Enhancing Traffic Incident Management (TIM) in Rural Areas
Workshop Overview

- Rural Challenges
- Self Introductions
- National Unified Goal (NUG) for TIM Overview
- TIM Process
  - Strategies and/or Enhancements for Rural TIM
- TIM Program Development Overview
- Case Studies
- Questions
Rural Transportation Statistics

- Of the 8.4 million lane-miles of US roads, over 6 million lane-miles are rural ≈ 71.4%

- In 2006:
  - The fatality rate for rural crashes was 2.25 per 100M VMT, which is over twice the fatality rate in urban crashes
  - 23,339 people were killed in rural motor vehicle crashes, accounting for 55% of all motor vehicle fatalities

- Nearly 50 percent of total highway fatalities occur on two-lane rural roads

Source: US Dept of Transportation Rural Safety Initiative – February 2008
Rural Transportation Challenges

- Topography and road conditions
  - Roadside hazards such as utility poles, sharp-edged pavement drop-offs, and trees close to roadway

- Limited alternative routes

- High percentage of recreational travelers
  - Route congestion
  - Seasonal demand
  - High parking demand and turn-over
Rural Transportation Challenges (cont.)

- Availability of power and communications
  - Limited cellular coverage
  - Limited power availability
  - Limited wireless E-911 service

- Emergency response times
  - Rural response is 30% longer
  - Volunteer efforts can increase response times
Self Introductions

- Name
- Agency
- Position
- Challenges
National Unified Goal (NUG) for TIM Overview
Traffic Incident Management (TIM)

- TIM consists of a planned and coordinated multidisciplinary process to detect, respond to, and clear traffic incidents so that traffic flow may be restored as safely and quickly as possible.

- Effective TIM reduces the duration and impacts of traffic incidents and improves the safety of motorists, crash victims and emergency responders.

- TIM Programs are based on multidisciplinary partnerships dedicated to implementing improved TIM procedures and practices.
The National Unified Goal (NUG) for TIM is:

- Responder Safety
- Safe, Quick Clearance
- Prompt, Reliable, Interoperable Communications
Cross-Cutting Strategies:
1. TIM Partnerships and Programs
2. Multidisciplinary NIMS and TIM Training
3. Goals for Performance and Progress
4. TIM Technology
5. Effective TIM Policies
6. Awareness and Education Partnerships
Objective 1: Responder Safety
7. Recommended Practices for Responder Safety
8. Move Over/Slow Down Laws
9. Driver Training and Awareness

Objective 2: Safe, Quick Clearance
10. Multidisciplinary TIM Procedures
11. Response and Clearance Time Goals
12. 24/7 Availability
Objective 3: Prompt, Reliable, Interoperable Communications

13. Multidisciplinary Communications Practices and Procedures
14. Prompt, Reliable Responder Notification
15. Interoperable Voice and Data Networks
16. Broadband Emergency Communications Systems
17. Prompt, Reliable Traveler Information Systems
18. Partnerships with News Media and Information Providers
Purpose: To more broadly involve individual TIM professionals and practitioners in Coalition activities and to seek their representative expertise in the same.

Members have the opportunity to participate in one or more working groups:

- Practices and Procedures - Develop multidisciplinary TIM practices/procedures as well as review proposed procedures
- Communications and Training - Identify, develop and distribute Coalition information and training products
- Research - Review or identify and recommend research projects, programs and opportunities
Involvement

- Go to the NTIMC Web site and complete the TIM Network membership application
  - [http://timcoalition.org](http://timcoalition.org)

- Find us on Facebook
  - Become a fan of the “National Traffic Incident Management Coalition”
  - Add “Tim Shareswell” as a friend
TIM Process
TIM Process

Detection → Verification

Response

Site Management

Clearance/Removal

Traffic Management

Traveler Information

After-Action Review
The process that brings the incident to the attention of responders

- Incident victims most vulnerable
- Traffic flow most disrupted and unpredictable
- Quick, accurate detection / verification is critical
Response

- Deployment of the appropriate personnel, equipment, communications, traffic management, traveler information

- Requires understanding of the incident’s nature, scope and what it will take to clear and restore to normal operating conditions
The process of accurately assessing the incident, establishing priorities, coordinating and communicating with responders

- NIMS/ICS provides structure

- Safety for victims and responders paramount
Clearance / Removal

- Involves removing vehicles, wreckage, debris, spilled materials, etc. from the roadway to enable restoration of capacity
- May require specialized equipment
- Often most critical step due to length of time
Traffic Management

