A company with deep expertise in mobility data & insights

INRIX

Connecting a world of possibilities through intelligent transportation

- Largest mobility & location-based platform
- 35B+ real-time data points / day
- Over 1,000 blue-chip customers

Agenda

Foundational Data

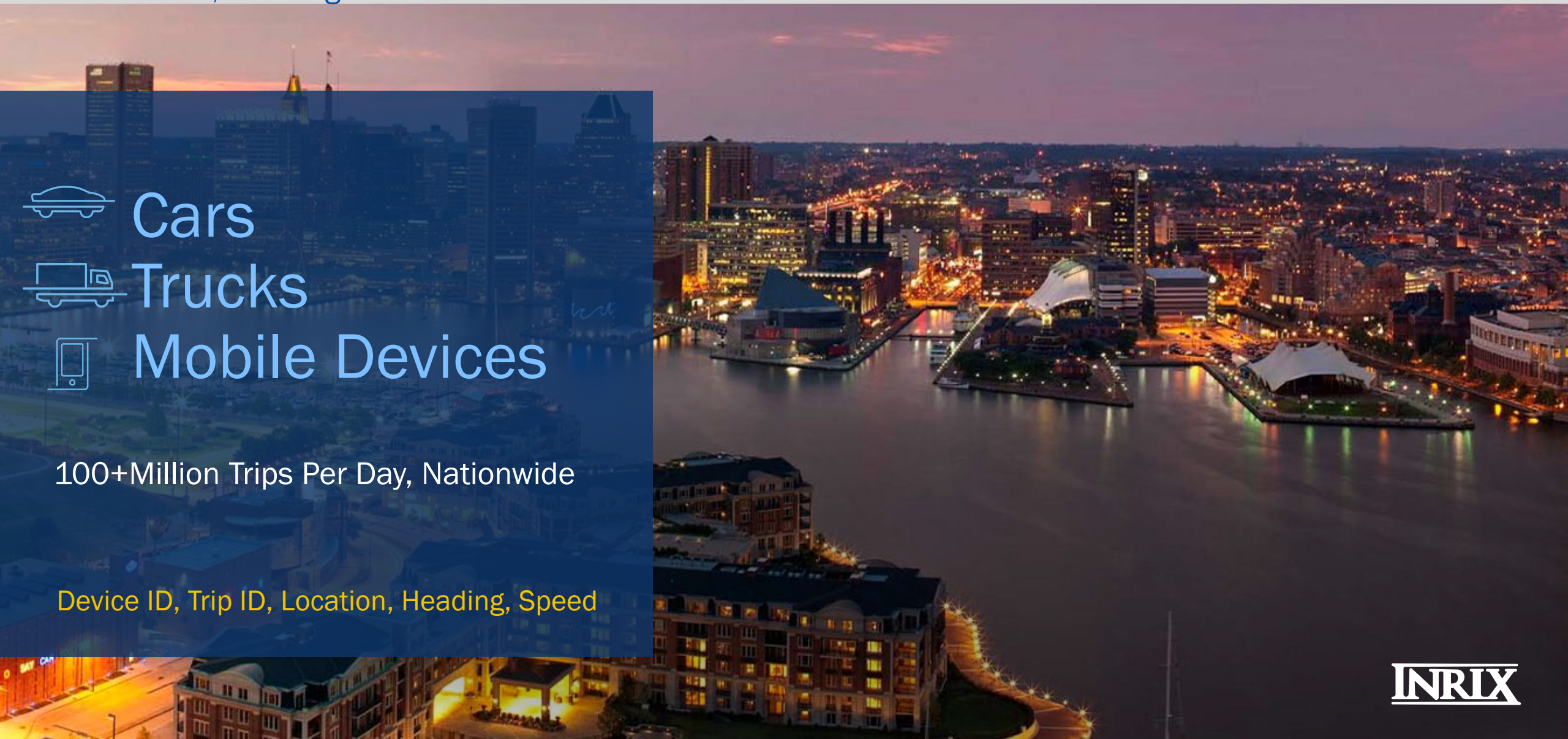
Trips Dataset

Signal Analytics

NJ Signal Inventory
Dashboard
Intersection Analytics Powered by CATT Lab
Q&A

INRIX Foundational Data

GPS Devices, Covering 5+ Million Miles of Road



Cars

Trucks

Mobile Devices

100+Million Trips Per Day, Nationwide

Device ID, Trip ID, Location, Heading, Speed

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The INRIX IQ Suite of mobility intelligence solutions

IQ suite

Anonymized location-based data

Faster and smarter to improve decision-making

Foundational Data
Trip Paths Dataset

Signal Analytics
Demo

Roadway Analytics
On-demand traffic data, analytics and visualizations

Data Showcase
Explore all the diverse content layers we provide

Trip Trends
Analyze the movement of goods & people around the world

Road Rules
A tool to digitize, manage & communicate mobility information

Signal Analytics
Systemwide insights in your city
Performance trends without fieldwork

Trip Analytics
Visualize the path drivers traverse on individual trips

Visit Analytics
Foot-traffic insights to understand movement of people

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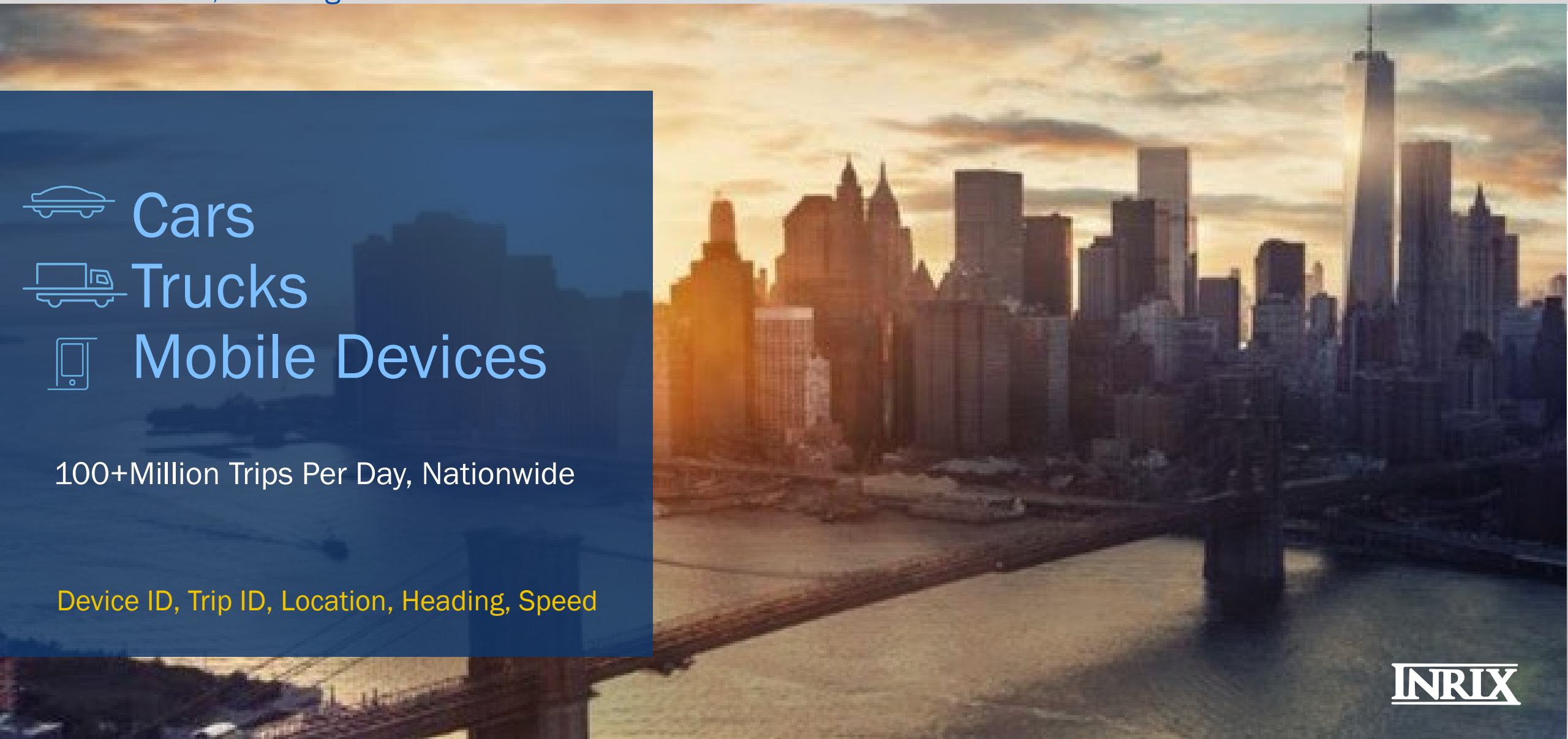
INRIX Foundational Data

GPS Devices, Covering 5+ Million Miles of Road



Cars

Trucks

Mobile Devices

100+Million Trips Per Day, Nationwide

Device ID, Trip ID, Location, Heading, Speed

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INRIX GPS National Data Growth

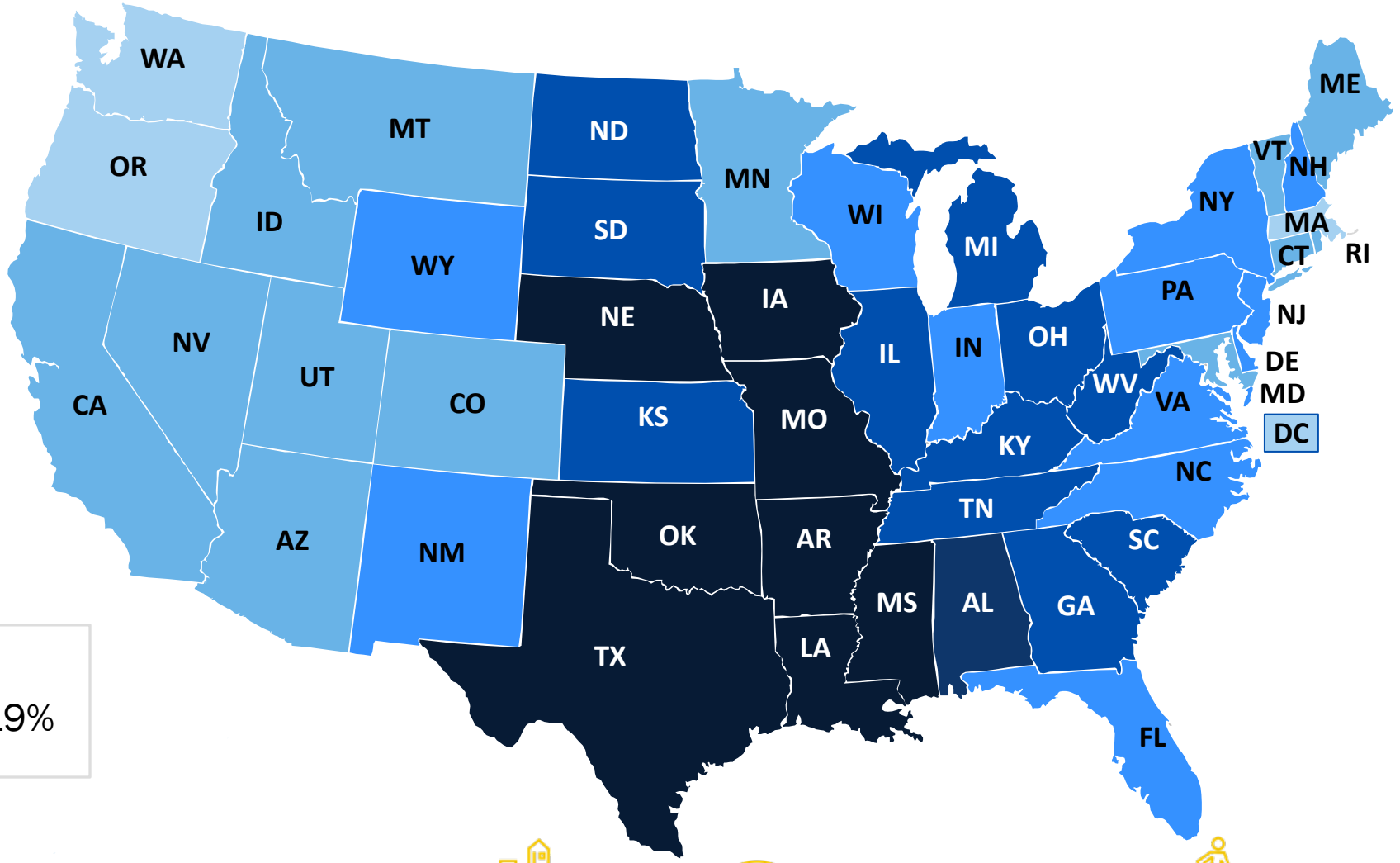
Growth by a factor of 10x

January 2019: 8.3M Trips per day Average

January 2020: 100M Trips per day Average

Average ‘INRIX Fleet’ VMT Penetration (as of Feb 2021)

Daily Nationwide Average: ~100 million trips, ~1 billion+ miles, ~12.7% of National VMT*



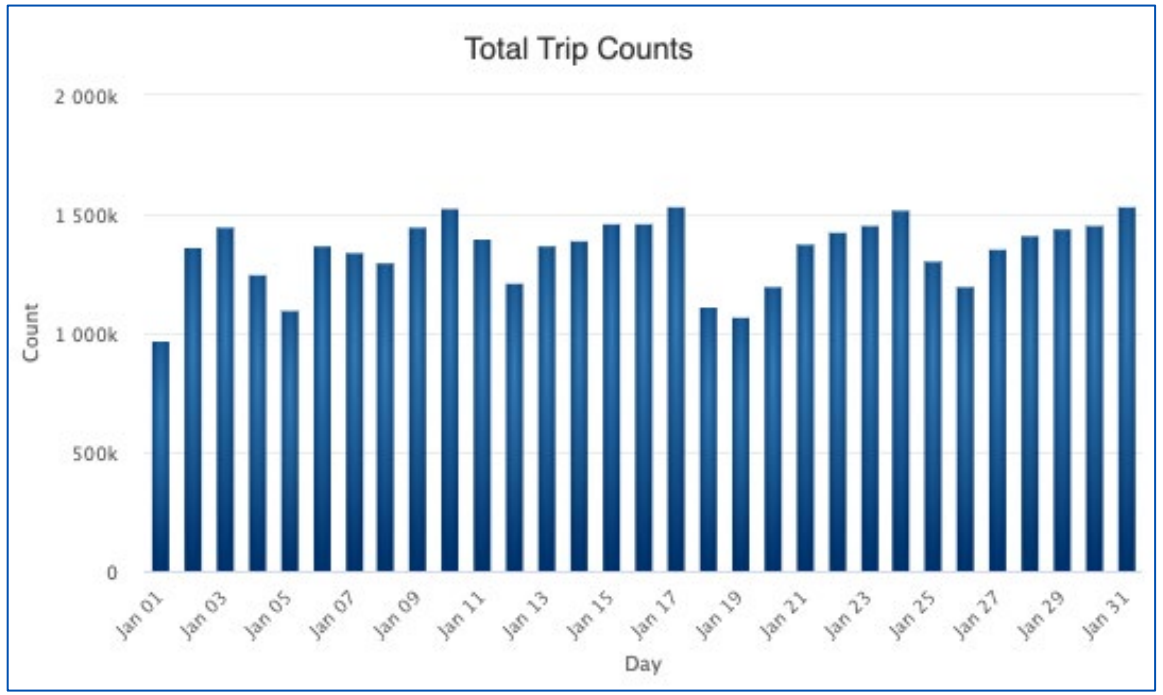
% of State VMT

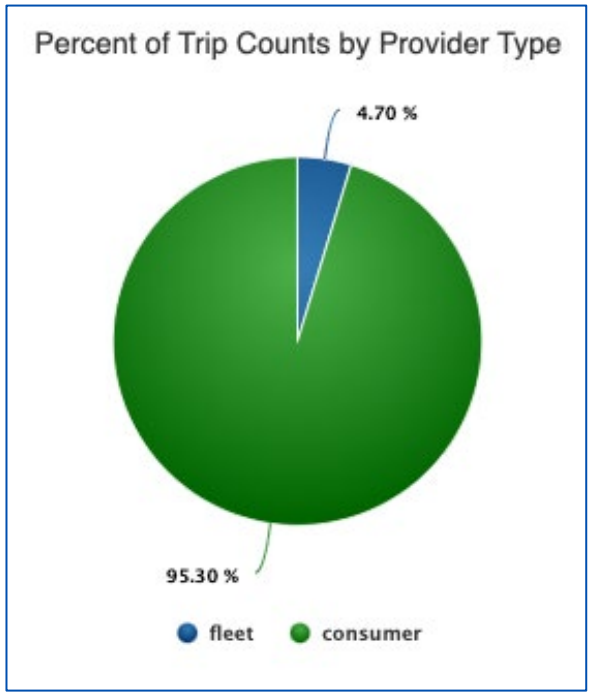
7% 19%

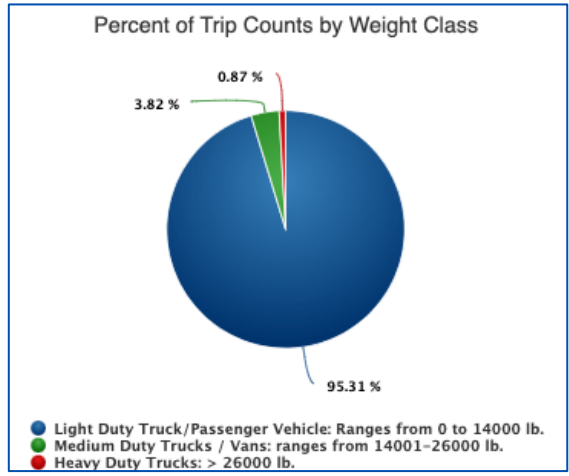
INRIX Trip Path Metrics

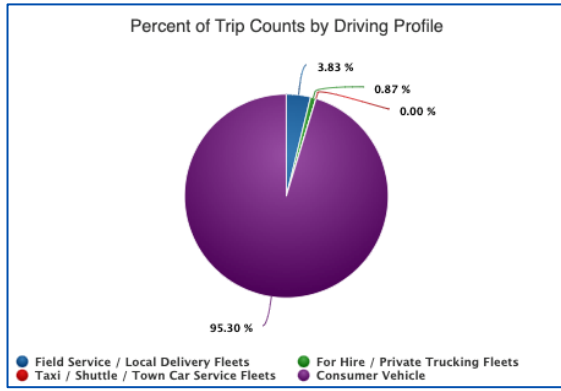
Maryland Trip example February 2020

Trips Total	Waypoint Count	Distance (km)	Duration (minutes)
41,859,870	5,931,722,503	674,628,367	864,971,806
Ave Trip Cnts By Day	**Waypoints Per Trip**	**Distance (km) Per Trip**	**Duration (minutes) Per Trip**
1,350,318	141.7 waypoints	16.12 km	20.66 minutes

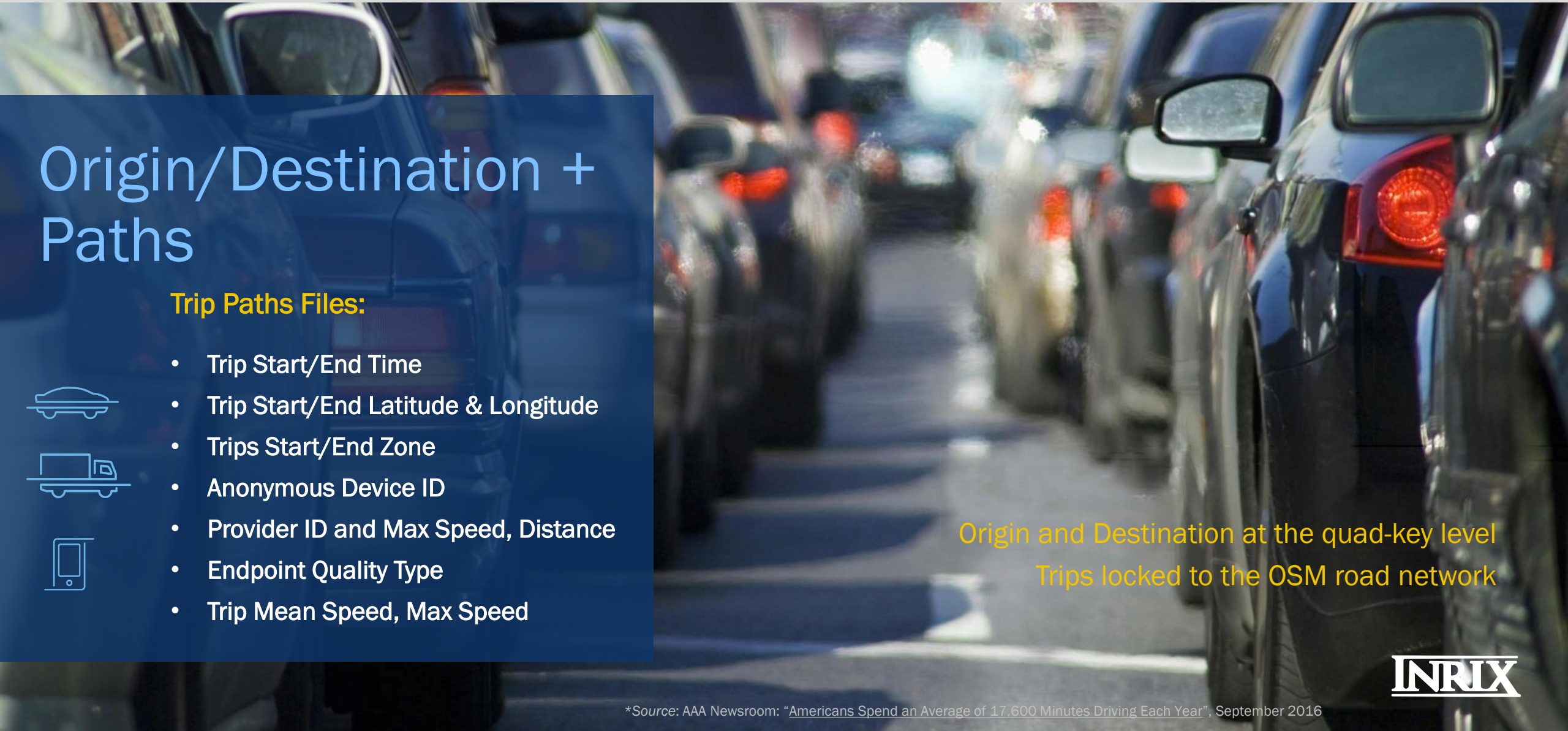








INRIX Trip Path Dataset



Origin/Destination + Paths

Trip Paths Files:

