



Accelerating solutions for highway safety, renewal, reliability, and capacity

Traveler Information

& Summary of Our Regional Approach

& How it Allows Operations to Span Spatial, Institutional, &
Disciplinary Boundaries

Freeway & Arterial System of
Transportation, Las Vegas

Caltrans District 12, August 5, 2015

TRANSPORTATION RESEARCH BOARD
OF THE NATIONAL ACADEMIES

or

**Hitting the Jackpot
with Las Vegas
Traffic**





RAINBOW
I5/CPAIG
I5/FLAMINGO

7
7
7

Performance Measures for Traffic Incident Management

2012 3:17:59 PM







NOTICE AND A PUBLIC MEETING Las Vegas NV 89118

FB-Mailbox

FREEWAY AND ARTERIAL SYSTEM OF TRANSPORTATION - OPERATIONS MANAGEMENT COMMITTEE

9:30 A.M. NOVEMBER 1, 2012

**TRAFFIC MANAGEMENT CENTER
4615 WEST SUNSET ROAD, ROOM A105
LAS VEGAS, NV 89118
(702) 432-5300**



How did we get here?!?

Money Trail?





104 I-15/I-215

126 215/S DECATUR WEST

203 95/RANCHO WEST

209 95/TORREY EAST

30 BOLDFIELD US-95

166 I-15/HACIENDA NORTH

108 I-15/FLAMINGO NORTH

109 I-15/SPRING TOWN SOUTH

118 I-15/I-515 WEST

217 SAHARA EUBLUD

207 BONAVENTURE EAST

201 95/FLX W

218 95/CLAYTON SOUTH



Transit Authority



Transit

Traffic Management Systems



FAST

Transportation Planning Agency



MPO



PROJECT FUNDED BY THE
AMERICAN RECOVERY
AND
REINVESTMENT ACT



USDOT
TIGER

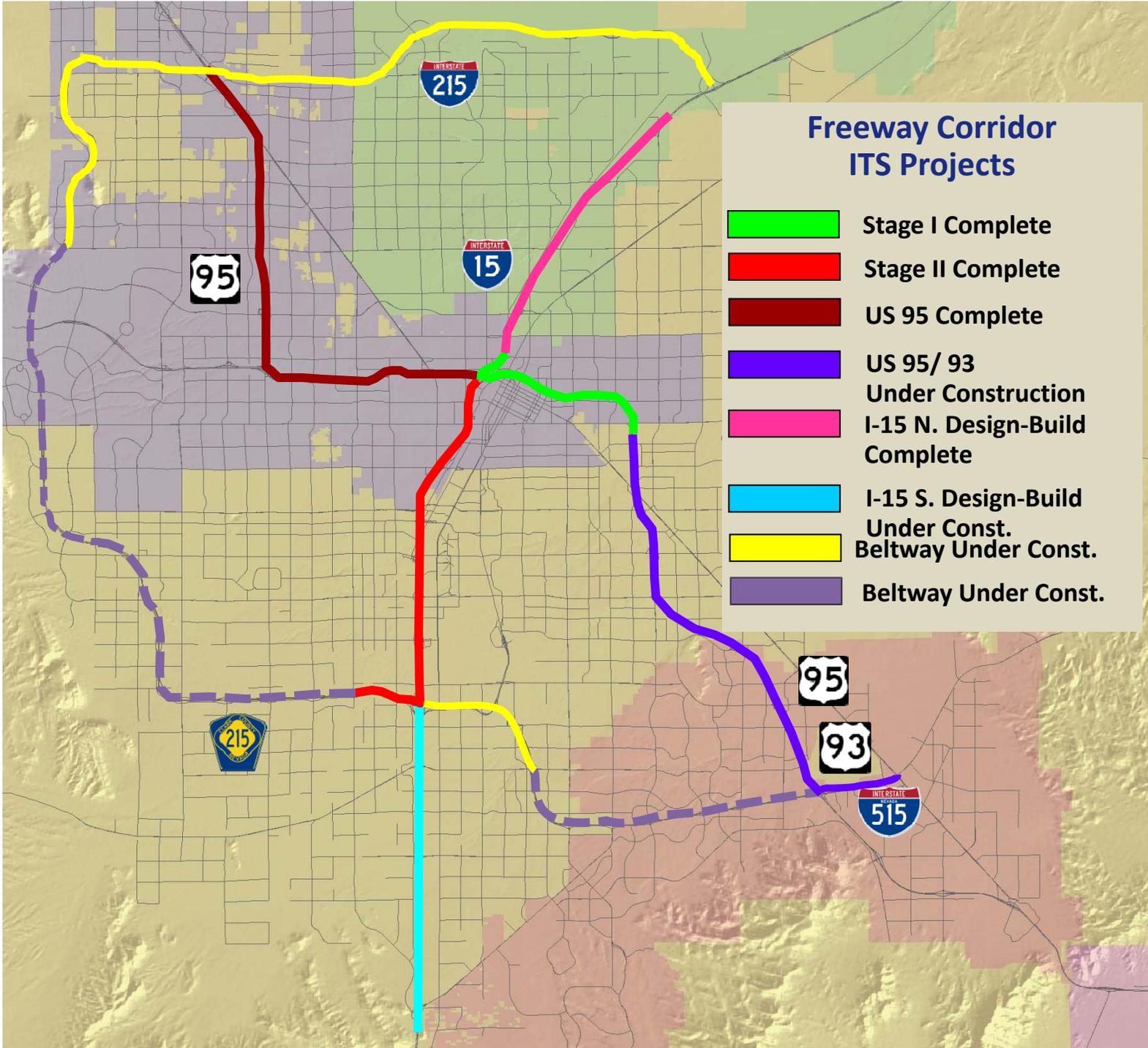
ITS in Nevada

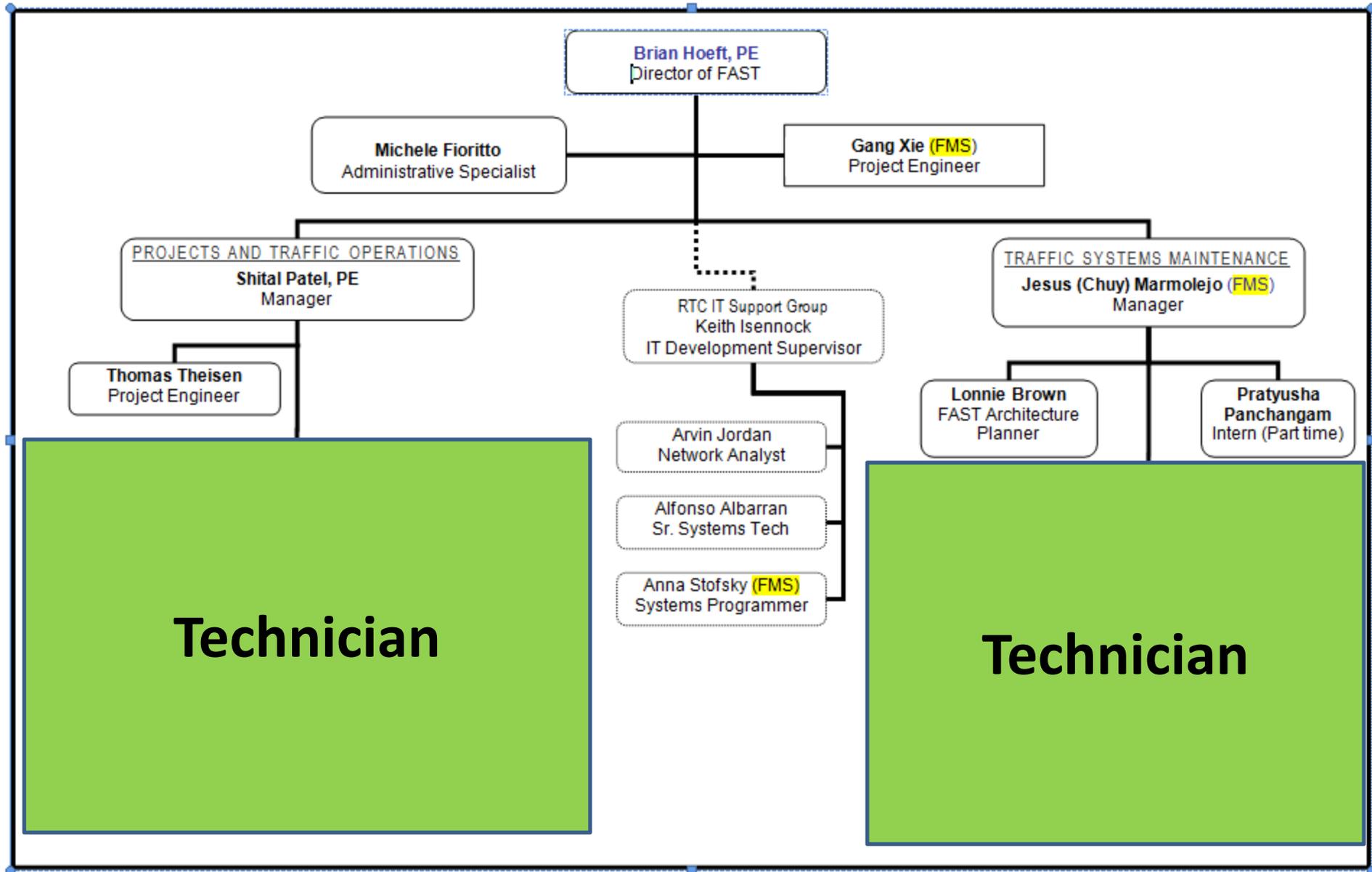
A 5 year master plan
The greater Las Vegas area

What has been accomplished

- FAST TMC
- FAST Pilot Corridor Phase 1
- FAST Pilot Corridor Phase 2
- US-95 ITS (NDOT 3326)
- I-15 North Design Build
- I-15 South Design Build









Travel Time

INTERSTATE
215

Flamingo

INTERSTATE
515 **95** **93**

6
10
15

MUST-SEE MOBILE DEALS
BEST PHONE, SERVICE, AND PRICE. 1-800-XXX-XXXX

VISIT NEVADAN
Nevada

Vanilla Ice



Fiery tractor-trailer crash on I-15 creates traffic crisis

BY ADRIENNE PACKER
LAS VEGAS REVIEW-JOURNAL





I-15 SOUTH
DESIGN-BUILD
PROJECT

9200
SOUTH

I-15/PATRICK



2071 LV BLVD/SUNSET.
SOUTH





LATEST NEWS:



Project Neon Public Meeting Reminder

The Nevada Department of Transportation will be holding a Public Meeting to provide you with an update to Project NEON Design Build Phases 1-4. The meeting will be held tonight, Wednesday, June 10, 2015 from 4pm-7pm at the Historic Fifth Street School located at 401 South 4th Street, Las Vegas, NV 89101.

Free parking will be available at the corner lot of 4th street and E. Stewart.

If you are unable to attend the meeting, all of meeting materials will be posted on our website on the [Public Outreach](#) page.

Please note that there is a road closure at Sixth Street and Bridger due to an ongoing Pedestrian Improvement Project. Traffic disruptions are expected on Bridger Avenue from Casino Center to Sixth.

