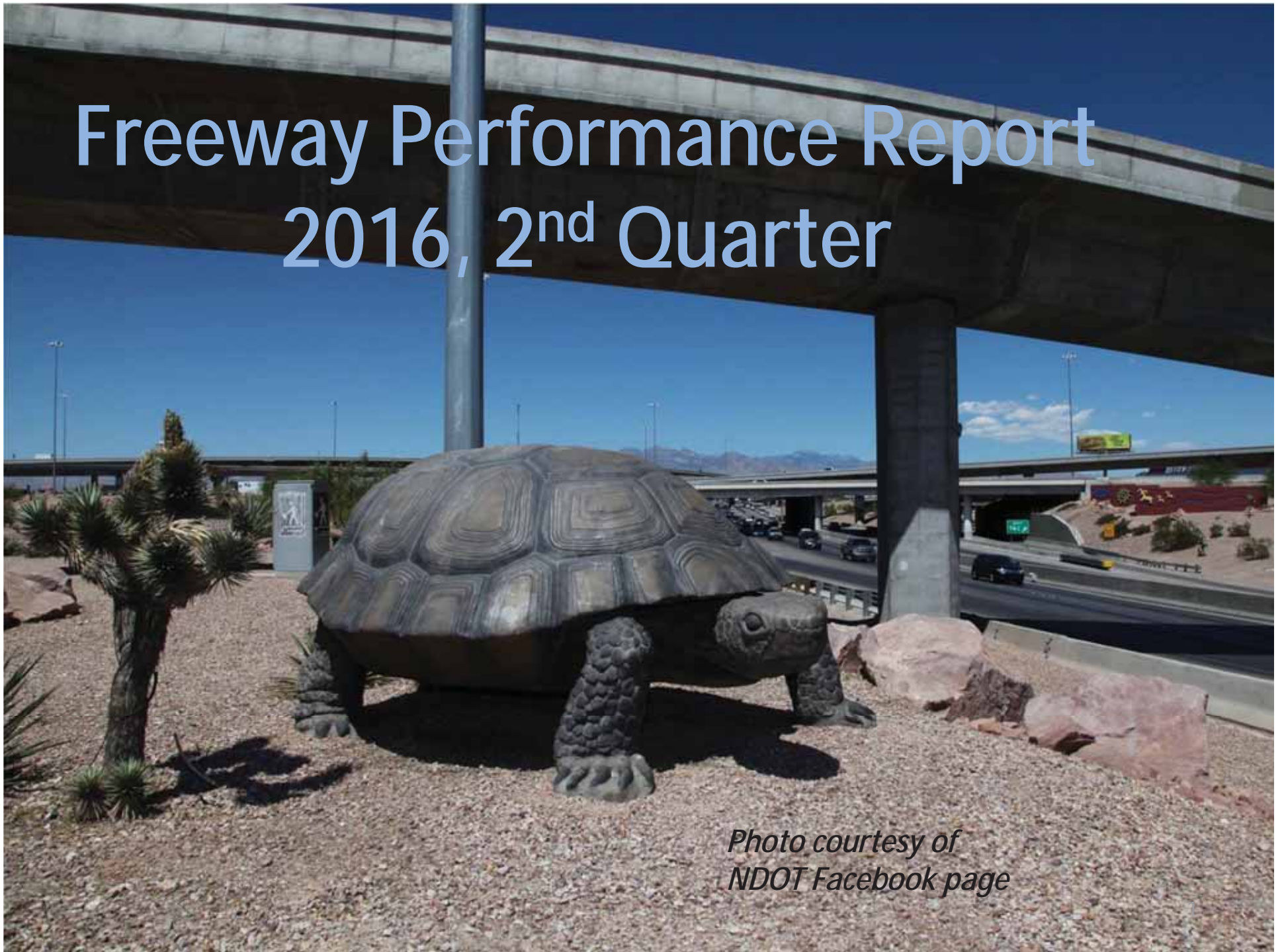


Freeway Performance Report 2016, 2nd Quarter



*Photo courtesy of
NDOT Facebook page*

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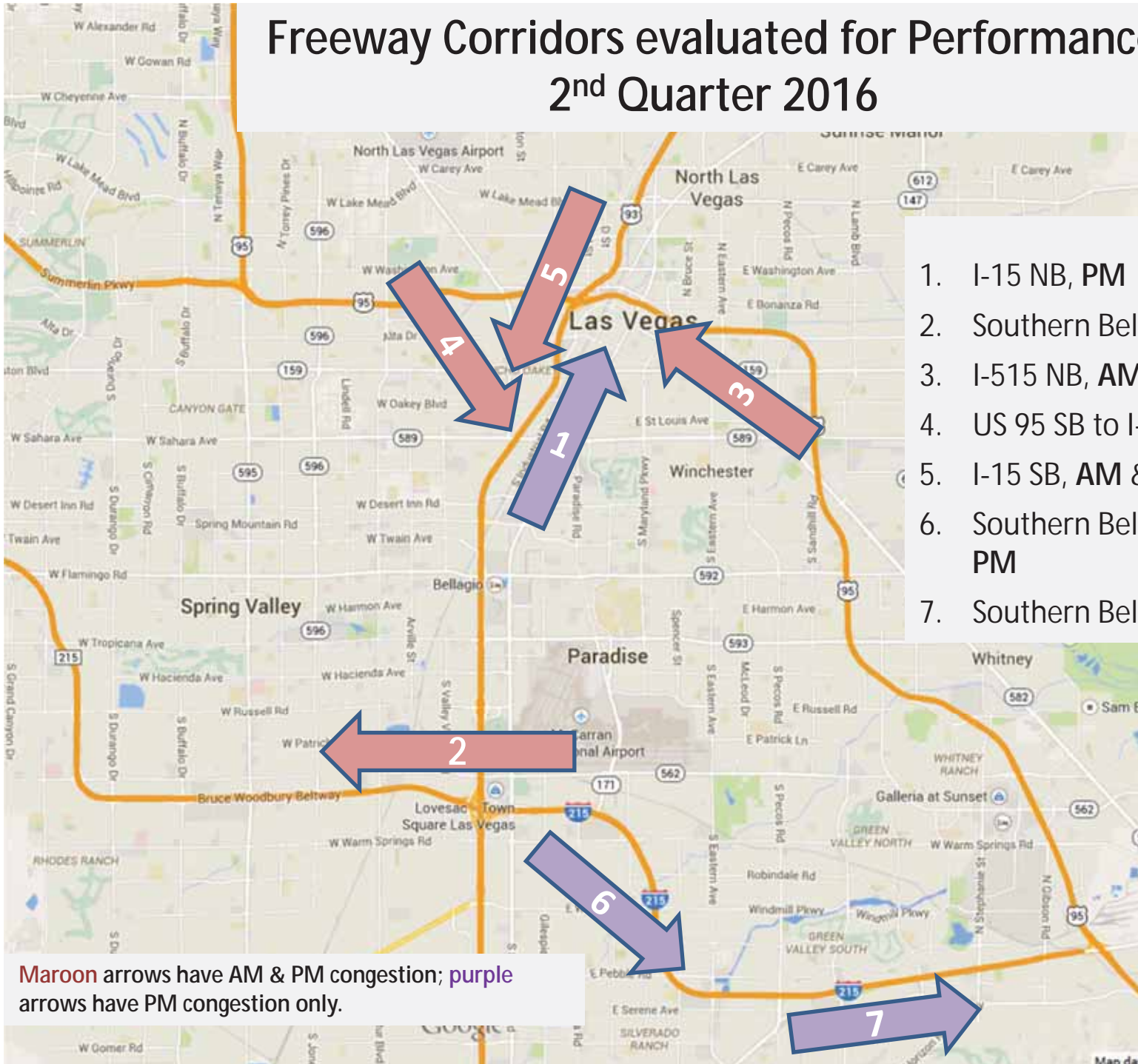
page	item	page	item
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3	Objectives	22	I-515 NB
4	Map of Corridors	23	215 Beltway WB
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Report Objective: Monitor, measure and understand all performance data that fully describes travel time reliability; use this information to address travel problems