- Trip Start/End Time
- Trip Start/End Latitude & Longitude
- Trips Start/End Zone
- Anonymous Device ID
- Provider ID and Max Speed, Distance
- Endpoint Quality Type
- Trip Mean Speed, Max Speed

Origin and Destination at the quad-key level

Trips locked to the OSM road network

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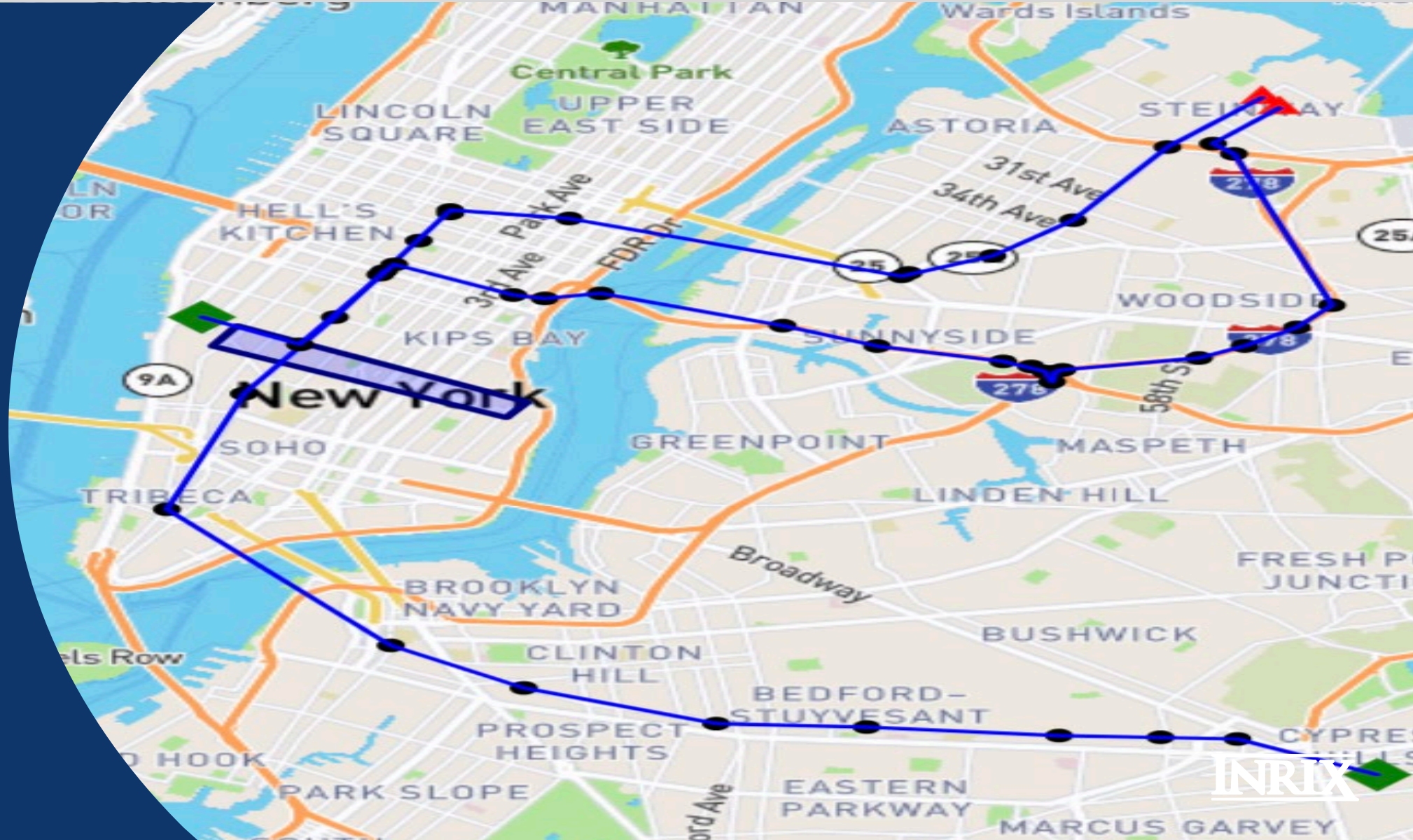
*Source: AAA Newsroom: "Americans Spend an Average of 17,600 Minutes Driving Each Year", September 2016

What is a Trip Path

Actual historical, anonymized vehicle GPS data

Vehicle GPS Data

- Paths utilize OSM road network information including speed limits and directionality
- Easier to compute corridor travel times and turn ratios
- Matching trips by road segment
- Full corridor view as opposed to points on a map
- Easy Segment Ordering



INRIX Trip Use Case Examples in NYC

Real world use cases

NEW YORK CITY DOT

Myriad of Use Cases

Anonymized location-based data

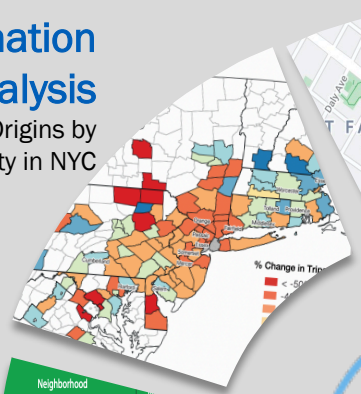
Faster and smarter to improve decision-making and measure the impact of change.

Open Streets

Determine re-routes (diverted trips) resulting from street closures

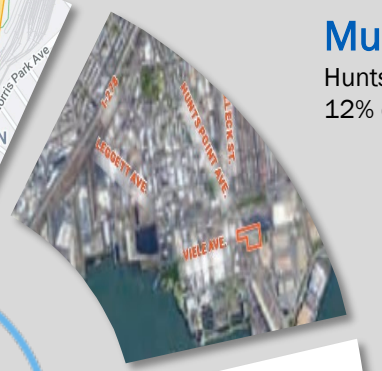
Origin-Destination Analysis

COVID impact on Truck Trip Origins by County in NYC



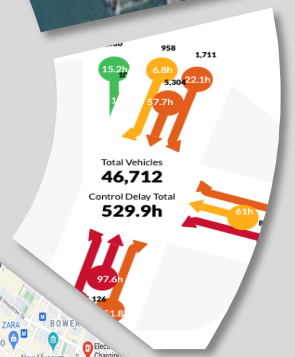
Freight Hub Connections to NYC Multimodal Freight Network

Hunts Point Coop Market home to 8,500 jobs, distributes 12% of all food to NYC and generates 15k daily truck trips



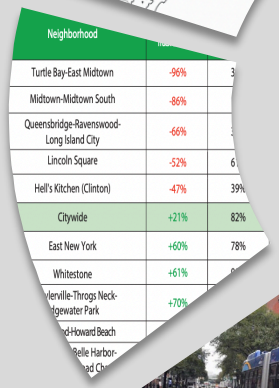
Construction Mitigation Effectiveness

Before/After trip patterns including alternate parallel routes



Freight Studies

Truck Deliveries by neighborhood



Neighborhood		
Turtle Bay-East Midtown	-96%	
Midtown-Midtown South	-86%	
Queensbridge-Ravenswood-Long Island City	-66%	
Lincoln Square	-52%	
Hell's Kitchen (Clinton)	-47%	39%
Citywide	+21%	82%
East New York	+60%	78%
Whitestone	+61%	
	+70%	

Turning Movement Counts

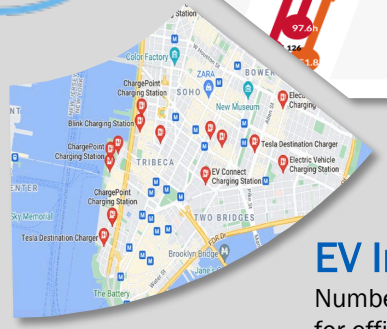
Turning Movements at the intersection level (coming soon)

Travel Demand Modeling

14th Street Busway Project.

EV Infrastructure Planning

Number of cars moving through corridors to plan for efficient curb usage



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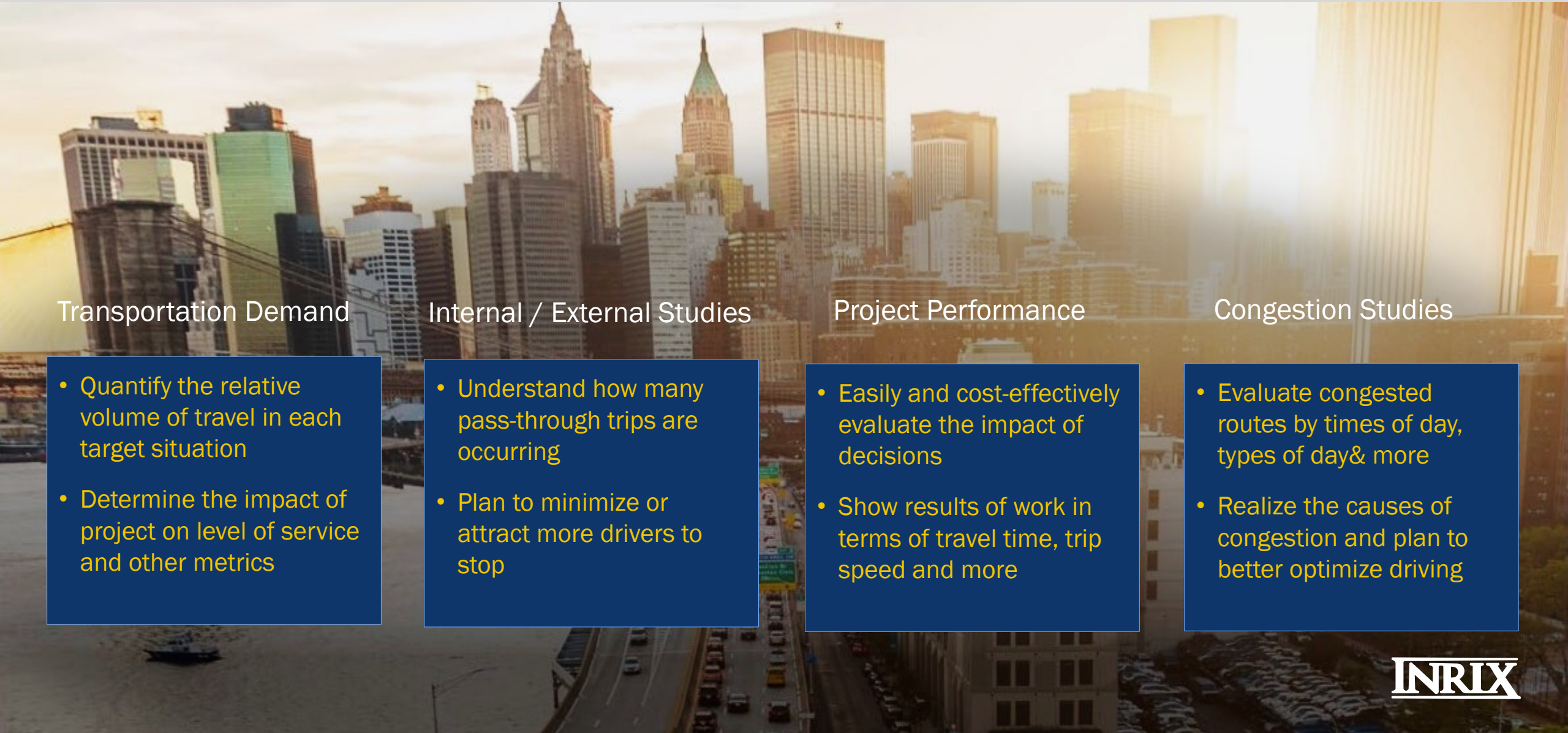
Trips provide a variety of insights

Use Case Examples



Transportation Demand

- Quantify the relative volume of travel in each target situation
- Determine the impact of project on level of service and other metrics

Internal / External Studies

- Understand how many pass-through trips are occurring
- Plan to minimize or attract more drivers to stop

Project Performance

- Easily and cost-effectively evaluate the impact of decisions
- Show results of work in terms of travel time, trip speed and more

Congestion Studies

- Evaluate congested routes by times of day, types of day& more
- Realize the causes of congestion and plan to better optimize driving

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IQ Signal Analytics

Think beyond equipment and infrastructure

VIRTUAL INFRASTRUCTURE

Every signal intersection from 1/2020

JUST TURN IT ON

Systemwide insights in your city

Performance trends without fieldwork

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INRIX IQ Signal Analytics

Foundational GPS data used in Signal Analytics

High—Frequency GPS Data
(~3 second)

Dramatic Increase Data -

Systemwide

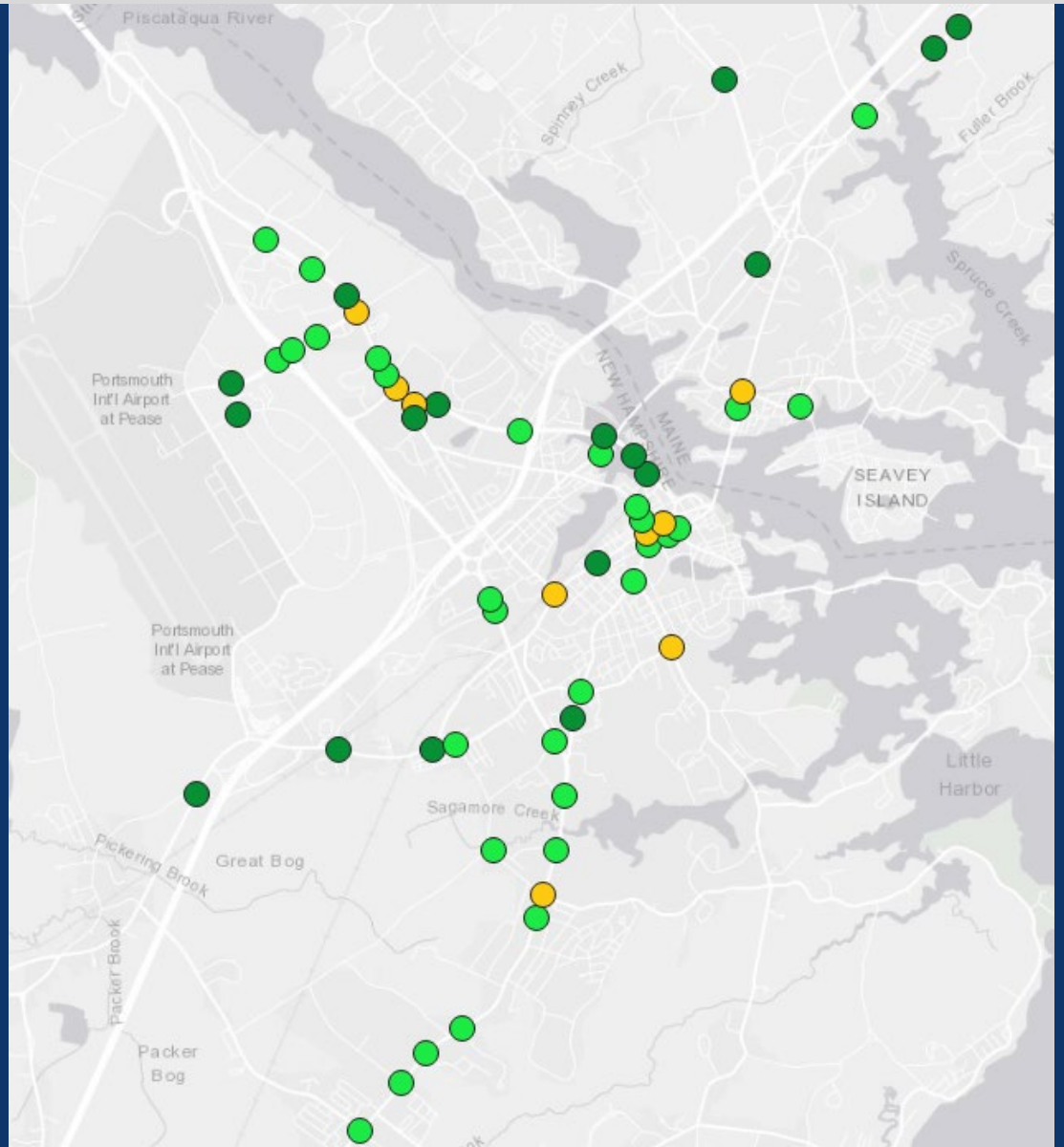
Scalable, Remote Evaluation

of **ALL** Signals and Corridors

NO Field Infrastructure

Continuous Data Collection

Allows Analysis of any Time



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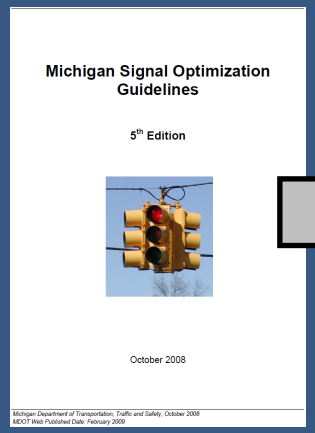
The Traditional Signal Management Process

Shifting from Reactive to Proactive Management of Signals

Traditional Approach

Define Specs



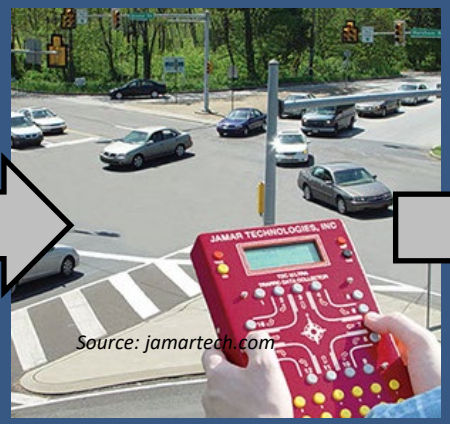
Hire Consultant

AECOM

Kimley»Horn
Expect More. Experience Better.

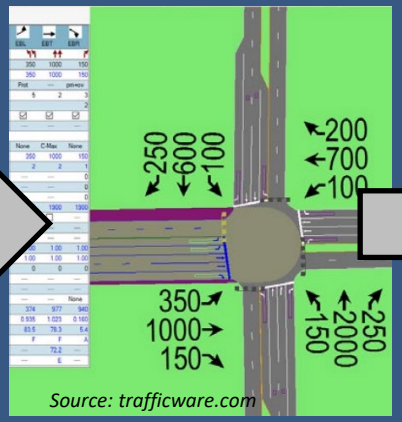
WSP

Data Collection



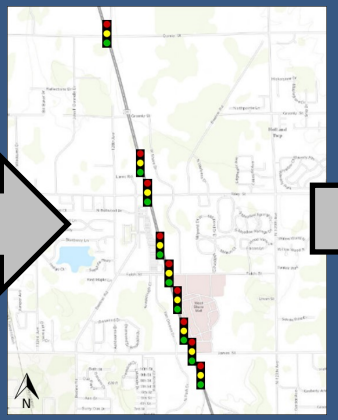
Source: jamartech.com

Modeling

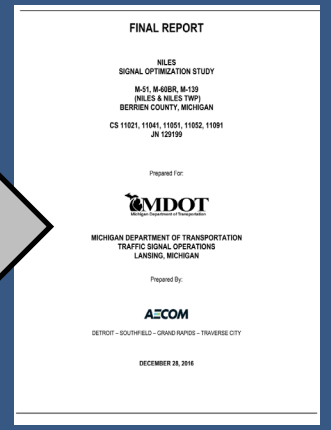


Source: trafficware.com

Implement

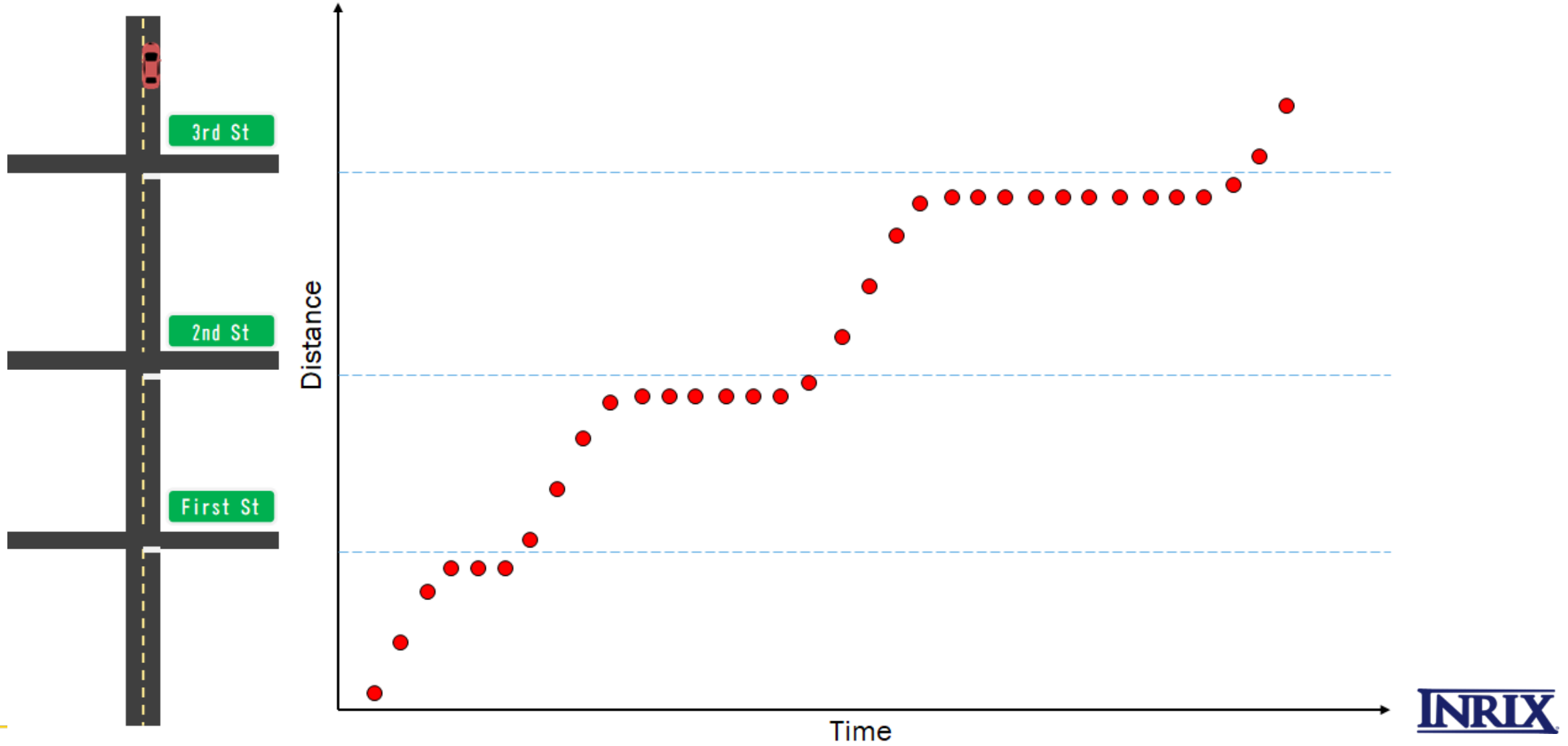


Results



How do we use CV data to understand intersection performance?