Posted - 6/10/2015



YIELD
ON FLASHING
YELLOW
ARROW



The HAWK Signal



Trafficware

ATMS.now

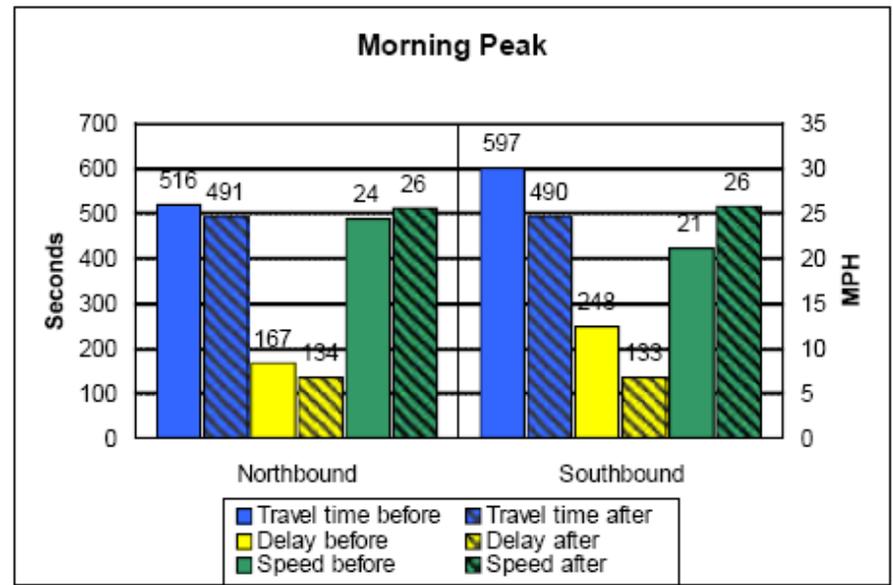
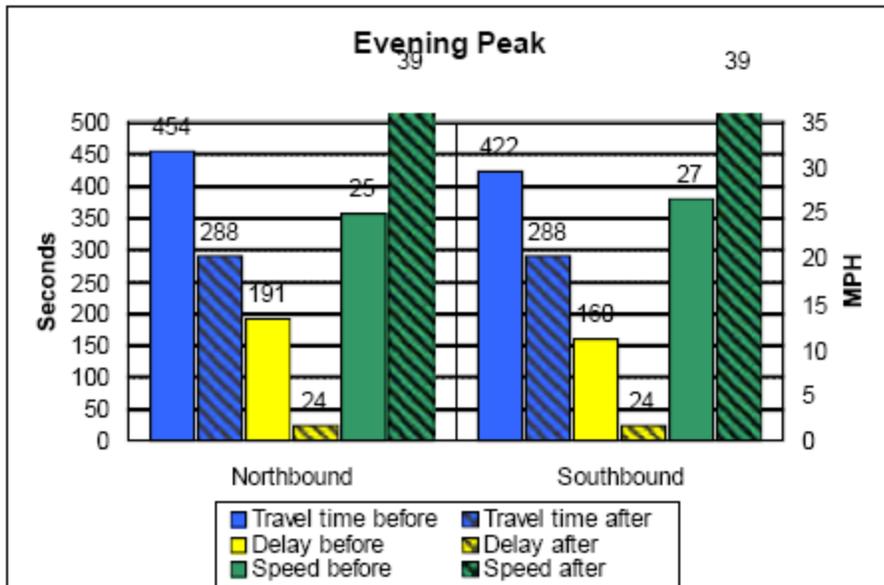
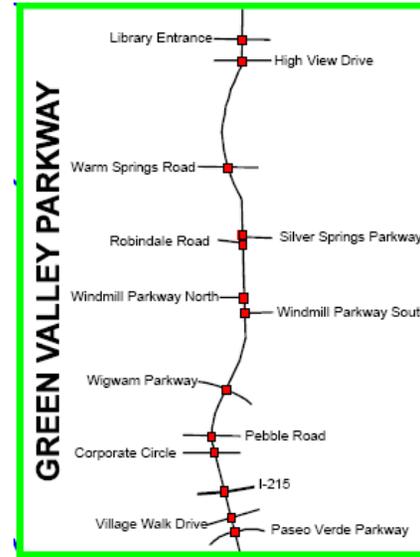
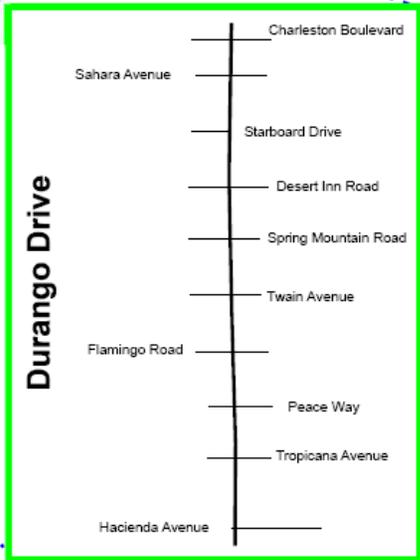




The Media (and politicians)



Example of Travel Time Savings



RTC findings questioned

Mayor tells it like it is

A Regional Transportation Commission study found signal retiming efforts on some valley streets this year reduced traffic delays by up to 60 percent, cut travel times by up to 32 percent and increased vehicle speeds by up to 45 percent.

"We are making significant gains over what's been accomplished in the past, albeit at the same time when we're adding 100 new cars a day to an already oversaturated (road) network," Jacob Snow, the commission's general manager, said.

Signal synchronization has been the bane of valley drivers, who have made the issue among the most common complaints to valley transportation engineers.

Las Vegas Mayor Oscar Goodman doubted officials' claims that their efforts have eased traffic.

"I don't know how much money has been spent (on signal retiming efforts). Whatever it was, it's a waste

Sometimes, Las Vegans cringe when their mayor prepares to open his mouth.

Former mob attorney Oscar Goodman is always colorful, but some are of the opinion that his mouth can occasionally get out there ahead of his cerebrum.

Just as a beginning driver will sometimes try to shift gears before his foot has completely disengaged the clutch, resulting in a really distressing noise, so the mayor sometimes appears to speak before his mind is fully engaged.

But sometimes he just makes you want to cheer.

Because sometimes, like the little boy who finally asks why the king is naked, the mayor manages to blurt out what many were thinking, but were afraid to say.

So it was Thursday, as the Regional Transportation Commission delivered a report to Mayor Goodman and other members of the panel's board, bragging that everything is going along just swell in their effort to re-time valley traffic lights.

The concept is simple. In this age of computers, any city whose streets form a basic grid pattern — New York and Phoenix are other good examples — should be able to

motor vehicles churn out as they sit idling at every red light in town.

Substantial progress toward that goal has now been made in the Las Vegas Valley, the RTC staff reported Thursday. Signal retiming has reduced traffic delays by up to 60 percent, cut travel times by up to 30 percent, and increased average vehicle speeds by up to 45 percent.

"Thank you for that encouraging news," many a complacent bureaucrat or Milquetoast mayor might have said. Not Oscar.

"I don't know how much money has been spent. Whatever it was, it's a waste of money," Mayor Goodman replied. "I'm not having the pleasant experience that's been represented to us. If I'm wrong, I'm going to apologize.

But I'm not wrong."

If those remarks were not greeted by general cheering and dancing in the aisles, it's only because vast mobs of the public do not generally spend their daylight hours at meetings of the Regional Transportation Commission.

The mayor is right.

There may be plenty of excuses. But



Mayor Oscar Goodman
Road warrior

Goodman doubts effectiveness of stoplight retiming

Why are we so cynical, you ask? Because, like Goodman, we drive on those roads every day, and we see for ourselves that signal light timing is often awful. In Goodman's words: "I don't know how much money has been spent. Whatever it was, it's a waste of money. I'm not having the pleasant experience that's been represented to us."

obs Exactly! Goodman is judging the RTC's claims based upon what he's seen in the real world. And so should transportation journalists, assuming they actually drive in the real world. We've seen Sofradzija's TV commercial, in which he gets in somebody's car and tells a surprised driver the route he should take, so we assume Sofradzija drives, too. And there's nothing wrong with calling bullshit when you hear it from the RTC.

One thing that did come out in Sofradzija's article struck a note with us: Signal timing becomes impossible when signals are placed too close together. And since every whiny request

Traffic lights timed? In whose dreams?

To the editor:

I thoroughly enjoyed reading your two Sunday editorials: the first concerning the upcoming behind-closed-doors session of the U.S. Senate and the second on the re-timing of the county's traffic lights. I agree with them both. But the traffic lights are of a more immediate concern, as I have already felt the impact.

Working swing shift, I travel home after 4 a.m., going west on Tropicana Avenue from Interstate 15. Until around six weeks ago, if I was doing the speed limit — or a mile or two above — I generally would

Wrong signals

To the editor:

I would have to agree with Mayor Oscar Goodman and say that any "alleged" traffic light re-timing was not worth whatever it cost.

I drive the same route to work every day. I travel eastbound on Cheyenne Avenue to Losee Road, and I have noticed that the signal lights do have a pattern. If I leave my home before 6:30 in the morning, I run into red lights at all intersections. If I leave after 6:30 a.m., I find a different traffic light pattern.

I see the same pattern



RTC just getting started on signal timing

Growth brings constant change to traffic flow

By JACOB L. SNOW
SPECIAL TO THE REVIEW-JOURNAL

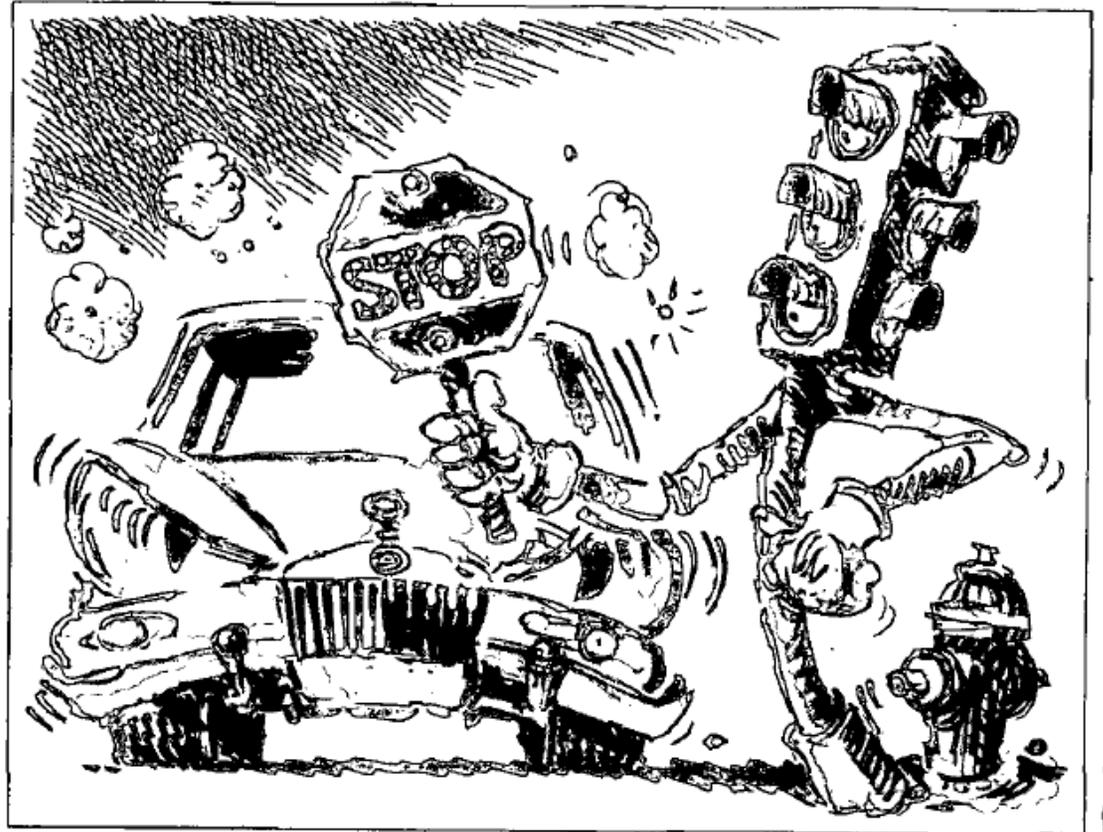
As the fastest-growing metropolitan area in the nation, our community is faced with mounting challenges of growth, development and mobility. The ability to navigate throughout our valley is a quality-of-life issue of increasing importance requiring more effort and more time every day.

