

Traffic Management Center Traffic Management & Operations

Arterial Systems Management Section Traffic Services Division **Street Transportation Department**

Simon T Ramos, PE
Field Services Superintendent
November 4, 2022

City of Phoenix

Traffic Management Center
200 West Washington Street
Phoenix, AZ 85003
City Hall, 6th Floor



City of Phoenix



Traffic Management Center

Hours of Operation

0500hrs to 2100hrs
Monday to Friday

Standby / On-call Support

2100hrs to 0500hrs
Monday to Friday
and
Weekends



Introduction

Traffic Management & Operations is within Arterial Systems Management (ASM). The Traffic Management Center (TMC) and Intelligent Transportation Systems (ITS) are the core elements of the group.

Its key function is to **REACTIVELY** and **PROACTIVELY** reduce accidents and congestion through the use of technology and performance metrics.



Traffic Management



- Congestion (reoccurring and non-reoccurring)
- Incident Management and Special Events
- Construction Projects



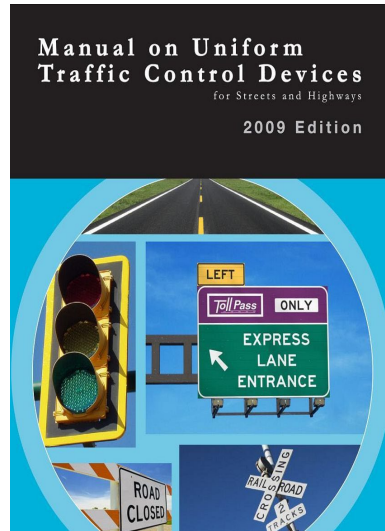
Proactive Traffic Management

PROGRAMS

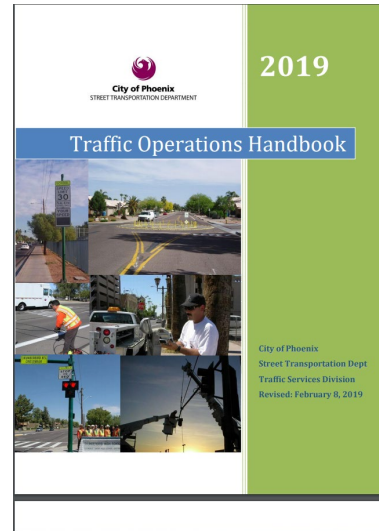
- Safety Compliance
- Progression on Corridors
- Incident Management and Special Event Plans
- Performance Measures



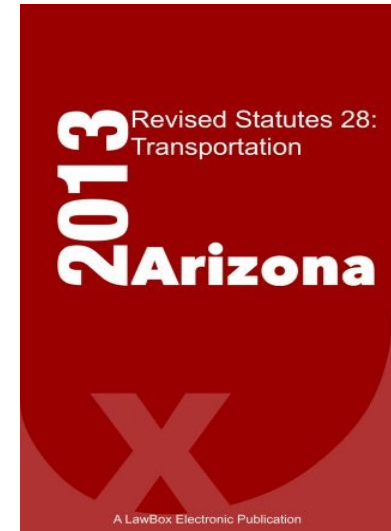
Safety Compliance



MUTCD



City of Phoenix Traffic Operations Handbook



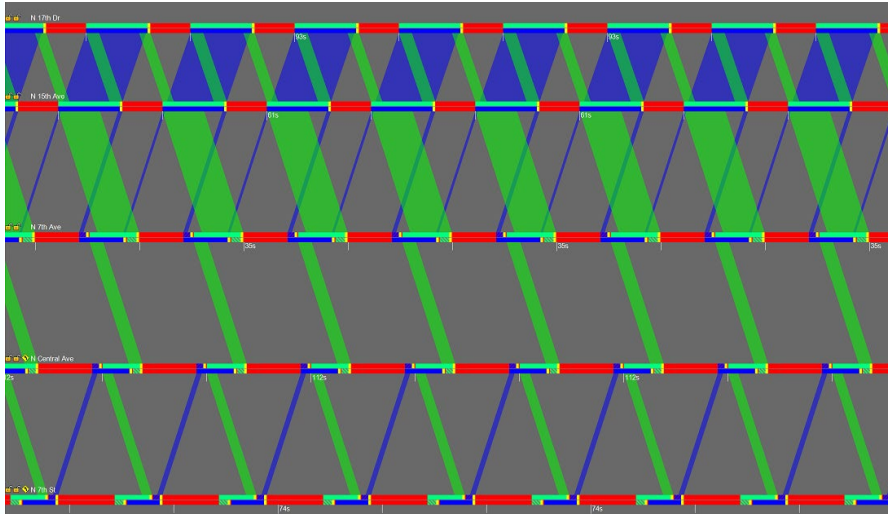
Arizona Revised Statutes Title 28 - Transportation

- Pedestrian Clearance Times (PCT)
- All-Red or Red Clearance Intervals
- Yellow Change Intervals

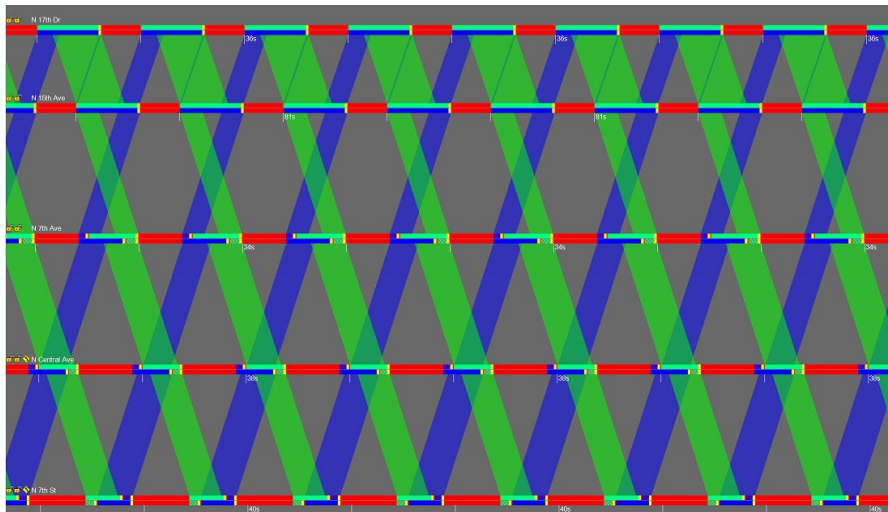


Progression on Corridors

Providing seamless progression across jurisdictional boundaries.



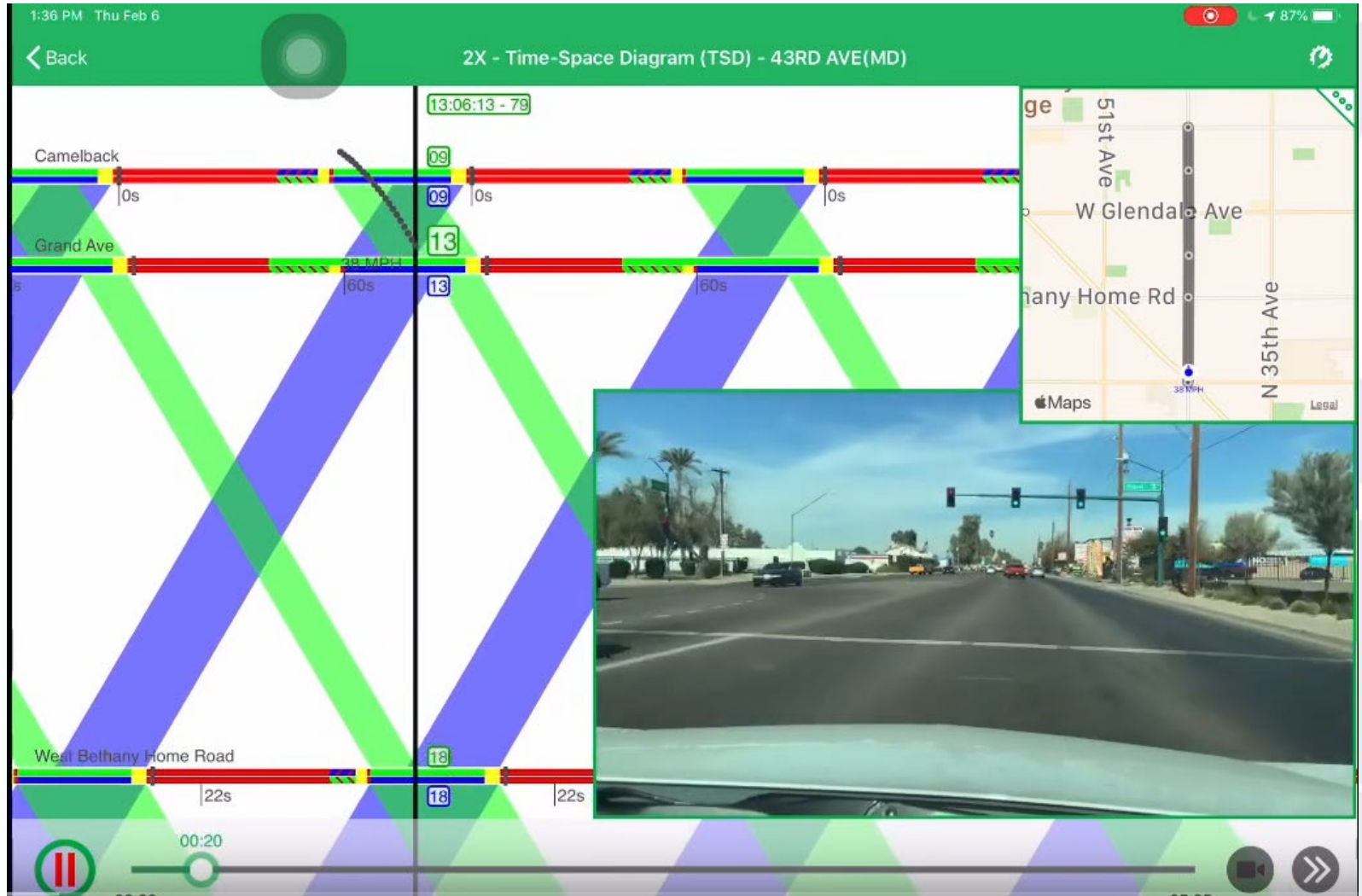
BEFORE



AFTER



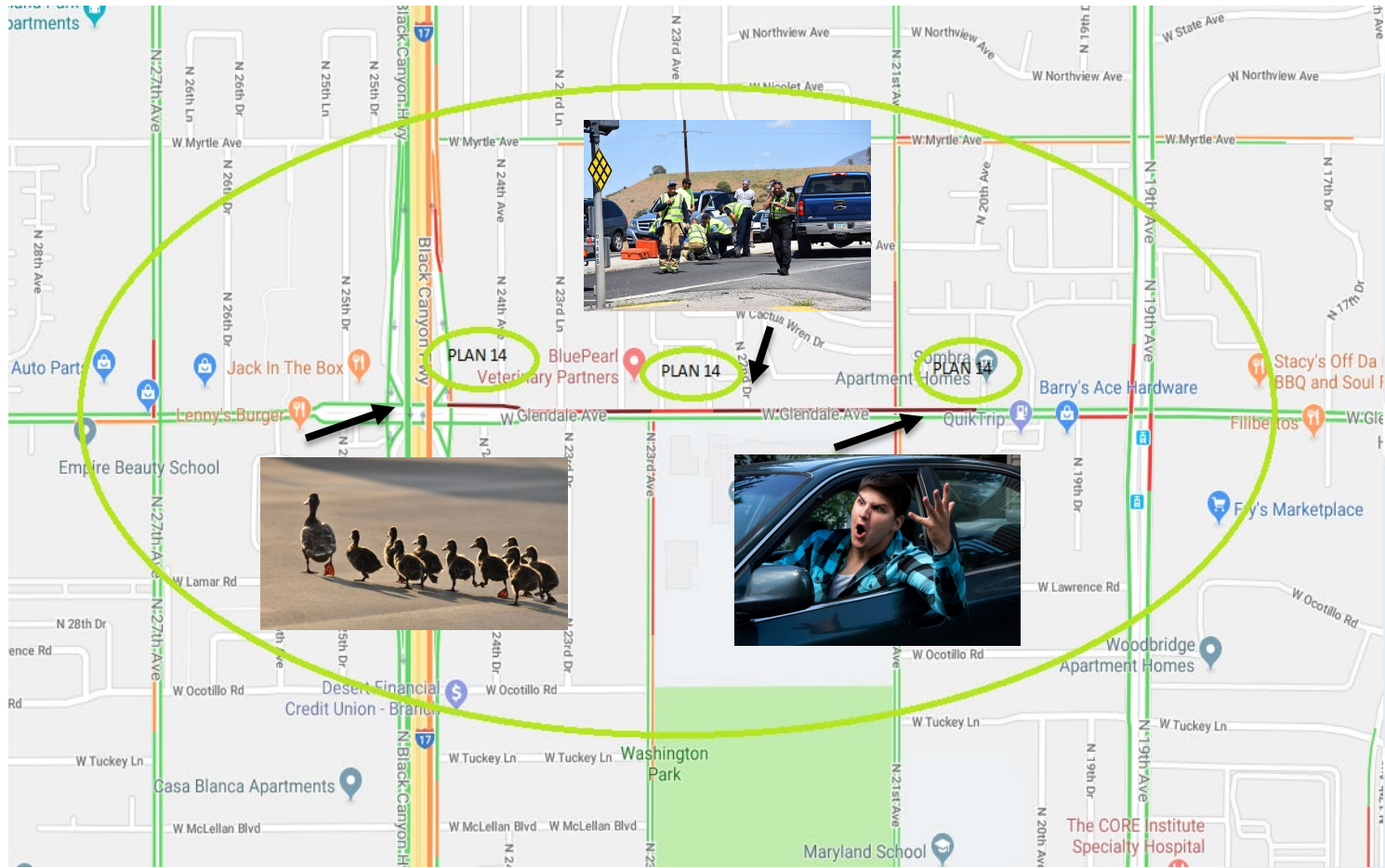
Progression on Corridors



Providing seamless progression across jurisdictional boundaries.



