



NORTH CAROLINA

Department of Transportation

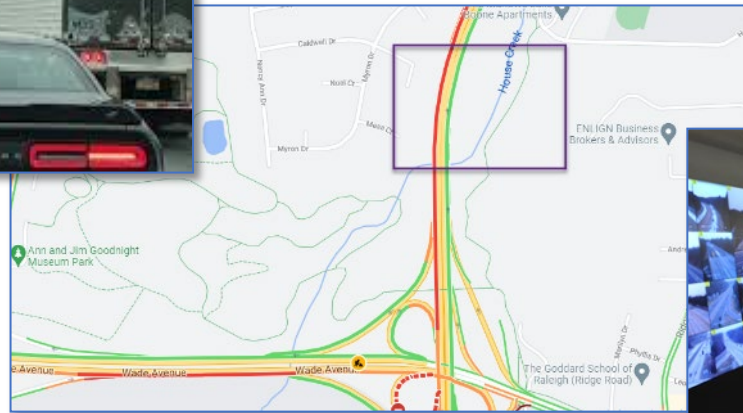


Commercial Vehicle Alerts in NC

Courtney Weeter, PE, PMP

11/16/2022

Traditional Traffic Operations



- Find slowdowns and tell drivers
- But what if we could do it
 - more quickly (<5 min) and
 - at the point of need (>300 DMS)?

Traffic Operations with Drivewyze



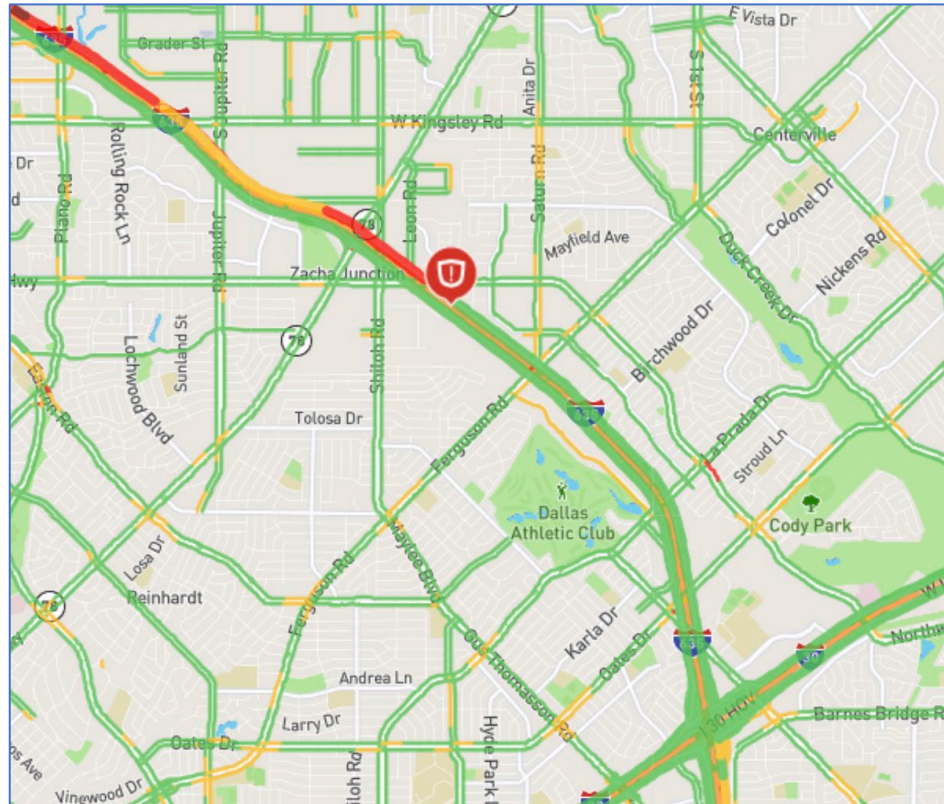
INRIX + Drivewyze = real time in cab alerts
for slow downs and congestion

400,000 drivers have enabled alerts

Traffic Alerts

Slowdowns

- Alert issued if speed drops 35 mph +
- 2 miles ahead
- Speed ahead vs current speed