I understand the frustration of waiting at red lights, and the aggravation of delay when trying to attend to the many responsibilities in our busy lives. While the issue is not simple, I understand that my fellow citizens simply want that *%\$! red light to turn green.

Because the Regional Transportation Commission of Southern Nevada strives

(FAST) responsibilities on July 3, 2004. This past year alone, 97 new traffic signals were added in the Las Vegas Valley. That is a rate of almost two signals per week. Not only does this mean more signals for every driver to navigate, but more signals for which we have to provide complex timing patterns that must be constantly monitored and adjusted for traffic levels. We also have to accommodate the effects that the myriad new master-planned communities, shopping malls, and hotel/casino resorts have on the existing signal system.

Remember that for every intersection, at least 12 vehicle movements must be accommodated. While waiting for the traffic signal to turn green in your direction, 11 other traffic movements are also waiting for and demanding that same green



ROAD WARRIOR: Driving out of sync in 2007

reviewjournal.com

Subscribe to the R-J
See the Internet Special

Find a Car
Find a Home

Nevada News | Sports | Business | Living | Opinion | Neon | Image | Classifieds

SAVE THIS | EMAIL THIS | PRINT THIS | MOST POPULAR | RSS FEEDS

Mar. 09, 2007
Copyright © Las Vegas Review-Journal

Potential dims for retiming of lights

Official: Don't expect effort to be traffic fix

By OMAR SOFRADZIJA
REVIEW-JOURNAL



Traffic waits Thursday at a

There's a new deadline for when traffic signal synchronization efforts will allow commuters to drive across town without hitting a single red light never.

While stoplight retiming efforts can improve the speed and pace of commuting, such work never will give drivers all green lights, all the time, the Regional Transportation Commission's chief administrator told its board Thursday.

"We have to manage people

Peer Review

of the
Freeway and Arterial System of Transportation



Recommendations of the Peer Review Panel

April 2008



Convened by the
Institute of Transportation Engineers

Street smarter

Roads are stupid. So are drivers. How can we make them faster, safer and cleaner?

Technology!

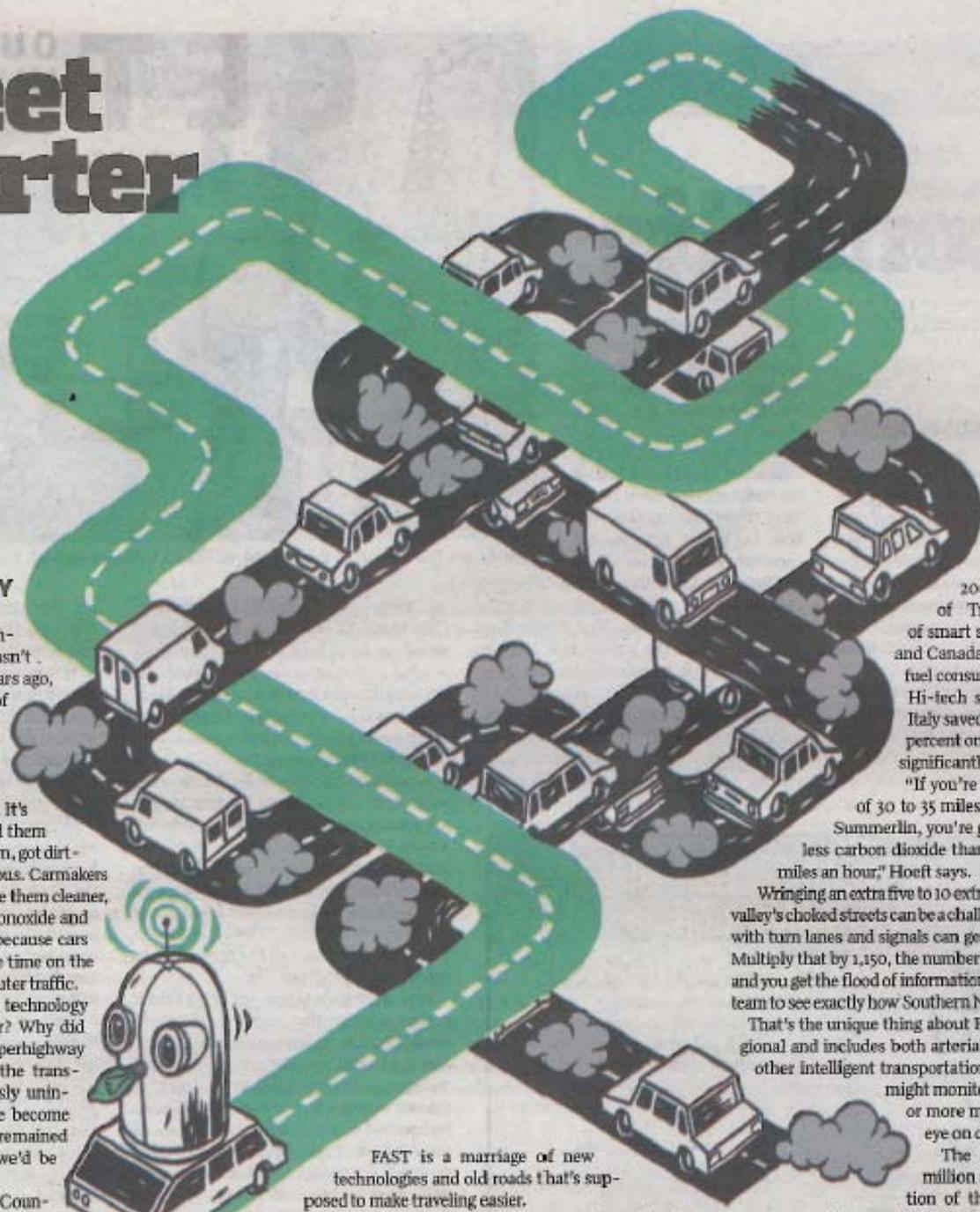
BY AMY KINGSLEY

The Interstate Highway System hasn't aged well. Fifty years ago, it was a marvel of modern engineering. Today it's hopelessly obsolete — a concrete dinosaur in an age of light titanium.

It's not the highways' fault. It's the cars. As the world around them sped up, freeways slowed down, got dirtier and became more dangerous. Carmakers tweaked their engines to make them cleaner, so they'd emit less carbon monoxide and ozone. But it didn't matter because cars were spending so much more time on the road, mired in miles of commuter traffic.

What happened? Wasn't technology supposed to make life better? Why did we invite the information superhighway into our homes, but keep the transportation highways hopelessly uninformed? Buildings may have become automated, but automobiles remained relics. Maybe, some said, we'd be better off without them.

But a lot of people in Clark Coun-



FAST is a marriage of new technologies and old roads that's supposed to make traveling easier.

2004 study by the Institute of Transportation Engineers of smart signal projects in the U.S. and Canada found that they reduced fuel consumption by 2 to 9 percent. Hi-tech speed control systems in Italy saved drivers between 8 and 14 percent on their average fuel use and significantly decreased emissions.

"If you're driving an average speed of 30 to 35 miles per hour to Sahara from Summerlin, you're going to be releasing a lot less carbon dioxide than if you're going 20 to 25 miles an hour," Hoefft says.

Wringing an extra five to 10 extra miles per hour out of the valley's choked streets can be a challenge. A single interchange with turn lanes and signals can generate 40 pages of tables. Multiply that by 1,150, the number of signals timed by FAST, and you get the flood of information that allows Hoefft and his team to see exactly how Southern Nevada traffic works.

That's the unique thing about FAST, the fact that it's regional and includes both arterial streets and freeways. In other intelligent transportation systems, a state agency might monitor the highways while one or more municipal systems keep an eye on city streets.

The agency's budget is \$5.2 million annually, which is a fraction of the amount spent to add