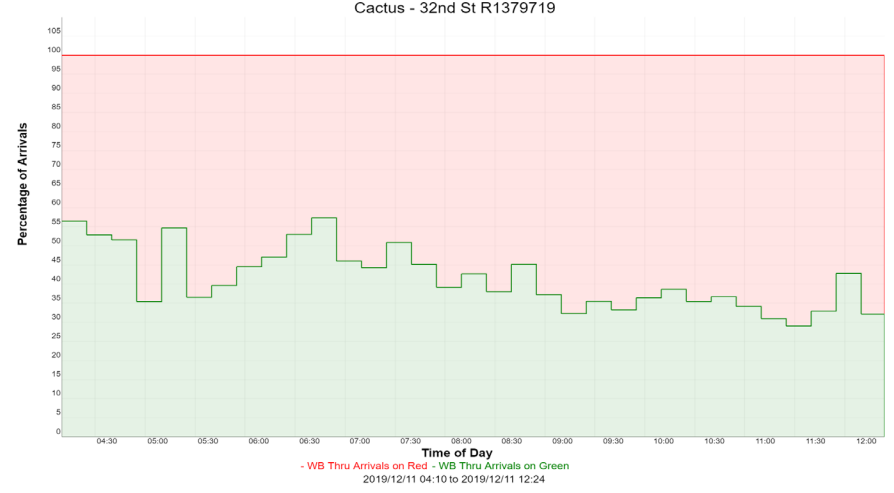
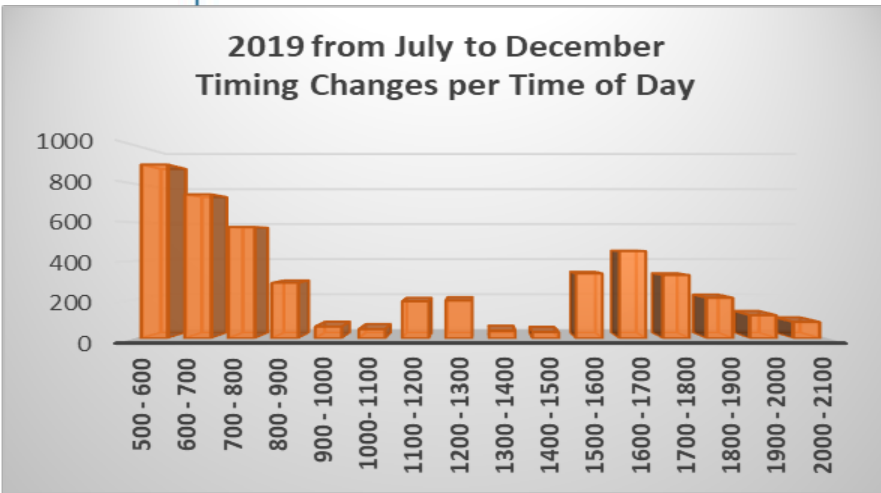
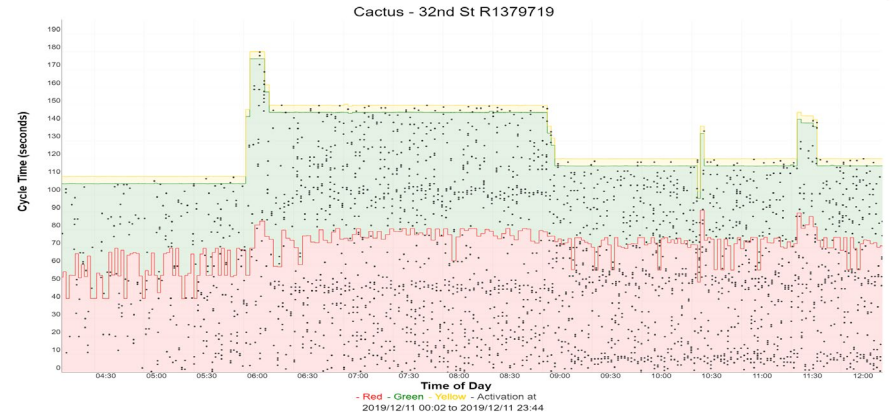
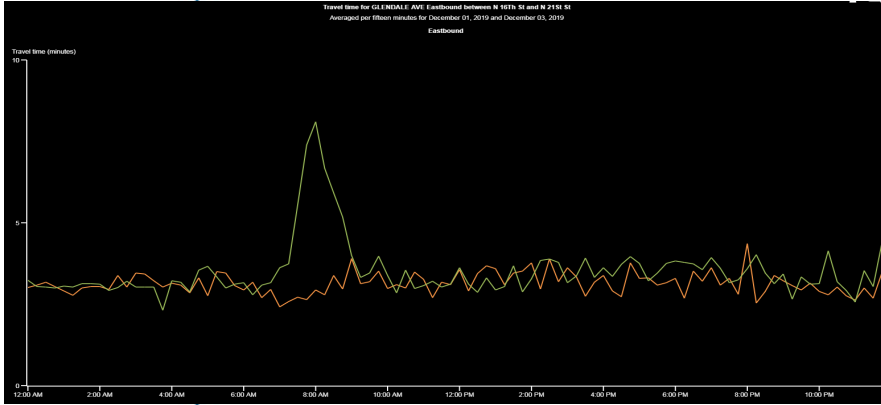
Incident Management and Special Event Plans



Traffic signals are running "Plan 14", favoring westbound traffic.



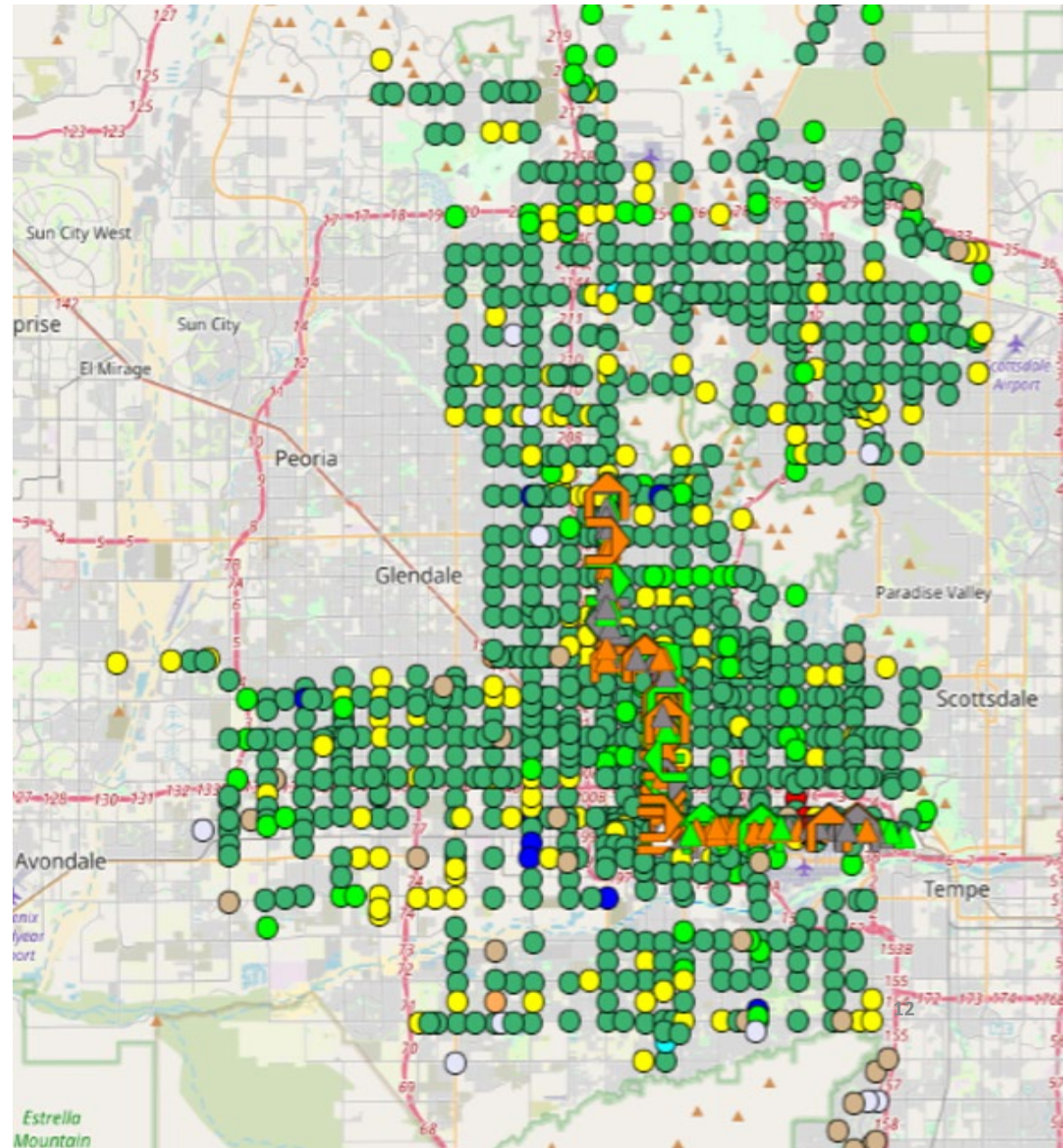
Performance Measures



Quantitative data is available

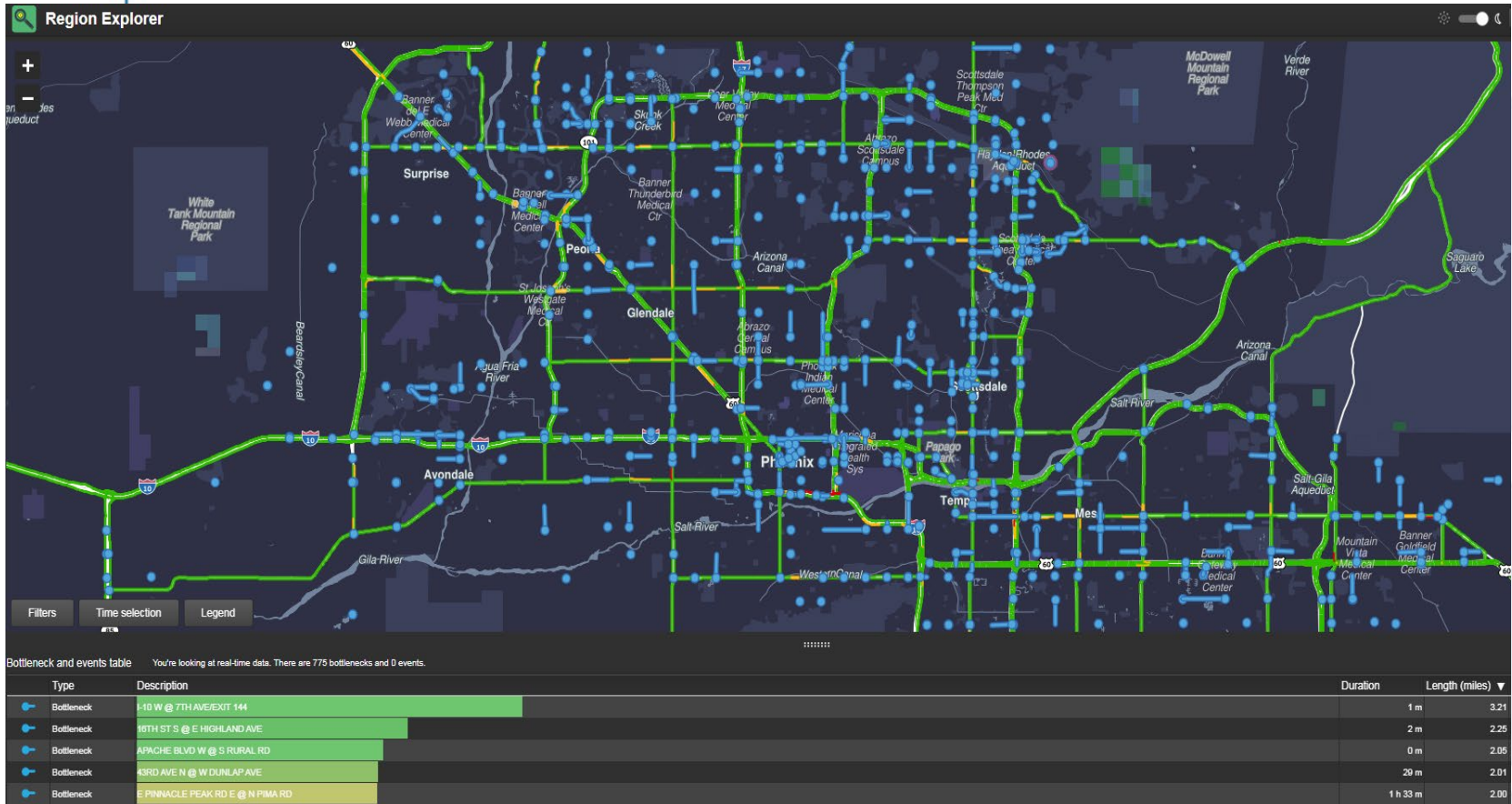
Traffic Control Technology

TransSuite Advanced Traffic Management System (ATMS)





