

I-12 RAMP METERING OPERATIONAL RESULTS

CONGESTION MANAGEMENT

SEPTEMBER 13, 2011

One Year of Operation



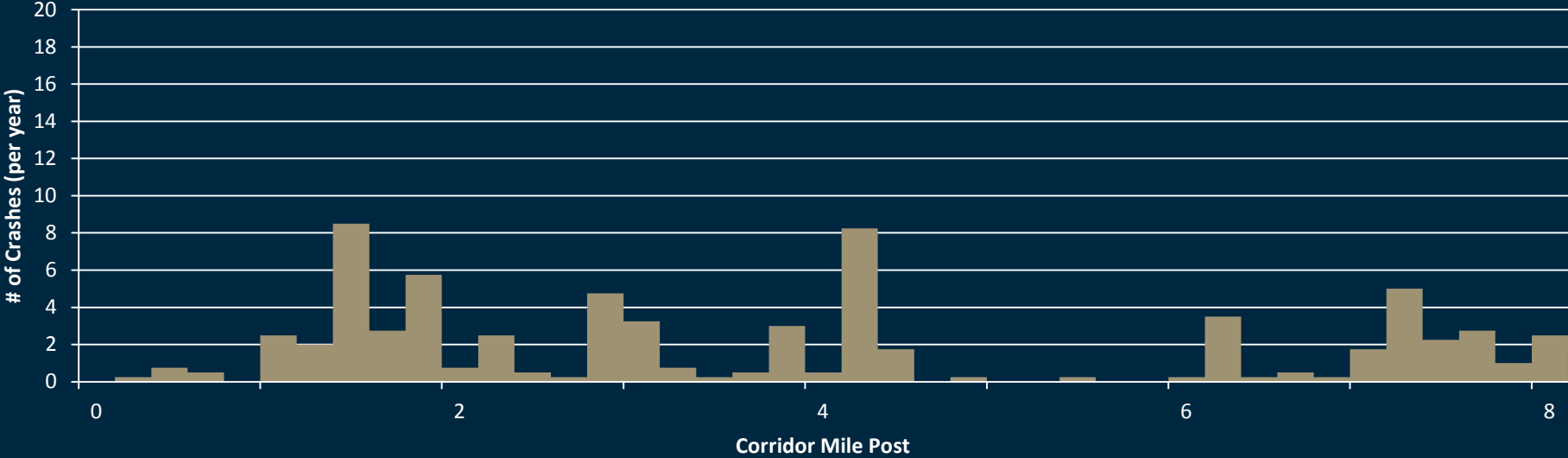
- First ramp meter activated on June 8, 2010
- 14 meters activated with a cost of \$1.2M
- 2 planned after I-12 widening
- Operate 6:00 to 10:00 and 2:00 to 7:00

