

ADOT Dust Mitigation Project Arizona Dust Workshop 2022

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What got us here?

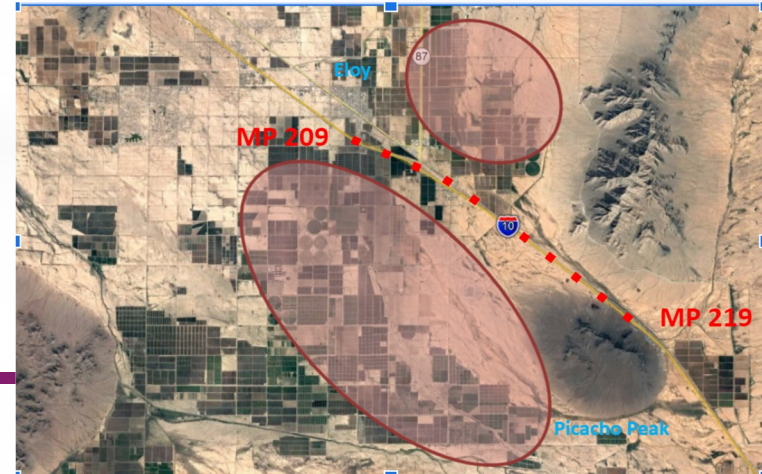
Dust related crashes

- Aug 2010 to Aug 2015
 - 3 Fatal
 - 5 Incapacitating
 - 27 Non-Incapacitating
 - 6 Possible
 - 42 Property Damage Only
- 83 crashes in 5 years
- 1 crash since Dust Detection System Deployment
 - 6 vehicles in crash with possible injuries



ADOT's solution using technology

- I-10 MP 209-219 (between Phoenix and Tucson)
- Data used for sensor locations
- X-Band radar
- SPOT DETECTOR (13) Spot Detectors
- Variable Speed Limits (VSL)(16)
- Closed Circuit TV (5)
- Dynamic Message Signs (4)
- Speed Feedback Signs (2)



System Activation Thresholds

- Visibility thresholds drive system activation
- Thresholds based on stopping sight distance criteria

