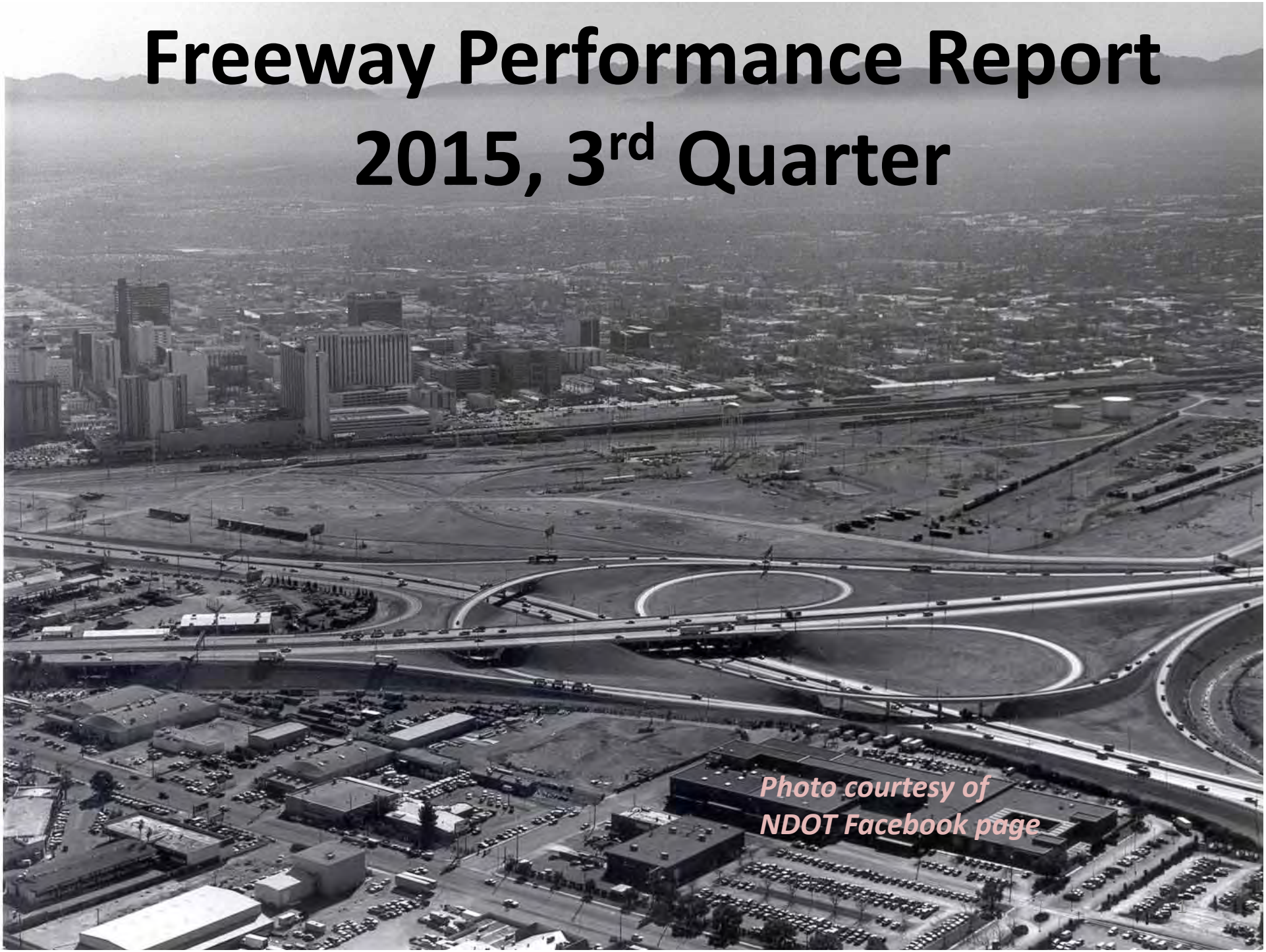
Freeway Performance Report
2015, 3rd Quarter



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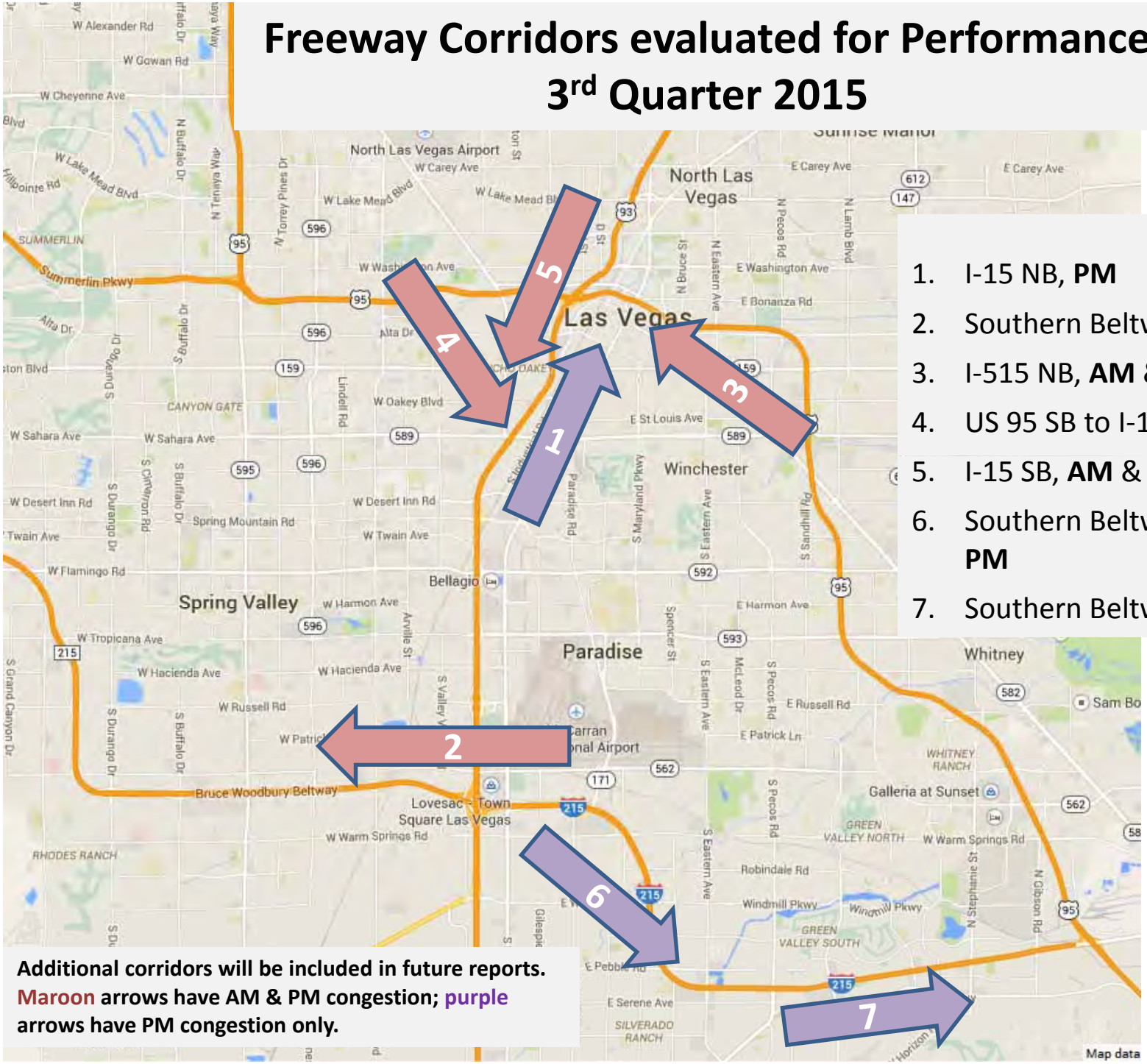
Report Objective: Monitor, measure and understand all performance data that fully describes travel time reliability; use this information to address travel problems

- 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 day[1].
- 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

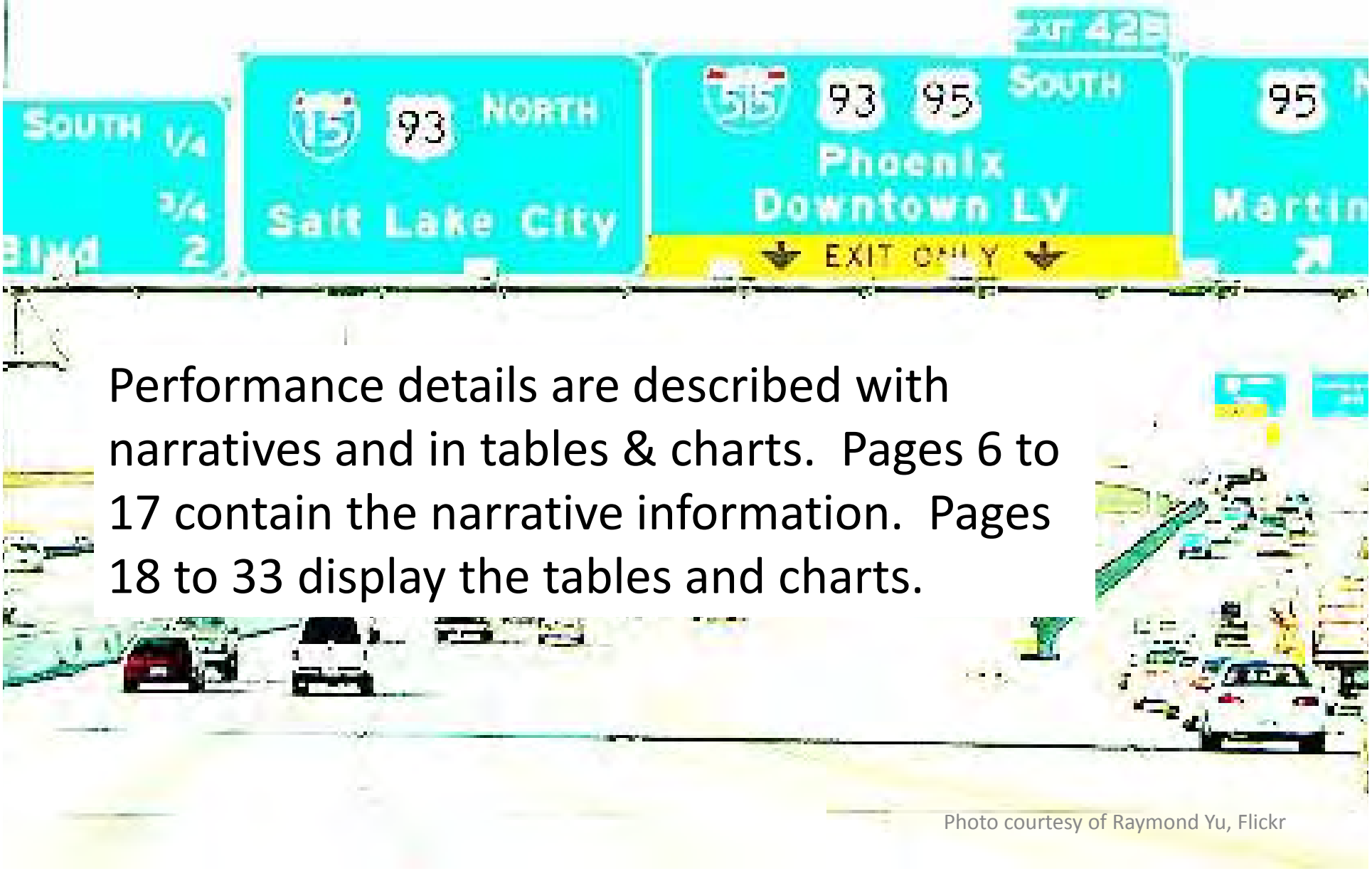
Freeway Corridors evaluated for Performance
3rd Quarter 2015



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**

Additional corridors will be included in future reports. Maroon arrows have AM & PM congestion; purple arrows have PM congestion only.

Performance Details



Performance details are described with narratives and in tables & charts. Pages 6 to 17 contain the narrative information. Pages 18 to 33 display the tables and charts.