Audible beep accompanies visual alerts

Congestion

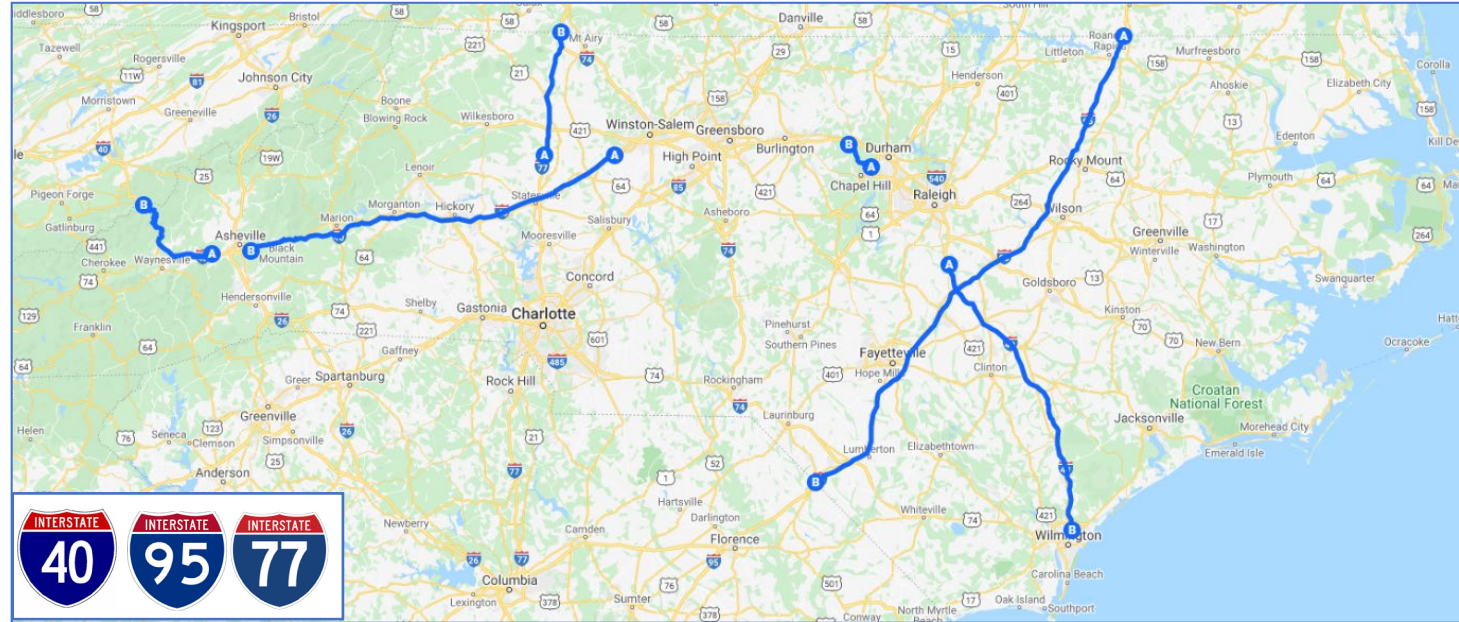
- Alert issued if delay is 3 minutes +
- 3 miles ahead
- Travel Time now vs. historical (same season last year)





Contract

- Procured Through Eastern Transportation Coalition Transportation Data Marketplace (TDM)
- Year One
 - \$250,000
 - 500 Rural Interstate Miles
- Year Two
 - \$255,000
 - All NC Freeways (could be up to 5000 miles)



September 2021-August 2022 I-77 added in December 2021

CMV Traffic Alerting Summary

NCDOT-Defined Alert Corridors

Rural Interstates



Drivewyze Monitors INRIX for Events

- Sudden Slowdowns
- Congestion



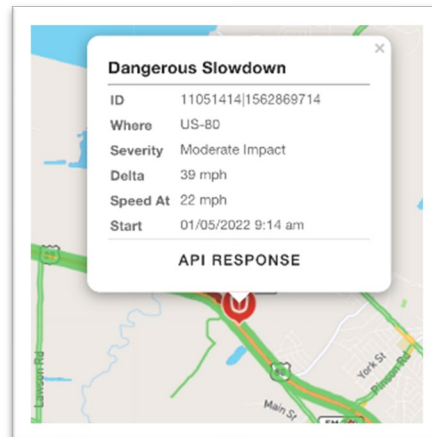
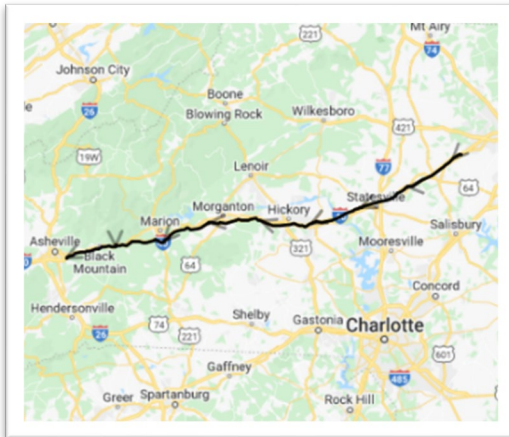
Drivewyze Distributes Alerts