Time Space Diagram



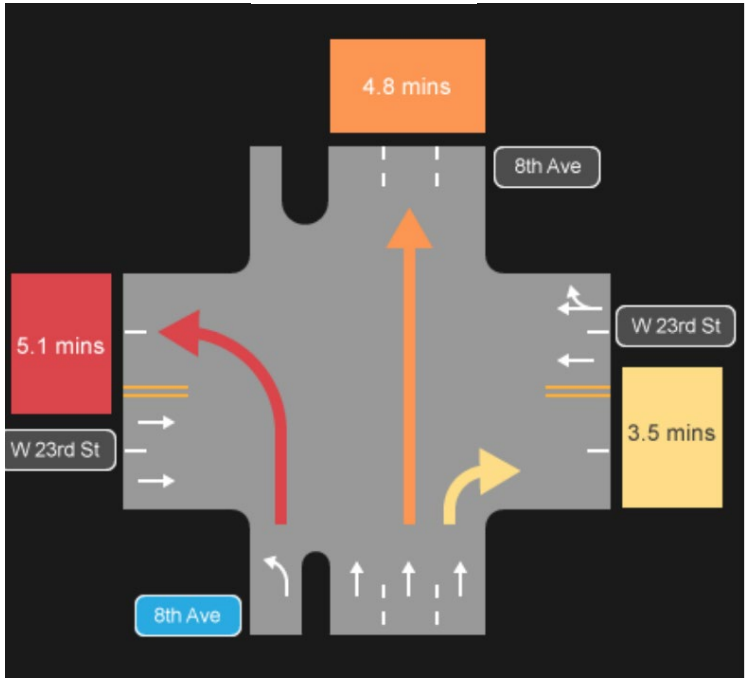
INRIX Signal Analytics

Vastly richer data set means signal analytics is finally possible

Data Set → **Snapped to Movement** → **Solution**

3 - 5% sample size

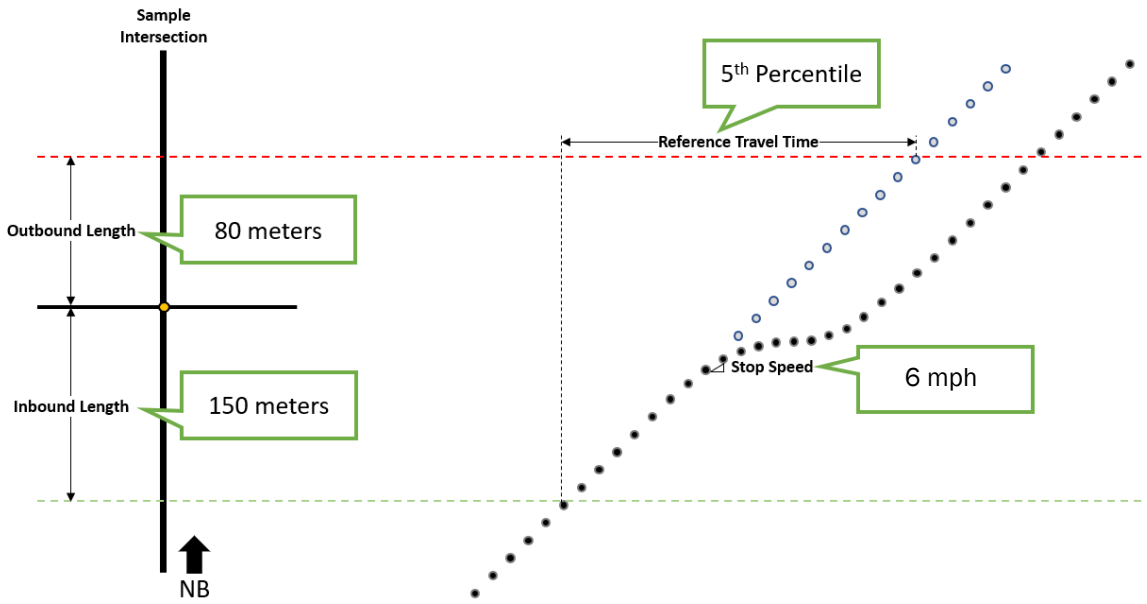
3-second frequency



Metrics assessed by movement

Signal Performance Metrics

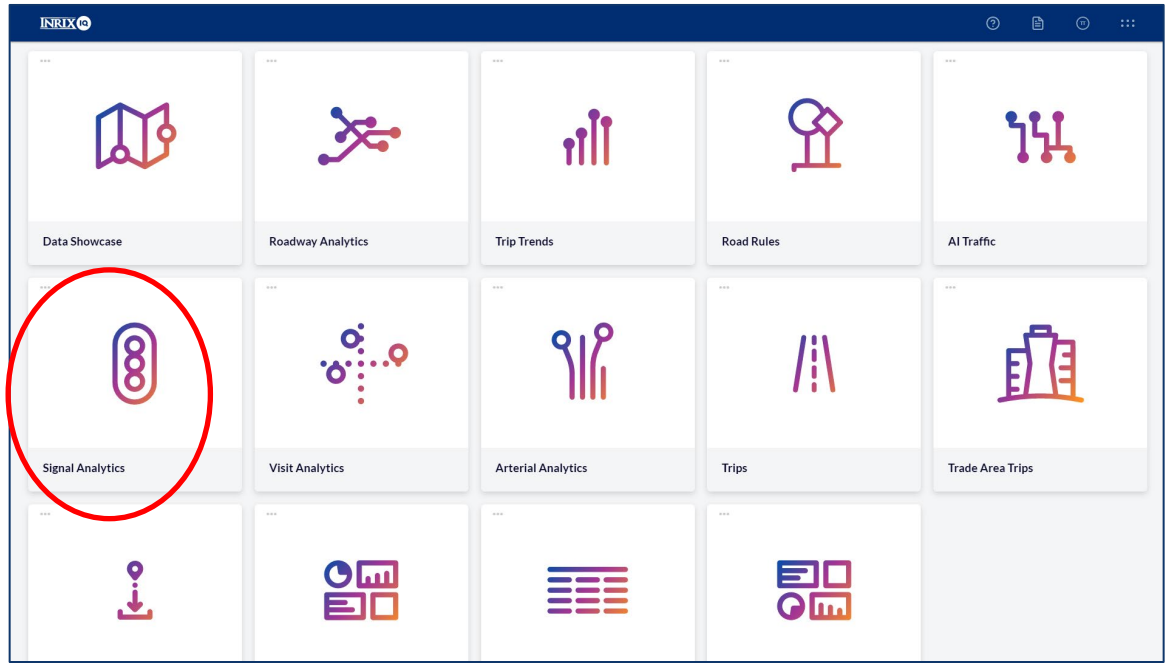
Aggregated from individual trajectories

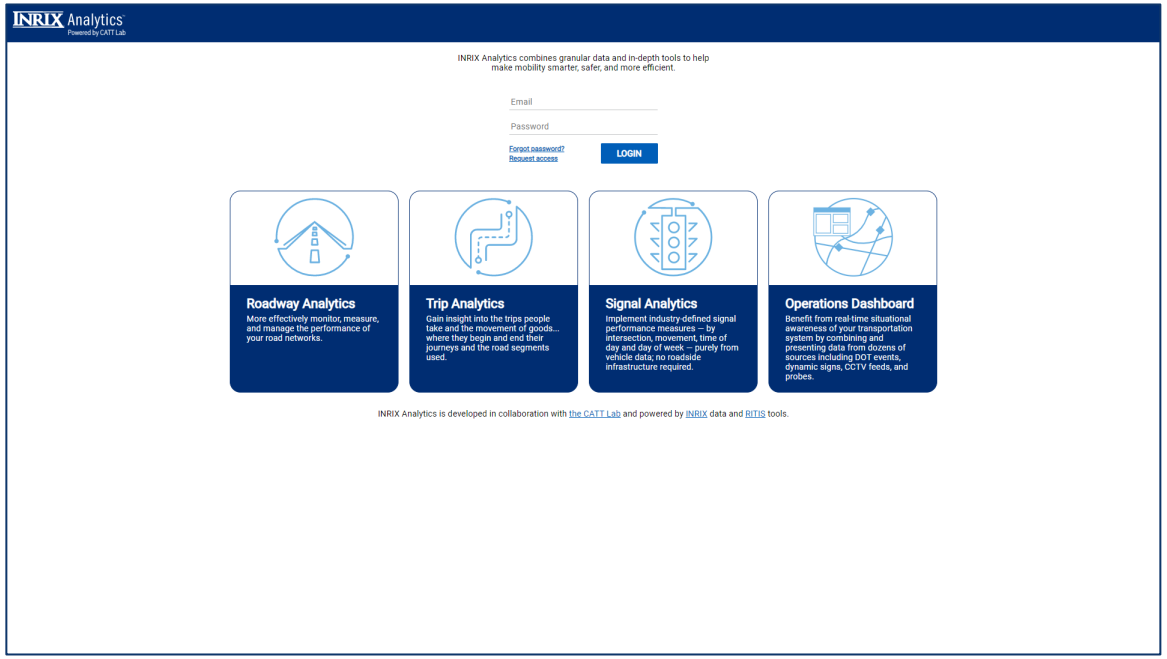


- **Percent Arrival on Green (POG):** Minimum vehicle speed above 6 mph
- **Vehicle Count and Stopped Vehicle Count**
  - Observed vehicle crossings
- **Travel Times** through the intersection, average and maximum
- **Travel Speeds** through the intersection, average and maximum
- **Control Delay**, average and maximum (the extra time required at an intersection due to slowing attributed to the signal compared to measured free-flow speeds).
- **Split Failure:** Vehicles that stop two or more times in queue

INRIX Signal Analytics – Two Modules

Daily Reports/Dashboards + Intersection Analysis, Powered by CATT





IQ Signal Analytics

Tool Demonstration

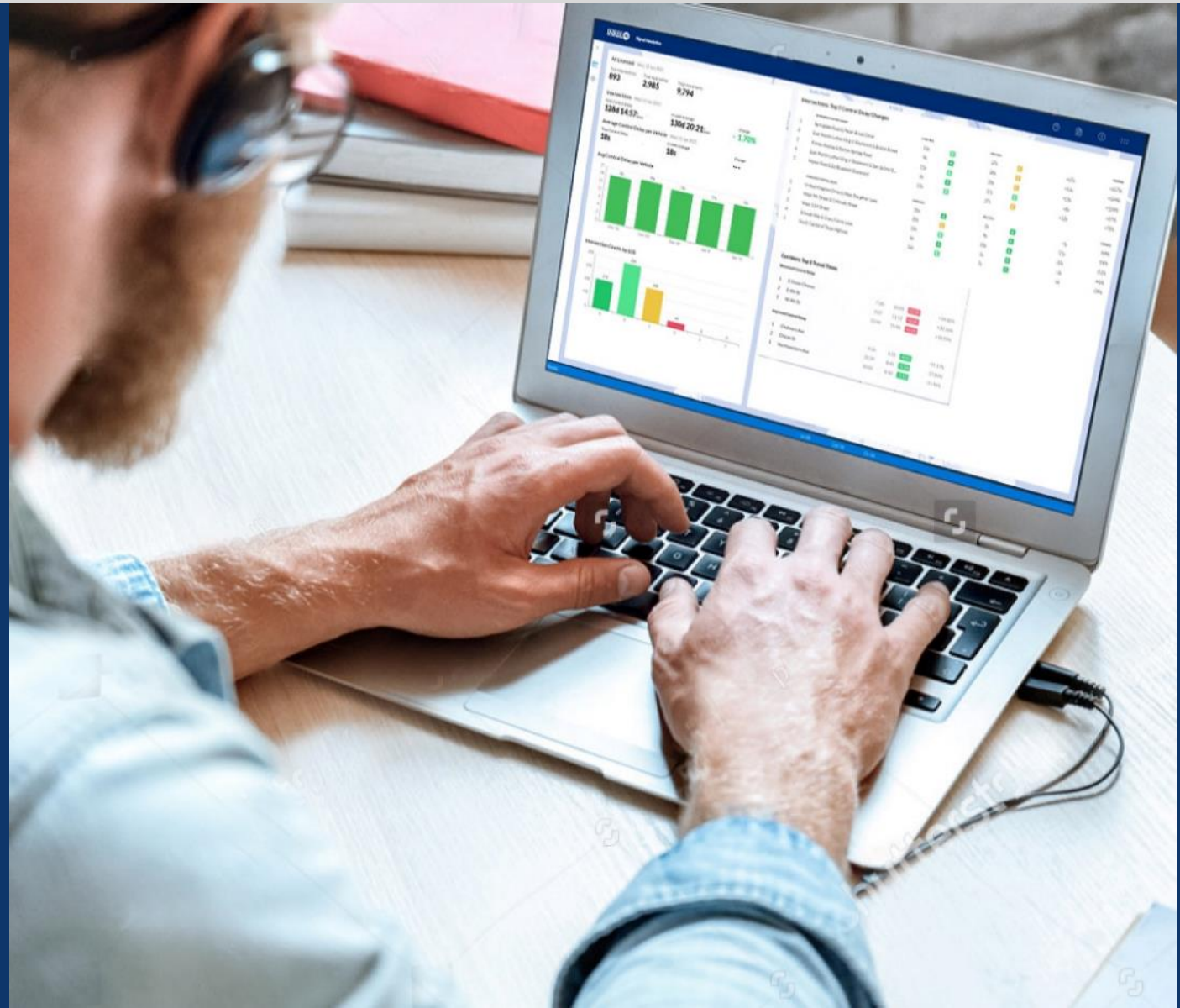
System Wide

Daily Reports

Dashboards

Intersection Analysis

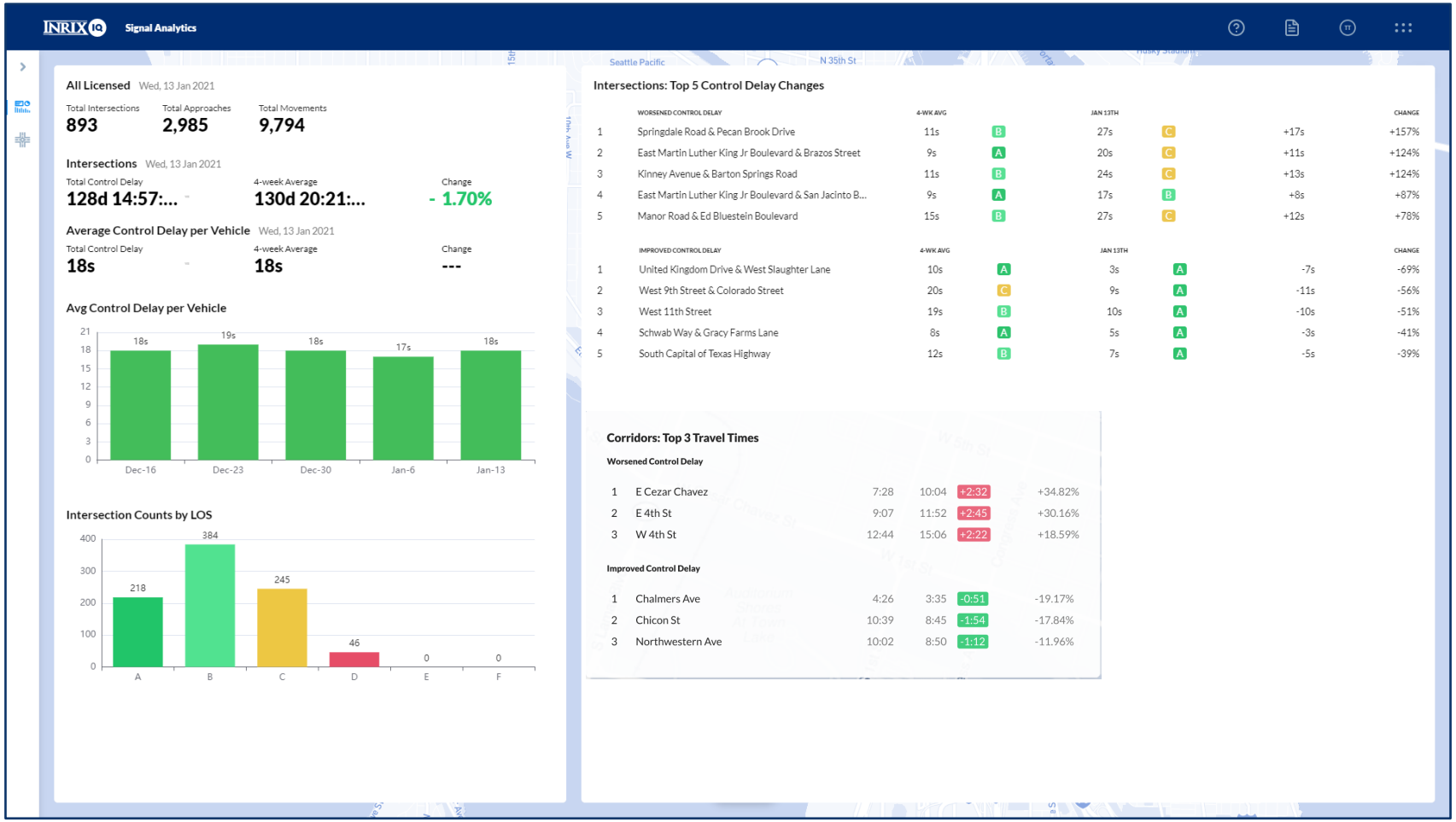
Powered by the CATT Lab



INRIX

Daily Report – Dashboard

Updated automatically each morning



- Agency defined:
  - Intersections
  - Peak Period Times
- Complete system report generated daily
- Daily performance assessed against previous 4-week average for specific day
- Significant changes highlighted

All Licensed Wed, 13 Jan 2021

Total Intersections	Total Approaches	Total Movements
893	2,985	9,794

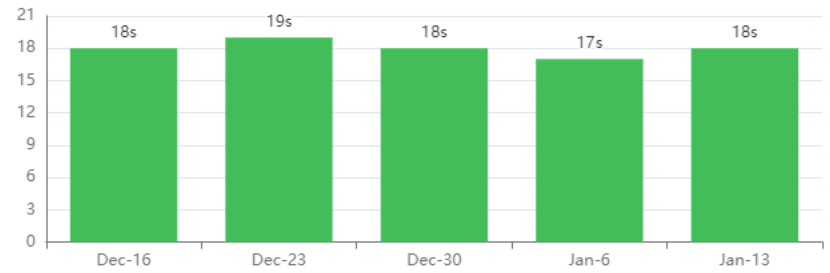
Intersections Wed, 13 Jan 2021

Total Control Delay	4-week Average	Change
128d 14:57:...	130d 20:21:...	- 1.70%

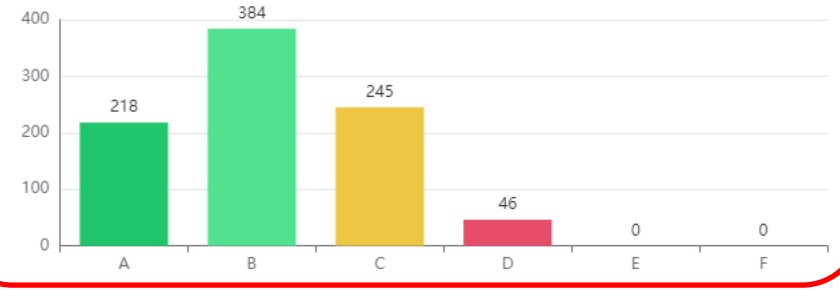
Average Control Delay per Vehicle Wed, 13 Jan 2021

Total Control Delay	4-week Average	Change
18s	18s	---

Avg Control Delay per Vehicle



Intersection Counts by LOS



Intersections: Top 5 Control Delay Changes

	WORSENED CONTROL DELAY	4-WK AVG		JAN 13TH			CHANGE
1	Springdale Road & Pecan Brook Drive	11s	B	27s	C	+17s	+157%
2	East Martin Luther King Jr Boulevard & Brazos Street	9s	A	20s	C	+11s	+124%
3	Kinney Avenue & Barton Springs Road	11s	B	24s	C	+13s	+124%
4	East Martin Luther King Jr Boulevard & San Jacinto B...	9s	A	17s	B	+8s	+87%
5	Manor Road & Ed Bluestein Boulevard	15s	B	27s	C	+12s	+78%

	IMPROVED CONTROL DELAY	4-WK AVG		JAN 13TH			CHANGE
1	United Kingdom Drive & West Slaughter Lane	10s	A	3s	A	-7s	-69%
2	West 9th Street & Colorado Street	20s	C	9s	A	-11s	-56%
3	West 11th Street	19s	B	10s	A	-10s	-51%
4	Schwab Way & Gracy Farms Lane	8s	A	5s	A	-3s	-41%
5	South Capital of Texas Highway	12s	B	7s	A	-5s	-39%

