Winter Operations...
Pulling It All Together

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What Do Our Customers Want?

• Traffic flowing smoothly and safely
• Be kept informed of conditions
• Incidents detected and cleared quickly
• Reliability

What don’t they care about?
Systems Operations and Maintenance

- Agencies/jurisdictions working as one system
- Local and regional collaboration
- Regional transportation system decision making and planning
- Strengthening opportunities to link planning and operations
System Operations Includes

- Traffic Incident Management
- Road Weather Information
- Traveler Information
- Freeway Management
- Traffic Signal Control
- Work Zone Safety
- Freight Management
- Electronic Payment
Elements of a Regional Concept for Transportation Operations (RCTO)

- Physical Improvements
- Relationships and Procedures
- Resource Arrangements

TSAG Summer 2010 Meeting
Arrangements
Traffic Incident Management and Snow and Ice

Traffic incidents are often the core problem of road closures.

- Crashes
- Tractor Trailers
Traffic Incident Management

TIM Components

Program
- Relationships
- Administration & Staffing
- Needs Assessment
- Training
- Asset Management
- Plans and Procedures
- Contracting
- Performance Evaluation

Response
- TIM Process

Diagram:
- Detection
  - Verification
    - Response
      - Site Management
        - Clearance / Removal
          - Traffic Management
            - Traveler Information
              - After Action Review / Debrief
TIM - The Future

- Increased Focus on Responder Safety
- More Widespread Training - 3 levels
- More effective use of currently installed ITS
- Integrated Communication and Data Sharing
- Performance Goals and Measures
National Unified Goal for TIM

The NUG for TIM is:

- Responder Safety
- Safe, Quick Clearance
- Prompt, Reliable, Interoperable Communications
NUG Strategies

Cross-Cutting Strategies:

• Recommended Practices for Responder Safety
• TIM Partnerships and Programs
  Multi-Agency TIM Committees
• Multidisciplinary NIMS and TIM Training
• Goals for Performance and Progress
• Multidisciplinary TIM Procedures
• Effective TIM Policies
NUG Summit

Baltimore
Sept. 21+22
NUG Summit Webinar
Sept. 21 12-5 pm
Additional TIM Components

• Strong Tow Policies and Agreements
• Effective Communication Procedures
  Inter-agency
  On scene
  Dispatch and TMC
  Regional Communication
• Clear on-scene procedures
• Traveler information
FHWA Weather Program Highlights

- The *Clarus* Initiative
- IntelliDrive & Road Weather
- Maintenance Decision Support System (MDSS)
- Weather-responsive Traffic Management
Getting From Problems to Solutions

Societal Benefits
Getting From Problems to Solutions

Make Effective Decisions & Policies

Societal Benefits
Getting From Problems to Solutions

Decision Support Systems & Assessments

Make Effective Decisions & Policies

Societal Benefits
Getting From Problems to Solutions

Traffic Data & Transportation System Status → Decision Support Systems & Assessments → Make Effective Decisions & Policies → Societal Benefits
Getting From Problems to Solutions

Traffic Data & Transportation System Status → Decision Support Systems & Assessments → Make Effective Decisions & Policies → Societal Benefits

Weather Forecast Models
Weather Observing Systems

Data
Predictions
Observations

ROAD CLOSED
Getting From Problems to Solutions

Traffic Data & Transportation System Status

Weather Forecast Models

Weather Observing Systems

Decision Support Systems & Assessments

Make Effective Decisions & Policies

Societal Benefits

Data Observation Predictions
What is the *Clarus* Initiative?

- A database management system for all surface transportation weather observations in North America
- One database removes borders
- Provides advanced quality checking for both atmospheric & pavement data
- Includes extensive metadata
- Easy access via web portal & subscription
- Once development completed, transfer to NOAA for operations
Clarus System Data Flows

Nationwide Data Management System for Surface Transportation Environmental & Pavement Condition Observations

- Observations
- Metadata
- Quality Flags
IntelliDrive<sup>SM</sup> & Weather - Vision

- Obtain a thorough picture of current weather and road conditions by including mobile sources
  - Higher resolution observations that spatially augment fixed sensors
  - Take advantage of existing standards and on-board sensors
- Improve weather-related decision support tools to mitigate safety and mobility impacts of weather
  - Based on ability to better detect and forecast road weather and pavement conditions
Vehicle Data in IntelliDrive™

- Sun/Rain Sensor
- Windshield Wiper Setting
- Head Lights Status
- Ambient Air Temperature

- Speed and Heading
- Adaptive Cruise Control (ACC)
- Location and Elevation
- Hours of Operation

- Antilock Braking System (ABS)
- Brake Status
- Stability Control
- Traction Control
Maintenance Decision Support System

• MDSS is a winter maintenance decision-support system that combines:
  - Advanced weather prediction
  - Advanced road condition prediction
  - Rules of practice for anti-icing and de-icing

• The system generates winter treatment recommendations on a route-by-route basis.
Weather Responsive Traffic Management

- **Goal**: Develop strategies and tools to help agencies effectively manage traffic and highway operations during inclement weather.

- **WRTM Strategies**
  - Advisory, Control and Treatment

- **Current Research**
  - Weather Integration in TMC/TOC
  - Weather and Traffic Flow Studies
Weather and Traffic - Highlights

- **Weather Integration in TMC/TOC**
  - Developed a self-evaluation guide to assist TMC’s with their weather integration activities

- **Road Weather Advisory and Control Messages**
  - Published design guidelines to assist traffic and emergency managers with the creation of weather-related messages

- **Developments in Weather-Responsive Traffic Management (WRTM) Strategies**
  - Document, test and evaluate, and promote effective management strategies to minimize the impacts of weather

- **Weather Module for Traffic Analysis Tools (TAT)**
  - Develop guidance materials on the application of weather-sensitive tools
Traveler Information

• Regional Partnerships
• 511
• Media
• Variable Message Signs
• Highway Advisory Radios
• Automatic alerts
Responder Safety

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