<1800' = lower speed limit to 65

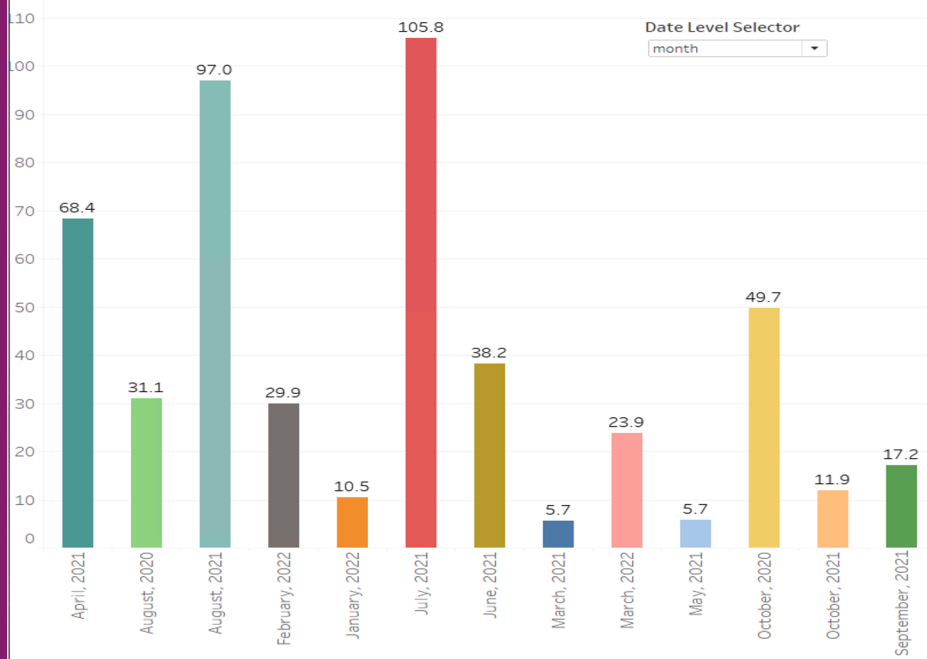
<1500' = lower speed limit to 55

<1200' = lower speed limit to 45

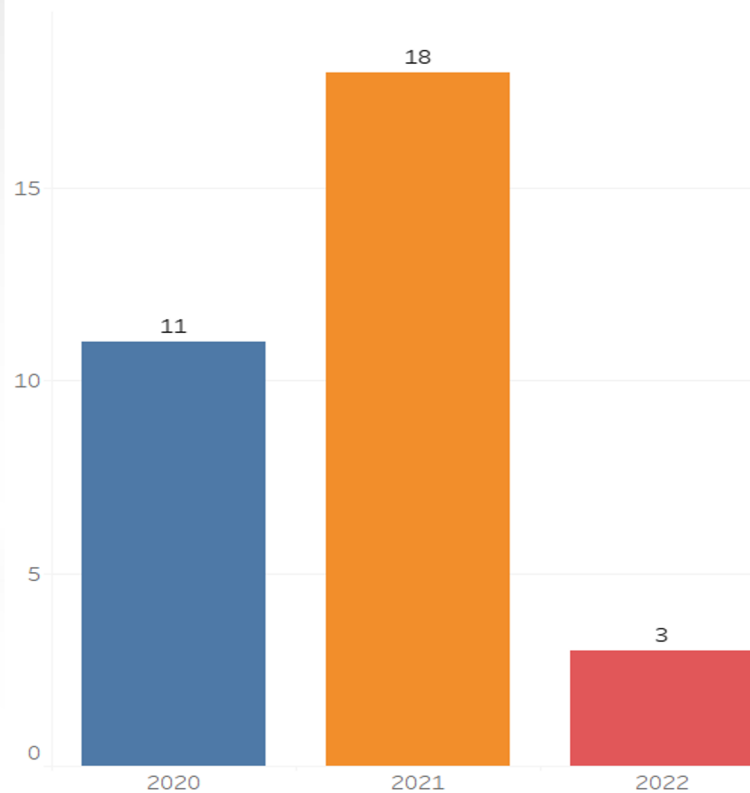
<900' = lower speed limit to 35

System Data

Duration of Dust Events in Minutes By Time Interval



of Dust Storms Greater than 2 Minutes

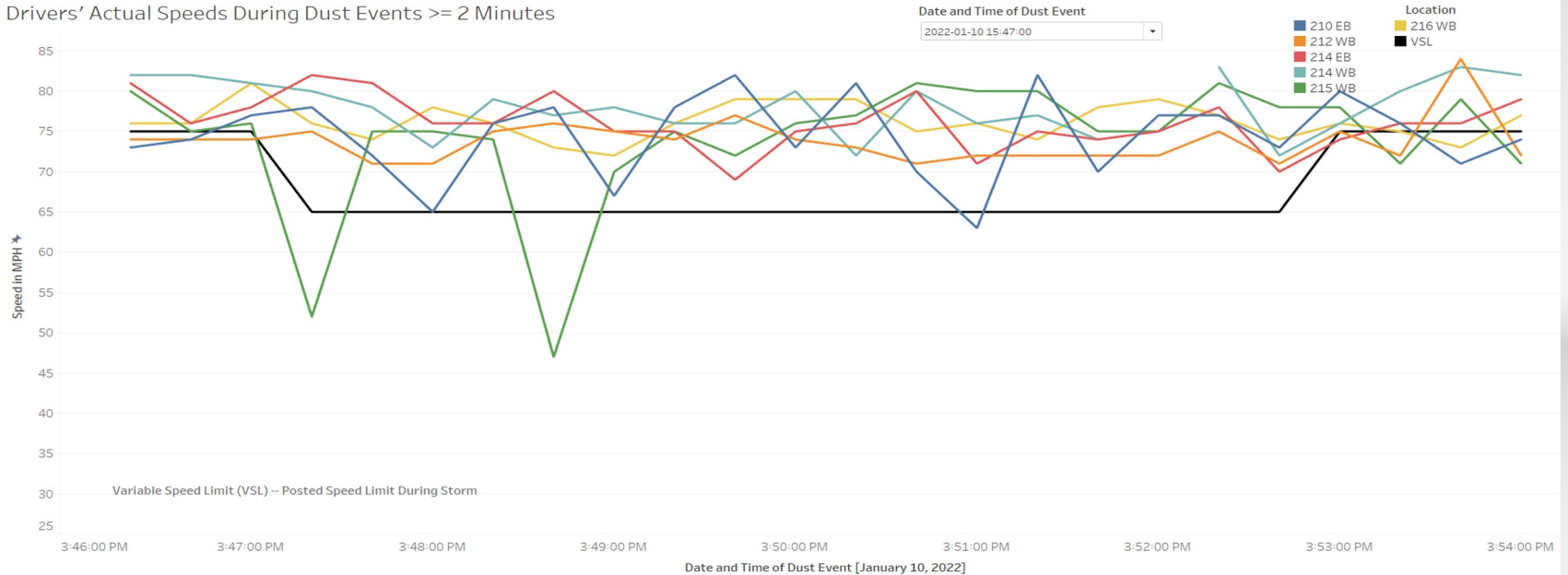


System Data

TSMO Performance Measures | Driver's Speeds During Dust Event(s)

