

# **ADOT Dust Mitigation Project Arizona Dust Workshop 2022**

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# What got us here?

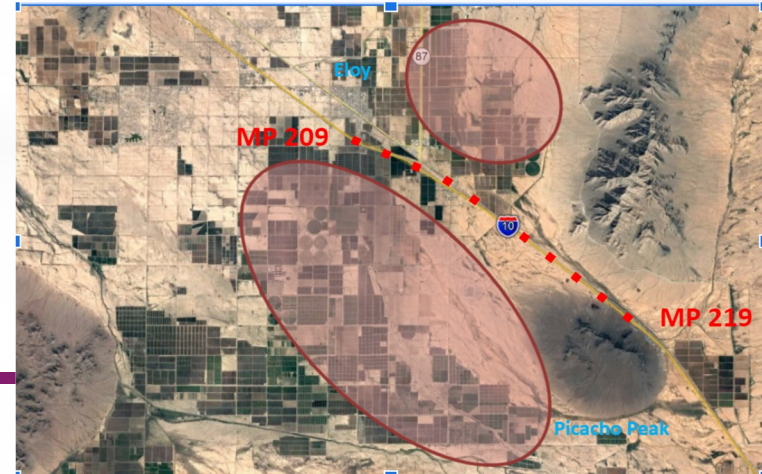
## Dust related crashes

- 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

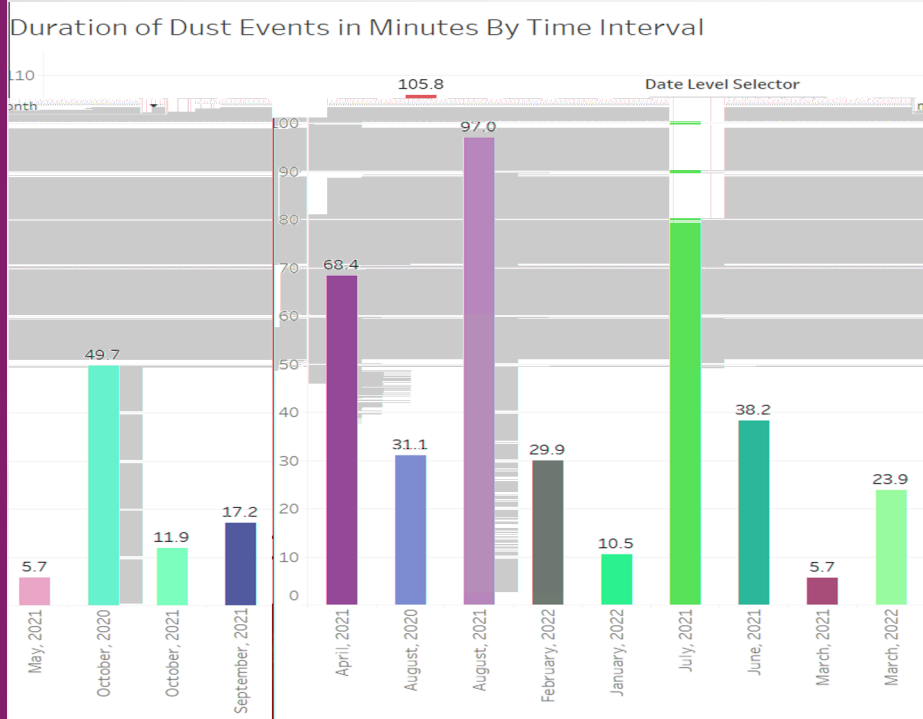
<1800' = lower speed limit to 65

