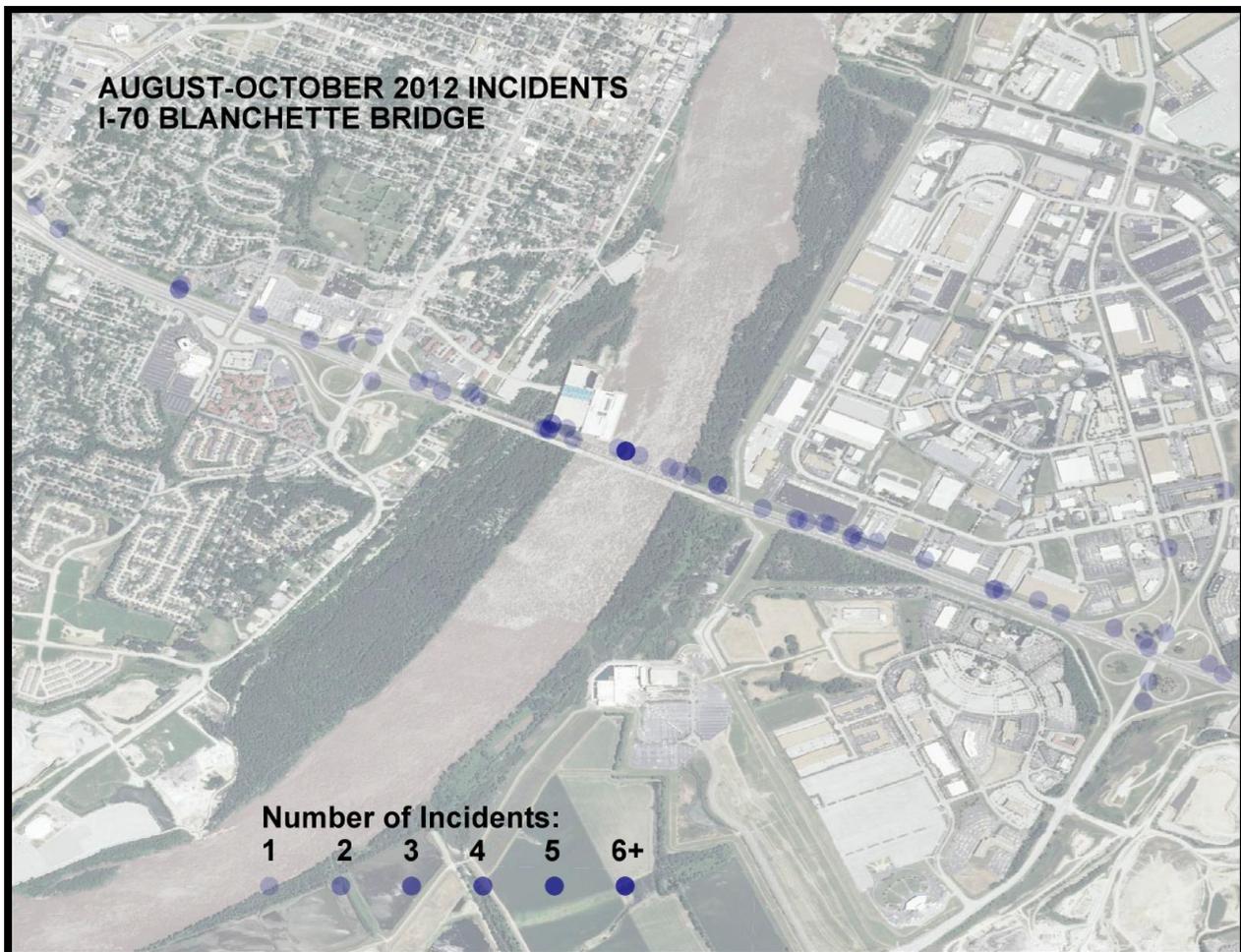
- A minor two vehicle crash knocked a traffic attenuator barrier into the open lane, closing the interstate
- A MoDOT employee witnessed the crash, reported it to the TMC
- No injuries, no state damage
- Work Zone Coordinator and EOC were notified
- All lanes opened at 3:41 am with no queue as motorists diverted at Jefferson Avenue

**10/29 (Monday) 8:31 AM Southbound I-55 Past Reavis Barracks, Two Right Lanes Closed**

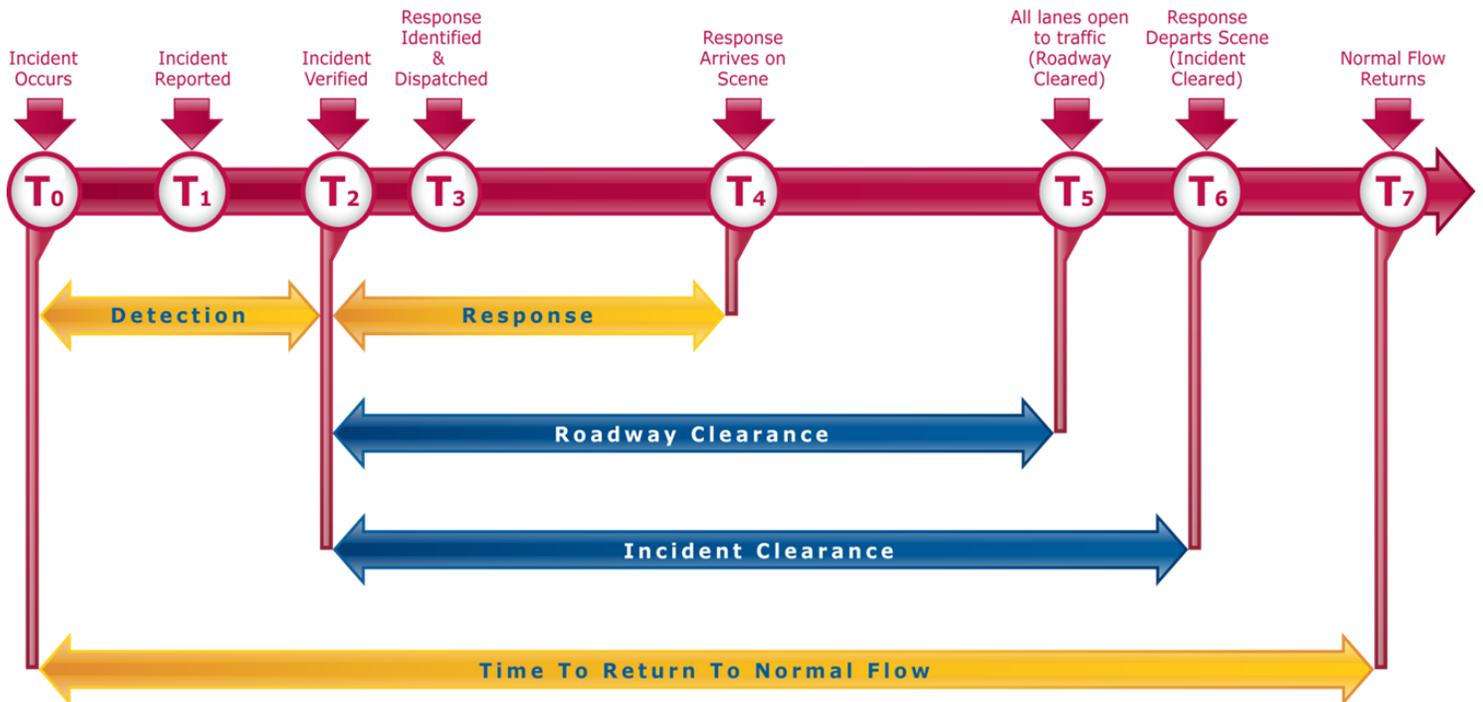
- A minor two vehicle crash in the work zone blocked the left lane
- Motorist Assist, Police and Fire responded
- Work Zone Coordinator and Resident Engineer were notified
- All Lanes opened at 8:51 am with five minutes of additional travel time being observed.
- An estimated queue of 528 vehicles, impacting 634 motorists and 132 vehicles per minute/per lane were adding to the queue. The cost of the additional travel time is estimated at \$185 for every minute of additional travel time caused by the crash.

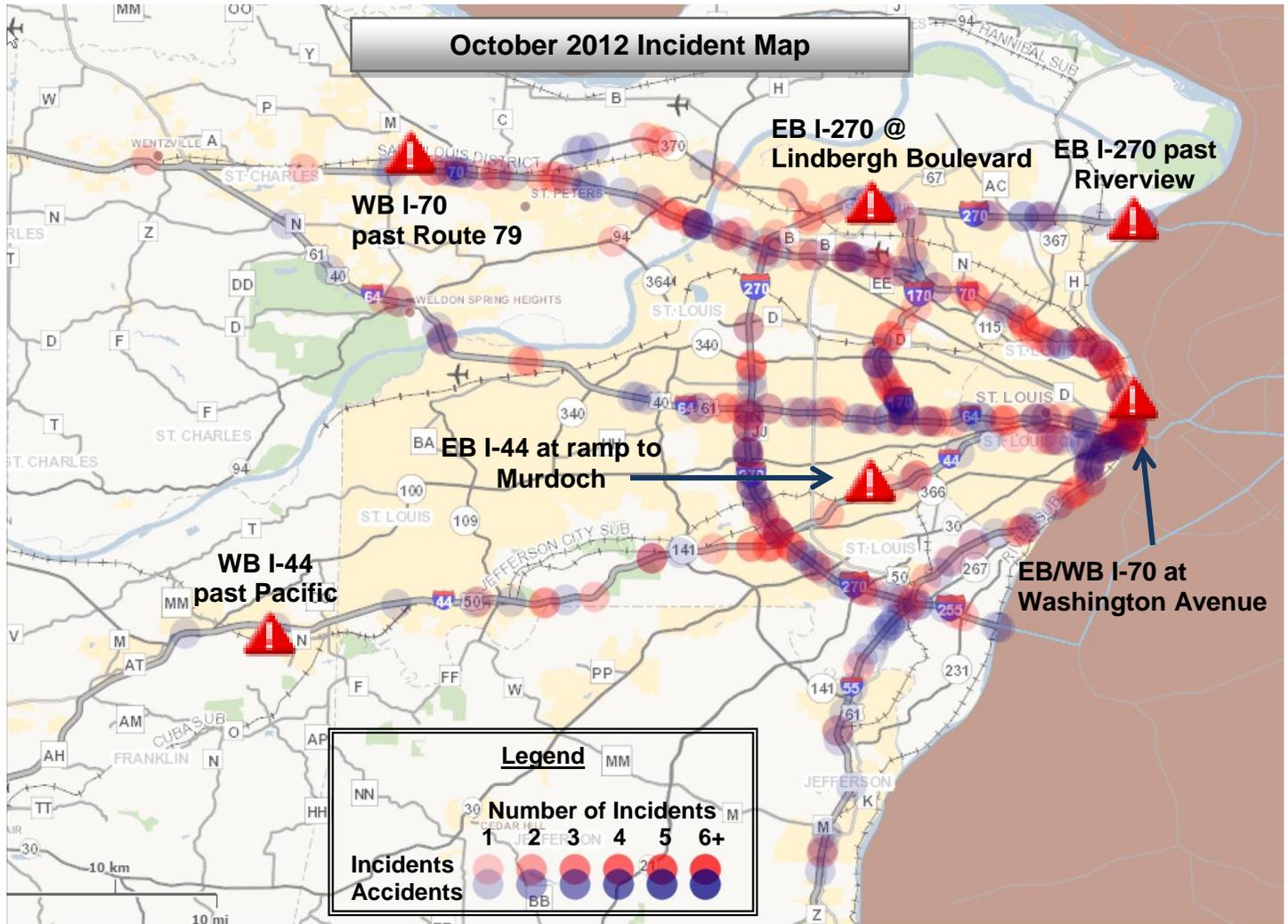
**10/31 (Wednesday) 8:36 AM Eastbound I-70 @ Missouri River – All Lanes Opened**

- A minor two vehicle crash involving a tractor trailer and a car
- No injuries or additional travel time
- Work Zone Coordinator was notified; Motorist Assist, tow company and MSHP responded
- Cleared at 8:51 am
- All work zone signage and mitigation efforts were in full use during this closure



## September 2012 vs. October 2012 Incidents Summary





Number of Incidents			
	August	September	October
Interstate			
I-70	100	150	116
I-270	70	109	93
I-64	61	71	69
I-55	35	70	58
I-44	29	54	47
I-170	27	21	30
Mo-370	7	13	10
Mo-364	0	0	1
Total	329	488	415

- Denotes Location of Major Impact Traffic Incidents
- The incident details and mitigation actions along with the results are outlined on page 6
  - Please note that traffic engineering assumptions were made when describing the approximate number of vehicles and people impacted.
  - These estimates provide a simple method to describe the impact on the motoring public.