Comparative Study

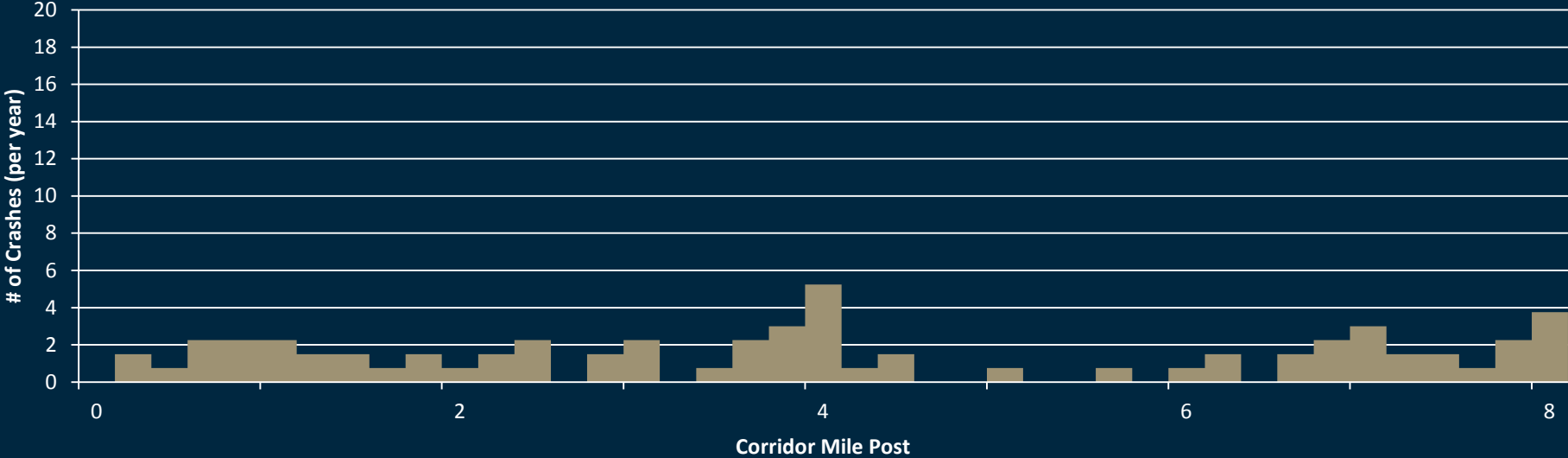
- Safety
- Travel Times
- Speed

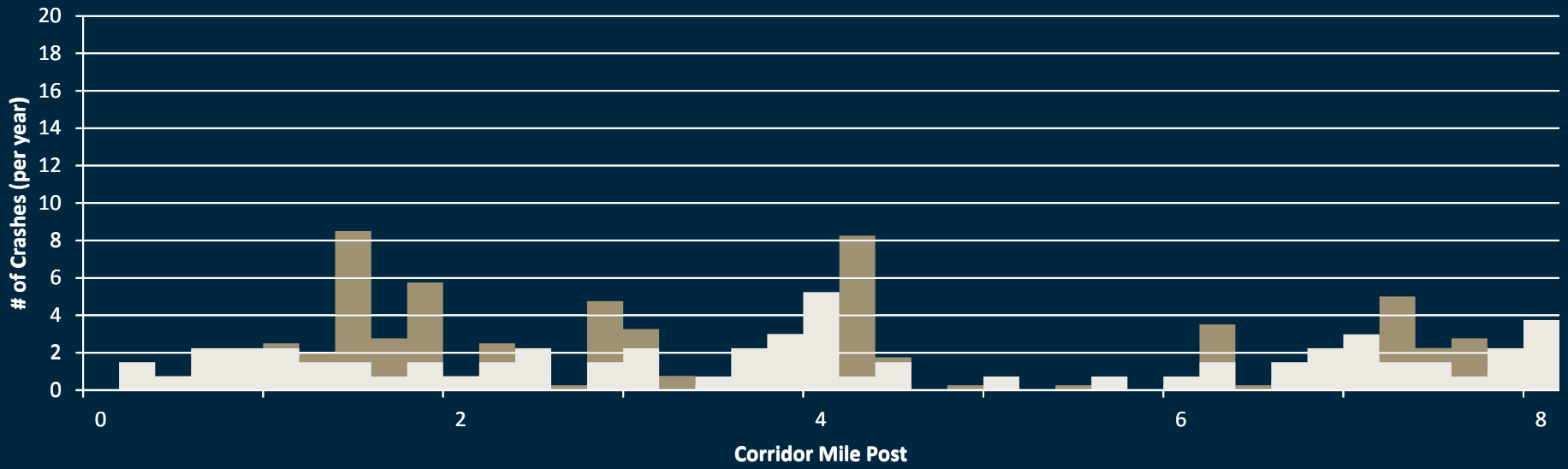


Number of Crashes per Year 2005 - 2008 AM Peak Period, WB Traffic Pre-Ramp Metering



Number of Crashes per Year 2010 - 2011 AM Peak Period, WB Traffic Post-Ramp Metering