Photo courtesy of Raymond Yu, Flickr

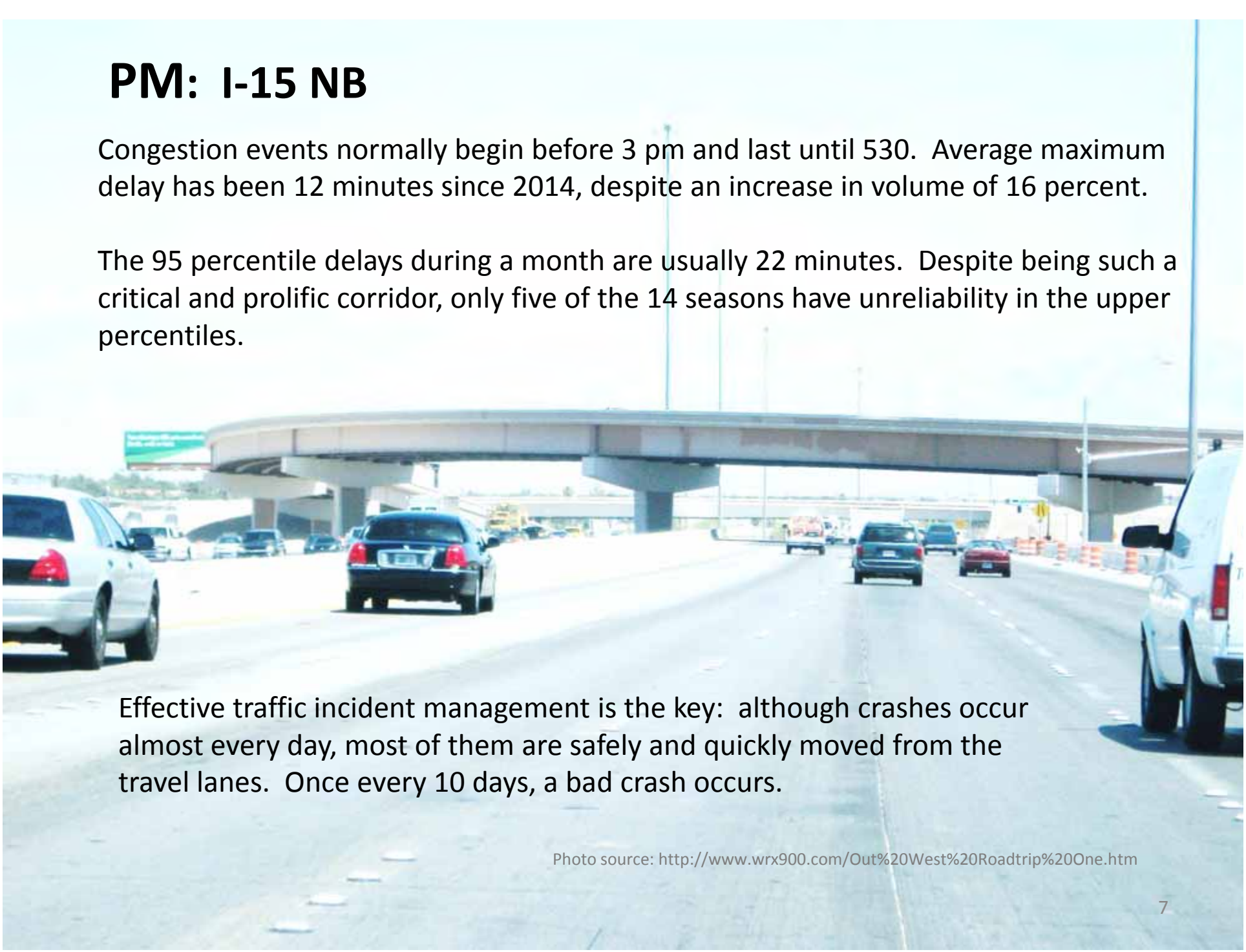
Terms and concepts used in narratives

- Seasonal coverage is from Early Summer 2013 through Summer 2015 for most subcorridors. This provides data for 14 seasons (four in 2013, six in 2014, and four, to date, in 2015). A description of seasons is provided on page 45.
- Congestion events are quantified using travel times posted on Las Vegas area freeway signs. To qualify as a congestion event, the delays need to exceed three to five minutes depending on the subcorridor. More details on congestion events are described in the 2015 1st Quarter Report.
- Current best practice in travel time reliability uses a Buffer Index (BI) to quantify this measure. BIs have been calculated and ranked using four quartiles: the upper two are for reliability worse than average, and the lower two are for better-than-average reliability. Page 3 provides more information on the reliability concept. Pages 42 and 43 shows the BIs used in this report.
- Freeway incidents are classified as a crash or a bad crash. A crash has vehicles cleared from travel lanes in less than 30 minutes for property damage only or less than 60 minutes for crashes with injuries. If clearance time exceeds these values, the incident is a bad crash. The FAST Dashboard archives the crash data used to make these calculations.
- Weekly average volumes and speeds at select locations in the subcorridors are calculated for each season.
- *Please contact FAST if you would like additional details on the data summarized for these performance reports.*

PM: I-15 NB

Congestion events normally begin before 3 pm and last until 530. Average maximum delay has been 12 minutes since 2014, despite an increase in volume of 16 percent.

The 95 percentile delays during a month are usually 22 minutes. Despite being such a critical and prolific corridor, only five of the 14 seasons have unreliability in the upper percentiles.



Effective traffic incident management is the key: although crashes occur almost every day, most of them are safely and quickly moved from the travel lanes. Once every 10 days, a bad crash occurs.

Photo source: http://www.wrx900.com/Out%20West%20Roadtrip%20One.htm

AM: 215 WB Beltway

Prior to the 215 widening between Warm Springs and I-15 that ended in 2013, AM WB delays occurred to the east of Eastern Avenue. Those delays have diminished, and the recurring congestion now occurs between Eastern and I-515.

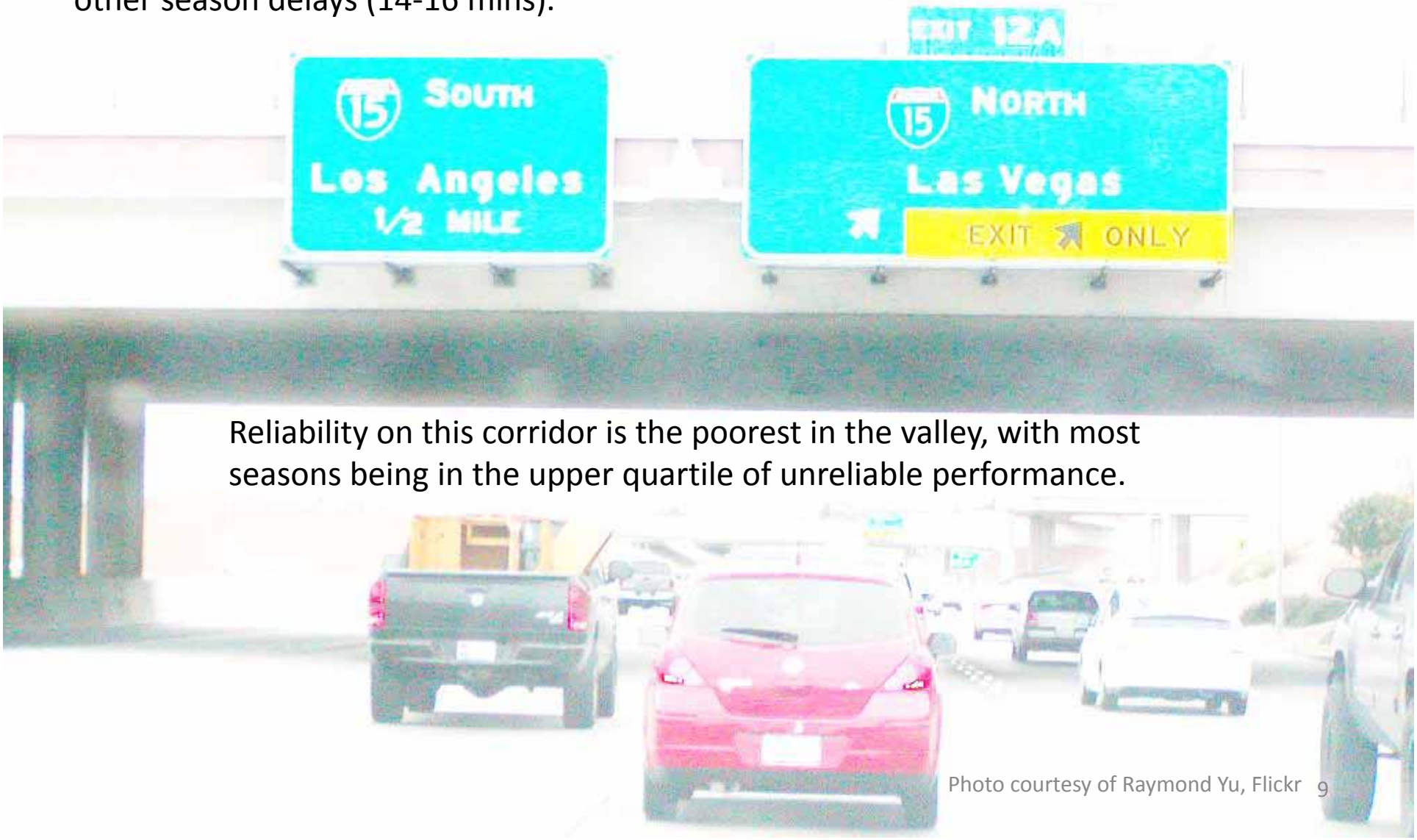
The tables and graphs in this report describe this newer congestion trends, using just the 2015 seasons. The 4th Quarter performance report will contain Fall and Holiday 2015 data and provide additional analysis on this performance.

Traffic volumes have increased significantly, rising by 25 percent between St Rose / Pecos and I-15. This is largely due the beltway widening project completed in 2013. Further to the west, volumes have increased by 15 percent at Decatur.

Photo courtesy of Raymond Yu, Flickr

PM: 215 WB Beltway

On all weekdays, delays are virtually guaranteed between 430 and 630 pm. During the past 12 months, the summer max average delay has been shorter (10 mins) than the other season delays (14-16 mins).



Reliability on this corridor is the poorest in the valley, with most seasons being in the upper quartile of unreliable performance.

Photo courtesy of Raymond Yu, Flickr

AM: I-515 / US 95 NB

Congestion event duration has consistently been in the 30 to 60 minute range. During school seasons, congestion occurs on most work days as opposed to only two or three days during summer. Delays begin around 730 and end before 830.

Average max delay has held steady at eight minutes, and reliability is good with only two of 14 seasons falling in the highest quartile. Five of the past seven seasons have had better than average reliability.

Crashes on this subcorridor occur every three days on average, and bad crashes occur once or twice a month. Average weekly volume growth has been 17 percent.

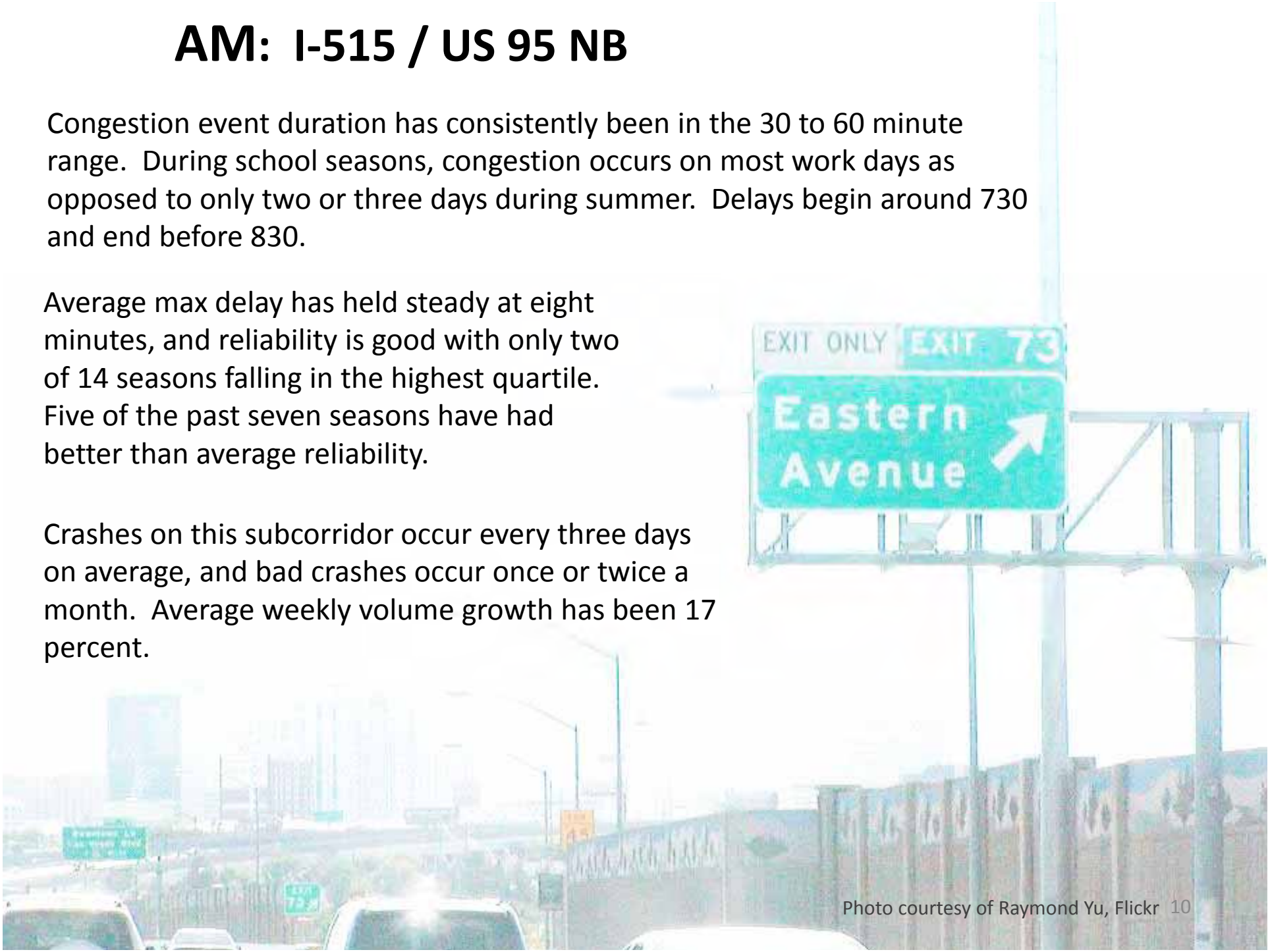


Photo courtesy of Raymond Yu, Flickr

PM: I-515 / US 95 NB

Congestion events during the summer are half as long as those during other seasons (1 hr vs 2 + hrs). The longer events begin by 330 and end before 6 pm. With school in session, delays occur Mon-Fri; during summer and other long vacation periods, noticeable delays may occur only three days a week.

Maximum average delays range from 10 to 14 minutes.

The corridor is unreliable compared with the rest of the valley, with four of the past six seasons falling in the upper quartiles. Many of the crashes that contribute to this problem occur between Charleston and Eastern.

Photo courtesy of Raymond Yu, Flickr

Summer and holiday season congestion events are shorter than other seasons. In 2015, the school-based seasons experienced congestion every weekday that lasted 90 minutes—noticeably longer than in previous years.

This corridor displays an increasing trend of delay. In 2013, the average max delay was six minutes, in 2014 it ranged between 8 to 10 minutes, and in 2015 it has consistently been 12 minutes.

Between mid-2013 through summer 2014 reliability was the best in the valley. With increased volumes, reliability is still good, but has worsened slightly.

Crashes are frequent—every other day or more—but are cleared relatively quickly as shown by the reliability values. Volume increases are 12 percent on 95 at Rancho.

AM: US 95 SB to I-15 SB

Photo courtesy of Raymond Yu, Flickr

Summer congestion, as with the AM period, is lighter than when school is in session. Delay patterns since the end of F Street construction begin earlier in the afternoon.

The average max delay has held steady since mid 2015. The reliability trend is average for the valley, although the Summer 2015 period was the most unreliable one for the corridor during the past year.

PM: US 95 SB to I-15 SB

Photo courtesy of Raymond Yu, Flickr

In 2015, following F Street construction, congestion event duration between Washington and Sahara has been 90 minutes and occurred every weekday and some Saturdays.

Average maximum delay has been 12 minutes and the corridor has been moderately unreliable.

Crashes normally occur every other day and bad crashes occur, on average, once a week.

