

Work Zone Performance Monitoring and the Safety and Mobility Rule



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NTOC Webcast
May 28, 2009

Outline

- Why We Need Work Zone Data and Performance Measures
- Performance Monitoring and the Work Zone Safety and Mobility Rule



Why We Need WZ Data and Performance Measures

1. Understand and Improve Performance

- Work zones often cause safety and mobility impacts
- Those impacts affect system performance
- Data and measures help us understand and assess the impacts, and improve performance



Why We Need WZ Data and Performance Measures (cont.)

2. Provide a Basis for Decisions and Spending

- Without data we have limited basis for decisions
- We may spend resources on the wrong areas



Why We Need WZ Data and Performance Measures (cont.)

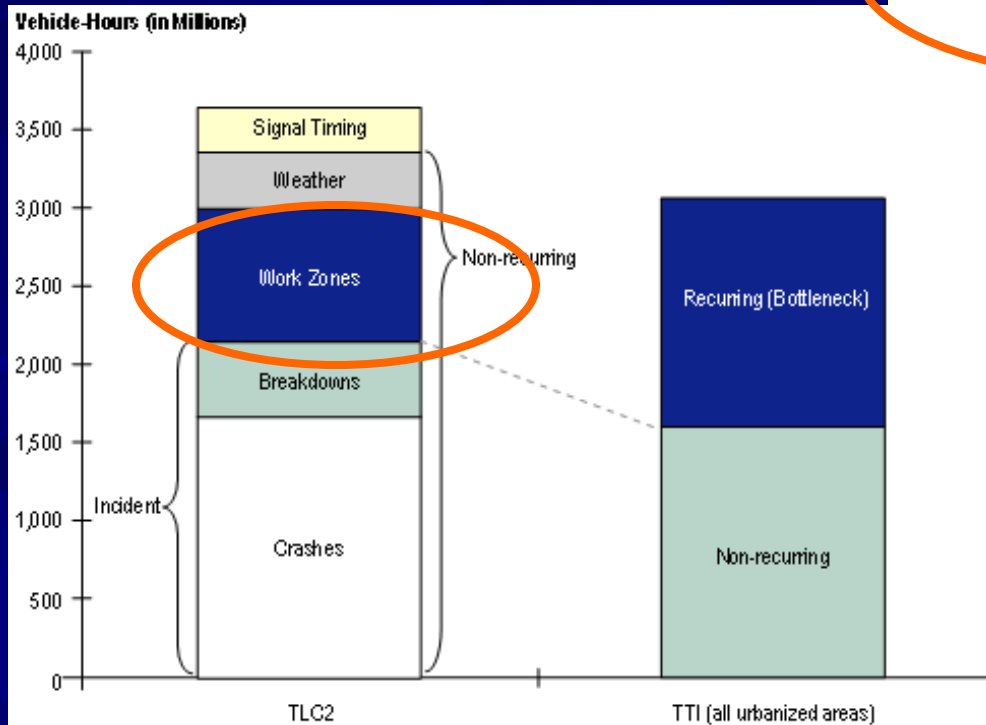
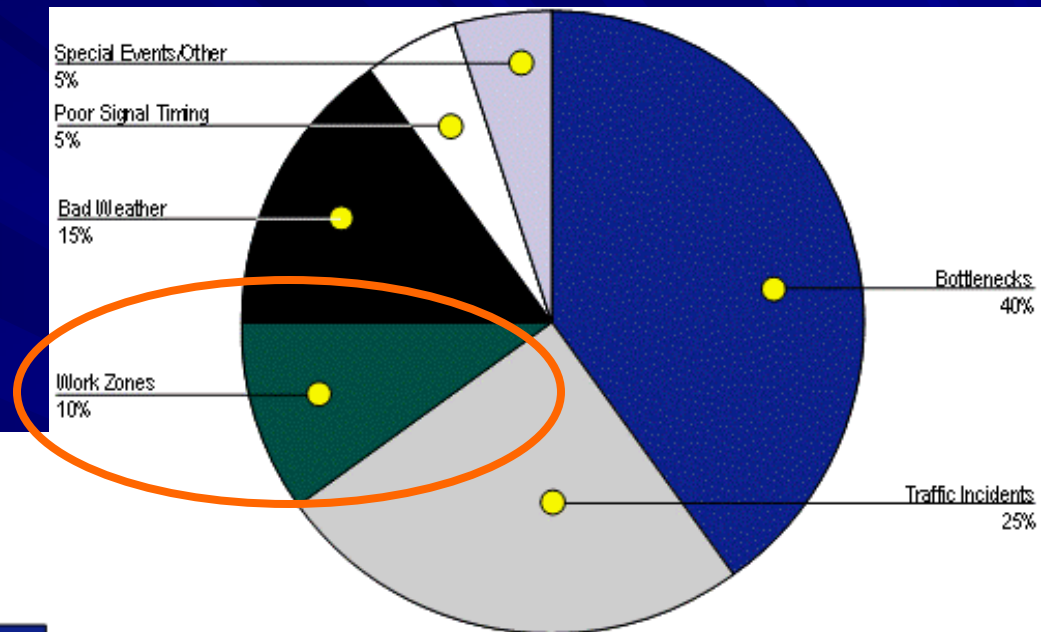
3. Tool for Communication