- Subscribed Fleets
- Subscribed Drivers
- Free to Drivers



Drivewyze Provides Analytics Results

- Alert Location
- Alert Frequency
- Alert Density



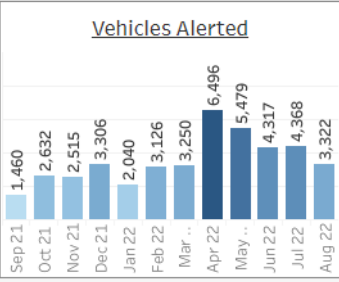
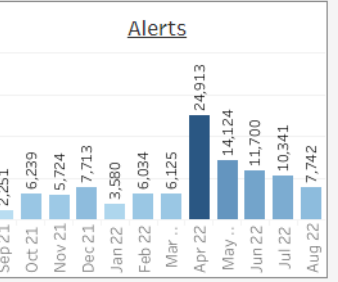
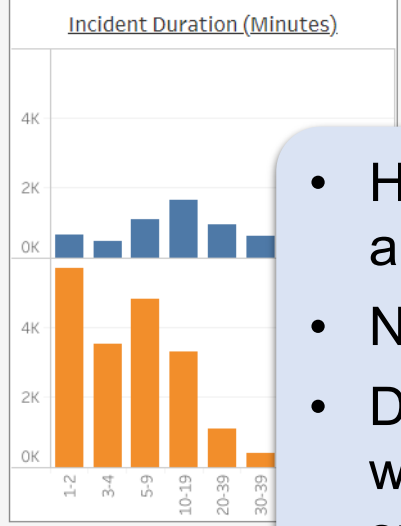
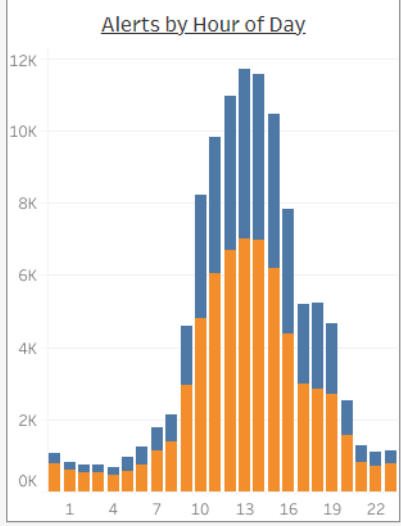
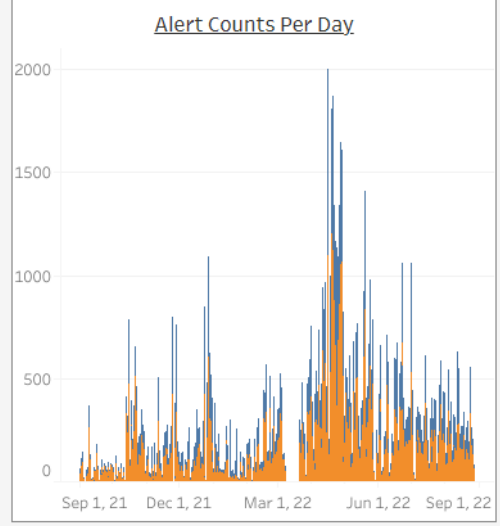
Drivewyze CMV Traffic Alert Dashboard - NC

Through 8/27/2022 6:39:16 PM
No notifications sent March 7th-21st

Jurisdiction: Date: Agency: name: Incident Type: Congestion Sudden Slowdo...

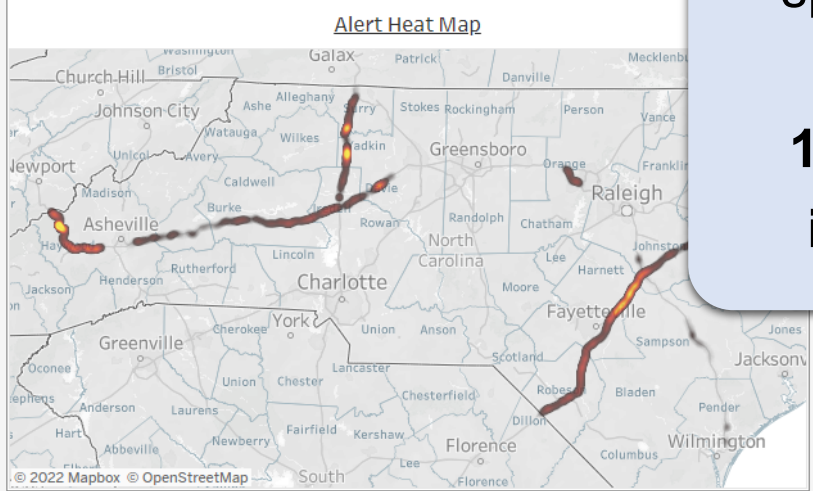
Program Stats

	Alert Count	Incident Count	Vehicle Count	Avg. Incident Duration
Congestion	42,240	7,351	16,289	61
Sudden Slowdown	64,246	19,151	18,926	13
Grand Total	106,486	26,502	23,126	32