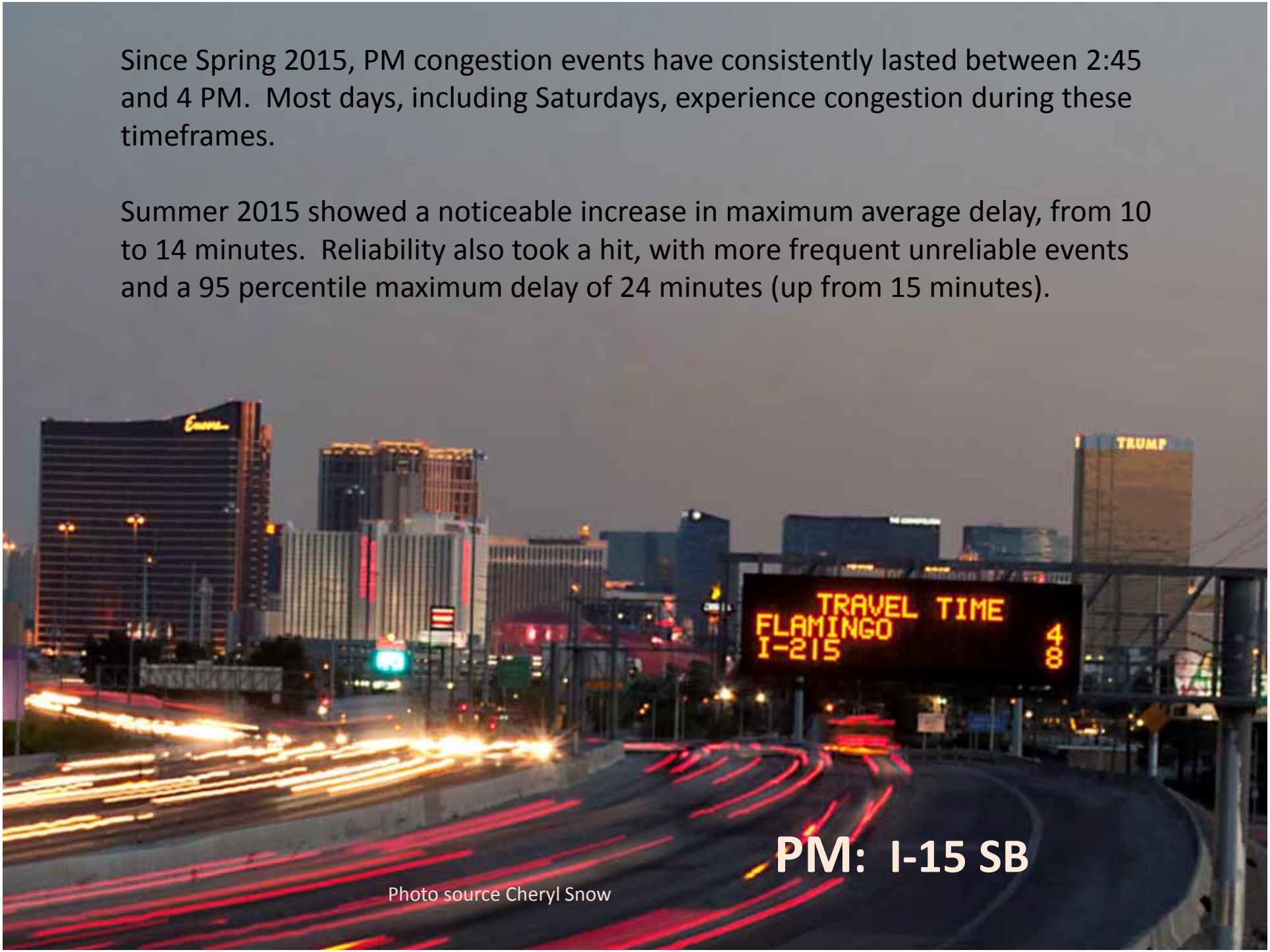
Volume growth is 25 percent at Lake Mead Blvd and 18 percent between Flamingo and Tropicana.

AM: I-15 SB

Photo source: http://www.reviewjournal.com/news/las-vegas/2-crashes-causing-major-traffic-delays-i-15-and-sahara

Since Spring 2015, PM congestion events have consistently lasted between 2:45 and 4 PM. Most days, including Saturdays, experience congestion during these timeframes.

Summer 2015 showed a noticeable increase in maximum average delay, from 10 to 14 minutes. Reliability also took a hit, with more frequent unreliable events and a 95 percentile maximum delay of 24 minutes (up from 15 minutes).



PM: I-15 SB

Photo source Cheryl Snow

Congestion events are a regular Monday through Friday occurrence, and the duration now exceeds an hour each day. The max average delay has increased to eight minutes since early 2015, and summer 2015 had the worst reliability, some of the valley's worst in 2015.

Congestion is caused by capacity reduction at Windmill. Fall 2015 will show increased delays through the Airport Connector and Warm Springs area due to construction.

Incidents have been relatively infrequent, averaging just over one per week for crashes and three per month for bad crashes.

Volumes between Airport Connector and Eastern are 30 percent higher than prior to the 2013 widening.

Photo courtesy of Raymond Yu, Flickr

PM: 215 EB to Eastern

Congestion events used to occur almost daily in this subcorridor, but now traffic is metered by the delays further to the west and events occur a few times per week. There is a lot of on-ramp traffic at Pecos / St Rose that contributes to a slow weave between that ramp and Green Valley Parkway.

Five of the past eight seasons have had very high unreliability, mainly due to crashes between Stephanie and I-515. The max average delay has held steady at six minutes.

Crashes occur once a week or so, and bad crashes normally occur once per month. Even though crashes are relatively infrequent and most cleared within criteria, the beltway still experiences some of the highest levels of unreliability.

Despite no capacity increases, growth has been 20 percent.

Photo courtesy of Raymond Yu, Flickr

PM: 215 EB, from Eastern to 515

Performance Tables and Graphs

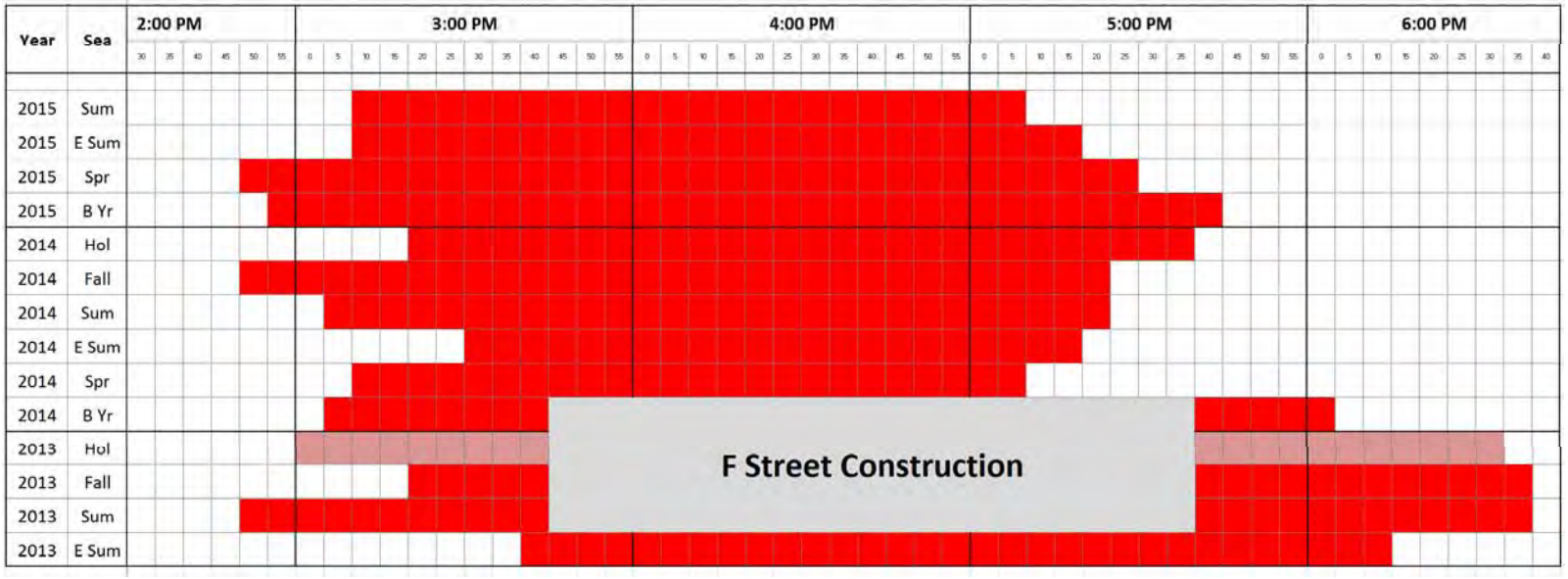
- Pages 20 through 23 display average duration by season of congestion events. The color of each bar is described on the next slide.
- Pages 24 through 26 display the average maximum delay and 95th percentile maximum delay for each season.
- Pages 27 and 28 display the number of days between each crash and bad crash.
- Pages 29 through 36 show the changes in weekly average volume and speed.

Photo from http://mapio.net/s/4826930/

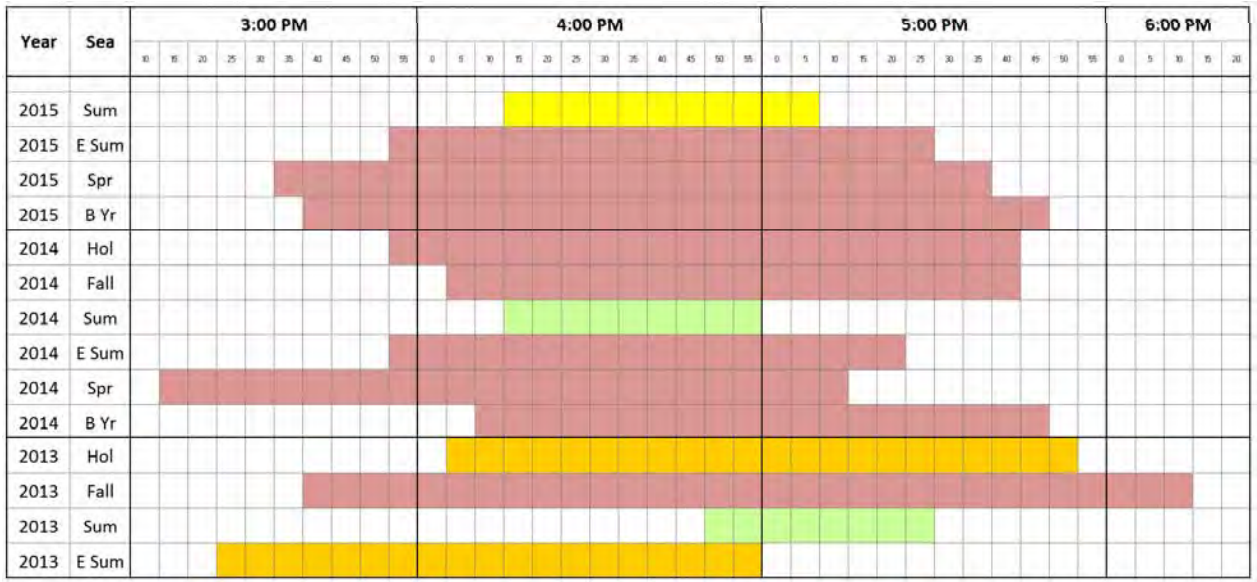
Color Descriptions

- Congestion Duration—the bar color shows which days normally experience peak period congestion
  - Red: Weekdays and sometimes on Saturdays and Sundays
  - Maroon: Weekdays
  - 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

Congestion Duration tables (PM congestion)

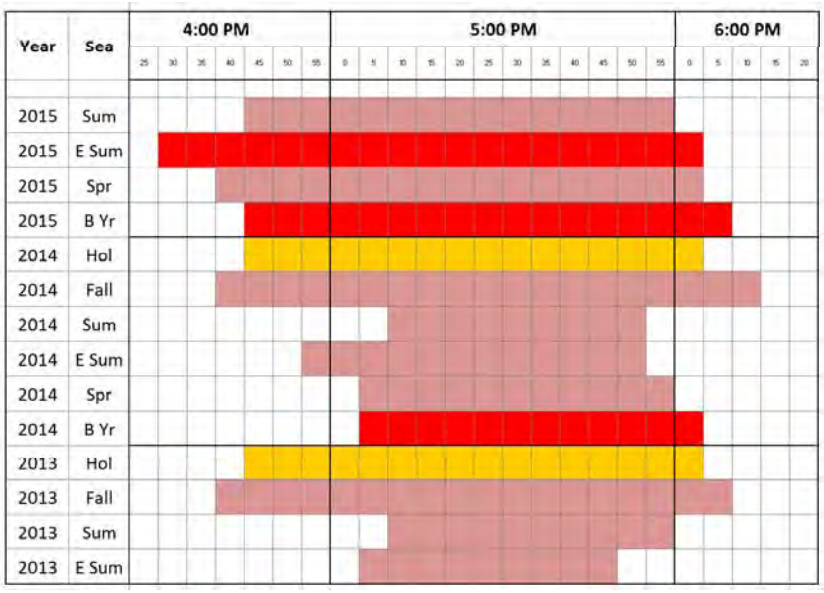


I-15 NB

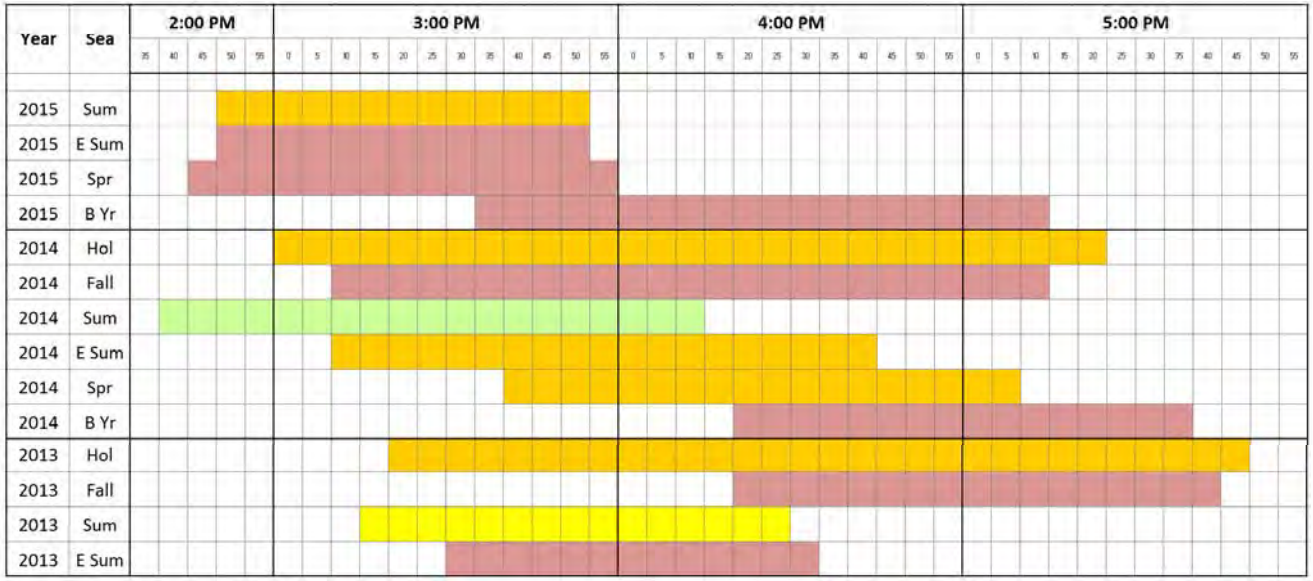


I-515 NB

Congestion Duration tables cont.(PM congestion)