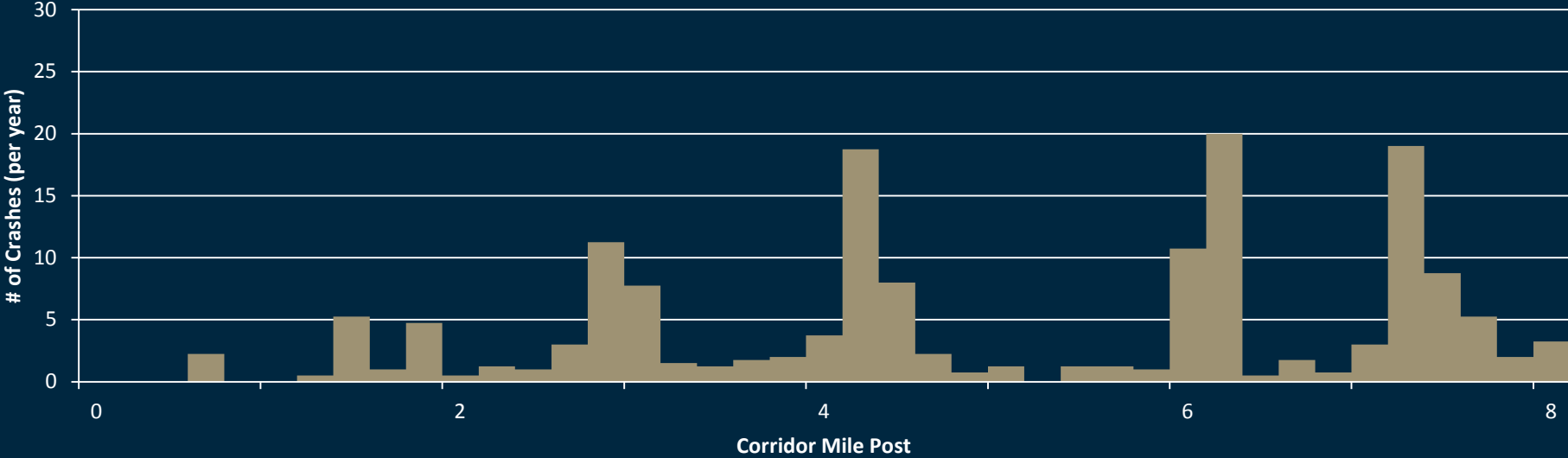




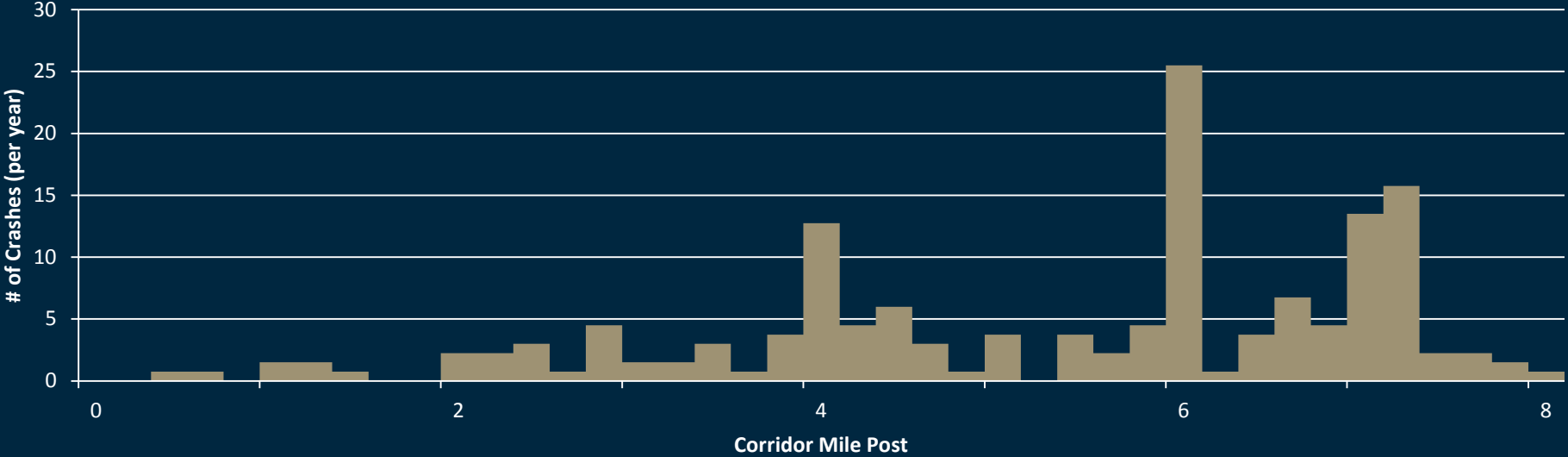
Number of Crashes per Year 2005 - 2008

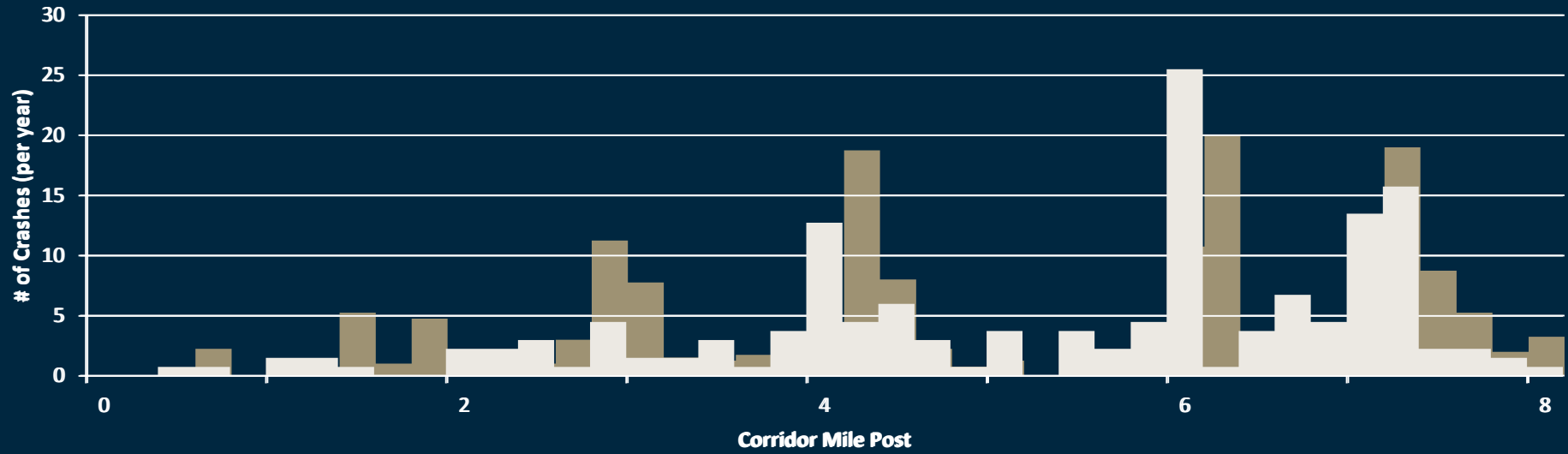
PM Peak Period, EB Traffic

Pre-Ramp Metering