<1500' = lower speed limit to 55

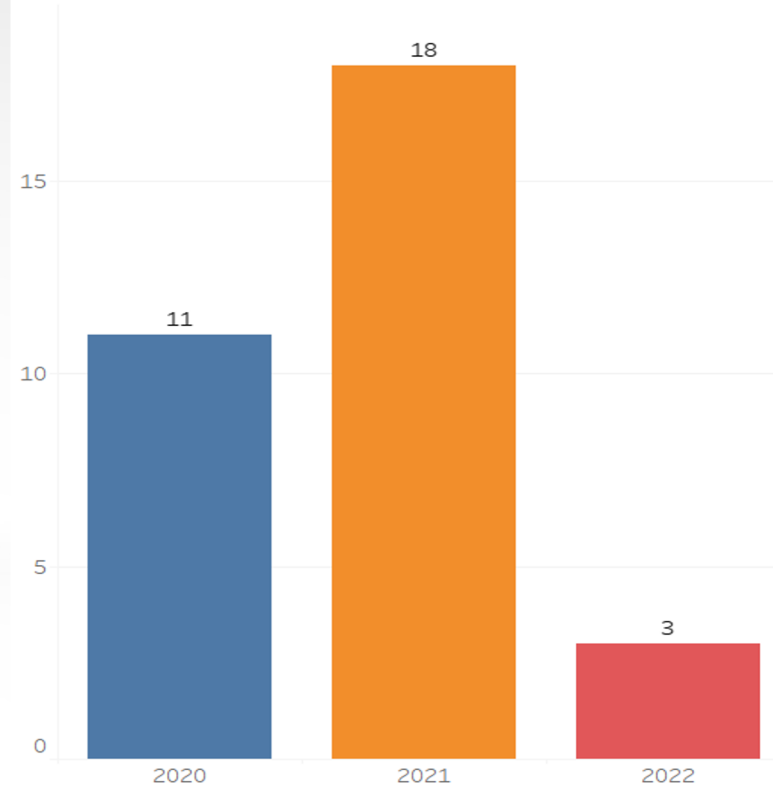
<1200' = lower speed limit to 45

<900' = lower speed limit to 35

# System Data



# of Dust Storms Greater than 2 Minutes

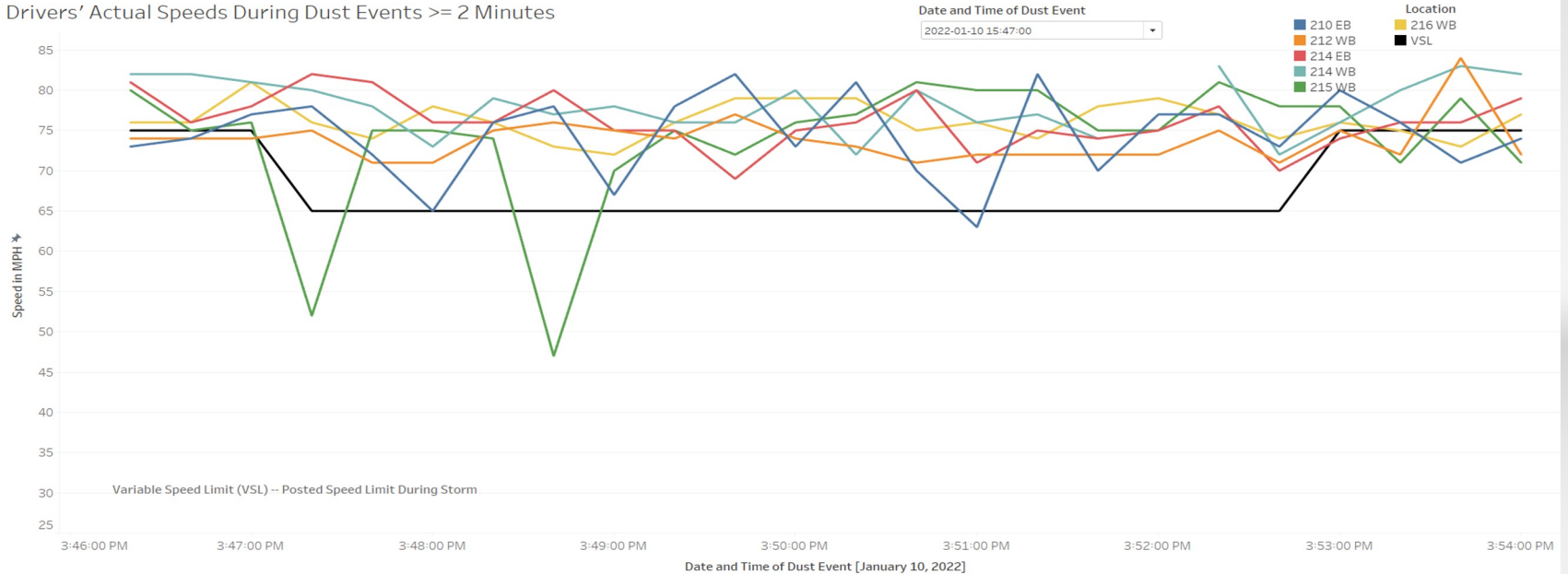


# System Data

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