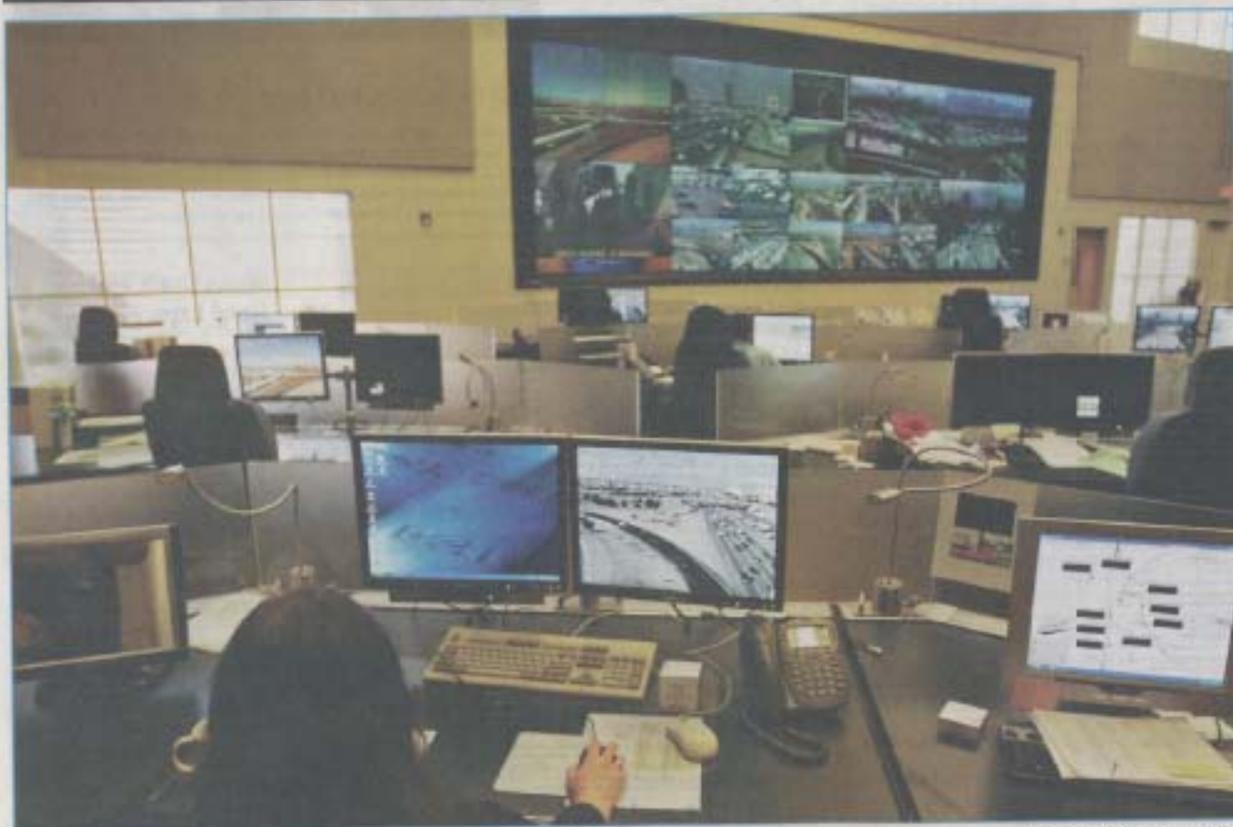
ON AIR

ARTS & STYLE
AREA 108 LOOKING FOR AUDIENCE

SERVING SILVERADO, ENTERTAINING THE TOURISTS

SILVERADO NEWS

MARCH 8-14, 2007



JEREMY L. ALBRECHT/NEWS STAFF PHOTO

Numerous cameras mounted to the top of poles along Las Vegas highways feed computer screens to help the Freeway and Arterial System of Transportation coordinate traffic signals and ramp meters.

Warriors of the roads

County plans new sports complex

By JEFF POPE

A proposed 200-acre park near Sam Boyd Stadium would satisfy some of the demand for park facilities in the county and become a regional sports complex that offers a variety of outdoor activities, planners say.

Designers unveiled plans for the expanded Silver Bowl Park to the County Commission on Feb. 20. Senior Parks Planner Justin Williams said the Parks and Recreation Department doesn't have a timetable on construction because it is working on the cost estimate. Williams said the county would likely seek Southern Nevada Public Lands Management Act funds and grants along with public funding.

The park would be built on land around Sam Boyd Stadium and south of the Wetlands Park. The existing Silver Bowl Park southwest of the stadium would receive

UNLV's master of traffic

Professor, with his students, applies expertise in math, electrical engineering and robotics to smooth the way from Point A to Point B

By STEPHANIE TAVARES
Las Vegas Sun

When you notice that car crashes and road construction aren't tying up Las Vegas Valley traffic for as long as they used to, remember this name: Pushkin Kachroo.

The co-director of UNLV's Transportation Research Center is considered something of a genius by traffic engineers. The university lucked out when it got him. He came to Las Vegas two years ago from Virginia Tech only because his wife landed a job as a marketing professor at UNLV.

His resume includes degrees, including two doctorates, from top U.S. and Indian universities. He has published eight books and armloads of academic papers.

The stack of academic accolades is impressive, but he is also making a major difference where the rubber, literally, meets the road, experts say.

He is using his deep and varied expertise in robotics, electrical engineering and mathematics to improve traffic flow throughout the valley.

"Transportation has changed dramatically in the last 20 years," Kachroo explains from his office in UNLV's new engineering building. "It used to be about planning and infrastructure — roads, freeways, bridges. Now it's about sensors and lights and active traffic control."

Kachroo researches feedback control — essentially action, sensing and reaction. He has applied his research to everything from an electronic sense and response feature in cars to his latest work on traffic pat-





ROAD WARRIOR: With stoplights, timing isn't everything



ROAD WARRIOR
MORE COLUMNS

Brian Hoeft is the leader of the red light district in Las Vegas. OK, not really, but he does have control over traffic signals turn red, or green, in his role as assistant director of the Regional Transportation Center's Freeway & Arterial System of Transportation (FAST).

And because of that job, Hoeft knows a lot about how signals work and why your commute is sometimes long, and it might not be. That is because FAST communicates with fiber cables that monitor traffic flow. So if you hit every red light on the way to work, don't lash out at Hoeft. The guy really does care, and he'll be happy to personally check out your concerns.



ROAD WARRIOR: With stoplights, timing isn't everything



ROAD WARRIOR
MORE COLUMNS

Brian Hoeft is the leader of the red light district in Las Vegas. OK, not really, but he does have control over traffic signals turn red, or green, in his role as assistant director of the Regional Transportation Center Freeway & Arterial System of Transportation (FAST).

And because of that job, Hoeft knows a lot about how signals work and why your commute is smothered it might not be. That is because FAST communicates with fiber cables that monitor traffic flow. So if you hit every red light on the way to work, don't lash out at Hoeft. The guy really does care, and he's willing to personally check out your concerns.



Brian Hoeft is the leader of the red light district in Las Vegas.





Steve Sebelius Steve Sebelius

Red lights at Wingbrook, Horizon Ridge, Carnegie, Sandy Ridge, Eastern AND Coronado! It's a banner day for the gang at FAST!

[#FASTfail](#)

30 Jun



Steve Sebelius Steve Sebelius

Just wondering why 4-lane Green Valley Parkway came to a screeching red light at Wingbrook when there were NO CARS there? Anyone? [#FASTfail](#)

21 Jun



Steve Sebelius Steve Sebelius

[@Buzzzarownd](#) Avoid turning from eastbound Twain/Sands/Spring Mtn. to northbound Paradise! You'll hit every red bet. there and DI!

[#FASTfail](#)

4 Jul



@SteveSebelius

Steve Sebelius

Driving north on Sunridge Heights, I hit the red at tiny little Sandy Valley, causing me to miss the light at Eastern. Really? [#FASTfail](#)

16 Jun via [Echofon](#)

[Favorite](#) [Retweet](#) [Reply](#)



Steve Sebelius Steve Sebelius

How can it be that mighty Paradise is brought to a long halt by tiny Sierra Vista, when NO CARS are there to turn? Only one way:

[#FASTfail.](#)

29 Jun

Results for fastfail

Tweets · Top ▾

don300x4 don smale
 @SteveSebelius no #FASTfail? Someone must have known you were going that way, eh? #somebodyswatchingme
 13 Jul

 **SteveSebelius** Steve Sebelius
 Credit where due: Just made it down GV Pkwy bet. Horizon Ridge and Sunset w/o having to stop at single red. No #FASTfail today!
 13 Jul



Elizabeth Watts

News Personality



Wall Elizabeth Watts · Everyone (Most Recent)

Share:  Post  Photo  Link

Write something...

-  Wall
-  Info
-  Friend Activity (1)
-  Photos

 **Elizabeth Watts**
 What do you think of traffic lights in this town?
 Efficient or un-synchronized chaos?? Most at work say they're terrible! Ha :)
 Tonight hear what RTC has to say about the issue. On FOX5 News at 10 & 11.

Like · Comment · Share · May 31 via mobile

-  **Figurative Artist** what's with the traffic lights? what's the difference with traffic lights in this town?
 May 31 at 6:01pm · Like
-  **Dana Ehlers** The lights suck...but the drivers that run them on red suck more!
 May 31 at 6:29pm · Like · #3 1
-  **Gary Ebert** Drivers are bad but a Lot of the lights are also bad....fwy on/off ramps in Henderson @ eastern
 May 31 at 8:10pm · Like

Album: Wall Photos · 65 of 80

Shared with:  Public

Download
 Report This Photo

Explore '80s Yearbooks
 80s.yearbookarchives...



See if we have your yearbook!

Sponsored

Scranton Gillette Communications

A Supplement to Roads & Bridges Magazine

TME

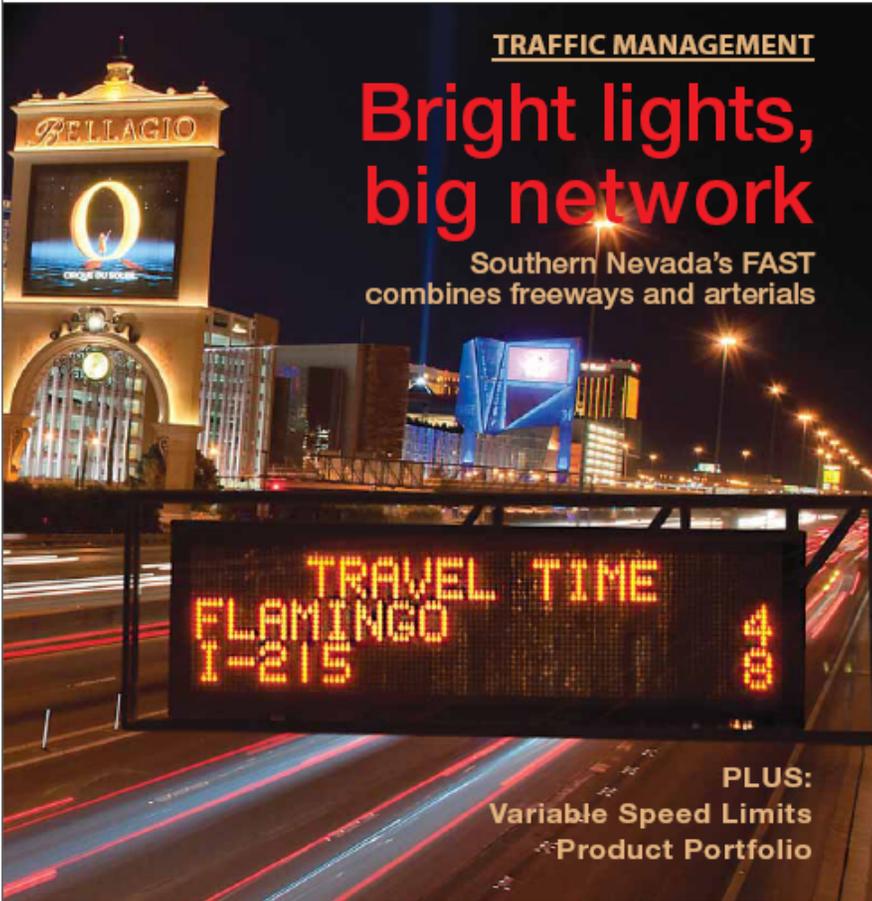
www.tmemag.com
July 2011

Transportation Management & Engineering

TRAFFIC MANAGEMENT

Bright lights, big network

Southern Nevada's FAST
combines freeways and arterials



TRAVEL TIME
FLAMINGO
I-215

PLUS:
Variable Speed Limits
Product Portfolio

Issue 28

BLVDS
LAS VEGAS

community | culture | design | flavor

PBS.ORG VIDEO TV SCHEDULE PROGRAMS DONATE SHOP KIDS PARENTS TEACHERS

Search PBS.org Search PBS

Our sponsor: **DOW** Check Local Listings

AMERICA REVEALED

STORIES MAP GET INVOLVED TEACHERS EPISODES ABOUT BUY DVD DONATE

Episode 1 Episode 2 Episode 3 Episode 4

EPISODE 2: NATION ON THE MOVE

41:47 / 53:10

Facebook Twitter Email RSS DVD

Support provided by: [Learn More](#)

PROGRESS IS EVERYONE'S BUSINESS
See how Goldman Sachs is helping Human Genome Sciences reach new milestones.