- Application of traffic control measures at incident site and other affected facilities including alternate routes
- Not typically primary concern of most emergency responders
- When not done properly, can lead to unnecessary delay and secondary incidents
Traveler Information

- Real-time, accurate traveler information about the incident is key to managing congestion
- Often a role of TOC/TMCs
- May need to continue well past removal of the incident
Typically a function of an on-going TIM Program (i.e. should NOT be done at the incident scene)

Absolutely critical for success

Facilitates inter-agency relationship building

Evaluation

- What went well?
- What went not so well?
- How can we do better?
Strategies and/or Enhancements for Rural TIM
Mayday and Automated Crash Notification (ACN) systems

Enhanced Reference Markers

Detection and CCTV Surveillance in High-Crash Locations

“Road Watch” programs and partnerships
Enhanced Reference Markers
Statewide Cameras

Click any camera icon to view latest camera image.

Use the Custom Cam page to create a customized view of up to 10 roadside camera images.
Strategies and/or Enhancements

Response

- Emergency Response Call-Out / Resource Lists
- Pre-positioned TIM Equipment
- Staging Policies
- Enhanced Public Safety Dispatch/CAD Linkages
Emergency Response Call-Out / Resource Lists

- Response agencies
  - Location
  - Resources
- Traffic control equipment
  - Signs
  - Cones
  - Barrels
- Clearance equipment
- Crash investigation equipment
TN “Ready Response” Trailers

Existing and Proposed
NIMS/ICS – Utilization and Training
Vehicle Markings
Lighting Policies
High Visibility Apparel
Vehicle Markings
“If your feet are on the street... Your vest is on your chest!”
Rural Specific Clearance Goals

Towing and Recovery Related
  • Vehicle Identification Guide Training and Use
  • Distance Based Rotation Lists

Crash Reconstruction Technologies
  • Photogrammetry
Authority Removal Laws

- These laws provide authority (and immunity from liability in general) for designated public agencies to remove abandoned vehicles and spilled cargo from the roadway to restore traffic flow.
Clearance Goals

- Washington State Joint Operations Policy Statement (JOPS)
  - Washington State Patrol (WSP)
  - Washington State Dept of Transportation (WSDOT)

- WSDOT and WSP have established a mutual goal of safely clearing highway traffic incidents within 90 minutes.
Called in as a Hyundai - minor side damage
Vehicle Identification Guide
Training and Use - TRAA

- Vehicle Information
  - Light Duty
  - Heavy Duty
- Location
- Reason for Tow
- Additional Vehicle/ Crash Information
Photogrammetry

- Allows crash investigators to photograph an incident scene and obtain all necessary measurements using computer software.
Strategies and/or Enhancements

Traffic Management

- Traffic Control Standard Operating Guidelines and Training
- Emergency Alternate Route/Detour Planning
  - Pre-Identified Decision Points
- Pre-positioned TIM Equipment
  - Ramp Closure Gates/Barricades
Purpose

- Established so incident responders within the State of Wisconsin have a uniform approach to emergency traffic control and scene management.

- Goal to provide the safest possible work environment for all Wisconsin incident responders, while minimizing the risk for secondary crashes.
WisDOT Emergency Traffic Control and Scene Management Guidelines

- Incident Response Priorities
- Initial Incident Response Objectives
  - Scene Size-Up
- Traffic Incident Management Area
- Vehicle Positioning and Emergency Vehicle Lighting
- Emergency Alternate Routes
- Responder Safety
- Media Considerations
- Post Incident Debriefings

Traffic Incident Management Area (TiMA)

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Source: WSDOT

Put on high-visibility safety apparel as soon as possible
1. Park vehicle in a block position
2. Stabilize scene
3. Conduct initial scene size-up
4. Initiate ICS / Unified Command
5. Establish a TiMA
6. Conduct secondary scene size-up

For additional copies please contact WisDOT’s STOC at: (414) 227-2166 | 10/01/08
1. Using the attached charts, identify the number and placement of cones/flares needed.