**Number of Major Impact Incidents**

**September 2012 vs. October 2012**

**11                      6**

## Major Impact Traffic Incidents and Mitigation

### 10/8/12 (Monday)

- **Time:** 9:12 pm – 11:38 pm
- **Location:** St. Louis City - Eastbound I-270 past Riverview Road
- **Event:** Two-vehicle crash involving tractor trailer closed all lanes
- **Action:** Transportation Management Center posted web-based and text message alerts, displayed advanced messaging on roadside message boards informing motorists of the closure and to use an alternate route. State EOC and Motor Carriers were notified. MoDOT Incident Management Coordinator, MoDOT Emergency Response, IDOT Emergency Response, Fire, EMS, St. Louis Metro Police, and tow were dispatched to the scene.
- **Estimated Initial Impact:** Two motorists were ejected sustaining injuries and closing all eastbound lanes. Total closure forcing motorists to experience additional travel time.
- **Result:** Left lane opened at 10:50 pm. All lanes opened at 11:38 pm with a 5 minute queue.
- **Duration:** 2 hours 25 minutes

### 10/11/12 (Thursday)

- **Time:** 11:20 am – 4:00 pm **\*\*\*Ramp/Mainline Event\*\*\***
- **Location:** St. Louis County - Eastbound I-44 at ramp to Murdoch Avenue
- **Event:** A dump truck stall with a broken axle
- **Action:** Transportation Management Center posted web-based and text message alerts, displayed advanced messaging on roadside message boards informing motorists of the lane closures and to use an alternate route. MoDOT Emergency Responders were dispatched to the scene along with two Sunset Hills TMA's, Shrewsbury Police and Fire, and tow.
- **Estimated Initial Impact:** Right lane, right and left exit ramp blocked.
- **Result:** Police closed exit ramp to unload truck before it could be towed. TMA's used for traffic control. Exit ramp opened at 4:00 pm with no queue.
- **Duration:** 4 hours 40 minutes

## Major Impact Traffic Incidents and Mitigation

### 10/15/12 (Monday)

- **Time:** 6:35 pm – 8:37 pm
- **Location:** St. Charles County - Westbound I-70 past Route 79
- **Event:** A tractor trailer with a shifted load blocked the right lane
- **Action:** Transportation Management Center posted web-based and text message alerts, displayed advanced messaging on roadside message boards informing motorists of the right lane closure. MoDOT Emergency Responders requested a MSHP DOT Officer respond to the scene to assess the situation. Tow responded to assist with the shifted load.
- **Estimated Initial Impact:** The right lane and right shoulder were closed at the request of MSHP for traffic control to temporarily shift the load.
- **Result:** The right lane remained closed until the vehicle was moved to Foristell for a permanent reloading. No queue when lane opened at 8:37 pm.
- **Duration:** 2 hours 2 minutes



## Major Impact Traffic Incidents and Mitigation

### 10/17/12 (Wednesday)

- **Time:** 5:46 am – 1:06 pm **\*\*Rush Hour Event\*\*** **\*\*Arterial Mitigation\*\***
- **Location:** Franklin County - Westbound I-44 past Pacific
- **Event:** A multi-vehicle vehicle crash involving three tractor trailers closed all lanes
- **Action:** Transportation Management Center posted web-based and text message alerts, displayed advanced highway messaging on roadside message boards informing motorists of the total closure and advising them to seek an alternate route. Motor carriers and EOC were notified. MoDOT Emergency Responders, MoDOT Southwest Area Maintenance Superintendent, Gray Summit Maintenance, Hazmat Personnel, MSHP Troop C, Pacific Police and Fire Departments, tow, and Meramec Ambulance Services responded.
- The I-44 @ Lamar signal's max times were increased at 7:30 am from 35 to 50 seconds to try and increase the thru flow on the outer road. The max times were returned to the normal 35 seconds at 9:00 am.
- **Estimated Initial Impact:** Traffic diverted at Mile Marker 257 causing additional travel times around the incident. CMS on Westbound I-44 and Northbound Route 109 adjusted to reflect accident instead of eastbound construction. Traffic in queue between Pacific and crash was re-routed. Original reports indicated there was a diesel leak of an unknown quantity and of a continuing nature.
- **Result:** At 6:30 am on scene Hazmat personnel confirmed no diesel spill and that one of the trucks involved was split open with a load of canned goods / salad dressing spilled on the road. Gray Summit maintenance responded with a loader, dump trucks, and sand for cleanup and incident ahead static signs were placed for traffic control. The police were directing traffic at the bottom of the I-44 Westbound Off-Ramp. This negated the signal changes restricting flow at the off-ramp. All lanes opened at 1:06 pm with a 4 minute queue.
- **Duration:** 7 hours 20 minutes

### 10/18/12 (Thursday)

- **Time:** 12:55 pm – 3:06 pm
- **Location:** St. Louis County - Eastbound I-270 at Lindbergh Boulevard
- **Event:** A two vehicle crash with injuries blocked the two right lanes
- **Action:** Transportation Management Center posted web-based and text message alerts, and displayed advanced highway messaging on roadside message boards informing motorists of the crash. MoDOT Emergency Responders were dispatched to the scene along with Hazelwood Fire and Police Departments, MSHP and tow.
- **Estimated Initial Impact:** Two eastbound lanes were closed.
- **Result:** All lanes opened at 3:06 pm with a 38 minute queue.
- **Duration:** 2 hours 11 minutes

## Major Impact Traffic Incidents and Mitigation

### 10/22/12 (Monday)

- **Time:** 1:10 pm – 6:18 pm **\*\*PM Rush Hour\*\***
- **Location:** St. Louis City - Eastbound/Westbound I-70 at Memorial
- **Event:** Tractor trailer crash onto median wall Eastbound/Westbound I-70 at Memorial
- **Action:** Transportation Management Center posted web-based and text message alerts, displayed advanced highway messaging on roadside message boards informing motorists of the lane closures and closure of the exit to memorial. EOC and Motor Carriers were notified of the Memorial exit closure and closure of all westbound lanes. MoDOT Emergency Responders were dispatched to the scene along with police, fire, a crane tow and MoDOT Maintenance. A MoDOT media alert was issued warning motorists to avoid this area, to seek an alternate route into Illinois, and to expect delays through the pm rush.
- **Estimated Initial Impact:** Total closure of all lanes East and Westbound I-70. Vehicle was resting on the median wall with the back of the trailer blocking Westbound I-70 and the front of the vehicle blocking Eastbound I-70 lanes. All lanes were closed for removal of the tractor trailer from the roadway and median wall. No injuries were reported. Extensive damage to the median wall and the traffic attenuators protecting the bridge abutment occurred. The handrails on the Memorial overpass were unbolted from the impact of the crash.
- **Result:** Crews were able to work in the westbound left shoulder and two left lanes to remove the vehicle from the median wall. All lanes in the westbound direction opened at 4:04 pm with a 40 minute queue. Crews cleared lanes of debris, removed damaged attenuators and placed temporary barrels to protect bridge abutment while lanes were closed. Eastbound lanes remained closed for removal of vehicle and cleanup of spilled fluids. All Eastbound lanes cleared at 6:18 pm with a 3 minute queue.
- **Duration:** 5 hours 8 minutes

## High/Moderate Impact Traffic Mitigation Events

### 10/01/2012 (Monday)

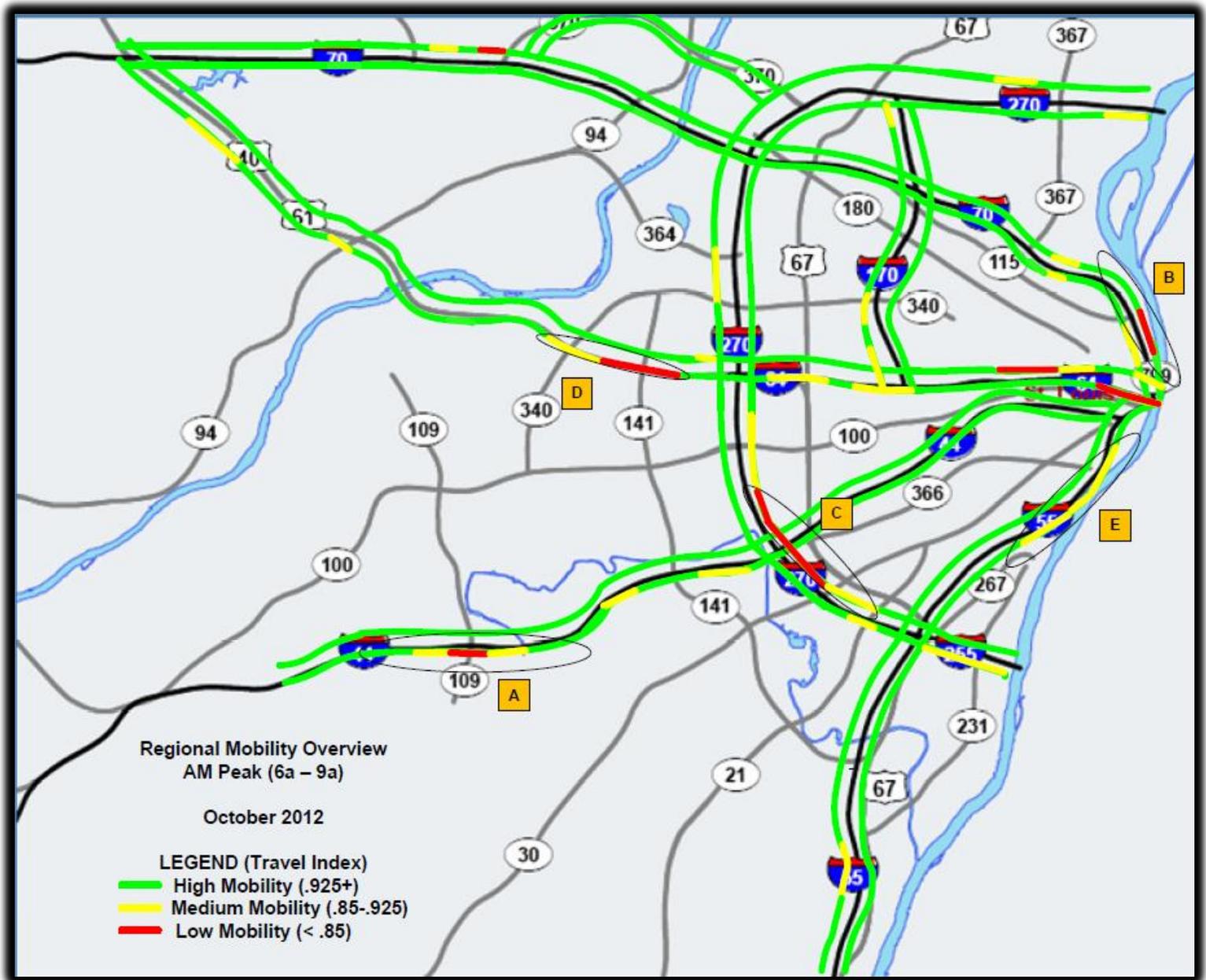
- **Time:** 8:00 am - 8:30 am **\*\*AM Rush Hour\*\***
- **Location:** St. Charles County – Route 79 @ I-70 Westbound Ramp
- **Event:** There was an accident on Salt River Road that had traffic detoured on Southbound Route 79 to Eastbound I-70.
- **Action:** Traffic was detoured via Route 79 to I-70 Eastbound. The timing of the signals at Route 79 @ I-70 Westbound Ramp was adjusted to provide more time to the southbound movement. At 8:30 am, the southbound backups were completely cleared and signal timing was returned to normal.
- **Result:** Adjustments were successful in improving flow of detouring traffic and reducing additional travel time.
- **Duration:** 30 minutes

### 10/3/12 (Wednesday)

- **Time:** 7:43 am – 9:20 am **\*\*AM Rush Hour\*\***
- **Location:** St. Louis County – Eastbound I-44 @ Route 109
- **Event:** Crash involving two tractor trailers resulted in I-44 Eastbound shutting down @ Route 109 until 8:35 am when a single right lane opened on Eastbound I-44. There was also a crash on Southbound Route 109 @ the intersection with the Westbound I-44 ramp blocking the right lane.
- **Action:** Police closed off the entrance ramp from 109 to Eastbound I-44. The group of signals at I-44 & Route 109 were set to free operation to alleviate traffic getting off of Eastbound I-44 and heading north on Route 109. Southbound Route 109 crash was cleared at 8:45 am. Eastbound I-44 crash was cleared and all lanes opened at 9:05 am. Traffic on Route 109 returned to normal flow and the signal system was set back to coordination at 9:20 am.
- **Result:** Allowing the signals to run free provided more time for the ramp traffic to turn onto Northbound Route 109 as a detour. This action in conjunction with the police restricting access to Eastbound I-44 aided in allowing traffic to flow well on Route 109 while the crash was being cleared on I-44.
- **Duration:** 1 hour 37 minutes

### 10/17/2012 (Wednesday)

- **Time:** 8:00 am – 08:15 am **\*\*AM Rush Hour\*\***
- **Location:** St. Louis County – Southbound McDonnell Boulevard @ I-270 Westbound On Ramp
- **Event:** A two vehicle crash involving a Bi-State Bus blocked the right Southbound thru lane on McDonnell Boulevard and the Westbound On-Ramp to I-270 at the Westbound I-270 On-Ramp. The I-270 Westbound Off-Ramp backed up near the highway due to the closed rightmost left turn lane. The Southbound thru traffic backed up at times to Behlman Lane.
- **Action:** The Westbound I-270 Off-Ramp signal was set to Free to clear the ramp at 8:00 am.
- **Result:** The ramp successfully cleared and was returned to normal operation at 8:15 am. The ramp was monitored until the crash was cleared at 8:45 am.
- **Duration:** 15 minutes