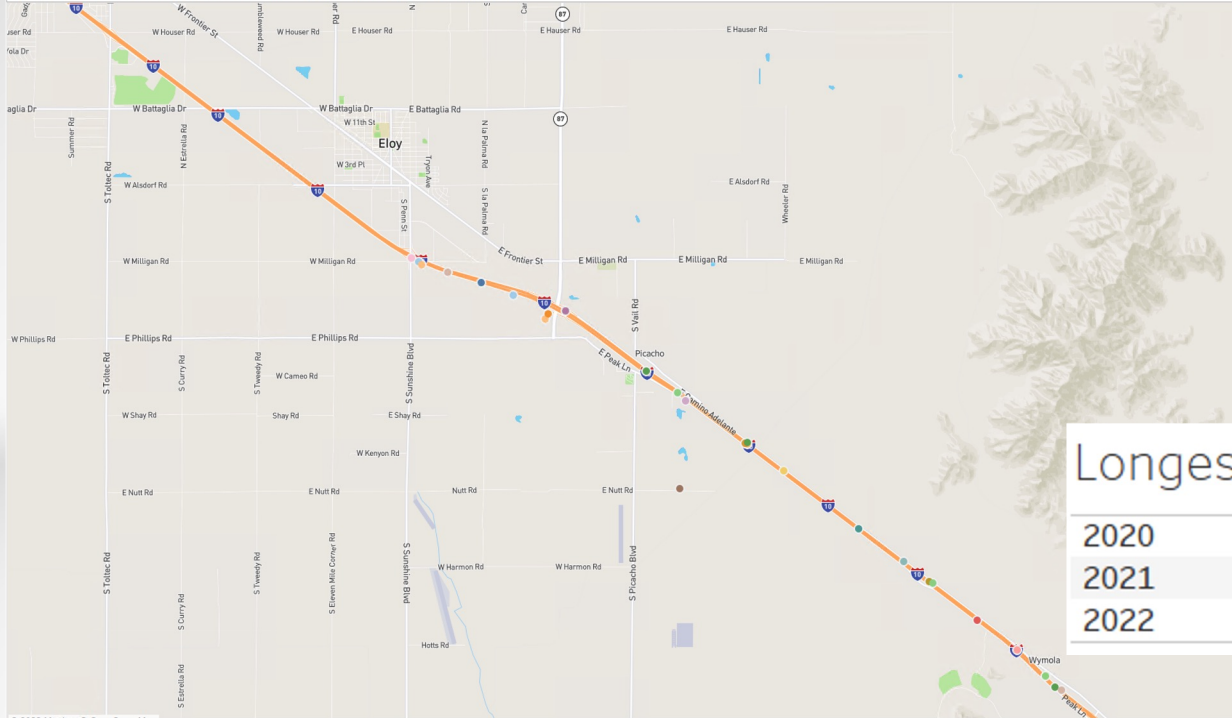
The driver's actual speeds captured from the RADS loop detector data during a dust event. The variable speed limit (VSL) adjusts based off the amount of dust in the air.

Drivers' Actual Speeds During Dust Events >= 2 Minutes



System Data

Map of Dust Detection and Traffic Management Equipment



- Device Name
- AWS310 #1
 - AWS310 #2
 - AWS310 #3
 - CCTV 1
 - CCTV 2
 - CCTV 3
 - CCTV 4
 - CCTV 5
 - DMS 1
 - DMS 2
 - DMS 3
 - DMS 4
 - Ex CCTV
 - Ex DMS
 - Sensor #1
 - Sensor #2
 - Sensor #3
 - Sensor #4
 - Sensor #5
 - Sensor #6
 - Sensor #7
 - Sensor #8
 - Sensor #9
 - Sensor #10
 - Sensor #11
 - Sensor #12
 - Sensor #13

Longest Dust Storm by Year

| | | |
|------|---------------------|------------|
| 2020 | 2020-10-21 14:10:00 | 21 minutes |
| 2021 | 2021-06-21 06:48:00 | 15 minutes |
| 2022 | 2022-02-15 11:43:00 | 24 minutes |

Summary

- We continue to look at the data and make adjustments using our tableau program.
- We continue to work on a platform so we can display the information internally.
- Getting the system data, how it is working from a data perspective takes time.
- We are evaluating if speeds are reducing and system working during dust events.

THANK YOU

For further information, please contact:

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