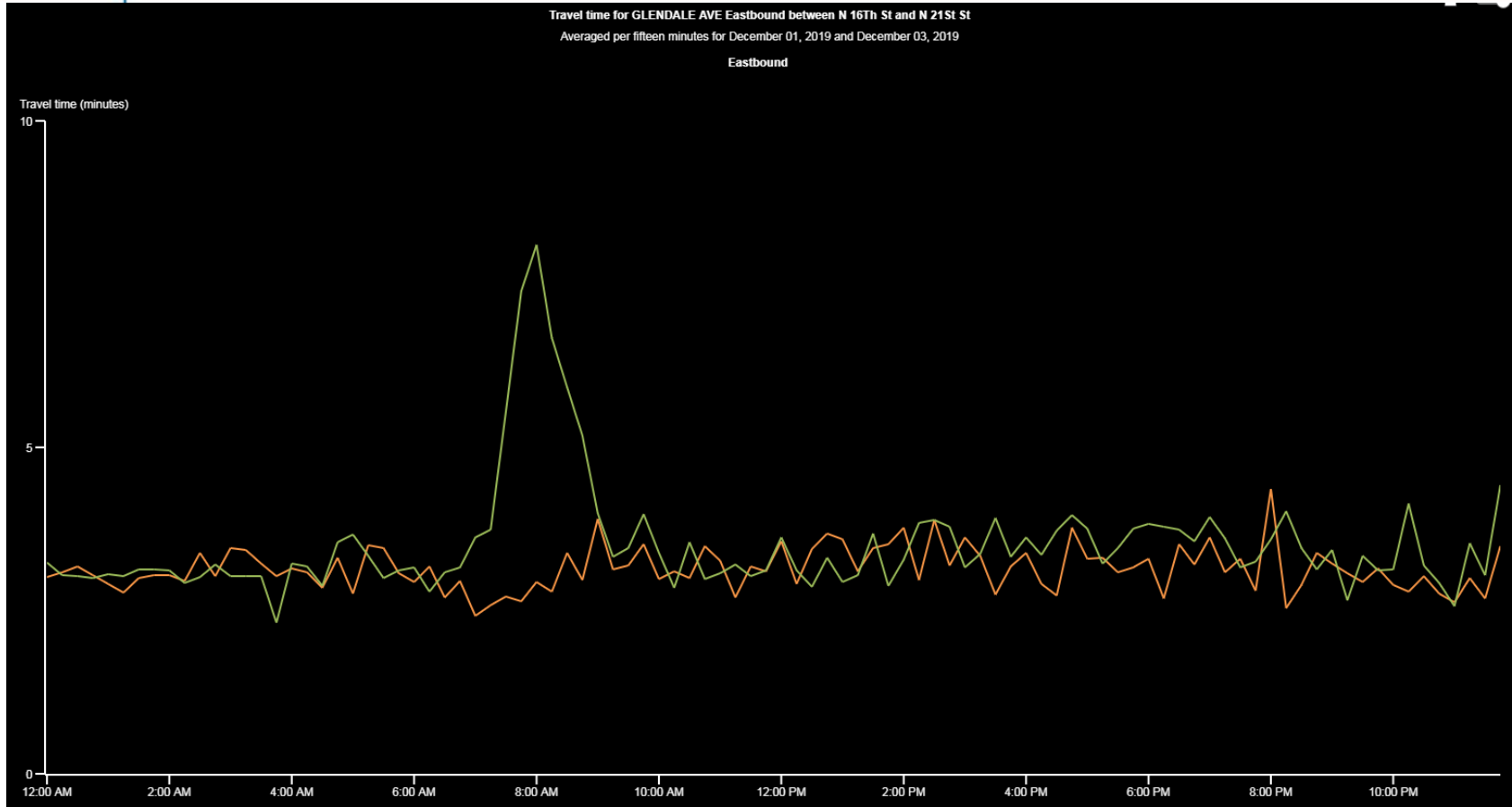
3rd Party Data - INRIX



Regional Explorer - In real-time congestion and speed map. Includes weather and traffic event layers.



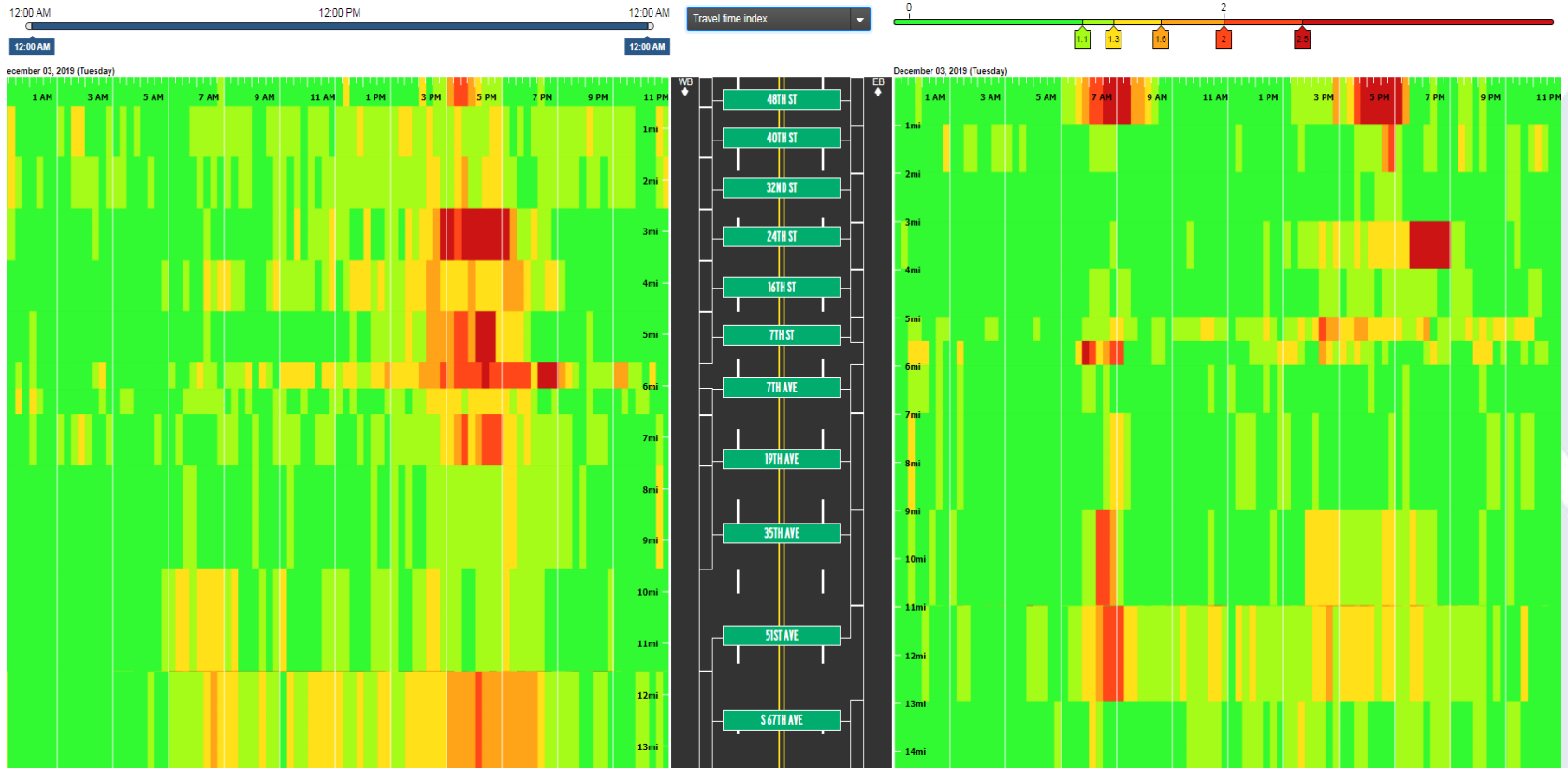
3rd Party Data - INRIX



Performance Charts - Travel times and Speed.
Up to 7 time periods can be compared bi-directionally. Tabular data is an optional.



3rd Party Data - INRIX



Congestion Scan - Areas of concern on a corridor are easily identified. Data can be sorted by travel time and congestion indexes or speed. User can also set thresholds.



3rd Party Data - INRIX

Simon

+ Add widget Select a dashboard...

Top 20 Bottlenecks in Phoenix

Location	Length(miles)	Duration
1 I-10 W @ 35TH AVE/EXIT 141	6.44	05 m 09 s
2 I-10 E @ BROADWAY RD/52ND ST/EXIT 153B	4.75	04 m 09 s
3 I-17 N @ BETHANY HOME RD/EXIT 204	3.15	04 m 09 s
4 67TH AVE S @ AZ-101/AGUA FRIA FWY	3.09	59 m 09 s
5 19TH AVE N @ W BETHANY HOME RD	3.01	20 m 09 s
6 W LOWER BUCKEYE RD W @ S 75TH AVE	2.99	58 m 09 s
7 BASELINE RD W @ 7TH ST	2.99	12 m 09 s
8 I-17 N @ US-60/19TH AVE/EXIT 197	2.94	03 m 09 s
9 AZ-101-LOOP W @ CAVE CREEK RD/N 28TH ST/EXIT 28	2.90	50 m 09 s
10 BROADWAY RD W @ S CENTRAL AVE	2.51	03 m 09 s
11 SOUTHERN AVE W @ S CENTRAL AVE	2.49	03 m 09 s
12 AZ-202-LOOP W @ I-10/AZ-51	2.38	01 h 24 m 09 s
13 16TH ST N @ I-17/US-60/MARICOPA FWY	2.36	08 m 09 s
14 E LINCOLN DR W @ 32ND ST	2.15	49 m 09 s
15 N CAVE CREEK RD S @ BEARDSLEY RD	2.14	28 m 09 s
16 32ND ST S @ E THOMAS RD	2.04	06 m 09 s
17 CENTRAL AVE S @ MCDOWELL RD	2.00	08 m 09 s
18 75TH AVE S @ W CAMELBACK RD	2.00	09 m 09 s
19 75TH AVE N @ W INDIAN SCHOOL RD	2.00	13 m 09 s
20 BASELINE RD E @ 51ST AVE	1.98	14 m 09 s

Using INRIX data Updated Dec 4, 2019 3:39 PM (32s ago)

Top 10 Bottlenecks Glendale Events

Location	Length(miles)	Duration
1 91ST AVE N @ W OLIVE AVE	1.99	06 m 09 s
2 INDIAN SCHOOL RD E @ N 99TH AVE	1.03	03 m 09 s
3 83RD AVE S @ W NORTHERN AVE	1.00	03 m 09 s
4 W CAMELBACK RD W @ 83RD AVE	0.99	03 m 09 s
5 W NORTHERN AVE W @ 91ST AVE	0.99	03 m 09 s
6 I-10 W @ 75TH AVE/EXIT 136	0.98	20 m 09 s
7 W NORTHERN AVE E @ 91ST AVE	0.58	07 m 09 s
8 99TH AVE S @ I-10/PAPAGO FWY	0.32	05 m 09 s
9 MCDOWELL RD W @ N 99TH AVE	0.18	03 m 09 s
10 83RD AVE S @ I-10/PAPAGO FWY	0.16	25 m 09 s

Using INRIX data Glendale Events Updated Dec 4, 2019 3:39 PM (31s ago)

North/South Central Phoenix

Corridor	Average Speed			Travel Time		
	Differential	Current	Historic	Differential	Current	Historic
7TH AVE between I-10/Papago Fwy and W Dunlap Ave	0	29 mph	29 mph	0	33 min	33 min
CENTRAL AVE between Roosevelt St and Dunlap Ave	↓ 2	21 mph	23 mph	↑ 3	46 min	43 min
7TH ST between E Washington St and E Dunlap Ave/N Cave Creek Rd	↓ 1	24 mph	25 mph	↑ 2	49 min	47 min
19TH AVE between I-10/Papago Fwy and W Dunlap Ave	↑ 1	23 mph	22 mph	↓ 2	43 min	45 min
16TH ST between E Washington St and E Northern Ave	↑ 1	25 mph	24 mph	↓ 2	35 min	37 min