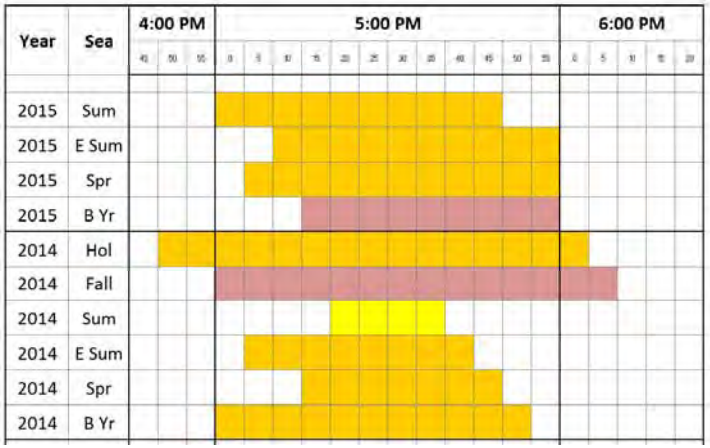


215 Beltway WB

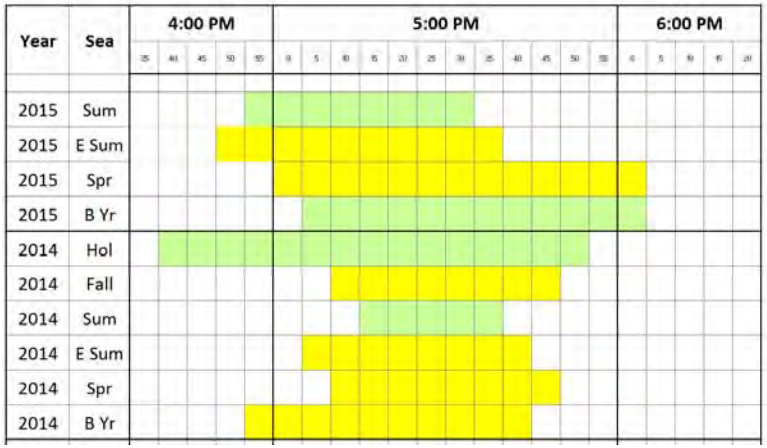


US 95 SB to I-15 SB

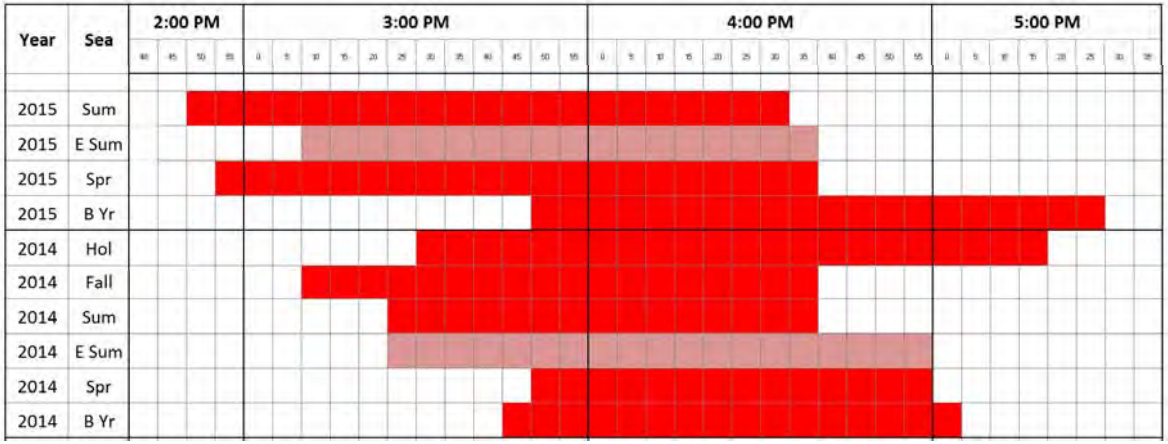
Congestion Duration tables cont. (PM congestion)



I-15 SB to 215 at Eastern

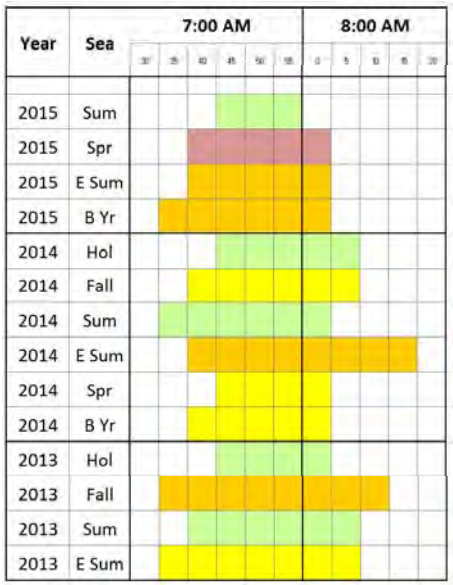


215 EB to I-515



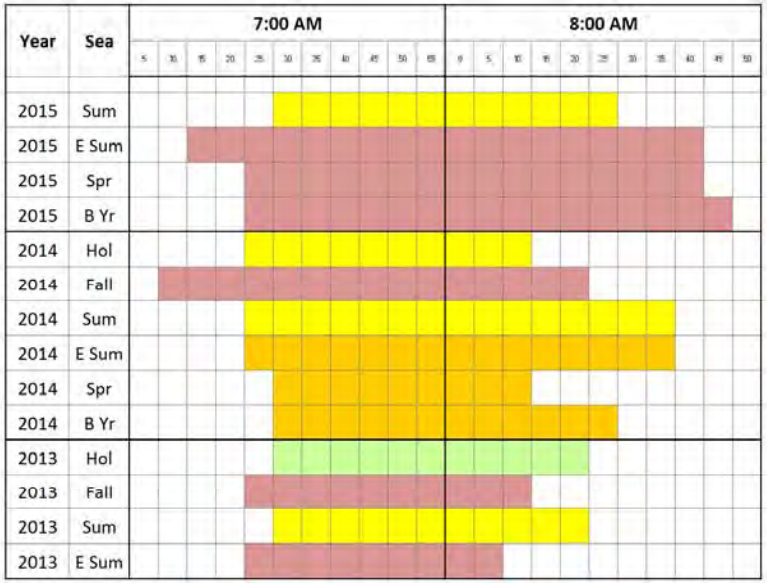
I-15 SB to 215 Beltway

Congestion Duration tables (AM congestion)

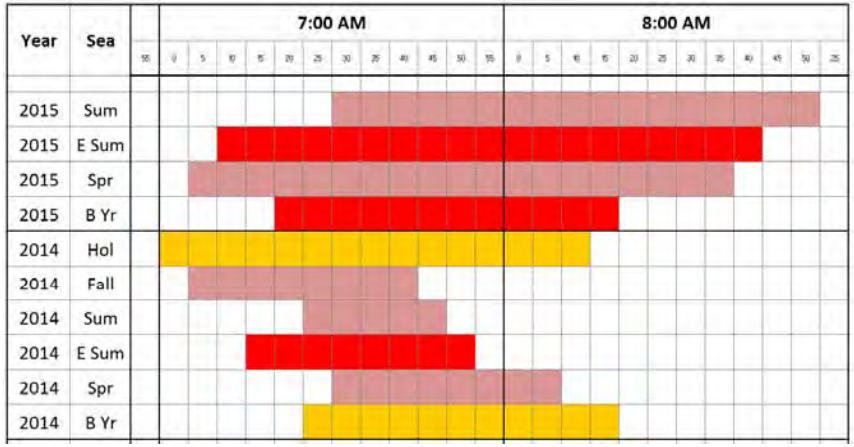


I-515 NB

215 Beltway WB
(between 515 & Eastern)

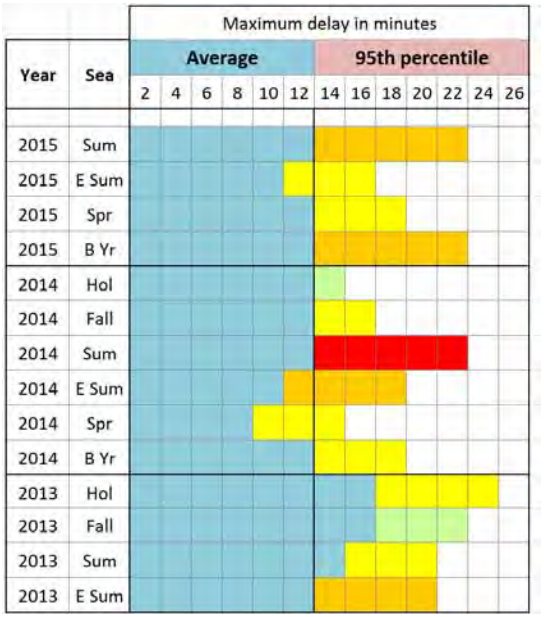


US 95 SB to I-15 SB

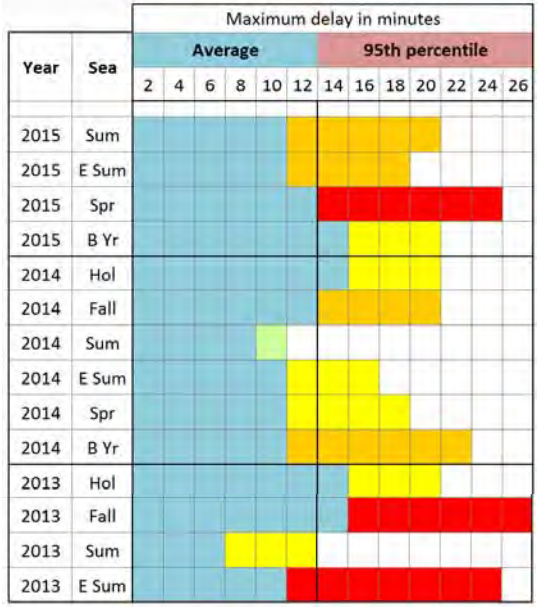


I-15 SB to 215 Beltway

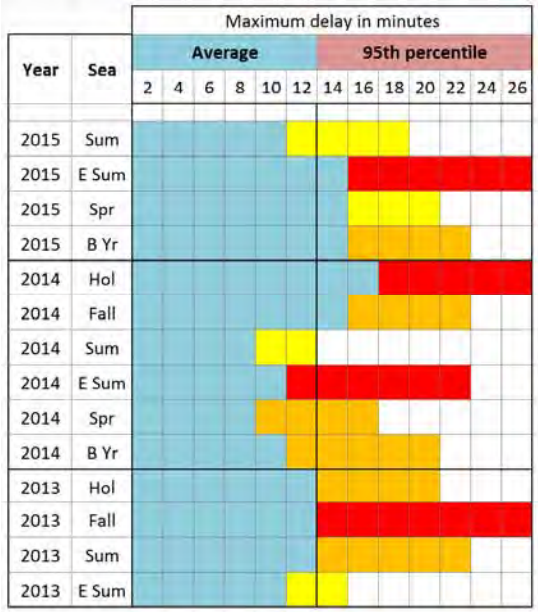
Maximum Congestion Delay per event (PM Average and 95th Percentile)



I-15 NB

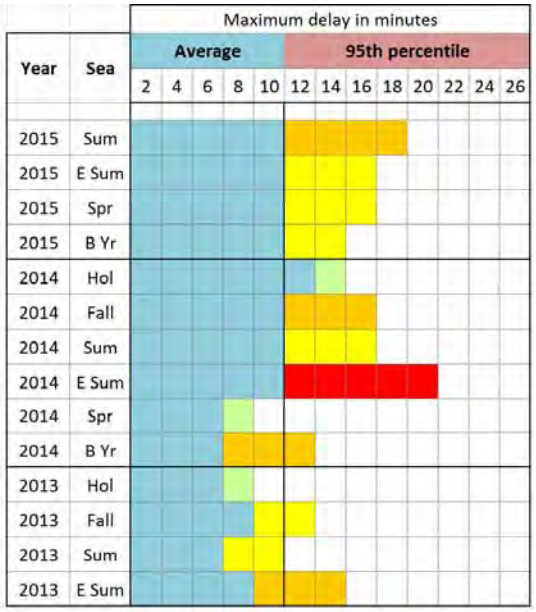


I-515 NB

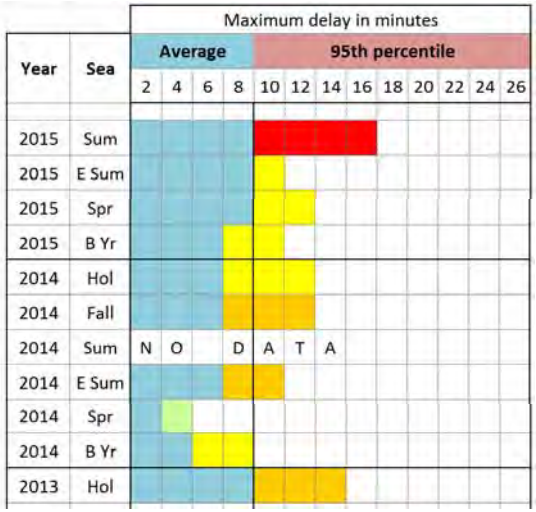


215 Beltway WB

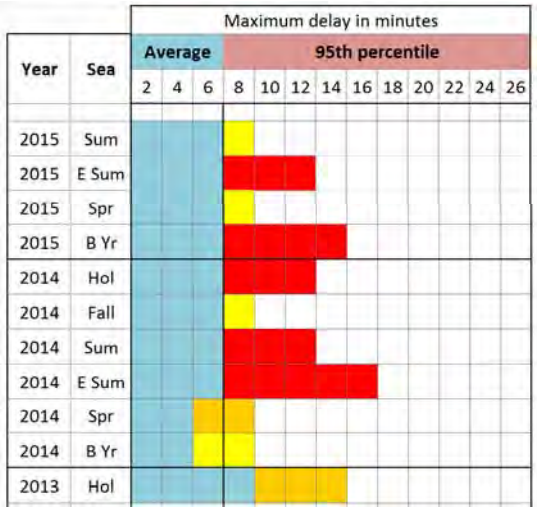
Maximum Congestion Delay per event cont. (PM Average and 95th Percentile)



