

**APWA Congress
Boston, August 2010**

**Applied Risk Management Techniques for
Improving *Highway Work Zone Safety***



- Leadership & Motivation will do more than a library full of rules
- Understand the technical standards as a starting point
- Protect your people on the ground

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Work Zone Dynamics



- Distracted drivers are increasingly common
- Crash statistics for '*Unprotected Highway Users*' are trending in the wrong direction
- Pedestrians, motorcyclists, bicyclists, **highway workers**
- Work Zone Safety Week - create & maintain awareness all year

Work Zone *Safety* Dynamic



- Use public information when possible to inform: OHMB's, local newspapers, traffic reporters, highway construction web page, etc.
- Advance warning signage - PMB's, multiple sets of signage, make sure signs are readable at NIGHT!
- Setting out & picking up the closure is usually most hazardous time of exposure
 - Use TMA or Blue Lights
- Speed reduction thru work zone - not always possible or advisable

Employee Motivation

- Motivation should encourage a person to think & act responsibly when no one is looking.
- Individuals are motivated by widely varying triggers, but there are some common denominators.
- The value SAFETY is roughly equal to all - ex. Maslow's 'Hierarchy of Needs'
- Leadership & Organization Goals should reflect personal safety, caring, recognition and appreciation.
- Motivation is what's left when the rules no longer fit the circumstance.
- Motivation helps a person make the right decision.
- Motivation to THINK and ACT conscientiously.
- Simple reminders: events, small gifts; repeat the message.



Employee Safety Training



- You should have a template safety training program- first day, first week, first month
- Address regulatory and technical elements: Traffic Control; Equipment Operation; PPE etc.
- Include non-required but relevant training - such as Slip & Fall Prevention, Ergonomics, seasonal factors
- Find ways to make the training informative, relevant, engaging - invite outside speakers, SME's
- Always recognize training with a Certificate and Wallet Card

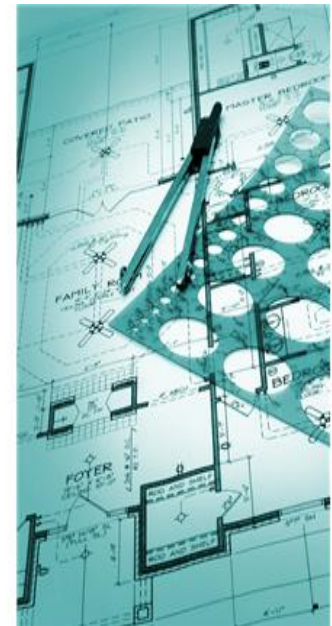
The Importance of *Defensive Driving*

- A good safety program will teach and reinforce basic and intermediate defensive driving skills.
- Seat belt use and Daytime Running Lights are basics
- Fleet management practices, route planning, intersection safety awareness are examples of intermediate skills.
- What's this got to do with Work Zone Safety? If your crew is not driving defensively, they're not going to even reach the Work Zone!



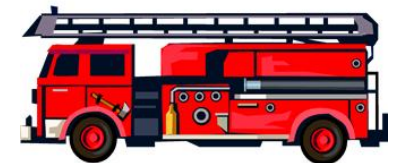
Work Zone Safety - *Technical Standards*

- NIOSH - Internal Work Zone Traffic Control Plans; Blind Side Backing
- States: VA Driver/Spotter rule- GOAL
- ANSI A10.47 - Highway Work Zone Safety
- OSHA 10 Hour - Highway Work Zone Course
- TAMU - www.workzonesafety.org - this is the single most informative Work Zone Safety site - bookmark it!!
- US DOT MUTCD, State Traffic Control Plans



Incident Management - NIMS/ TIMS

- First Responder safety is an emerging issue
- Motorist safety when approaching incidents - deploy Accident Ahead signage immediately
- Congestion management
- OH Message Boards - critical information, real time
- AM Radio advisories
- Traffic reporters, Internet & wireless alert messages (more distracted driving!)
- Major Incidents: Organization, command, control, support

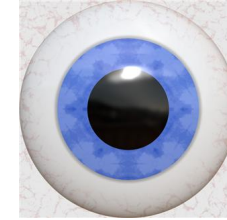


Manage the Risk



- Work planning should include a thorough Job Hazard Analysis
- ALL JHA's start with Traffic Control
- Identify key tasks and their associated risks
- Review the JHA with employees, Safety Committee, others with expertise
- Review internal work zone traffic controls

Ergonomic & Visual Factors



- Optical Physics - the human eye is light seeking - which is why High Visibility Apparel is critical
- Full body (Class E) Hi Vis apparel recommended for direct traffic high speed exposures & night work
- Avoid overuse of tinted lenses
- The eye needs light to see: to detect motion, depth of field, texture, etc.
- Insufficient task lighting is a common factor in accidents

High Visibility Apparel & the 4 most dangerous words...



- Outside the vehicle, HVA is the single most important piece of defensive PPE.
- HVA is the equivalent of DRL's on a PERSON!
- Select good quality ANSI approved. Use a local supplier and try new configurations
- Full body (Class E)
- Class 3 - upper body minimum
- HVA will fade over time. Keep it clean & replace when brightness fades
- Supplement with HV gloves, hard hat striping

Night Work



- Manage employee fatigue factors
- Protect work zone from impaired motorists especially after midnight.
- Avoid weekend work. Saturday is statistically most dangerous day of the week. If you have emergency work on Saturday, take extra precautions.
- Accidents do not take weekends off.

Employee Well Being

- Strong motivational benefit for employee and family
- Educate- in safety meetings, newsletters
- Encourage exercise & health awareness
- Seasonal issues - work apparel for hot / cold weather
- Hydration - maintain proper level- year 'round
- Fatigue - leads to impaired decision making
- Diet - educate, promote and encourage good eating habits - particularly at lunch
- Shift cycles - avoid frequent changes



Summary - Work Zone Safety



- Identify and manage the risk
- Plan, coordinate, JHA
- Motivate employees, show your Leadership
- Exceed the minimum standards where needed
- Educate, train and equip employees
- Recognize and reward safe performance