Communication Plan for Windblown Dust
Research Recommendations

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March 19, 2015

Background

‣ **Research study conducted by ADOT Research Center for ADOT Communications**

‣ **Key personnel:**

   Dianne Kresich, project manager

   Tim Tait, sponsor

   Sonoma Technology, Inc., prime consultant

   Partners in Brainstorms, subconsultant

Study Objectives

Identify actionable recommendations for:

▸ **Most effective means for acquiring information about approaching dust storms**

▸ **Best available communication methods to the public and within ADOT**
   - ○ **Intelligent Transportation System (ITS) assets**
   - ○ **Traditional media**
   - ○ **Social media**

Study Process

- **Review current practices**
  - **Dust detection and warning practices in Arizona and in other states**

- **Needs assessment**
  - **Literature review on driver behavior**
  - **Survey and focus groups with drivers; document their understanding and experience of driving during dust storms, ADOT messaging**

- **Recommendations**

Review of Key Findings

▸ **Windblown dust events in Arizona occur as a result of:**
  - **Thunderstorm outflow during summer monsoons**
  - **Cold front movement in the fall, winter and spring**

▸ **"Hot spots" for dust-related crashes**

▸ **Small-scale dust events ("dust channels") are difficult to predict and detect**

Review of Key Findings

- **Visibility warning systems in other states are similar to the ADOT Safford District pilot system**
  - **Forward-scatter optical sensors, CCTV, DMS and HAR**

- **Sensor durability and maintenance are key issues**

- **Systems in other states focus on localized issues**

- **Effective warning messages reflect actual road conditions and are broadcast near the weather event**

Recommendations Overview

Focus Area	Recommendation
Forecasting	Fine-tuning meteorological models for localized events
Detection	Dense network of monitoring equipment Pilot testing of new technologies
Detection	Augment sensors with human verification to prevent false warnings

Photo courtesy of Mike Olbinski Photography

Recommendations Overview

Focus Area	Recommendation
Communication	Dynamic Message Signs in dust "hot spots" in tandem with refinements to messaging
Other	Research on land-use contributors to dust to determine mitigation strategies

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Recommendations:

NEEDS ASSESSMENT (DRIVER SURVEY AND FOCUS GROUPS)

Recommendations
Core Components for Communication

Focus Area	Core Components of Implementation
Messaging	Improve "Pull Aside, Stay Alive" driver information
Communication	Use communication channels drivers prefer
Education	Expand approach to informing all travelers about dangers
Assessing Effectiveness	Measure/assess effectiveness of ADOT communication

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Short-Term Recommendations

Focus Area	ADOT Resources and Staff in Place
Messaging	Use high-impact, graphic messaging that shows the consequences of driving into blowing dust Inform drivers of rationale behind safe driving tips
Communication (Signage)	Add DMS, mobile, flashing lights, billboards Consider progressive series
Communication (Signage)	Accurate, timely, informative and reliable DMS messaging to improve driver trust Provide clear instruction to aid driver decision-making

Photo courtesy of Mike Olbinski Photography

Short-Term Recommendations

Focus Area	ADOT Resources and Staff in Place
Communication	Use mix of media that is responsive to cell phone apps, wireless alerts and age-associated preferences
Education	Coordinate efforts with internal and external partners ➢ Motor Vehicle Division ➢ Department of Public Safety ➢ Local communities

Photo courtesy of Mike Olbinski Photography

Mid-Term Recommendations

Focus Area	ADOT Resources and External Assistance
Communication	Aggressively promote use of ADOT social media and online tools
Communication (Signage)	Work with partner agencies to address community and cultural preferences
Education	Partner with other agencies to develop outreach to employers, businesses, and trucking industry

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Long-Term Recommendations

Focus Area	Requiring more money/time/cooperation
Communication (Technology)	Explore improving tech options available to consumers
Communication	Continue partnerships to develop holistic efforts to mitigate the dust problem
Education	Conduct ADOT-sponsored workshops
Education	Solicit support to help underwrite costs

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Implementing Recommendations and Assessing Effectiveness

Focus Area	Impact of communication plan
Partnership/ Collaboration	Work with partners to develop strategies/tools to measure public response and effectiveness of communication plan to influence driver behavior
Public Involvement	
Continuous Improvement	Further research and opportunities for improvement

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May we provide more information?

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