Using INRIX data Updated Dec 4, 2019 3:39 PM (24s ago)

Grand Avenue (City of Phoenix)

Corridor	Average Speed			Travel Time		
	Differential	Current	Historic	Differential	Current	Historic
US-60 between Bethany Home Rd/51ST Ave and N 24Th Dr	↑ 13	45 mph	32 mph	↓ 5	15 min	20 min
W GRAND AVE	↑ 4	24 mph	20 mph	↓ 3	12 min	15 min

Using INRIX data Updated Dec 4, 2019 3:39 PM (25s ago)

Baseline, McDowell, Buckeye, Glendale and Bell Road

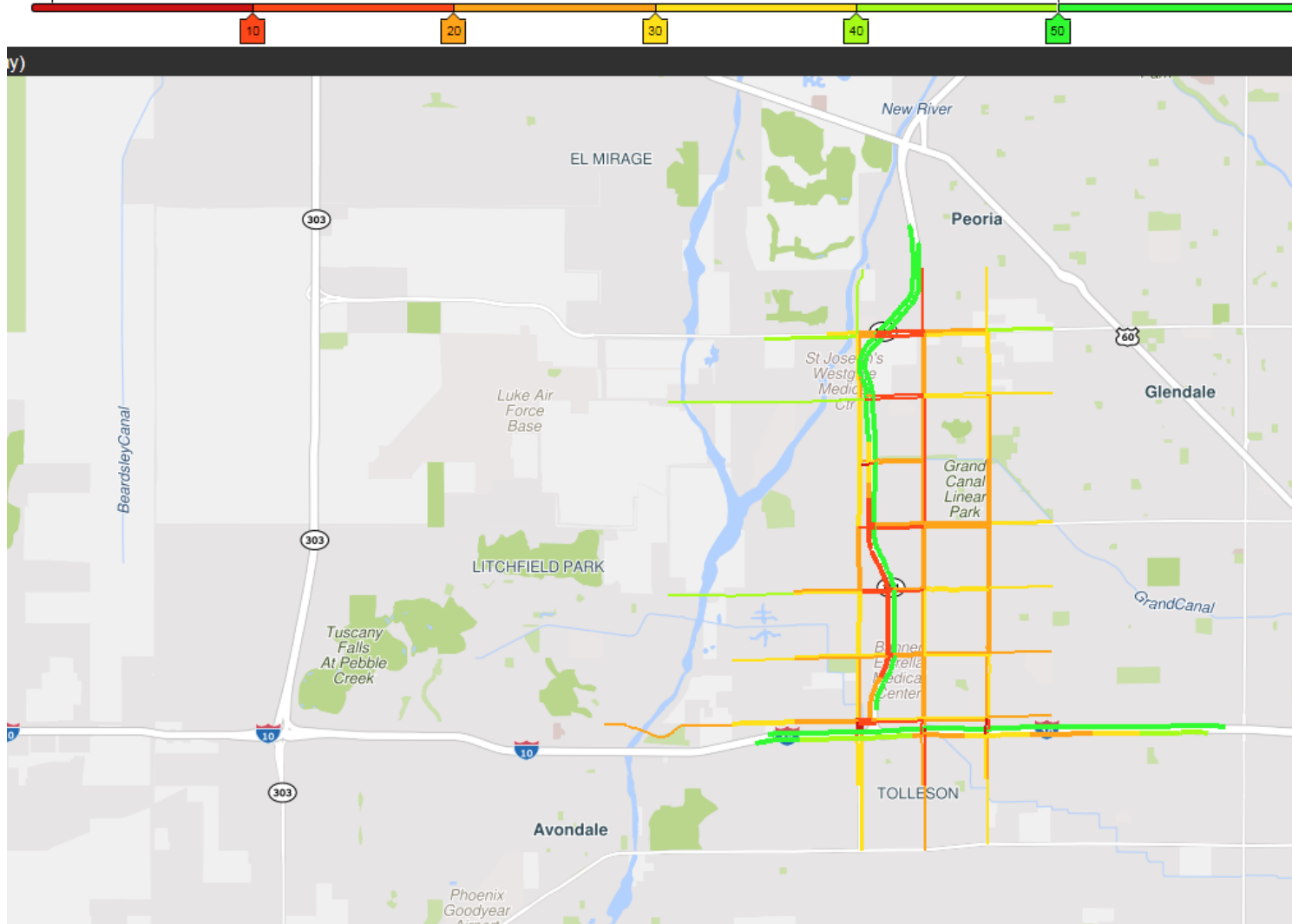
Corridor	Average Speed			Travel Time		
	Differential	Current	Historic	Differential	Current	Historic
MCDOWELL RD EB between AZ-101/Agua Fria Fwy and N 44Th St	0	24 mph	24 mph	↓ 1	41 min	42 min
MCDOWELL RD WB between AZ-101/Agua Fria Fwy and N 44Th St	↑ 3	24 mph	21 mph	↓ 6	42 min	48 min
BUCKEYE RD EB between AZ-85/S 17Th Ave and S 24Th St	↑ 1	25 mph	24 mph	↓ 1	08 min	09 min
BUCKEYE RD WB between AZ-85/S 17Th Ave and S 24Th St	↑ 2	23 mph	21 mph	↓ 1	11 min	12 min
E BELL RD between N 7Th St and N 56Th St	↓ 1	28 mph	29 mph	↑ 1	30 min	29 min

Using INRIX data Updated Dec 4, 2019 3:39 PM (20s ago)

Dashboards



Trend Maps





Trend Maps

Color Thresholds

0 mph

50 mph



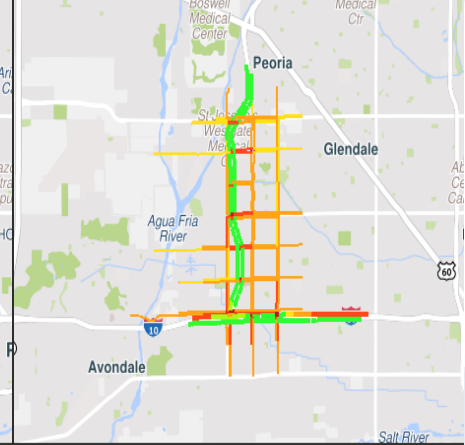
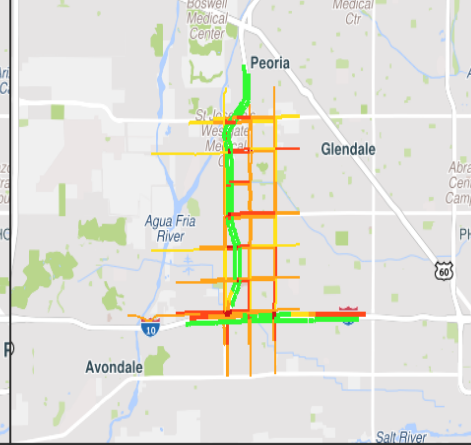
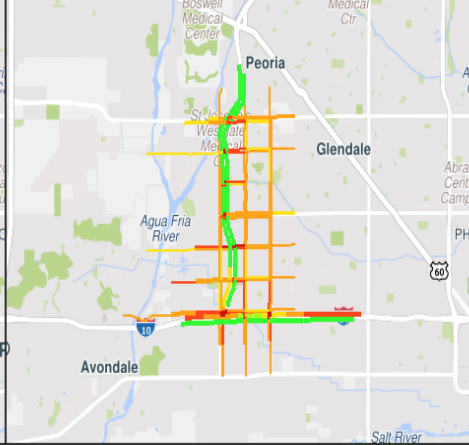
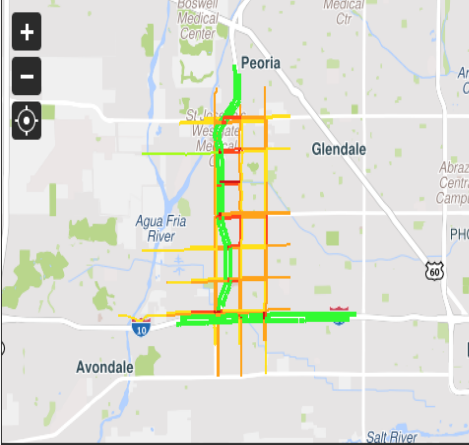
Speed (mph) ▾

05:00 PM - January 12, 2020 (Sunday)

05:00 PM - January 13, 2020 (Monday)

05:00 PM - January 14, 2020 (Tuesday)

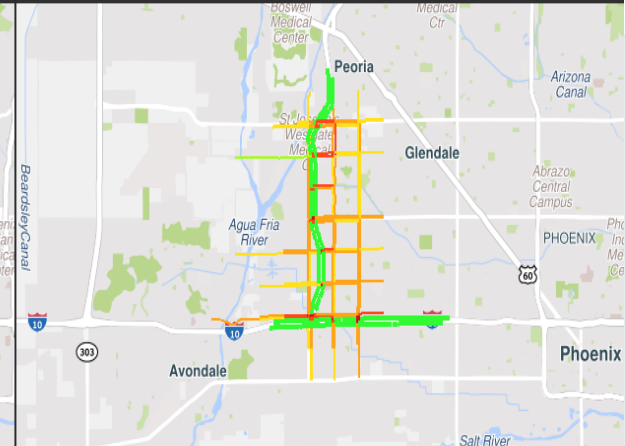
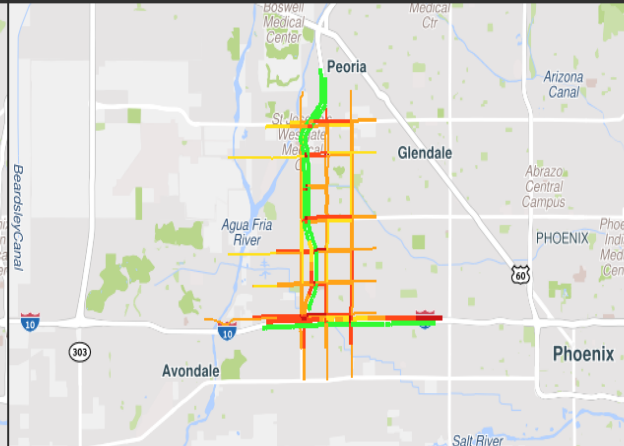
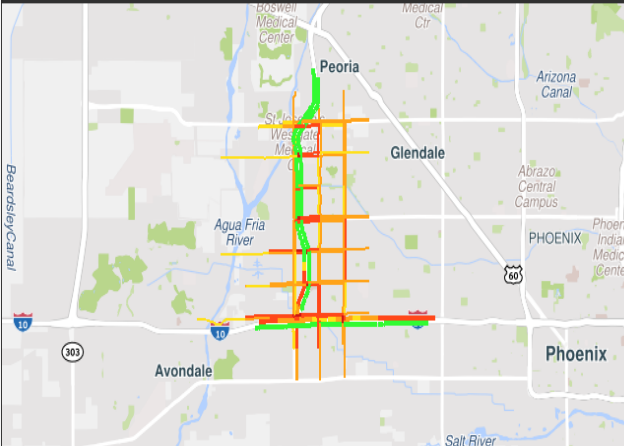
05:00 PM - January 15, 2020 (Wednesday)



05:00 PM - January 16, 2020 (Thursday)

05:00 PM - January 17, 2020 (Friday)

05:00 PM - January 18, 2020 (Saturday)