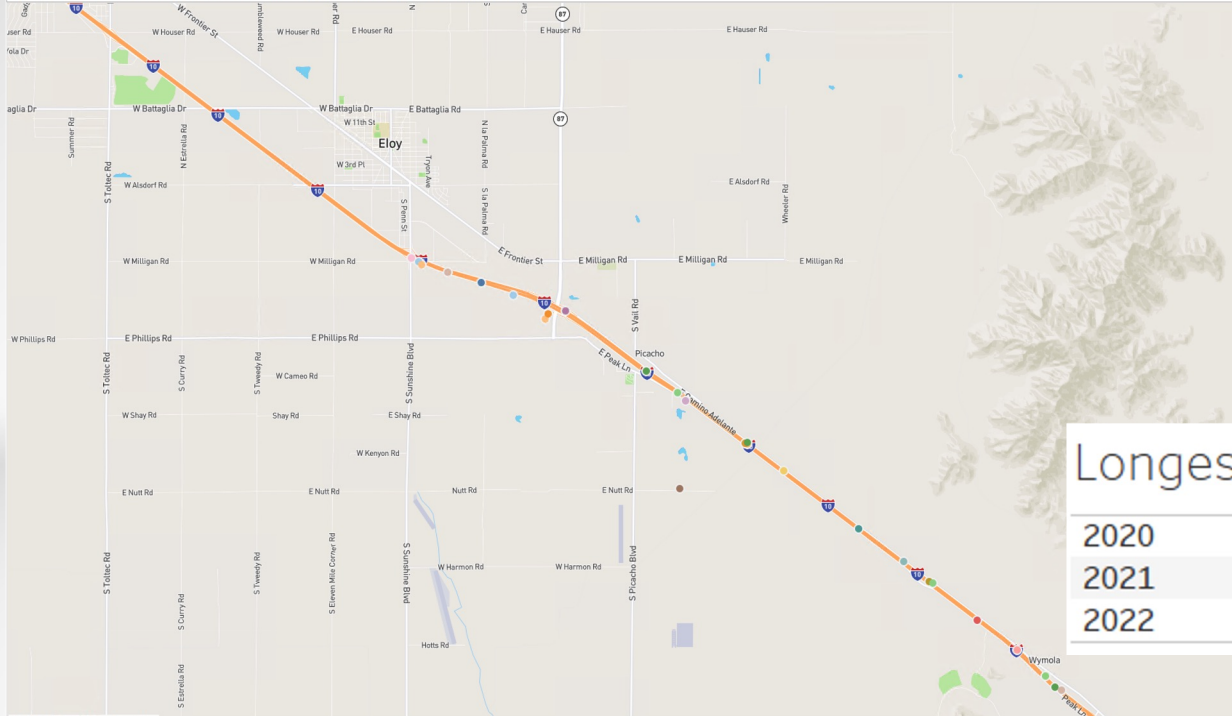
The driver's actual speeds captured from the RADS loop detector data during a dust event. The variable speed limit (VSL) adjusts based off the amount of dust in the air.

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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