## AM Peak Changes in October 2012



Mobility Slightly Increased

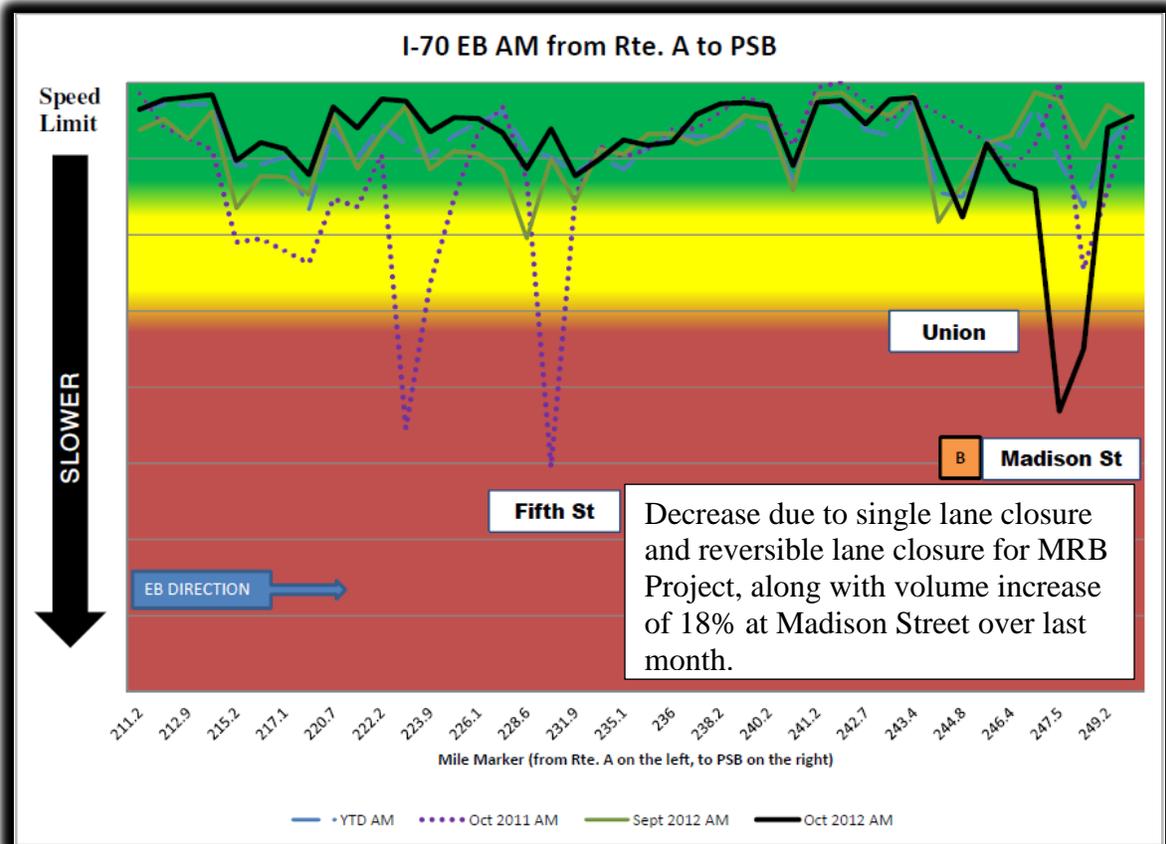
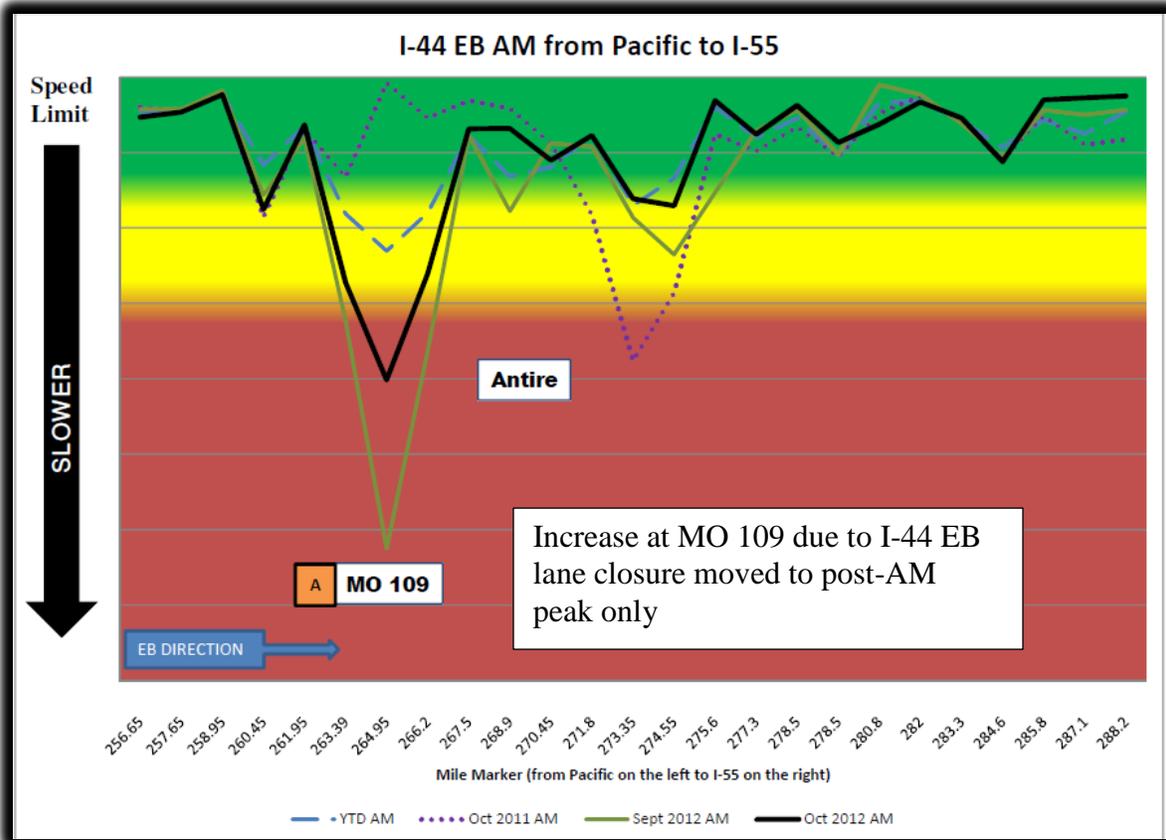


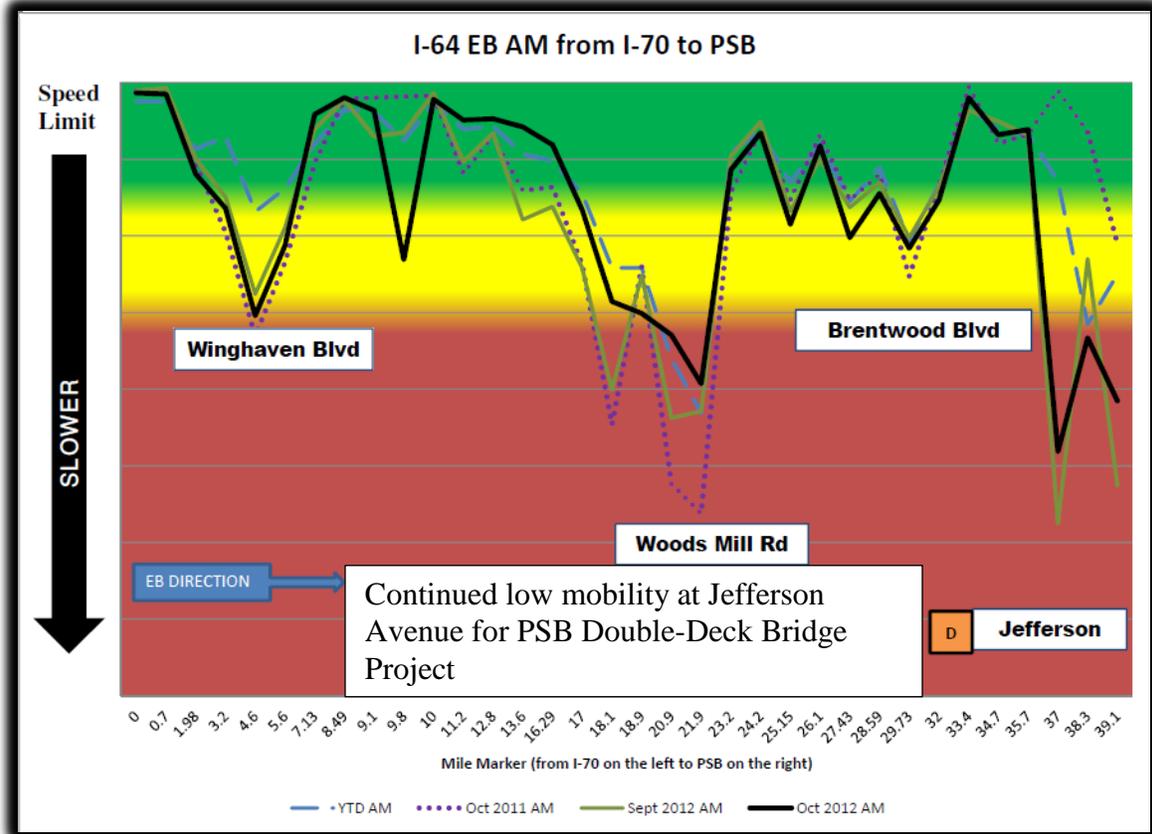
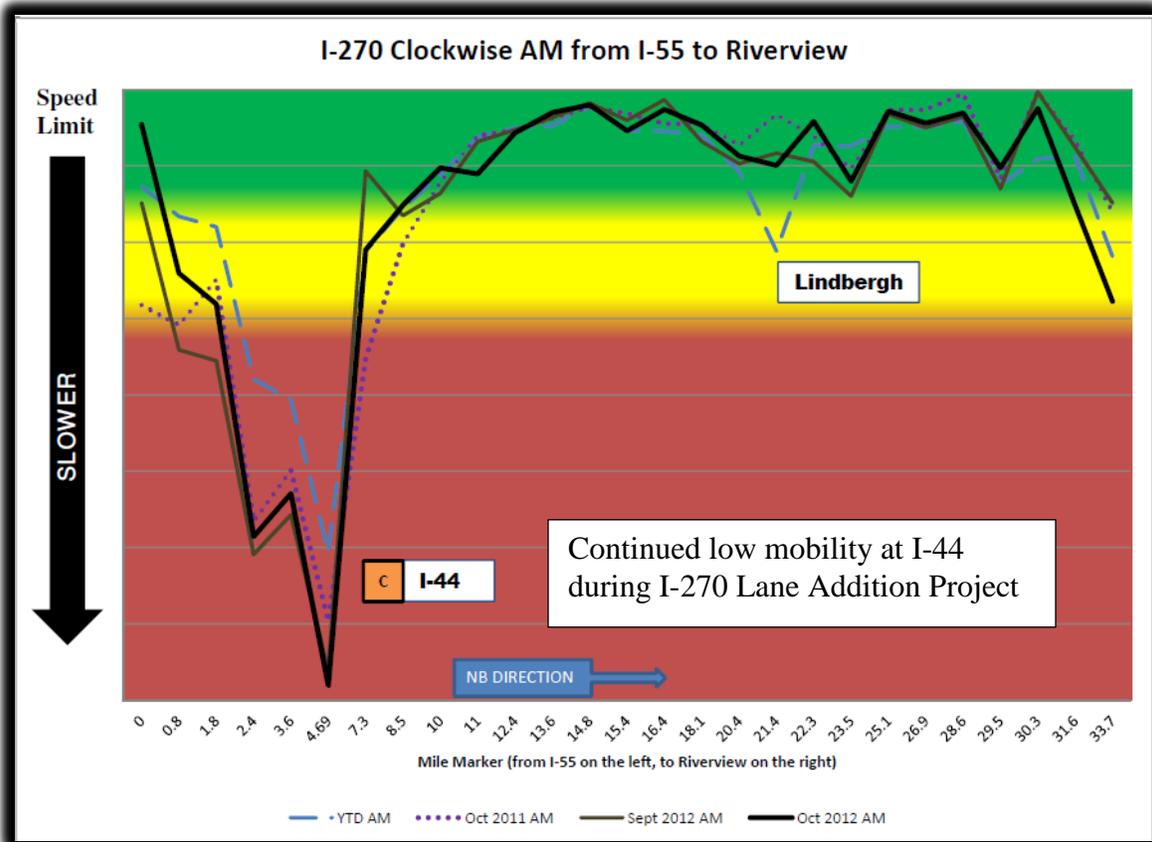
Mobility Slightly Decreased