- In this information age, we need to make sure the right information is shared
- Work zones are not exempt from the growing accountability to the public and elected officials



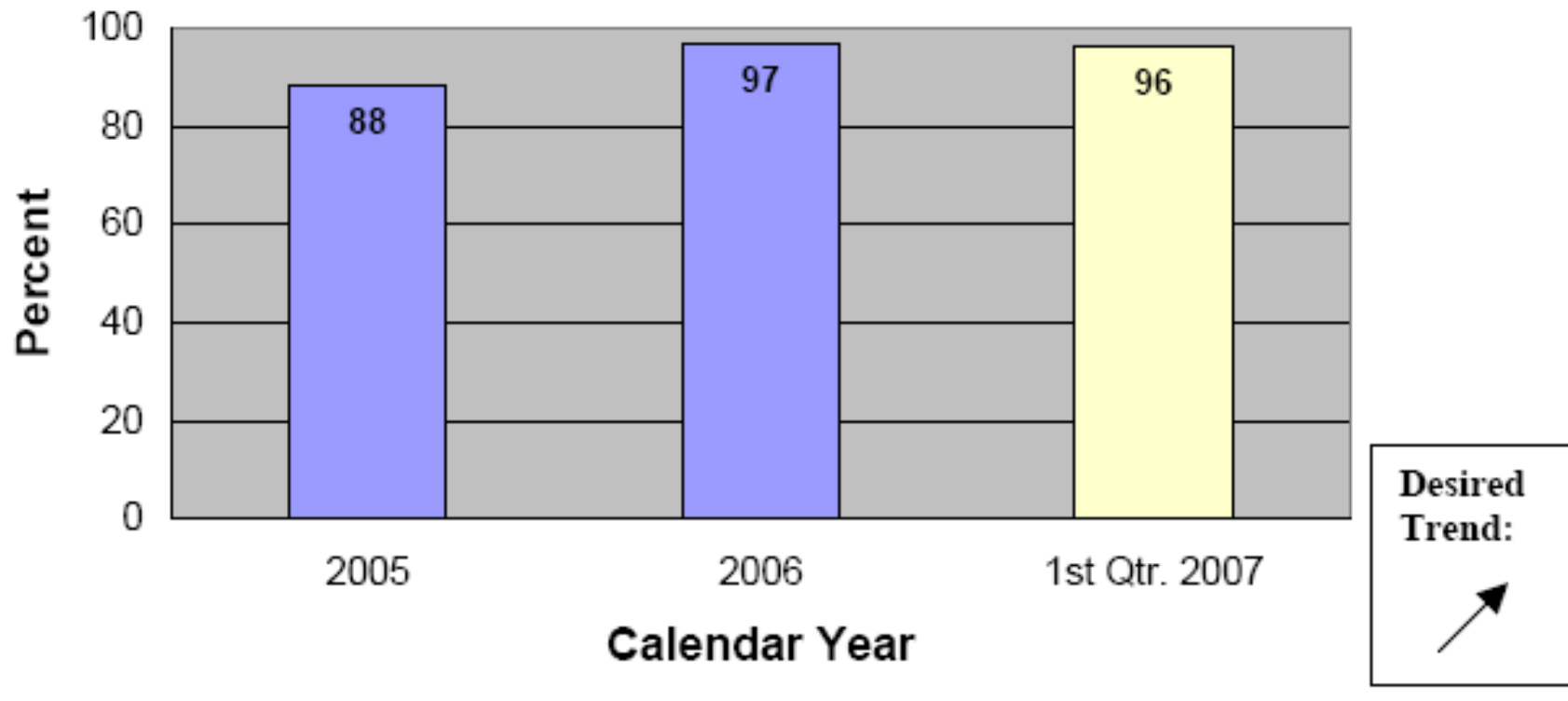
1. Understand and Improve Performance