Corridors: Top 3 Travel Times

Worsened Control Delay

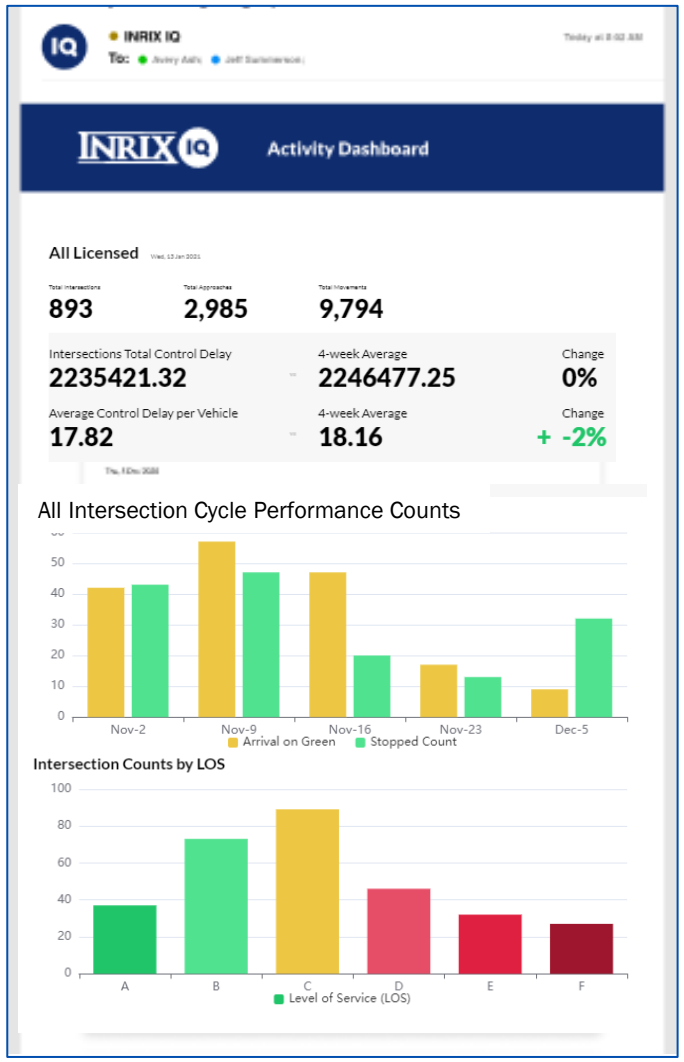
1	E Cezar Chavez	7:28	10:04	+2:32	+34.82%
2	E 4th St	9:07	11:52	+2:45	+30.16%
3	W 4th St	12:44	15:06	+2:22	+18.59%

Improved Control Delay

1	Chalmers Ave	4:26	3:35	-0:51	-19.17%
2	Chicon St	10:39	8:45	-1:54	-17.84%
3	Northwestern Ave	10:02	8:50	-1:12	-11.96%

Daily Email Summary

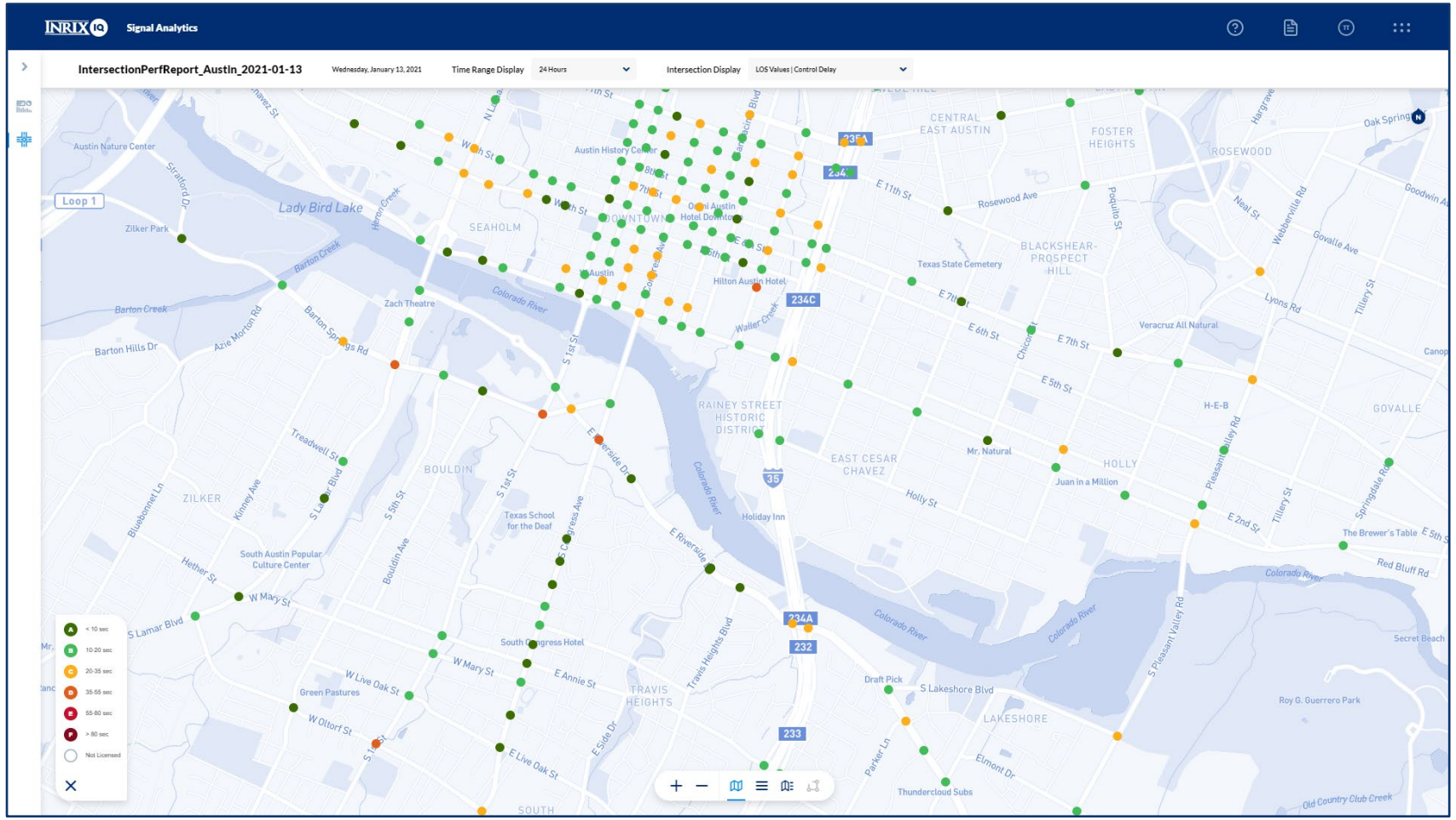
Updated and delivered automatically each morning

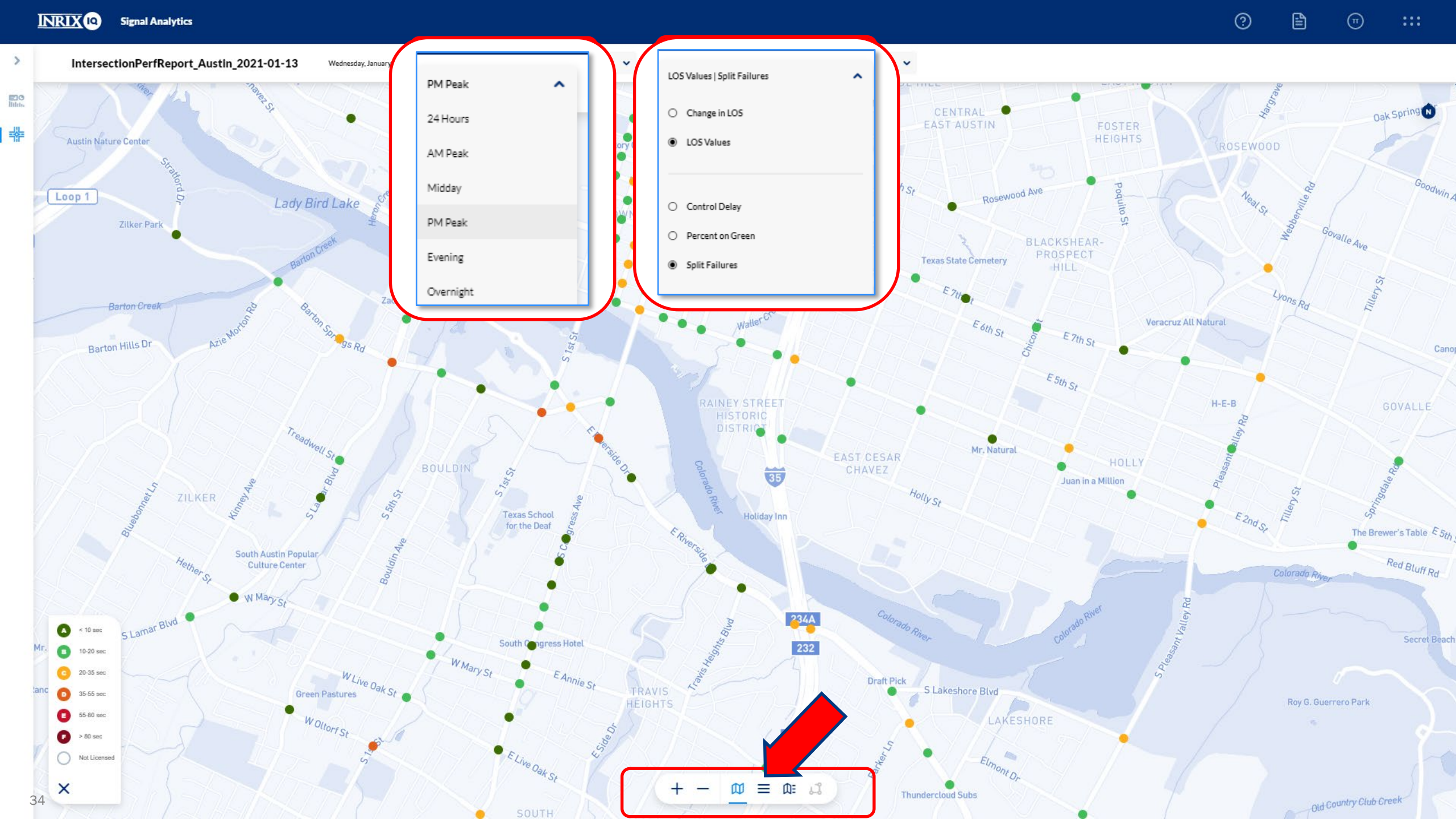


- System Summary Statistics
  - Total Control Delay
  - Average per Vehicle
- Intersection Performance Counts by Metric
  - Arrival in Green
  - Level of Service
- Top 5 Intersections
  - Change in Delay
- Corridor Summary

Systemwide Map View

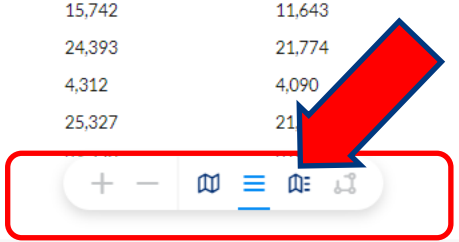
Ability to select a single or group for intersection details




INRIX IQ
Signal Analytics
IntersectionPerfReport_Austin_2021-01-13
Wednesday, January
PM Peak
24 Hours
AM Peak
Midday
PM Peak
Evening
Overnight
LOS Values | Split Failures
Change in LOS
LOS Values
Control Delay
Percent on Green
Split Failures
< 10 sec
10-20 sec
20-35 sec
35-55 sec
55-80 sec
> 80 sec
Not Licensed
Austin Nature Center
Loop 1
Lady Bird Lake
Zilker Park
Barton Creek
Barton Hills Dr
Azie Morton Rd
Barton Springs Rd
Stratford Dr
Treadwell St
S Lamar Blvd
Kinney Ave
Bluebonnet Ln
ZILKER
BOULDIN
S 1st St
S 5th St
Bouldin Ave
Hether St
W Mary St
South Austin Popular Culture Center
Texas School for the Deaf
S Congress Ave
E Riverside Dr
Colorado River
Holiday Inn
35
RAINEY STREET HISTORIC DISTRICT
EAST CESAR CHAVEZ
Mr. Natural
HOLLY
Juan in a Million
Holly St
E 7th St
E 6th St
E 5th St
E 2nd St
Chicon St
Veracruz All Natural
H-E-B
Pleasant Valley Rd
Tillery St
Springdale Rd
GOVALLE
Lyons Rd
Govalle Ave
Webberville Rd
Neal St
Rosewood Ave
Poquito St
ROSEWOOD
FOSTER HEIGHTS
CENTRAL EAST AUSTIN
Oak Springs
Hargrave
Goodwin A
Texas State Cemetery
BLACKSHEAR-PROSPECT HILL
The Brewer's Table
Red Bluff Rd
Secret Beach
Roy G. Guerrero Park
Old Country Club Creek
234A
232
Travis Heights Blvd
TRAVIS HEIGHTS
South Congress Hotel
W Live Oak St
E Annie St
Green Pastures
W Oltorf St
E Live Oak St
E Side Dr
SOUTH
Draft Pick
S Lakeshore Blvd
LAKESHORE
Elmont Dr
Thundercloud Subs
Parker Ln

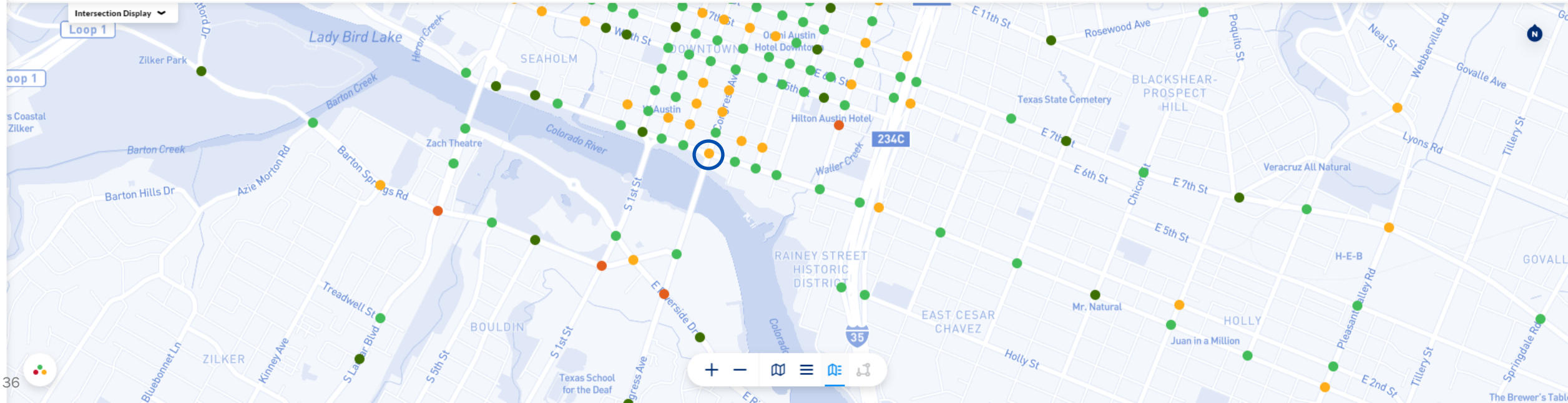
IntersectionPerfReport_Austin_2021-01-13 Wednesday, January 13, 2021 Time Range Display 24 Hours ◉ Scaled ○ Observed Download Edit Columns

SELECTED	INTERSECTION	PERCENT ON GREEN	TOTAL VEHICLE VOLUME	THROUGH VEHICLE VOLUME	STOPPED VEHICLE VOLUME	SPLIT FAILURE VOLUME	SPLIT FAILURE %	AVG. CONTROL DELAY	AVG. TRAVEL TIME
○	Orchard Ridge Boulevard & East Slaughter Lane	88.26%	9,112	8,042	1,070	17	0.18%	7s	17s
○	East Slaughter Lane & Orchard Ridge Boulevard	89.75%	8,159	7,323	836	0	---	6s	16s
○	East Slaughter Lane	59.98%	18,482	11,086	7,396	33	0.18%	15s	25s
○	South 1st Street & Taft Lane	73.44%	12,330	9,055	3,276	0	---	9s	21s
○	South Interstate 35 & East Slaughter Lane	59.34%	32,487	19,278	13,209	162	0.50%	28s	41s
○	South Interstate 35 & West Slaughter Lane	59.09%	29,631	17,509	12,122	114	0.38%	27s	40s
○	West Slaughter Lane & South Congress Avenue	38.01%	32,016	12,170	19,846	1,460	4.56%	47s	62s
○	West Slaughter Lane & Cullen Lane	66.03%	24,624	16,258	8,365	618	2.51%	29s	44s
○	Alice Mae Lane & West Slaughter Lane	66.23%	12,287	8,137	4,150	228	1.85%	24s	38s
○	West Slaughter Lane & Alice Mae Lane	86.20%	11,441	9,863	1,579	130	1.14%	9s	21s
○	Southpark Meadows Drive & West Slaughter Lane	83.57%	25,817	21,574	4,243	34	0.13%	7s	19s
○	West Slaughter Lane & South 1st Street	40.36%	33,191	13,396	19,795	68	0.21%	32s	45s
○	West Slaughter Lane & Menchaca Road	29.68%	31,862	9,458	22,405	239	0.75%	40s	54s
○	West Slaughter Lane	97.89%	8,686	8,503	184	0	---	5s	17s
○	Sugarberry Lane & West Slaughter Lane	78.49%	26,136	20,514	5,621	18	0.07%	9s	20s
○	Texas Oaks Drive & West Slaughter Lane	87.86%	24,333	21,380	2,953	0	---	6s	17s
○	West Slaughter Lane & Palace Parkway	89.29%	23,145	20,666	2,479	0	---	5s	16s
○	United Kingdom Drive & West Slaughter Lane	94.08%	22,833	21,481	1,352	0	---	3s	13s
○	West Slaughter Lane	69.22%	18,438	12,763	5,675	55	0.30%	13s	25s
○	Monarch Drive & Menchaca Road	87.68%	14,306	12,543	1,763	0	---	6s	17s
○	West Slaughter Lane & Curlew Drive	86.56%	17,523	15,168	2,355	0	---	6s	18s
○	West Slaughter Lane	90.13%	19,164	17,272	1,892	0	---	5s	16s
○	West Slaughter Lane & West Gate Boulevard	82.90%	20,064	16,633	3,431	0	---	8s	19s
○	East William Cannon Drive & South Pleasant Valley Road	43.67%	15,775	6,888	8,886	119	0.76%	26s	38s
○	West Slaughter Lane & Brodie Lane	35.17%	34,051	11,977	22,074	60	0.18%	35s	49s
○	South Pleasant Valley Road & Nuckols Crossing Road	59.91%	6,536	3,916	2,620	0	---	11s	24s
○	Dittmar Road & Menchaca Road	59.75%	16,346	9,767	6,579	0	---	18s	30s
○	East William Cannon Drive	73.96%	15,742	11,643	4,099	30	0.19%	9s	20s
○	West Slaughter Lane & Wolftrap Drive	89.26%	24,393	21,774	2,619	20	0.08%	4s	16s
○	Village Square Drive & South Pleasant Valley Road	94.85%	4,312	4,090	222	0	---	5s	18s
○	West Slaughter Lane	85.22%	25,327	21	3,742	0	---	5s	16s

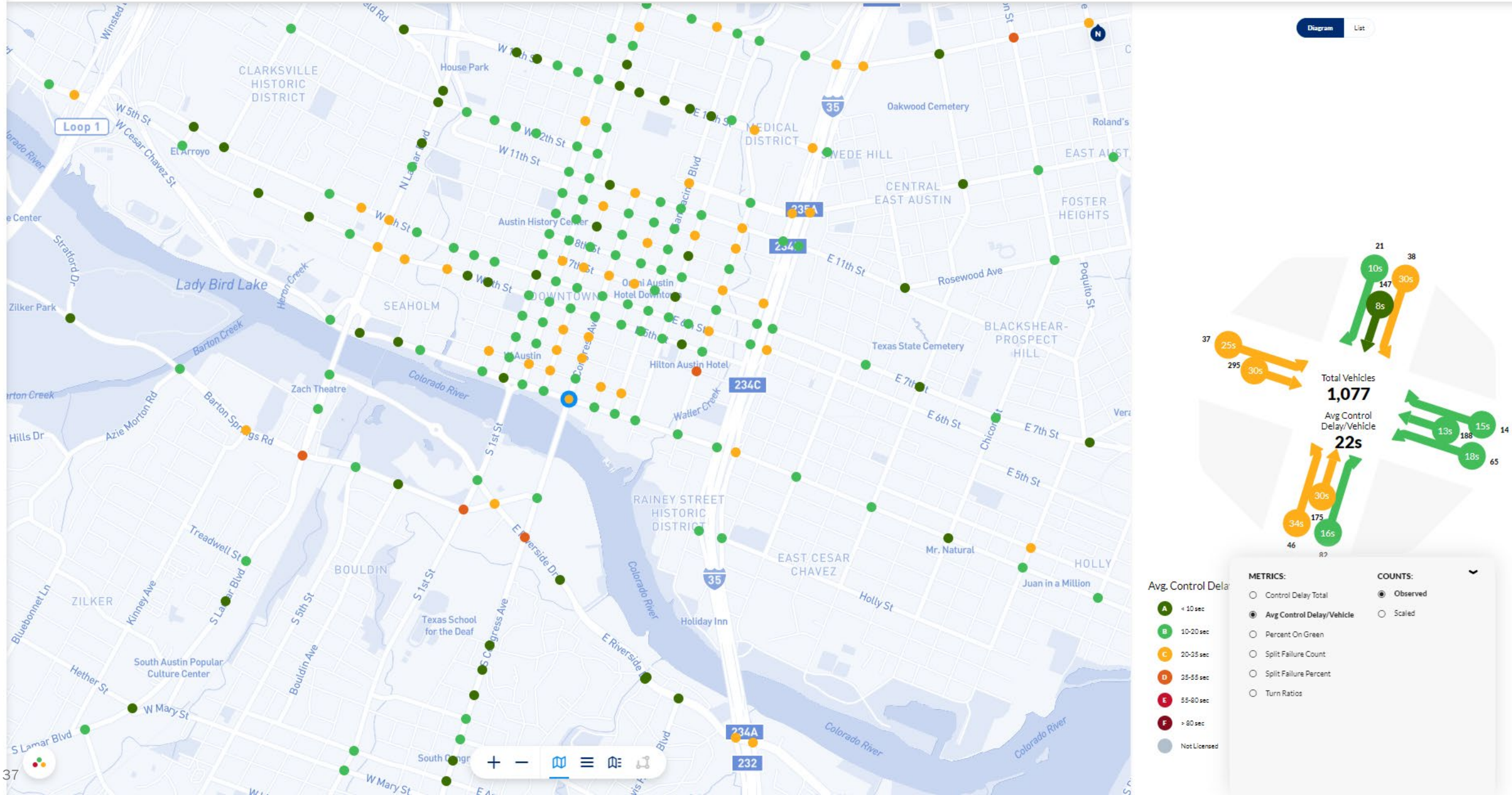


IntersectionPerfReport_Austin_2021-01-13 Wednesday, January 13, 2021 Time Range Display 24 Hours ◉ Scaled ○ Observed Download Edit Columns