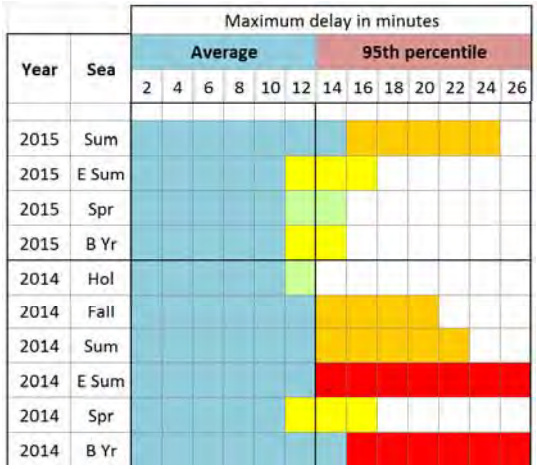
US 95 SB to I-15 SB



I-15 SB to 215 at Eastern

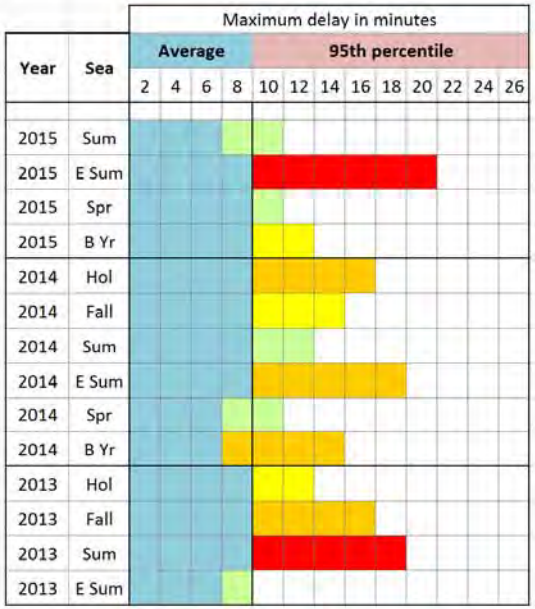


215 EB to I-515



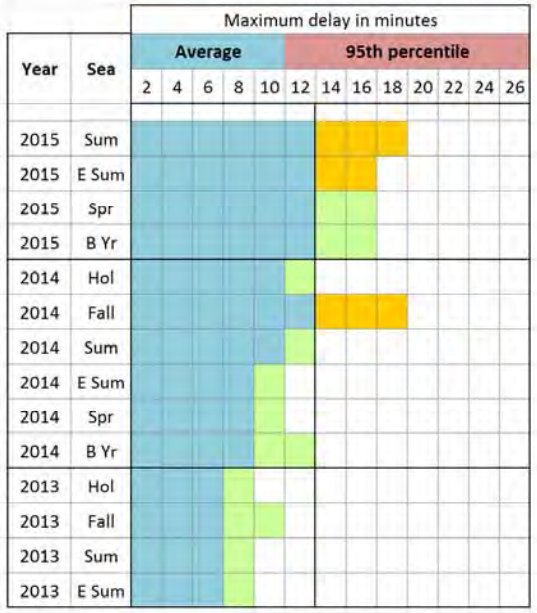
I-15 SB to 215 Beltway

Maximum Congestion Delay per event (AM Average and 95th Percentile)

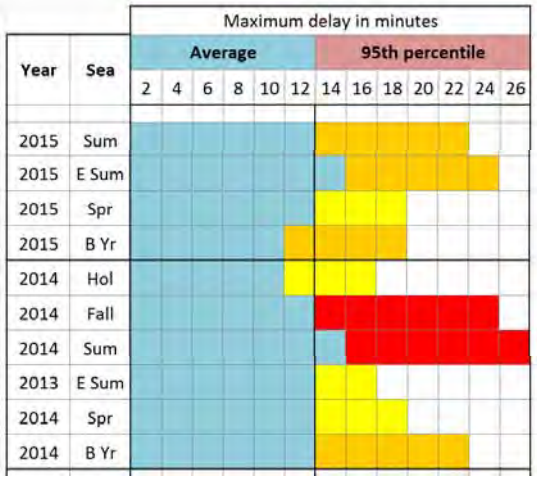


I-515 NB

215 Beltway WB

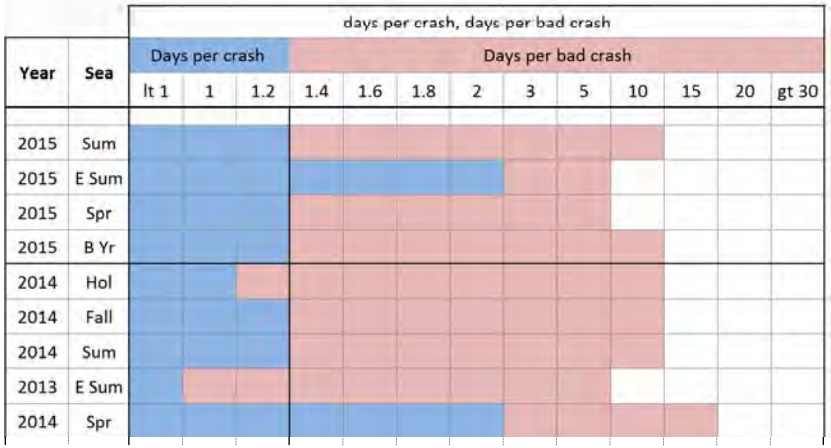


US 95 SB to I-15 SB



I-15 SB to 215 Beltway

Days per crash



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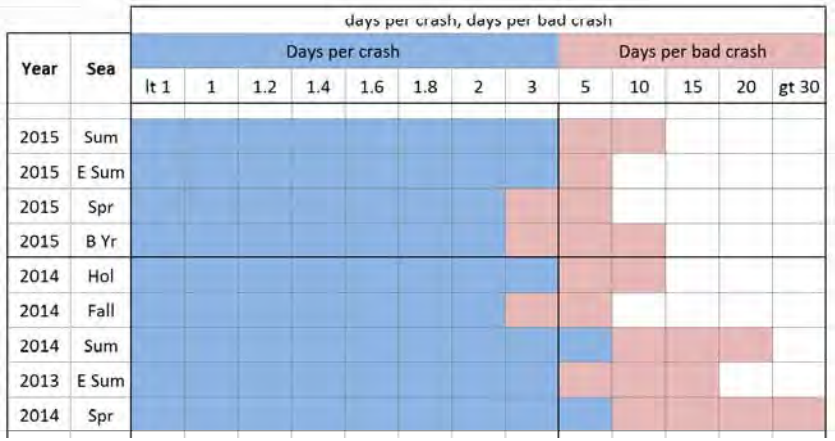

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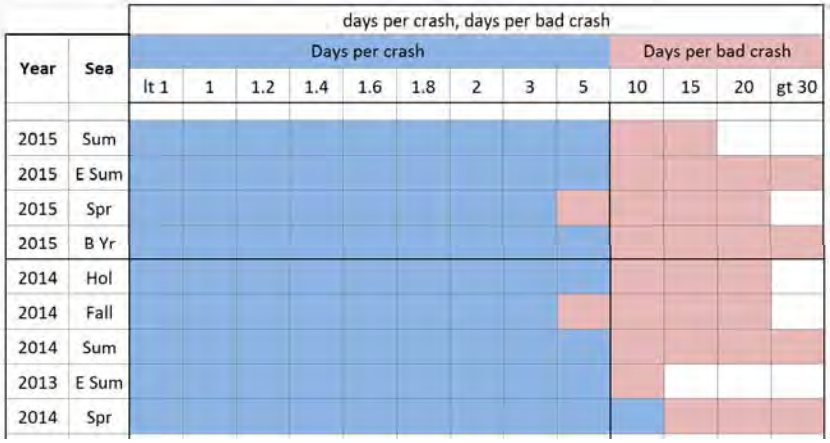
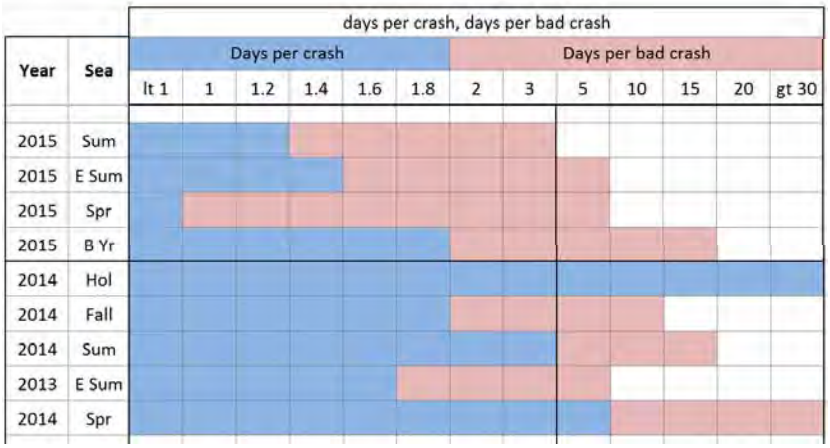
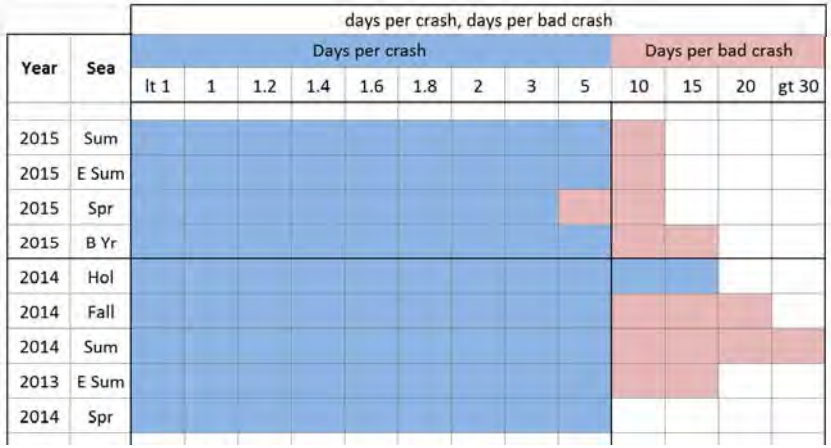


215 Beltway WB

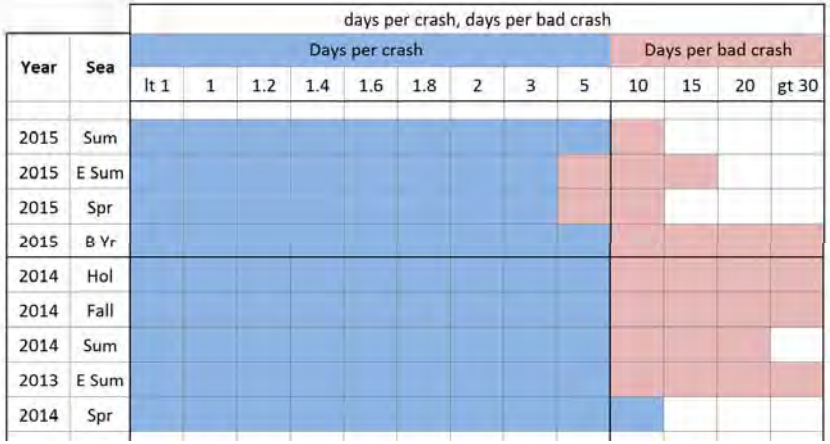


US 95 SB to I-15 SB

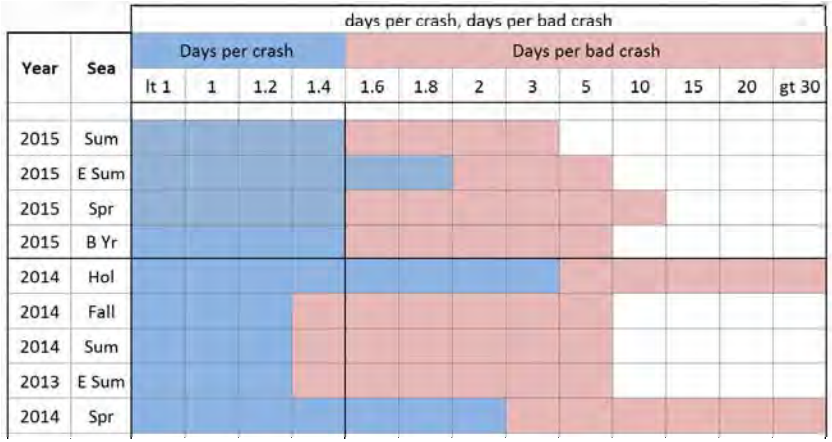
Days per crash cont.