Work zones cause impacts that effect overall system performance

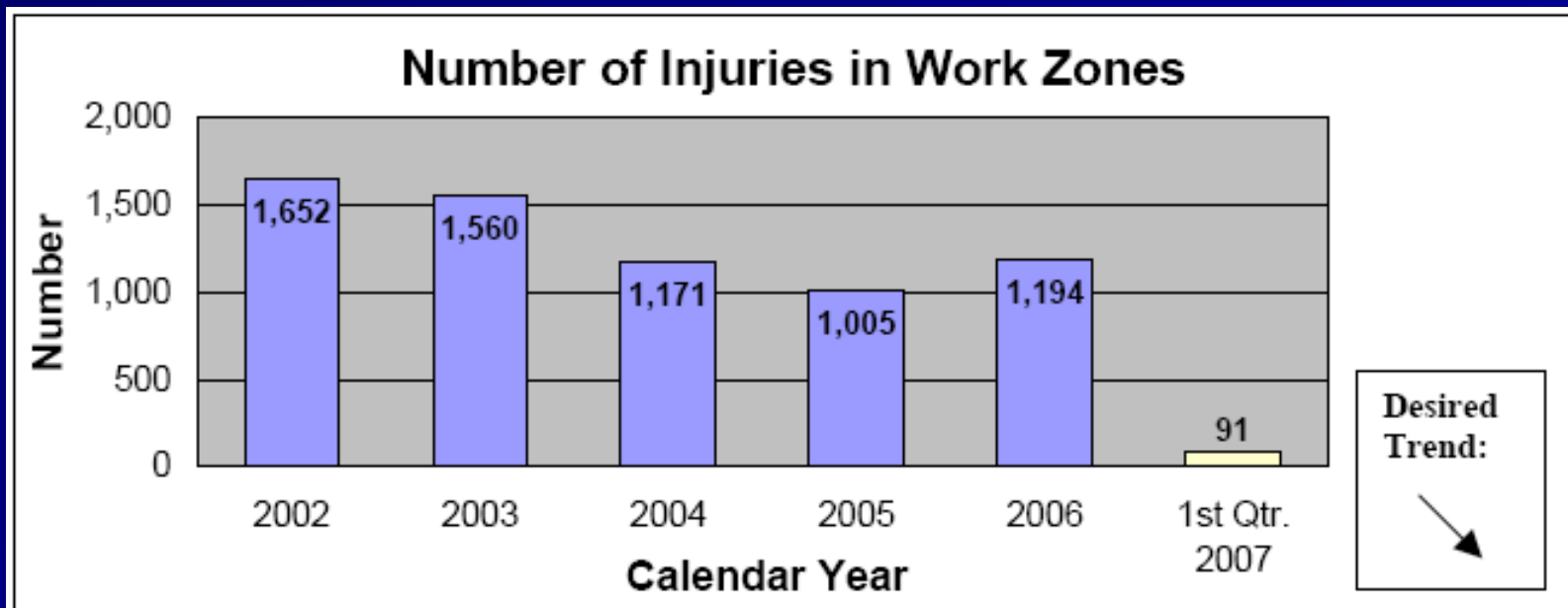
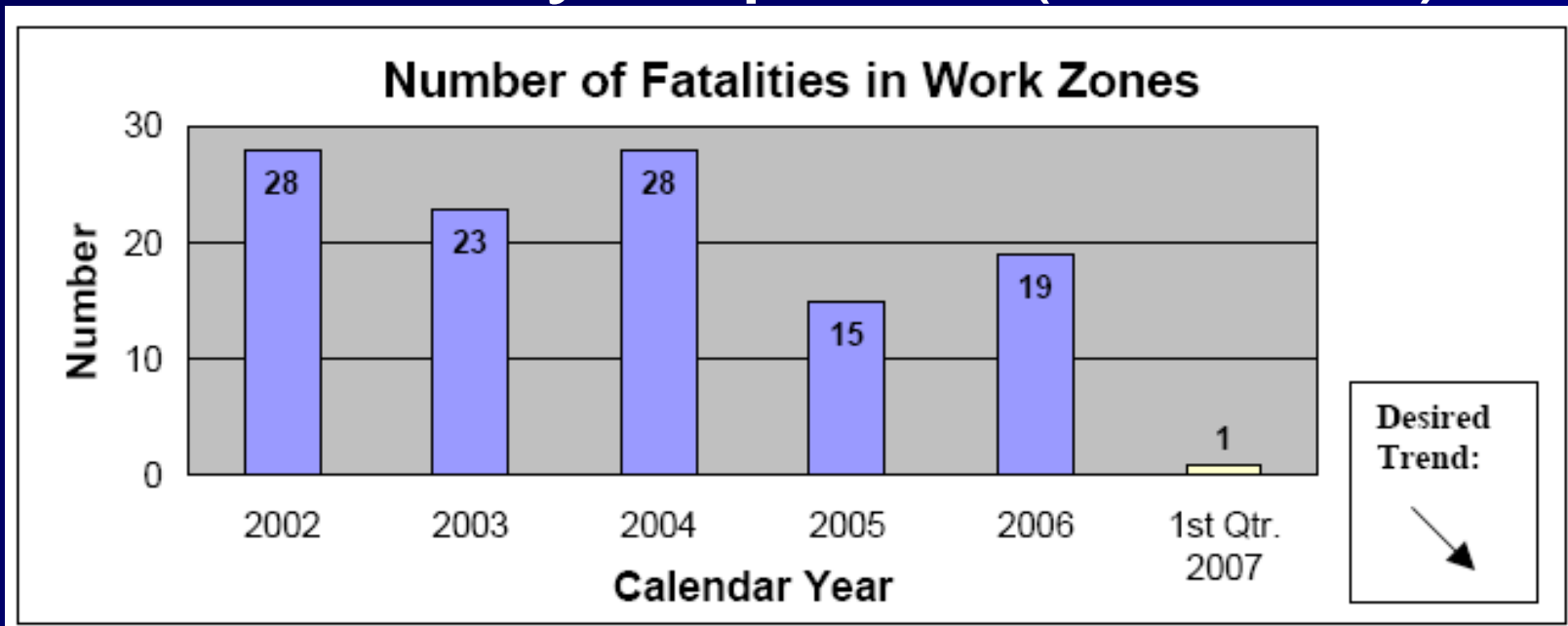


Tracking Mobility Impacts (Missouri DOT)

**Percent of Work Zones Meeting Expectations for
Traffic Flow**



And Safety Impacts (MoDOT)



Data and Measures Help Us Understand/Improve Performance

Q: When the number of work zone fatalities increases from one year to the next are we doing a worse job at work zone safety?