- According to FHWA, travel time reliability is the consistency or dependability in travel times, as measured from day-to-day and/or across different times of the day¹.
- Our reliability efforts are currently the most-developed in describing maximum delay experienced during a congestion event. This tells us whether a corridor's delay is predictable or an outlier.
- As we continue our reporting, reliability measurement and analysis will improve.

1. http://ops.fhwa.dot.gov/perf_measurement/reliability_measures/index.htm

Freeway Corridors evaluated for Performance 2nd Quarter 2016



1. I-15 NB, PM
2. Southern Beltway WB, AM & PM
3. I-515 NB, AM & PM
4. US 95 SB to I-15 SB, AM & PM
5. I-15 SB, AM & PM
6. Southern Beltway EB to Eastern, PM
7. Southern Beltway EB to I-515, PM

Maroon arrows have AM & PM congestion; purple arrows have PM congestion only.

Beginning, End and Duration of Congestion Events

- The following charts describe what time peak period congestion typically begins and ends.
- As described on the next page, as the bar color becomes redder, more days each week are impacted by peak period congestion.

Color Descriptions

- Congestion Duration—the **bar color** shows which days normally experience peak period congestion
 - **Red**: Weekdays and many Saturdays and Sundays
 - **Maroon**: Weekdays only
 - **Orange**: Monday through Thursday
 - **Yellow**: Tuesday through Thursday
 - **Light Green**: two or fewer events per week
- Congestion Delay, 95th percentile
 - **Red**: most *unreliable*
 - **Orange**: moderately *unreliable*
 - **Yellow**: moderately *reliable*
 - **Light Green**: most *reliable*

Average and 95th Percentile Delay Days per Crash

The delay tables display what the maximum delay is, on average, during peak period congestion.

The table also shows what 95th percentile delay is, the maximum delay, usually one time a month, when things get extremely bad.

For crashes, the tables display how many days per crashes that get cleared relatively quickly, and how many days between the bad crashes that cause longer delays.

Year	Sea	Maximum delay in minutes																					
		Average						95th percentile															
		2	4	6	8	10	12	14	16	18	20	22	24	26									
2016	E Sum																						
2016	Spr																						
2016	B Yr																						
2015	Hol																						
2015	Fall																						
2015	Sum																						
2015	E Sum																						
2015	Spr																						
2015	B Yr																						
2014	Hol																						
2014	Fall																						
2014	Sum																						
2014	E Sum																						
2014	Spr																						
2014	B Yr																						
2013	Hol																						
2013	Fall																						
2013	Sum																						
2013	E Sum																						

AM

Year	Sea	Maximum delay in minutes																					
		Average						95th percentile															
		2	4	6	8	10	12	14	16	18	20	22	24	26									
2016	E Sum																						
2016	Spr																						
2016	B Yr																						
2015	Hol																						
2015	Fall																						
2015	Sum																						
2015	E Sum																						
2015	Spr																						
2015	B Yr																						
2014	Hol																						
2014	Fall																						
2014	Sum																						
2014	E Sum																						
2014	Spr																						
2014	B Yr																						
2013	Hol																						
2013	Fall																						
2013	Sum																						
2013	E Sum																						

PM

95 SB to 15 SB



Year	Sea	days per crash, days per bad crash																					
		Days per crash						Days per bad crash															
		lt 1	1	1.2	1.4	1.6	1.8	2	3	5	10	15	20	gt 30									
2016	E Sum																						
2016	Spr																						
2016	B Yr																						
2015	Hol																						
2015	Fall																						
2015	Sum																						
2015	E Sum																						
2015	Spr																						
2015	B Yr																						
2014	Hol																						
2014	Fall																						
2014	Sum																						
2013	E Sum																						
2014	Spr																						

Delay performance has been relatively stable during the past year.

Project Neon construction may have an impact on performance during the next several months.

