



# Responding to Dust Storms on State Highways

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Safford District  
ARIZONA DEPARTMENT OF TRANSPORTATION

# Response Strategies

- Preparation
- Field Tactics
- Technology
- Public Education

# Preparation

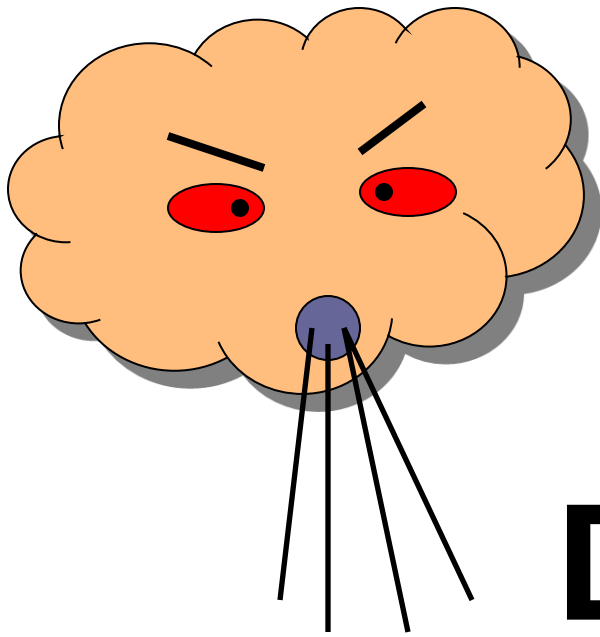
- Alert & trained DOT crews & DPS patrol officers
- Experience: location, season, conditions
- Weather reports: forecasted wind speed, gusts, & direction
- Communication protocol
- Ready to go?

# Field Tactics

- Patrolling & reporting observations
- Slow & go or close & detour?
- Overhead variable message signs (DMS)
- Arizona & New Mexico coordination







**Do We Need a  
Dust Storm  
Warning System?**

# Technology

## *FHWA & ADOT Partnership*

- Rural Innovation Safety Grant
- \$600,000 in 2008
- Installed in 2011; one year evaluation