05:00 PM

11:45 PM at 15 minute intervals



Intergovernmental Agreements (IGA) with State Universities

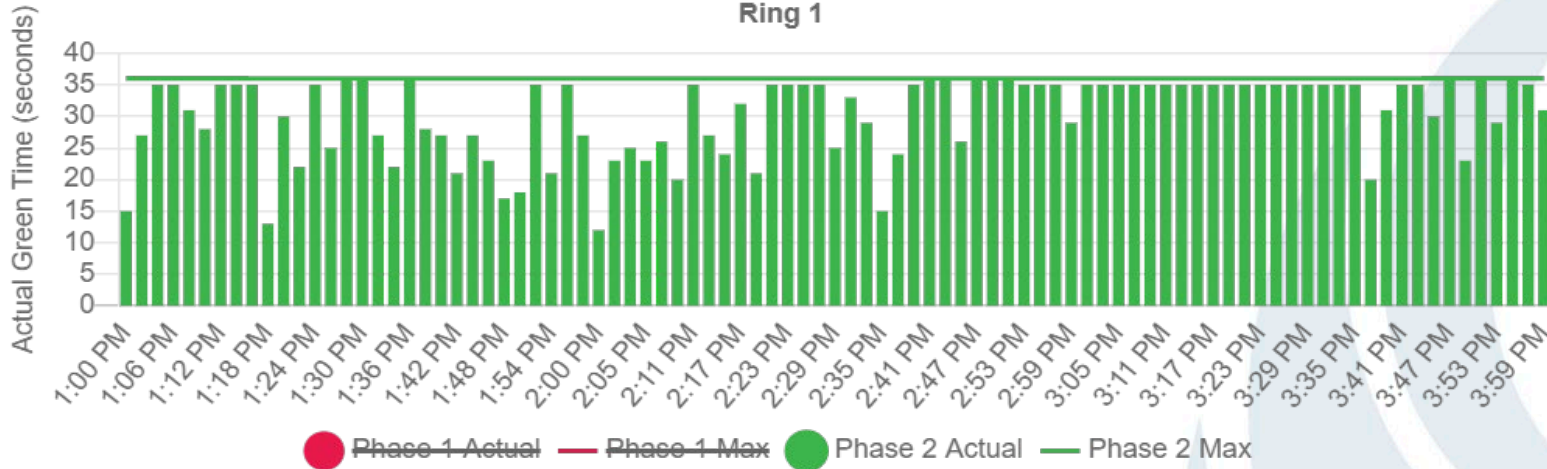


Mutual Partnering in Solving
Complex Problems that Requires
Innovative Solutions

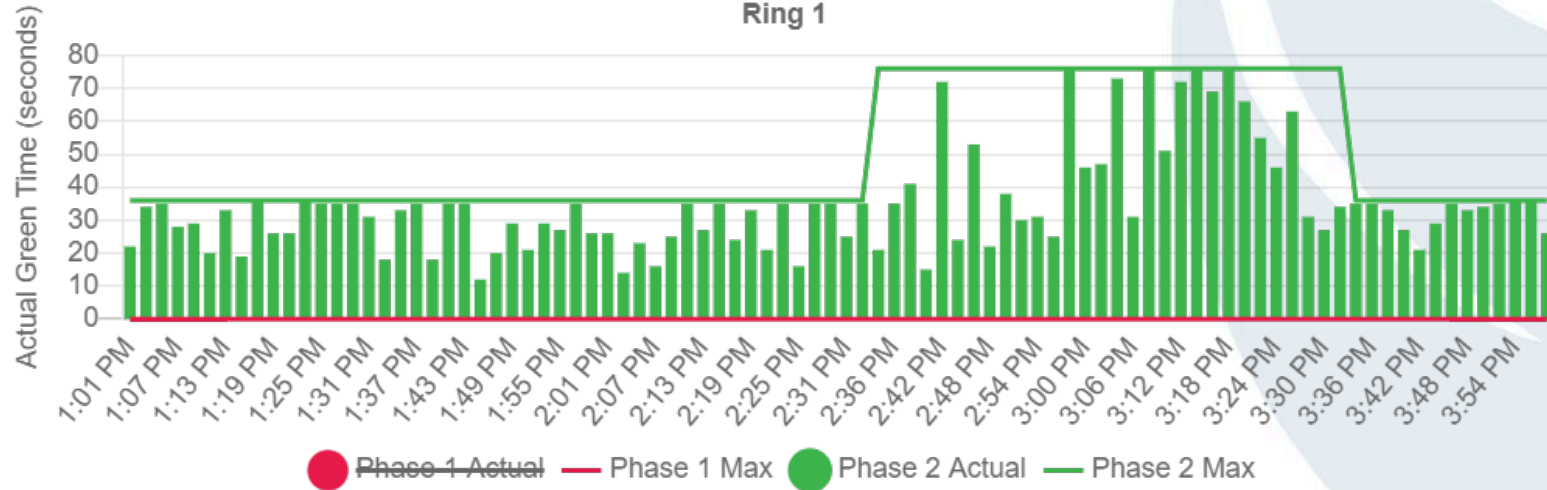


City of Phoenix TransSuite ATMS

Intersection 131 - CAMPBELL & 32 ST
11/29/2021 1:00:00 PM - 11/29/2021 4:00:00 PM
Ring 1



Intersection 131 - CAMPBELL & 32 ST
12/13/2021 1:00:00 PM - 12/13/2021 4:00:00 PM
Ring 1





City of Phoenix TransSuite ATMS

Intersection 7 - BETHANY HOME & 15 AVE

Select

Time

Real Time



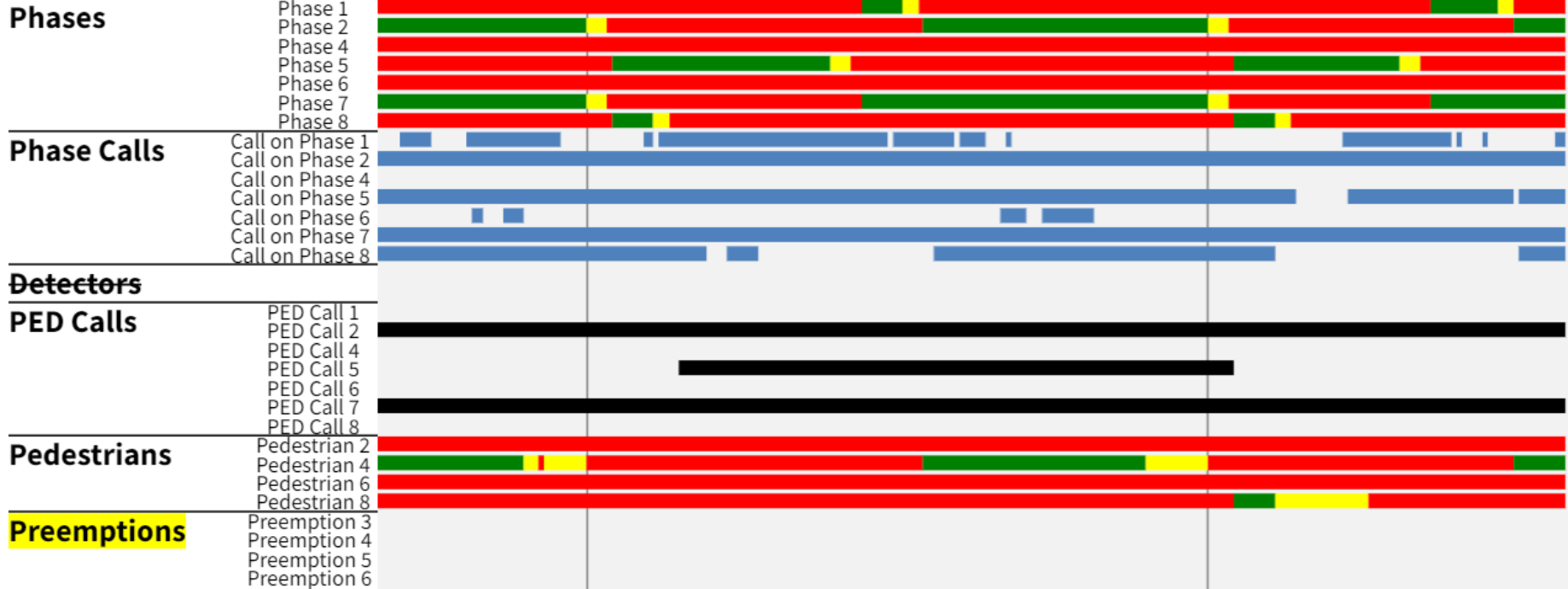
Get Report

View

Time Span

File

Export to Image(s)



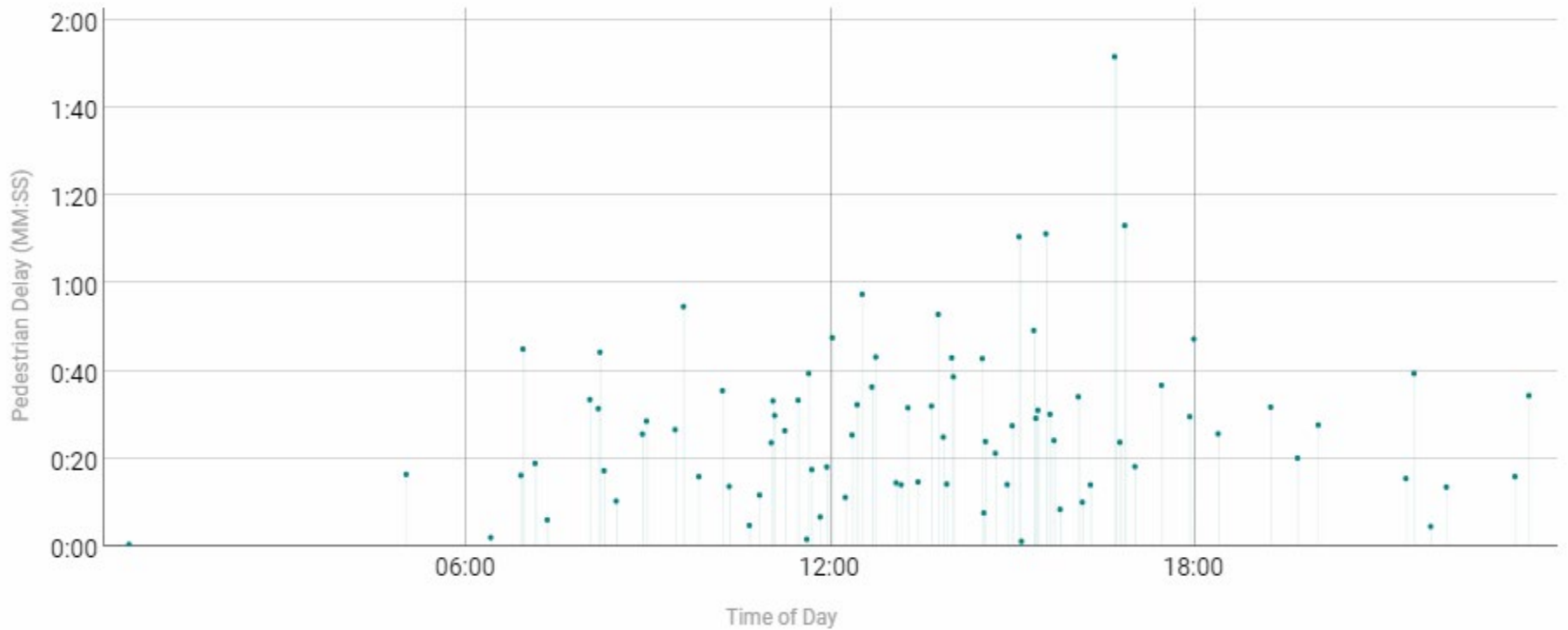


Pedestrian Delay

Thomas & 44 St



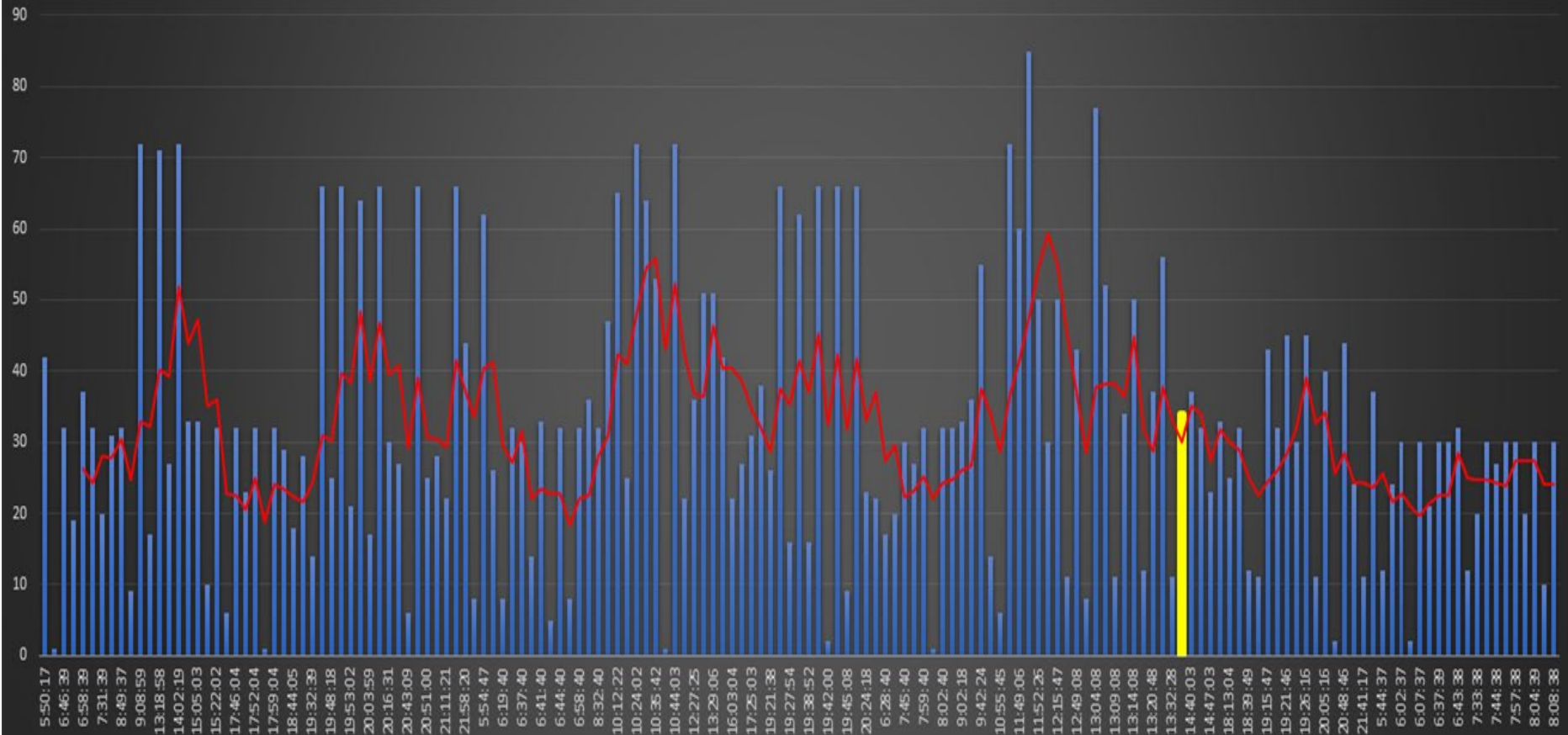
Pedestrian Delay: 00:00 2021/03/30 - 00:00 2021/03/31