WATCH THE SHORT FILM

BUY THE DVD >

Like 226 Tweet 33

About the episode

America is a nation of vast distances and dense urban clusters, woven together by 200,000 miles of railroads, 5,000 airports, and 4 million miles of roads.

These massive, complex transportation systems combine to make Americans the most mobile people on earth. In this episode, host Yul Kwon journeys across the continent by air, road and rail.





US93/BUCHANAN

NORTH





Assessing Performance



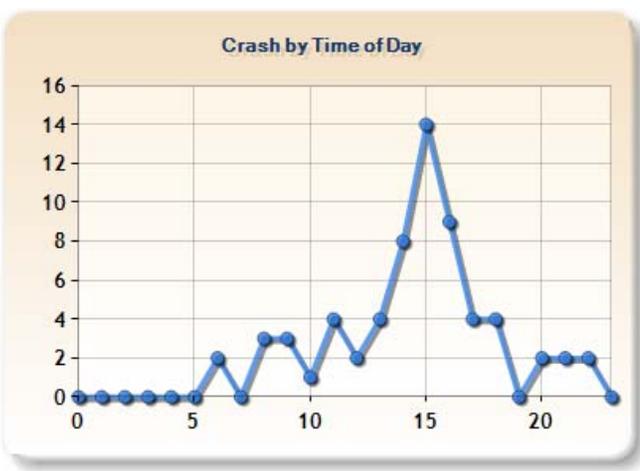
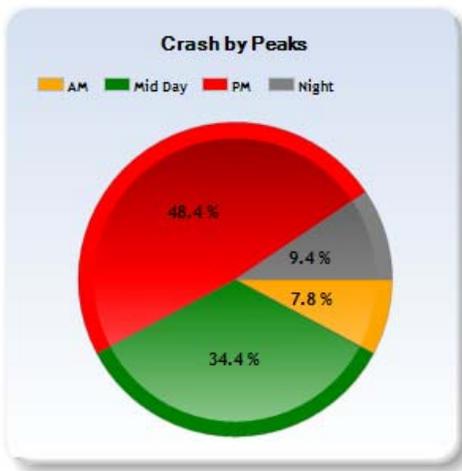
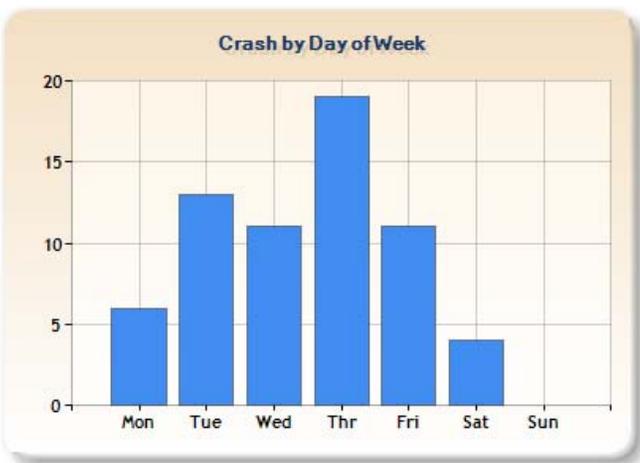
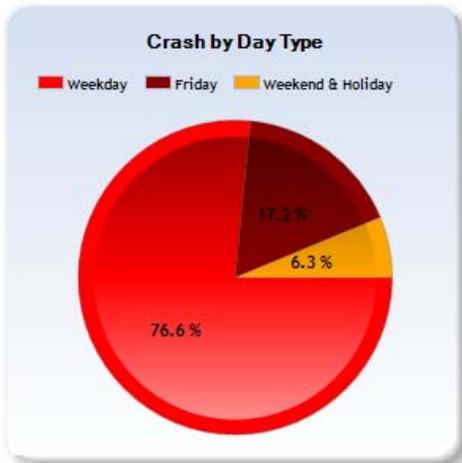
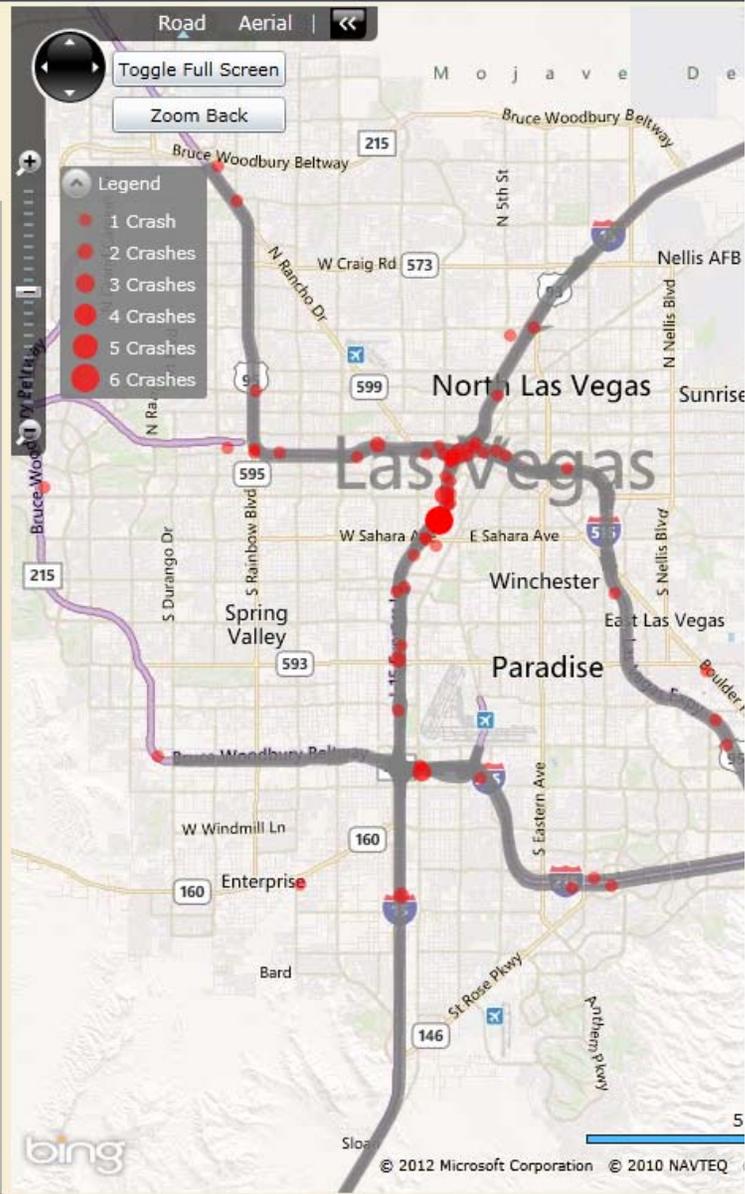
From: 5/28/2012 To: 6/11/2012 Time of Day: All 00:00 to 00:59

Included Days: Mon Tue Wed Thr Fri Sat Sun

Corridor: All Workzone: All Lanes: All Severity: All **Total Incidents: 74**

Tow: All Clearance: All [Draw Plot](#)

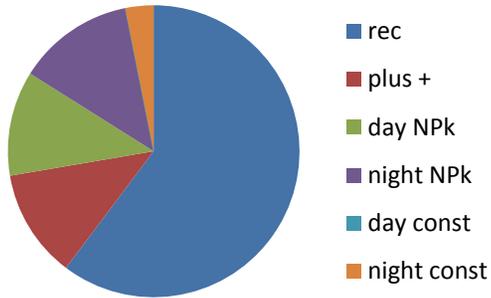
[Spatial](#) [Temporal](#) [Severity](#) [Clearance](#) [Data](#)



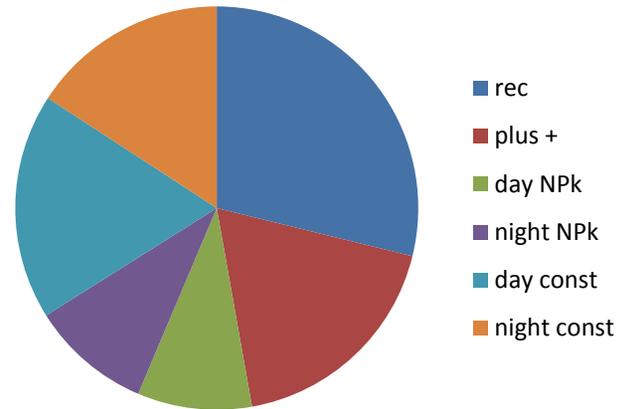
I-15 Congestion events per day: compare Fall 2012 to 2009

Key take away: the amount of recurring congestion stayed the same; the other types of congestion events increased which made the share of recurring congestion less