Number of Crashes per Year 2010 - 2011 PM Peak Period, EB Traffic Post-Ramp Metering





Safety

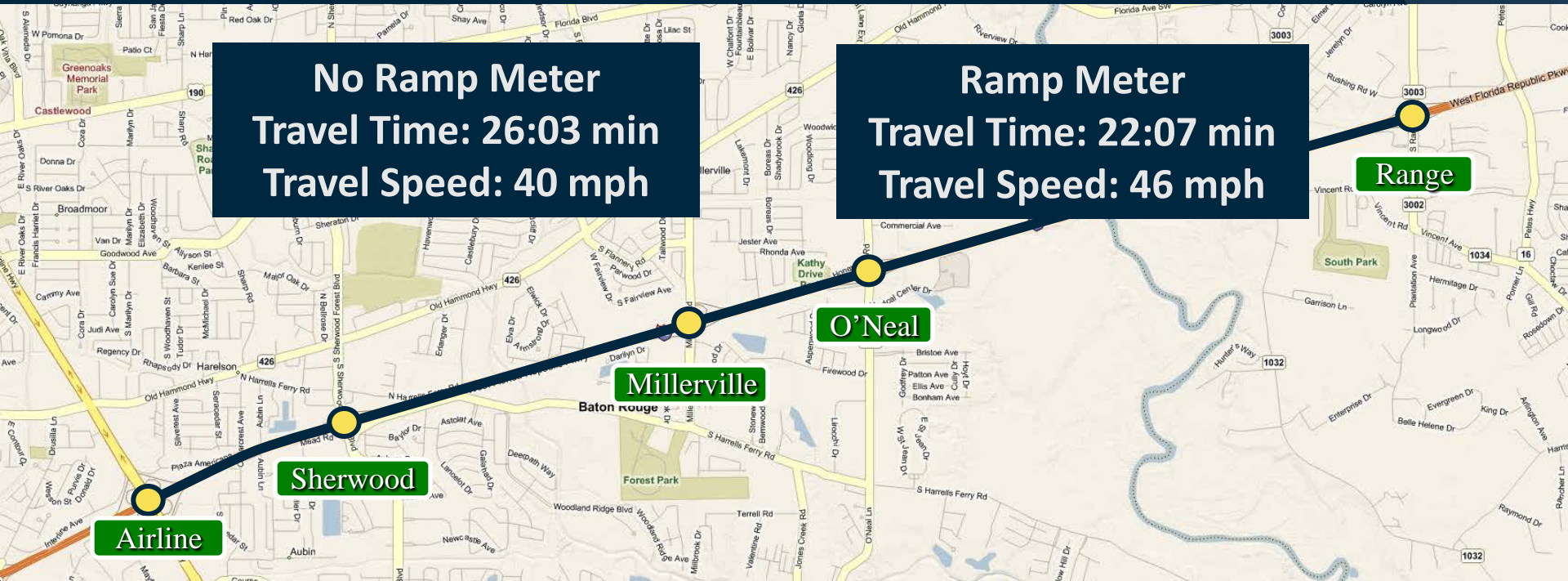
AM Westbound: Crashes reduced by 17% (or 12 crashes)

PM Eastbound: Crashes reduced by 7% (or 12 crashes)