Pedestrian Delay at HAWK

7th Street at Montebello (4-27-2020 550hrs to 4-30-2020 808hrs)





ITERIS Speed Map

iteris ClearGuide™

MAP ROUTES SAFETY EXTRAS ABOUT AZ

TYPE: MONTH YEAR MONTH TIME OF DAY: All Day From GO

Speeding Map

PERCENT OF VEHICLES OVER SPEED LIMIT BY 10 MPH

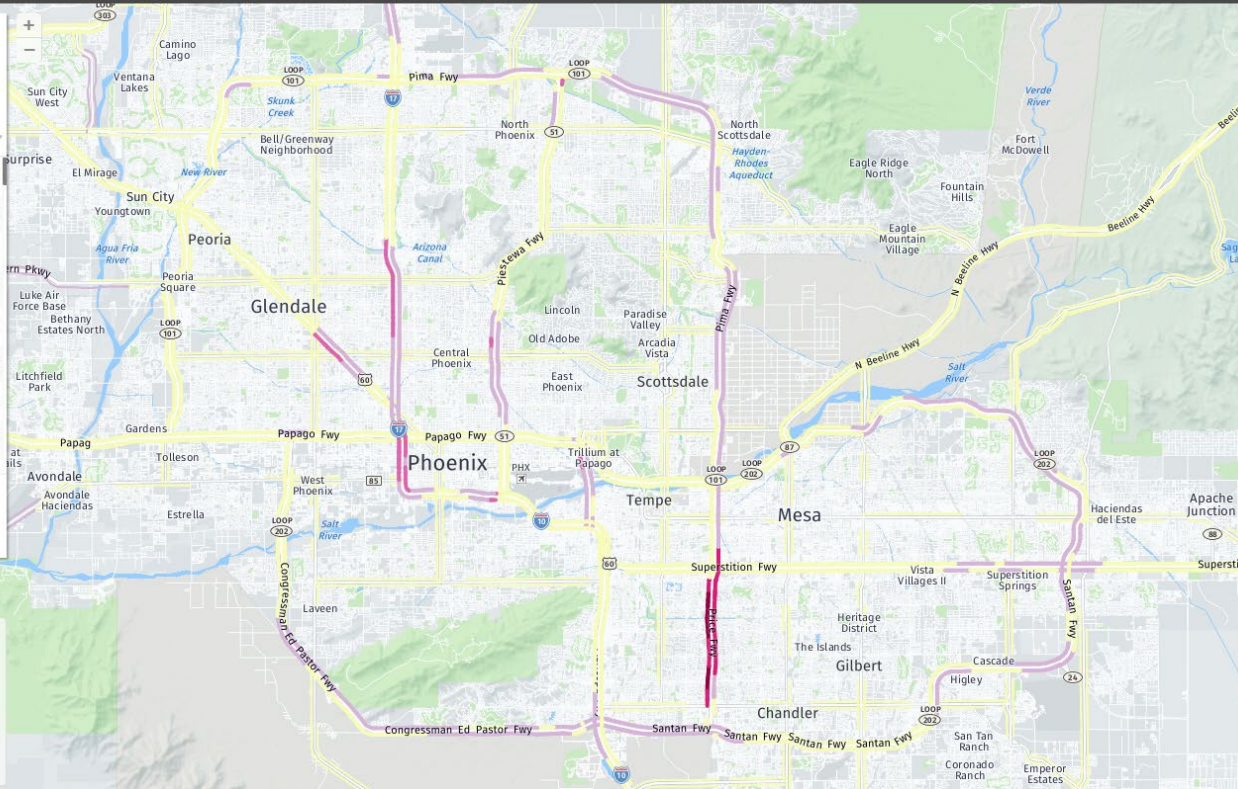
TMC	PCT	COUNT
1 AZ-101-LOOP SB from 0.17 ...	81%	53,220
2 AZ-101-LOOP NB from 0.16 ...	77%	43,100
3 AZ-101-LOOP SB from 0.17 ...	82%	42,681
4 AZ-101-LOOP NB from 0.3 ...	78%	38,257
5 AZ-101-LOOP SB from 0.21 ...	79%	37,432
6 AZ-101-LOOP NB from 0.21 ...	78%	37,305
7 AZ-101-LOOP SB from 0.2 m...	81%	36,935
8 AZ-101-LOOP NB from 0.09 ...	72%	36,680

Showing 1 to 100 of 5,164 entries

Prev 1 2 3 4 5 ... 52 Next

LEGEND

% VEHICLES OVER SPEED LIMIT BY 10 MPH



Layers

- Percent of vehicles over speed limit
 - by 10 mph
 - Show only TMCs with count >= 100
- Percentile Speeds
- Standard deviation of speeds
- Speed Limit



ITERIS Speed Map

iteris ClearGuide™

MAP ROUTES SAFETY EXTRAS ABOUT

Maricopa



TYPE: **Month** YEAR: **2021** MONTH: **April** TIME OF DAY: All Day [+ Show Advanced](#) From **GO**

Speeding Map

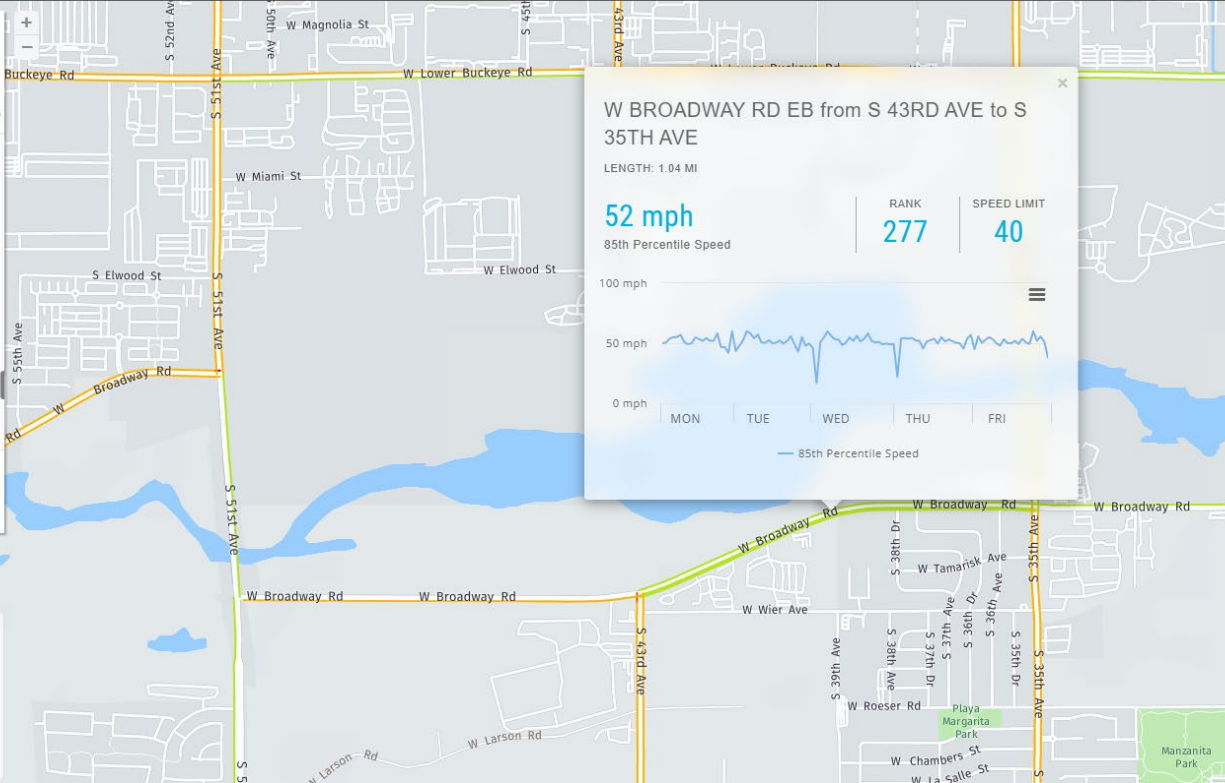
85TH PERCENTILE SPEED

TMC	MPH
277 W BROADWAY RD EB from S 43...	52
278 N PIMA RD NB from E DYNAMIT...	52
279 E SHEA BLVD EB from 0.19 mi b...	52
280 S 44TH ST NWB	52
281 W CAMELBACK RD WB from N 1...	52
282 NW GRAND AVE NWB from 0.33...	52
283 W GRAND AVE NWB from W GR...	52
284 W GRAND AVE SEB from W GRE...	52

Showing 201 to 300 of 5,720 entries

Prev 1 2 3 4 5 ... 58 Next

LEGEND



W BROADWAY RD EB from S 43RD AVE to S 35TH AVE

LENGTH: 1.04 MI

52 mph
85th Percentile Speed

RANK: **277** | SPEED LIMIT: **40**

100 mph
50 mph
0 mph

MON TUE WED THU FRI

— 85th Percentile Speed

Layers

- Percent of vehicles over speed limit
- Percentile Speeds
 - 0th 20th 40th 60th 80th 100th
 - slower faster
- Standard deviation of speeds
- Speed Limit

