ADOT Dust Mitigation Project Arizona Dust Workshop 2022

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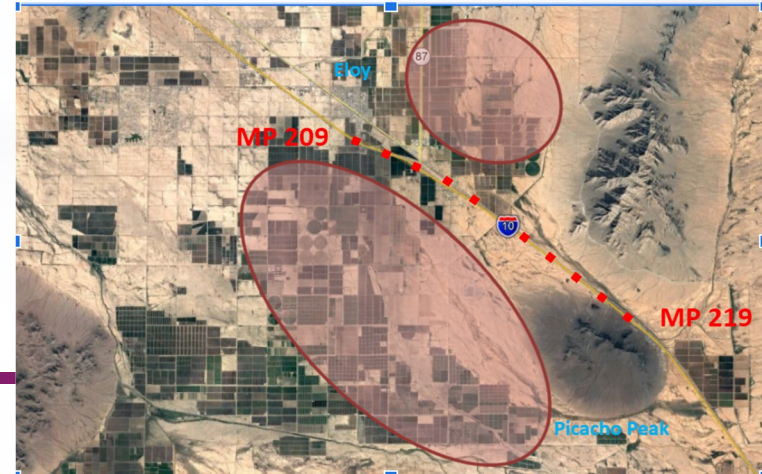# What got us here?

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

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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
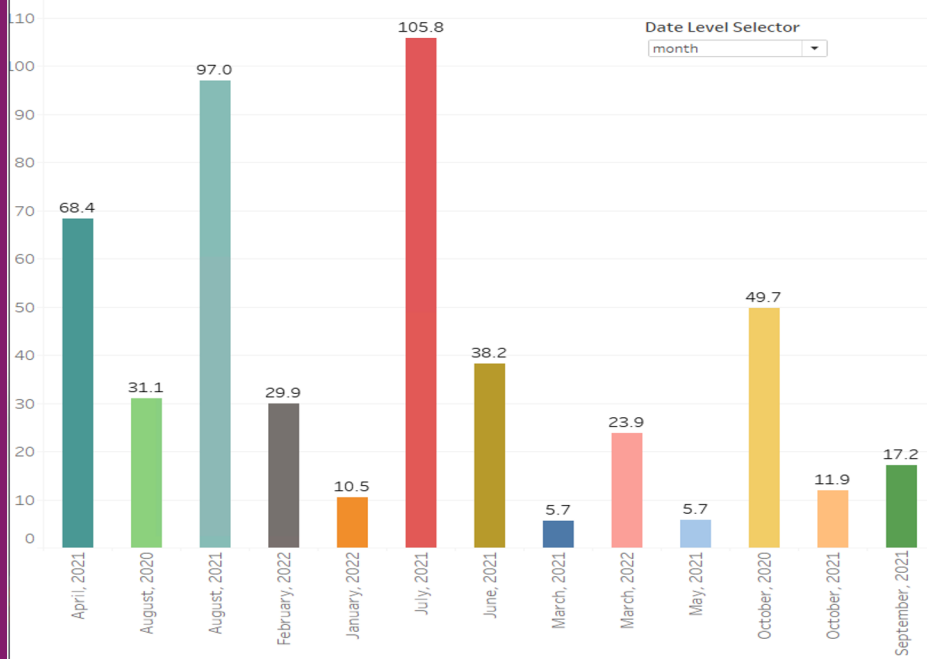
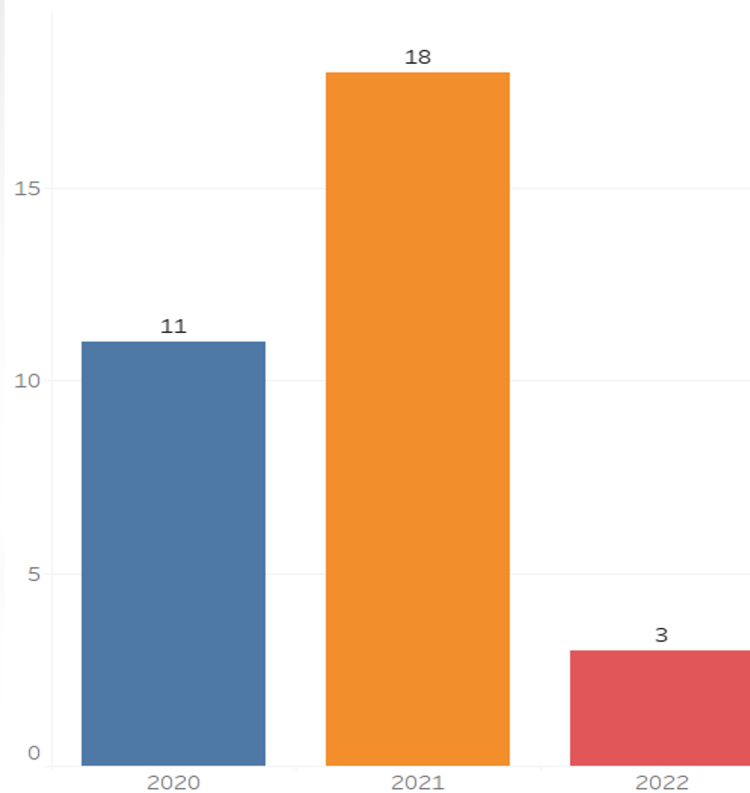<1800' = lower speed limit to 65