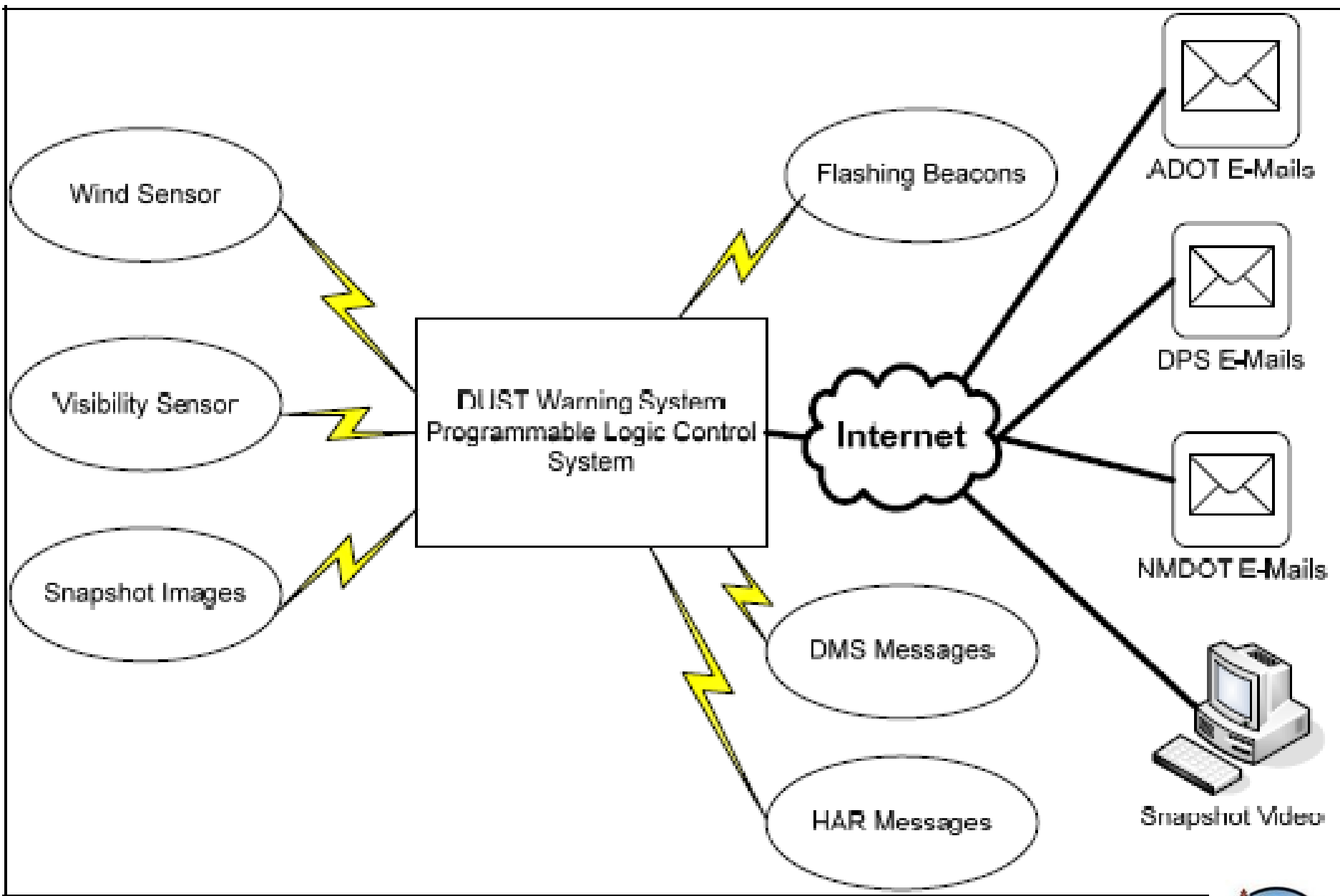




# Technology

## *Sensory Instrumentation*

- RWIS
  - Wind speed: average & gusts
  - Wind direction
  - Visibility
- Cameras



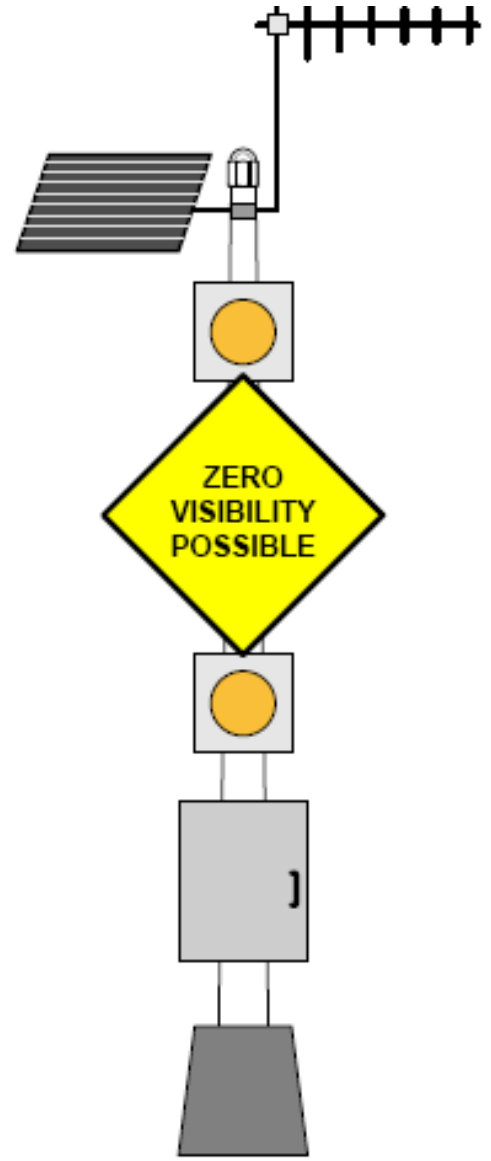


<b>Dragoon</b> <input type="button" value="Camera"/>	Temp <b>75.4 °</b> 	Barometer (InHg) <b>25.05</b> 	Relative Humidity <b>43.96 %</b> 	Wind Speed <b>4 MPH</b> 	Wind Direction <b>SW</b> 	Dew Point <b>56.8 °</b> 	Precipitation Type <b>None</b> Precipitation Rate <b>0.00 in/hr</b>
	<input type="button" value="Beacon Control"/>	EB Beacons WB Beacons 	Setpoints: Wind / Visibility 	Wind Speed <b>8 MPH</b> 	HAR Control HAR Status 	HAR Beacon 	DMS Control DMS Status 
<b>Bowie</b> <input type="button" value="Camera"/> <input type="button" value="Off Delay"/> 1 Min.	<input type="button" value="Auto"/> <input type="button" value="On"/>				<input type="button" value="Auto"/> HAR Wind Warning <input type="button" value="On"/> HAR Dust Warning <input type="button" value="On"/>	<input type="button" value="On"/>	<input type="button" value="Auto"/> DMS Wind Warning <input type="button" value="On"/> DMS Dust Warning <input type="button" value="On"/>
<b>San Simon</b> <input type="button" value="Camera"/> <input type="button" value="Off Delay"/> 1 Min.	<input type="button" value="Auto"/> <input type="button" value="On"/>				<input type="button" value="Auto"/> HAR Wind Warning <input type="button" value="On"/> HAR Dust Warning <input type="button" value="On"/>	<input type="button" value="On"/>	<input type="button" value="Auto"/> DMS Wind Warning <input type="button" value="On"/> DMS Dust Warning <input type="button" value="On"/>
<b>Olga Road</b> <input type="button" value="Camera"/> <input type="button" value="Off Delay"/> 1 Min.	<input type="button" value="Auto"/> <input type="button" value="On"/>						
Arizona Department of Transportation Highway Dust Monitoring System							

# Technology

## *Warning the Public*

- Static signing
- Signing with flashing lights
- Dynamic message signs
- HARS



# Technology

## *Informing the Agencies*

- Email to ADOT, DPS, & NMDOT
- Data collection
- TOC

# Technology

## *Issues*

- Snap shot with very localized view
- HARS questionable
- Reliability of instrumentation & com gear
- Capital + O&M costs
- Budgets, B/C Ratios
- Crews gone home & not checking email
- Both accidents & weather are random
- Needs further evaluation!



# Public Education

- Public Service Announcements thru commercial radio, ADOT internet, etc.
- Roadside warning signs





# Questions?