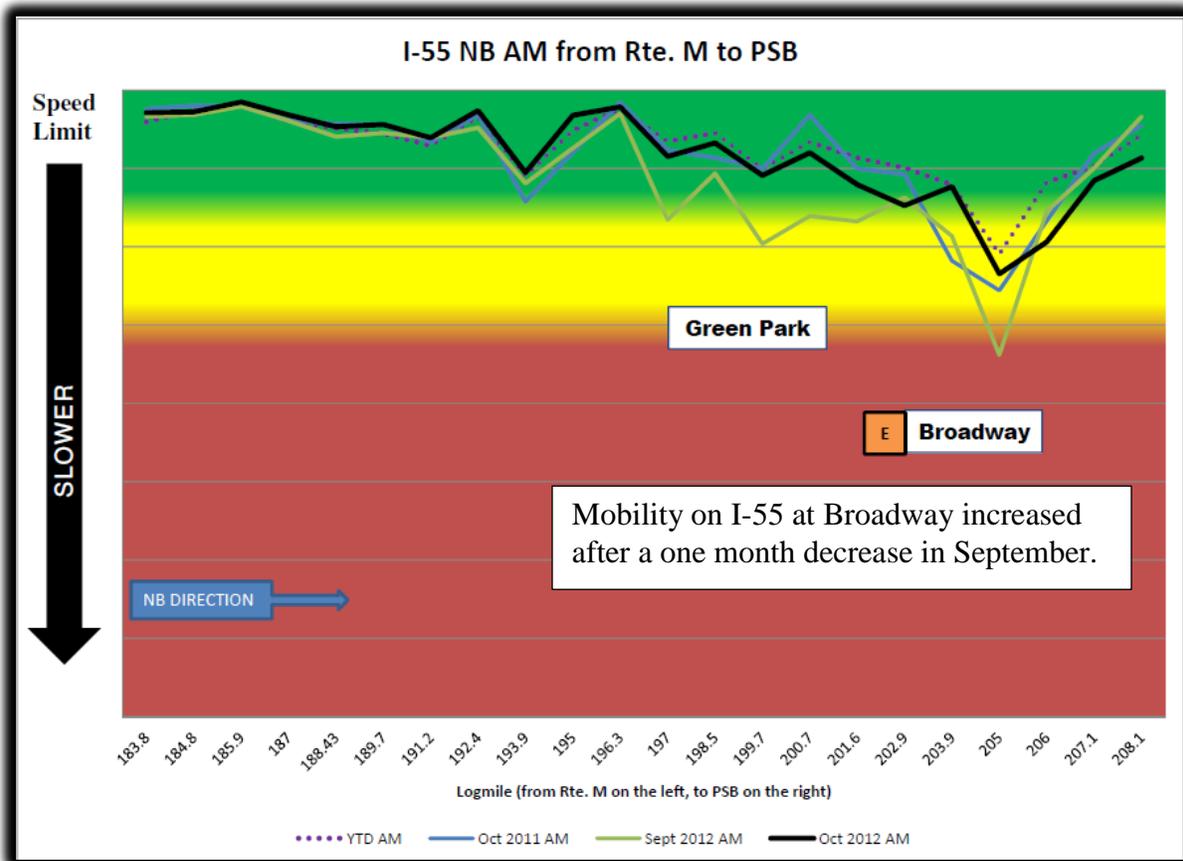


Mobility Remained Low

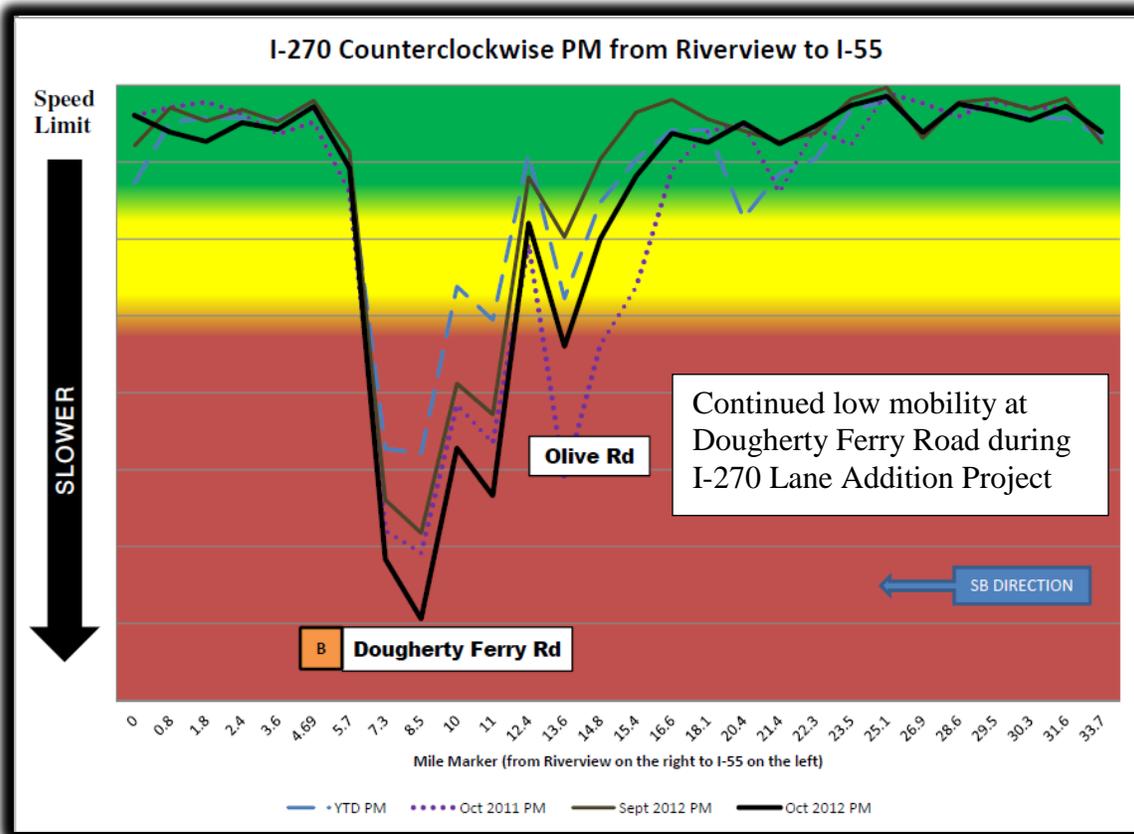
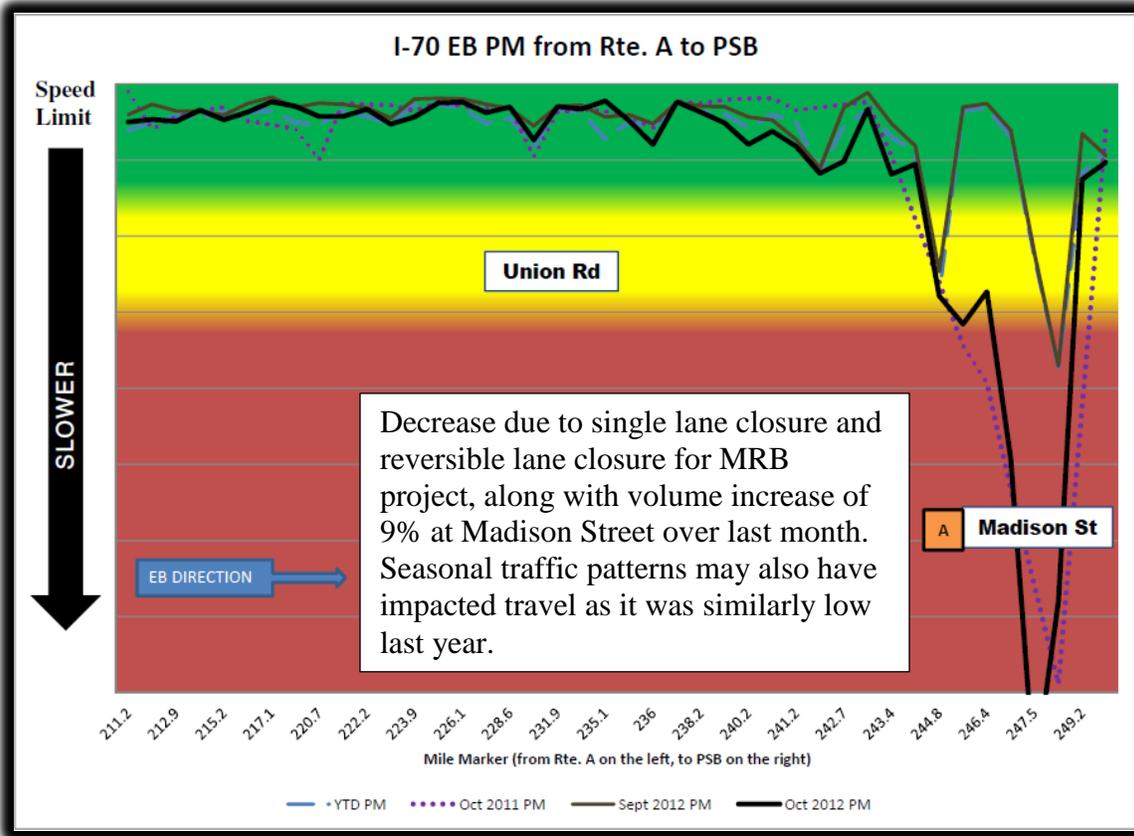
\*All weekdays are included in speed index calculation

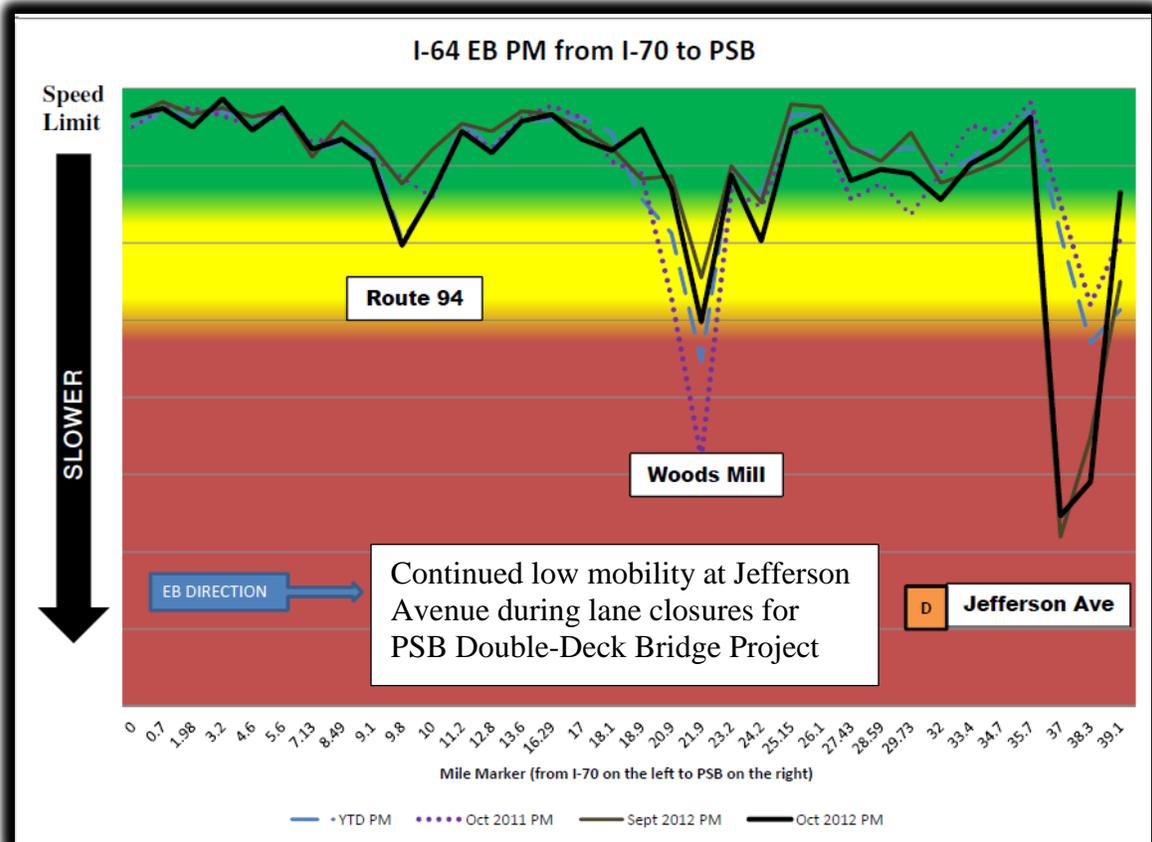
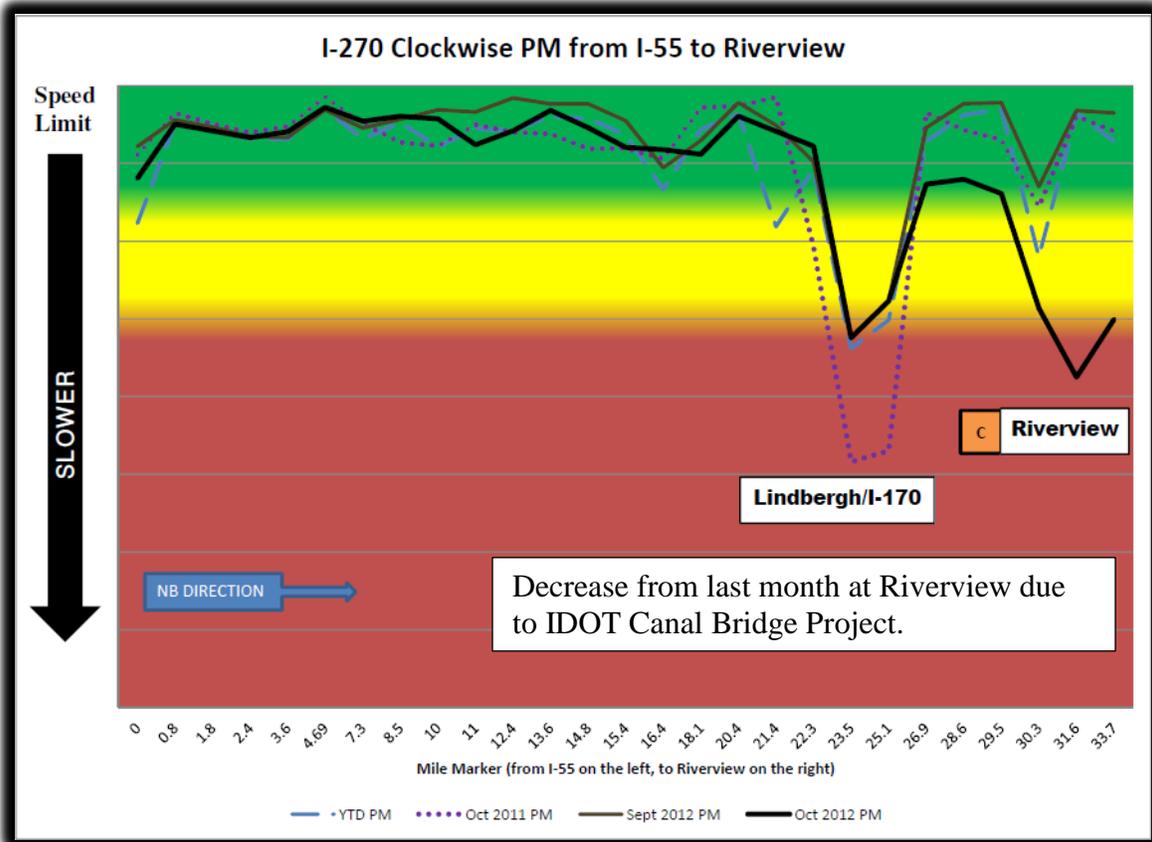












## Average Rate of Travel on Selected Signalized Routes by Calendar Year Average Travel Time per Mile Arterial Management

The purpose of this measure is to determine how well selected arterials across the region are operating during the peak traffic times. As improvements are made, such as signal timing, equipment upgrades, or access management improvements, this measure will show the effects of those efforts and decisions on the arterial system.

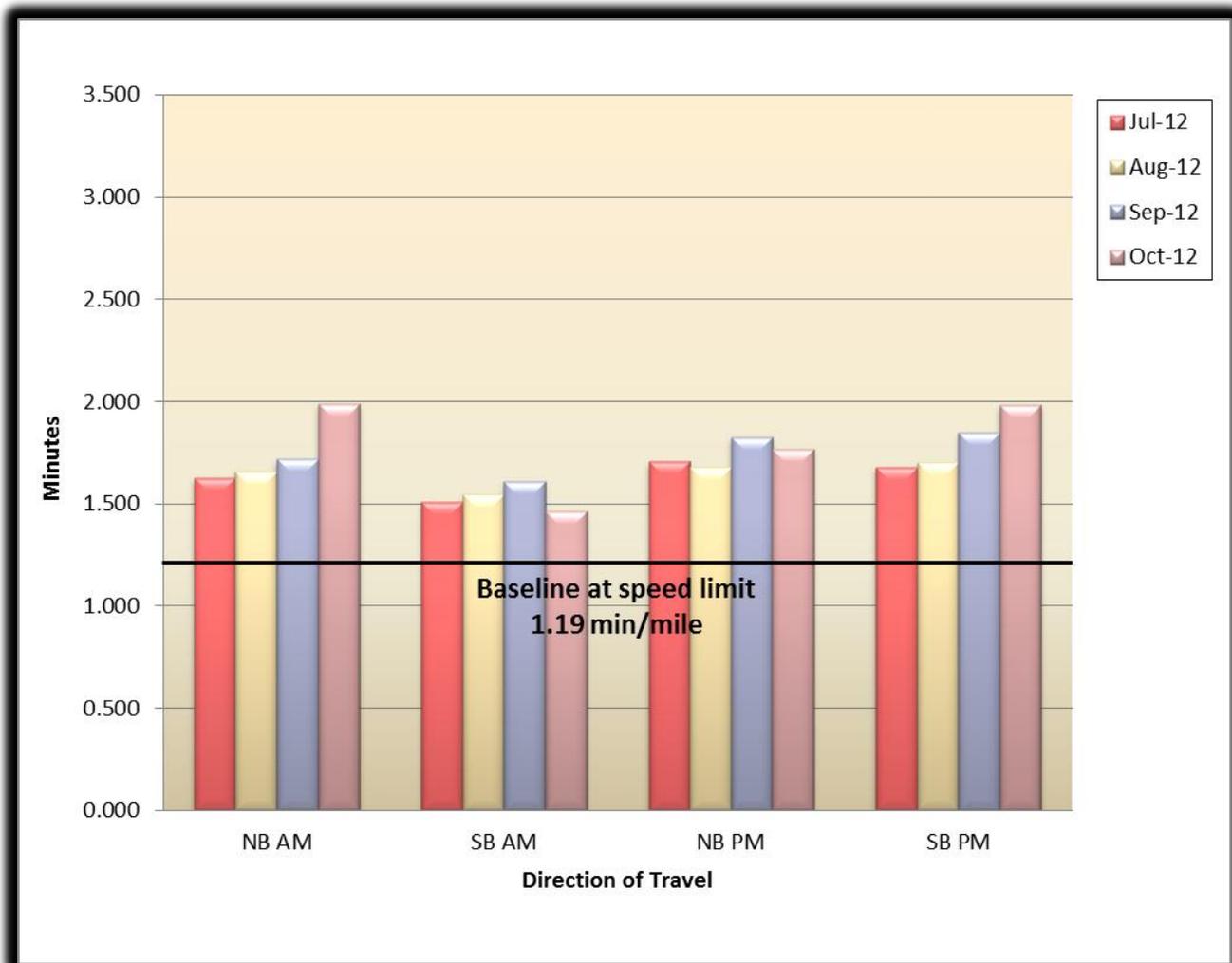
Travel times are measured on various arterial routes. For most routes, data is collected from driving each route multiple times during the A.M. and P.M. peak periods and timing how long it takes to traverse the route. For Rte. 141 and US 67, the Sensys Travel Time system is utilized to determine the travel times and allows a much more comprehensive collection of data. The travel time is compared to the speed limit and the average minutes per mile are calculated. An average minutes per mile based on a perfect run through the corridor is calculated and used as the baseline for comparison. If the actual average minutes per mile are at the baseline, traffic is moving at the speed limits without any stops.