<1500' = lower speed limit to 55

<1200' = lower speed limit to 45

<900' = lower speed limit to 35

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System Data

Duration of Dust Events in Minutes By Time Interval

Date Level Selector: month

Time Interval	Duration (minutes)
April, 2021	68.4
August, 2020	31.1
August, 2021	97.0
February, 2022	29.9
January, 2022	10.5
July, 2021	105.8
June, 2021	38.2
March, 2021	5.7
March, 2022	23.9
May, 2021	5.7
October, 2020	49.7
October, 2021	11.9
September, 2021	17.2

# of Dust Storms Greater than 2 Minutes

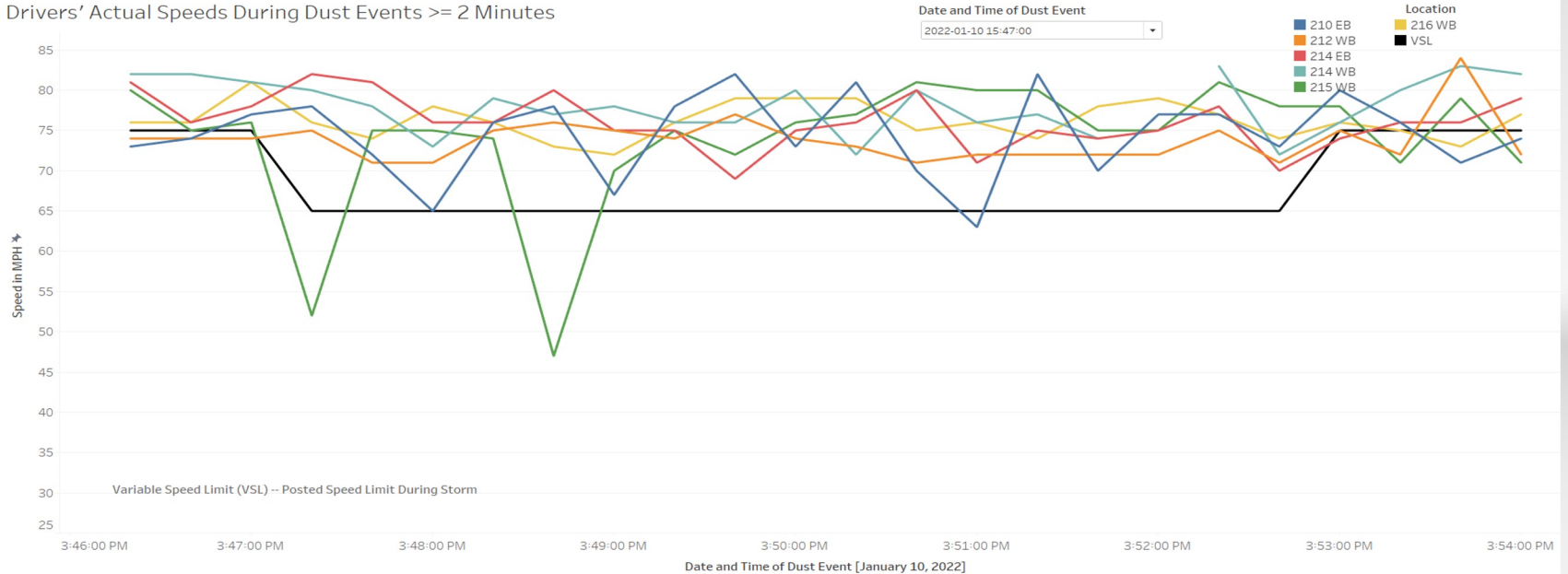| Year	Count
2020	11
2021	18
2022	3

System Data

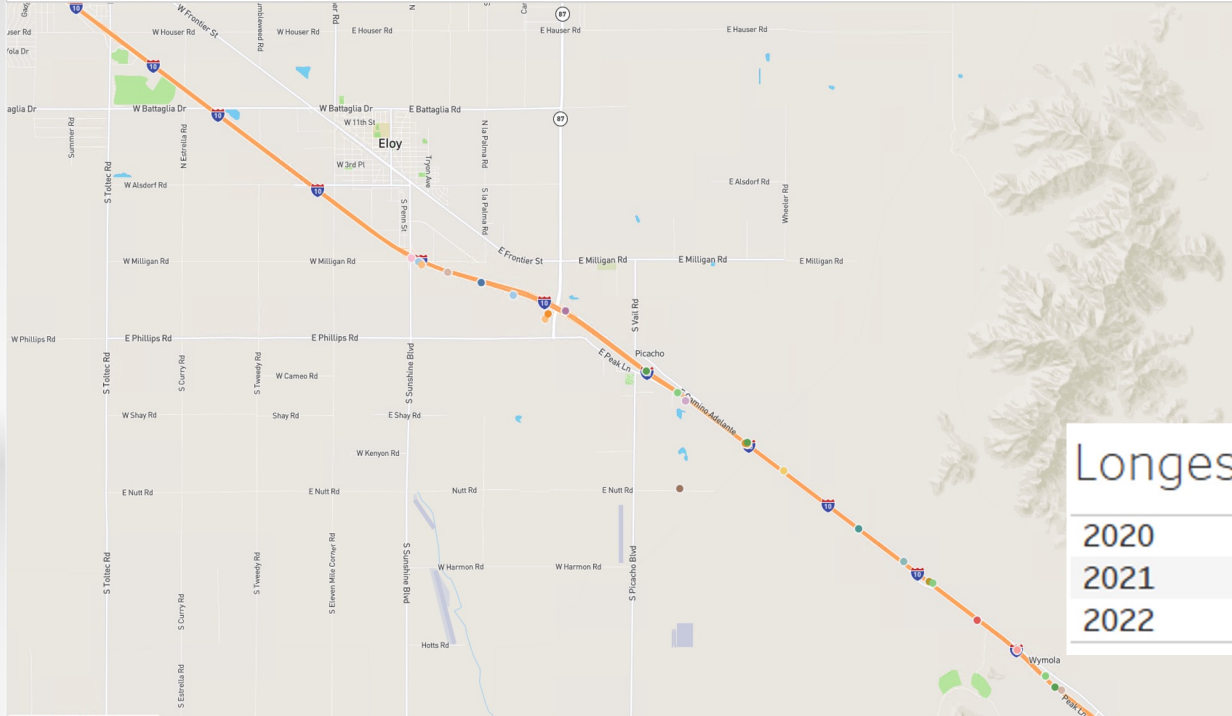**TSMO Performance Measures** | Driver's Speeds During Dust Event(s)

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.

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

Year	Date	Duration
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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