SELECTED	INTERSECTION	PERCENT ON GREEN	TOTAL VEHICLE VOLUME	THROUGH VEHICLE VOLUME	STOPPED VEHICLE VOLUME	SPLIT FAILURE VOLUME	SPLIT FAILURE %	AVG. CONTROL DELAY	AVG. TRAVEL TIME
○	Orchard Ridge Boulevard & East Slaughter Lane	88.26%	9,112	8,042	1,070	17	0.18%	7s	17s
○	East Slaughter Lane & Orchard Ridge Boulevard	89.75%	8,159	7,323	836	0	---	6s	16s
○	East Slaughter Lane	59.98%	18,482	11,086	7,396	33	0.18%	15s	25s
○	South 1st Street & Taft Lane	73.44%	12,330	9,055	3,276	0	---	9s	21s
○	South Interstate 35 & East Slaughter Lane	59.34%	32,487	19,278	13,209	162	0.50%	28s	41s
○	South Interstate 35 & West Slaughter Lane	59.09%	29,631	17,509	12,122	114	0.38%	27s	40s
○	West Slaughter Lane & South Congress Avenue	38.01%	32,016	12,170	19,846	1,460	4.56%	47s	62s
○	West Slaughter Lane & Cullen Lane	66.03%	24,624	16,258	8,365	618	2.51%	29s	44s
○	Alice Mae Lane & West Slaughter Lane	66.23%	12,287	8,137	4,150	228	1.85%	24s	38s
○	West Slaughter Lane & Alice Mae Lane	86.20%	11,441	9,863	1,579	130	1.14%	9s	21s
○	Southpark Meadows Drive & West Slaughter Lane	83.57%	25,817	21,574	4,243	34	0.13%	7s	19s
○	West Slaughter Lane & South 1st Street	40.36%	33,191	13,396	19,795	68	0.21%	32s	45s
○	West Slaughter Lane & Menchaca Road	29.68%	31,862	9,458	22,405	239	0.75%	40s	54s
○	West Slaughter Lane	97.89%	8,686	8,503	184	0	---	5s	17s
○	Sugarberry Lane & West Slaughter Lane	78.49%	26,136	20,514	5,621	18	0.07%	9s	20s
○	Texas Oaks Drive & West Slaughter Lane	87.86%	24,333	21,380	2,953	0	---	6s	17s



IntersectionPerfReport_Austin_2021-01-13 | Wednesday, January 13, 2021 | Time Range Display: 24 Hours | Intersection Display: LOS Values | Control Delay



IntersectionPerfReport_Austin_2021-01-13 | Wednesday, January 13, 2021 | Time Range Display: 24 Hours | Intersection Display: LOS Values | Control Delay

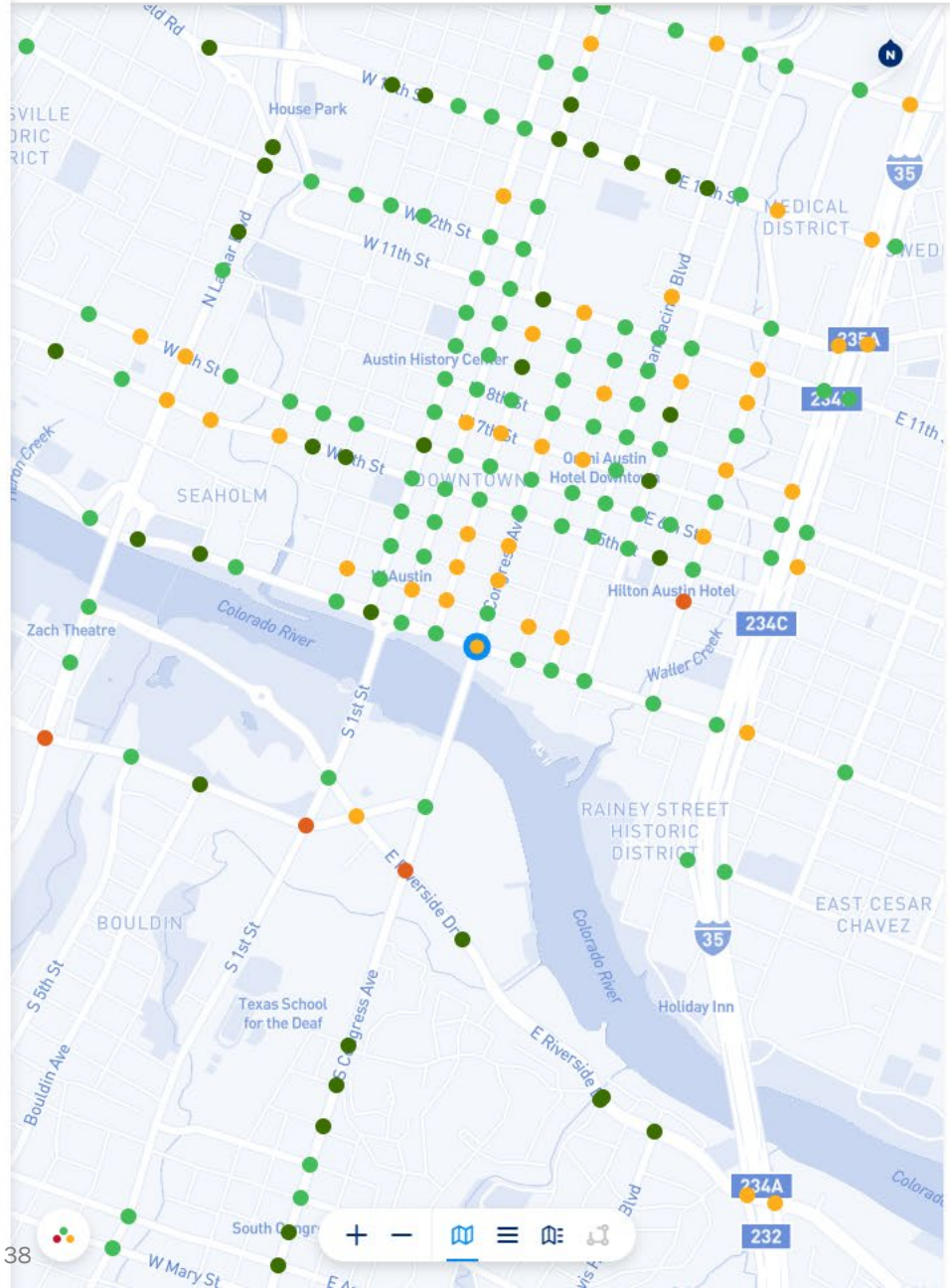
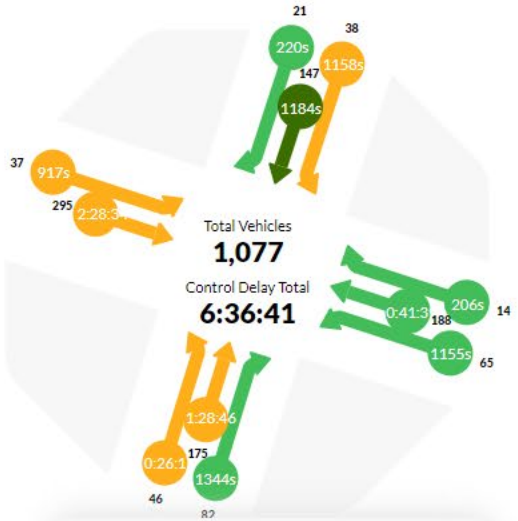


Diagram | List



Avg. Control Delay

- A: < 10 sec
- B: 10-20 sec
- C: 20-35 sec
- D: 35-55 sec
- E: 55-80 sec
- F: > 80 sec
- Not Licensed

METRICS:

- (•) Control Delay Total
- ( ) Avg Control Delay/Vehicle
- ( ) Percent On Green
- ( ) Split Failure Count
- ( ) Split Failure Percent
- ( ) Turn Ratios

COUNTS:

- (•) Observed
- ( ) Scaled

Movement Details

Count stats | Time stats

Percent on Green: 17.29 %	4-week Average: 17.45 %	Change: - 0.95%
Split Failures: 7	4-week Average: 10.25	Change: - 31.71%
Vehicle Count: 295	4-week Average: 266.50	Change: + 28.50
Stopped Count: 244	4-week Average: 220	Change: + 24

Resolution: Hourly

IntersectionPerfReport_Austin_2021-01-13 | Wednesday, January 13, 2021 | Time Range Display: 24 Hours | Intersection Display: LOS Values | Control Delay

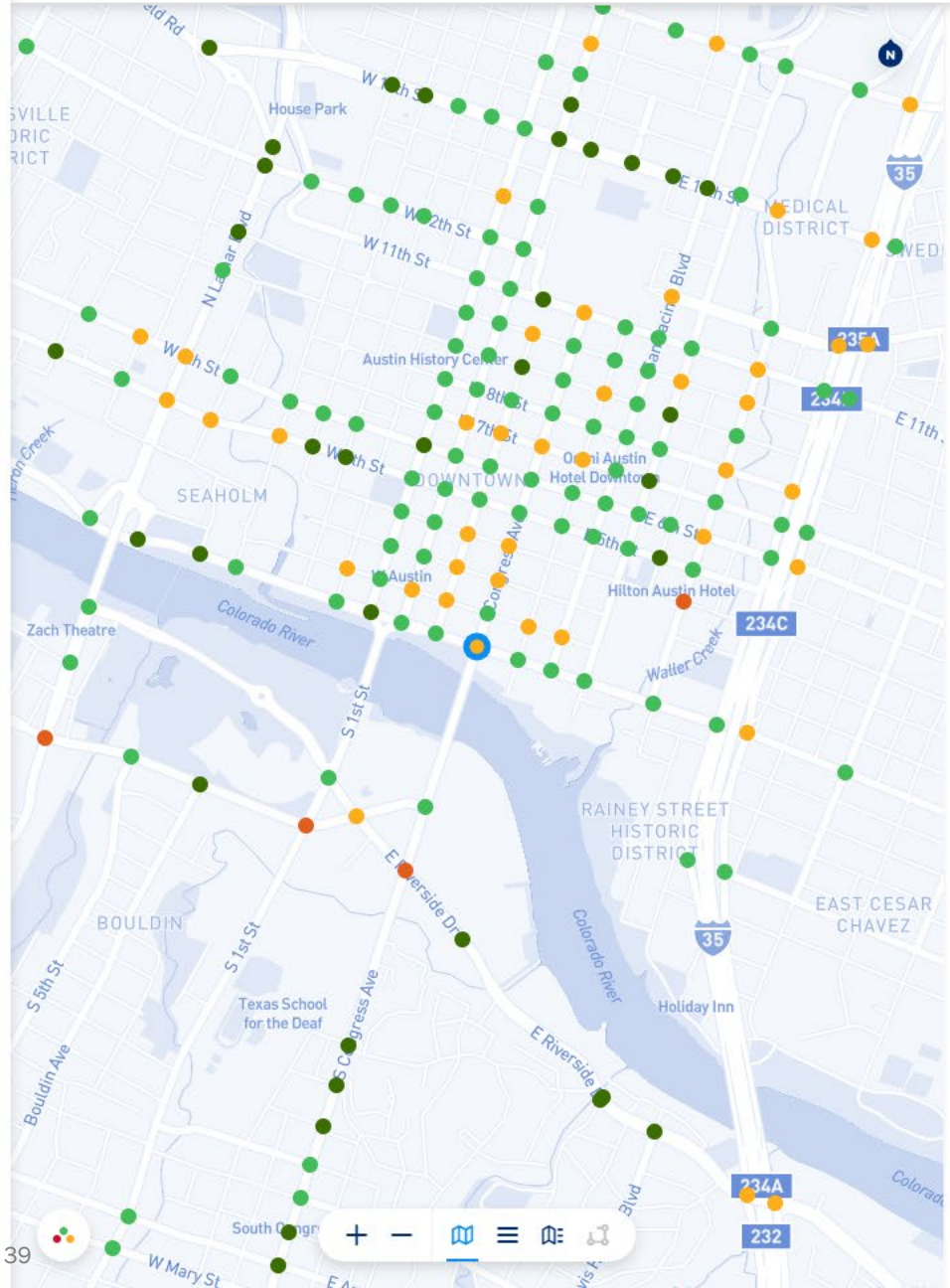
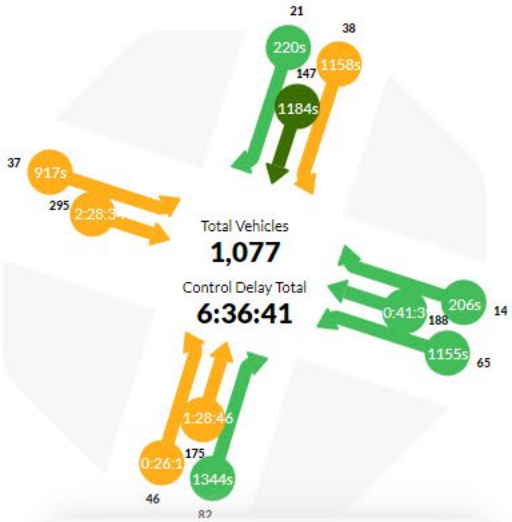


Diagram | List



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- Not Licensed

METRICS:

- (●) Control Delay Total
- ( ) Avg Control Delay/Vehicle
- ( ) Percent On Green
- ( ) Split Failure Count
- ( ) Split Failure Percent
- ( ) Turn Ratios

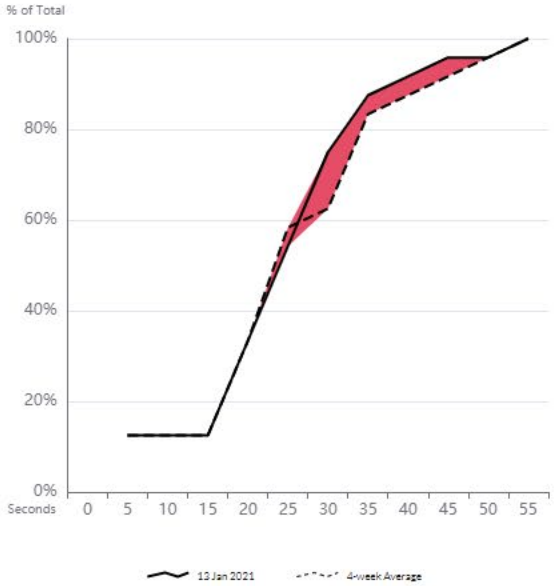
COUNTS:

- (●) Observed
- ( ) Scaled

Movement Details | Count stats | Time stats

Avg Control Delay/Vehicle	4-week Average	Change
30.22 s	33.34 s	- 9.37%
Avg Travel Time	4-week Average	Change
43.38 s	47.26 s	- 8.22%

Metric: Control Delay



IntersectionPerfReport_Austin_2021-01-13 Wednesday, January 13, 2021 Time Range Display 24 Hours Intersection Display LOS Values | Control Delay

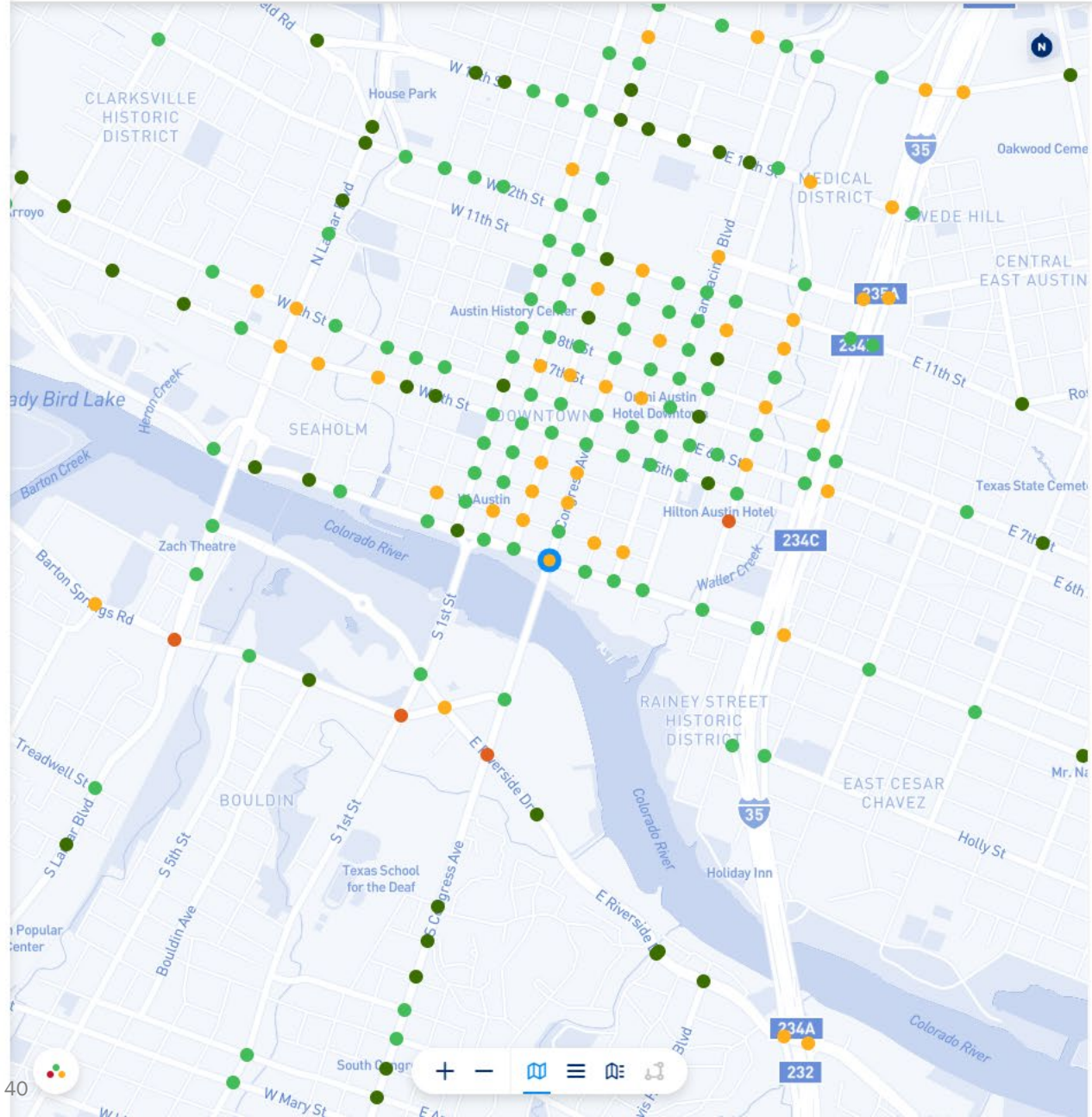


Diagram | List

RANK	INBOUND DIR	MOVEMENT	POG	THROUGH VEHICLE #	STOPPED #	TURN %	STOP DELAY
1	Northbound	Left	28.26%	13	33	15.18%	24 s
2	Northbound	Right	48.78%	40	42	27.06%	10 s
3	Northbound	Through	37.71%	66	109	57.76%	20 s
4	Eastbound	Left	35.14%	13	24	11.18%	15 s
5	Eastbound	Through	17.29%	51	244	89.12%	20 s
6	Southbound	Left	39.47%	15	23	18.63%	20 s
7	Southbound	Right	71.43%	15	6	10.29%	4 s
8	Southbound	Through	82.99%	122	25	72.06%	4 s
9	Westbound	Left	60.00%	39	26	24.34%	12 s
10	Westbound	Right	71.43%	10	4	5.24%	7 s
11	Westbound	Through	71.81%	135	53	70.41%	6 s

Corridor Report (coming soon)

View corridors the agency has chosen to monitor

Recent reports

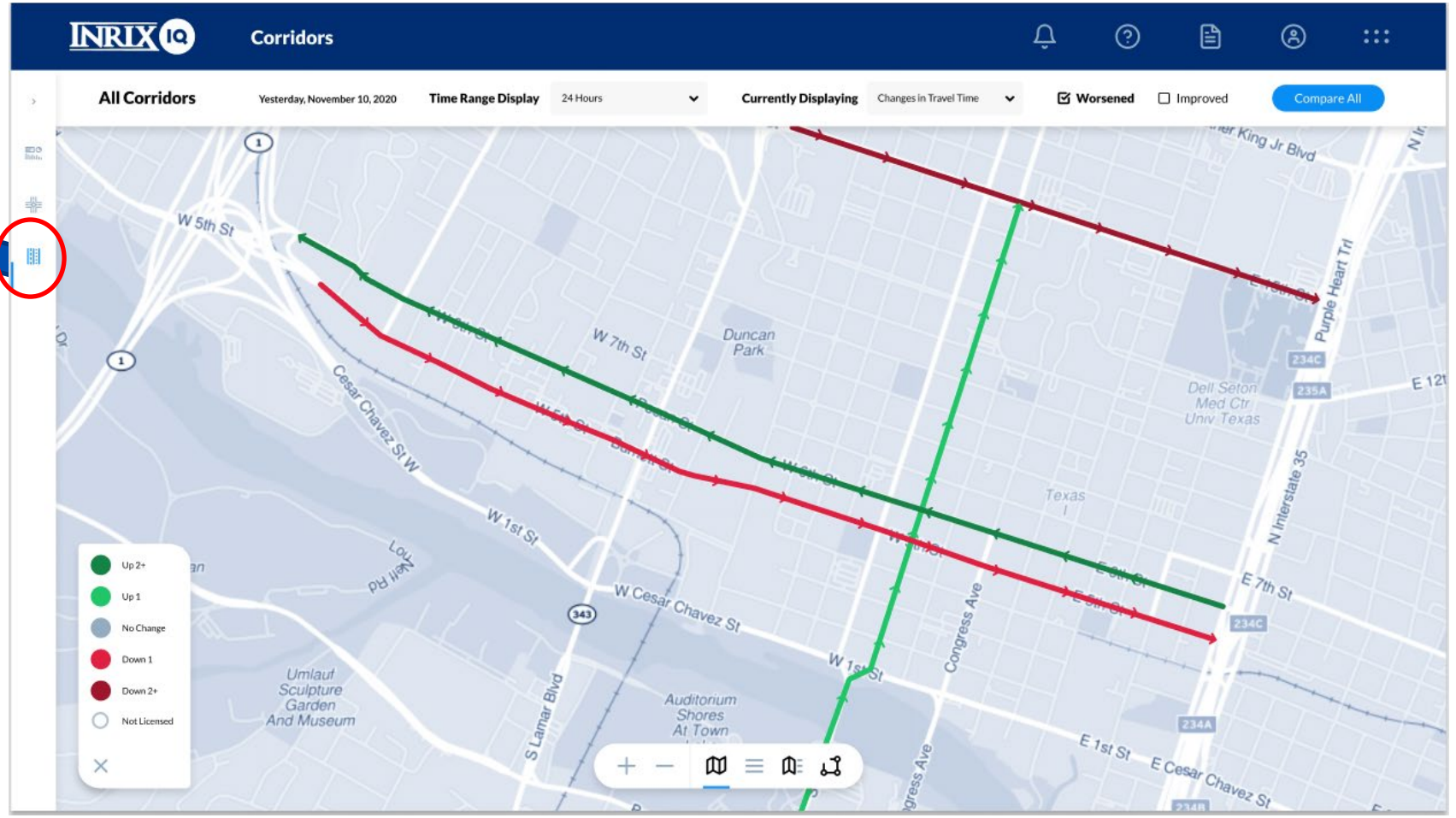
TITLE	ID	CREATED
Scheduled_IntersectionPerformanceReport_Austin_2021-01-13	169469	2021