Most Active Corridors - By Alert Count

name	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug
I-40EB MM0-40 TN to Asheville	255	642	317	391	315	381	405	912	1,306	819	367	441
I-40EB MM53-180 Asheville to WS	370	769	368	227	104	176	150	1,736	1,095	780	501	493
I-40EB MM259-270 Hillsborough	23	25	103	54	3	5	14	94	84	105	33	55
I-40EB MM320-420 Raleigh to Wilm	11	75	5	5	12	3	9	123	55	136	90	66
I-40WB MM40-0 Asheville to TN	110	650	1,054	1,718	734	590	835	4,632	1,591	1,242	789	777
I-40WB MM180-53 WS to Asheville	706	1,955	837	370	276	185	142	620	307	642	954	433
I-40WB MM270-259 Hillsborough	44	138	123	55	23	49		97	145	133	113	78
I-40WB MM420-320 Wilm to Raleigh	18	39	11	4	4		4	13	46	45	23	17
I-77 NB MM 55 to MM 105				123	105	1,112	1,154	3,876	2,636	1,392	290	291
I-77 SB MM 105 to MM 55				99	545	1,443	679	1,026	689	903	49	43
I-95NB MMO-182	403	700	1,433	933	798	611	1,729	7,998	3,884	3,263	3,671	2,746
I-95SB MM182-0	311	1,246	1,473	3,734	661	1,479	1,005	3,805	2,268	2,238	3,461	2,302



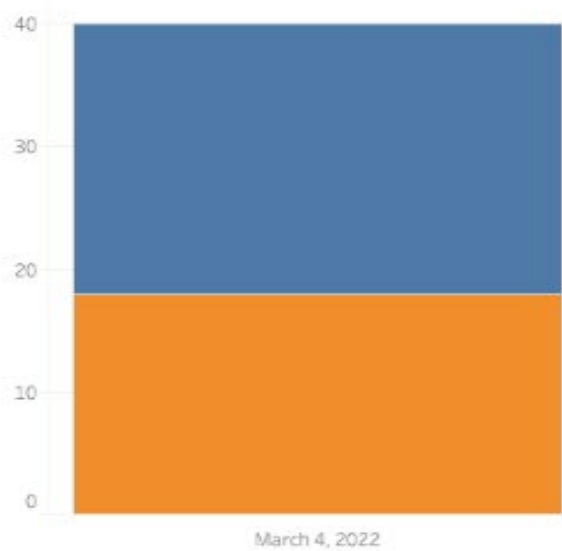
- Historical alert and event trends
- Near real-time
- Drill into time windows for specific event

123,000 alerts in 13 months

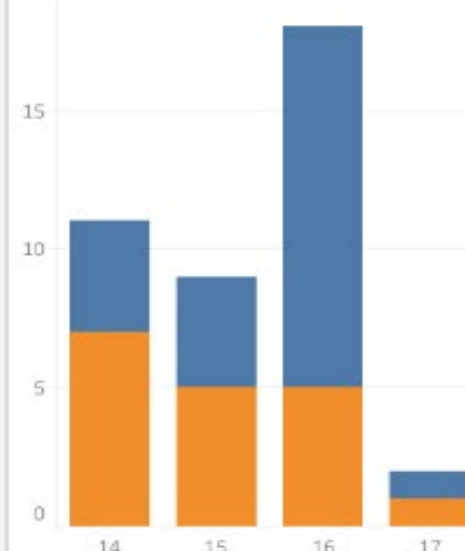
Program Stats

	Alert Count	Incident Count	Vehicle Count	Avg. Incident Duration
Congestion	22	3.00	19.00	69.64
Sudden Slowdown	18	14.00	12.00	5.22
Grand Total	40	17.00	24.00	40.65

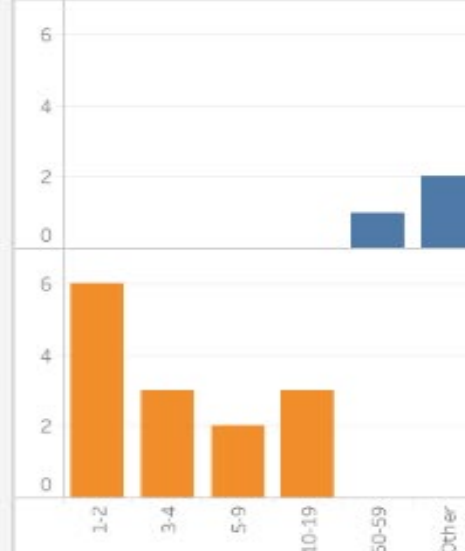
Alert Counts Per Day



Alerts by Hour of Day



Incident Duration (Minutes)