Year	Sea	Maximum delay in minutes																							
		Average												95th percentile											
		2	4	6	8	10	12	14	16	18	20	22	24	26	2	4	6	8	10	12	14	16	18	20	22
2016	E Sum	[Blue]												[Yellow]											
2016	Spr	[Blue]												[Yellow]											
2016	B Yr	[Blue]												[Yellow]											
2015	Hol	[Blue]												[Yellow]											
2015	Fall	[Blue]												[Yellow]											
2015	Sum	[Blue]												[Yellow]											
2015	E Sum	[Blue]												[Yellow]											
2015	Spr	[Blue]												[Yellow]											
2015	B Yr	[Blue]												[Yellow]											
2014	Hol	[Blue]												[Yellow]											
2014	Fall	[Blue]												[Red]											
2014	Sum	[Blue]												[Red]											
2013	E Sum	[Blue]												[Yellow]											
2014	Spr	[Blue]												[Yellow]											
2014	B Yr	[Blue]												[Yellow]											

AM

Year	Sea	Maximum delay in minutes																							
		Average												95th percentile											
		2	4	6	8	10	12	14	16	18	20	22	24	26	2	4	6	8	10	12	14	16	18	20	22
2016	E Sum	[Blue]												[Yellow]											
2016	Spr	[Blue]												[Yellow]											
2016	B Yr	[Blue]												[Yellow]											
2015	Hol	[Blue]												[Yellow]											
2015	Fall	[Blue]												[Yellow]											
2015	Sum	[Blue]												[Yellow]											
2015	E Sum	[Blue]												[Yellow]											
2015	Spr	[Blue]												[Yellow]											
2015	B Yr	[Blue]												[Yellow]											
2014	Hol	[Blue]												[Yellow]											
2014	Fall	[Blue]												[Red]											
2014	Sum	[Blue]												[Red]											
2014	E Sum	[Blue]												[Red]											
2014	Spr	[Blue]												[Yellow]											
2014	B Yr	[Blue]												[Red]											

PM

Southern Beltway EB at Airport Connector and to I-515



Average delays and reliability have stayed constant. Crashes have increased, but have typically been cleared quickly.

Year	Sea	days per crash, days per bad crash												
		Days per crash						Days per bad crash						
		lt 1	1	1.2	1.4	1.6	1.8	2	3	5	10	15	20	gt 30
2016	E Sum	[Blue]						[Red]						
2016	Spr	[Blue]						[Red]						
2016	B Yr	[Blue]						[Red]						
2015	Hol	[Blue]						[Red]						
2015	Fall	[Blue]						[Red]						
2015	Sum	[Blue]						[Red]						
2015	E Sum	[Blue]						[Red]						
2015	Spr	[Blue]						[Red]						
2015	B Yr	[Blue]						[Red]						
2014	Hol	[Blue]						[Red]						
2014	Fall	[Blue]						[Red]						
2014	Sum	[Blue]						[Red]						
2013	E Sum	[Blue]						[Red]						
2014	Spr	[Blue]						[Red]						

How the percent change in daily volume and daily average speed graphs work (greener graphs, increased volumes; redder graphs, decreased speeds)

- The percent change, by season, of daily volume is shown in the graphs with the green bars.
- Longer green bars show a larger increase in volume over the previous year's season.
- The percent change, by season, of average speed is shown in the graphs with the maroon bars.
- Longer maroon bars show a larger decrease in average speed over the previous year's season.

Year	Sea	east of I-15												
		0.5	1.0	1.5	2.0	2.5	3.0	3.5	4.0	4.5	5.0	5.5	6.0	
2016	E Sum	neg	15.5											
2016	Spr													
2016	B Yr													
2015	Hol													
2015	Fall													
2015	Sum													
2015	E Sum													
2015	Spr													
2015	B Yr													
2014	Hol													
2014	Fall													
2014	Sum													
2014	E Sum													
2014	Spr													
2014	B Yr											7.5	>>	
2013	Hol													
2013	Fall													
2013	Sum											6.5	>>	
2013	E Sum													

515 NB, AM & PM



← Percent change in daily volume

Year	Sea	east of I-15											
		lt-2	-1.8	-1.6	-1.4	-1.2	-1.0	-0.8	-0.6	-0.4	-0.2	0.0	pos
2016	E Sum												0.9
2016	Spr	<<	-2.7										
2016	B Yr												
2015	Hol												
2015	Fall												
2015	Sum												
2015	E Sum												
2015	Spr												
2015	B Yr												
2014	Hol											0.2	
2014	Fall												
2014	Sum												
2013	E Sum												
2014	Spr												
2014	B Yr												
2013	Hol												
2013	Fall												
2013	Sum												
2013	E Sum												

Percent change in daily average speed →

Year	Sea	at Lake Mead Blvd											
		0.5	1.0	1.5	2.0	2.5	3.0	3.5	4.0	4.5	5.0	5.5	6.0
2016	E Sum	█	█										
2016	Spr	█	█	█									
2016	B Yr	█	█	█	█								
2015	Hol	█	█	█	█	█	█	█	█	█	█	█	█
2015	Fall	█	█	█	█	█	█	█	█	█	█	█	█
2015	Sum	█	█	█	█	█	█	█	█	█	█	█	█
2015	E Sum	█	█	█	█	█	█	█	█	█	█	█	█
2015	Spr	█	█	█	█	█	█	█	█	█	█	█	█
2015	B Yr	█	█	█	█	█	█	█	█	█	█	█	█
2014	Hol	█	█	█	█	█	█	█	█	█	█	█	█
2014	Fall	█	█	█	█	█	█	█	█	█	█	█	█
2014	Sum	█	█	█	█	█	█	█	█	█	█	█	█
2014	E Sum	█	█	█	█	█	█	█	█	█	█	█	█
2014	Spr	█	█	█	█	█	█	█	█	█	█	█	█
2014	B Yr	█	█	█	█	█	█	█	█	█	█	█	█
2013	Hol	█	█	█	█	█	█	█	█	█	█	█	█
2013	Fall	█	█	█	█	█	█	█	█	█	█	█	█
2013	Sum	█	█	█	█	█	█	█	█	█	█	█	█
2013	E Sum	█	█	█	█	█	█	█	█	█	█	█	█