2. Faster speeds require longer taper - Set the taper based on the operational speed, not posted.

3. You will need one more cone/flare than the number of skips used for taper.
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Lane Taper Set-Up

Assume vehicle speed = 30 mph

- 50' Skip
- 12 ft 37.5' 12.5' 3 feet 6 feet 9 feet
- Shoulder 3 feet 6 feet 9 feet 12 feet
- Fog Line
- First Responder Foot Path
- Cone/Flare
Lane Taper Set-Up - Double Lane Taper

Assume vehicle speed = 30 mph
I-94 EMERGENCY ALTERNATE ROUTES
TRANSPORTATION NW REGION: HUDSON - EAU CLAIRE
Ramp Closure Gates/Barricades

Gates

Barricades
Strategies and/or Enhancements
Traveler Information

- Road Weather Information System (RWIS)
- 5-1-1
- Media Partnerships
- Technology at Rest Areas
RWIS and 511

RWIS integrated with 511 system
Media Partnerships

- Understand the importance of building good media relations
- Become familiar with the media and their needs
- Determine how to use the media to effectively communicate your message
- Learn basics for successful interviews
After-Action Review / Debrief

- Purpose
- Forms
- Typical Structure
After-Action Review Purpose

- Purpose: to evaluate the decisions made and actions taken during an incident and to identify both best practices and opportunities for improvement.

- Incidents Highlighting:
  - Best practices (good)
  - Opportunities for improvement (bad)
  - Unique situations (cool)
Incident AAR/Debrief Form

- Incident location
- Incident duration
- Brief description
- Timeline of events
- Road closures/alternate routes used
- List of responding agencies
- Best practices
- Opportunities for improvement
After-Action Review Structure

1. Review basic details of incident
   ▪ Utilize pictures and/or video to illustrate incident scene

2. Roundtable discussion – agency perspectives
   ▪ Discuss issues and/or areas of concern
   ▪ Identify solutions/enhancements

3. No finger pointing!
   - TIM Program meetings provide a regular opportunity to conduct AAR / Debriefs and follow up on resulting action items
TIM Program Development Overview
TIM Program Components

Program
- Relationships
- Administration & Staffing
- Needs Assessment
- Training
- Asset Management
- Finance/Budget
- Contracting
- Performance Evaluation

Response
- TIM Process
  - Detection
  - Verification
  - Response
  - Site Management
  - Traffic Management
  - Traveler Information
  - Clearance/Removal
  - After-Action Review
The goal of a TIM program is not to create a response, but rather to allow for a more effective, efficient response for all responding agencies.

Incident response in and of itself, does not entail the same degree of coordination, planning, and conscious effort required for TIM to be effective.

TIM programs are sustained and ongoing.
TIM Program Establishment

- Assess the “climate”, situation - Where are we now?
- Identify a “champion” to lead program development
- Identify, involve, encourage participation from all responding agencies and stakeholders
- Establish relationships
TIM Program Establishment

- Meet regularly to:
  - Establish, confirm, reinforce goals/objectives
  - Identify, discuss problem areas, needs
  - Collaborate in developing solutions, strategies
  - Conduct after-action reviews, debriefs
  - Monitor training requirements
  - Establish, reinforce and renew relationships

- **Tip:** Keep meetings *interesting and worthwhile!*
Critical that stakeholders feel TIM meetings are worthwhile and have a purpose – an agenda is a must and donuts don’t hurt either
TIM Program Establishment

- Identify and/or establish funding source(s)
- Oversee solution/strategy implementation
- Monitor progress, evaluate strategies, and identify benefits
- Conduct TIM benefits outreach and “in-reach”
- Strategic planning
TIM Program Administration and Implementation (Funding)

- Do not overlook need for and importance of program administration
- Staffing
- Strategy implementation management
- Operations and maintenance
- Maintaining relationships
- Funding
TIM Program Administration and Implementation (Funding)

- Program Funding vs Strategy Funding
- Recognize that operations and maintenance funding is absolutely required for many strategies, especially technology and infrastructure
- Acknowledge need to “plan ahead” for TIM
  - Regional and state transportation plan elements
  - Transportation improvement programs
TIM Program Administration and Implementation (Funding)

- State and Local funds
- Federal Transportation Funds
- Private sector (e.g. special events)
- Public-Private Partnerships
- Federal, State, Local Public Safety Funds
- Department of Homeland Security
Purpose: to provide a formal process for State and local transportation, public safety and private sector partners to collaboratively assess their traffic incident management programs and identify opportunities for improvement

Revised in 2009 to more closely align with the National Incident Management System

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<td>4.2 Tactical - 40%</td>
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4.2.1. Policies and Procedures for Incident Response and Clearance