A: It depends. If the number of fatalities increased 10%, but the amount of work increased 30% - *maybe we're doing better.* If the reverse is true – *maybe we are doing worse.*



Data and Measures Help Us Understand/Improve Performance

- Understand and quantify impacts of work zones & effectiveness of strategies to manage them
 - Quantify how work zones are affecting motorists
 - Quantify actions being taken, management strategies and technologies being deployed
 - Quantify effects of actions/strategies (what is working, what is not)



Which work zone will I get?



2. Provide a Basis for Decisions and Spending

- Guide investment decisions and WZ policy development, define program priorities
 - Identify trends
 - Refine improve WZ policies and procedures based on objective data (i.e., is a “maximum allowable delay” a useful policy objective?)
 - Emphasize accountability (“what gets measured, gets done”)



Data and Measures Can Guide Spending

Q: How do you decide how much to spend on mitigating work zone impacts and managing traffic for a project?

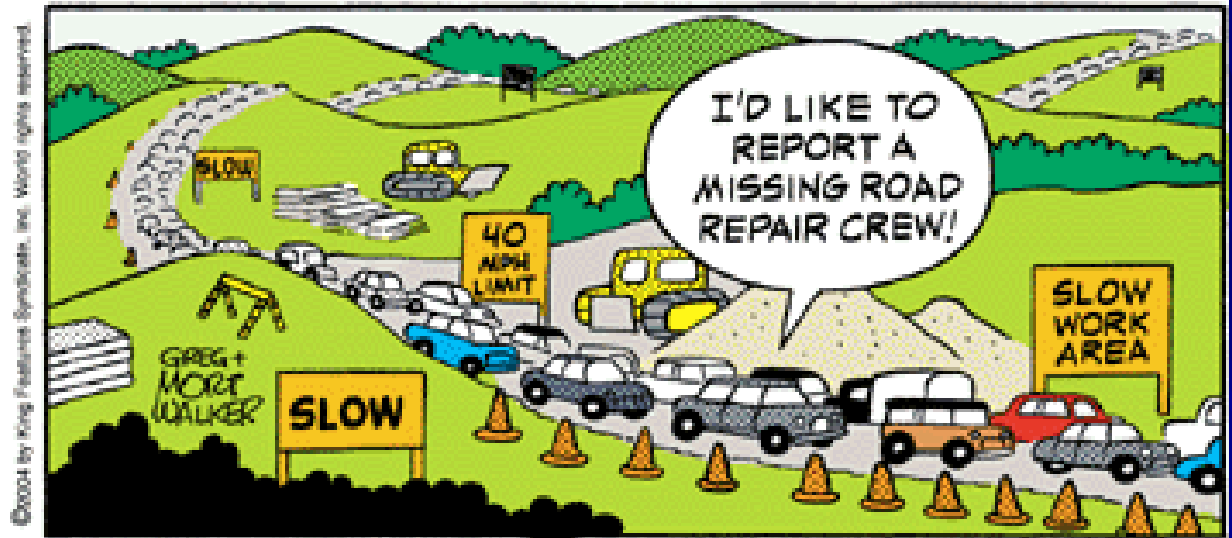
A: Joe over here, he's been doing this for a long time, and he just knows what will work and what won't, what to do to keep us from getting a lot of complaints.



3. Tool for Communication

- Assist communication and outreach
 - Aid agencies in “telling their story”
 - Facilitate better public understanding and acceptance
 - Ensure that elected officials have “correct” information





“One state told us that maximum work zone delays were set by the State’s governor following the governor’s experiencing an excessive delay due to a work zone while traveling to an appointment.”