Alerts

40

Vehicles Alerted

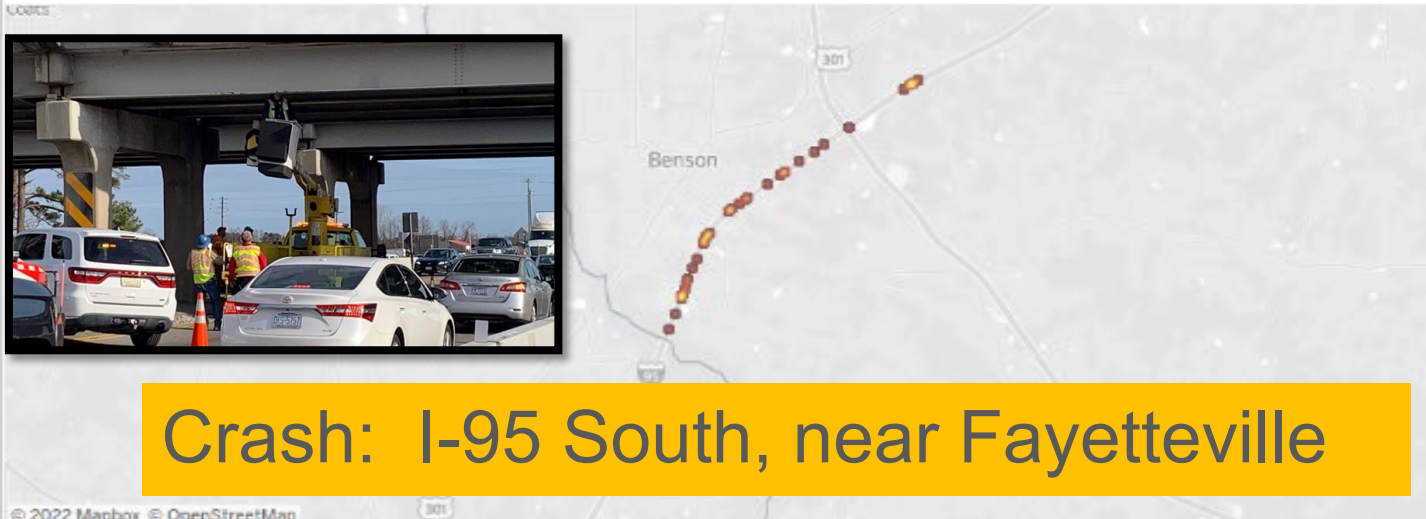
24

Most Active Corridors - By Alert Count

name	March
I-95SB MM182-0	39
I-95NB MM0-182	1



Alert Heat Map



Crash: I-95 South, near Fayetteville

But Can We Quantify the Benefit

- We have issued over 120,000 alerts to date....
- We saw it warn of I-95 crash queues...
- We “know” it is good to alert drivers in advance of slowdowns.....

Looked at crash data for:

- I-95 in 2018 and 2019
- I-85 in 2021

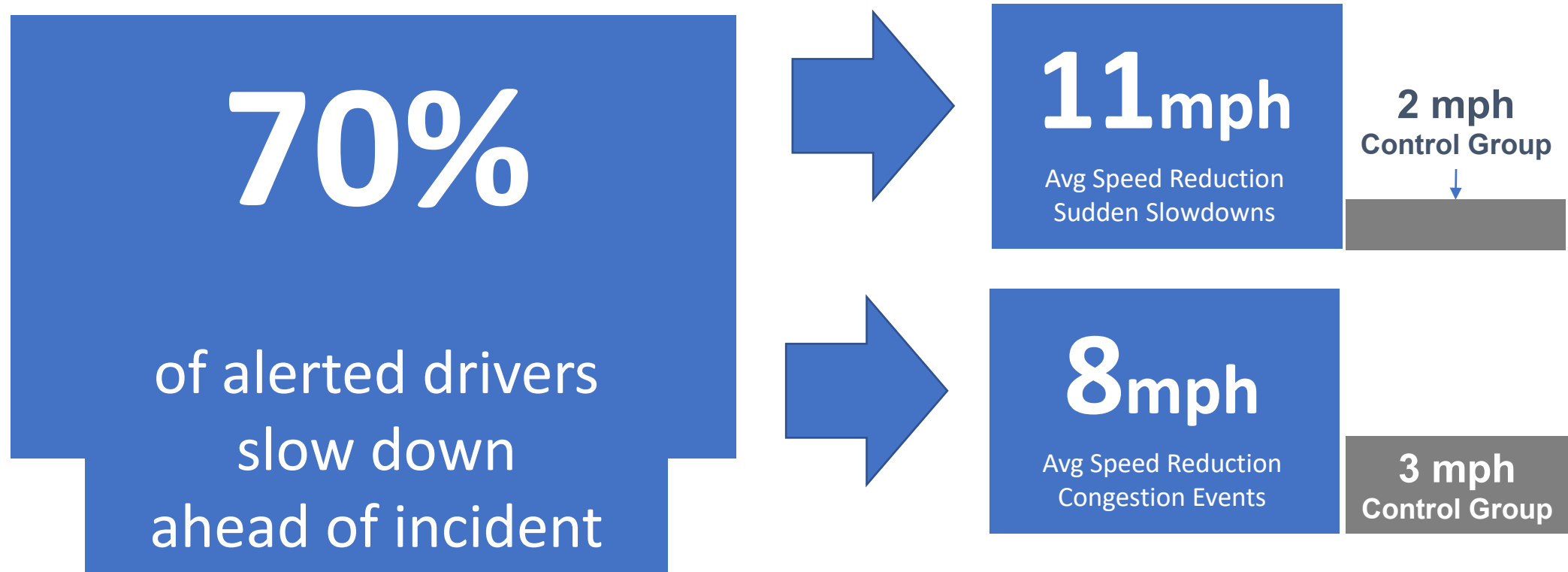
Hard to see reduction in:

- # of truck crashes
- truck crash rate

How else can we quantify benefits???