between Flamingo & Tropicana												
0.5	1.0	1.5	2.0	2.5	3.0	3.5	4.0	4.5	5.0	5.5	6.0	
2016	E Sum	█	█	█	█	█	█	█	█	█	█	█
2016	Spr	█	█	█	█	█	█	█	█	█	█	█
2016	B Yr	█	█	█	█	█	█	█	█	█	█	█
2015	Hol	█	█	█	█	█	█	█	█	█	█	█
2015	Fall	█	█	█	█	█	█	█	█	█	█	█
2015	Sum	█	█	█	█	█	█	█	█	█	█	█
2015	E Sum	█	█	█	█	█	█	█	█	█	█	█
2015	Spr	█	█	█	█	█	█	█	█	█	█	█
2015	B Yr	█	█	█	█	█	█	█	█	█	█	█
2014	Hol	█	█	█	█	█	█	█	█	█	█	█
2014	Fall	█	█	█	█	█	█	█	█	█	█	█
2014	Sum	█	█	█	█	█	█	█	█	█	█	█
2014	E Sum	█	█	█	█	█	█	█	█	█	█	█
2014	Spr	█	█	█	█	█	█	█	█	█	█	█
2014	B Yr	█	█	█	█	█	█	█	█	█	█	█
2013	Hol	█	█	█	█	█	█	█	█	█	█	█
2013	Fall	█	█	█	█	█	█	█	█	█	█	█
2013	Sum	█	█	█	█	█	█	█	█	█	█	█
2013	E Sum	█	█	█	█	█	█	█	█	█	█	█

I-15 SB through Project Neon area



← Percent change in daily volume

Sea	at Lake Mead Blvd											pos
	lt-2	-1.8	-1.6	-1.4	-1.2	-1.0	-0.8	-0.6	-0.4	-0.2	0.0	
E Sum	<<	-3.4										
Spr	<<	-2.5										
B Yr	<<	-2.7										
Hol	<<	-2.6										
Fall												
Sum												2.2
E Sum												2.0
Spr												1.6
B Yr												2.2
Hol												3.4
Fall												1.1
Sum												
E Sum	<<	-3.2										
Spr	<<	-4.0										
B Yr	<<	-4.2										
Hol	<<	-4.0										
Fall	<<	-4.0										
Sum	<<	-2.1										
E Sum												

between Flamingo & Tropicana												pos
lt-2	-1.8	-1.6	-1.4	-1.2	-1.0	-0.8	-0.6	-0.4	-0.2	0.0		
E Sum												
Spr												
B Yr												0.2
Hol												0.3
Fall												0.7
Sum												0.7
E Sum												0.7
Spr												1.6
B Yr												2.2
Hol												3.4
Fall												1.1
Sum												
E Sum	<<	-3.2										
Spr	<<	-4.0										
B Yr	<<	-4.2										
Hol	<<	-4.0										
Fall	<<	-4.0										
Sum	<<	-2.1										
E Sum												

Percent change in daily average speed →

Year	Sea	between Durango & Buffalo										between LV Blvd & Airport ramps										west of Eastern													
		0.5	1.0	1.5	2.0	2.5	3.0	3.5	4.0	4.5	5.0	5.5	6.0	0.5	1.0	1.5	2.0	2.5	3.0	3.5	4.0	4.5	5.0	5.5	6.0	0.5	1.0	1.5	2.0	2.5	3.0	3.5	4.0	4.5	5.0
2016	E Sum																																		
2016	Spr																																		
2016	B Yr																					7.0 >>													
2015	Hol																					6.6 >>													
2015	Fall																					9.5 >>													
2015	Sum																					7.2 >>													
2015	E Sum																					7.9 >>													
2015	Spr																					7.9 >>													
2015	B Yr																					7.5 >>													
2014	Hol											na										7.1 >>													
2014	Fall																					7.9 >>													
2014	Sum																					13.4 >>>													
2014	E Sum																					10.2 >>>													
2014	Spr																					9.2 >>>													
2014	B Yr																					6.9 >													
2014	B Yr																					13.7 >>>													
2014	B Yr																					7.2 >>													
2014	B Yr																					13.6 >>>													
2014	B Yr																					6.3 >													
2014	B Yr																					9.3 >>>													
2014	B Yr																					7.2 >>													
2014	B Yr																					6.9 >													

← Percent change in daily volume

Year	Sea	between Durango & Buffalo												between LV Blvd & Airport ramps												west of Eastern											
		lt-2	-1.8	-1.6	-1.4	-1.2	-1.0	-0.8	-0.6	-0.4	-0.2	0.0	pos	lt-2	-1.8	-1.6	-1.4	-1.2	-1.0	-0.8	-0.6	-0.4	-0.2	0.0	pos	lt-2	-1.8	-1.6	-1.4	-1.2	-1.0	-0.8	-0.6	-0.4	-0.2	0.0	pos
2016	E Sum																																				
2016	Spr																																				
2016	B Yr																																				
2015	Hol																																				
2015	Fall																																				
2015	Sum																																				
2015	E Sum																																				
2015	Spr																																				
2015	B Yr	<< -2.3												<< -9.7												0.3											
2014	Hol																									0.3											
2014	Fall																									5.0											
2014	Sum																									10.8											
2013	E Sum																									8.8											
2014	Spr																									10.2											
2014	B Yr																									9.6											
2014	B Yr																									7.5											