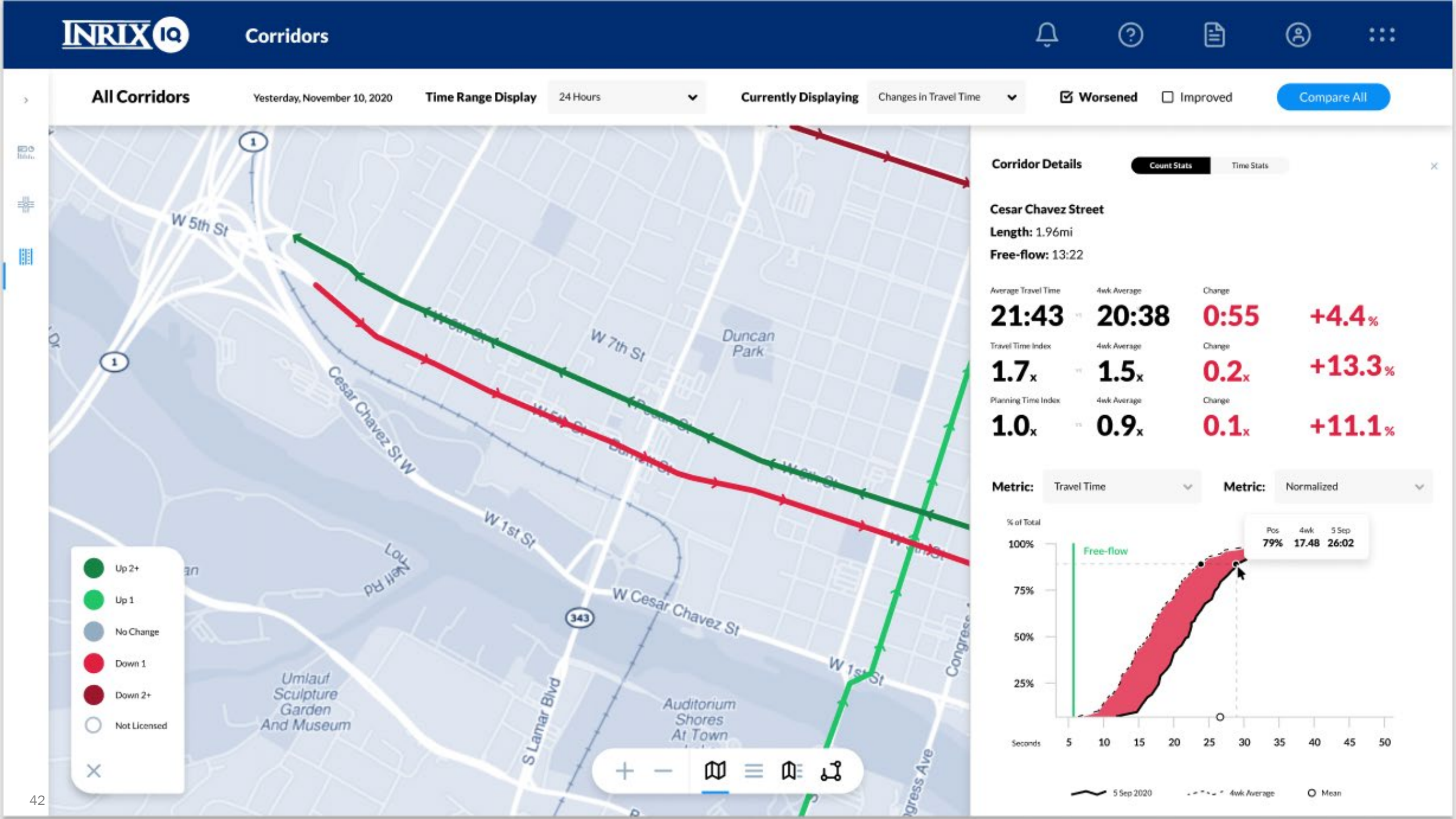
Past reports

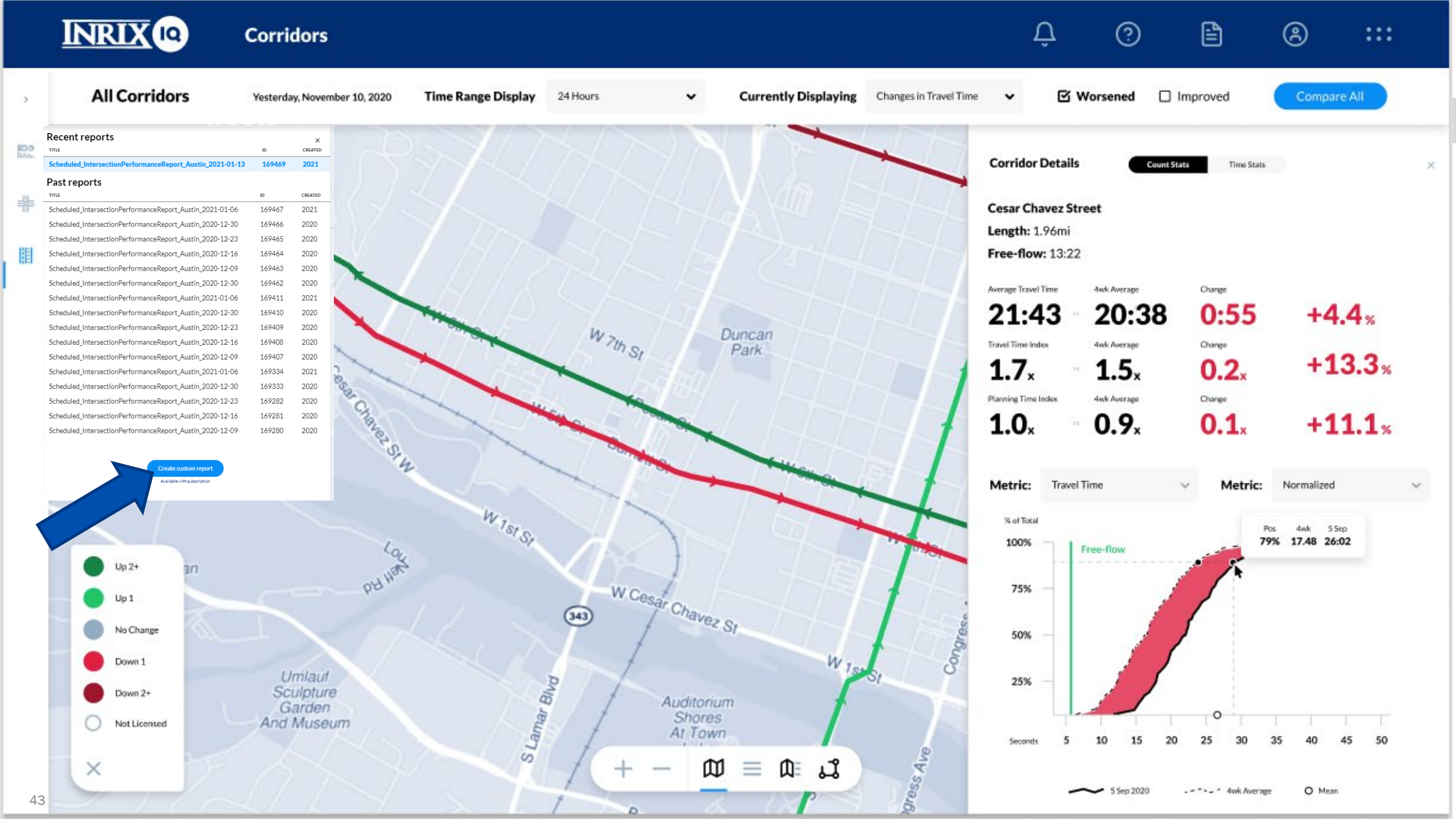
TITLE	ID	CREATED
Scheduled_IntersectionPerformanceReport_Austin_2021-01-06	169467	2021
Scheduled_IntersectionPerformanceReport_Austin_2020-12-30	169466	2020
Scheduled_IntersectionPerformanceReport_Austin_2020-12-23	169465	2020
Scheduled_IntersectionPerformanceReport_Austin_2020-12-16	169464	2020
Scheduled_IntersectionPerformanceReport_Austin_2020-12-09	169463	2020
Scheduled_IntersectionPerformanceReport_Austin_2020-12-30	169462	2020
Scheduled_IntersectionPerformanceReport_Austin_2021-01-06	169411	2021
Scheduled_IntersectionPerformanceReport_Austin_2020-12-30	169410	2020
Scheduled_IntersectionPerformanceReport_Austin_2020-12-23	169409	2020
Scheduled_IntersectionPerformanceReport_Austin_2020-12-16	169408	2020
Scheduled_IntersectionPerformanceReport_Austin_2020-12-09	169407	2020
Scheduled_IntersectionPerformanceReport_Austin_2021-01-06	169334	2021
Scheduled_IntersectionPerformanceReport_Austin_2020-12-30	169333	2020
Scheduled_IntersectionPerformanceReport_Austin_2020-12-23	169282	2020
Scheduled_IntersectionPerformanceReport_Austin_2020-12-16	169281	2020
Scheduled_IntersectionPerformanceReport_Austin_2020-12-09	169280	2020

Create custom report

Available with subscription




INRIX IQ
Corridors
All Corridors
Yesterday, November 10, 2020
Time Range Display
24 Hours
Currently Displaying
Changes in Travel Time
Worsened
Improved
Compare All
W 5th St
W 7th St
Duncan Park
Cesar Chavez St W
W 1st St
W Cesar Chavez St
343
S Lamar Blvd
Umlauf Sculpture Garden And Museum
Auditorium Shores At Town
Up 2+
Up 1
No Change
Down 1
Down 2+
Not Licensed
Corridor Details
Count Stats
Time Stats
Cesar Chavez Street
Length: 1.96mi
Free-flow: 13:22
Average Travel Time
21:43
4wk Average
20:38
Change
0:55
+4.4%
Travel Time Index
1.7x
4wk Average
1.5x
Change
0.2x
+13.3%
Planning Time Index
1.0x
4wk Average
0.9x
Change
0.1x
+11.1%
Metric:
Travel Time
Metric:
Normalized
% of Total
100%
75%
50%
25%
Free-flow
Pos
79%
4wk
17.48
5 Sep
26:02
Seconds
5
10
15
20
25
30
35
40
45
50
5 Sep 2020
4wk Average
Mean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1.5x
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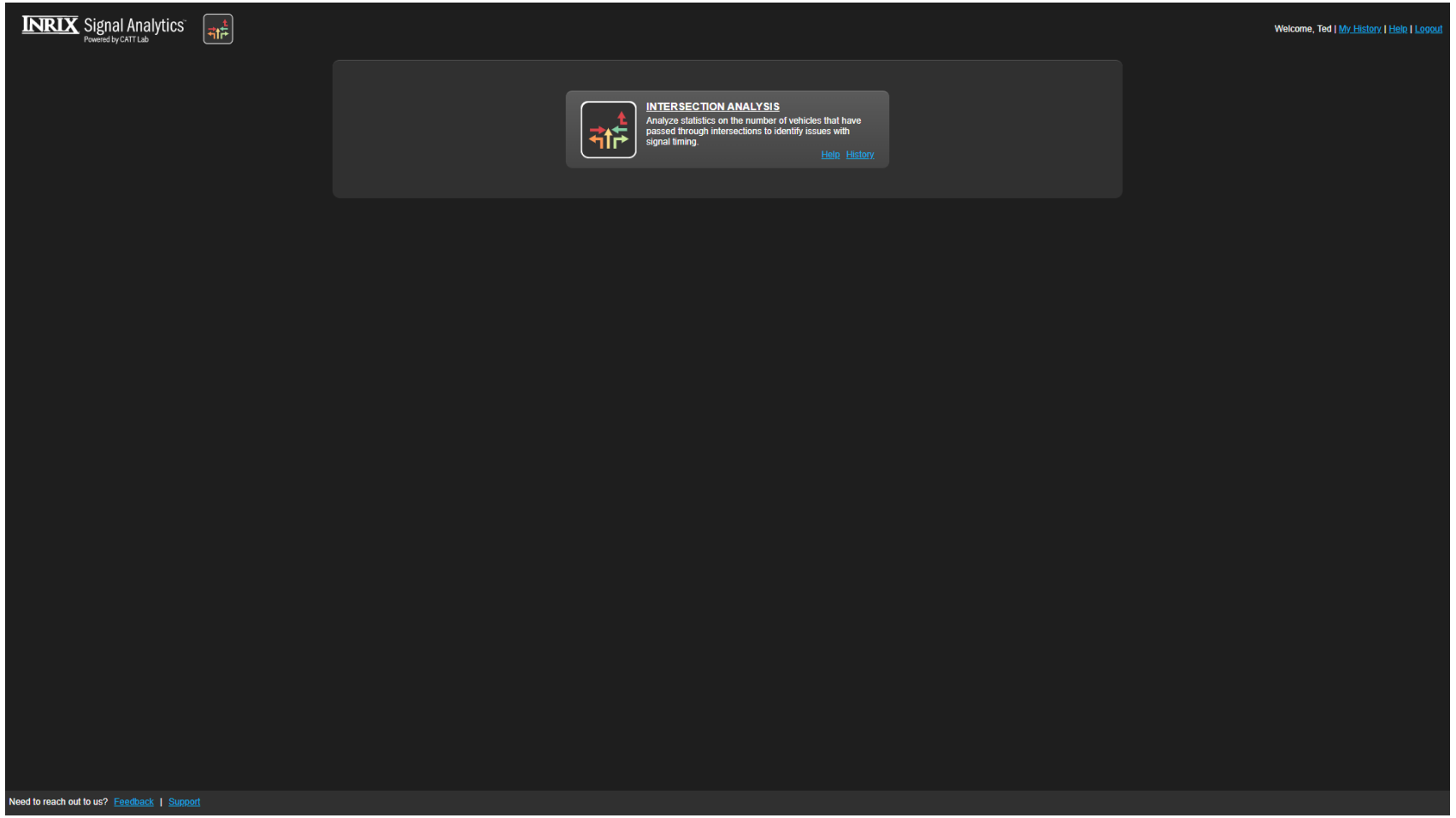
0.2x
+13.3%
Planning Time Index
1.0x
4wk Average
0.9x
Change
0.1x
+11.1%
Metric:
Travel Time
Metric:
Normalized
% of Total
100%
75%
50%
25%
Free-flow
Pos
4wk
5 Sep
79%
17.48
26:02
Seconds
5
10
15
20
25
30
35
40
45
50
5 Sep 2020
4wk Average
Mean

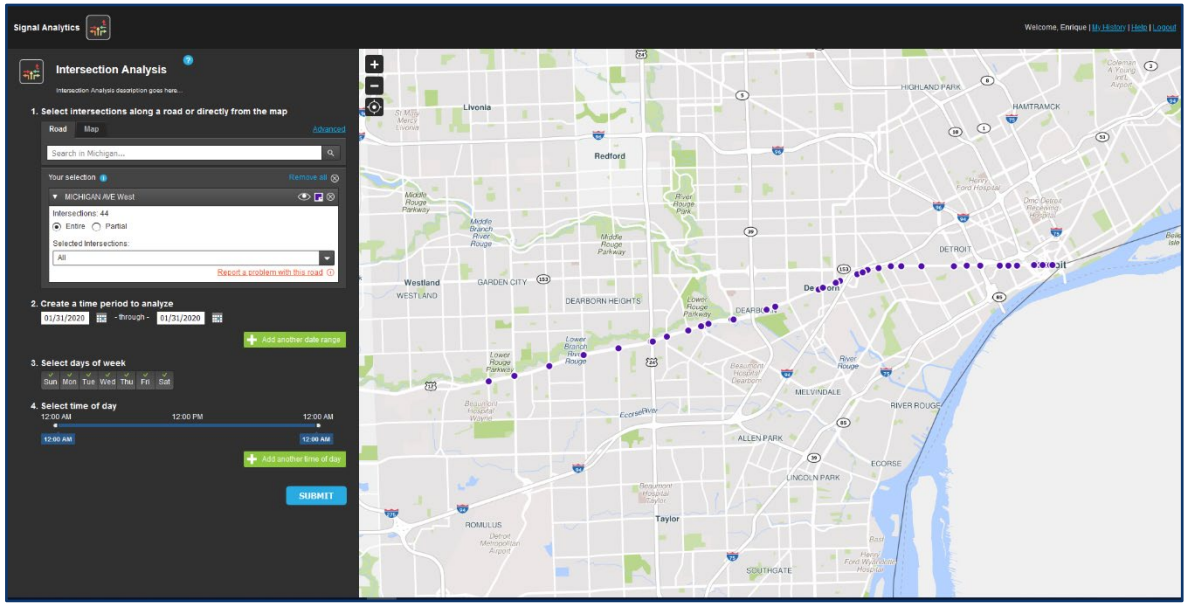
Intersection Analysis

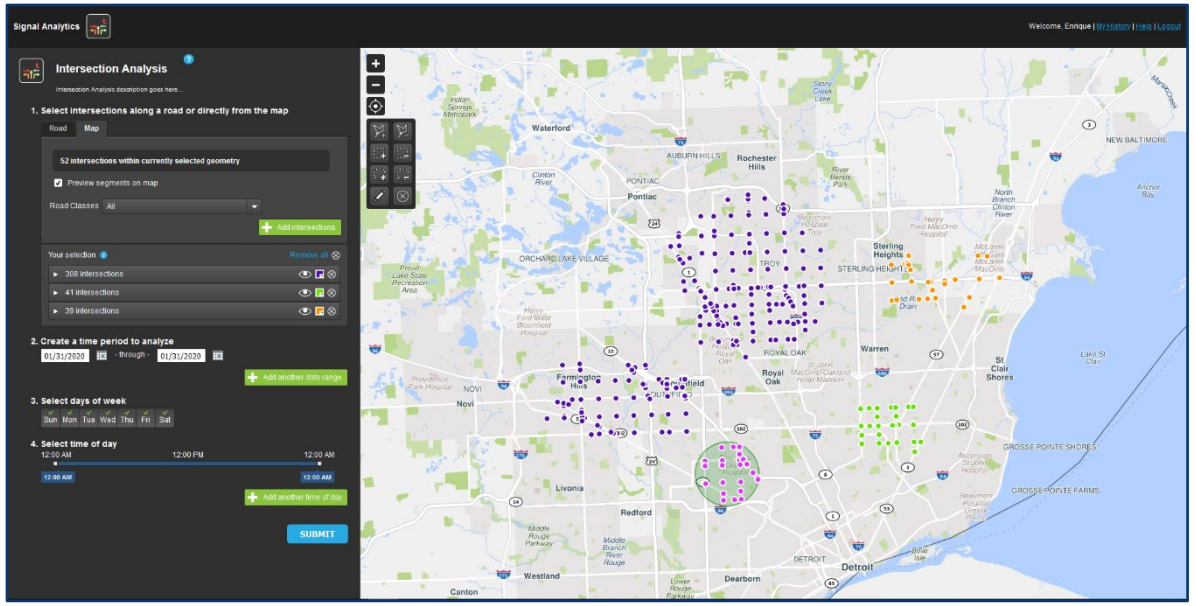


Selection Options

Road or Zone selection

Road Name - or - Zone





Intersection Analysis

Analyze statistics on the number of vehicles that have passed through intersections to identify issues with signal timing.

1. Select intersections by road name or directly from the map

Use the controls on the map to define your intersection set. Controls with a '+' allow you to add intersections while controls with a '-' allow you to remove intersections from your selection.

Road: Enter road name

Add intersections

Your selection | Remove all

1 intersection

Congress Avenue & West Cesar Chavez Street

2. Create a time period to analyze

01/12/2020 - through - 01/25/2020

04/12/2020 - through - 04/25/2020

01/10/2021 - through - 01/23/2021

You have selected the maximum number of ranges.