I-15 SB to 215 at Eastern



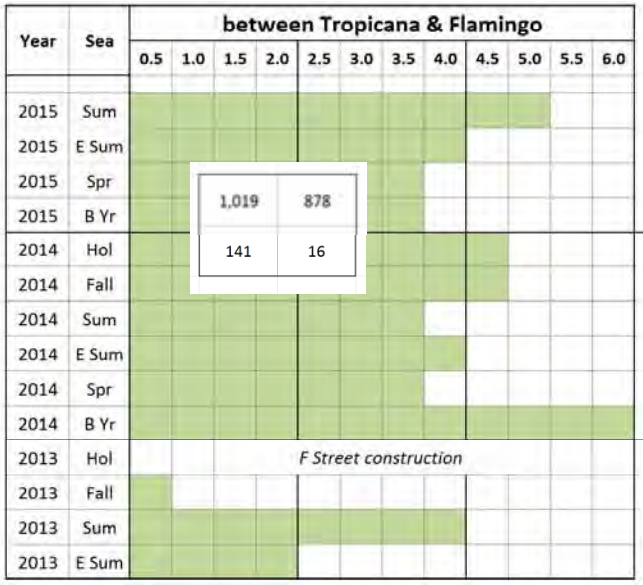
215 EB to I-515

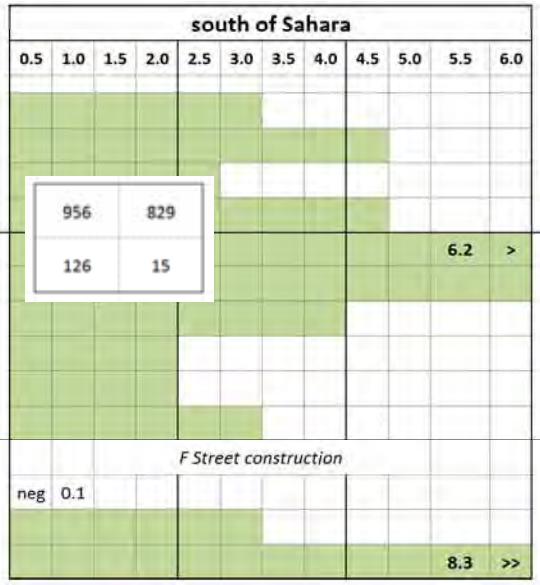


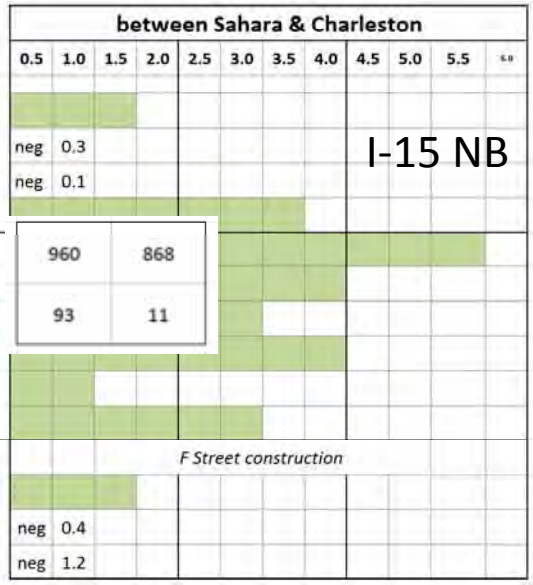
I-15 SB to 215 Beltway

Percent Change in Daily Average Volume

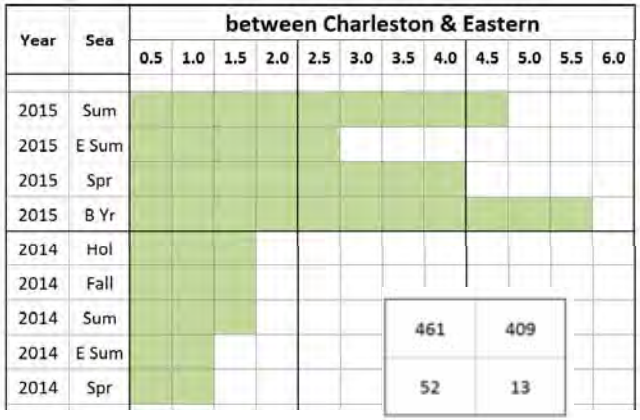
Compare season's value with previous year (e.g. Spr 15 vs Spr 14)

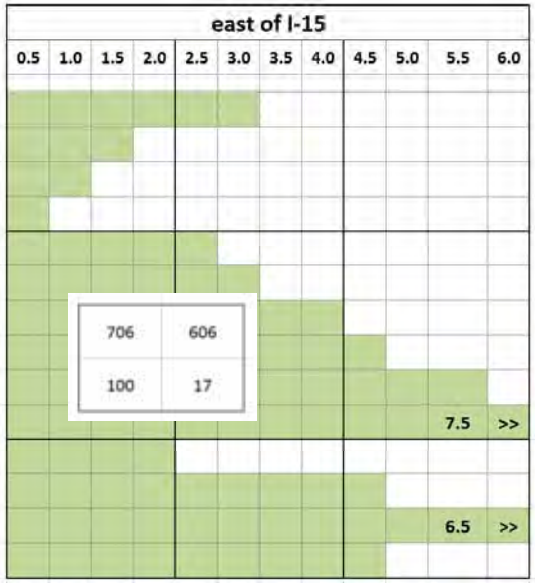






I-15 NB



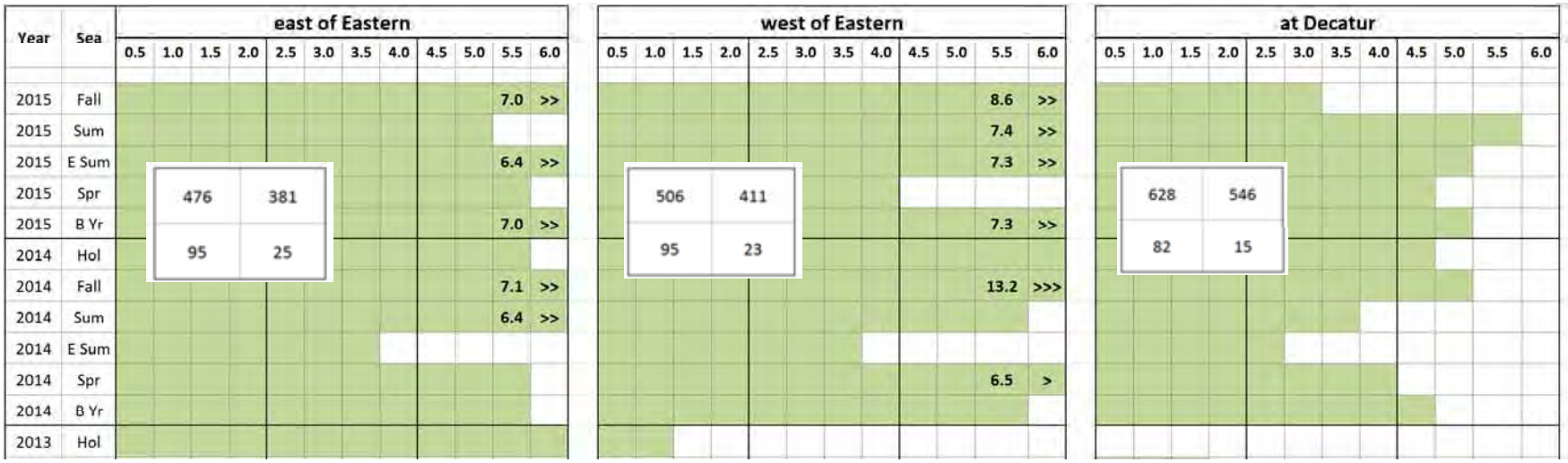


I-515 NB

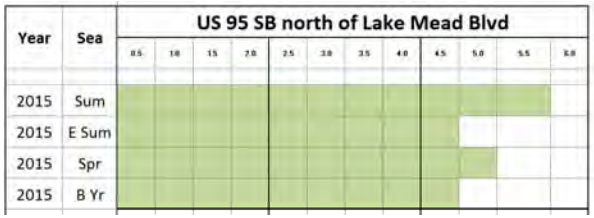
weekly high	weekly low
volume change	percent change

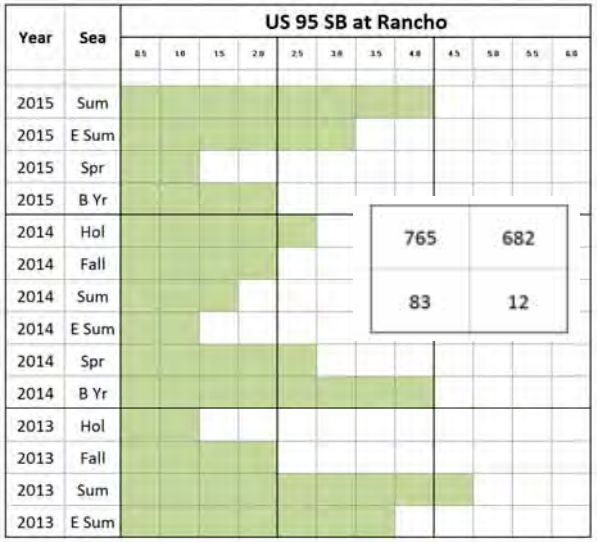
Volumes in 000s

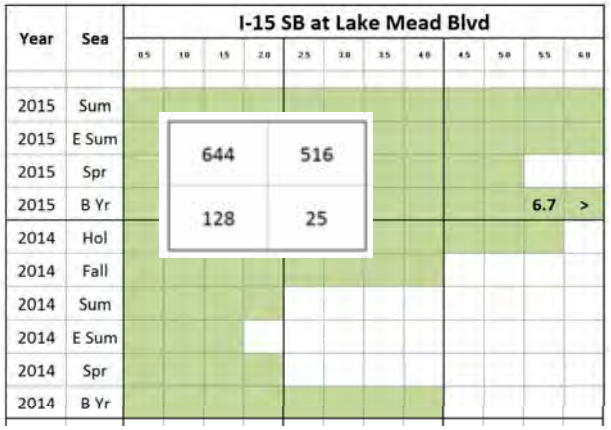
Percent Change in Daily Average Volume cont.



215 Beltway WB







US 95 SB to I-15 SB

weekly high	weekly low
volume change	percent change

Volumes in 000s

Percent Change in Daily Average Volume cont.

Year	Sea	between Durango & Buffalo											
		0.5	1.0	1.5	2.0	2.5	3.0	3.5	4.0	4.5	5.0	5.5	6.0
2015	Sum											7.5	>>
2015	E Sum											8.3	>>
2015	Spr											6.4	>
2015	B Yr											9.1	>>>
2014	Hol											7.2	>>
2014	Fall											7.9	>>
2014	Sum												
2014	E Sum												
2014	Spr											6.9	>
2014	B Yr												

467	395
72	18

I-15 SB to 215
at Eastern

between LV Blvd & Airport ramps													
0.5	1.0	1.5	2.0	2.5	3.0	3.5	4.0	4.5	5.0	5.5	6.0
										7.9	>>
										7.9	>>
										7.6	>>
na											
										13.4	>>>
										10.2	>>>
										9.2	>>>
										9.3	>>>
										13.7	>>>
na											

721	556
165	30

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
										8.1	>>
										7.3	>>
										7.2	>>
										13.6	>>>
										6.3	>
										7.2	>>
										6.9	>

496	390
106	27

Year	Sea	east 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
2015	Sum											7.8	>>
2015	E Sum											7.1	>>
2015	Spr											6.4	>
2015	B Yr											7.3	>>
2014	Hol											6.4	>
2014	Fall											8.4	>>
2014	Sum												
2014	E Sum												
2014	Spr												
2014	B Yr											6.2	>

471	394
78	20

between Pecos & Green Valley											
0.5	1.0	1.5	2.0	2.5	3.0	3.5	4.0	4.5	5.0	5.5	6.0
										8.1	>>
										6.1	>
										6.6	>

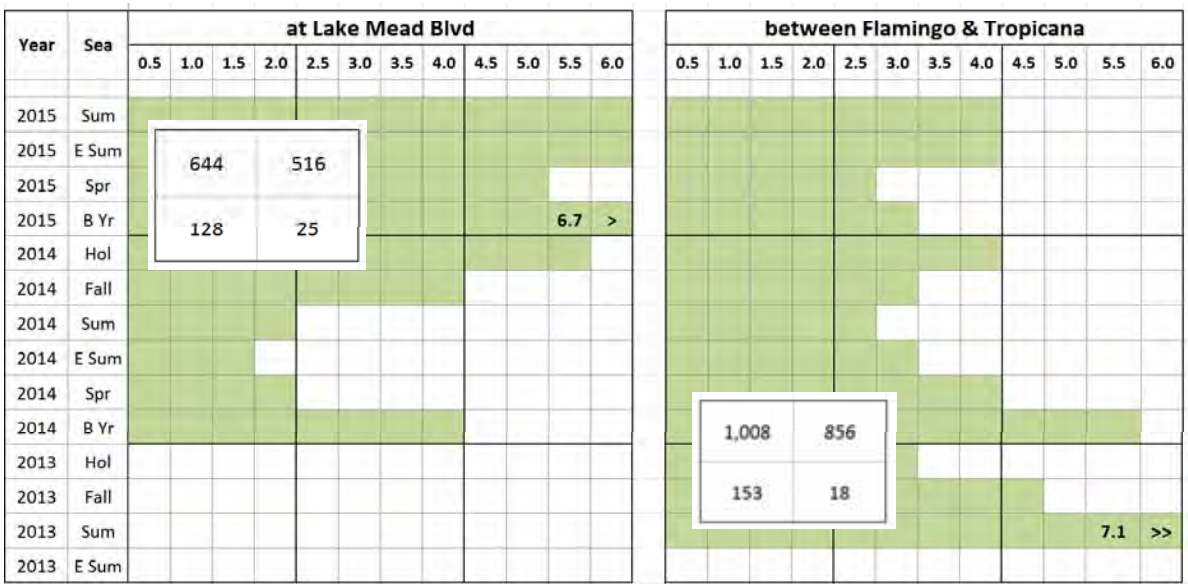
532	454
78	17

215 EB to I-515

weekly high	weekly low
volume change	percent change

Volumes in 000s

Percent Change in Daily Average Volume cont.