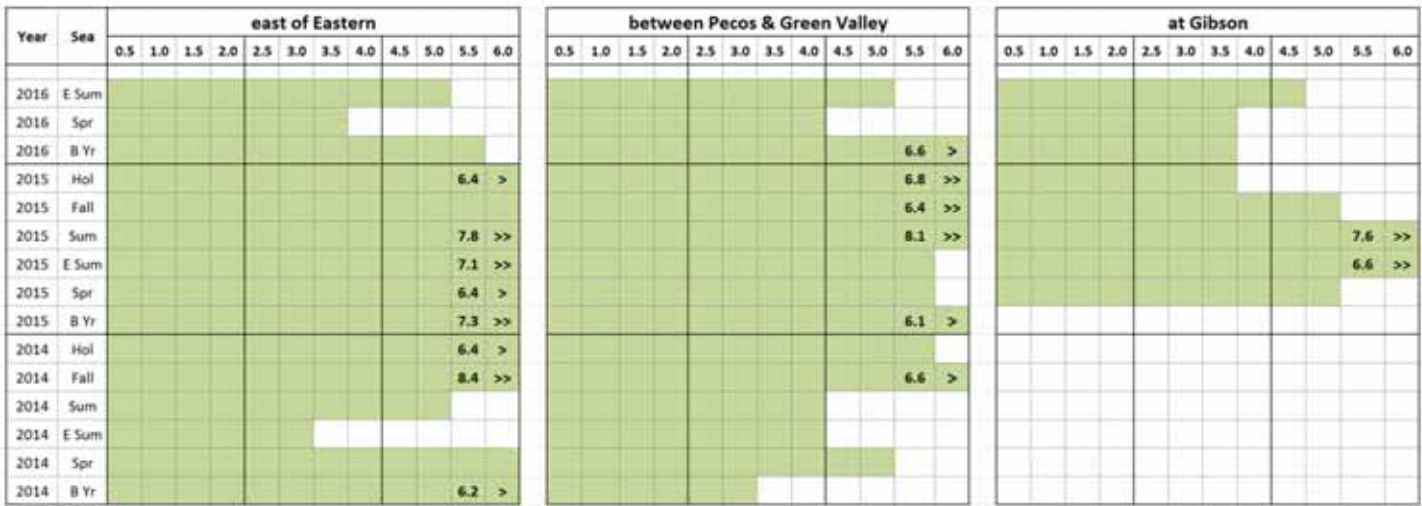
← Percent change in daily average speed

Southern Beltway EB at Airport Connector and to I-515

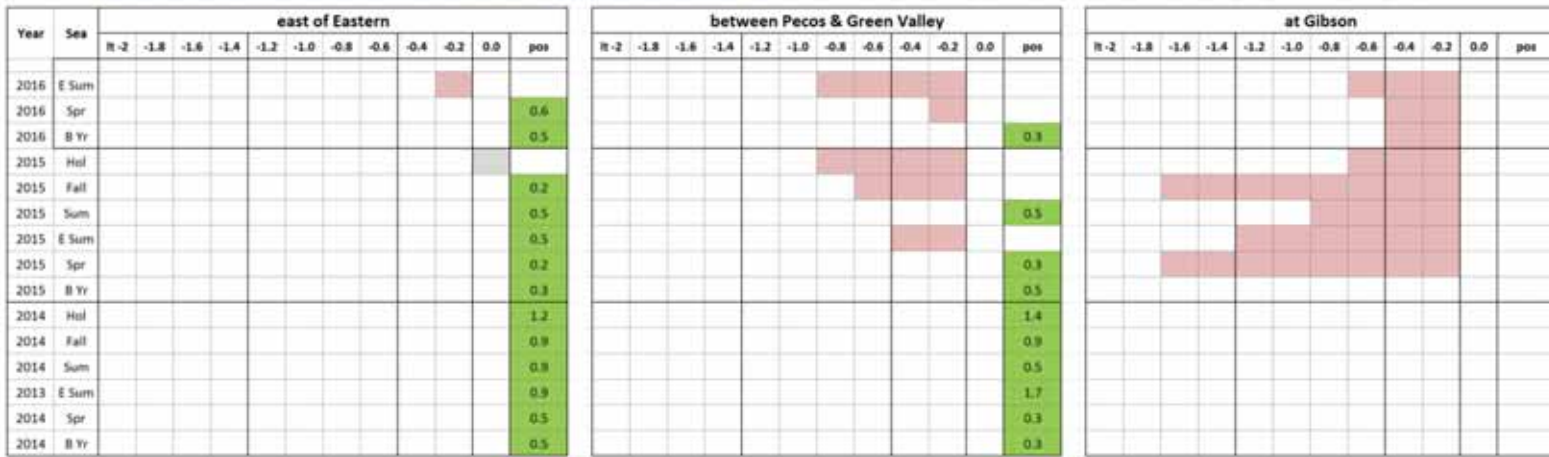


These tables focus on changes in volumes and speeds west of Eastern. The next page displays similar data for the 215 Beltway east of Eastern.

These days, the entire 215 beltway is experiencing significant increases in volume



← Percent change in daily volume



← Percent change in daily average speed

Southern Beltway EB at Airport Connector and to I-515 (cont)



Thresholds

- In late 2014, the FHWA Office of Transportation Performance Management (TPM) launched a technical assistance program that will provide a variety of products related to performance management. FAST is part of the stakeholder group advising on this effort.
- These materials will help shape the performance reporting for the Las Vegas area freeways.
- Draft documents from this report define target-setting as a data-driven, collaborative process. It makes the link between investment decisions and performance expectations transparent for all stakeholders.
- The 2015 2nd Quarter Report introduced the concept of Performance Thresholds which is our initial step in moving towards our TPM program and effective target setting.
- In this report, due to longer delays, many thresholds were revised. The table on the next page shows both sets of thresholds, the older and the revised ones.

Thresholds: for this report, new thresholds have been introduced. The original thresholds are also shown

Temporal / Spatial description			How long does a congestion event last? How frequent are congestion events?				Maximum Delay (minutes)						Days per crash			
Corridor	AM / PM	School in or out	duration	duration ii	frequency color	frequency color ii	Average	Avg ii	95th percentile	95th ii	reliability color	reliability color ii	crash	crash ii	very bad crash	very bad crash ii
15 NB	pm	na	2.5 to 3 hours	3 plus hours	red	red	12	14	20	24	yellow	orange	1.2	1.2	10	10
515 NB	am	sch	30 to 45 mins	45 mins	orange	maroon	8	10 to 12	14	22	green	yellow	3	2	15	15
	am	summer	30 mins	30 mins	yellow	yellow	8	8	14	14	green	green				
	pm	sch	1.5. to 2 hours	2.5 hours	maroon	maroon	12 to 14	16	20	26	yellow	yellow				
	pm	summer	lt 45 mins	lt 45 mins	yellow	yellow	8	8	12	12	green	green				
215 WB	am	sch	lt 1 hour	45 to 60 mins	orange	maroon	8	8	16	12	yellow	yellow	5	5	30	30
	am	summer	30 mins	30 mins	yellow	yellow	8	8	14	14	green	green				
	pm	sch	1 to 1.5 hrs	1.5 to 2 hours	red	maroon	14	12	20	20	yellow	yellow				
	pm	summer	lt 60 mins	lt 60 mins	maroon	maroon	10	10	14	14	green	green				
95 to 15 SB	am	sch	1 hour	1.5 to 2 hours	maroon	maroon	10 to 12	10 to 12	16	14	yellow	orange	2	1.6	20	10
	am	summer	lt 70 mins	lt 70 mins	orange	orange	10	10	12	12	green	green				
	pm	sch	lt 2 hours	1.5 to 2 hours	red	maroon	10	10	14	12	yellow	yellow				
	pm	summer	lt 100 mins	lt 100 mins	red	red	8	8	12	12	yellow	yellow				
15 SB	am	sch	lt 60 mins	1 to 1.5 hours	maroon	maroon	10	12	16	20	yellow	yellow	1.5	1.5	8	8
	am	summer	lt 45 mins	lt 45 mins	orange	orange	10	10	14	14	yellow	yellow				
	pm	sch	lt 75 mins	2 hours	red	red	12	12	16	20	yellow	orange				
	pm	summer	lt 75 mins	lt 75 mins	red	red	12	12	16	16	yellow	yellow				
215 EB to Eastern	pm	sch	lt 60 mins	1.5 hours	maroon	maroon	6	8	10	12	yellow	yellow	8	5	30	15
	pm	summer	lt 30 mins	lt 30 mins	orange	orange	4	4	8	8	green	green				
215 EB to 515	pm	sch	lt 30 mins	1 hour	yellow	yellow	6	6	10	14	green	orange	8	5	30	15
	pm	summer	lt 30 mins	lt 30 mins	yellow	yellow	4	4	8	8	green	green				