Results

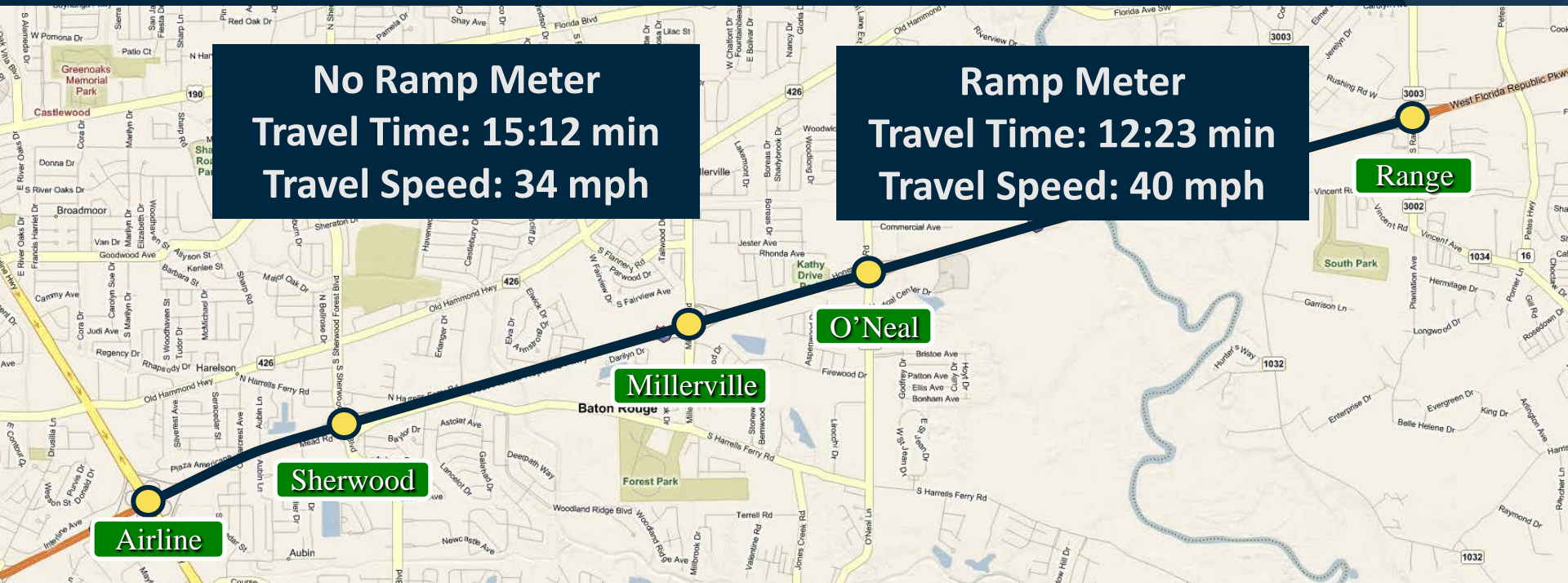
(A.M. Peak Period, Walker to Essen)