(Maze et al., *Synthesis of Procedures to Forecast and Monitor Work Zone Safety and Mobility Impacts*, November 2005, pg. 5)



General Performance Measure Use within State DOTs is Increasing

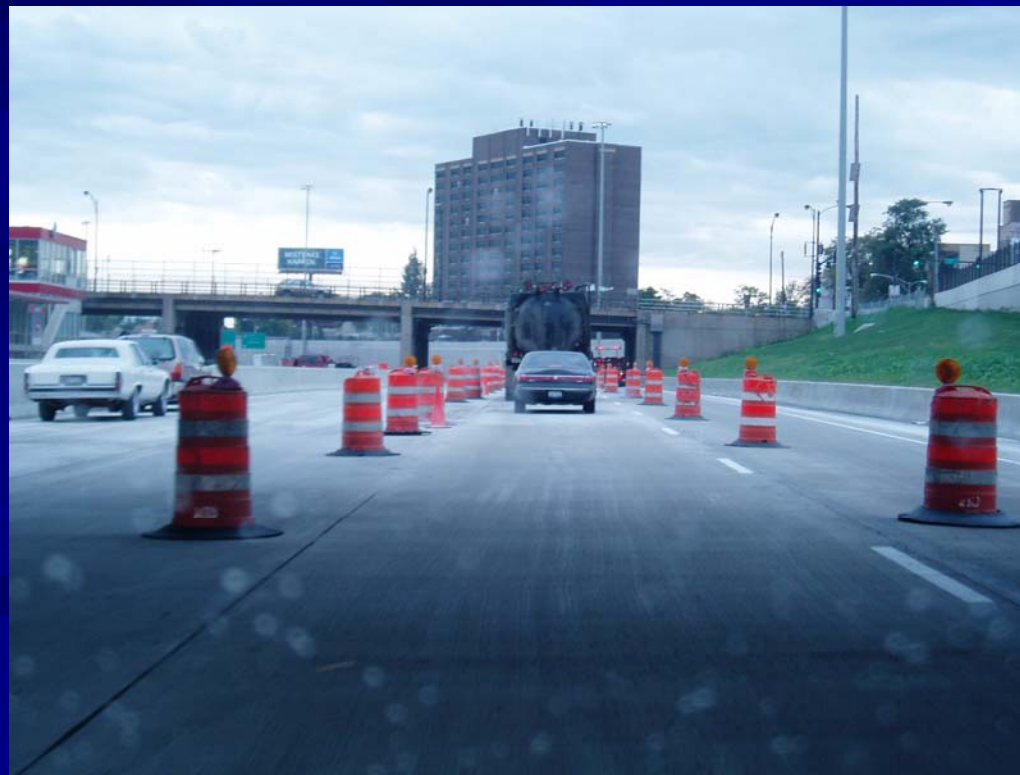
- Asset Preservation
- Mobility and Accessibility
- Operations and Maintenance
- Safety
- Security
- Economic Development
- Environmental
- Social
- Transportation Delivery

Work zone performance measurement needs to be coordinated with these efforts!