Temporal / Spatial description			season / year	How long does a congestion event last? How frequent are congestion events?		Maximum Delay (minutes)			Days per crash		
Corridor	AM / PM	School in or out		duration	frequency color	Average	95th percentile	reliability color	crash	very bad crash	
15 NB	pm	na	E Sum 16	no	max freq	no	no	no	no	no	
			Spr 16	no	max freq	no	no	no	no	no	
			B Yr 16	no	max freq	no	no	no	no	no	
			Hol 15	yes	max freq	no	yes	yes	yes	yes	
			Fall 15	yes	max freq	yes	no	no	yes	no	
			Sum 15	yes	max freq	yes	no	no	yes	yes	
			E Sum 15	yes	max freq	yes	yes	yes	yes	yes	no
			Spr 15	yes	max freq	yes	yes	yes	yes	yes	no
515 NB	am	sch	E Sum 16	no	no	no	no	no	no	no	
		sch	Spr 16	yes	no	no	no	yes	no	no	
		sch	B Yr 16	yes	no	no	no	no	no	no	
		no sch	Hol 15	no	no	no	no	no	yes	no	
		sch	Fall 15	yes	no	no	no	no	yes	no	
		no sch	Sum 15	yes	yes	yes	yes	yes	yes	no	
		sch	E Sum 15	yes	no	yes	no	no	yes	no	
		sch	Spr 15	yes	yes	yes	yes	yes	no	no	
	pm	sch	E Sum 16	no	no	no	no	yes	no	no	
		sch	Spr 16	no	yes	no	no	no	no	no	
		sch	B Yr 16	no	yes	no	no	yes	no	no	
		no sch	Hol 15	no	yes	no	no	yes	yes	no	
		sch	Fall 15	yes	yes	yes	no	no	yes	no	
		no sch	Sum 15	no	yes	no	no	no	yes	no	
sch		E Sum 15	yes	yes	yes	yes	no	yes	no		
sch		Spr 15	no	yes	yes	yes	no	no	no		

Temporal / Spatial description			season / year	How long does a congestion event last? How frequent are congestion events?		Maximum Delay (minutes)			Days per crash	
Corridor	AM / PM	School in or out		duration	frequency color	Average	95th percentile	reliability color	crash	very bad crash
215 WB	am	sch	E Sum 16	no	no	no	no	no	no	no
		sch	Spr 16	yes	no	yes	yes	yes	yes	no
		sch	B Yr 16	yes	no	yes	yes	yes	yes	no
		no sch	Hol 15	no	no	yes	yes	yes	yes	no
		sch	Fall 15	yes	no	yes	yes	no	yes	no
		no sch	Sum 15	no	yes	yes	yes	yes	yes	no
		sch	E Sum 15	yes	yes	yes	yes	yes	yes	no
		sch	Spr 15	yes	yes	no	no	no	no	yes
	pm	sch	E Sum 16	no	yes	yes	yes	yes	no	no
		sch	Spr 16	no	yes	yes	no	yes	yes	no
		sch	B Yr 16	no	yes	yes	no	yes	yes	no
		no sch	Hol 15	no	yes	no	no	yes	yes	no
		sch	Fall 15	yes	yes	yes	no	no	yes	no
		no sch	Sum 15	no	yes	yes	no	yes	yes	no
		sch	E Sum 15	no	no	yes	no	no	yes	no
		sch	Spr 15	no	yes	yes	yes	yes	no	yes

Temporal / Spatial description			season / year	How long does a congestion event last? How frequent are congestion events?		Maximum Delay (minutes)			Days per crash		
Corridor	AM / PM	School in or out		duration	frequency color	Average	95th percentile	reliability color	crash	very bad crash	
95 to 15 SB	am	sch	E Sum 16	no	yes	yes	yes	no	no	no	
			Spr 16	no	yes	yes	yes	yes	no	no	
			B Yr 16	no	yes	yes	yes	no	no	no	
		no sch	Hol 15	yes	no	yes	no	yes	no	no	
			sch	Fall 15	no	yes	no	yes	yes	no	no
			no sch	Sum 15	yes	yes	no	no	no	no	no
			sch	E Sum 15	no	yes	yes	yes	no	no	no
			sch	Spr 15	no	yes	yes	yes	yes	no	no
	pm	sch	E Sum 16	yes	yes	yes	no	no	no	no	
			Spr 16	no	yes	yes	yes	yes	no	no	
			B Yr 16	yes	yes	yes	yes	yes	no	no	
		no sch	Hol 15	no	no	no	no	no	no	no	
			sch	Fall 15	yes	yes	yes	no	yes	no	no
			no sch	Sum 15	yes	yes	no	no	no	no	no
		sch	E Sum 15	yes	yes	yes	no	yes	no		
		sch	Spr 15	yes	yes	yes	no	yes	no		

