Nothing Compares
NORTH CAROLINA

2016 ITS Carolinas Annual Meeting

Work Zone Safety "Innovations"

Steve Kite, PE State Work Zone Engineer

Work Zone Safety Innovation- "Presence" Lighting

- Utilize "balloon/anti-glare" lighting systems that *supplement* task/tower lighting…not replacements
- Install throughout full length of lane closure

Work Zone "Presence Lighting"

- Improve WZ "conspicuity" throughout full length of lane closure
- Create "uniform" speeds throughout full length of lane closure
- Reduce excessive speeding
- Improve Worker Visibility
- Give drivers the idea of an "active" work zone

Moving Forward- What's Next

- Beginning in Spring 2016, we'll begin "Pilot" projects on NC's freeway and interstate system
- Approximate costs around $750/light/month rental or $10,000 each for purchase
- Utilize from 4 to 6 light units per mile depending on light intensity and "balloon" surface area

Work Zone Safety Innovation-"Digital Speed Limit Signs"

- Ability to Post "reasonable" Speed Limits based on activities, conditions and direction of travel
- Conveniently change the WZ Speed Limit remotely through software Apps on smartphones and PC's
- Reduce Speed Differential in Work Zones
- Improve Credibility and Compliance
- Can be trailer mounted or stationary mounted

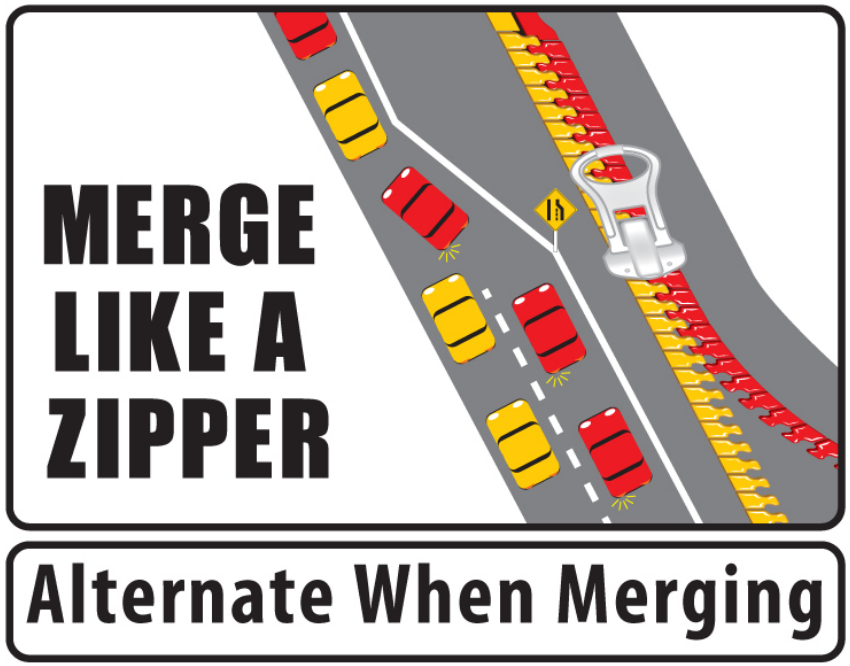
Digital Speed Limit Signs in Work Zones

Have a couple of “Pilot” projects on I-85 and I-95. This photo from I-85 in Cabarrus County

Approximate costs around $950/sign/month or $12,000 each for purchase

Utilize a sign in advance of the work zone and every 1.5 miles thereafter and between interchanges

Work Zone Safety Innovation-"Zipper Merge"



- It's a strategy used for congested conditions, not freeflow
- Directs traffic to use both lanes to merge area
- Take Turns in Merge Area

"Zipper Merge"

- We've selected a study project on I-85 in Vance/Warren County. Long-Term Lane Closures with Cross-Overs
- "Before" data is now being collected with Standard Lane Closures
- Zipper Merge to be installed the week of September 26th
- Study period will be for 30 Days

Work Zone Traffic Pattern Issues

1) “Ghost Lines”-
Poor Removal

2) “Confusion Patterns”-Scarring from Line Removal

3) “Deep Rutting”-
Aggressive Removal

Work Zone Safety Innovation- Work Zone "Pattern Masking" and "Performance" Pavement Markings