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<tr>
<th>Does the TIM program:</th>
<th>Enter Ratings for Each Question Below:</th>
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<tr>
<td>4.2.1.1. have “authority removal” laws allowing pre-designated responders to remove disabled or wrecked vehicles and spilled cargo?</td>
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<td>4.2.1.2. have “driver removal” laws which require drivers involved in minor crashes (not involving injuries) to move vehicles out of the travel lanes?</td>
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<td>4.2.1.3. use a safety service patrol?</td>
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<td>4.2.1.4. utilize the Incident Command System?</td>
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<td>4.2.1.5. have response equipment pre-staged for timely response?</td>
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<td>4.2.1.6. identify and type resources so that a list of towing, recovery and hazardous materials response operators (including operator capabilities and special equipment) is available for incident response and clearance?</td>
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<td>4.2.1.6.a. Is that list organized so that resources are identified and deployed based on incident type and severity?</td>
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<td>4.2.1.7. have specific policies and procedures for hazmat and fatal accident response that also address maintaining traffic flow around the incident? (Composite score for 4.2.1.7.a through 4.2.1.7.b below)</td>
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<td>4.2.1.7.a. for hazmat response?</td>
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<td>4.2.1.7.b. for fatal accident response?</td>
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2009 TIM SA - National Results

- 86 cities from 40 states participated
- The average score was: 60.6%
- TIM SA are due to FHWA annually in June
  - It is recommended that the survey be completed using a collaborative approach between TIM stakeholders
  - Allows for identification of TIM initiatives that may be easy to implement

- Additional information can be found at: http://ops.fhwa.dot.gov/eto_tim_pse/preparedness/tim/self.htm
Measuring Success

*What Gets Measured Gets Performed...*

- Quantifying TIM benefits will advance program continuity:
  - Builds critical mass for program support from managers and elected officials:
    - Supporting what works
  - Ensures buy-in from diverse stakeholders:
    - Multiple agencies, coordinated response
  - Supports allocation of technical and budget resources
“Roadway” Clearance Time
- The time between first recordable awareness of an incident (detection/ notification/verification) by a responsible agency and first confirmation that all lanes are available for traffic flow.

“Incident” Clearance Time
- The time between the first recordable awareness and the time at which the last responder has left the scene.

Secondary Crashes
- The number of secondary crashes beginning with the time of detection of the primary incident where a collision occurs either a) within the incident scene or b) within the queue, including the opposite direction, resulting from the original incident.
Case Studies
After Action Debriefing
I-96 EB – 1/18/10

I-96 Okemos Rd (Exit 110) to Williamston Rd (Exit 117)
I-96 at Williamston Rd. (Exit 117)
Timeline

2:08 PM
Start of incident

2:09 PM
Police 1st on scene
Noted ejected driver & fuel leak

2:12 PM
Fire & ambulance on scene

2:12 PM
Media noticed of closure

2:30 PM
Turnaround used for trapped traffic

3:03 PM
Request body transport

3:30 PM
Wreckers on scene

5:00 PM
5:15 PM
Body transported

5:50 PM
Started to unload trailer
Also started to pump off diesel

11:36 PM
12:00 PM
One lane opened

12:26 AM
All lanes opened

All traffic diverted
Traffic was lighter on this Monday due to Martin Luther King Day

Twelve Agencies Involved in the Incident

Original Incident was thought to be a HazMat

Law Enforcement needed to establish ISC sooner on scene

No reported Secondary Crashes

Agencies felt Good Cooperation by All
Action Item

- Action item: First Responders were wearing high visibility vests but the media was not. A press release was issued by MDOT to the media to wear high visibility vests.
After Action Debriefing
I-94 WB – 12/11/07
I-94 by 9 Mile Road (MM101)
Timeline

8:14 AM
Start of Incident

9:00 AM
9:00 AM
Young Environmental Rejected the Job

10:00 AM
10:15 AM
Company Sending Truck to Off Load from Joliet, IL

10:00 AM
11:00 AM
12:00 PM
1:00 PM
2:00 PM
3:00 PM
4:00 PM

10:46 AM
MDOT Authorized Taplin Environmental

12:30 PM
Told Taplin Environmental Did Not Have a Truck

2:43 PM
All Lanes Closed

3:28 PM
One Lane Reopened

8:25 AM
Load Identified as Non-Haz Glue and Not Leaking

2:43 PM
All Lane Cleared
Incident Overview

- New Role for the Incident Commander
- Difficulties in getting glue off loaded
- Limited Shoulder due to the guardrail
- Streamline request for traffic control from MDOT
- Call Wrecker Service at the beginning of incident
- Reimbursement for Environmental Clean-up
Action Item

- Common Communications
  - Action item: Share talk groups on the 800MHz radios. Maintenace Supervisor and Traffic & Safety Engineer able to listen and communicate with 911 Dispatch and Law Enforcement
Questions