Add another date range

3. Select days of week

Sun | Mon | Tue | Wed | Thu | Fri | Sat

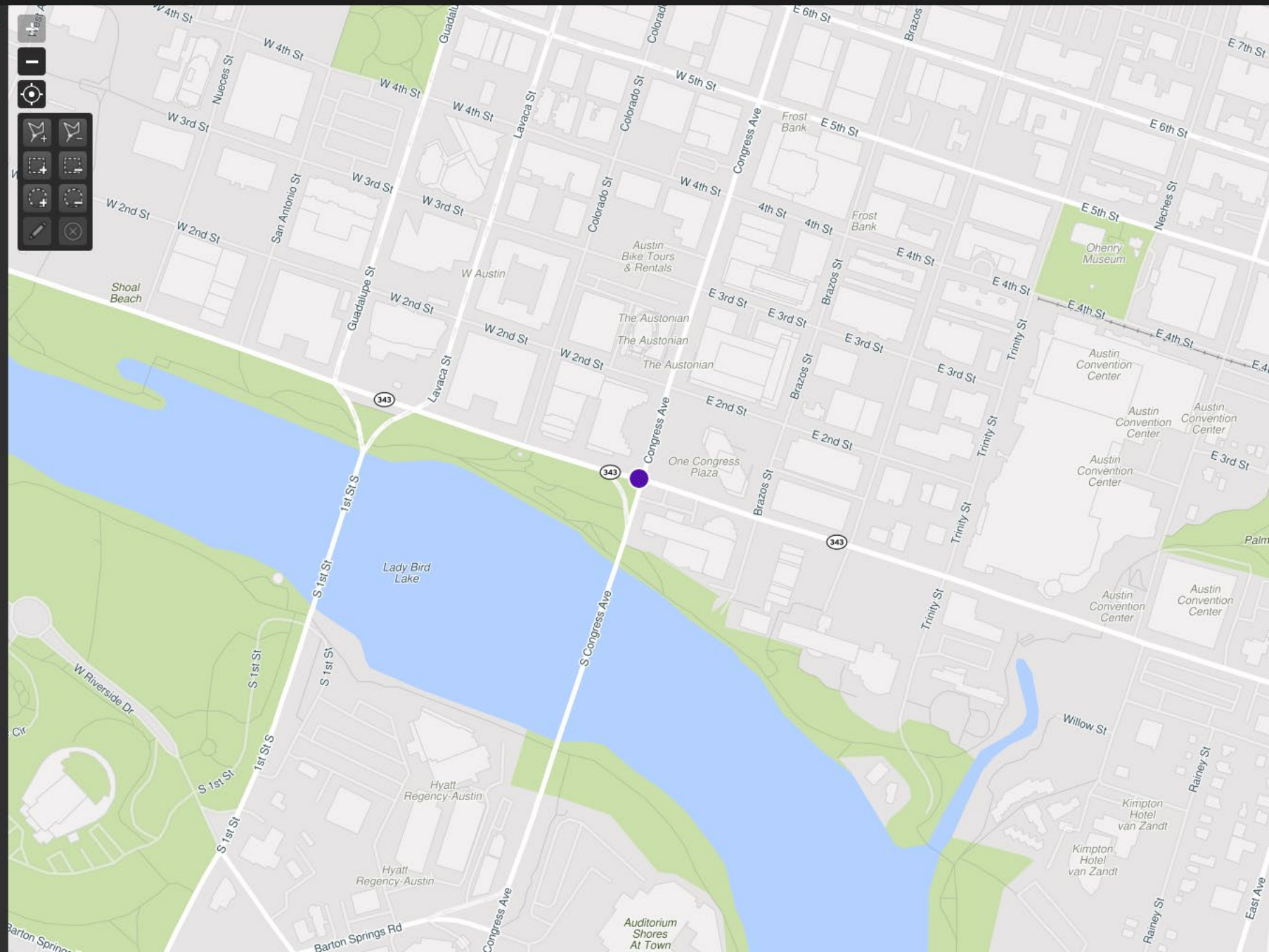
4. Select time of day

12:00 AM — 12:00 PM — 12:00 AM

6:00 AM — 8:00 PM

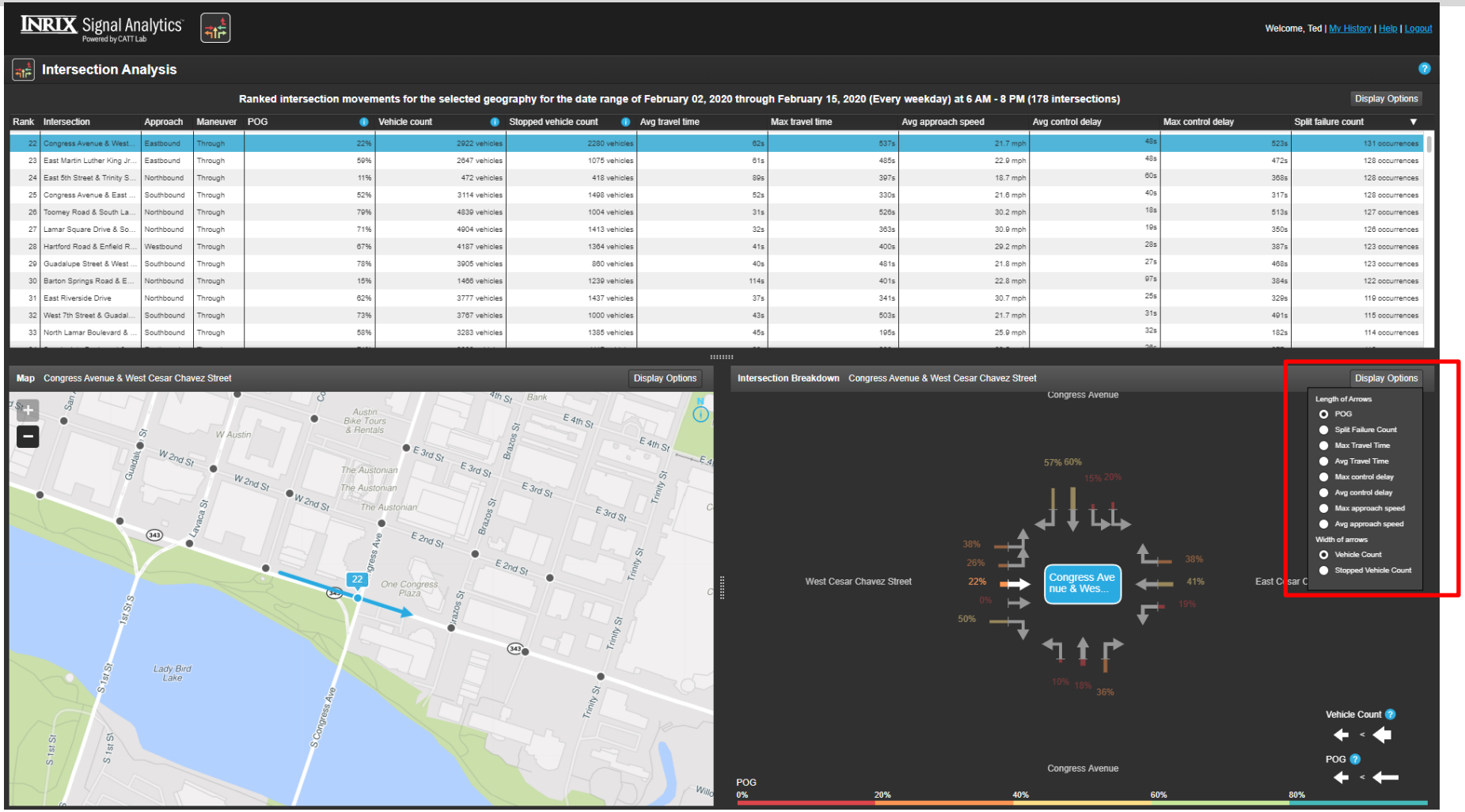
Add another time of day

SUBMIT



INRIX Signal Analytics

Performance Measures for intersection by movement

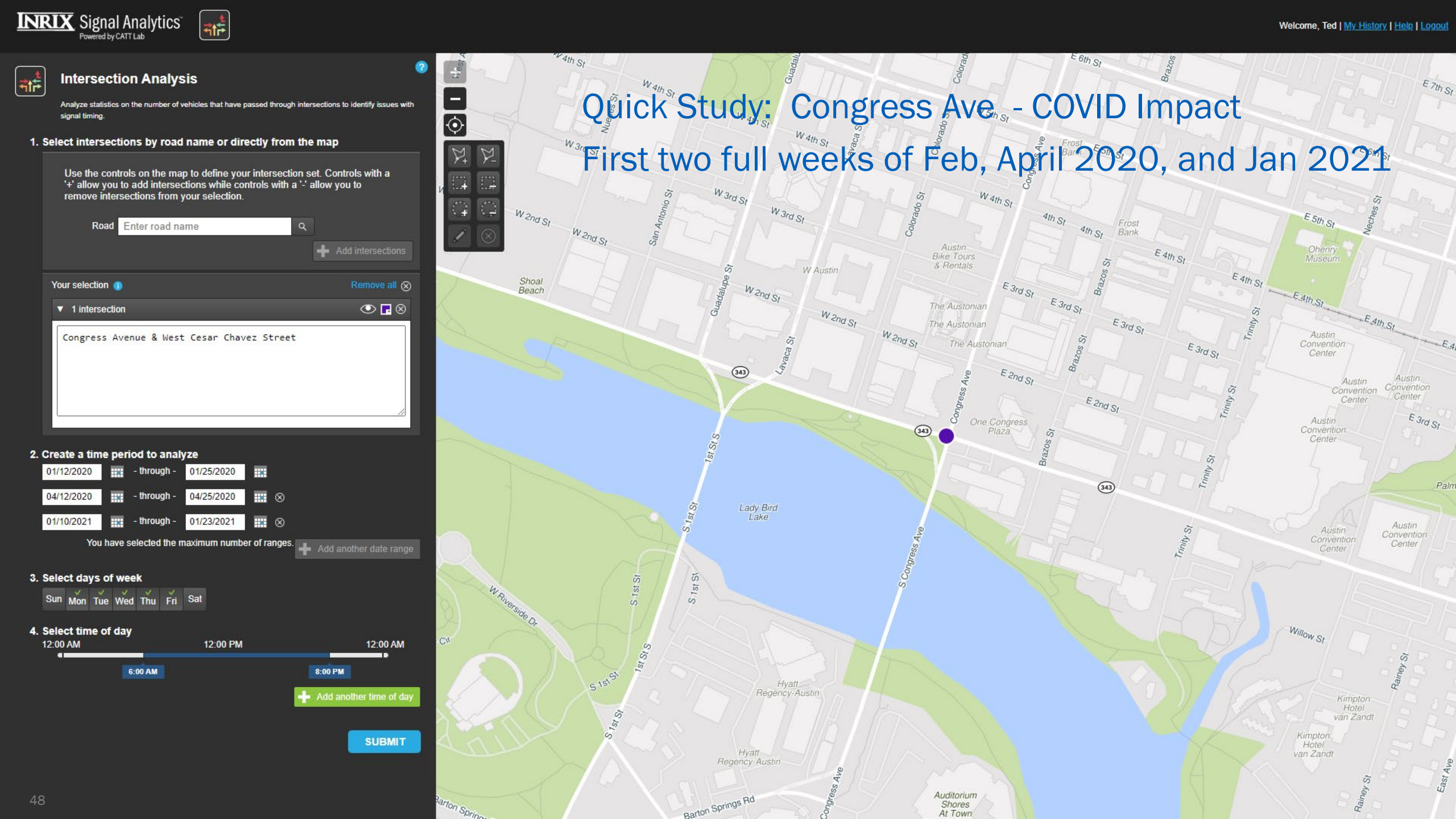


Display Options by Metric:
by movement

- Arrival of Green (POG)
- Split Failure
- Max Travel Time
- Ave Travel Time
- Max Control Delay
- Ave Control Delay
- Max approach speed
- Ave approach speed
- Vehicle Count
- Stopped Vehicle Count

Quick Study: Congress Ave. - COVID Impact

First two full weeks of Feb, April 2020, and Jan 2021



Intersection Analysis

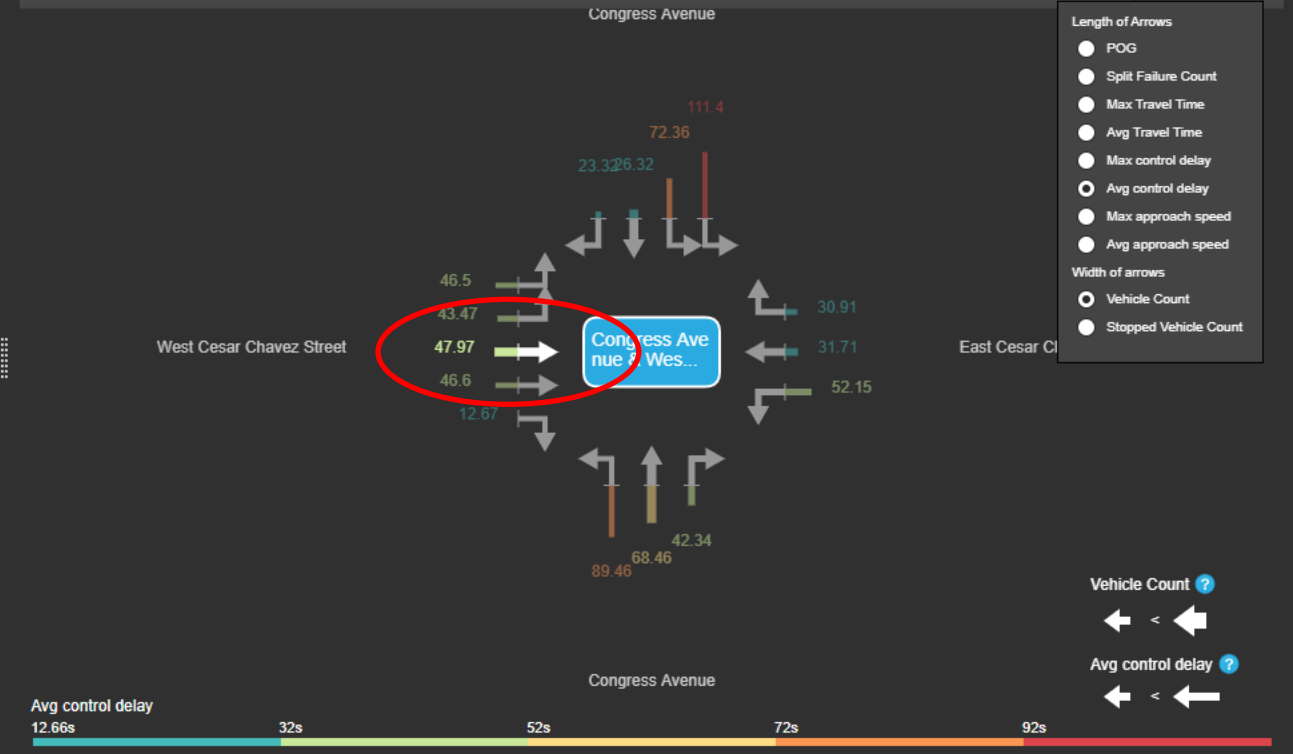
Ranked intersection movements for the selected geography for the date range of February 02, 2020 through February 15, 2020 (Every weekday) at 6 AM - 8 PM (178 intersections)

Display Options

Rank	Intersection	Approach	Maneuver	POG	Vehicle count	Stopped vehicle count	Avg travel time	Max travel time	Avg approach speed	Avg control delay	Max control delay	Split failure count
22	Congress Avenue & West...	Eastbound	Through	22%	2922 vehicles	2280 vehicles	62s	537s	21.7 mph	48s	523s	131 occurrences
23	East Martin Luther King Jr...	Eastbound	Through	59%	2647 vehicles	1075 vehicles	61s	485s	22.9 mph	48s	472s	128 occurrences
24	East 5th Street & Trinity S...	Northbound	Through	11%	472 vehicles	418 vehicles	89s	397s	18.7 mph	60s	368s	128 occurrences
25	Congress Avenue & East ...	Southbound	Through	52%	3114 vehicles	1498 vehicles	52s	330s	21.6 mph	40s	317s	128 occurrences
26	Toomey Road & South La...	Northbound	Through	79%	4839 vehicles	1004 vehicles	31s	526s	30.2 mph	18s	513s	127 occurrences
27	Lamar Square Drive & So...	Northbound	Through	71%	4904 vehicles	1413 vehicles	32s	363s	30.9 mph	19s	350s	126 occurrences
28	Hartford Road & Enfield R...	Westbound	Through	67%	4187 vehicles	1364 vehicles	41s	400s	29.2 mph	28s	387s	123 occurrences
29	Guadalupe Street & West ...	Southbound	Through	78%	3905 vehicles	860 vehicles	40s	481s	21.8 mph	27s	468s	123 occurrences
30	Barton Springs Road & E...	Northbound	Through	15%	1466 vehicles	1239 vehicles	114s	401s	22.8 mph	97s	384s	122 occurrences
31	East Riverside Drive	Northbound	Through	62%	3777 vehicles	1437 vehicles	37s	341s	30.7 mph	25s	329s	119 occurrences
32	West 7th Street & Guadal...	Southbound	Through	73%	3767 vehicles	1000 vehicles	43s	503s	21.7 mph	31s	491s	115 occurrences
33	North Lamar Boulevard & ...	Southbound	Through	58%	3283 vehicles	1385 vehicles	45s	195s	25.9 mph	32s	182s	114 occurrences

Map Congress Avenue & West Cesar Chavez Street — Display Options

Intersection Breakdown Congress Avenue & West Cesar Chavez Street — Display Options



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23	East Martin Luther King Jr...	Eastbound	Through	59%	2647 vehicles	1075 vehicles	61s	485s	22.9 mph	48s	472s	128 occurrences
24	East 5th Street & Trinity S...	Northbound	Through	11%	472 vehicles	418 vehicles	89s	397s	18.7 mph	60s	368s	128 occurrences

Ranked intersection movements for the selected geography for the date range of April 05, 2020 through April 18, 2020 (Every weekday) at 6 AM - 8 PM (178 intersections)

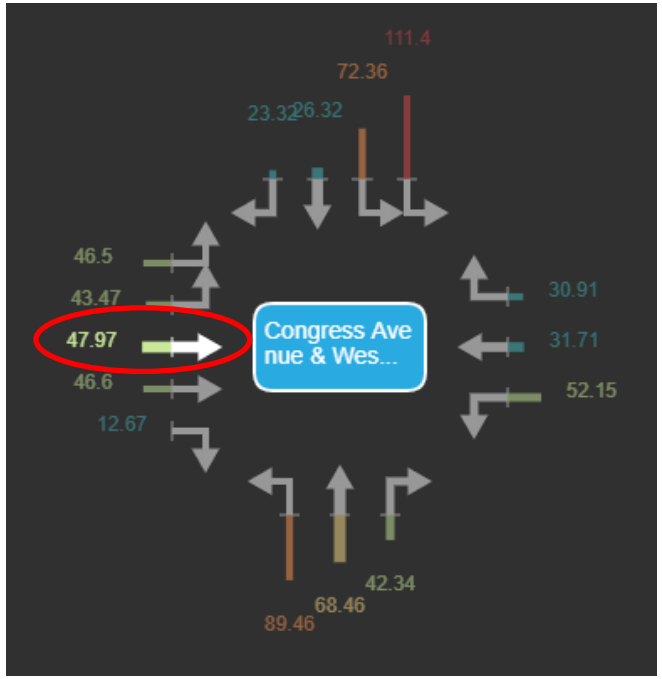
Display Options

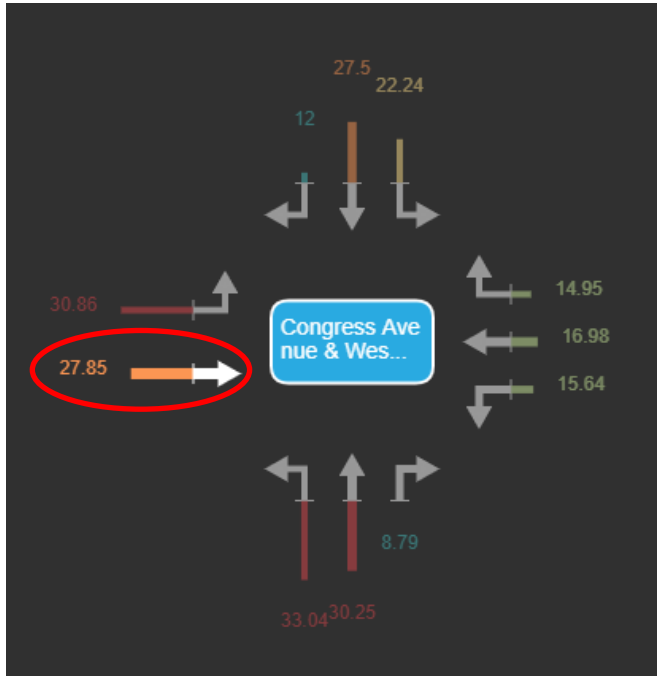
Rank	Intersection	Approach	Maneuver	POG	Vehicle count	Stopped vehicle count	Avg travel time	Max travel time	Avg approach speed	Avg control delay	Max control delay	Split failure count
167	East Martin Luther King Jr...	Southbound	Left	23%	66 vehicles	51 vehicles	76s	326s	22.1 mph	51s	301s	1 occurrence
168	Congress Avenue & West...	Eastbound	Through	21%	1128 vehicles	892 vehicles	40s	98s	24.6 mph	28s	86s	1 occurrence
169	West 3rd Street & Colora...	Eastbound	Left	20%	5 vehicles	4 vehicles	64s	124s	17.2 mph	36s	93s	1 occurrence

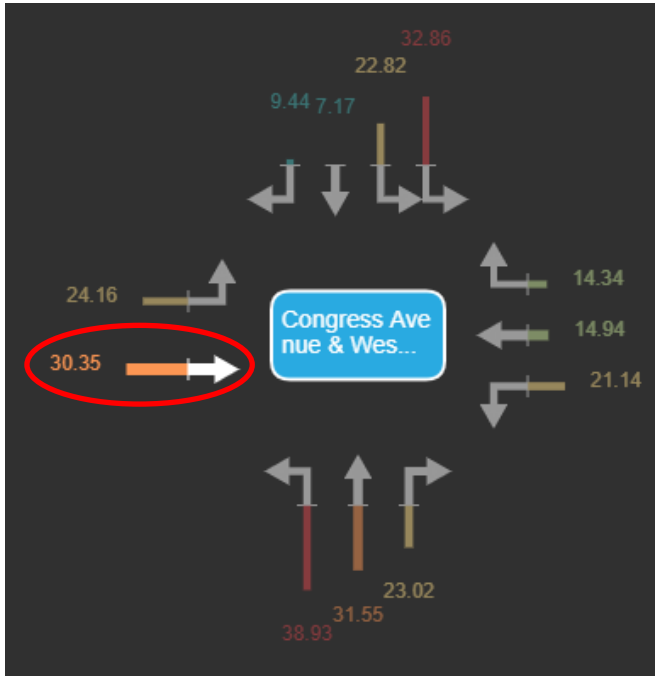
Ranked intersection movements for the selected geography for the date range of January 03, 2021 through January 16, 2021 (Every weekday) at 6 AM - 8 PM (178 intersections)