The routes where data was collected include the following:

- Route 141\*, from I-55 to I-64
- Route 30, from Route PP to Weber Hill Road
- Route 100, from Route 340 to Maple Lane
- US 50, from Union West City Limit to Denmark
- US 67\*, from Route 367 to I-270

\* Routes where data was collected using Sensys system.

## Route 141, from I-55 to US 40 St. Louis and Jefferson Counties



The travel times are indicating a slight rise for the NB AM and SB PM directions. Increases in traffic volumes are speculated, but not confirmed at this point. This corridor encompasses many systems.

Number of Signals - 41

Length of system - 18.6 miles

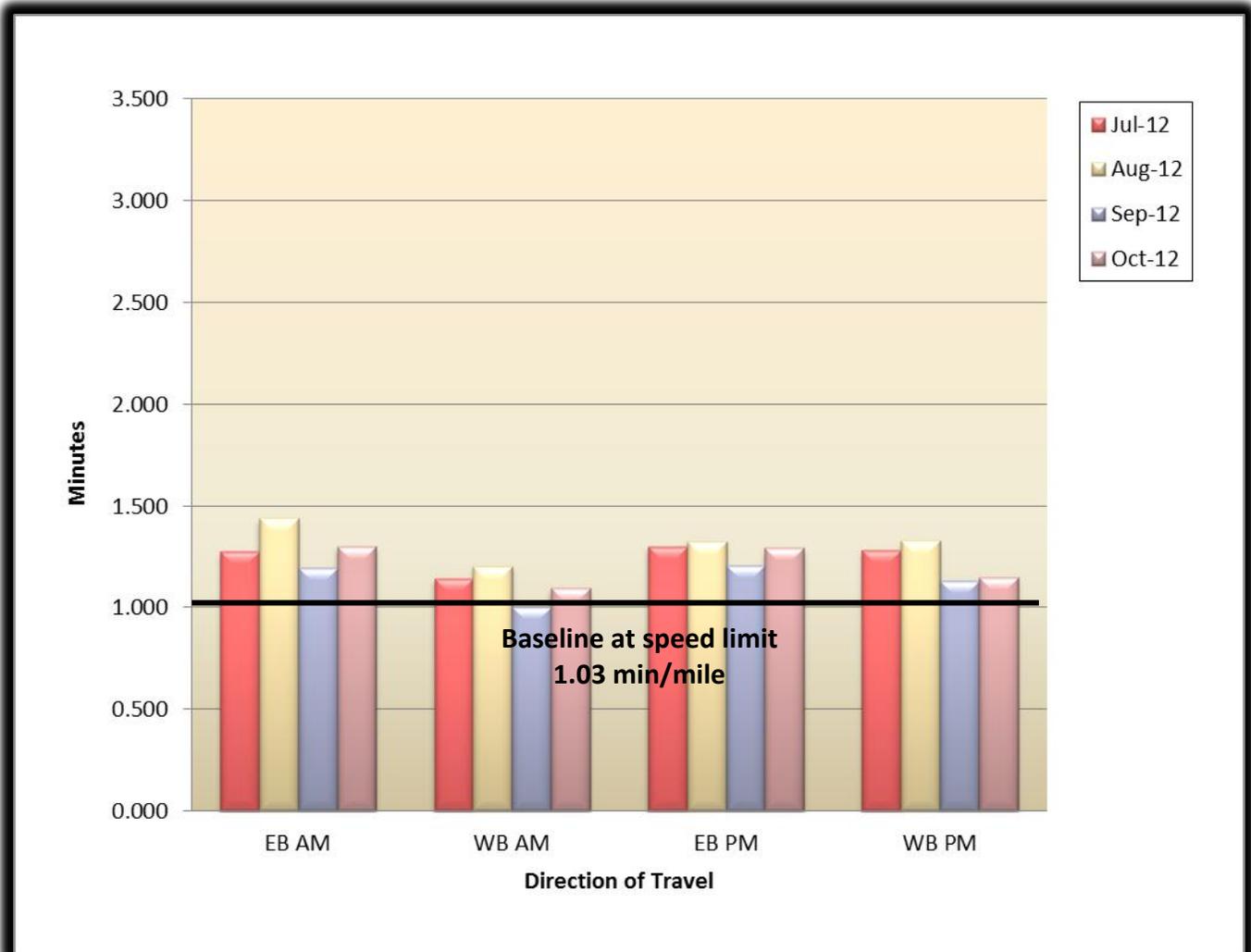
Speed Limit on this corridor varies from 45 mph to 55 mph

Number of Lanes – This is an urban/rural 4-6 lane expressway with signalized crossovers and several grade separated interchanges.

Weighted AADT for length of segment – 35930

This system provides travel time data based on the Sensys Travel Time system.

## Route 30, from Route PP to Weber Hill Road St. Louis and Jefferson Counties



Travel times indicate a slight increase for all directions. Previous reports speculated that construction activities had no known impacts to the travel times.

This system was optimized in 2009 and is scheduled again in 2013.

Number of Signals - 11

Length of system - 9.2 miles

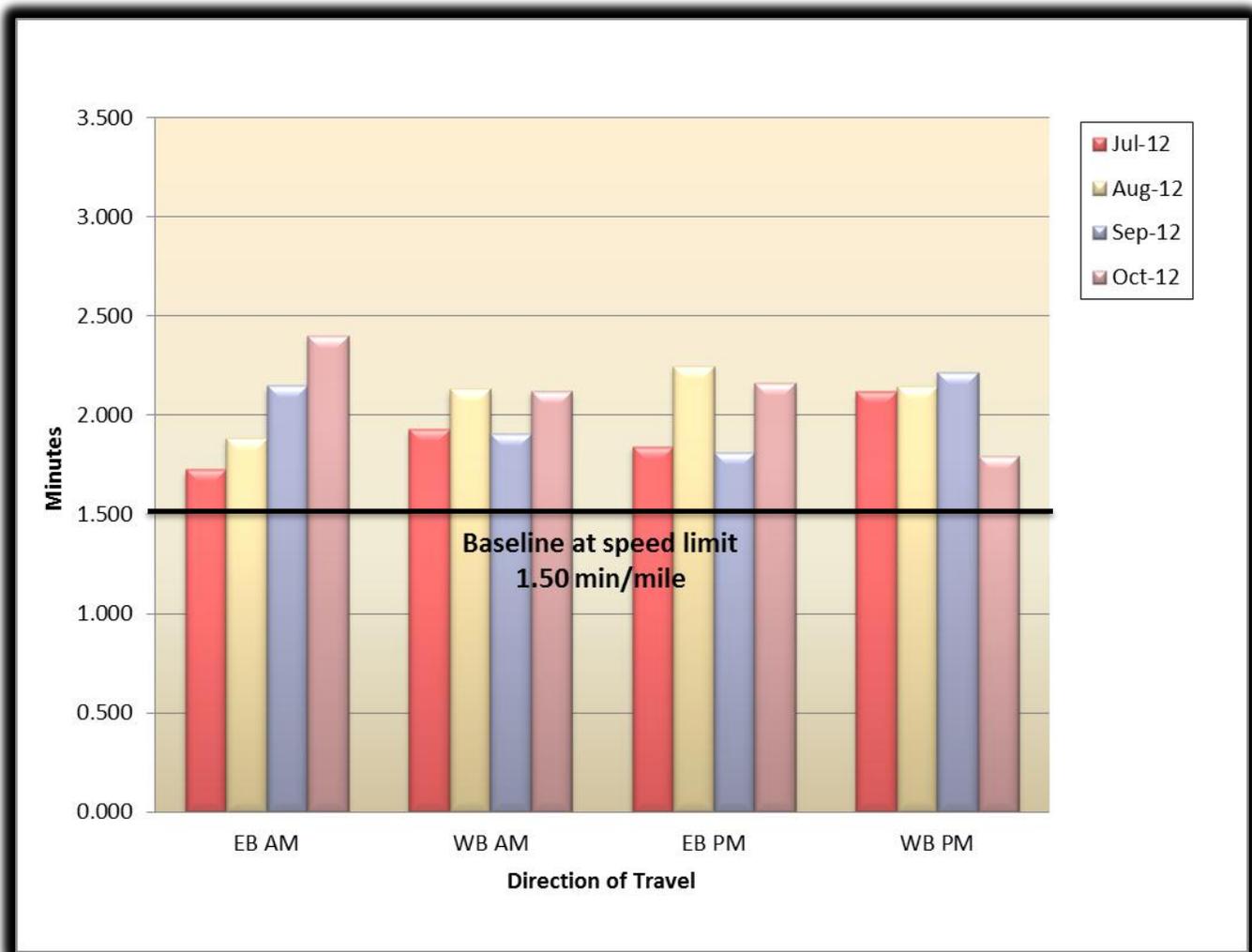
Speed Limit varies from 50 mph and 60 mph

Number of Lanes - this is a rural four lane expressway with signalized crossovers

Weighted AADT for length of segment – 38150

A portion of this system is currently under construction to install a Sensys Travel Time system (Weber Hill to Rte.141 ~ 3mi)

## Route 100, from Route 340 to Maple Lane St. Louis County

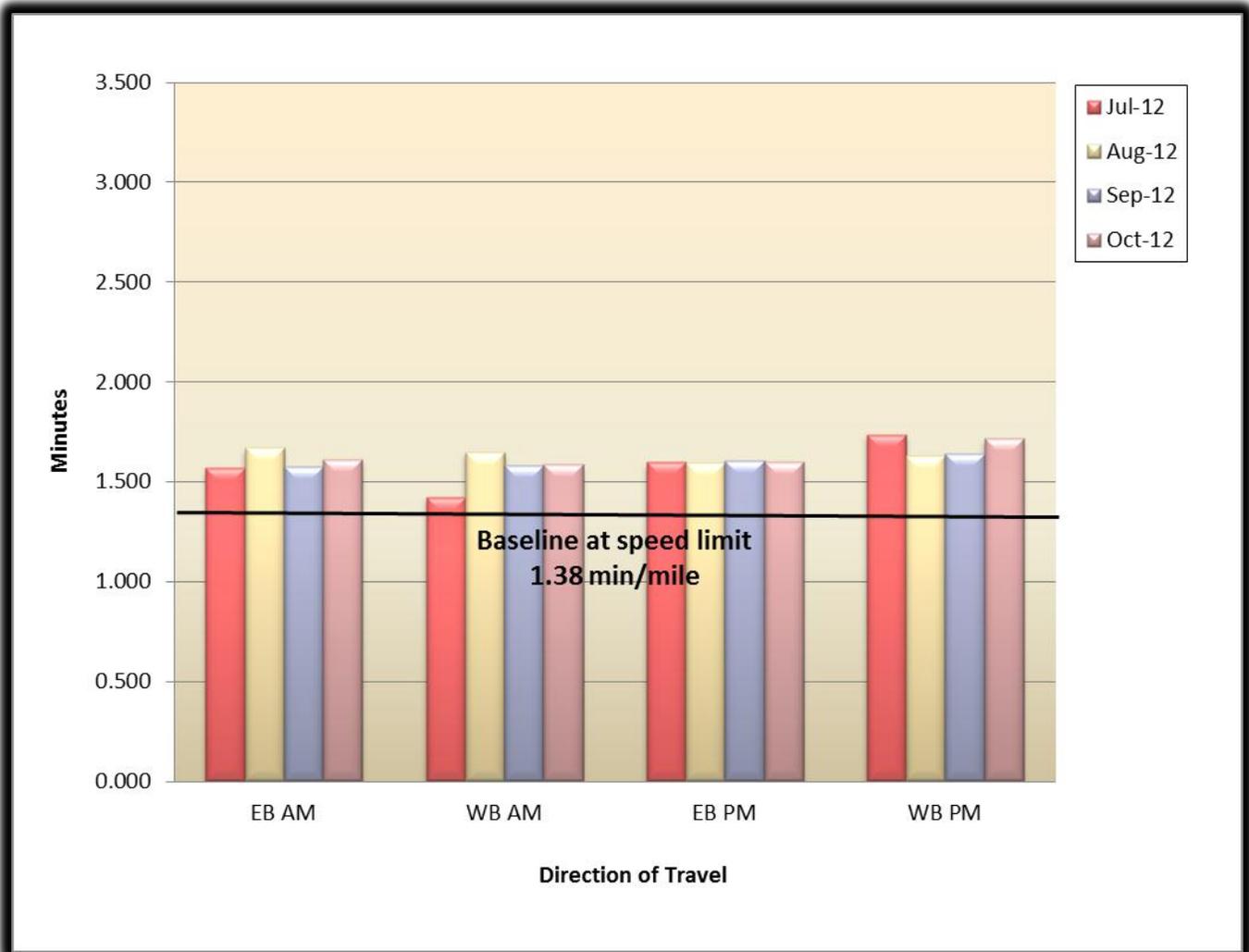


Travel times continue to rise for the EB AM direction. There was also an increase for the WB AM and EB PM movements. The WB PM seems to show improvement. Traffic volume changes have not been verified. Previous reports contributed the rise and fall in travel times to driver behavior changes and emergency vehicle preemption influences.