15% reduction in travel time

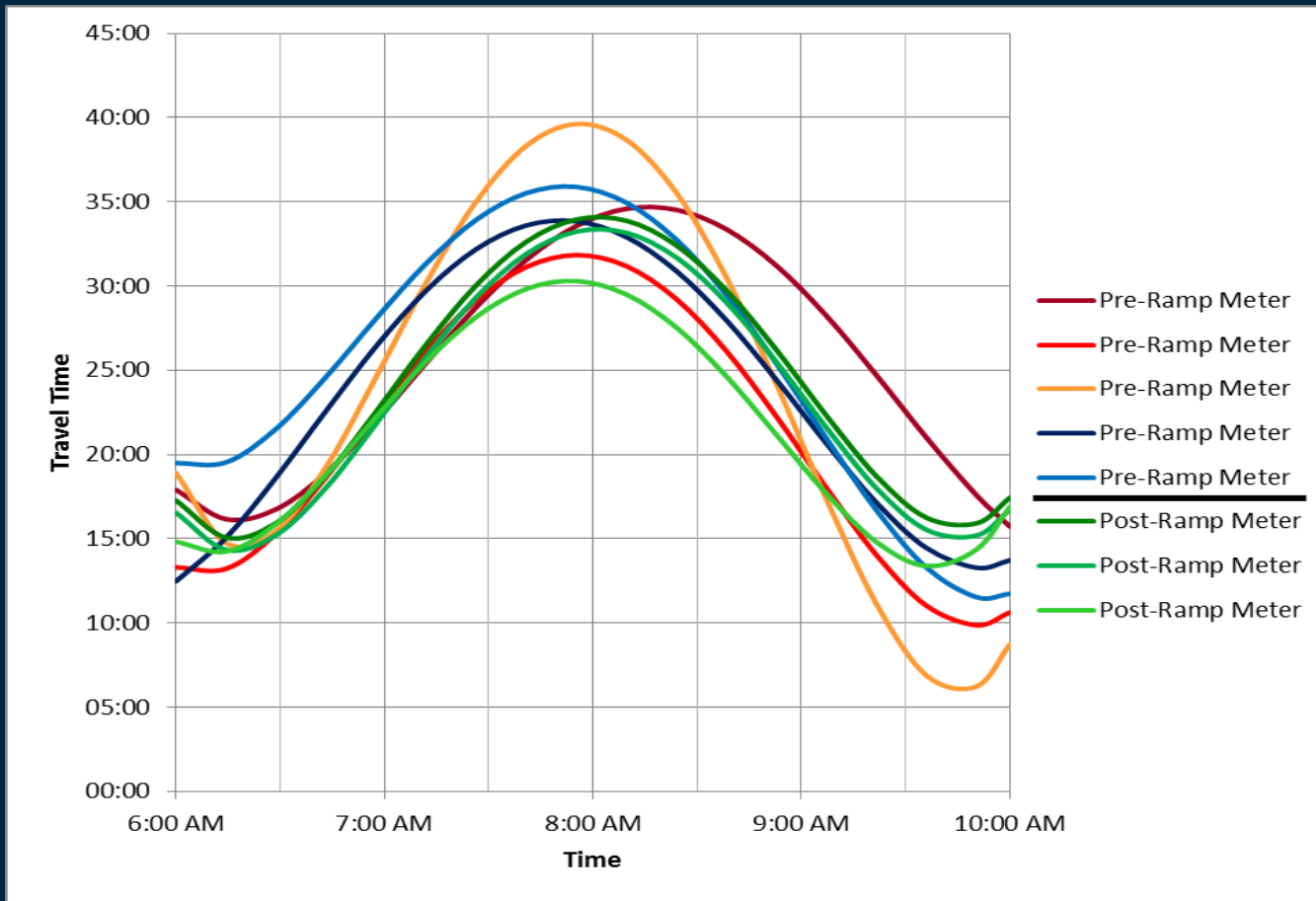
Results

(P.M. Peak Period, Essen to O'Neal)

