

I-10 Dust Group Update

2017 Arizona Dust Storm Workshop

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Group Member Agencies

Arizona Department of Environmental Quality (ADEQ) – current lead

Arizona Department of Transportation (ADOT)

AZ Department of Public Safety (DPS)

National Weather Service (NWS) Phoenix & Tucson

Arizona Department of Agriculture (ADA)

Pinal County Sherriff's Office

USDA Natural Resource Conservation Service (USDA NRCS)

Pinal County Air Quality

University of Arizona

National Oceanic and Atmospheric Administration (NOAA)

National Hwy Administration

* Gila River Indian Community (GRIC)

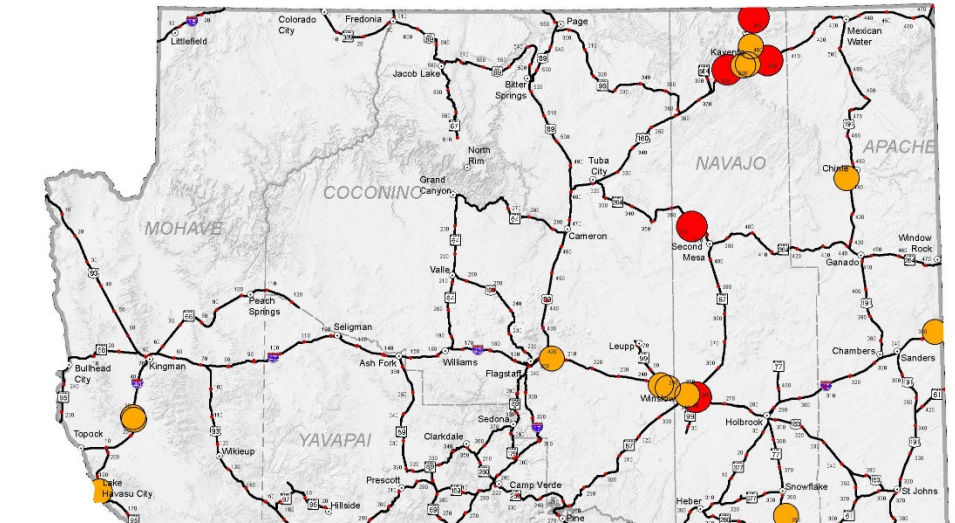
* Tohono O'Odham Nation

* AZ State Lands Department

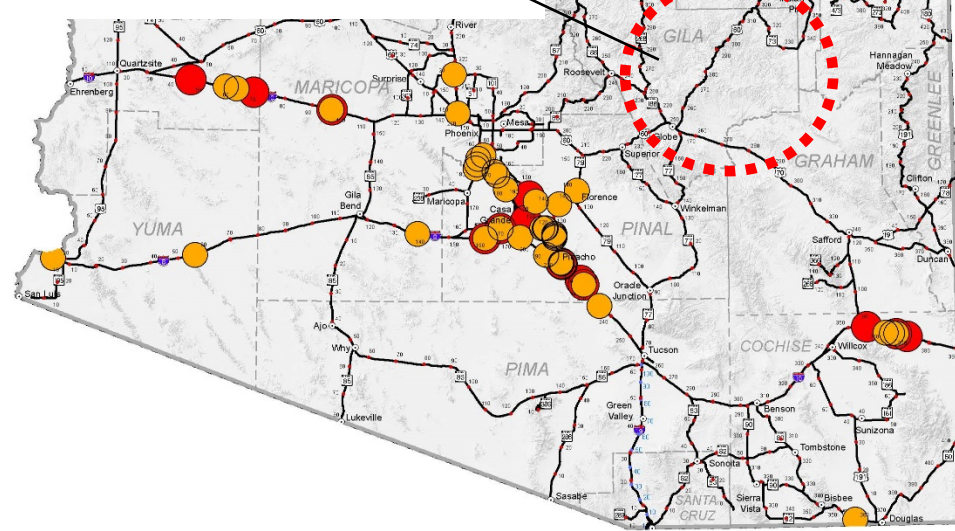
*Indicates new participating member as of November meeting