The corridor is in its final optimized configuration upon completion of the plans in May. We are awaiting the final report.

- Number of Signals - 8
- Length of system - 4.2 miles
- Speed Limit is 40 mph
- Number of Lanes - this is a five lane section with a two way left turn lane.
- Weighted AADT for length of segment - 39500
- AM peak flow is eastbound. PM peak flow is westbound.
- This system is currently under construction to install a Sensys Travel Time system.

## US 50, from Union West City Limit to Denmark Franklin County



Travel times continue to be stable with very little increase or decrease.

This system had signal optimization timings implemented in early July 2011. Additional reviews on corridor progression are planned for the future.

Number of Signals - 6

Length of system - 6.3 miles

Speed Limit varies between 40 mph and 50 mph

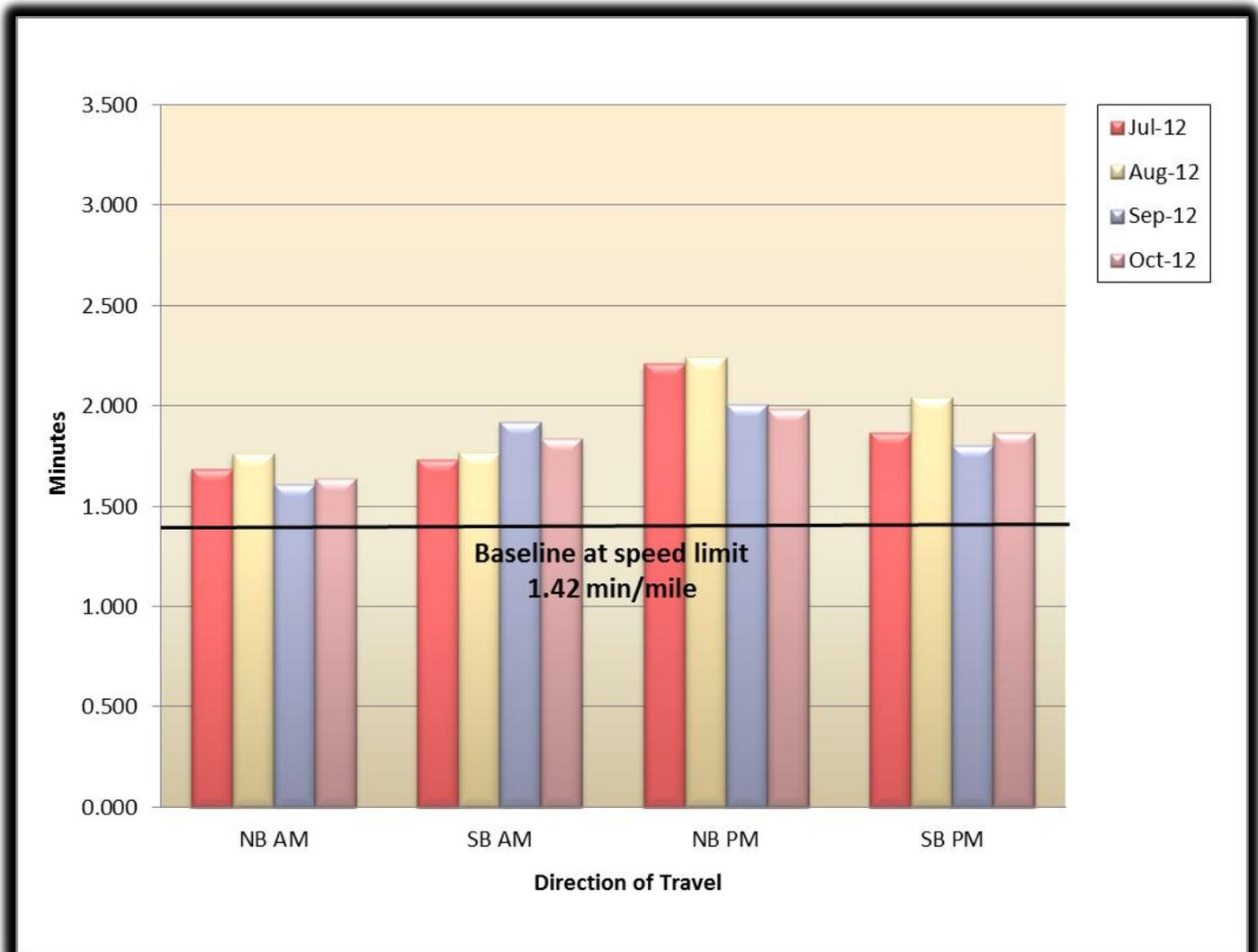
Number of Lanes - this was just recently upgraded to a five lane section.

Weighted AADT for length of segment - 16850

AM peak flow is eastbound. PM peak flow is westbound.

No current plans to install Sensys Travel Time system.

## US 67, from Route 367 to I-270 St. Louis County



Travel times are consistent with last month with minimal increases or decreases. The PM travel time improvements from September were a result of detection issues being corrected in late August.

Optimization on this system was recently completed and we are awaiting the response on areas of concern.

Number of Signals - 19

Length of system - 8.3 miles

Speed Limit varies between 40 mph and 45 mph

Number of Lanes - this is a five lane section with a two way left turn lane.

Weighted AADT for length of segment – 25450

Since June 2011, this system has been providing travel time data based on the Sensys Travel Time system.

## Arterial Mobility Improvements – October, 2012

After the St. Louis County divestiture work was completed, the full opening of MO 141, the opening of MO 364 Phase 3 project, and the closing of a single lane on the I-70 Blanchette Bridge, an increase in traffic was observed exiting Eastbound MO 364 to Southbound MO 141. This increase in traffic was causing backups during the AM peak onto MO 364 Eastbound for over a half a mile (to River Valley Drive overpass) most mornings and some mornings close to a mile and a half (to the Veterans Memorial Bridge).

In an attempt to flush the MO 364 Eastbound ramp at MO 141 the green time was increased to 40 seconds of the 70 second cycle length. Unfortunately the signal timing changes had no effect.

An in house effort was made to restripe, remove signal heads, install a concrete island, and add signs to make the right turn from MO 364 Eastbound a free channelized movement into their own lane on SB 141. The signs are not currently installed due to a few not being in stock and the concrete island has not yet been installed. Even without these two important items being completed the backup has been greatly alleviated and at most times during the AM peak completely eliminated.



## Route 100 (St. Louis) Optimization Summary

Revised timing plans were implemented for Route 100 between Broadway/4<sup>th</sup> St and McCausland Ave in St Louis City (26 signals) in December 2011, with the exception of the signals between Vandeventer and Jefferson Aves, whose implementation was delayed until July 2012 due to the Grand Blvd bridge closure. The arterial was broken into smaller signal groups (see below) for signal plan implementation due to holding the major north-south intersections constant to maintain coordination with the St. Louis City signal systems.

Held constant for north/south coordination:

- McCausland Ave
- Kingshighway Blvd
- Vandeventer Ave
- Grand Blvd
- Compton Ave
- Jefferson Ave
- Truman Pkwy
- Tucker Blvd/11th St
- 7th St
- Broadway/4th St

Group 1:

- Prather Ave
- Waldemar Ave
- St Louis Market Place
- Knox Ave
- Sulphur Ave
- Sublette Ave
- Mackland Ave
- Barron Ave

Group 2:

- Taylor Ave
- Newstead Ave
- Tower Grove Ave
- Boyle Ave
- Sarah St

Group 3:

- 39th St
- Spring Ave

Group 4:

- 14th St

A summary of optimization efforts provided initial annual reduced fuel consumption of approximately 26,000 gallons/year (approximately \$86,000 in fuel costs @ \$3.33/gallon), and annual emission reductions of 13 tons.

Major decreases are seen in travel times for both eastbound and westbound in the AM peak (by 13% and 10%) and eastbound in the PM peak (by 19%). An increase in the westbound mid-day peak travel time of 7% is mostly offset by a decrease in eastbound travel time of 9%.

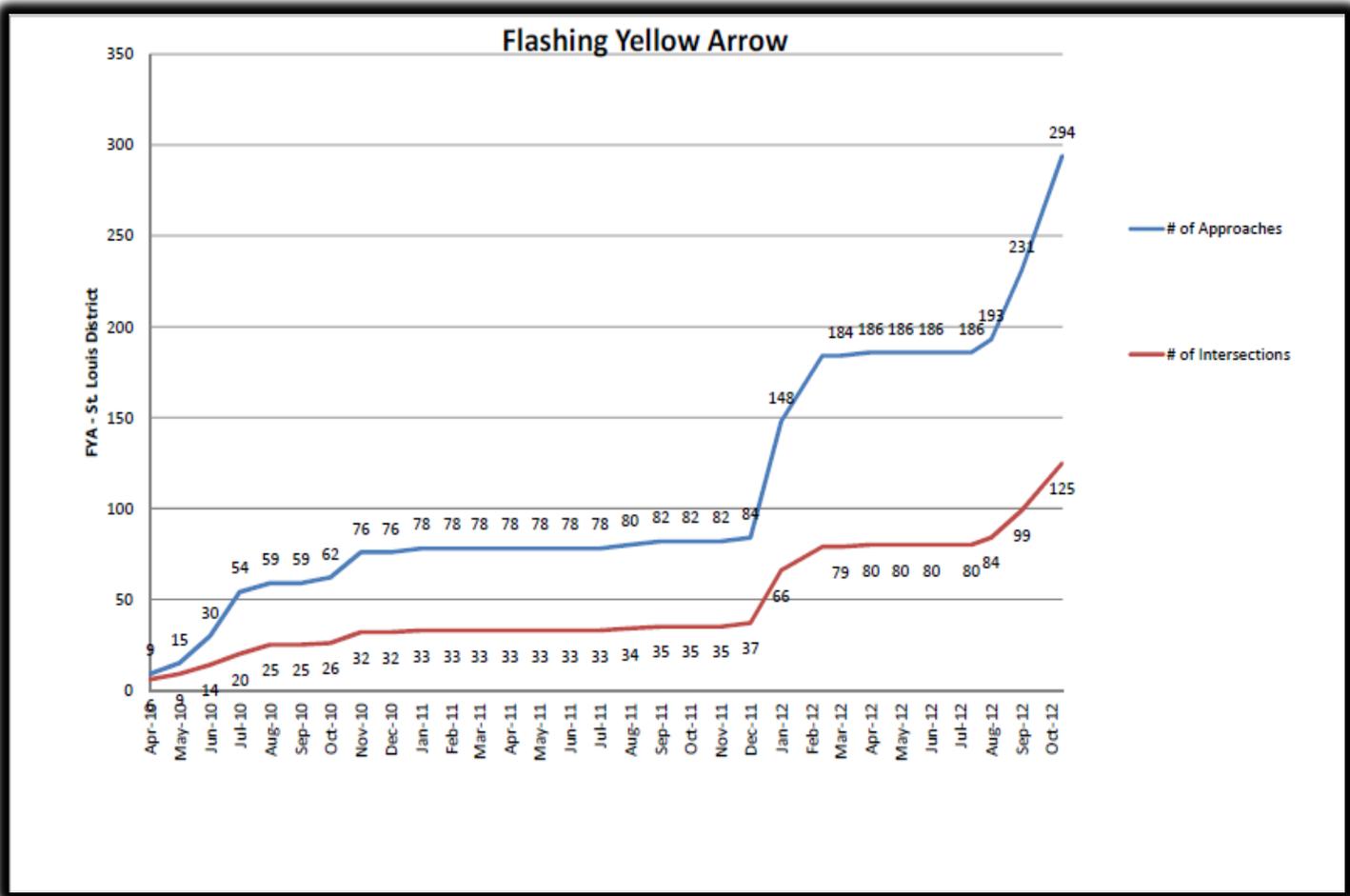
Cost or Emission Measure	Pre-Study	Post-Study	Difference
Estimated Annual Fuel Consumption (gallons/year):	937,490	911,720	25,770
Estimated Annual Operating Costs (dollars/year)*:	\$3,121,842	\$3,036,028	\$85,814
Estimated Annual Pollutant Emissions (pounds/year):			
VOC:	72,272	69,778	2,494
CO:	609,788	596,272	23,517
NO:	107,392	106,512	880
<b>Total (VOC,CO,NO):</b>	<b>789,452</b>	<b>762,561</b>	<b>26,891</b>

\*Based on Average Automobile Fuel Cost for the St. Louis Metro Region in July 2012 (\$3.33/gallon Regular Unleaded) as Reported by AAA Motor Club.

## Rt. 100 (St. Louis) Optimization Summary Data

Table C1 Travel-Time Delay Summary Route 100 Saint Louis, Missouri					
Route 100 Eastbound		Pre-Study	Post-Study	Net Change	
				Value	Percent
AM Peak	Number of Samples	6	6		
	Average Travel Time (sec)	1293.8	1123.7	-170.1	-13.1%
	Average Delay	601.0	430.0	-171.0	-28.5%
	Average # of Stops	10.3	6.0	-4.3	-41.7%
	Average Travel Speed (mph)	18.6	21.4	2.8	15.1%
Midday Peak	Number of Samples	6	6		
	Average Travel Time (sec)	1299.7	1181.0	-118.7	-9.1%
	Average Delay	606.3	485.3	-121.0	-20.0%
	Average # of Stops	12.0	8.0	-4.0	-33.3%
	Average Travel Speed (mph)	18.5	20.4	1.9	10.3%
PM Peak	Number of Samples	6	6		
	Average Travel Time (sec)	1515.0	1227.5	-287.5	-19.0%
	Average Delay	820.2	531.2	-289.0	-35.2%
	Average # of Stops	11.8	6.2	-5.6	-47.5%
	Average Travel Speed (mph)	15.9	19.6	3.7	23.3%

Table C1 (continued) Travel-Time Delay Summary Route 100 Saint Louis, Missouri					
Route 100 Westbound		Pre-Study	Post-Study	Net Change	
				Value	Percent
AM Peak	Number of Samples	6	6		
	Average Travel Time (sec)	1420.3	1270.5	-149.8	-10.5%
	Average Delay	730.5	574.8	-155.7	-21.3%
	Average # of Stops	11.0	7.5	-3.5	-31.8%
	Average Travel Speed (mph)	16.9	18.9	2.0	11.8%
Midday Peak	Number of Samples	6	6		
	Average Travel Time (sec)	1102.3	1181.3	79.0	7.2%
	Average Delay	426.3	486.7	60.4	14.2%
	Average # of Stops	9.2	9.7	0.5	5.4%
	Average Travel Speed (mph)	21.2	20.3	-0.9	-4.2%
PM Peak	Number of Samples	6	6		
	Average Travel Time (sec)	1231.3	1207.2	-24.1	-2.0%
	Average Delay	542.5	518.7	-23.8	-4.4%
	Average # of Stops	10.2	9.8	-0.4	-3.9%
	Average Travel Speed (mph)	19.5	19.9	0.4	2.1%



Flashing Yellow Arrow signals are currently at 294 approaches in October, an increase of 63 from September. This increases the number of intersections containing Flashing Yellow Arrows to 125 in October, a gain of 26 from September. Increases were made with installations on MO 21 (St. Louis County) and Route K (St. Charles County) in October.

