Work Zone Access and Egress
Night Work Nuances

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Night Work Advantages

- Reduced traffic volume
- Better access to work site
- Longer work shifts – maybe
- Cooler temperatures
- Reduced business impact
Night Work Concerns

- Visibility
- Noise & glare
- Work quality
- Staffing issues
- Cost - labor, materials, traffic control
- Logistics, supervision
- Worker & driver alertness
- Impaired drivers
- Higher speeds
- SAFETY
Nighttime Safety Concerns

- Irresponsible driver behavior
- High speed
- Driver confusion
- Work space intrusions
- Poor visibility
- Irresponsible worker behavior
Night Work Basics

- Good illumination is essential
- Enhanced TCDs - bigger, brighter, more
- Operational plans and procedures

- NCHRP Reports 475, 476, 498
- NCHRP CRD-CP-50 – Training
- FHWA Handbook – SA-03-026
Enhancements to Address Night Concerns

- Temporary illumination
- Brighter signs and TCDs
- Larger signs and TCDS
- More signs and TCDs
- Positive guidance
- More safety devices
- Driver information
- Police enforcement
Other Traffic Control Devices and Safety Features

- Changeable message signs
- Flashing arrow panels
- Temporary signals
- Rumble strips
- Crash cushion
- Shadow vehicles with TMA
- Traffic barriers
- Arrestor nets and intrusion alarms
Temporary Lighting for Night Work

- Good lighting essential for night work (Safety, quality, productivity, morale)
- Adequate illumination, glare control
- Lighting plan recommended
- Details and references in NCHRP 476, 498.
Illumination Requirements by Task

- **Level I** - 54 lux (5 fc) General illumination
  - all activity areas
- **Level II** - 108 lux (10 fc) - paving, milling, equipment work areas
- **Level III** - 215 lux (20 fc) - mechanical, electrical, other detail work

- Fixed Roadway Lighting typically less than 20 lux (<2fc).
Lighting Plan Implementation

- Equipment present before work begins
- Trial run to check adjustments, aim
- Photometric measurements
- Control for glare, check results
- Agency’s Project Engineer has final authority
Illumination for Flagging

- Provide temporary illumination for all flagging stations
- Supplement permanent roadway lighting
- Avoid glare, shadows, back lighting
- Use floodlight towers or other overhead luminaires
Night Flagging

- Avoid if possible
- Provide adequate illumination
- Good setup and procedures
Work Vehicle Protection

- Warning lights - 360 deg. Visibility
- Two lights = better depth perception
- Amber is preferred color
- Rotating/ flashing incandescent best
- Strobe lights not as good
- Supplement with 4-way flashers
- Retroreflective markings
- Identifying signs
Worker Visibility

- High visibility apparel essential
- Addressed in MUTCD Part 6
- Addressed in Safetea-Lu
- ANSI / ISEA 107-2004
- Class 3 for night work
- Illumination plus hi-vis apparel
Overview of Night work

Concerns

- Night work entails additional risks
- Night work can be safe for workers and travelers
- Enhanced traffic controls reduce risks
- Planning is critical for safe, efficient operations
5 Practical Solutions

- Effective signs
- Enhanced channelization
- Visible workers
- Visible work vehicles/ equipment
- Effective temporary lighting
Key References for Night Work

- MUTCD Part 6
- Traffic Control Handbook for Mobile Operations at Night - FHWA-SA-03-026
- NCHRP Report 475 - Procedure
- NCHRP Report 476 - Guidelines
- NCHRP Report 498 - Illumination Guidelines
- NCHRP Training - CRP-CD-50

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