Display Options

Rank	Intersection	Approach	Maneuver	POG	Vehicle count	Stopped vehicle count	Avg travel time	Max travel time	Avg approach speed	Avg control delay	Max control delay	Split failure count
1	Congress Avenue & West...	Eastbound	Through	17%	2393 vehicles	1975 vehicles	43s	198s	22.8 mph	30s	185s	62 occurrences
2	East 2nd Street & San Ja...	Southbound	Through	24%	255 vehicles	194 vehicles	65s	428s	21.7 mph	41s	404s	27 occurrences
3	East Riverside Drive & So...	Southbound	Left	28%	563 vehicles	404 vehicles	52s	287s	30.2 mph	36s	271s	26 occurrences
4	West Cesar Chavez Stree...	Eastbound	Left	21%	865 vehicles	683 vehicles	34s	260s	29.8 mph	19s	245s	23 occurrences







Intersection Analysis

Ranked intersection movements for the selected geography for the date range of February 02, 2020 through February 15, 2020 (Every weekday) at 6 AM - 8 PM (178 intersections)

Filter | Display Options

Rank	Intersection	Approach	Maneuver	POG	Vehicle Count	Stopped Vehicle Count	Avg Travel Time (sec)	Max Travel Time (sec)	Avg Approach Speed (mph)	Avg Control Delay (sec)	Max Control Delay (sec)	Split Failure Count
22	Congress Avenue	Eastbound	Through	22%	2922	2280	62	537	22	48	523	131
23	East Martin Luther King Jr Boulevard & Brazos Street	Eastbound	Through	59%	2647	1075	61	485	23	48	472	128
24	Trinity Street & East 5th Street	Northbound	Through	11%	472	418	89	397	19	60	368	128

Ranked intersection movements for the selected geography for the date range of April 05, 2020 through April 18, 2020 (Every weekday) at 6 AM - 8 PM (178 intersections)

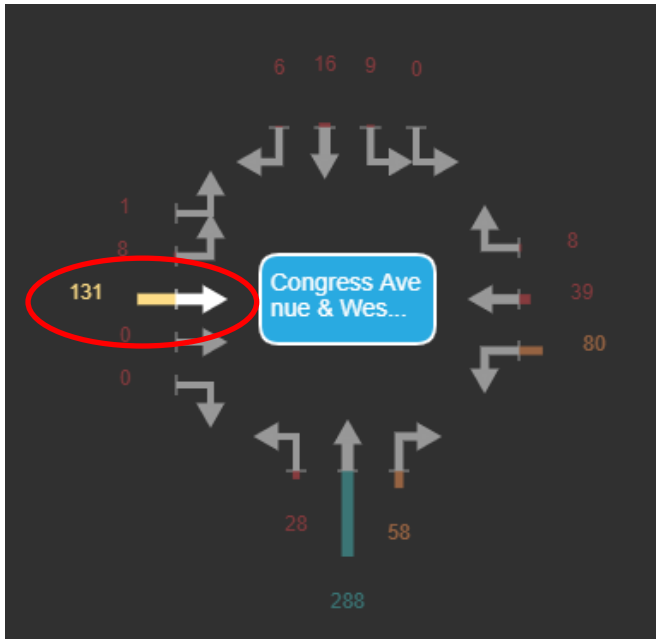
Display Options

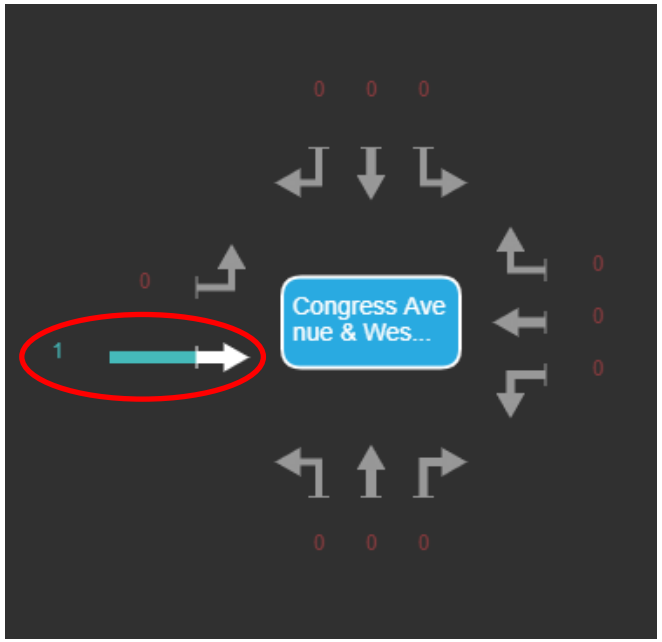
Rank	Intersection	Approach	Maneuver	POG	Vehicle count	Stopped vehicle count	Avg travel time	Max travel time	Avg approach speed	Avg control delay	Max control delay	Split failure count
167	East Martin Luther King Jr...	Southbound	Left	23%	66 vehicles	51 vehicles	76s	326s	22.1 mph	51s	301s	1 occurrence
168	Congress Avenue & West...	Eastbound	Through	21%	1128 vehicles	892 vehicles	40s	98s	24.6 mph	28s	86s	1 occurrence
169	West 3rd Street & Colora...	Eastbound	Left	20%	5 vehicles	4 vehicles	64s	124s	17.2 mph	33s	93s	1 occurrence

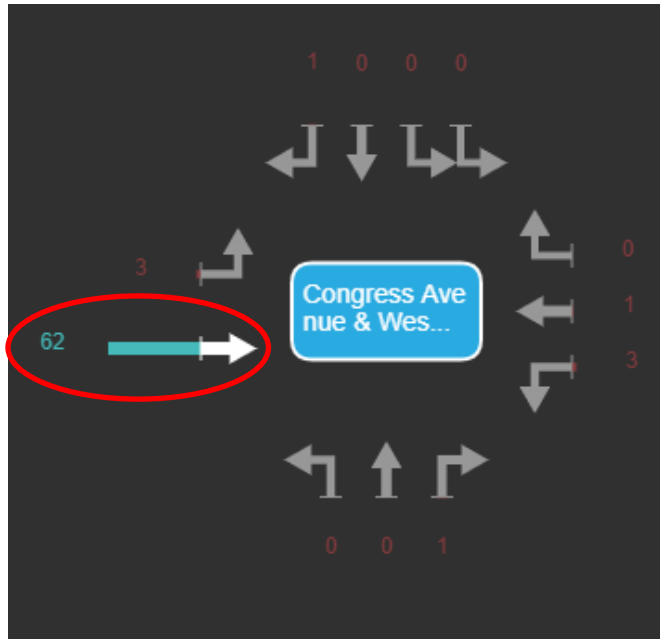
Ranked intersection movements for the selected geography for the date range of January 03, 2021 through January 16, 2021 (Every weekday) at 6 AM - 8 PM (178 intersections)

Display Options

Rank	Intersection	Approach	Maneuver	POG	Vehicle count	Stopped vehicle count	Avg travel time	Max travel time	Avg approach speed	Avg control delay	Max control delay	Split failure count
1	Congress Avenue & West...	Eastbound	Through	17%	2393 vehicles	1975 vehicles	43s	198s	22.8 mph	30s	185s	62 occurrences
2	East 2nd Street & San Ja...	Southbound	Through	24%	255 vehicles	194 vehicles	65s	428s	21.7 mph	41s	404s	27 occurrences
3	East Riverside Drive & So...	Southbound	Left	28%	563 vehicles	404 vehicles	52s	287s	30.2 mph	36s	271s	26 occurrences
4	West Cesar Chavez Stree...	Eastbound	Left	21%	865 vehicles	683 vehicles	34s	260s	29.8 mph	19s	245s	23 occurrences

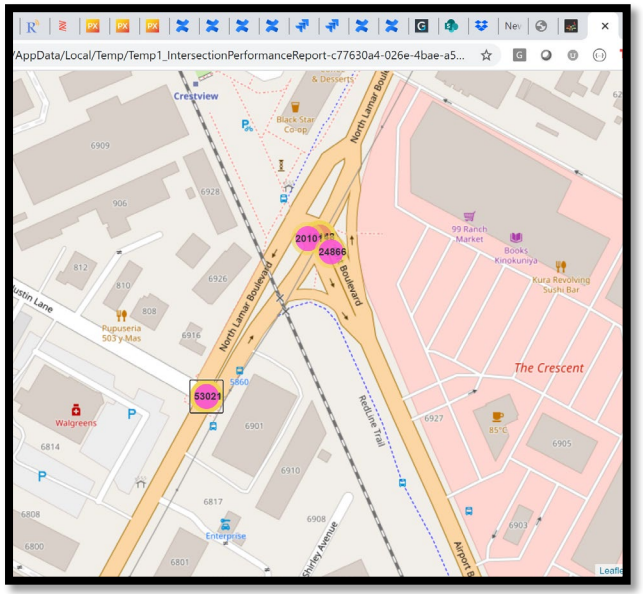


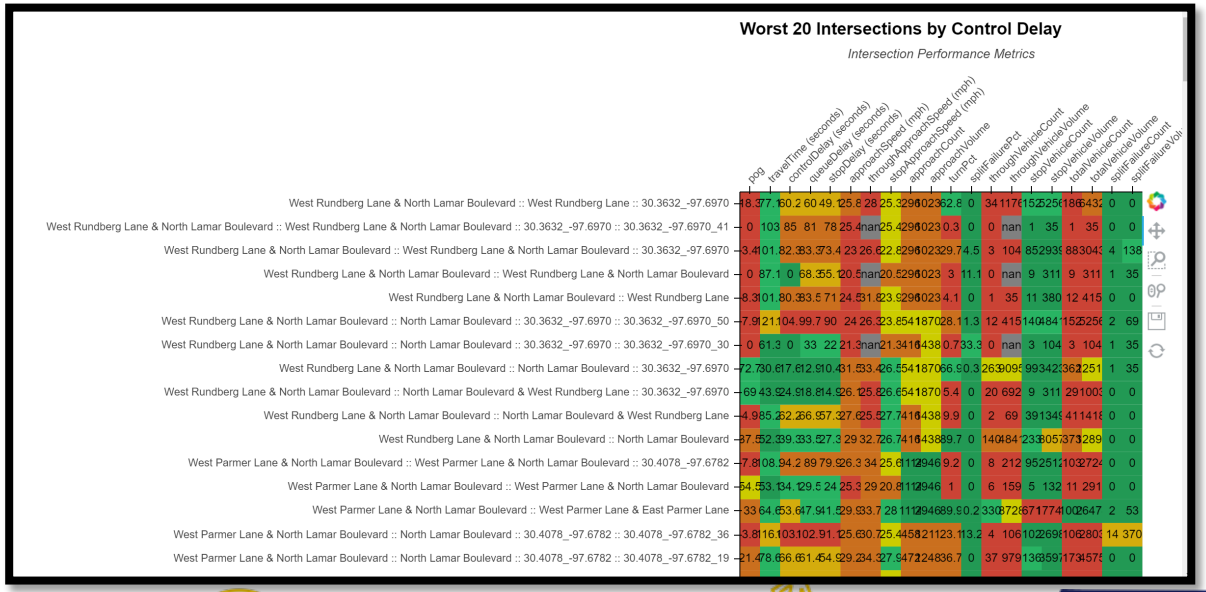




Additional Plots Embedded in Downloadable Link

- Intersection and approach level plots for the worst 20 intersections





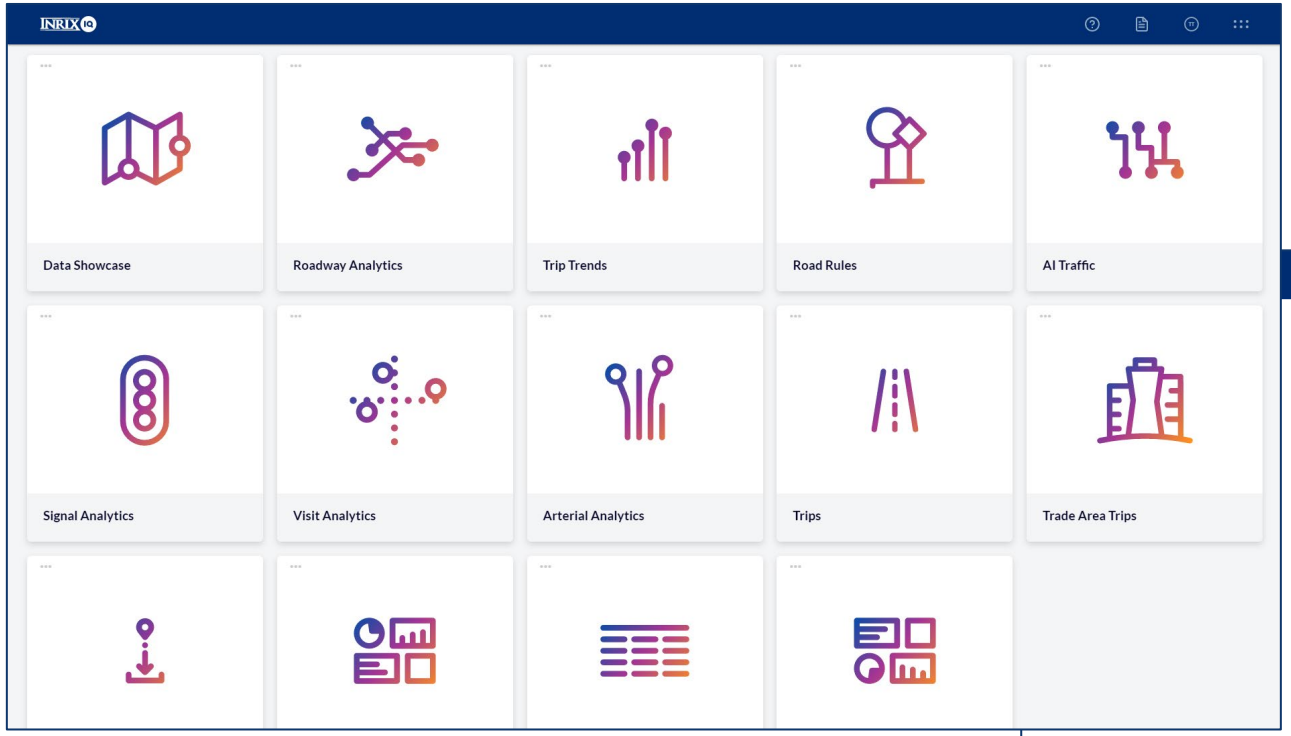
Benefits of Signal Performance Measures

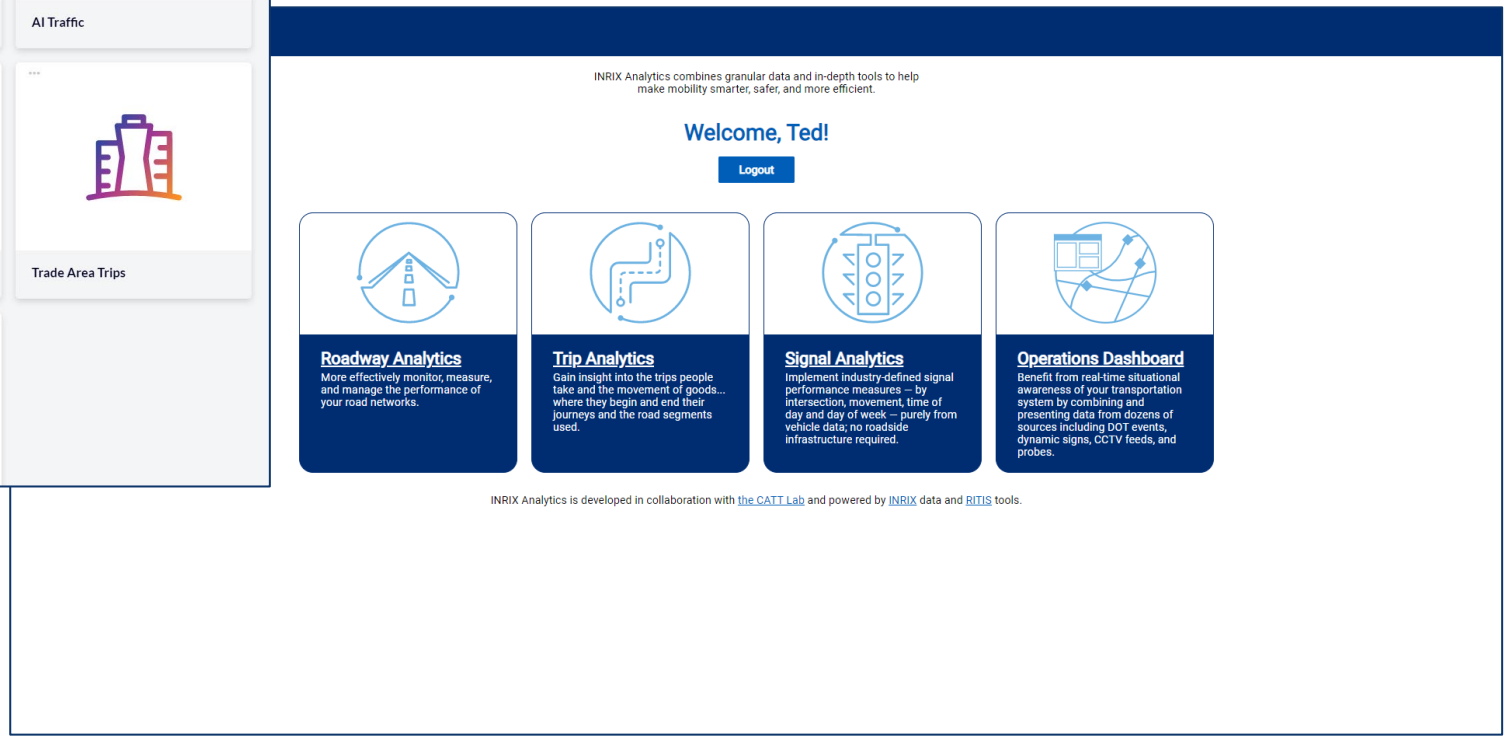
Systemwide assessment – Faster Solutions – Reporting Results

EXHIBIT 1-3. SIGNAL PERFORMANCE MEASURE BENEFITS

SOLVE PROBLEMS FASTER	AUTOMATE ALERTS FOR PROACTIVE MANAGEMENT	REDUCE MODELING NEEDS FOR EXISTING CONDITIONS
IDENTIFY HIGH-PRIORITY LOCATIONS	TRACK PROGRESS TOWARD AGENCY GOALS	PRODUCE SHARABLE REPORTS THAT SUMMARIZE IMPACTS

INRIX IQ - Suite of Tools





References

US Signals Scorecard:

Home Page: https://inrix.com/signals-scorecard/

Interactive Map: https://inrix.com/signals-scorecard/map

Blog post: https://inrix.com/blog/2021/02/suprising-findings-from-the-inrix-signals-scorecard

INRIX IQ Signal Analytics

Product Page: https://inrix.com/products/signal-analytics/

IQ Trial: https://iq.inrix.com/

February 2, 2021 Webinar: https://inrix.com/campaigns/inrix-signal-analytics-webinar/

Webinar:: https://inrix.com/campaigns/us-signals-scorecard-webinar/

Video, How it works: https://www.youtube.com/watch?v=jXiiiKasS9A&feature=youtu.be

Video, Intersection Analytics Module (w/CATT Lab): https://ritis.org/tutorials/videos/404397193

References:

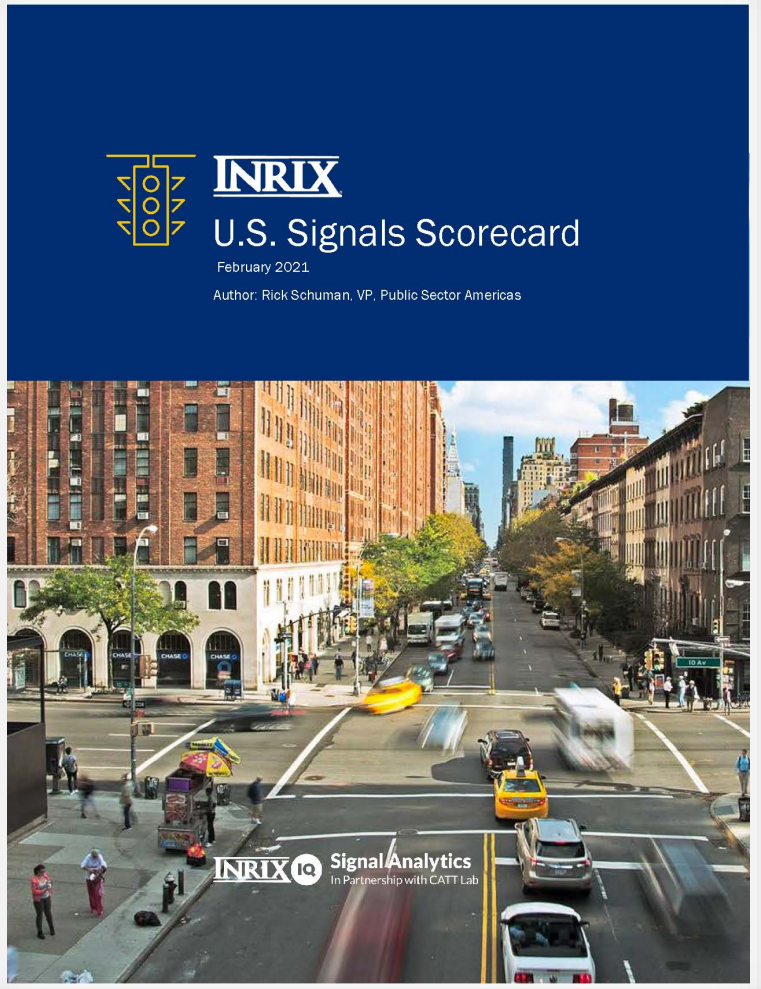
FHWA's ATSPM Home Page: https://ops.fhwa.dot.gov/arterial_mgmt/performance_measures.htm

Old Causes of Congestion Study:

https://ops.fhwa.dot.gov/congestion_report/executive_summary.htm#what_is_congestion

USDOT BTS/TETC Coalition/UMD CATT Lab TDADS Study:

https://tetcoalition.org/projects/transportation-disruption-and-disaster-statistics/



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What's Next?

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