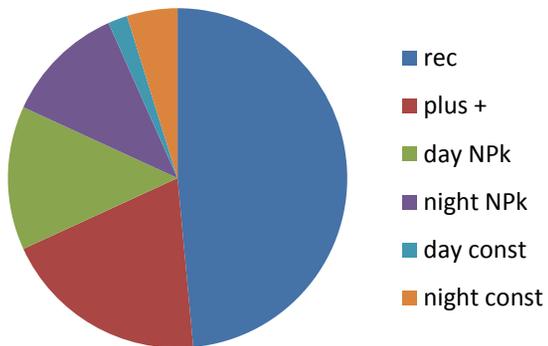
Fall 2012, PM 2.7



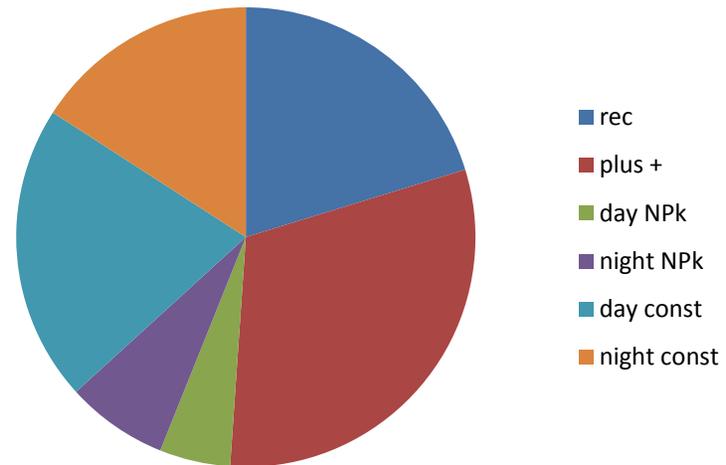
Fall 2011, PM 4.7



Fall 2010, PM 3.2



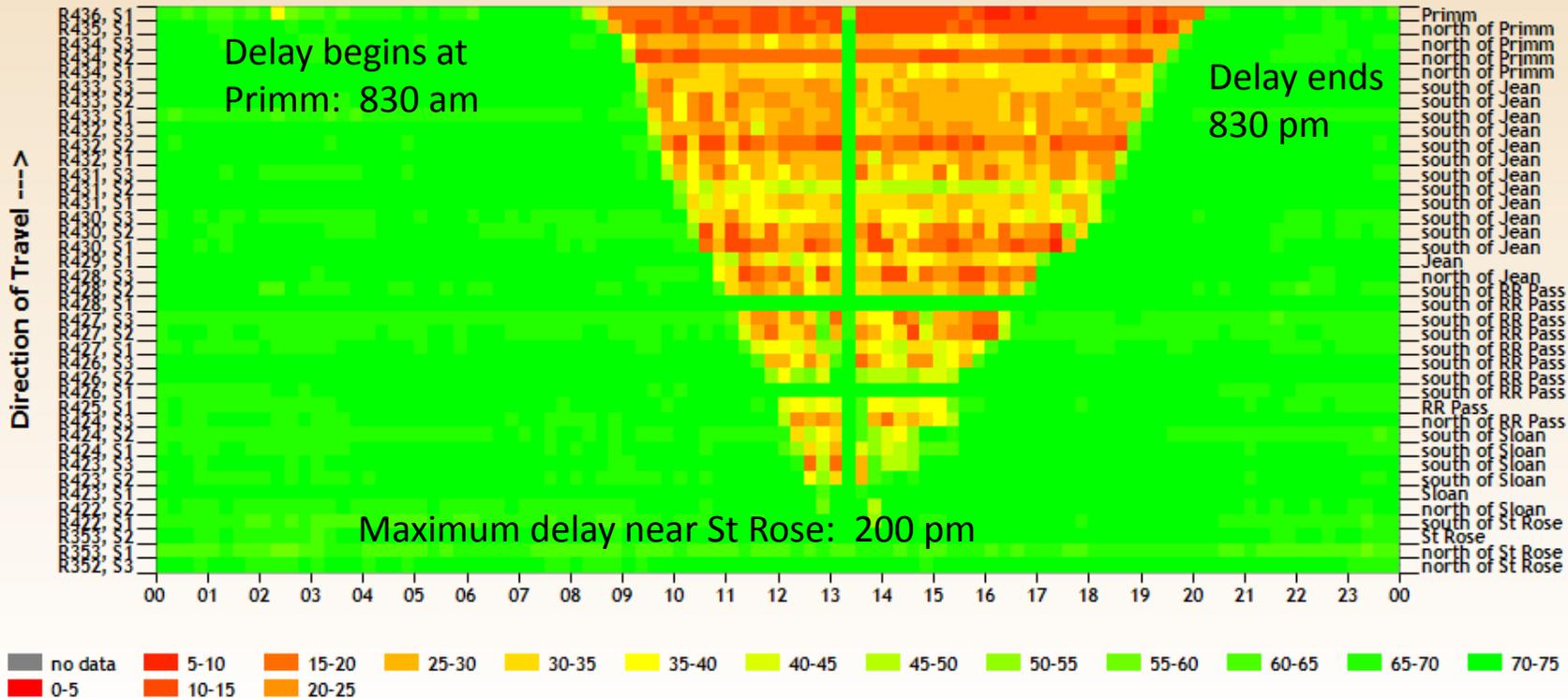
Fall 2009, PM 6.2



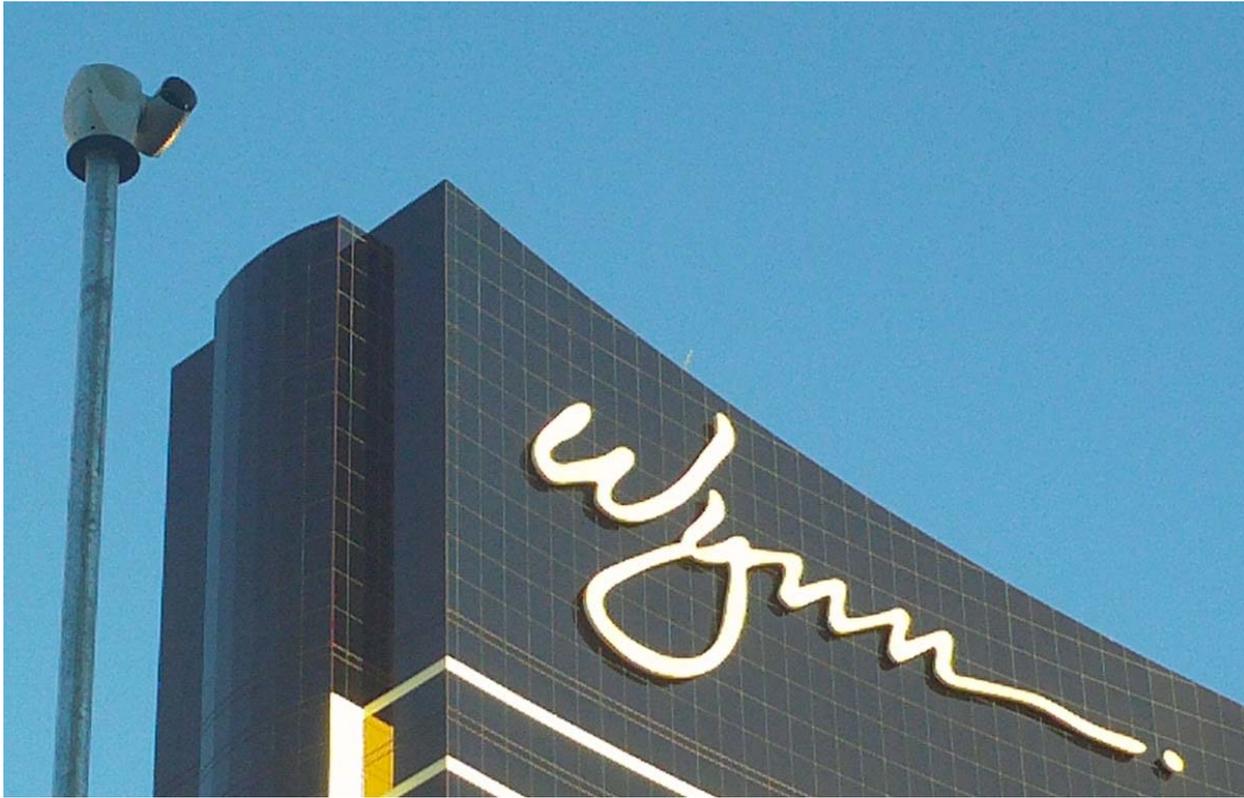
Route: I-15 SB From: north of St Rose To: Primm
 From: 5/27/2013 To: 5/27/2013 Measure: Average Speed Segment List Show Incident