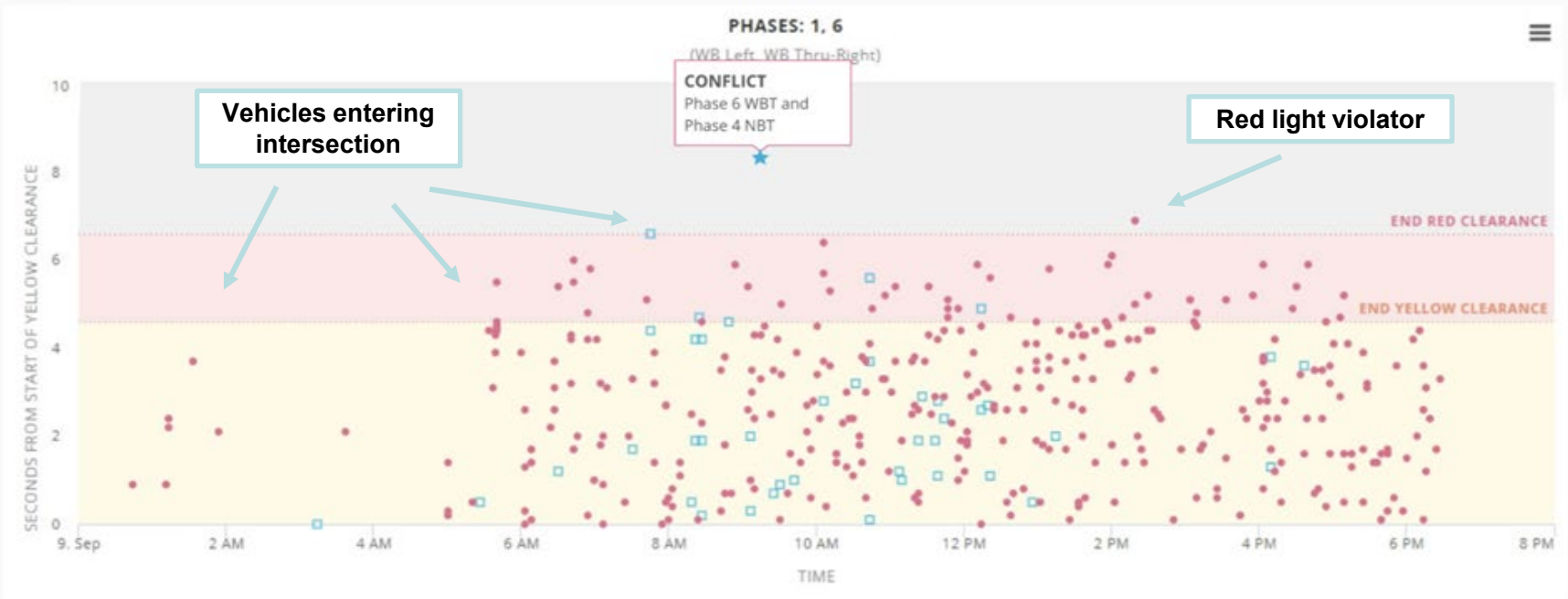


ITERIS Red Light Runner Data

Memorial Blvd & Martin L. King

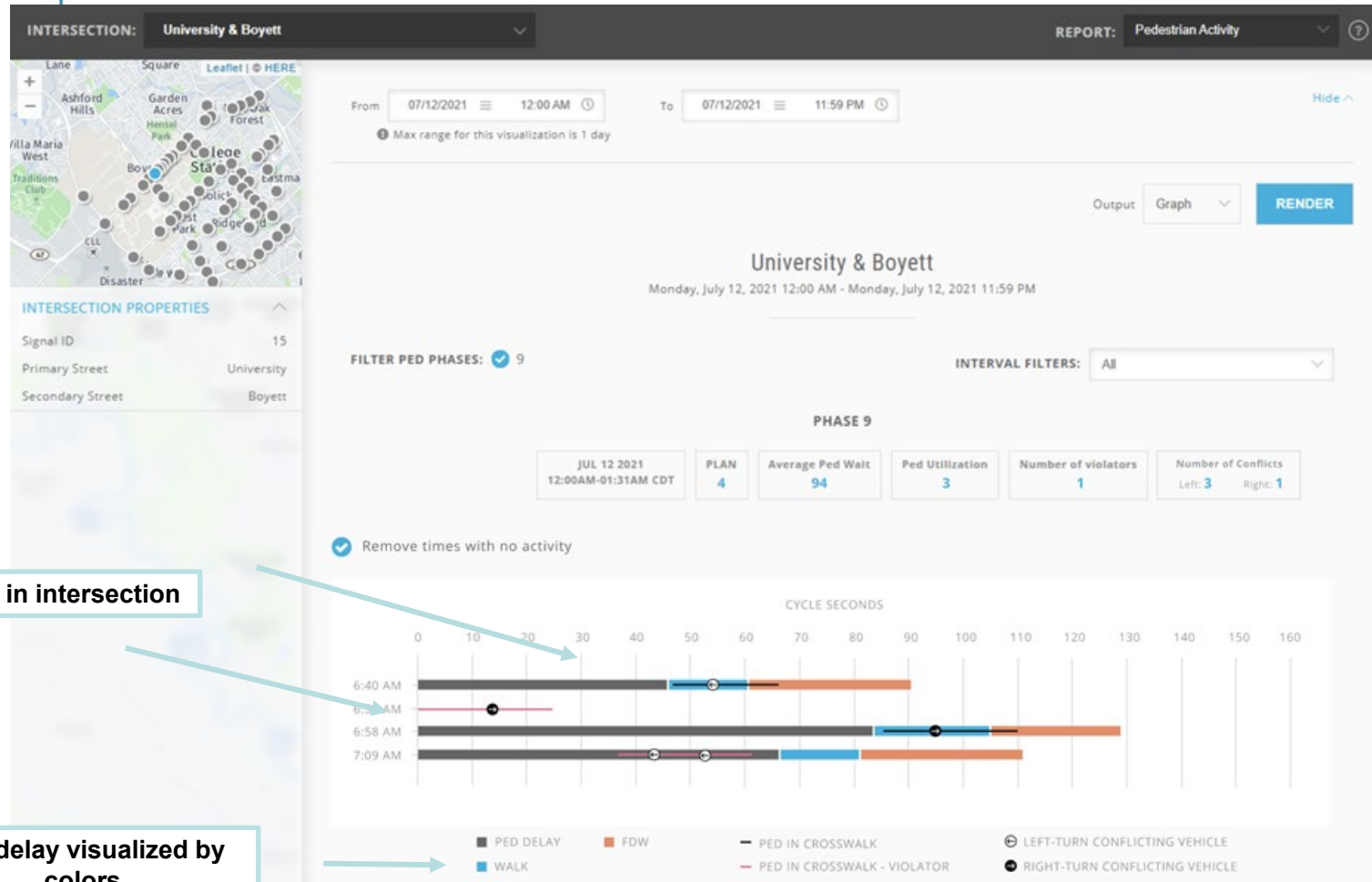
Wednesday, September 8, 2021 12:00 AM - Wednesday, September 8, 2021 11:59 PM

TOTAL CONFLICTS	VEHICLES ENTERING AFTER ALL-RED CLEARANCE	VEHICLES ENTERING DURING ALL-RED CLEARANCE	VEHICLES ENTERING DURING YELLOW
2	4	8	16