## Work Zones

Whenever additional travel time is reported, this additional time shall be evaluated using this chart and adequate mitigation measures should begin within the parameters of this chart. TMC and field personnel are partners in the mitigation of traffic and notification of additional travel times should trigger the appropriate response from both parties.

Chart is designed to be an additional travel time reference to establish parameters for gauging the travel impact through work zones and to provide guidance for taking mitigation actions. Travel times can be collected or reported via Blue Toad technology, field personnel, call reports, ITS, TMC cameras, etc.

Major and Moderate impacts trigger an IAR (Immediate Action Required) event. IAR means work zone user and TMC partner together to take immediate actions to reduce or eliminate distress. During an IAR event mitigation procedures can range from increased driver notification up to and including removal of work zone. Additional mitigation procedures may require involvement of administration through use of the work zone resolution ladder.

Level of Impact	Additional Travel Time Expected	Mitigation Actions
<p style="text-align: center;"><b>Major (Red)</b> <b><u>IAR Event</u></b></p> <p style="text-align: center;">SEVERE DISTRESS PRESENT</p> <p style="text-align: center;"><b>Return of roadway to free flow traffic is Priority #1</b></p>	<p style="text-align: center;">15 minutes or above</p> <p style="text-align: center;">TMC and field personnel take all steps possible up to and including removal of lane closure to achieve free flow threshold</p>	<p style="text-align: center;"><b>Immediate Action Required</b></p> <p style="text-align: center;">Supervisory mitigation assistance is required using the St. Louis District Work Zone Resolution Ladder as a tool to restore free flow traffic threshold</p>
<p style="text-align: center;"><b>Moderate (Yellow)</b> <b><u>IAR Event</u></b></p> <p style="text-align: center;">CAUTIONARY STAGE:</p> <p style="text-align: center;"><b>Action required by Field/ TMC to prevent escalation to a major event</b></p>	<p style="text-align: center;">10 – 14 minutes</p> <p style="text-align: center;">TMC increases driver messaging. Field begins efforts to restore free flow traffic</p>	<p style="text-align: center;">TMC and field shall reach a consensus on mitigation success within 15 minutes or less.</p> <p style="text-align: center;">If a consensus cannot be reached, mitigation should be scaled upwards in accordance with the St. Louis District Work Zone Resolution Ladder</p>

## Incident Levels

### **Major Impact Traffic Incident – Road closure > 2 hours**

Major traffic incidents are typically traffic incidents involving hazardous materials, fatal traffic crashes involving numerous vehicles, and other natural or man-made disasters. These traffic incidents typically involve closing all or part of a roadway facility for a period exceeding 2 hours.

### **Moderate Impact Traffic Incident – Blocked travel lanes/closure 30 min – 2 hours**

Moderate traffic impact incidents typically affect travel lanes for a time period of 30 minutes to 2 hours, and usually require traffic control on the scene to divert road users past the blockage. Full roadway closures might be needed for short periods during traffic incident clearance to allow traffic incident responders to accomplish their tasks.

### **Minor Impact Traffic Incident – Lane closures < 30 minutes**

Minor traffic incidents are typically disabled vehicles and minor crashes that result in lane closures of less than 30 minutes. On-scene responders are typically law enforcement and towing companies, and occasionally highway agency service patrol vehicles.

## Definitions

**511** – Gateway Guide’s phone line for automated call-in travel information in the St. Louis Metro Area

**511 Floodgate Message** – Road closure message sent from the TMC that is read at the beginning of a 511 call and posted to the banner on the website

**ACTRA** – Traffic signal management software program

**Alert** – Email message sent regarding an incident or event on the roadway

**Arterial** – Missouri State Highway Numbered Routes, not fully access controlled

**Arterial Device** – ITS equipment located along MoDOT arterials

**Average Minutes per Mile** – Number of minutes for a vehicle to travel one mile of roadway averaged over a section of roadway

**BlueTOAD** - a (Bluetooth Travel-time Origination and Destination) traffic monitoring system to collect high quality high density travel times by sampling a portion of actual travel times

**CFI** – Continuous Flow Intersection, at grade intersection configured to move turning vehicles conflicting with through movements out of the main intersection.

**DMS** - Dynamic Message Signs

**Defined Sensor** – A single sensor with an individual ID focused on a particular roadway; multiple defined sensors may be located at one physical sensor location

**Driver messaging** – Messages placed on DMS boards to alert drivers of incidents ahead of their direction of travel

**EOC** – Emergency Operations Center operated by MoDOT at the central office in Jefferson City

**ER** – MoDOT’s Emergency Response units that provide emergency assistance during nights and weekends typically not covered by Motorist Assist units

**Freeway Device** – ITS device located along a MoDOT freeway, such as interstates and other fully access controlled highways

**Gatewayguide.com** – Gateway Guide’s website for local St. Louis area traffic information

**GuidePost** – Area of report highlighting important mobility topics for the month

**IDOT** - Illinois Department of Transportation

**KCScout** – Gateway Guide’s counterpart for the greater Kansas City Metropolitan area, a collaboration involving both MoDOT and the Kansas DOT

**Mobility** – Ease of movement over roadway, through system, and or work zone

**MMU** – Conflict monitor hardware installed at a signal system

**MRB** – Mississippi River Bridge under construction north of downtown St. Louis

**Observed Work zone** – Work zone tracked by traffic cameras at the TMC

**Peak Average** – Daily speed sensor readings over an entire weekday rush commute period averaged for an entire month

**PSB** - Poplar Street Bridge

**Regional Mobility Overview** – Map depicting congestion areas based on speed index ratings derived from speed sensor readings

**Speed Index** – a ratio of the speed at which vehicles travel during a period to the speed at free-flow conditions

**Stats to Watch** – Area of report highlighting interesting trends for the report month, or data to be closely followed

**STLtraffic** – Email group consisting of Gateway Guide personnel and Gateway Guide’s media partners, messages sent to the group are also posted on Twitter

**TMC** – Traffic Management Center (also referred to as Gateway Guide)

**TMC Alert** – Email alert sent to an internal group of Gateway Guide personnel

**VDS** – Video Detection System, signal equipment used to detect vehicles at an intersection

**Visibility**- Concerning placement of traffic signs, signals, devices, barricades and warning lights for safety within work zone or construction area to help motorist and workers move within a work zone safely; Clearly visible and legible, distinguishable to approaching traffic during day and night, aligned with road user’s line of vision, and positioned as to not obstruct other applicable traffic control devices. Must meet MUTCD standards for condition and must be covered, turned or properly stowed when not in use.

**Zoning In** – section of report highlighting important construction topics for the report month

## I-70 Mile Markers

ST. CHARLES COUNTY		ST. CHARLES COUNTY	
5TH ST SOUTH (ST. CHARLES)	229A	229A	5TH ST SOUTH (ST. CHARLES)
5TH ST NORTH (ST. CHARLES)	229B	229B	5TH ST NORTH (ST. CHARLES)
ST. LOUIS COUNTY		ST. LOUIS COUNTY	
BLANCHETTE BRIDGE	230	230	BLANCHETTE BRIDGE
EARTH CITY EXPRESSWAY SOUTH	231A	231A	EARTH CITY EXPRESSWAY SOUTH
EARTH CITY EXPRESSWAY NORTH	231B	231B	EARTH CITY EXPRESSWAY NORTH
I-270	232	232	I-270
MCKELVEY RD OVERPASS (BRIDGETON)	233	233	MCKELVEY RD OVERPASS (BRIDGETON)
RTE 180/ST. CHARLES ROCK RD (BRIDGETON)	234	234	RTE 180/ST. CHARLES ROCK RD (BRIDGETON)
US 67 SOUTH (BRIDGETON)	235A	235A	US 67 SOUTH (BRIDGETON)
US 67 NORTH (BRIDGETON)	235B	235B	US 67 NORTH (BRIDGETON)
CYPRESS RD (BRIDGETON)	235C	235C	CYPRESS RD (BRIDGETON)
AIRFLIGHT (ST. ANN)	236	236	AIRFLIGHT (ST. ANN)
MCDONNELL OVERPASS (BERKELEY)	237	237	MCDONNELL OVERPASS (BERKELEY)
LAMBERT AIRPORT (BERKELEY)	238A	238A	LAMBERT AIRPORT (BERKELEY)
I-170 NORTH (BERKELEY)	238B	238B	I-170 NORTH (BERKELEY)
I-170 SOUTH (BERKELEY)	238C	238C	I-170 SOUTH (BERKELEY)
NORTH HANLEY (BERKELEY)	239	239	NORTH HANLEY (BERKELEY)
RTE N/FLOISSANT RD (COOL VALLEY)	240A	240A	RTE N/FLOISSANT RD (COOL VALLEY)
BERMUDA DR (NORMANDY)	240B	240B	BERMUDA DR (NORMANDY)
RTE U/LUCAS AND HUNT RD	241B	241B	RTE U/LUCAS AND HUNT RD
JENNINGS STATION RD (PINE LAWN)	242C	242C	JENNINGS STATION RD (PINE LAWN)
ST. LOUIS CITY		ST. LOUIS CITY	
GOODFELLOW (ST. LOUIS)	243A	243A	GOODFELLOW (ST. LOUIS)
RIVERVIEW/BIRCHER (ST. LOUIS)	243B	243B	RIVERVIEW/BIRCHER (ST. LOUIS)
UNION (ST. LOUIS)	244A	244A	UNION (ST. LOUIS)
KINGSHIGHWAY (ST. LOUIS)	244B	244B	KINGSHIGHWAY (ST. LOUIS)
SHREVE (ST. LOUIS)	245A	245A	SHREVE (ST. LOUIS)
WEST FLOISSANT AVE (ST LOUIS)	245B	245B	WEST FLOISSANT AVE (ST LOUIS)
NORTH BROADWAY (ST. LOUIS)	246A	246A	NORTH BROADWAY (ST. LOUIS)
ADELAIDE (ST LOUIS)	246B	246B	ADELAIDE (ST LOUIS)
GRAND (ST. LOUIS)	247	247	GRAND (ST. LOUIS)
SALISBURY (ST LOUIS)	248A	248A	SALISBURY (ST LOUIS)
BRANCH (ST LOUIS)	248B	248B	BRANCH (ST LOUIS)
MADISON (ST LOUIS)	249A	249A	MADISON (ST LOUIS)
PINE ST OVERPASS (ST LOUIS)	250	250	PINE ST OVERPASS (ST LOUIS)
CHESTNUT ST OVERPASS (ST LOUIS)	250	250	CHESTNUT ST OVERPASS (ST LOUIS)
MARKET ST OVERPASS (ST. LOUIS)	250	250	MARKET ST OVERPASS (ST. LOUIS)
WALNUT ST OVERPASS (ST LOUIS)	250	250	WALNUT ST OVERPASS (ST LOUIS)

I-70 DISTRICT 6 WESTBOUND  
I-70 DISTRICT 6 EASTBOUND

## I-70 St. Charles County Mile Markers

RTE A (WENTZVILLE)	212	I-70 DISTRICT 6 EASTBOUND I-70 DISTRICT 6 WESTBOUND	212	RTE A (WENTZVILLE)
LAKE ST. LOUIS BLVD (LAKE ST. LOUIS)	214		214	LAKE ST. LOUIS BLVD (LAKE ST. LOUIS)
BRYAN RD (O'FALLON)	216		216	BRYAN RD (O'FALLON)
RTE K/RTE M (O'FALLON)	217		217	RTE K/RTE M (O'FALLON)
T.R. HUGHES BLVD (O'FALLON)	218		218	T.R. HUGHES BLVD (O'FALLON)
RTE 79 (ST. PETERS/O'FALLON)	220		220	RTE 79 (ST. PETERS/O'FALLON)
RTE C/MID RIVERS MALL DR (ST. PETERS)	222		222	RTE C/MID RIVERS MALL DR (ST. PETERS)
SPENCER RD OVERPASS (ST. PETERS)	223		223	SPENCER RD OVERPASS (ST. PETERS)
RTE 370 (ST. PETERS)	224		224	RTE 370 (ST. PETERS)
CAVE SPRINGS (ST. CHARLES)	225		225	CAVE SPRINGS (ST. CHARLES)
ZUMBEHL RD (ST. CHARLES)	227		227	ZUMBEHL RD (ST. CHARLES)
HAWK'S NEST OVERPASS (ST. CHARLES)	227		227	HAWK'S NEST OVERPASS (ST. CHARLES)
RTE 94 (ST. CHARLES)	228		228	RTE 94 (ST. CHARLES)
5TH ST SOUTH (ST. CHARLES)	229A		229A	5TH ST SOUTH (ST. CHARLES)
5TH ST NORTH (ST. CHARLES)	229B		229B	5TH ST NORTH (ST. CHARLES)