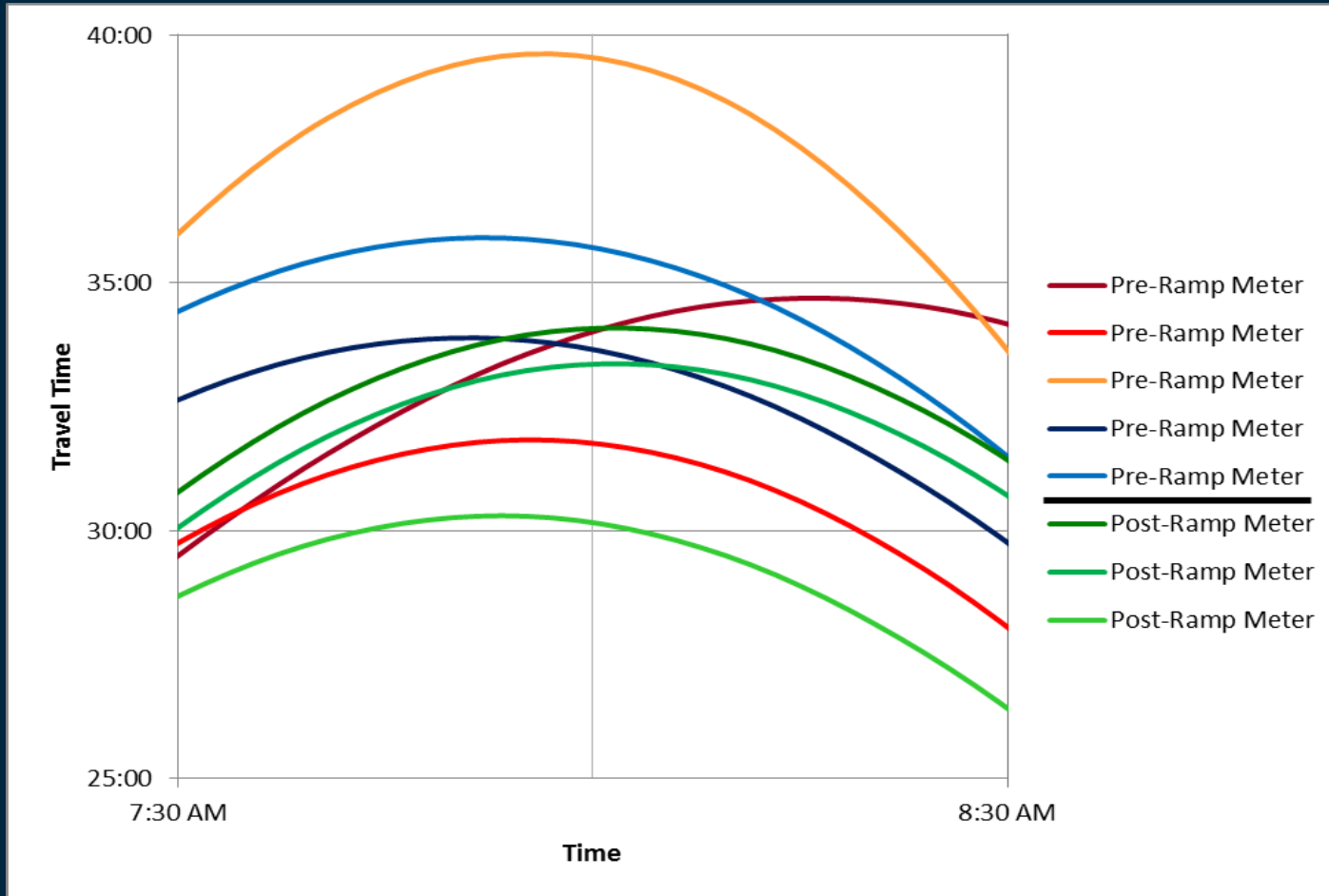


19% reduction in travel time

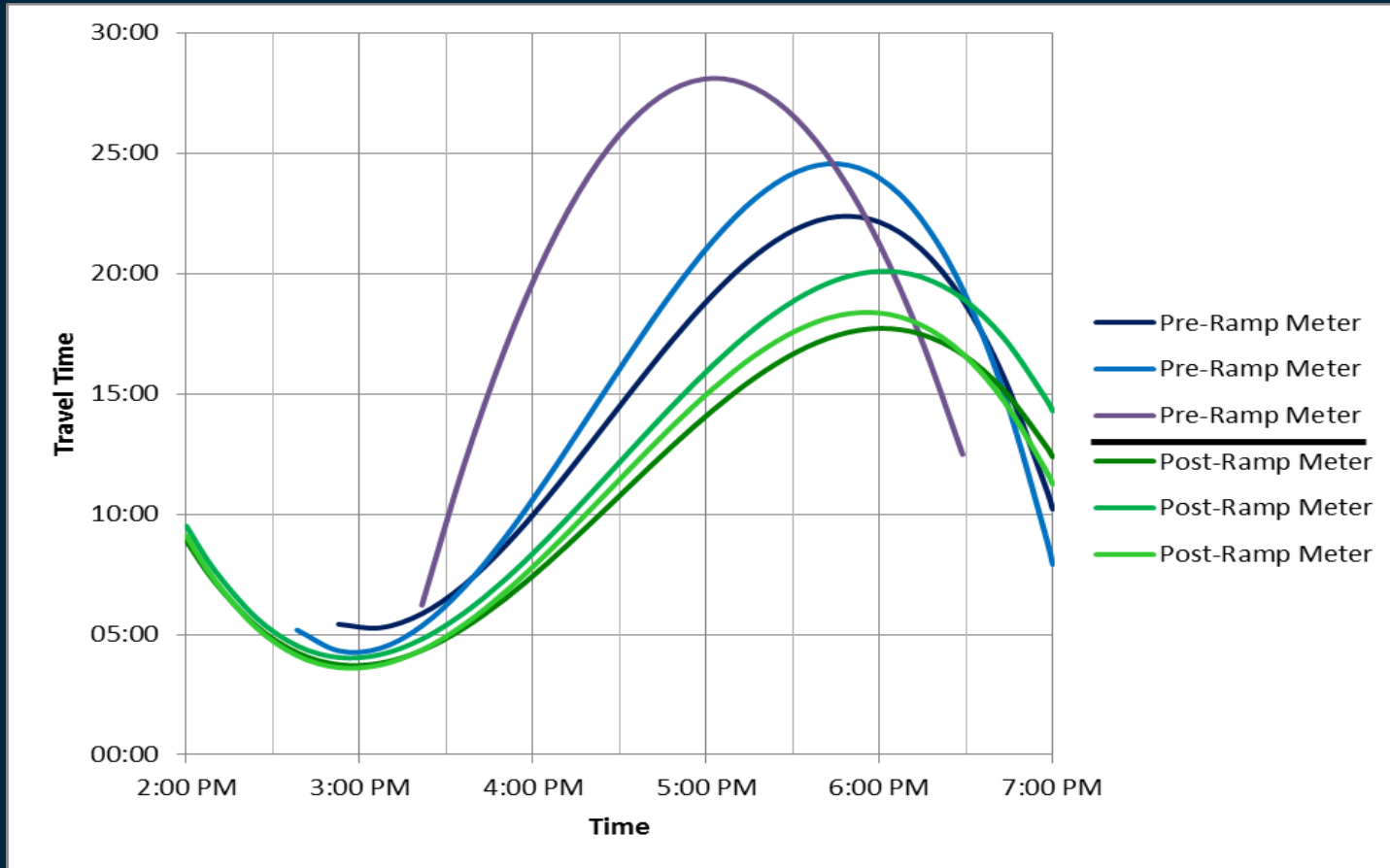
AM Field Measured Travel Times



AM Peak Hour Field Measured Travel Times

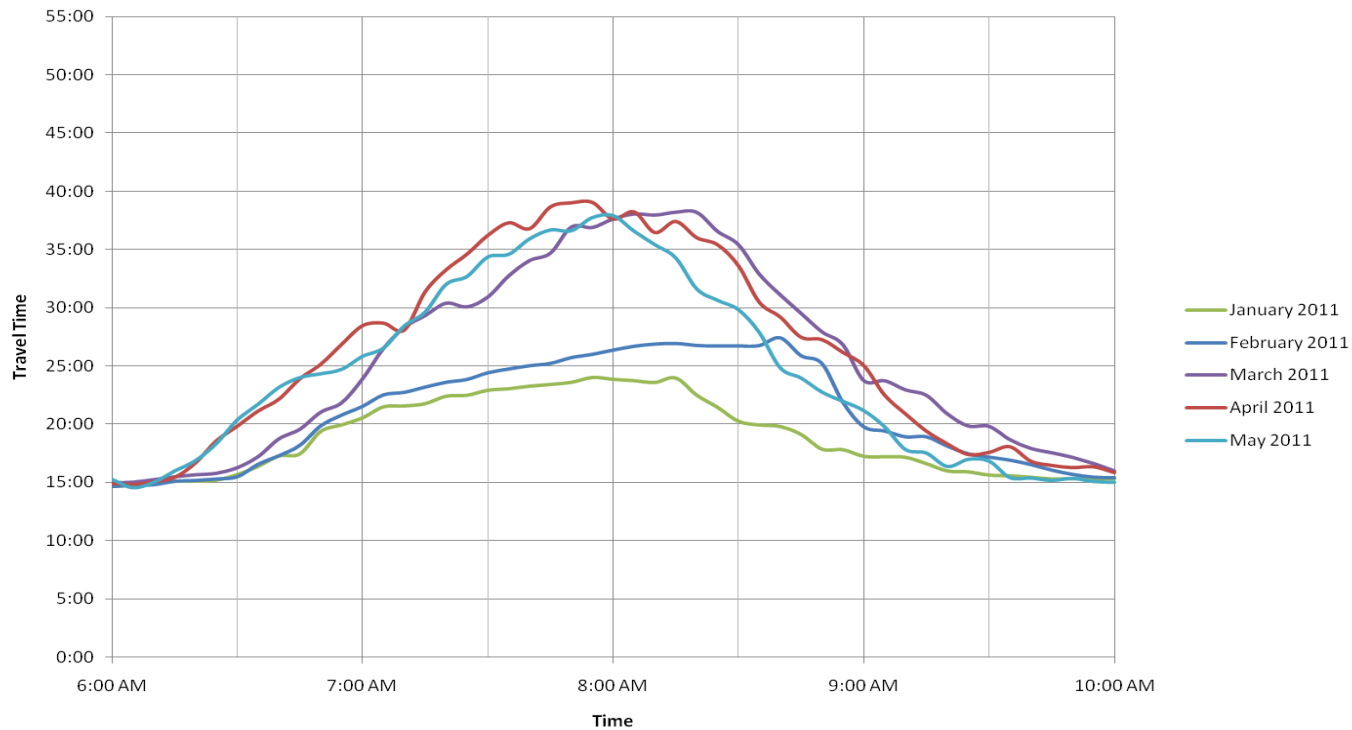


PM Field Measured Travel Times



Range Avenue

**I-12 Travel Times
Walker Rd to Essen Ln
01/01/11 - 05/12/11**



Impact to Side Streets

AM Travel Times

Ramp	Travel Time (seconds)		
	Pre-Ramp Meter	Post-Ramp Meter	Difference
Range Avenue NB	00:31	01:56	01:25
O'Neal NB	01:20	01:10	-00:10
Millerville NB	00:25	00:32	00:07
Sherwood NB	00:52	01:03	00:11
Airline NB	00:27	00:57	00:30
Range Avenue SB	00:23	01:07	00:44
O'Neal SB	00:22	01:18	00:56
Millerville SB	00:36	01:01	00:25
Sherwood SB	00:22	01:18	00:56
Airline SB	01:01	01:35	00:34

Does it really work?

- ◉ Travel times have been reduced 15% and 19% in the AM and PM
- ◉ Travel speeds have been increase by 4 MPH and 7 MPH in the AM and PM
- ◉ Crashes have been reduced by 17% and 7% in the AM and PM
- ◉ Crashes between Essen Lane and I-10 exit have been reduced from 21 to 6

Does it really work?

- ◉ Onset of PM Peak hour congestion has been delayed for 30 minutes or more
- ◉ Price of congestion for 1 hour
 - ◉ \$16.01 for passenger vehicle
 - ◉ \$105.67 for freight
- ◉ Ramp meters have eliminated 131,625 hours of wasted time or \$3,287,466
- ◉ Activating flush function at Range Avenue has increase travel time from 19:57 to 25:23

Conclusions

- Ramp Meters have reduced congestion and increased safety
- Some of the benefits are imperceptible to the general public
- Minnesota performed before and after study due to public pressure
- Corridor is still highly influenced by construction
- Ramp meters should provide even more benefit once widening project is completed

Recommendations

- ◉ Truncate A.M. operation to 6:30 to 9:00
- ◉ Truncate P.M. operation to 3:00 to 7:00
- ◉ Deactivate flush function at Range Avenue
- ◉ Build second ramp lane at Millerville and O'Neal
- ◉ Perform additional comparative study when construction is complete

For more information

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