Incident Management and Work Zone Patrols

Kimberly J. Peters
March 5, 2012
Purdue Road School
What is Traffic Incident Management (TIM)?

The planned and coordinated multi-disciplinary process to detect, respond to, and clear traffic incidents so that traffic flow may be restored as safely and quickly as possible.
The Crash Pyramid

30,797
Fatal Crashes

1,630,000
Injury Crashes

3,957,000
Property Damage Crashes

Three injury crashes every minute, 24/7.
Emphasize that the overarching purpose of TIM is safety. The safety of responders, those involved in incidents, and those approaching and passing incidents.

According to the National Law Enforcement Officers memorial, over the past 24 years, a dozen officers are killed each year on average in struck by incidents.

The Fire Memorial in Emmitsburg, MD tells us that statistics from 2010 are typical for firefighter struck by deaths, about 5 per year.

The Towing memorial foundation in Chattanooga, TN tells us that about 60 towers are struck and killed each year.

Statistics from the Dept. of Labor demonstrate the dangers of working near roadways in highway work zones.
Congestion and Travel Reliability

- Traffic congestion costs American motorists $87.2 billion per year in wasted time and fuel costs.
  - More than $757 for every U.S. traveler.

- The total amount of wasted fuel topped 2.8 billion gallons.
  - 24 gallons of gas for every traveler.

- Americans spend 4.2 billion hours a year stuck in traffic.

- Nationally, in 2007, the average driver languished in rush-hour traffic for 36 hours.
  - Nearly one full work week for every traveler.
Source of Congestion

The Sources of Congestion
National Summary

- Traffic Incidents (22%)
- Special Events/Other (6%)
- Poor Signal Timing (5%)
- Bad Weather (15%)
- Work Zones (10%)
- Bottlenecks (40%)
TIM Planning for Work Zones

- Increase law enforcement presence
- Inter-agency communication
- Contractor provided towing/recovery service
- Emergency closure points
- Incident management training for construction personnel
- Use of construction equipment
Benefits of TIM Planning

- Institutional bonding
- Communications
- Rapid response
- Appropriate resources
- Responder safety
- Maximizing traffic flow
- Quick clearance
Why is Traffic Incident Management Important?

- The likelihood of a secondary crash increases by 2.8 percent for each minute the incident continues to be a hazard.
- Approximately 25 percent of all traffic crashes are secondary incidents.
- Improves safety for motorist, responders, and highway workers.
- Increases efficiency of roadway system
• Reinforce clarity in communications.
• Accurate, clear communication, means responders arrive at the scene sooner and clear the incident sooner meeting quick clearance goals and improving safety for themselves and accident victims.
The MUTCD defines traffic incident duration as depicted in the slide. Each type has different requirements.

- Emphasize the importance that estimating incident duration has on setting up temporary traffic control devices, clearing the incident, and restoring travel flow.
Heavy Truck Clearance Times

- Involving Heavy Trucks
- Not Involving Heavy Trucks

Average Clearance Time (in minutes)

- Fatality Collisions: 349 min.
- Injury Collisions: 241 min.
- Non-Injury Collisions: 108 min.
- Disabled Vehicles: 93 min.
- Abandoned Vehicles: 34 min.
- Other: 15 min.
- All Incidents: 10 min.

JOPS Goal of 90-Minutes Clearance Time
Indiana Laws

- Move It Law
- Move Over Law
- Hold Harmless
INDOT - Traffic Management Center

- Coordinate interagency communications between responders and agency dispatch centers
- Assist in incident detection and verification
- Program and operate electronic dynamic message signs
- Monitor closed-circuit television cameras
- Provide traveler information to the public and media
- Dispatch Hoosier Helpers as required
- Creates recordings and continually update HAR 530 AM
Incident Management Special Provision

- Maps
  - Detail open/closed travel lanes
  - Emergency vehicle access points
  - Rally points

- Meeting held prior to each phase change

- Identify road closure points

- Locations of arrow boards and barrels
Rally Points
When it comes to work zones, even the smallest mistake can be deadly.

Just take a look at these numbers:

- Nationally more than 1,000 people die in work zones each year. That’s nearly three a day!

- Every year, more than 25,000 people are injured in our nation’s work zones.

- More than 95 percent of those injured in work zones are motorists.

- It only takes 2.03 minutes longer to drive 45 mph vs. 65 mph through a 5 mile work zone.
Purpose

- Speed control
- Enforcement
- Traffic Incident Management
- Traffic control
- Increased visibility/motorist alertness
- Queue car
- Projects selected
- Algorithm/Selection Process
- In 2012 INDOT PSO funded 47 projects
- Types of enforcement (Moving, stationary, sitting w/workers)
- INDOT maintenance zones
- Where does the money come from???
- Changes to Indiana Code 9-21-5-11
Projects for consideration are submitted each December by the District Construction Engineers from each of the six INDOT Districts.
Variables

- AADT
- Project Length (Lane Miles)
- Construction Cost
- District Priority
- Crashes
- Injuries
- Fatalities
- % Trucks
- Work Zone Speed
- Degree Curvature
Additional Variables

- Grade
- Change in Lane Width
- Exits Open
- Work Zone Lane Width
- Work Zone Shoulder Width
- Lanes Shifted
- Feet Shifted
- Positive Protection
- Work Zone Safety Preference Factor
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2010 Work Zone Collisions by Primary Factor

- Following too Closely: 21%
- Improper Lane Usage/Unsafe Lane Movement: 18%
- Driver Asleep/Fatigued/Illness/Distracted/Other: 14%
- Failure to Yield Right of Way: 9%
- All Other Factors (46): 21%
- Unsafe Speed/Speed too Fast for Weather Conditions: 2%

Total: 100%
2011 Work Zone Collisions by Primary Factor

- Following too Closely: 38%
- Improper Lane Usage/Unsafe Lane Movement: 20%
- Driver Asleep/Patigue/Illness/Distracted/Other: 10%
- Failure to Yield Right of Way: 9%
- Unpaved Speed/Speed too Fast for Weather Conditions: 7%
- All Other Factors (46): 24%
2012 Work Zone Collisions by Primary Factor

- All Other Factors (46): 21%
- Following too Closely: 32%
- Improper Lane Usage/Unsafe Lane Movement: 19%
- Driver Asleep/Fatigued/Illness/Distracted/Other: 12%
- Ran Off Road Right: 6%
- Animal/Object in Roadway: 5%
- Failure to Yield Right of Way: 9%
Pickup In Construction Zones (PICZ)

- Three trucks released
  - Summer of 2011
- In 2013 construction season
  - Six additional trucks
## Work Zone Collision Data

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*Source: AIMS Track Reporting System*

*All I-5057 Routes (Interstates, State Roads, & U.S. Routes)*

With Construction Indicator marked "YES"
### Project Collision Data

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1.45 from the 10th to the 14th mm

Bravo County
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</table>

Artic data from the p to the p.m.

Individual's Market Locations.
Questions?
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