Responding to Dust Storms on State Highways

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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
### Weather Data

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Temperature (°F)</td>
<td>75.4</td>
</tr>
<tr>
<td>Humidity (%)</td>
<td>43.96</td>
</tr>
<tr>
<td>Wind Speed (MPH)</td>
<td>4</td>
</tr>
<tr>
<td>Wind Direction</td>
<td>SW</td>
</tr>
<tr>
<td>Dew Point (°F)</td>
<td>56.8</td>
</tr>
</tbody>
</table>

### Beacon Control

<table>
<thead>
<tr>
<th>Location</th>
<th>Beacon Control</th>
<th>EB Beacons</th>
<th>WB Beacons</th>
<th>Setpoints: Wind / Visibility</th>
<th>Wind Speed Visibility (mi.)</th>
<th>HAR Control</th>
<th>HAR Beacon</th>
<th>DMS Control</th>
<th>DMS Status</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bowie</td>
<td>Auto</td>
<td>On</td>
<td>Off Delay 1 Min.</td>
<td>On</td>
<td>8 MPH</td>
<td>On</td>
<td>On</td>
<td>On</td>
<td>On</td>
</tr>
<tr>
<td>San Simon</td>
<td>Auto</td>
<td>On</td>
<td>Off Delay 1 Min.</td>
<td>On</td>
<td>3 MPH</td>
<td>On</td>
<td>On</td>
<td>On</td>
<td>On</td>
</tr>
<tr>
<td>Olga Road</td>
<td>Auto</td>
<td>On</td>
<td>Off Delay 1 Min.</td>
<td>On</td>
<td>5 MPH</td>
<td>On</td>
<td>On</td>
<td>On</td>
<td>On</td>
</tr>
</tbody>
</table>

**Arizona Department of Transportation**

Highway Dust Monitoring System

**Safford District**

[Logo]
Technology

Warning the Public

- Static signing
- Signing with flashing lights
- Dynamic message signs
- HARS
CAUTION
BLOWING DUST

BLOWING DUST
TUNE RADIO TO 530 AM
WHEN FLASHING

ZERO VISIBILITY POSSIBLE
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?