Temporal / Spatial description			season / year	How long does a congestion event last? How frequent are congestion events?		Maximum Delay (minutes)			Days per crash		
Corridor	AM / PM	School in or out		duration	frequency color	Average	95th percentile	reliability color	crash	very bad crash	
15 SB	am	sch	E Sum 16	no	yes	no	no	no	no	no	
			Spr 16	no	yes	no	no	yes	no	no	
			B Yr 16	no	yes	no	no	no	yes	yes	
		no sch	Hol 15	no	yes	yes	yes	yes	yes	yes	
		sch	Fall 15	no	yes	no	no	no	yes	yes	
		no sch	Sum 15	no	yes	no	no	no	yes	yes	
		sch	E Sum 15	no	no	no	no	no	no	yes	yes
			Spr 15	no	yes	no	no	yes	yes	yes	yes
	pm	sch	E Sum 16	yes	max freq	yes	no	no	no	no	
			Spr 16	no	max freq	no	no	yes	no	no	
			B Yr 16	no	max freq	yes	no	no	yes	yes	
		no sch	Hol 15	no	max freq	yes	no	no	yes	yes	
		sch	Fall 15	no	max freq	yes	no	no	yes	yes	
		no sch	Sum 15	no	max freq	no	no	no	yes	yes	
sch		E Sum 15	no	max freq	yes	yes	yes	yes	yes	yes	
		Spr 15	no	max freq	yes	yes	yes	yes	yes	yes	

Temporal / Spatial description			season / year	How long does a congestion event last? How frequent are congestion events?		Maximum Delay (minutes)			Days per crash		
Corridor	AM / PM	School in or out		duration	frequency color	Average	95th percentile	reliability color	crash	very bad crash	
215 EB to Eastern	pm	sch	E Sum 16	no	no	no	no	yes	no	no	
			Spr 16	no	no	no	no	yes	no	no	
			B Yr 16	no	no	no	no	no	no	no	no
		no sch	Hol 15	no	no	no	no	no	no	no	no
		sch	Fall 15	yes	yes	no	no	yes	no	no	
		no sch	Sum 15	no	yes	no	no	no	no	no	no
		sch	E Sum 15	yes	yes	no	yes	yes	no	no	
			Spr 15	yes	yes	no	no	yes	no	no	
215 EB to 515	pm	sch	E Sum 16	no	yes	no	no	no	no	no	
			Spr 16	no	yes	yes	no	no	no	no	
			B Yr 16	no	yes	yes	no	no	no	no	
		no sch	Hol 15	no	yes	no	yes	yes	no	no	
		sch	Fall 15	no	yes	yes	no	no	no	no	
		no sch	Sum 15	no	yes	no	yes	no	no	no	
		sch	E Sum 15	no	yes	yes	no	no	no	no	
			Spr 15	no	yes	yes	yes	yes	no	no	

Reliability Quartiles

- FAST data analysis evaluates whether congestion events are expected, what we are used to, or if they cause extreme delays and / or occur at times when they are not expected.
- For this and previous reports, reliability is described in terms of the buffer index (BI).
- Higher BIs mean that congestion is less predictable and lower BIs mean congestion is more predictable.
- BIs based on the temporal / spatial arrangements used by these reports has been ranked, and the results are shown in the following tables.

Most unreliable corridors and temporal data

yr	buffer index	period	sub corr	season
16	94	pm	215 eb 1	6-beg yr
16	84	pm	215 eb 2	4-ear sum
14	74	pm	215 eb 2	4-ear sum
14	70	am	15 sb 1	3-sum
15	66	pm	215 eb 2	6-beg yr
16	65	pm	215 eb 2	6-beg yr
14	65	pm	15 sb 1	4-ear sum
15	63	pm	215 eb 2	2-fall
14	59	pm	15 sb 1	6-beg yr
13	59	am	95 nb 2	3-sum
14	58	pm	95 sb 2	4-ear sum
13	58	pm	95 nb 2	4-ear sum
15	58	am	95 nb 2	4-ear sum
13	57	pm	215 wb 2	2-fall
14	55	pm	215 wb 2	4-ear sum
15	55	am	95 nb 2	2-fall
14	54	pm	215 eb 2	3-sum
16	53	pm	15 nb 2	6-beg yr
15	53	pm	215 wb 2	2-fall
14	53	am	15 sb 1	2-fall
14	52	pm	215 eb 2	1-hol
14	52	pm	15 nb 2	3-sum
15	51	pm	215 eb 2	4-ear sum
15	51	pm	215 wb 2	4-ear sum
15	50	pm	95 nb 2	5-spr
15	50	pm	215 eb 1	3-sum
14	50	pm	215 wb 2	1-hol
13	50	pm	95 nb 2	2-fall

Unreliable corridors and temporal data

yr	buffer index	period	sub corr	season	yr	buffer index	period	sub corr	season
15	49	am	15 sb 1	3-sum	15	39	pm	15 sb 1	1-hol
16	47	am	15 sb 1	4-ear sum	15	39	pm	215 wb 2	1-hol
14	47	am	15 sb 1	6-beg yr	14	39	am	95 nb 2	1-hol
15	46	pm	15 sb 1	3-sum	14	38	pm	215 eb 1	2-fall
14	46	pm	15 sb 1	3-sum	14	38	pm	95 sb 2	6-beg yr
15	46	am	15 sb 1	2-fall	13	38	pm	95 sb 2	4-ear sum
15	45	pm	95 sb 2	1-hol	15	38	am	15 sb 1	6-beg yr
14	45	pm	95 nb 2	6-beg yr	15	38	am	15 sb 1	4-ear sum
14	45	pm	215 wb 2	6-beg yr	14	37	pm	15 nb 2	4-ear sum
13	44	pm	215 wb 2	1-hol	14	37	pm	95 nb 2	2-fall
15	43	pm	95 nb 2	2-fall	14	37	pm	95 sb 2	2-fall
14	43	pm	215 eb 2	5-spr	16	36	pm	215 eb 2	5-spr
13	43	pm	215 wb 2	3-sum	15	36	am	215 wb 1	5-spr
16	43	am	215 wb 1	4-ear sum	14	36	am	95 nb 2	6-beg yr
16	43	am	15 sb 1	6-beg yr	16	35	pm	95 nb 2	5-spr
16	42	pm	15 nb 2	4-ear sum	14	35	pm	15 sb 1	2-fall
16	42	pm	15 sb 1	6-beg yr	14	35	pm	215 wb 2	5-spr
16	42	pm	215 wb 2	5-spr	15	35	am	95 nb 2	1-hol
16	42	pm	15 sb 1	4-ear sum	16	34	pm	95 sb 2	4-ear sum
15	42	pm	15 nb 2	6-beg yr	14	34	pm	215 wb 2	2-fall
13	42	pm	215 eb 2	1-hol	15	33	pm	95 nb 2	4-ear sum
13	42	pm	15 nb 2	4-ear sum	15	33	pm	215 wb 2	6-beg yr
16	42	am	95 nb 2	6-beg yr	14	33	pm	215 eb 1	4-ear sum
14	42	am	95 nb 2	4-ear sum	13	33	pm	215 eb 1	1-hol
15	41	pm	15 nb 2	2-fall					
15	41	pm	95 nb 2	3-sum					
15	41	pm	15 sb 1	2-fall					
13	41	am	95 nb 2	2-fall					
15	40	pm	15 nb 2	3-sum					
15	40	pm	215 eb 1	1-hol					
15	40	pm	95 sb 2	3-sum					
16	39	pm	15 nb 2	5-spr					
16	39	pm	215 wb 2	6-beg yr					