I-15 SB to 215 Beltway

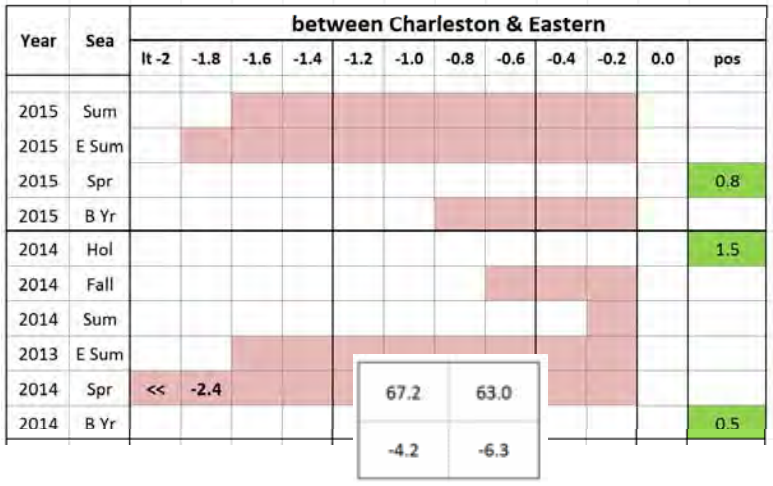
weekly high	weekly low
volume change	percent change

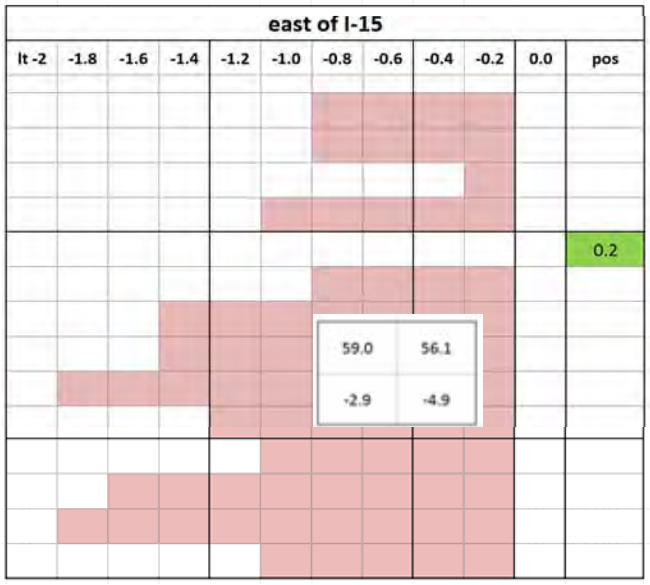
Volumes in 000s

Percent Change in Daily Average Speed

Compare season's value with previous year (e.g. Spr 15 with Spr 14)

I-15 NB

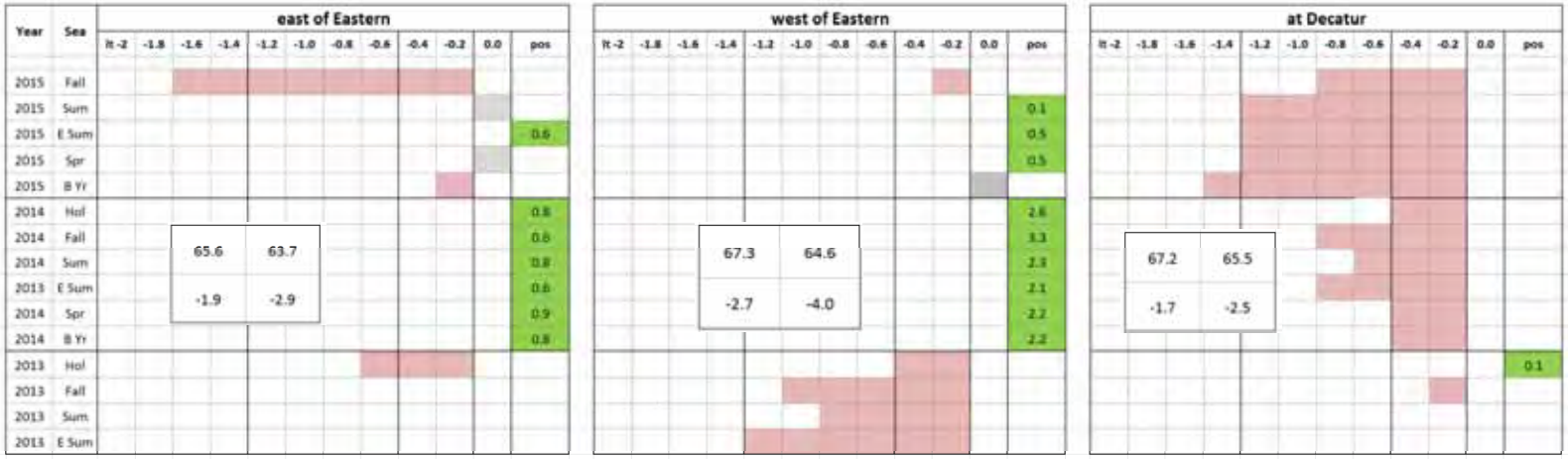




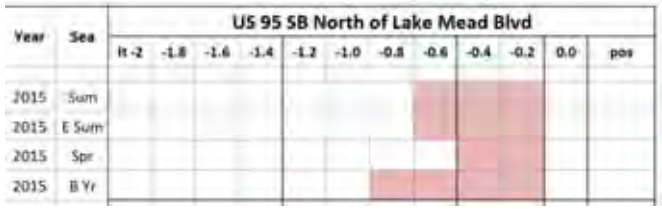
I-515 NB

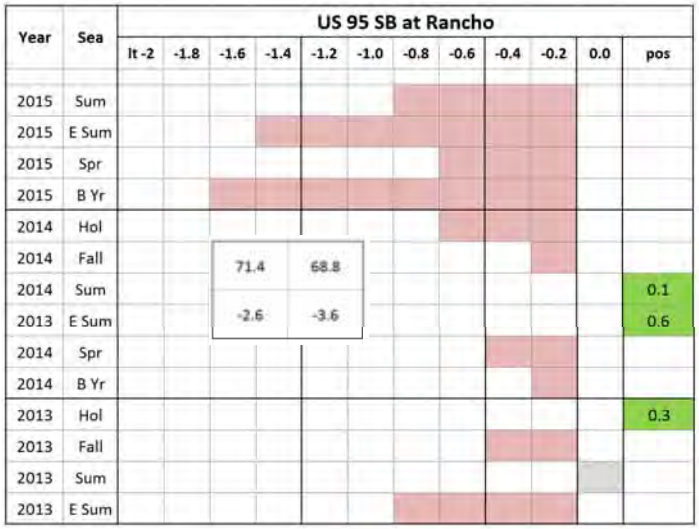
weekly high	weekly low
speed change	percent change

Percent Change in Daily Average Speed cont.

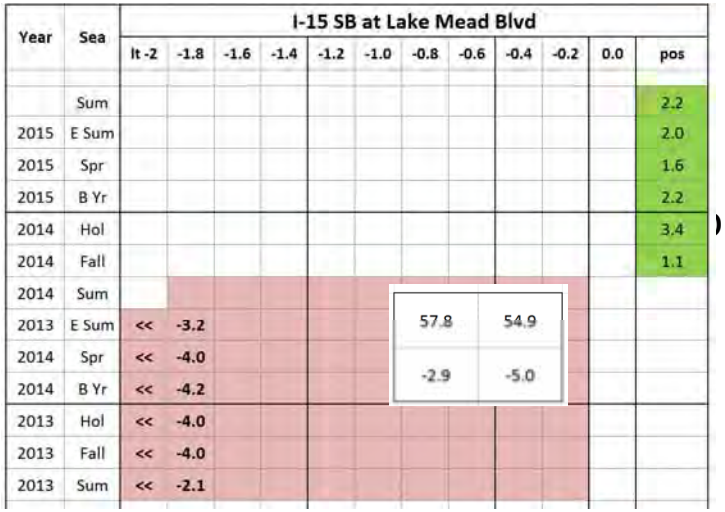


215 Beltway WB



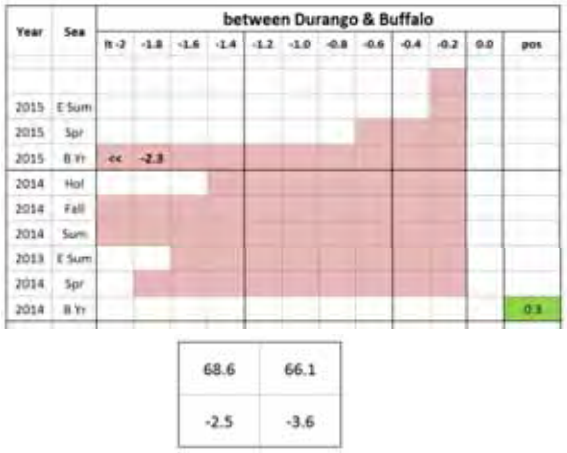


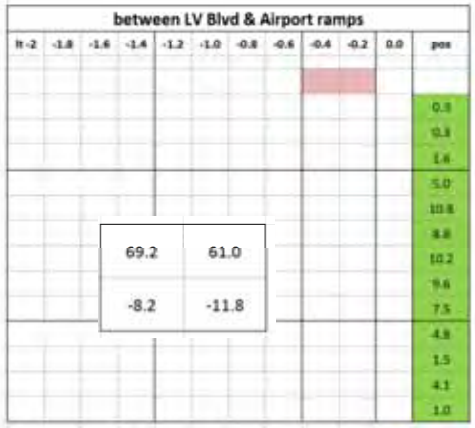
US 95 SB to I-15 SB

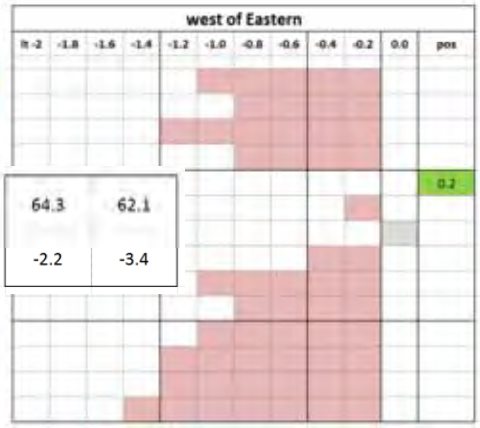


weekly high	weekly low
speed change	percent change

Percent Change in Daily Average Speed cont.

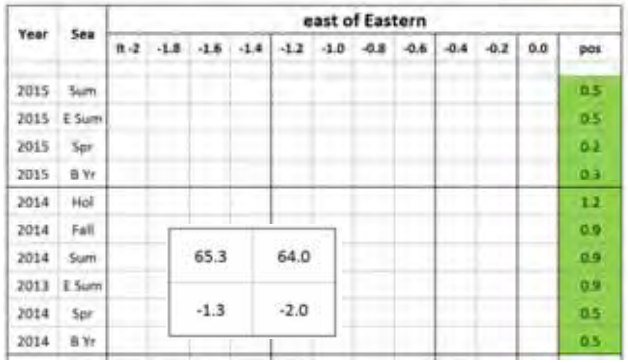


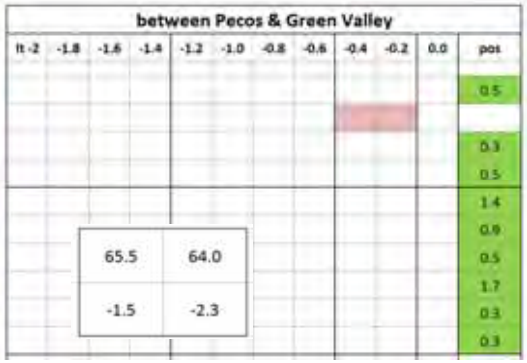


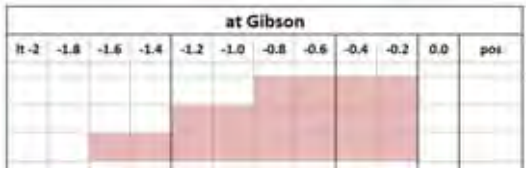


I-15 SB to 215 at Eastern

weekly high	weekly low
speed change	percent change







215 EB to I-515

Percent Change in Daily Average Speed cont.

Year	Sea	at Lake Mead Blvd											
		lt -2	-1.8	-1.6	-1.4	-1.2	-1.0	-0.8	-0.6	-0.4	-0.2	0.0	pos
2015	Sum												2.2
2015	E Sum			57.8		54.9							2.0
2015	Spr												1.6
2015	B Yr			-2.9		-5.0							2.2
2014	Hol												3.4
2014	Fall												1.1
2014	Sum												
2013	E Sum	<<	-3.2										
2014	Spr	<<	-4.0										
2014	B Yr	<<	-4.2										
2013	Hol	<<	-4.0										
2013	Fall	<<	-4.0										
2013	Sum	<<	-2.1										

between Flamingo & Tropicana											
lt -2	-1.8	-1.6	-1.4	-1.2	-1.0	-0.8	-0.6	-0.4	-0.2	0.0	pos
		57.9		55.1							0.7
		-2.8		-4.8							
											1.0
											0.2
											0.2
											0.2
											3.4

I-15 SB to 215 Beltway

weekly high	weekly low
speed change	percent change

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 we summarize thresholds identified in previous reports and identify whether they were met (green yes) or not (red no).
- Additional analysis will be available in future reports.

Threshold Summary

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	frequency color	Average	95th percentile	reliability color	crash	very bad crash
15 NB	pm	na	2.5 to 3 hours	red	12	20	yellow	1.2	10
515 NB	am	sch	30 to 45 mins	orange	8	14	light green	3	15
	am	summer	30 mins	light green	8	14	light green		
	pm	sch	lt 100 mins	maroon	12 to 14	20	yellow		
	pm	summer	lt 45 mins	yellow	8	12	yellow		
215 WB	am	sch	45 mins	orange	8	16	yellow	5	30
	am	summer	30 mins	yellow	8	14	yellow		
	pm	sch	lt 75 mins	maroon	14	20	orange		
	pm	summer	lt 60 mins	maroon	10	14	orange		
95 to 15 SB	am	sch	lt 70 mins	maroon	10 to 12	16	light green	2	20
	am	summer	lt 70 mins	yellow	10	12	light green		
	pm	sch	lt 135 mins	maroon	10	14	yellow		
	pm	summer	lt 100 mins	orange	8	12	yellow		
15 SB	am	sch	lt 60 mins	red	10	16	yellow	1.5	8
	am	summer	lt 45 mins	maroon	10	14	yellow		
	pm	sch	lt 75 mins	red	12	16	yellow		
	pm	summer	lt 75 mins	red	12	16	yellow		
215 EB to Eastern	pm	sch	lt 60 mins	orange	6	10	yellow	8	30
	pm	summer	lt 30 mins	orange	4	8	yellow		
215 EB to 515	pm	sch	lt 30 mins	yellow	6	10	light green	8	30
	pm	summer	lt 30 mins	light green	4	8	light green		

Threshold Attainment

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	Sum 15	yes	yes	yes	no	no	yes	yes
			E Sum 15	yes	yes	yes	yes	yes	yes	no
			Spr 15	yes	yes	yes	yes	yes	yes	no
515 NB	am	summer	Sum 15	yes	yes	yes	yes	yes	yes	no
		sch	E Sum 15	yes	no	yes	no	no	yes	no
			Spr 15	yes	yes	yes	yes	yes	no	no
	pm	summer	Sum 15	no	yes	no	no	no	yes	no
		sch	E Sum 15	yes	yes	yes	yes	no	yes	no
			Spr 15	no	yes	yes	yes	no	no	no
215 WB	am	summer	Sum 15	no	yes	yes	yes	yes	yes	no
		sch	E Sum 15	yes	yes	yes	yes	yes	yes	no
			Spr 15	yes	yes	no	no	no	no	yes
	pm	summer	Sum 15	no	yes	yes	no	yes	yes	no
		sch	E Sum 15	no	no	yes	no	no	yes	no
			Spr 15	no	yes	yes	yes	yes	no	yes
95 to 15 SB	am	summer	Sum 15	yes	yes	no	no	no	no	no
		sch	E Sum 15	no	yes	yes	yes	no	no	no
			Spr 15	no	yes	yes	yes	yes	no	no
	pm	summer	Sum 15	yes	yes	no	no	no	no	no
		sch	E Sum 15	yes	yes	yes	no	yes	no	no
			Spr 15	yes	yes	yes	no	yes	no	no

Threshold Attainment
(cont)

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	summer	Sum 15	no	yes	no	no	no	yes	yes
		sch	E Sum 15	no	no	no	no	no	yes	yes
			Spr 15	no	yes	no	no	yes	yes	yes
	pm	summer	Sum 15	no	yes	no	no	no	yes	yes
		sch	E Sum 15	no	yes	yes	yes	yes	yes	yes
			Spr 15	no	yes	yes	yes	yes	yes	yes
215 EB to Eastern	pm	summer	Sum 15	no	yes	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	summer	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	no	no	no

Comments on Threshold results

- Thresholds were developed based on historical performance between mid 2013 and March 2015. Subsequent performance is compared against these values to establish initial performance trends.
- Performance in Spring, Early Summer and Summer 2015 seasons has been compared to the thresholds.
- If performance has less delay or lower crash frequency, the threshold is met and receives a yes.
- More analysis will occur in future reports.