Draw Plot View Table Export to Excel Export to Text << < > >>

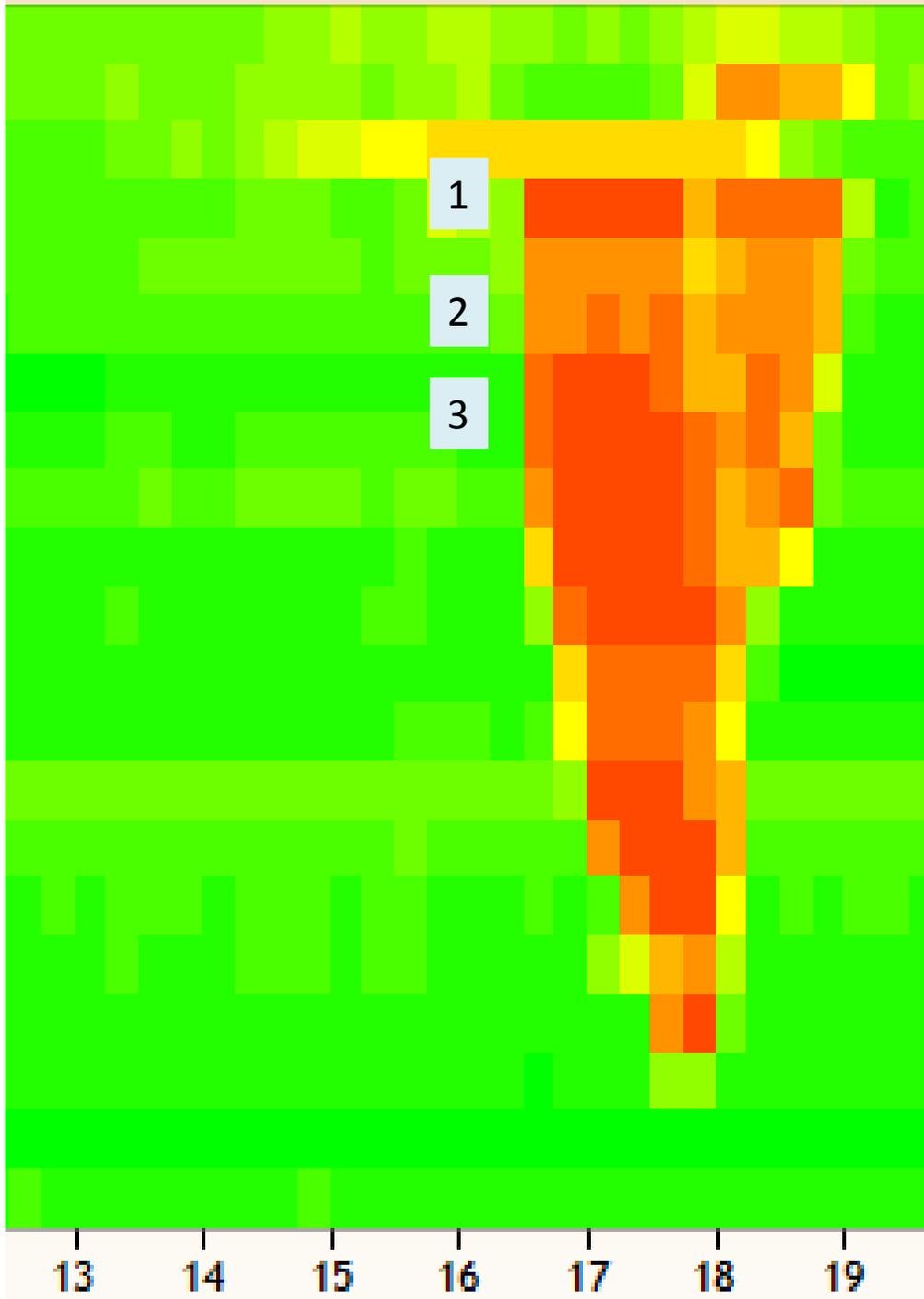
Segment Average Speed Contour Plot

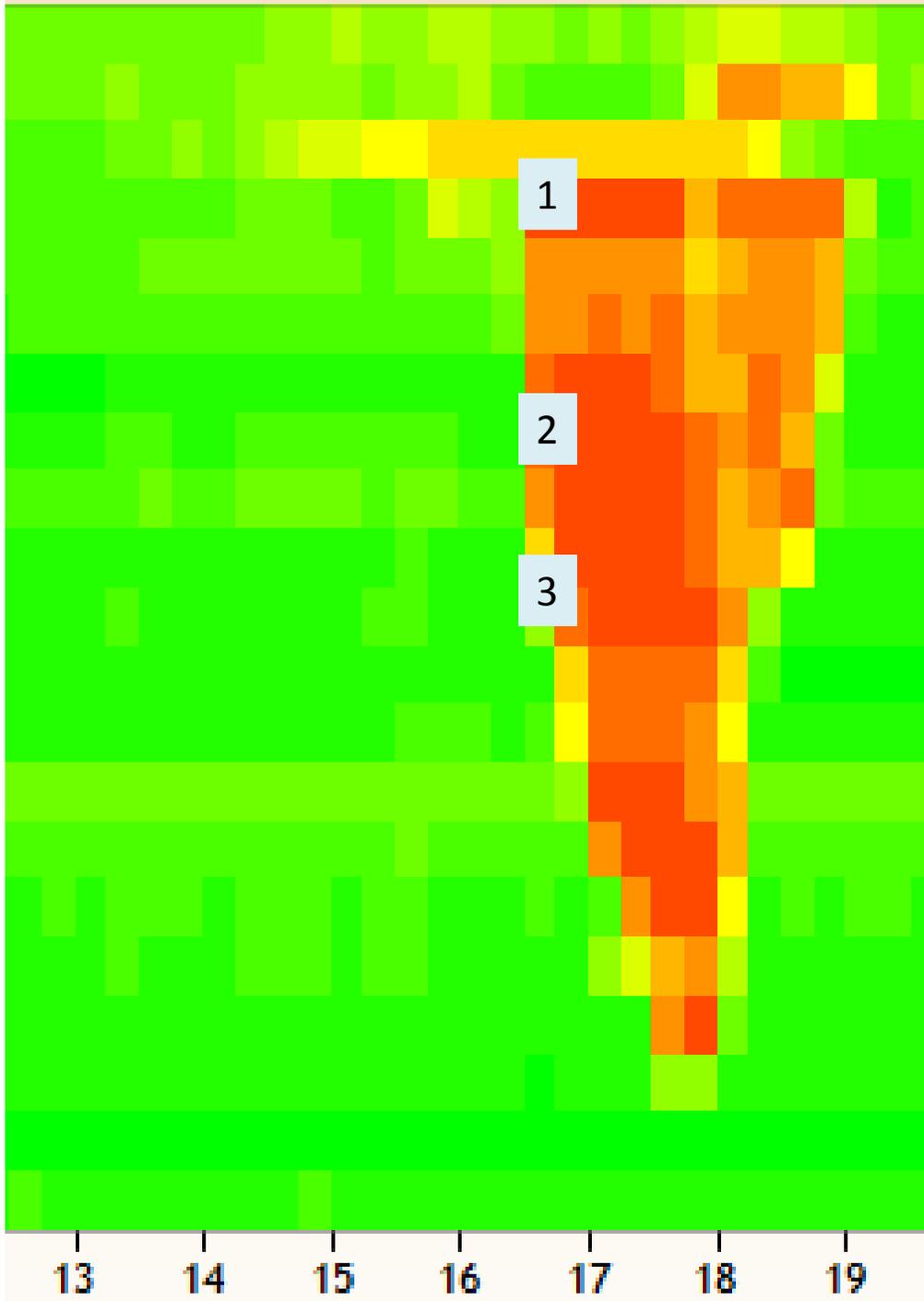


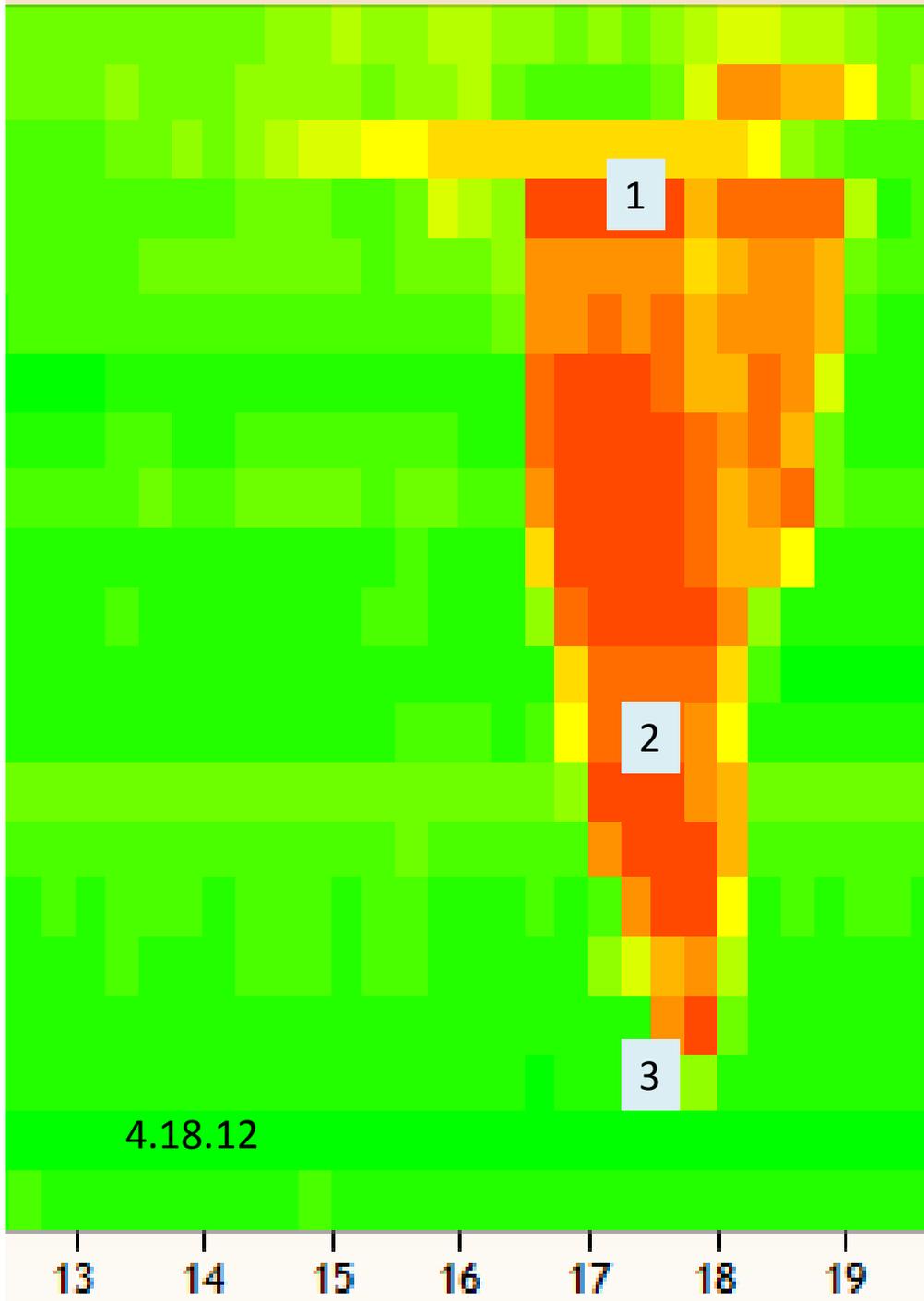
Monday May 27, 2013
12 hours of congestion; max extent is 25 miles