Reliable corridors and temporal data

yr	buffer index	period	sub corr	season
15	32	pm	215 eb 2	3-sum
15	32	pm	95 sb 2	4-ear sum
15	32	pm	215 eb 1	2-fall
15	32	pm	215 wb 2	3-sum
14	32	pm	95 nb 2	4-ear sum
13	32	pm	95 nb 2	3-sum
15	32	am	215 wb 1	6-beg yr
15	32	am	95 sb 2	3-sum
14	32	am	15 sb 1	1-hol
15	31	pm	95 nb 2	6-beg yr
15	31	pm	95 sb 2	5-spr
14	31	pm	95 nb 2	5-spr
14	31	pm	15 nb 2	6-beg yr
14	31	am	95 nb 2	2-fall
13	30	pm	215 wb 2	4-ear sum
16	30	am	15 sb 1	5-spr
16	29	pm	15 sb 1	5-spr
15	29	pm	15 sb 1	4-ear sum
15	29	pm	15 nb 2	1-hol
15	29	pm	95 nb 2	1-hol
15	29	pm	215 eb 1	5-spr
14	29	pm	215 eb 1	1-hol
16	29	am	95 nb 2	4-ear sum
16	28	pm	215 wb 2	4-ear sum
15	28	pm	95 sb 2	6-beg yr
15	28	pm	95 sb 2	2-fall
14	28	pm	95 nb 2	1-hol
14	28	pm	215 eb 1	6-beg yr
14	28	am	95 sb 2	2-fall
14	28	am	15 sb 1	5-spr
14	27	pm	215 eb 2	2-fall
15	27	am	95 sb 2	2-fall
16	26	pm	95 nb 2	4-ear sum

yr	buffer index	period	sub corr	season
15	26	pm	15 sb 1	6-beg yr
15	26	pm	215 wb 2	5-spr
14	26	pm	15 nb 2	5-spr
14	26	am	15 sb 1	4-ear sum
16	25	pm	95 nb 2	6-beg yr
15	25	pm	15 nb 2	4-ear sum
14	25	pm	95 sb 2	3-sum
14	25	pm	215 wb 2	3-sum
13	25	pm	95 sb 2	3-sum
13	25	pm	15 nb 2	1-hol
13	25	pm	95 sb 2	2-fall
15	25	am	215 wb 1	2-fall
15	24	pm	15 nb 2	5-spr
14	24	pm	15 nb 2	2-fall
16	23	pm	215 eb 1	4-ear sum
14	23	pm	15 sb 1	5-spr
16	23	am	215 wb 1	5-spr
15	23	am	215 wb 1	4-ear sum
13	23	am	95 nb 2	1-hol
16	22	pm	95 sb 2	5-spr
15	22	pm	215 eb 1	6-beg yr
15	22	pm	215 eb 2	5-spr
13	22	pm	15 nb 2	3-sum
15	22	am	15 sb 1	5-spr
15	22	am	95 nb 2	6-beg yr
16	21	pm	95 sb 2	6-beg yr
15	21	pm	215 eb 1	4-ear sum
15	21	am	15 sb 1	1-hol
15	20	pm	95 nb 4	3-sum
16	20	am	95 sb 2	4-ear sum
16	20	am	95 sb 2	6-beg yr
16	20	am	95 nb 2	5-spr
15	20	am	95 sb 2	4-ear sum
15	20	am	215 wb 1	3-sum

Most reliable corridors and temporal data

yr	buffer index	period	sub corr	season
15	19	am	95 sb 2	5-spr
14	19	am	95 nb 2	3-sum
14	19	am	95 sb 2	6-beg yr
14	18	pm	95 nb 2	3-sum
13	18	pm	15 nb 2	2-fall
15	18	am	95 sb 2	6-beg yr
14	18	am	95 sb 2	1-hol
13	18	am	95 nb 2	4-ear sum
13	18	am	95 sb 2	2-fall
13	18	am	95 sb 2	1-hol
16	17	pm	215 eb 1	5-spr
15	17	pm	215 eb 2	1-hol
14	17	pm	215 eb 1	5-spr
15	17	am	95 nb 2	3-sum
15	17	am	95 sb 2	1-hol
15	16	pm	95 nb 4	6-beg yr
14	16	am	95 sb 2	5-spr
15	15	pm	15 sb 1	5-spr
15	15	pm	95 nb 4	5-spr
14	15	pm	95 sb 2	1-hol
14	15	am	95 nb 2	5-spr
16	14	am	215 wb 1	6-beg yr
15	14	am	215 wb 1	1-hol
14	14	am	95 sb 2	4-ear sum
15	13	pm	95 nb 4	4-ear sum
14	13	pm	15 sb 1	1-hol
13	12	pm	95 sb 2	1-hol
16	12	am	95 sb 2	5-spr
14	12	am	95 sb 2	3-sum
13	11	am	95 sb 2	4-ear sum
14	10	pm	15 nb 2	1-hol
15	10	am	95 nb 2	5-spr
13	10	am	95 sb 2	3-sum
14	6	pm	95 sb 2	5-spr