- Utilize Black Polymer Surface Coating to "Conceal" the old markings and provide "Contrast" for the "Performance Markings
- Installed across full width of roadway
- Goes down at 16 mils with added frictional elements.
- Cures in 10 min or less.
- 12 month duration
- Estimated Cost around $0.12-$0.15 per square foot

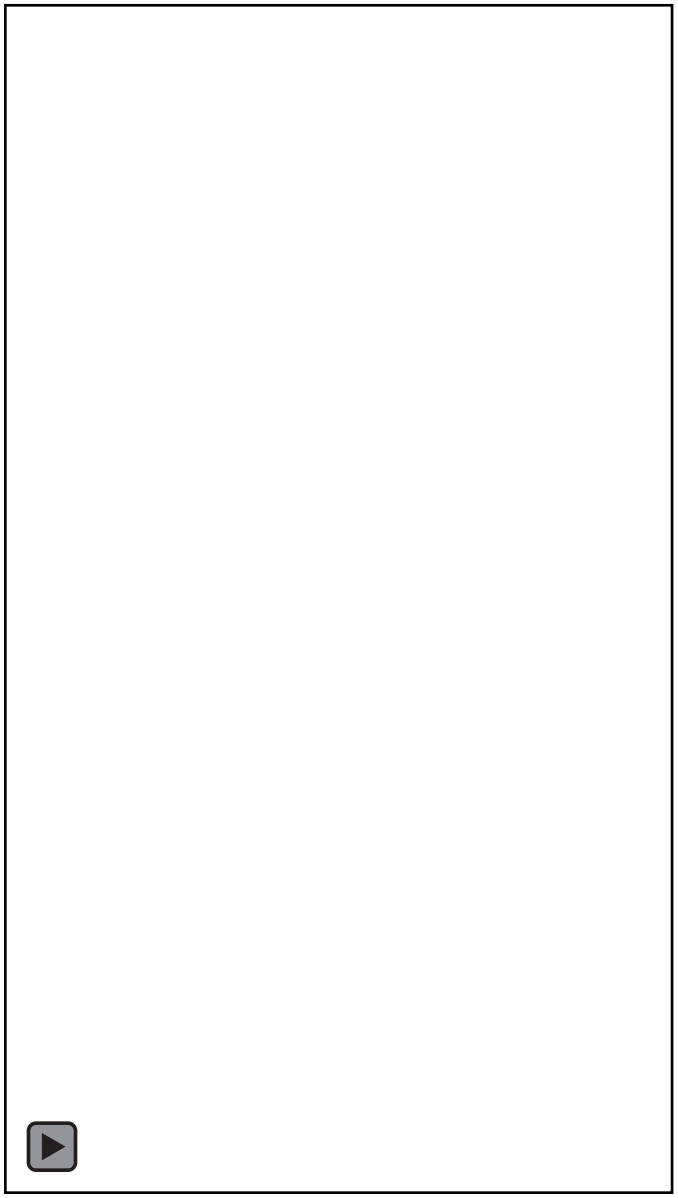
Work Zone Performance" Pavement Markings

- Performance Markings include Epoxy, Polyurea and Single Component Polymer Paints, Thermoplastic and Tape.
- All Lines are 6" widths
- Have initial, 6 month and 1 year retroreflectivity requirements
- Retroreflectivity of markings will be scanned by Mobile Scan companies
- All materials have required 12 month durations.
- Estimated Cost around $0.25-$0.50 per linear foot

Work Zone "Performance" Pavement Markings

- Provides clearer path for motorists in work zones
- Markings last longer and are brighter in both daytime and nighttime conditions
- Supports V2I initiative
- Will improve driver's satisfaction and hopefully lessen work zone crashes

Work Zone Safety Innovations-Other Gadgets



- Driveway Assistance Device- it's a device to replace flaggers at Driveways
- Directs driver to turn in direction of "flashing arrow"

Work Zone Safety Innovations-Temporary Signal Message Board

- Used when drivers can’t see other Signal
- Used when there are long cycle times so drivers won’t run the RED

Questions?

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