Effectiveness Study by Drivewyze

Preliminary results show that alerts do positively impact driving behavior relative to drivers not alerted.



Study conducted for I-95 Southbound Work Zone near Fayetteville, for January 14, 2022 – March 4, 2022 based on 4220 visits.

Truck Navigation & Restricted Routes



Drivewyze **INRIX**


Truck Navigation: same story every month

GPS Trucker Issues on SR 1991 (Dowell Ridge Rd) in Wilkes County

 Brown, Christopher J
To  Wells, Kelly
Cc  Adams, Daniel R

 Reply  Reply All  Forward  

Wed 8/24/2022 11:36 AM

 You replied to this message on 8/24/2022 5:40 PM.

 SR 1991 Dowell Ridge.pdf
302 KB

Kelly

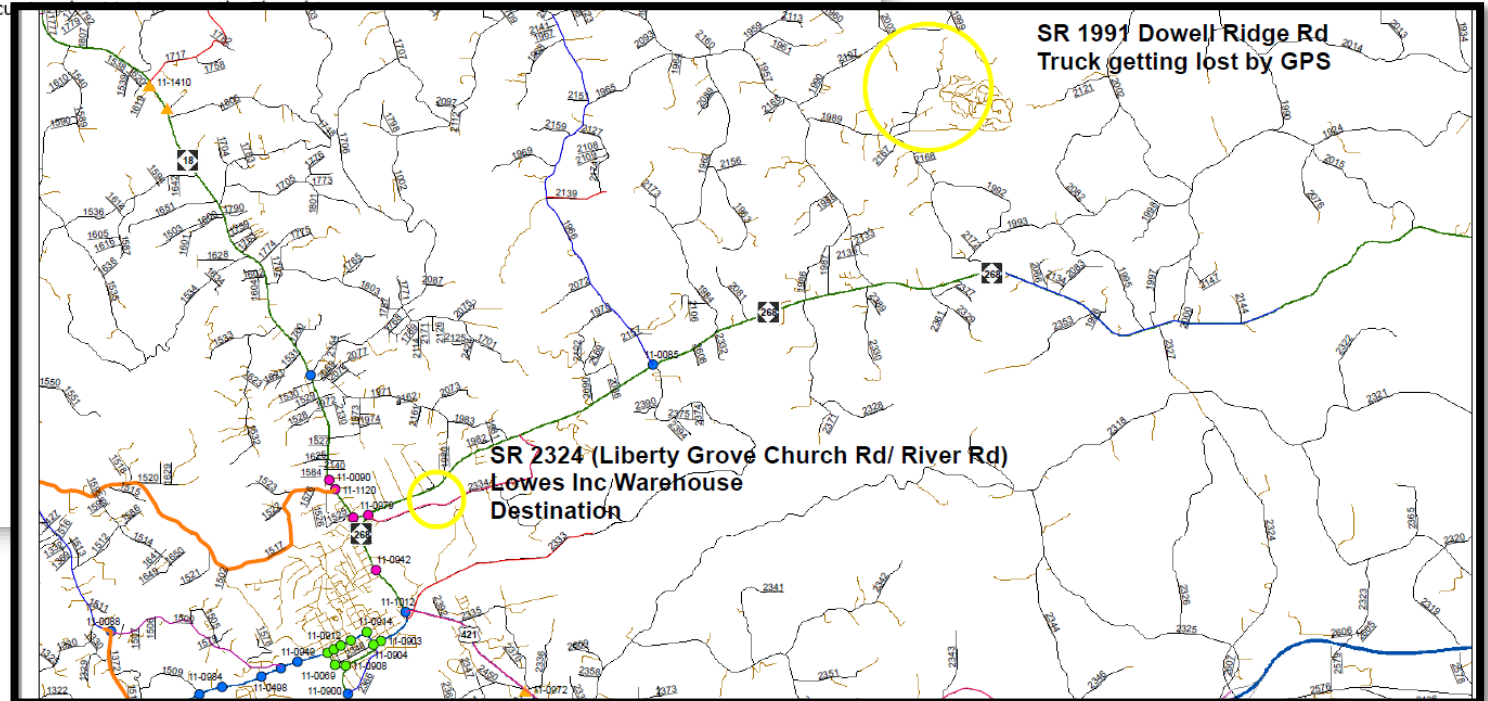
Our new Division Engineer, Michael Poe, asked me to talk to you about this location. I have talked to these residents for some time about this problem with trucks traveling down SR 1991 with no way to turn around without damaging property. These residents contacted our board member and thus was passed on to our Division Engineer. The residents gave him new information on the destination that they believe is Lowes Inc. warehouse on SR 2324 (Liberty Grove Rd/ River Rd). This now seems to be occu