Buffer Index
(most unreliable and unreliable tiers)

order	yr	rec score	buffer index	Corridor	period	season
1	14	2 some congestion	74	215 EB to 515	pm	4-ear sum
2	14	4 Weekday strong	70	15 SB to 215	am	3-sum
3	15	1 infrequent	66	215 EB to 515	pm	6-beg yr
4	14	4 Weekday strong	65	15 SB to 215	pm	4-ear sum
5	14	5 institutionalized	59	15 SB to 215	pm	6-beg yr
6	13	1 infrequent	59	515 / 95 NB to 15	am	3-sum
7	14	3 Weekday regular	58	95 SB to 15 SB	pm	4-ear sum
8	13	3 Weekday regular	58	515 / 95 NB to 15	pm	4-ear sum
9	15	4 Weekday strong	58	515 / 95 NB to 15	am	4-ear sum
10	13	4 Weekday strong	57	215 WB to SW	pm	2-fall
11	14	4 Weekday strong	55	215 WB to SW	pm	4-ear sum
12	14	1 infrequent	54	215 EB to 515	pm	3-sum
14	14	4 Weekday strong	53	15 SB to 215	am	2-fall
15	14	1 infrequent	52	215 EB to 515	pm	1-hol
16	14	5 institutionalized	52	15 NB to Char	pm	3-sum
17	15	5 institutionalized	51	215 WB to SW	pm	4-ear sum
18	15	2 some congestion	51	215 EB to 515	pm	4-ear sum
19	15	3 Weekday regular	50	215 EB to Eastern	pm	3-sum
20	15	4 Weekday strong	50	515 / 95 NB to 15	pm	5-spr
21	14	3 Weekday regular	50	215 WB to SW	pm	1-hol
22	13	4 Weekday strong	50	515 / 95 NB to 15	pm	2-fall

The Buffer Index (BI), expressed as a percent, is the extra time added to a trip to reasonably assure an on-time arrival.

Higher BIs mean the corridor is less reliable.

order	yr	rec score	buffer index	Corridor	period	season
23	15	4 Weekday strong	49	15 SB to 215	am	3-sum
24	14	3 Weekday regular	47	15 SB to 215	am	6-beg yr
25	15	5 institutionalized	46	15 SB to 215	pm	3-sum
26	14	5 institutionalized	46	15 SB to 215	pm	3-sum
27	14	4 Weekday strong	45	515 / 95 NB to 15	pm	6-beg yr
28	14	5 institutionalized	45	215 WB to SW	pm	6-beg yr
29	13	3 Weekday regular	44	215 WB to SW	pm	1-hol
30	14	2 some congestion	43	215 EB to 515	pm	5-spr
31	13	4 Weekday strong	43	215 WB to SW	pm	3-sum
32	15	5 institutionalized	42	15 NB to Char	pm	6-beg yr
33	13	1 infrequent	42	215 EB to 515	pm	1-hol
34	13	5 institutionalized	42	15 NB to Char	pm	4-ear sum
35	14	3 Weekday regular	42	515 / 95 NB to 15	am	4-ear sum
36	15	2 some congestion	41	515 / 95 NB to 15	pm	3-sum
37	13	3 Weekday regular	41	515 / 95 NB to 15	am	2-fall
38	15	3 Weekday regular	40	95 SB to 15 SB	pm	3-sum
39	15	5 institutionalized	40	15 NB to Char	pm	3-sum
40	14	1 infrequent	39	515 / 95 NB to 15	am	1-hol
41	14	4 Weekday strong	38	215 EB to Eastern	pm	2-fall
42	14	4 Weekday strong	38	95 SB to 15 SB	pm	6-beg yr
43	13	4 Weekday strong	38	95 SB to 15 SB	pm	4-ear sum
44	15	5 institutionalized	38	15 SB to 215	am	4-ear sum
45	15	5 institutionalized	38	15 SB to 215	am	6-beg yr
46	14	4 Weekday strong	37	95 SB to 15 SB	pm	2-fall
47	14	4 Weekday strong	37	515 / 95 NB to 15	pm	2-fall
48	14	5 institutionalized	37	15 NB to Char	pm	4-ear sum
49	15	3 Weekday regular	36	215 WB to Eastern	am	5-spr
50	14	2 some congestion	36	515 / 95 NB to 15	am	6-beg yr
51	14	5 institutionalized	35	15 SB to 215	pm	2-fall
52	14	4 Weekday strong	35	215 WB to SW	pm	5-spr
53	14	4 Weekday strong	34	215 WB to SW	pm	2-fall
54	15	4 Weekday strong	33	515 / 95 NB to 15	pm	4-ear sum
55	15	5 institutionalized	33	215 WB to SW	pm	6-beg yr
56	14	3 Weekday regular	33	215 EB to Eastern	pm	4-ear sum
57	13	1 infrequent	33	215 EB to Eastern	pm	1-hol

Buffer Index
(reliable and most reliable tiers)

order	yr	rec score	buffer index	Corridor	period	season
58	15	4 Weekday strong	32	215 WB to SW	pm	3-sum
59	15	1 infrequent	32	215 EB to 515	pm	3-sum
60	15	4 Weekday strong	32	95 SB to 15 SB	pm	4-ear sum
61	14	4 Weekday strong	32	515 / 95 NB to 15	pm	4-ear sum
62	13	1 infrequent	32	515 / 95 NB to 15	pm	3-sum
63	15	2 some congestion	32	95 SB to 15 SB	am	3-sum
64	15	3 Weekday regular	32	215 WB to Eastern	am	6-beg yr
65	14	3 Weekday regular	32	15 SB to 215	am	1-hol
66	15	4 Weekday strong	31	95 SB to 15 SB	pm	5-spr
67	15	4 Weekday strong	31	515 / 95 NB to 15	pm	6-beg yr
68	14	4 Weekday strong	31	515 / 95 NB to 15	pm	5-spr
69	14	5 institutionalized	31	15 NB to Char	pm	6-beg yr
70	14	2 some congestion	31	515 / 95 NB to 15	am	2-fall
71	13	4 Weekday strong	30	215 WB to SW	pm	4-ear sum
72	15	4 Weekday strong	29	15 SB to 215	pm	4-ear sum
73	15	3 Weekday regular	29	215 EB to Eastern	pm	5-spr
74	14	3 Weekday regular	29	215 EB to Eastern	pm	1-hol
75	15	4 Weekday strong	28	95 SB to 15 SB	pm	6-beg yr
76	14	4 Weekday strong	28	515 / 95 NB to 15	pm	1-hol
77	14	3 Weekday regular	28	215 EB to Eastern	pm	6-beg yr
78	14	4 Weekday strong	28	95 SB to 15 SB	am	2-fall
79	14	4 Weekday strong	28	15 SB to 215	am	5-spr
80	14	2 some congestion	27	215 EB to 515	pm	2-fall
81	15	4 Weekday strong	26	215 WB to SW	pm	5-spr
82	15	5 institutionalized	26	15 SB to 215	pm	6-beg yr
83	14	5 institutionalized	26	15 NB to Char	pm	5-spr
84	14	5 institutionalized	26	15 SB to 215	am	4-ear sum
85	15	5 institutionalized	25	15 NB to Char	pm	4-ear sum
86	14	1 infrequent	25	95 SB to 15 SB	pm	3-sum
87	14	4 Weekday strong	25	215 WB to SW	pm	3-sum
88	13	4 Weekday strong	25	15 NB to Char	pm	1-hol
89	13	4 Weekday strong	25	95 SB to 15 SB	pm	2-fall
90	13	2 some congestion	25	95 SB to 15 SB	pm	3-sum
91	15	5 institutionalized	24	15 NB to Char	pm	5-spr
92	14	5 institutionalized	24	15 NB to Char	pm	2-fall
93	14	5 institutionalized	23	15 SB to 215	pm	5-spr
94	15	3 Weekday regular	23	215 WB to Eastern	am	4-ear sum
95	13	1 infrequent	23	515 / 95 NB to 15	am	1-hol
96	15	2 some congestion	22	215 EB to 515	pm	5-spr
97	15	4 Weekday strong	22	215 EB to Eastern	pm	6-beg yr
98	13	5 institutionalized	22	15 NB to Char	pm	3-sum
99	15	4 Weekday strong	22	15 SB to 215	am	5-spr
100	15	3 Weekday regular	22	515 / 95 NB to 15	am	6-beg yr
101	15	3 Weekday regular	21	215 EB to Eastern	pm	4-ear sum
102	15	2 some congestion	20	95 nb to Rainbow	pm	3-sum
103	15	1 infrequent	20	215 WB to Eastern	am	3-sum
104	15	4 Weekday strong	20	95 SB to 15 SB	am	4-ear sum

order	yr	rec score	buffer index	Corridor	period	season
105	15	4 Weekday strong	19	95 SB to 15 SB	am	5-spr
106	14	1 infrequent	19	515 / 95 NB to 15	am	3-sum
107	14	3 Weekday regular	19	95 SB to 15 SB	am	6-beg yr
108	14	1 infrequent	18	515 / 95 NB to 15	pm	3-sum
109	13	5 institutionalized	18	15 NB to Char	pm	2-fall
110	15	4 Weekday strong	18	95 SB to 15 SB	am	6-beg yr
111	14	2 some congestion	18	95 SB to 15 SB	am	1-hol
112	13	1 infrequent	18	95 SB to 15 SB	am	1-hol
113	13	4 Weekday strong	18	95 SB to 15 SB	am	2-fall
114	13	2 some congestion	18	515 / 95 NB to 15	am	4-ear sum
115	14	3 Weekday regular	17	215 EB to Eastern	pm	5-spr
116	15	1 infrequent	17	515 / 95 NB to 15	am	3-sum
117	15	4 Weekday strong	16	95 nb to Rainbow	pm	6-beg yr
118	14	3 Weekday regular	16	95 SB to 15 SB	am	5-spr
119	15	3 Weekday regular	15	95 nb to Rainbow	pm	5-spr
120	15	5 institutionalized	15	15 SB to 215	pm	5-spr
121	14	3 Weekday regular	15	95 SB to 15 SB	pm	1-hol
122	14	2 some congestion	15	515 / 95 NB to 15	am	5-spr
123	14	3 Weekday regular	14	95 SB to 15 SB	am	4-ear sum
124	15	4 Weekday strong	13	95 nb to Rainbow	pm	4-ear sum
125	14	5 institutionalized	13	15 SB to 215	pm	1-hol
126	13	3 Weekday regular	12	95 SB to 15 SB	pm	1-hol
127	14	2 some congestion	12	95 SB to 15 SB	am	3-sum
128	13	4 Weekday strong	11	95 SB to 15 SB	am	4-ear sum
129	14	5 institutionalized	10	15 NB to Char	pm	1-hol
130	15	3 Weekday regular	10	515 / 95 NB to 15	am	5-spr
131	13	2 some congestion	10	95 SB to 15 SB	am	3-sum
132	14	3 Weekday regular	6	95 SB to 15 SB	pm	5-spr

The next report … & beyond

… will highlight the fall and holiday seasons.

The 2015 fall season, based on anecdotal observation, has featured the highest volumes and delays we have seen since we began tracking the data at this level.

Seasons: Based on review of several years of traffic volumes and patterns from ITS data, FAST arranges performance analysis as shown below. There are six seasons per year; details on the most recent seasons are shown.

Season	Description	Most recent season dates		Days	Comment
		Begin	End		
Summer 15	Final weekend of CCSD high school graduations through Sunday before the new school year begins	Saturday, 06.06.15	Sunday, 08.23.15	79	Recurring congestion and traffic volumes on the urbanized Las Vegas freeways are slightly reduced during the summer. There is an increase in travel between Las Vegas & California and towards Boulder City and Arizona.
Early Summer 15	A Monday in mid-April through the last weekend of CCSD school activity and graduation ceremonies	Monday, 04.20.15	Friday, 06.05.15	47	Patterns and volumes are typically similar to Fall and Beginning of Year.
Spring 15	A Saturday in mid-March through a Sunday in mid-April	Saturday, 03.14.15	Sunday, 04.19.15	37	Due to Spring Break, nice weather, Easter, March Madness, conventions, and other events and activities, there is a noticeable increase in traffic volumes between mid-March and Mid-April. For the urbanized freeway corridors, the highest daily average traffic volumes of the year typically occur during this season; they are noticeably higher than the adjacent Beginning of Year and Early Summer seasons and, therefore, earn their own season. Most Sundays experience high volumes and long delays between Las Vegas and Southern California.
Beginning of year 15	First day of CCSD school following holiday break through a Friday in mid-March	Monday, 01.05.15	Friday, 03.13.15	68	Traffic volumes and patterns pick up following holiday break and resemble Fall patterns.
Holiday 14	Monday before Thanksgiving to day before CCSD school begins	Monday, 11.24.14	Sunday, 01.04.15	42	Although school is still in session during part of this season, traffic volumes and patterns begin to transition out of the fall travel mode. The three lowest volume travel days of the year occur during this season: Thanksgiving, Christmas, and New Year's Day. Traffic volumes to and from California are very high on several days during this season.
Fall 14	First day of CCSD school following summer vacation to Sunday before Thanksgiving	Monday, 08.25.14	Sunday, 11.23.14	91	By mid-September traffic volumes and patterns typically are built up to represent what will occur until the holidays. There is a distinct change from patterns and volumes experienced during the Summer season.