

Presentation For MAG Air Quality Technical Advisory Committee Outlining ADOT “Dust” Committee Findings

February 23, 2012

Purpose of Committee

Evaluate the effect that dust storms have on ADOT highways and consider mitigation measures to enhance the safety of the traveling public

Committee Members

- Central Maintenance
- Communication and Community Partnerships
- Emergency Management
- Research Center
- Risk Management
- Traffic Safety Section
- Transportation Technology Group
- Various Districts

Deliverable No.1

Determine number of crashes that occurred on State, County, and Indian roads from 2006 – 2010 that can be attributed to severe crosswinds and blowing soil

Number of Crashes by Weather, 2006 - 2010

	No Injury	Possible Injury	Non Incapacitating Injury	Incapacitating Injury	Fatal	Total
Clear	365,969	88,374	62,485	18,546	3,459	538,833
Cloudy	33,125	7,883	5,900	1,831	398	49,137
Sleet Hail Freezing Rain Or Drizzle	448	59	93	29	8	637
Rain	14,592	3,117	2,101	542	106	20,458
Snow	3,370	367	428	76	20	4,261
Severe Crosswinds	426	78	113	44	13	674
Blowing Sand Soil Dirt	408	94	89	37	16	644
Fog Smog Smoke	160	37	26	9	1	233
Blowing_Snow	90	8	8	1	1	108
Other	88	22	15	6	1	132
Unknown	2,510	425	295	102	302	3,634
<i>Total</i>	<i>421,186</i>	<i>100,464</i>	<i>71,553</i>	<i>21,223</i>	<i>4,325</i>	<i>618,751</i>

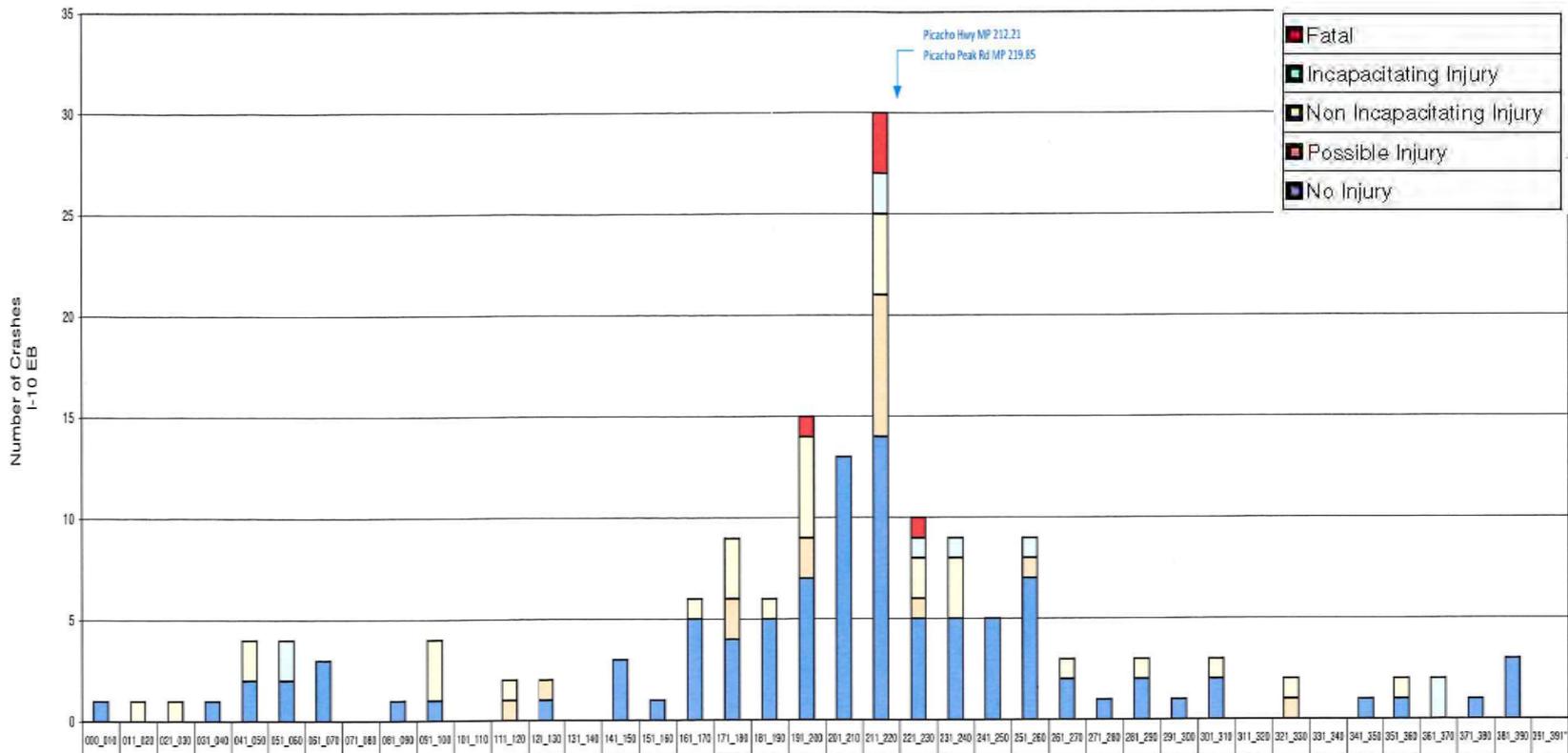
Less than 1% of crashes can be attributed to severe crosswinds/ blowing soil

Deliverable No.2

Identify sections of interstate highways that have significant number of crashes related to severe crosswinds and blowing soil

Example: Interstate 10 EB

'Severe Crosswinds' or 'Blowing Sand Soil Dirt' Weather Related Crashes on Interstate Highway Mainline Roadway
2001 - 2010



Deliverable No.3

Determine effectiveness of existing dust monitoring system in Safford District, and determine cost to install similar system on I-10 between Phoenix and Tucson

Dust Monitoring System on I-10 in Safford District



- Deployed in May 2011
- Coverage area is approx. 26 miles
- Sensors detect high winds and low visibility
- Cameras provide snapshots of existing weather conditions
- Various warning devices are activated when trigger points are exceeded
- Highway Advisory Radio will play warning message

Dust Monitoring System on I-10 in Safford District



Dust Monitoring System on I-10 in Safford District



Dust Monitoring System on I-10 in Safford District

- System requires some fine tuning. Upon becoming fully operational, it will be evaluated for effectiveness
- Present-day cost to design and construct similar system on I-10 that covers MP 200 – 230 (I-10/ I-8 junction – Pinal County Line) is approx. \$700K
- Present-day cost to design and construct similar system on I-10 that covers MP 160 – 240 (Wild Horse Pass Blvd- Tangerine Road) is approx. \$2.2M

Deliverable No.4

Determine where additional investment of resources will generate value

- ADOT is considering installing cameras at specific locations on I-10 between Tucson and Phoenix. Snapshots or live video of existing weather conditions would be transmitted to the Traffic Operations Center in Phoenix.
- If there were a dust storm brewing, then TOC would send out a page to the Tucson and Phoenix District, ADOT communications group, etc. Districts, in turn, would activate the appropriate overhead electronic signs and maintenance forces can be on stand-by.

Deliverable No.5

Work in partnership with other stakeholders

- The mitigation of dust at the point source is the responsibility of other agencies. ADOT will not be taking the lead on this effort, but is open to working with the various agencies.
- In March 2012, ADOT and National Weather Service will be hosting a meeting that will include the county and state emergency management and air quality contacts, DPS, ADEQ, public health, academia, and others.

Questions