Thanks

Chris J. Brown
Deputy Division Traffic Engineer
Division Eleven Traffic Services
North Carolina Department of Transportation

336 667 9111 office
cjbrown2@ncdot.gov

801 Statesville Road
P.O. Box 250
North Wilkesboro, North Carolina 28659-0250



Truck Navigation in General

- Successful in communicating with Waze, Apple & Google
 - Know how to affect changes to base maps & share incident info
- These apps are not meant for trucks
- Not sure how to affect where trucks are routed
- Our only influence is on Truck Restricted Routes

Agency Generated Safety Alerts no additional cost



Restricted Truck Alerts – Western North Carolina

Site ID	Site Name	Visit Count	Risky Visit Count
16799	NC Lansing to Virginia NC-194 Restricted Road NB	7	0
16802	NC Elk Park to Valle Crucis NC-194 Restricted Road EB	560	0
16803	NC Elk Park to Valle Crucis NC-194 Restricted Road WB	7	0
16805	NC Buncombe County I-40 Restricted Road WB	2,405	0
16806	NC Buncombe County I-40 Restricted Road EB	137	0
16807	NC Lake Lure Old Fort Rd Restricted Road NB	3	0
16808	NC McDowell County Bat Cave Road Restricted Road EB	171	0
16809	NC McDowell County Bat Cave Road Restricted Road WB	408	0
16830	NC Highlands Franklin Rd Restricted Road WB	23	0
16831	NC Highlands Dillard Rd Restricted Road	75	0
16832	NC Franklin Highlands Rd Restricted Road EB	70	0
16833	NC Franklin Sylva Rd Restricted Road NB	2,057	0
16834	NC Franklin Sylva Rd Restricted Road SB	2,030	0
16835	NC Rosman Rosman Hwy Restricted Road SB	110	0
16836	NC Rosman Rosman Hwy Restricted Road NB	105	0
16837	NC Pickens Moorefield Memorial Hwy Restricted Road NB	45	0
Grand Total		8,213	0

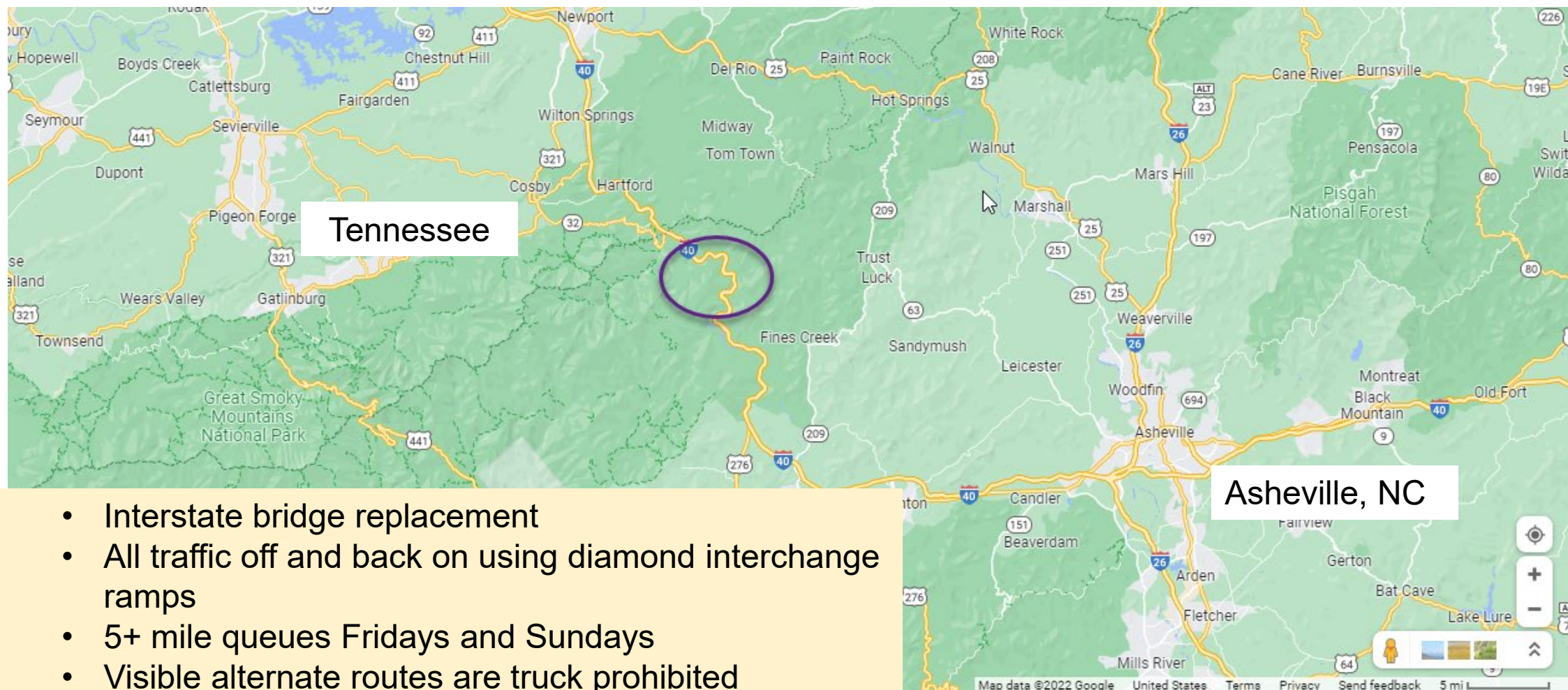
- July 5-Sept 15
= 10 weeks
- 16 locations
- 8200 Alerts
- 0 Risky Visits