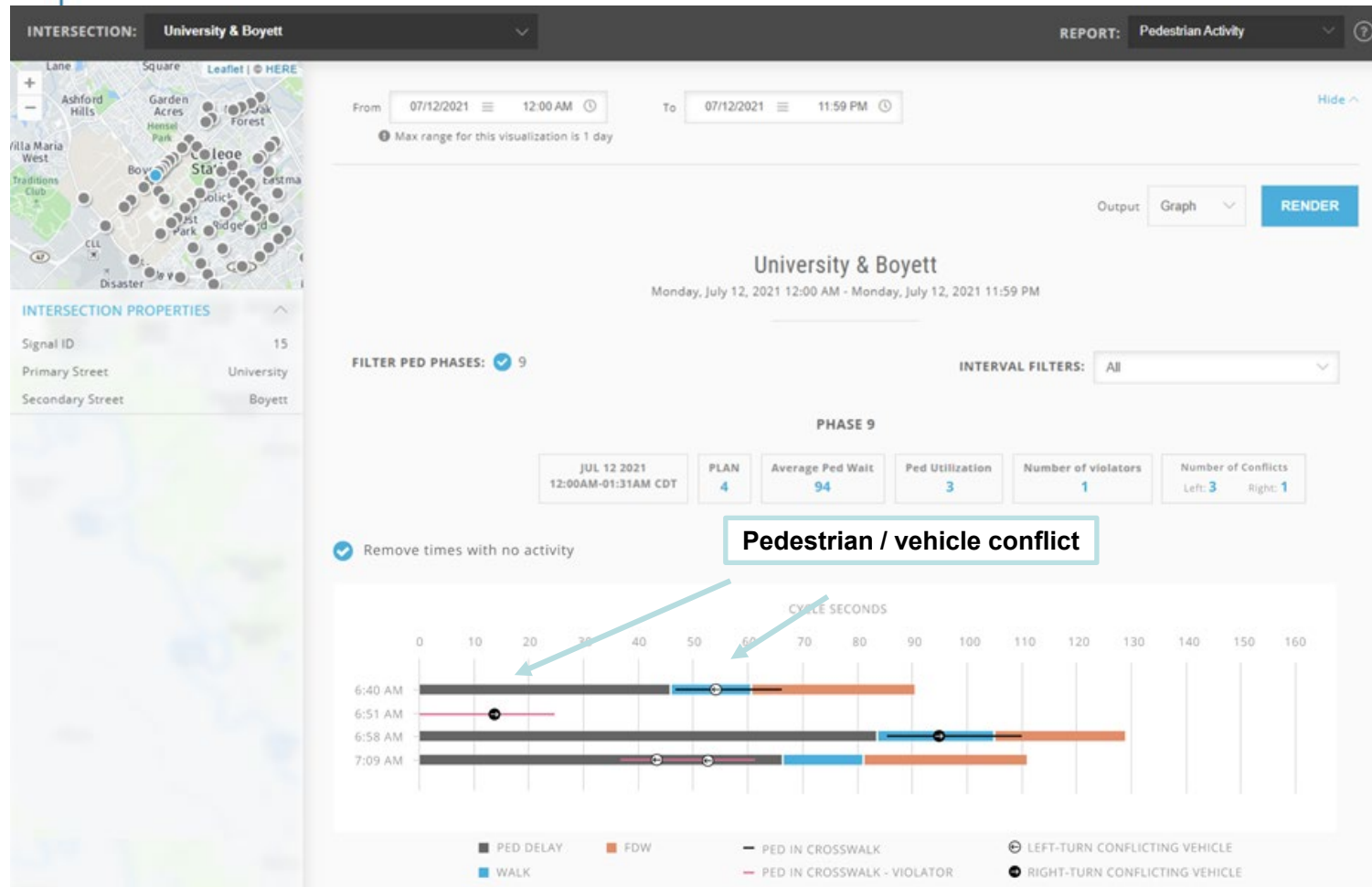


ITERIS Pedestrian Data



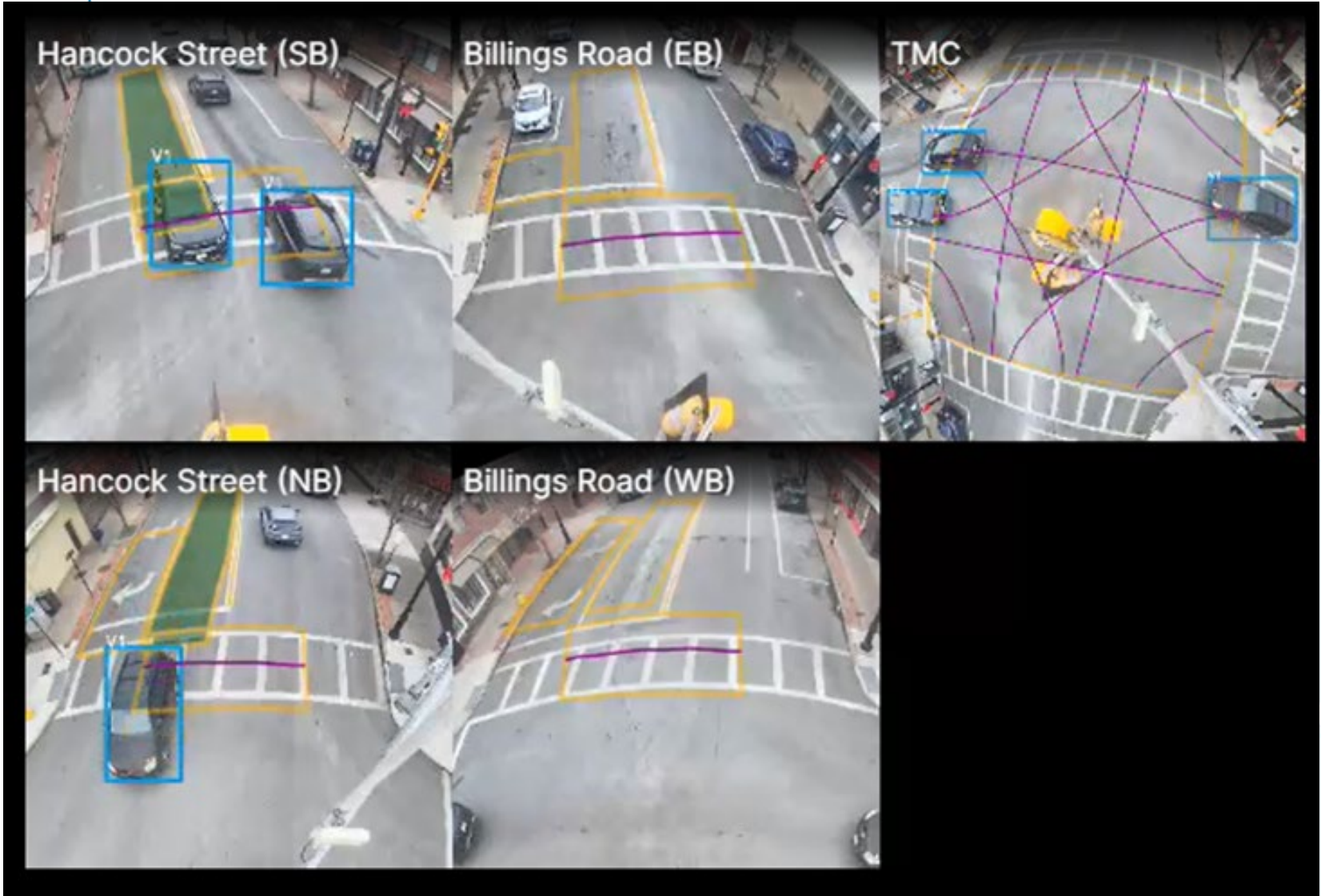


ITERIS Pedestrian Data





MioVision – Detection, Counts

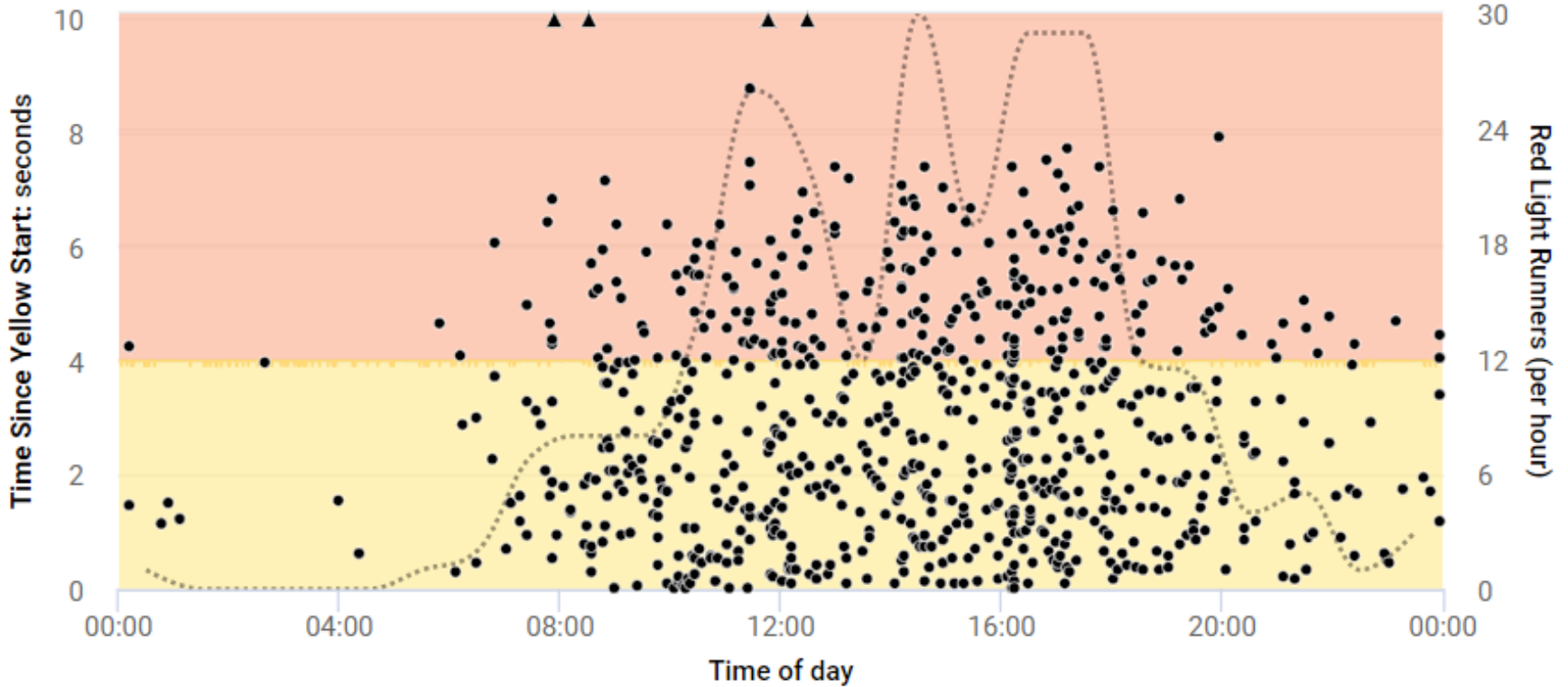




MioVision – Red Light Runner

Quincy Avenue and Water Street, Quincy Avenue (EB) - Thru

Red Light Runner | Wed, Dec 8th, 2021



● Red ● Yellow ● Detector Hits ▲ Detector Hits Over 10s RLR Hourly Count

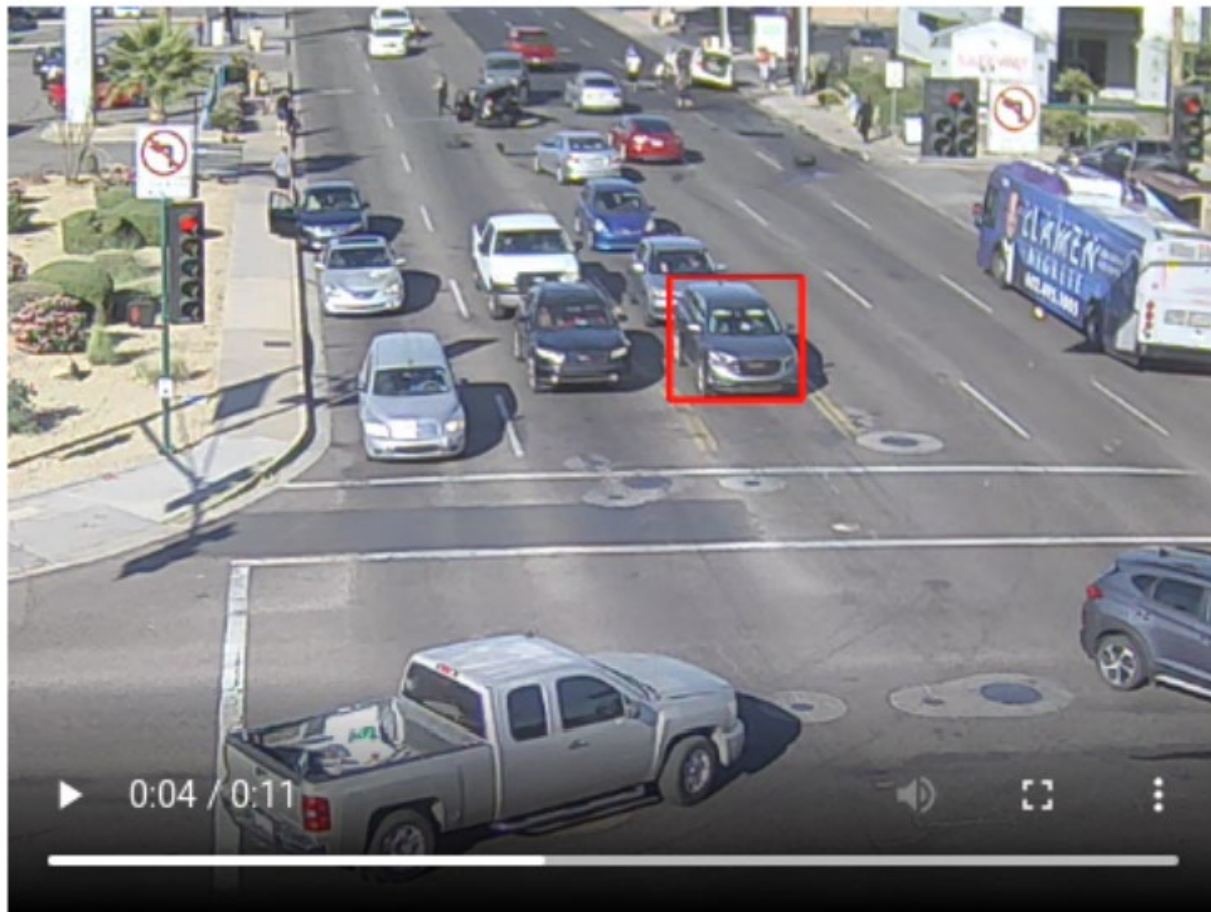


NoTraffic Detection / AI

NoTraffic System Alert - Traffic Accident

Our system has detected a traffic accident at Glendale & 7th in the southbound lane
Lane blockage is ongoing.

More information is available on the [dashboard](#).



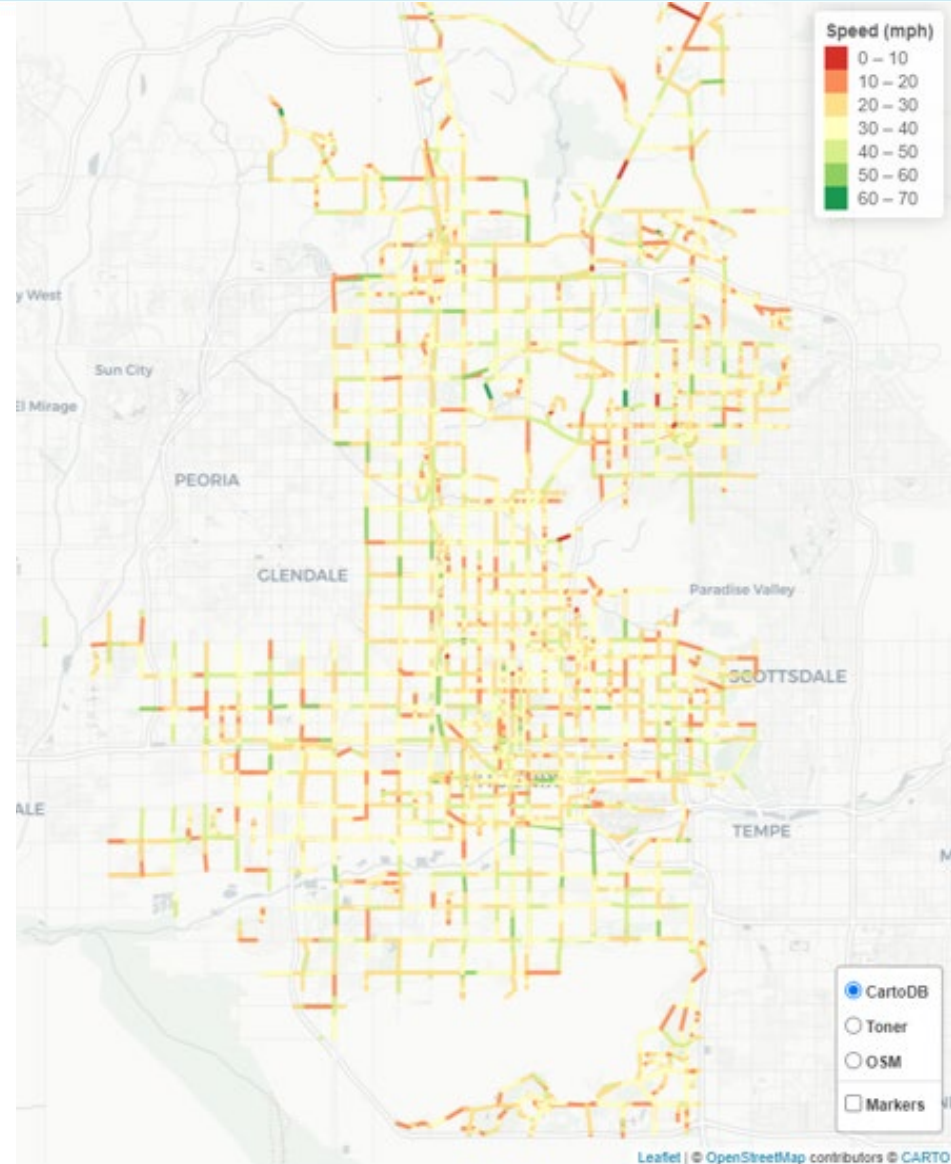
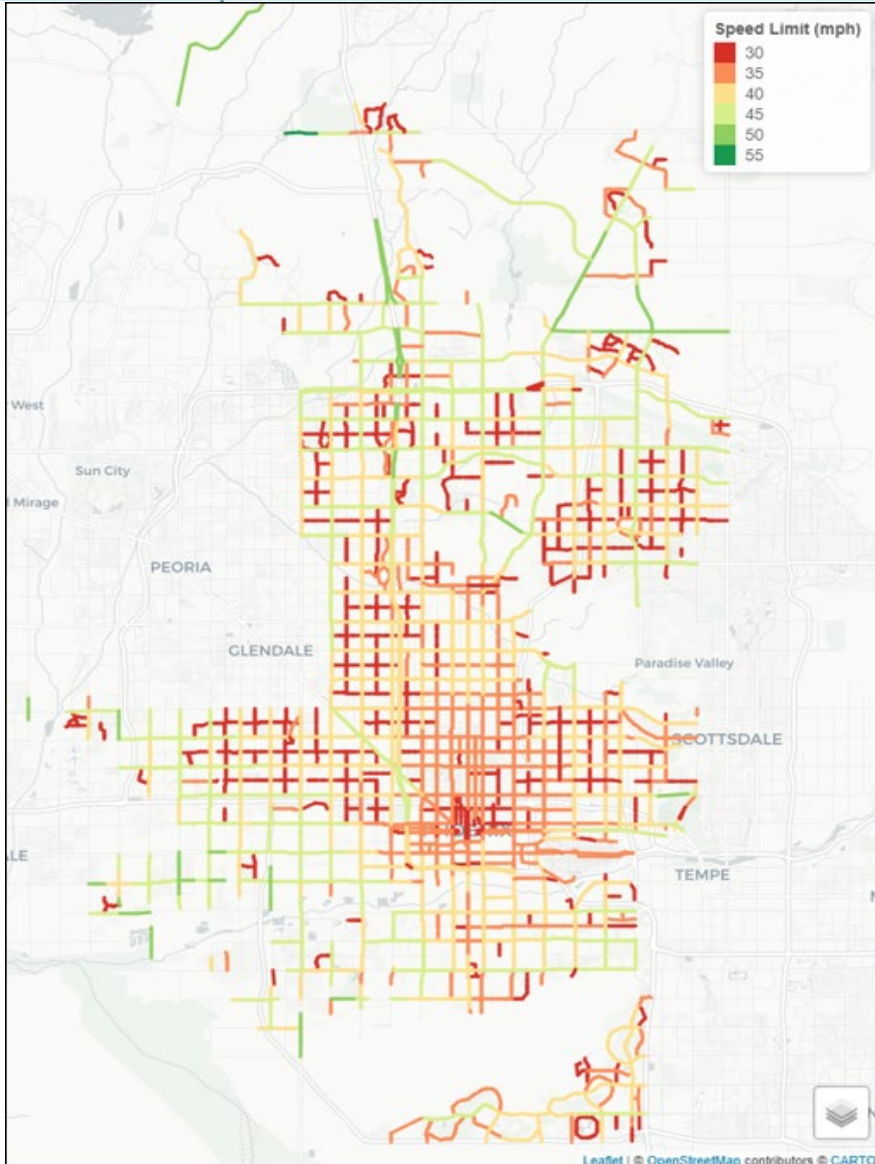


NoTraffic Artificial Intelligence





University of Arizona Speed Map





Questions



Email: simon.ramos@phoenix.gov