If you are with an agency not included on this list and would like to be
please contact Jamie Abbott, ADEQ AQ Compliance

Problem Being Solved:
Wind blown dust creates hazardous driving and health conditions along the I-10 corridor



PILOT AREA OF CONCERN



Dust Related Car Crashes (1991-2015)

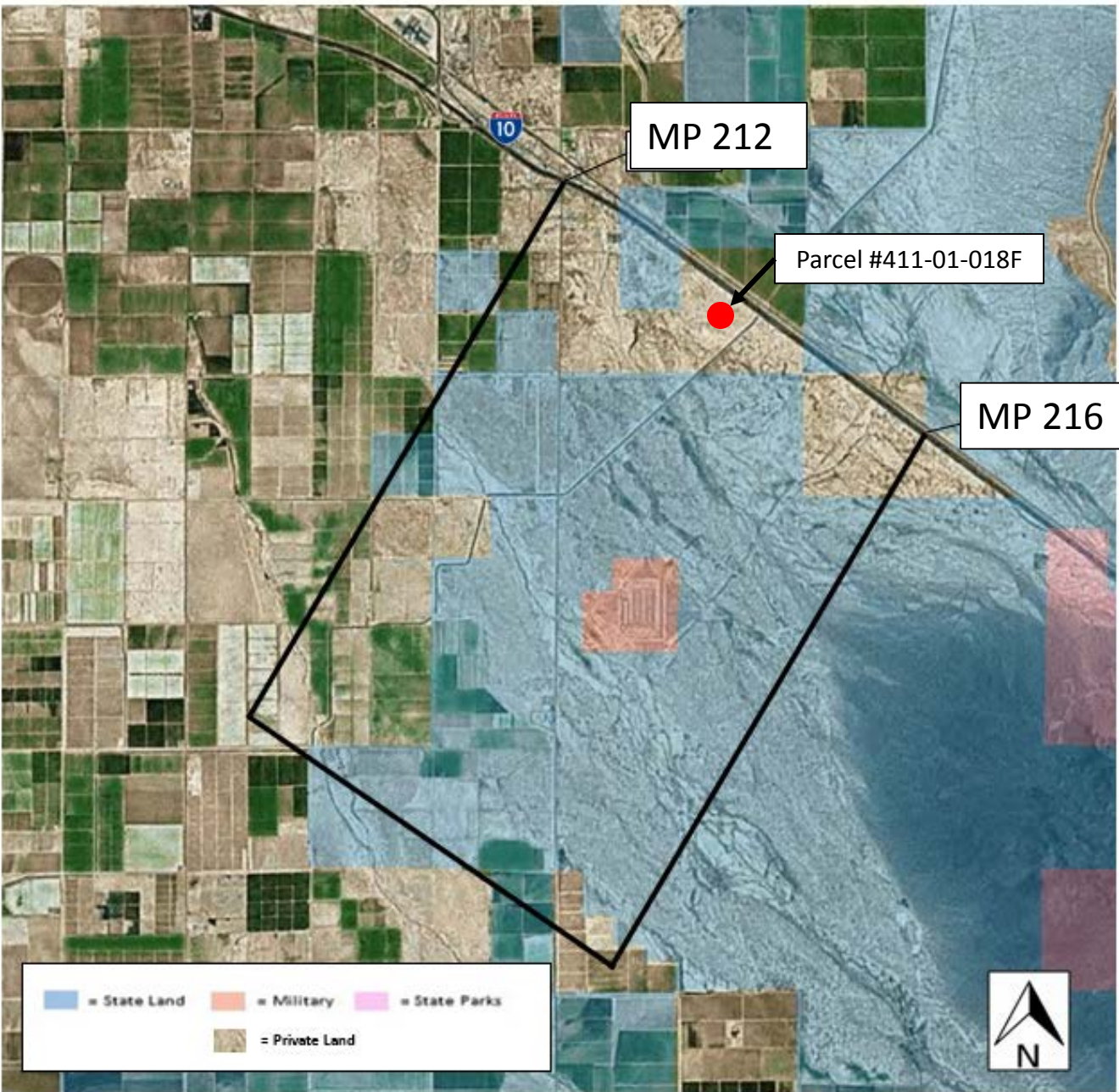
- | | | |
|--------------------|--------------------|------------------------|
| Injury Type | ○ Cities and Towns | — State Highway System |
| ● Fatal | • Milepost | □ County Boundaries |
| ● Serious Injury | • Kilometer Post | |