Static Alerts for Work Zones



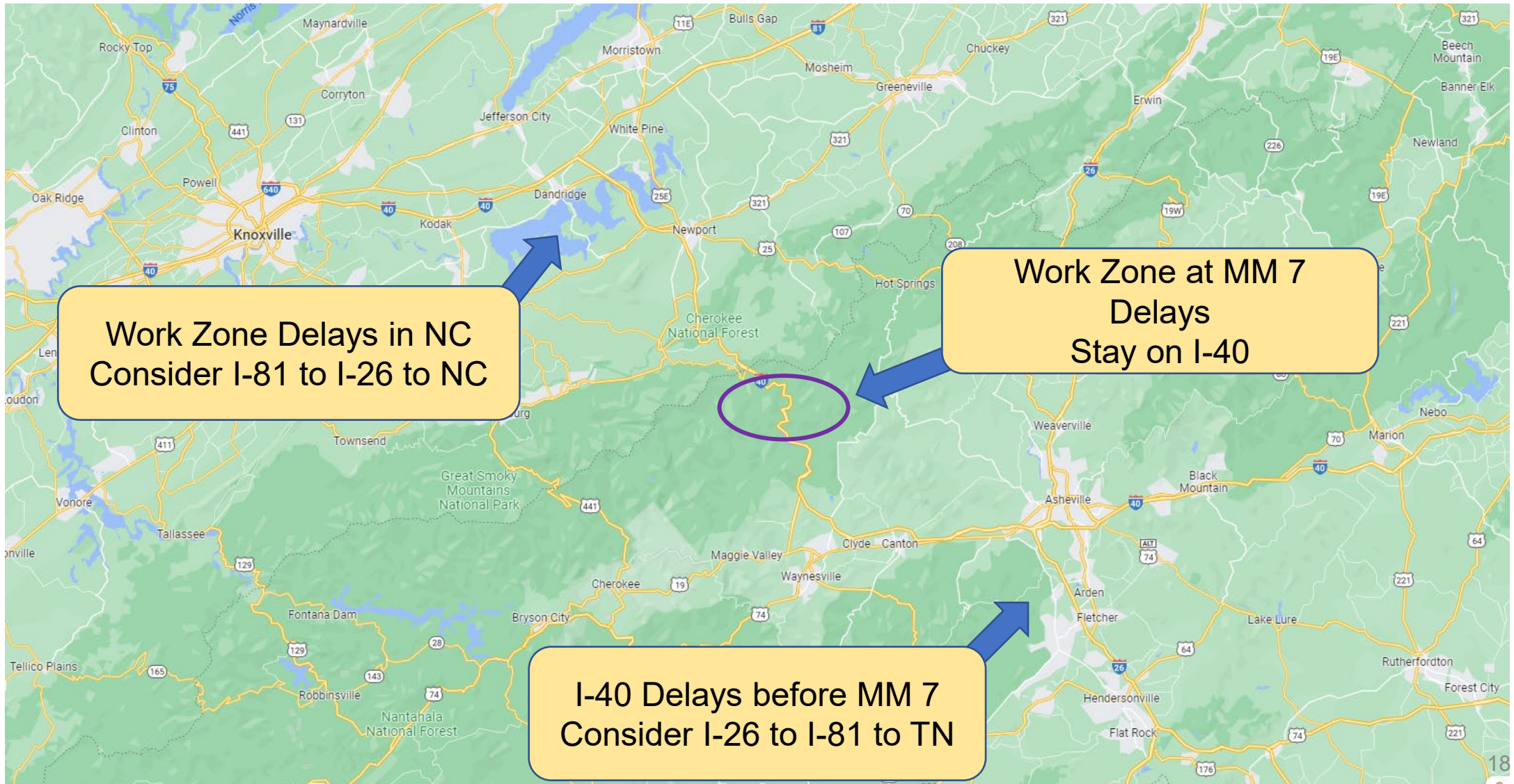
Drivewyze **INRIX**

I-40 Work Zone in Western NC



- Interstate bridge replacement
- All traffic off and back on using diamond interchange ramps
- 5+ mile queues Fridays and Sundays
- Visible alternate routes are truck prohibited
- Best truck alt route is 40+ miles before work zone

Agency Generated Safety Alerts



Courtney Weeter
clweeter@ncdot.gov

Kelly Wells
kwells@ncdot.gov