## I-270 Mile Markers

3	KOCH RD	I-255 WESTBOUND	I-255 EASTBOUND	KOCH RD	3
2	SR 231 (TELEGRAPH RD)		SR 231 (TELEGRAPH RD)	2	
1C	US61-67		US61-67	1B	
1B	<b>I-55 NORTH</b>		<b>I-55 NORTH</b>	1B	
1	<b>I-55 SOUTH</b>		<b>I-55 SOUTH</b>	1A	
2	SR 21 (TESSON FERRY RD.)		SR 21 (TESSON FERRY RD.)	2	
3	SR 30 (GRAVOIS RD.)		SR 30 (GRAVOIS RD.)	3	
5	I-44 EAST/SR 366 (WATSON RD.)		<b>I-44 EAST</b>	5	
5	<b>I-44 WEST</b>		<b>I-44 WEST</b>	5	
				BIG BEND RD.	7
8	DOUGHERTY FERRY RD.	<--- I-270 DISTRICT 6 COUNTER CLOCKWISE FROM RIVERVIEW DR. TO I-55	DOUGHERTY FERRY RD.	8	
10	SR 100 (MANCHESTER RD.)	--- > I-270 DISTRICT 6 CLOCKWISE FROM I-55 TO RIVERVIEW DR.	SR 100 (MANCHESTER RD.)	10	
12	I-64 EAST/WEST/US 40-61 NORTH/SOUTH		I-64 EAST/WEST/US 40-61 NORTH/SOUTH	12 A/B	
13	SR AB (LADUE RD)		SR AB (LADUE RD)	13	
14	SR 340 (OLIVE BLVD)		SR 340 (OLIVE BLVD)	14	
16	SR D (PAGE AVE.) EAST		SR D (PAGE AVE.) EAST	16A	
16	SR 364 WEST		SR 364 WEST	16B	
17	DORSETT RD		DORSETT RD	17	
20	<b>I-70 WEST/EAST</b>		<b>I-70 WEST</b>	20B	
			<b>I-70 EAST</b>	20A	
20C	SR 180 (ST. CHARLES ROCK RD)		SR 180 (ST. CHARLES ROCK RD)	20C	
22	MISSOURI BOTTOM RD/370 WEST		SR 370 WEST	22D	
23	MCDONNELL BLVD		MCDONNELL BLVD	23	
25A	US 67 SOUTH		US 67 NORTH	25A	
25B	US 67 NORTH		US 67 SOUTH	25B	
26	HANLEY/GRAHAM RD.		<b>I-170 SOUTH (EXIT LEFT)</b>	26A	
26	<b>I-170 SOUTH</b>		HANLEY/GRAHAM	26B	
27	NEW FLORISSANT RD		NEW FLORISSANT RD	27	
28	WASHINGTON/ELIZABETH RD.		ELIZABETH/WASHINGTON	28	
29	WEST FLORISSANT RD		WEST FLORISSANT RD	29	
30	SR AC HALLS FERRY RD		SR AC NEW HALLS FERRY RD	30	
			NEW HALLS FERRY RD.	30A	
31A	<b>SR 367 SOUTH</b>		<b>SR 367 SOUTH</b>	31A	
31B	<b>SR 367 NORTH</b>		<b>SR 367 NORTH</b>	31B	
32	BELLEFONTAINE RD		BELLEFONTAINE RD	32	
33	LILAC AVE.		LILAC AVE.	33	
34	RIVERVIEW DR.		RIVERVIEW DR.	34	

## I-64 Mile Markers

<b>I-70 WEST EXIT RIGHT/EAST EXIT LEFT</b>	1		1A	<b>I-70 WEST</b>
			1B	<b>I-70 EAST</b>
PROSPECT RD	1C		1C	PROSPECT RD
LAKE ST. LOUIS BLVD	2		2	LAKE ST. LOUIS BLVD
SR N	4		4	MO N
SR DD/WINGHAVEN	6		6	MO DD/Winghaven
SR K/SR 94	9		9	MO K
			10	MO 94
MISSOURI RESEARCH PARK/TECHNOLOGY DR	12		11	RESEARCH PARK CRL
DANIEL BOONE BRIDGE	13		13	DANIEL BOONE BRIDGE
CHESTERFIELD AIRPORT RD	14		14	SPIRIT OF ST LOUIS BLVD
			16	LONG RD
BOONE'S CROSSING	17		17	BOONE'S CROSSING
CHESTERFIELD PKWY	19A		19A	CHESTERFIELD PKWY
SR 340 (OLIVE/CLARKSON)	19B		19B	MO 340 (OLIVE/CLARKSON)
			20	CHESTERFIELD PKWY
TIMBERLAKE MANOR PKWY	21		21	TIMBERLAKE MANOR PKWY
SR 141	22		22	MO 141 (WOODS MILL RD)
MASON RD	23		23	MARYVILLE CENTRE DR
			24	MASON RD
<b>I-270 SOUTH</b>	25A		25A	<b>I-270 SOUTH</b>
<b>I-270 NORTH</b>	25B		25B	<b>I-270 NORTH</b>
SR JJ (BALLAS RD)	26		26	MO JJ (BALLAS RD)
SPOEDE RD	27		27	SPOEDE RD
US 61-67	28A		28A	US 61-67
			28B	CLAYTON RD
MCKNIGHT RD	30		30	MCKNIGHT RD
BRENTWOOD/HANLEY RD	31B		31A	<b>I-170 NORTH</b>
<b>I-170 NORTH</b>	31A		31B	HANLEY RD/BRENTWOOD BLVD
BELLEVUE AVE	33B			
BIG BEND	33A		33A	BIG BEND BLVD
MCCAUSLAND	33C			<b>ST. LOUIS CITY</b>
<b>ST. LOUIS CITY</b>			33C	MCCAUSLAND AVE
HAMPTON AVE/OAKLAND AVE	34B		34A	CLAYTON RD/SKINKER BLVD
			34B	HAMPTON AVE
KINGSHIGHWAY	36A		36A	KINGSHIGHWAY
VANDEVENTER AVE	36C		36B	BOYLE
MARKET ST/BERNARD ST	37A			
GRAND AVE	37B			
JEFFERSON AVE	38A		38A	FOREST PARK AVE/GRAND BLVD
CHESTNUT AT 20TH ST	38B		38B	MARKET ST AT 3000 WEST
14TH ST	39B		39A	MARKET ST AT 21ST
11TH ST EXIT LEFT	39C		40A	STADIUM/9TH ST/ TUCKER BLVD
BROADWAY/7TH ST (LAST MISSOURI EXIT)	40B		40C	<b>I-44 WB/I-55 SB/ I-70 WB</b>

I-64 DISTRICT 6 EASTBOUND  
I-64 DISTRICT 6 WESTBOUND

## I-55 Mile Markers

JEFFERSON COUNTY			JEFFERSON COUNTY	
RTE M	185		185	RTE M
MAIN ST(IMPERIAL)	186		186	MAIN ST(IMPERIAL)
RICHARDSON RD (ARNOLD)	190		190	RICHARDSON RD (ARNOLD)
RTE 141 (ARNOLD)	191		191	RTE 141 (ARNOLD)
ST. LOUIS COUNTY			ST. LOUIS COUNTY	
MERAMEC BOTTOM RD	193		193	MERAMEC BOTTOM RD
BUTLER HILL RD	195		195	BUTLER HILL RD
<b>I-255 EAST</b>	196A		196A	<b>I-255 EAST</b>
<b>I-270 NORTH</b>	196B		196B	<b>I-270 NORTH</b>
US67/LINDBERGH	197		197	US67/LINDBERGH
REAVIS BARRACKS RD	199		199	REAVIS BARRACKS RD
UNION RD	200		200	UNION RD
BAYLESS	201A		201A	BAYLESS
WEBER RD	201B		201B	WEBER RD
ST. LOUIS CITY			ST. LOUIS CITY	
GERMANIA (ST. LOUIS)	202B		202B	GERMANIA (ST. LOUIS)
LOUGHBOROUGH AVE (ST. LOUIS)	202C		202C	LOUGHBOROUGH AVE (ST. LOUIS)
BATES (ST. LOUIS)	203		203	BATES (ST. LOUIS)
BROADWAY (ST. LOUIS)	204		204	BROADWAY (ST. LOUIS)
GASCONADE (ST. LOUIS)	205		205	GASCONADE (ST. LOUIS)
ARSENAL (ST. LOUIS)	206C		206C	ARSENAL (ST. LOUIS)
SIDNEY OVERPASS	206		206	SIDNEY OVERPASS
GRAVOIS AVE OVERPASS	207		207	GRAVOIS AVE OVERPASS
<b>I-44 WEST (ST. LOUIS)</b>	207		207	<b>I-44 WEST (ST. LOUIS)</b>
7TH ST/PARK AVE (ST. LOUIS)	208		208	7TH ST/PARK AVE (ST. LOUIS)

I-55 DISTRICT 6 NORTHBOUND  
 I-55 DISTRICT 6 SOUTHBOUND

## I-44 Mile Markers

FRANKLIN COUNTY		FRANKLIN COUNTY	
PACIFIC	257	257	PACIFIC
ST. LOUIS COUNTY		261	ALLENTON/SIX FLAGS
ALLENTON/SIX FLAGS	261	ST. LOUIS COUNTY	
RTE 109/RTE W	264	264	RTE 109/RTE W
WILLIAMS RD	265		
LEWIS RD	266	266	LEWIS RD
		269	ANTIRE
RTE 141	272	272	RTE 141
BOWLES	274	274	BOWLES
MRAZ	274		
		275	SOCCER PARK
I-270 NORTH	276B	276B	I-270 NORTH
I-270 SOUTH	276A	276A	I-270 SOUTH
RTE 366/WATSON	277A		
US 67/LINDBERGH	277B	277B	US 67/LINDBERGH
BIG BEND	278	278	BIG BEND
		279	BERRY
ELM	280	280	ELM
LACLEDE STATION	282		
ST. LOUIS CITY		283	SHREWSBURY
JAMIESON	284A	ST. LOUIS CITY	
		284B	ARSENAL
		285	SOUTHWEST
HAMPTON	286		
KINGSHIGHWAY	287	287	KINGSHIGHWAY
GRAND AVE	288	288	GRAND AVE
JEFFERSON AVE	289	289	JEFFERSON AVE
I-55 SOUTH	290A		
18TH ST	290B		
		290C	12TH ST./GRAVOIS

I-44 DISTRICT 6 WESTBOUND  
I-44 DISTRICT 6 EASTBOUND

## I-170 Mile Markers

I-64 WEST/US 40-61	1A	I-170 DISTRICT 6 SOUTHBOUND I-170 DISTRICT 6 NORTHBOUND		
I-64 EAST/US 40-61	1B			
				1C   GALLERIA PARKWAY
BRENTWOOD BLVD	1D			
FOREST PARK PARKWAY	1E			1E   FOREST PARK PARKWAY
LADUE RD	1F			1F   LADUE RD
DELMAR	2			2   DELMAR
EAST/3B WEST SR 340 (OLIVE BLVD)	3A			3   SR 340 (OLIVE BLVD)
SRD/SR 364 (PAGE AVE)	4			4   SR D/SR 364 (PAGE AVE)
SR 180 (ST. CHARLES ROCK RD)	5			5   SR 180 (ST. CHARLES ROCK RD)
SR 115 (NATURAL BRIDGE RD)	6			6   SR 115 (NATURAL BRIDGE RD)
I-70 EAST (EXIT LEFT)	7A			7A   I-70 EAST (EXIT RIGHT)
I-70 WEST (EXIT RIGHT)	7B			7B   I-70 WEST (EXIT LEFT)
				7C   LAMBERT ST. LOUIS AIRPORT
SCUDDER	8			8   SCUDDEN/N. HANLEY RD
AIRPORT RD	9A			9A   AIRPORT
				9B   BOEING (EXIT LEFT)
				9C   N. HANLEY RD
				10A   I-270 WEST (EXIT RIGHT)
			10B   I-270 EAST (EXIT LEFT)	

## SR 364 Mile Markers

		SR 364 WESTBOUND SR 364 EASTBOUND	11B	HARVESTER RD
			12	HERITAGE CROSSING/JUNGS STATION RD
SR94 EAST/ST. CHARLES	13		13	SR 94 EAST/MUEGGE RD
ARENA PKWY/UPPER BOTTOM RD	14		14	UPPER BOTTOM/ARENA
MARYLAND HEIGHTS EXPRESSWAY	17		17	MARYLAND HEIGHTS EXPRESSWAY
BENNINGTON PL	19			
				21   BENNINGTON PL
I-270 SOUTH	22A			
I-270 NORTH	22B			

## SR 370 Mile Markers

		SR 370 WESTBOUND SR 370 EASTBOUND	1A	I-70 WESTBOUND
			1B	I-70 EASTBOUND
			1C	SPENCER RD
TRUMAN/CAVE SPRINGS RD	2		2	TRUMAN/CAVE SPRINGS RD
ELM/NEW TOWN BLVD	5		5	ELM/NEW TOWN BLVD
N 3RD ST/SR 94	7		7	N 3RD ST/SR 94
DISCOVERY BRIDGE ST. CHAS CO/ ST. LOUIS CO	8		8	DISCOVERY BRIDGE ST. LOUIS CO/ ST. CHAS CO
EARTH CITY EXPRESSWAY	9		9	EARTH CITY EXPRESSWAY
ST. LOUIS MILLS BLVD	11		11	ST. LOUIS MILLS BLVD
MISSOURI BOTTOM RD	12			
I-270 WEST BOUND	12			
I-270 EAST BOUND	12			

## SR 21 Mile Markers

RT B	164.8	SR 21 NORTHBOUND SR 21 SOUTHBOUND	164.8	RT B
RT BB	165.4		165.4	RT BB
STADIUM DR UNDERPASS	166.4		166.4	STADIUM DR UNDERPASS
RTE A	167.8		167.8	RTE A
SAND CREEK	169		169	SAND CREEK
HAYDEN RD	169.2		169.2	HAYDEN RD
GLADE CHAPEL RD OVERPASS	171.4		171.4	GLADE CHAPEL RD OVERPASS
OLD HWY 21 (GOLDMAN)	172.6		172.6	OLD HWY 21 (GOLDMAN)
KLABLE RD OVERPASS	174.2		174.2	KLABLE RD OVERPASS
SCHENK RD OVERPASS	175.2		175.2	SCHENK RD OVERPASS
HEADS CREEK	176.4		176.4	HEADS CREEK
RT MM	177.7		177.7	RT MM
W. FOUR RIDGE RD OVERPASS	179		179	W. FOUR RIDGE RD OVERPASS
OLD HWY 21 (SHADY VALLEY)	180.4		180.4	OLD HWY 21 (SHADY VALLEY)
OLD HWY 21 UNDERPASS	182		182	OLD HWY 21 UNDERPASS
WEST ROCK CREEK RD OVERPASS	182.8		182.8	WEST ROCK CREEK RD OVERPASS
OLD HWY 21 OVERPASS	183.2		183.2	OLD HWY 21 OVERPASS
LONDELL RD	184.2		184.2	LONDELL RD
OLD HWY 21	184.5		184.5	OLD HWY 21
SR 141	185.6		185.6	SR 141