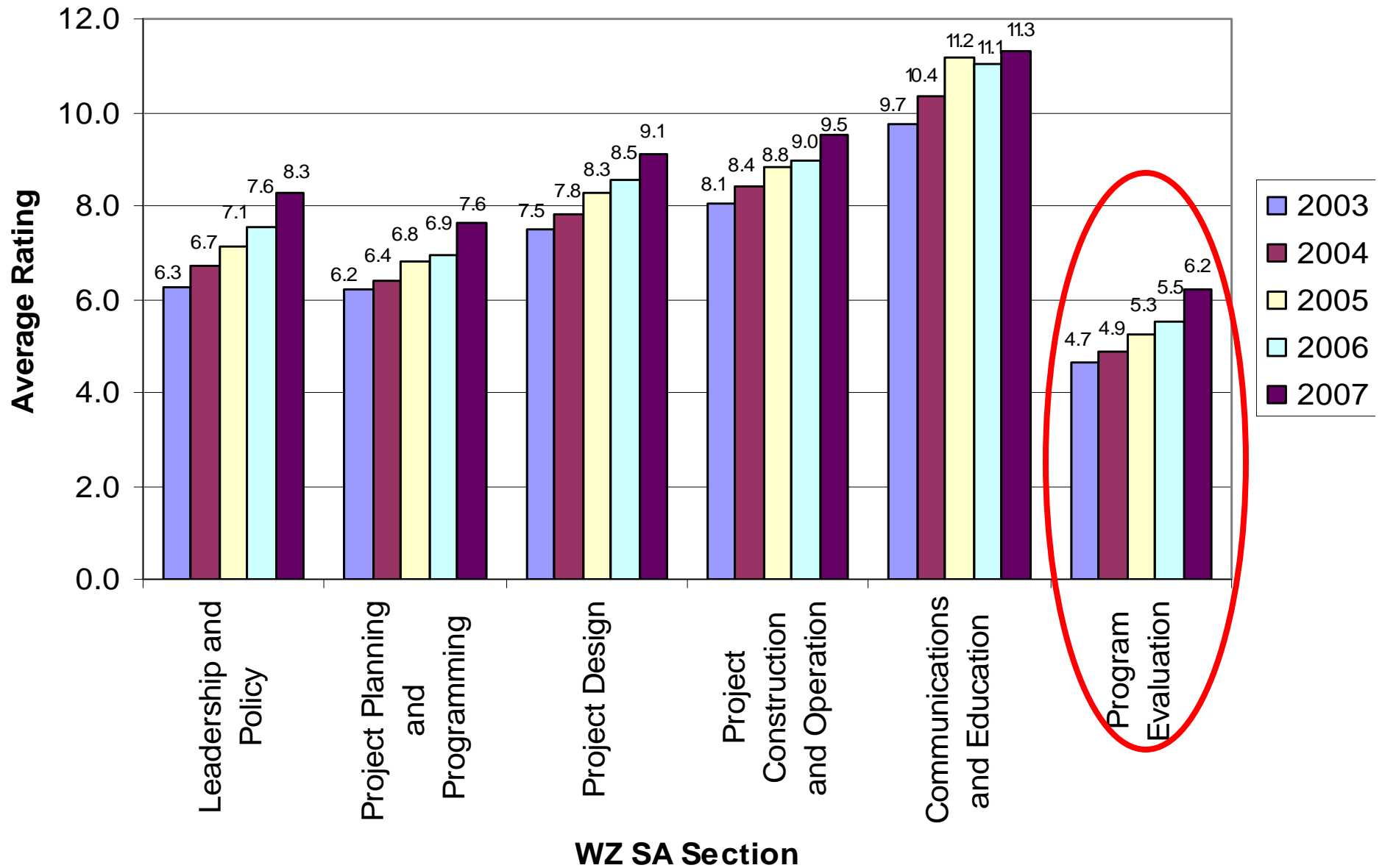


Yet...
work zone performance
monitoring is still a developing
area

How does
the driver
see our
work
zones?