Prepared by:
 Arizona Department of Transportation
 Multistate Planning Division
 GIS Section
 (602) 712-7333 November 2018



I-10 Dust Group Pilot Focus Area Scope Land Ownership



- Partners have collected land ownership and other land activity available data within this area.
- Parcel #411-01-018F initial parcel of concern identified – Pinal Co. and NRCS soil study ongoing.

- Partners currently collecting data to confirm land activities and soil type in focus area.
- Identify root cause(s) of dust impacting I-10 in scope area. (January meeting)
- Identify solution projects to mitigate dust root cause(s) to be implemented. (February/March meeting)
 - Identify resource/funding needs and sources
 - Establish or determine existing private landowner/agency partnerships to assist in project implementation

I-10 Dust Group Model Based Problem Solving Template

What we Know	What we don't/need to know	Contributing Factors	Root Causes	Solutions
<ul style="list-style-type: none"> • High crash locations involving fatalities and serious incidents • Wind events occur randomly throughout the calendar year (peaks in fall and early winter) • NWS has determined that SW winds of ~10 - 20 mph (or greater) are most concerning • Winds occur late morning or afternoon (possible correlation to incident timing) • Fatal Accidents have occurred 10:30 am – 12:45 pm (when initial wind front comes through) • DPS incident reports show witnesses claim “it just happened all of a sudden” • Majority of accidents are mobile • 4/5 fatal accidents occurred Oct to Dec • People continue to knowingly drive without slowing down into lower visibility • Large portion of land adjacent to corridor is owned by State Lands • Canal has impact to area • Parcel landownership and grazing allotment information • Soil type on Louis parcel is silty clay loam – very susceptible for wind blown erosion – Parcel current surface lacks vegetation crust (thin and fragile) but still susceptible to erosion without vegetation • Trespass and off road vehicle use observed on Louis parcel • Drainage from SE to NW; natural drainage for area has been disrupted • Ecological site data available (what should be there under natural conditions for area) 	<ul style="list-style-type: none"> • The actual source of dust (geographically and by land usage) • Land management or lack of has impacted soil conditions which creates dust generation (specific land type and management activities needs to be clarified at area(s) of concern) • Thresholds for wind speed, moisture content and soil type for dust generation • Land activities that lead up to known incidents (i.e. ag clearing, disturbances, vehicles, etc.) • Methodology for mitigation of the dust sources once identified • Specific site soil type and characteristics (get from NRCS?) • Incident cause from dust visibility impacts alone and/or vehicle control factors from wind? • How many dust storms occur that do not cause accidents? • How much dust is coming off the desert floor or contributed by the desert. • The soil structure and how damaged is it due to past land use. – specific soil characteristics and properties need to be defined further through lab analysis • Specific current land cover status or vegetative cover on all areas within project scope area. – How close to natural state is the area? (less susceptible to wind blown dust) • Hydrology for area (current and historic) – Does current hydrology support plant life? 	<ul style="list-style-type: none"> • Drivers do not follow safe driving recommendations during wind and dust events. • Ground (area of hot spot MP214) lacks vegetation; bare; offers no stabilization • Outdated or lack of warning and detection system (ADOT already addressing this contributing factor) • Soil Type prone to erosion and fine particles • Wind direction and speeds easily cause fugitive dust (time of day and season controlling factors for dust events) – channelized wind events 		

Updated January 18, 2017 at I-10 Dust Group meeting. (text in blue added at Jan. Meeting)

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