Roadway Weather Data Implementation for Improved Transportation Decision Making

This PowerPoint presents a model of data integration of geo-located weather and roadway data for decision making with the US Department of Transportation, the National Weather Service, and endusers who need integrated data for better roadway weather decision making.

The application of this Roadway Weather Data Implementation (RWDI) in Alabama and Georgia serves as a pilot evaluation to determine the relevant weather and transportation data needed for weather traffic management and decision making.

A UA study of winter weather roadway decision making in 2014 in Atlanta, GA led to the implementation of this concept with the National Weather Service and the Georgia DOT, which developed a data integration for their winter weather events. These data will serve as the factors for a model of roadway weather traffic management to be implemented in several test locations over the duration of the upcoming project. The result will be a roadway weather transportation research program for the development of new technologies, data analytics, and applications for transportation weather safety. A decision-making analytics portal will be developed for the data integration for ease of use by end-users.

This project will tie directly to the Pathfinder project of the USDOT's FHWA and the National Weather Service that can be accessed here:

https://ops.fhwa.dot.gov/publications/fhwahop16086/fhwahop16086.pdf



PUBLIC SAFETY

RWDI cont'd.

Pathfinder was developed a few years ago to encourage collaboration of agencies and data to provide decision-making guidelines on road conditions. The project that is proposed to extend this implementation will have a duration of 5 years.

- Years 1-2: Evaluations of Alabama, Georgia, and the remaining 26 states that have deployed Pathfinder will be conducted and decision-making portals will be developed for use of the data integration by end users.
- Years 3-4: A series of workshops will be held with weather and transportation professionals • to determine additional data elements required for other locations and weather types and the necessary data collection instruments will be identified. Simulations will be developed for exercise and training for decision-makers in advance of real-time usage.
- Year 5: A model for roadway weather data integration will be published for use by Pathfinder partners, and it will be disseminated to these partners for use.





ROADWAY WEATHER SAFETY DATA INTEGRATION

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TRANSPORTATION DISASTER MITIGATION AND RESILIENCY





JANUARY 2014 ATLANTA DUSTING



WINTER WEATHER ROAD FORECASTING





ECONOMIC IMPACTS





TRANSPORTATION DISASTERS





VISIBILITY ISSUES



IT'S NOT JUST ALABAMA!

TRUCKS, COMMERCE, AND WEATHER!

WHAT ARE THEY THINKING?

SURFACE TRANSPORTATION WEATHER COLLABORATION: THE PATHFINDER PROJECT

COLLABORATORS

Getting Started Quick Reference Guide:

GETTING STARTED QUICK REFERENCE GUIDE: SETTING INITIAL COLLABORATION GUIDELINES AND PROCEDURES

Identify partners

• Determine the key points of contact across all of the key agencies, organizations and companies

Determine qualifying collaboration events

• Impactful precipitation events effecting travel such as high winds, etc.

Select communication mediums and set procedures

- NWSChat
 - o Decide if the chat room is private or public
 - $\circ \quad \text{Initiate the conversation} \\$
 - Discuss 3 main Items until general agreement is reached:
 - 1) Impact potential 2) Location of potential impact 3) Timing of potential impact
- Conference calls- as necessary scheduled through chat or email

Establish point person at each participating entity

- Announce regular shift hours
- Obtain name and contact information for after hours

Synchronize forecast schedules

- As much as possible, synchronize ~
 - o releases of information to the public and
 - \circ ~ schedules for Pathfinder collaboration chats and conference calls

Establish definitions and create shared resources

• Photo repository, PowerPoint templates, shared impact messages, DMS message templates

Create shared Impact message for the public

- Recognize contributions of each entity (retweet, utilize other entity's graphic on your social media post etc.)
- Set Goals for distribution of messages based on the event type: For example, for an ice event ~ Release and distribute impact messages at least 24 hours before the event

Conduct post event review and data archiving

CENTER for ADVANCED PUBLIC SAFETY

ROAD WEATHER MANAGEMENT SYSTEMS

WEB-BASED DATA ANALYTICS SAFETY

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| ALL | Possible Injury | | 14,896 🔑 | Non-Incapacitating Injury | | | |
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WEB-BASED DATA ANALYTICS

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| 32-7A-16 OPER VEHICLE W/O LIABILITY INSURANCE | 67,348 🔎 | | |
| 32-6-19 DRIVING WHILE LICENSE IS SUSPENDED/RE | 62,551 🔎 | | |
| 32-5B-4 NO SEAT BELT | 48,798 🔎 | | |
| 32-6-1 NO/EXPIRED LICENSE | 43,477 🔑 | | |
| 32-5-240 IMPROPER LIGHTS | 37,289 🔑 | | |
| 32-5A-112(B) FAIL TO STOP FOR STOP SIGN OR YEIL | 27,407 🔑 | | |
| 32-6-61 FAILURE REGISTER VEHICLE | 21,490 🔎 | | |
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UA SAFETY ALERT

SOCIAL SCIENCE AND WEATHER IMPACTS

- Weather warning communication
- Weather enterprise evaluations
- Wind event infrastructure research
- Technology development for first responders
- Tornado research in Dixie Alley

MOORE, OK, 2013

CUES TO ACTION

- Risk communication
- Crisis communication
 - Tone/seriousness/ message
 - Impacts
 - Outlooks/Lead time
 - Watches and warnings
 - Calls to action

STORM SPOTTER DATA

CENTER for ADVANCED PUBLIC SAFETY

THANK YOU

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Connect with UACAPS