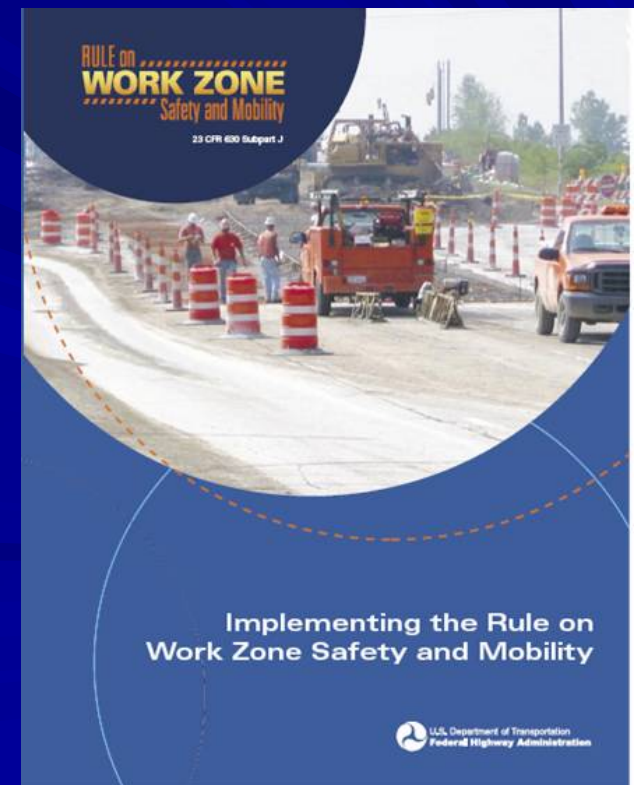
WZ Self Assessment Results



WZ Rule: WZ Data and PMs

- Rule Goal: Better understand and manage WZ impacts
- Related Provisions:
 - Impacts Assessment
 - Use of Data
 - Process Reviews
- Move practice forward

RULE on
WORK ZONE
Safety and Mobility



WZ Rule - Impacts Assessment

- Recommends that agencies develop/implement procedures **to assess WZ impacts in project development, and to manage safety and mobility during project implementation**
- Scope of procedures must be based on the characteristics of projects/project-classes
- In practice:
 - Requires some data and performance metrics
 - Possible use of analytical tools
 - Related to agency policies



WZ Rule Data Provisions

- Requires agencies to use WZ data at both the *project* and *process-levels* to manage and improve work zone safety and mobility
 - *Project level: Improvements while projects are underway*
 - *Process level: Broad improvements over time*
- Recommends that agencies maintain data and information resources that are necessary to support the use of WZ data for the above activities
- Does not require the reporting or submission of WZ data



Using WZ Data at the **Project-Level**

- Requires agencies to use field observations, available WZ crash data, and operational information **to manage WZ impacts for specific projects during implementation**
- Use of WZ data should support efforts to:
 - *Manage the safety and mobility impacts of projects more effectively during implementation*
 - *Develop a basis for procedures to assess work zone impacts in project development*
- Does not require additional data collection during project implementation, but rather the use of available information
 - *However if little or no data are available, some new collection or tracking may be needed.*



Using WZ Data at the **Process-Level**

- Requires agencies to continually pursue improvement of WZ safety and mobility by analyzing WZ crash and operational data from multiple projects **to improve agency processes and procedures**
- Use data from multiple projects to:
 - Identify trends and determine if there are common problems that could be remedied by a change in policy/practices/specs
 - Support post-construction evaluations, process reviews, development of lessons learned - and use results to improve agency policies/procedures
- Data typically becomes available during project implementation and needs to be retained for later analyses



WZ Rule – Process Reviews

- Requires agencies to do a process review at least every 2 years
- Should lead to improvements in agency WZ processes and procedures, data/information resources, training programs – and ultimately enhance safety and mobility on current and future projects
- Performance assessment may involve: 1) Overall WZ management processes, and 2) WZ field performance and management strategies, and may include:
 - Collection of data including project-related information and public and stakeholder perception
 - Synthesis/analysis of data at multiple levels (project, local, regional, State, and national) and comparison of findings to performance metrics
 - Application of results to continually improving WZ practices, policies, procedures
- Key performance measure areas: safety, mobility, construction efficiency/effectiveness, public perception and satisfaction



WZ Performance Monitoring Challenges

- Lack of data
- Limited personnel/infrastructure to gather data
- Difficulty in assessing impacts and estimating performance
- Unknown effectiveness of WZ strategies
- No agreed-upon metrics
- Lack of agency support



FHWA Current WZ PM Efforts

- WZ performance measures pilot test (Jerry)
 - Looks at metrics and data options (sources available, relative ease of collection, detail and accuracy of data, tips, lessons learned)
- Sharing examples and best practices (Dave)
- Tracking the state-of-the-practice
 - Talking to FHWA Divisions and State DOTs
 - WZ Process Reviews
 - WZ Self Assessment