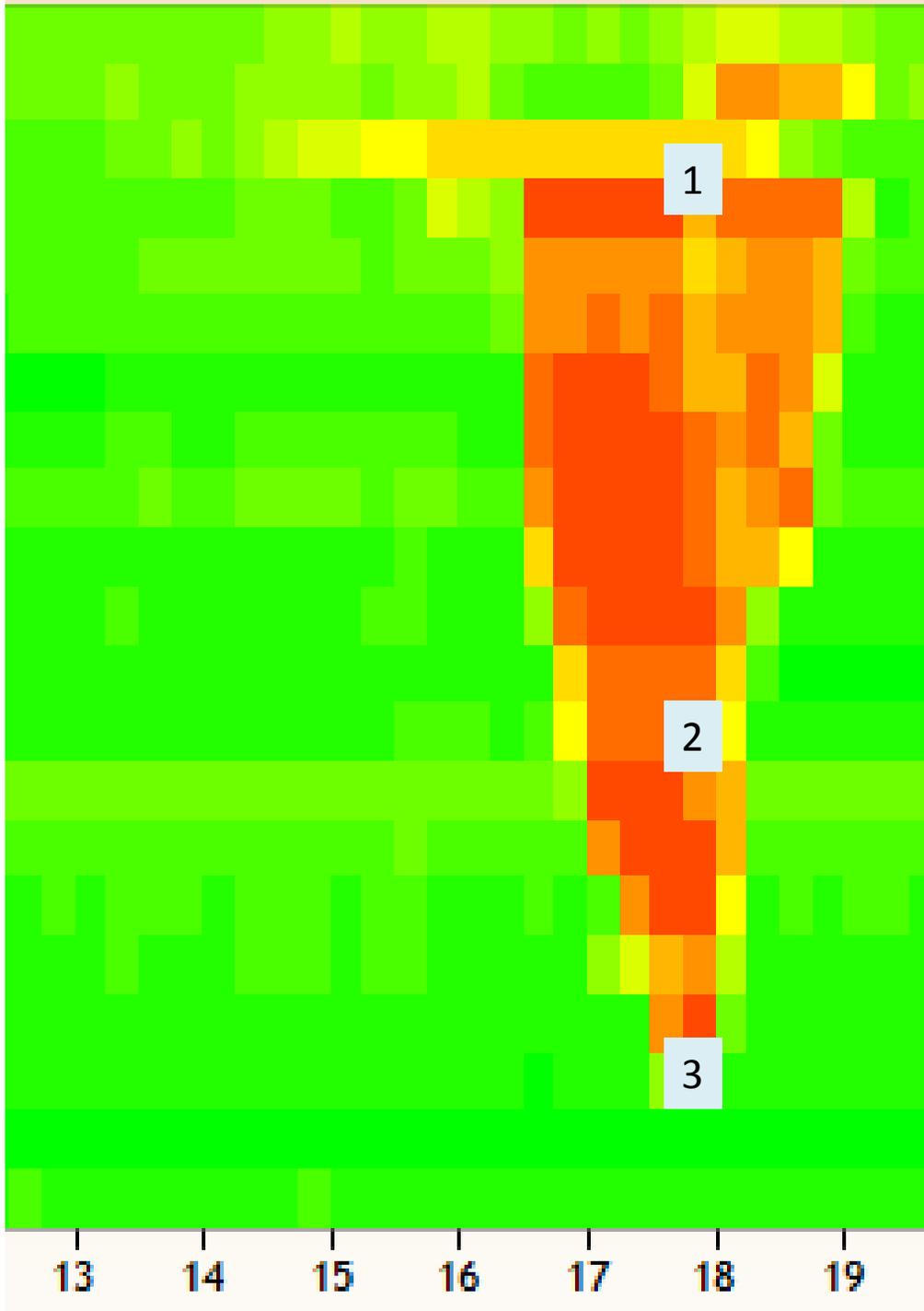


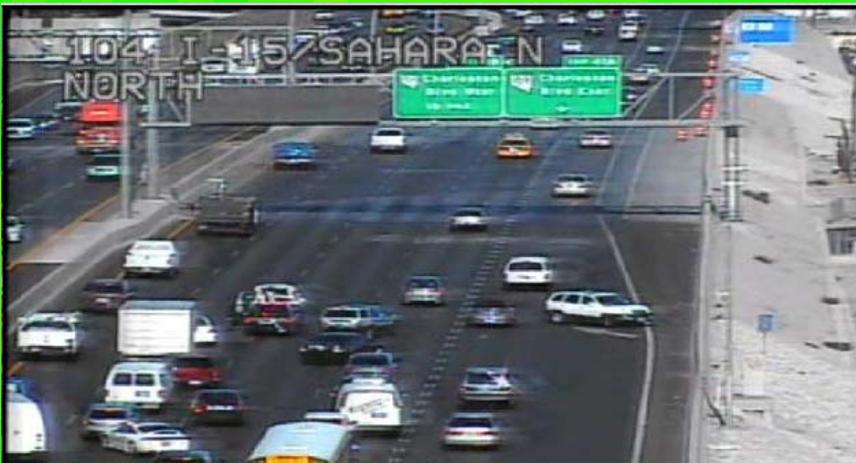
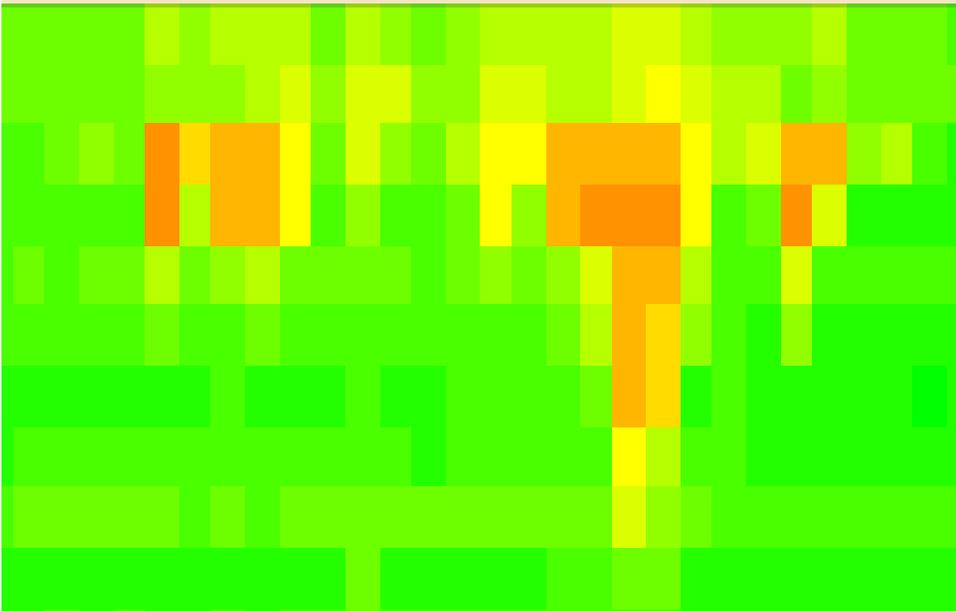
Seeing is
Believing!











13 14 15 16 17 18 19 20



Parameter Settings X

Settings:

Snapshot Interval: seconds

Window Title:

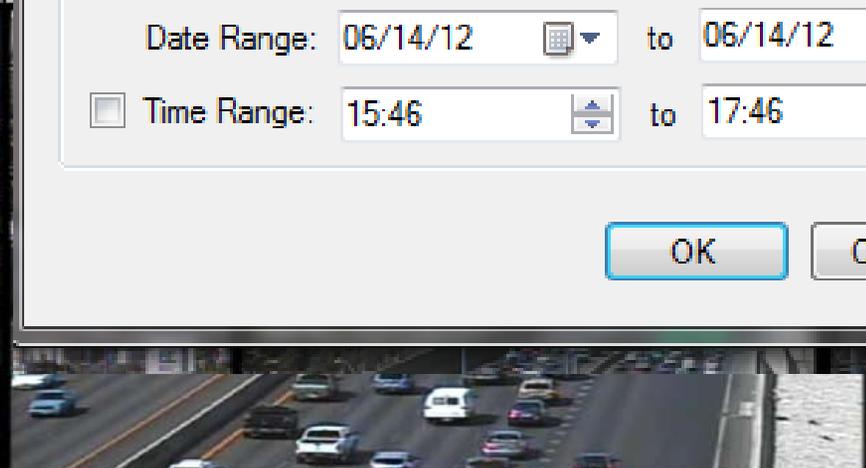
Prefix of the files

Add watermark using time stamp

Time Frame:

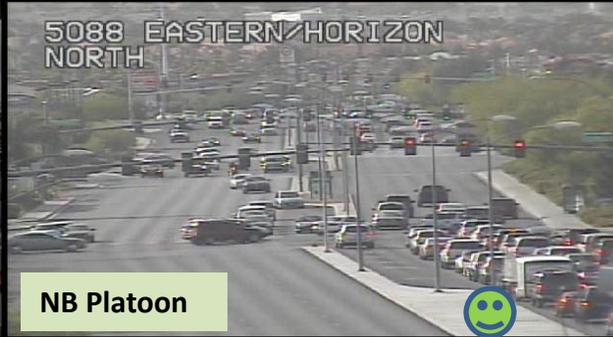
Date Range: to

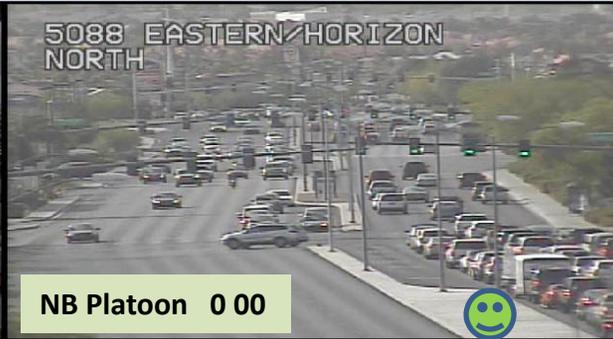
Time Range: to



How quickly can we move NB and SB platoons along Eastern Ave at 5 p.m. between Serene and Coronado Center?

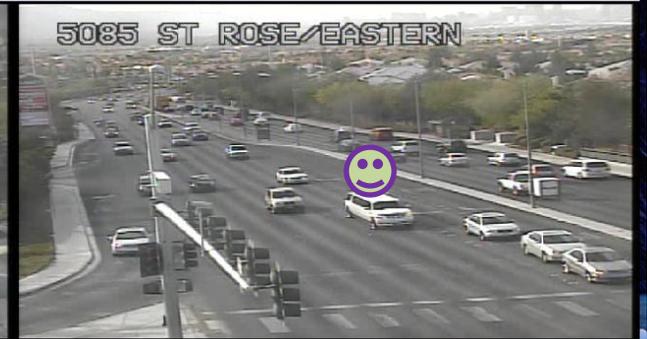
- 1.5 miles, seven signals
- 2009 SB hourly volume at 5 pm are 2800+ SB and 2400+ NB















Las Vegas Convention Traffic Overview

February 2015

DRAFT

1. Coordination between events



CCTV2437 5:15 PM

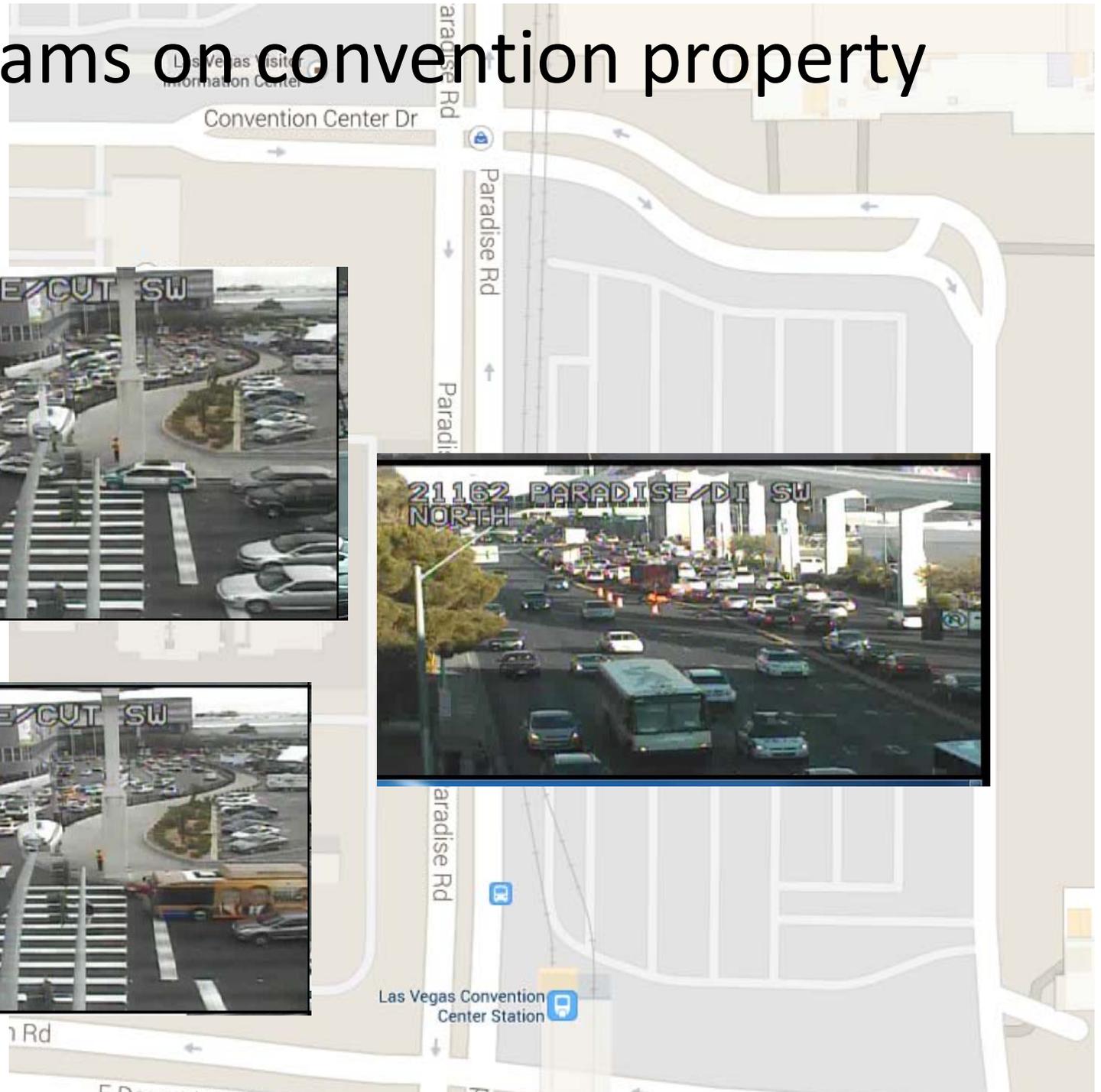


CCTV2192 5:15 PM

2. Metro PD controlling intersections



3. Traffic jams on convention property



4. Pedestrians



Heavy and continuous ped activity limits time available for vehicles on Paradise to travel north or west.



5. Slow-moving heavy vehicles



6. Incidents

On several of the days we reviewed, a crash clogged up a key roadway segment for long periods of time



*The
End*

Fin