



Work Zone Safety and Mobility Rule

23 CFR Section 630, Subpart J

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Sacramento WZ Traffic Modeling Workshop

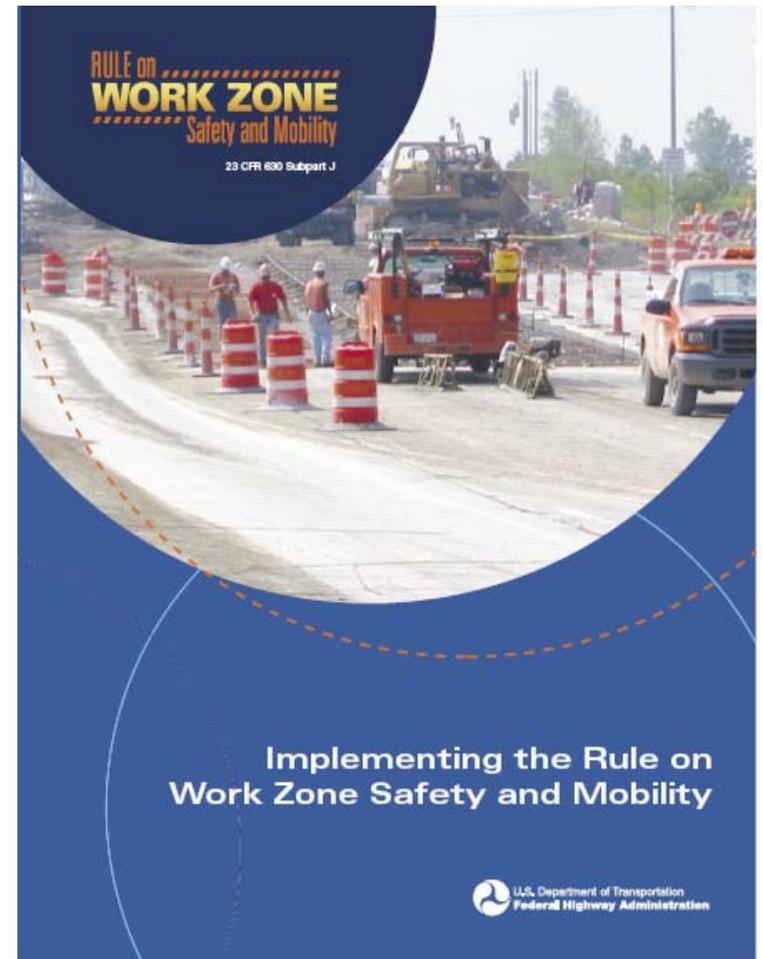
March 20, 2007

Topics

- Overview of the WZ Rule
- Resources to Help with Rule Implementation
- Relationship to Traffic Modeling



WZ Safety and Mobility Rule Overview



Overview of the Updated Rule

- **Establishes requirements and provides guidance for:**
 - Systematically addressing WZ safety and mobility impacts
 - Developing strategies to help manage these impacts
- **Applies to all Federal-aid highway projects**
- **Timeframes**
 - Published Final Rule September 2004
 - Must implement rule provisions by October 2007
- **“Must implement” means:**
 - Recipients of Federal-aid funds will adapt practices & policies
 - These emerge as internal business changes and contract changes

Key Concepts Advocated by the Rule

We can be more effective in reducing WZ safety and mobility impacts if we:

- **Better understand, anticipate, and plan for the impacts**
- **Do so early in the program delivery process**
- **Consider solutions that go beyond the immediate location of the work zone**
- **Integrate this thinking into the agency/DOT culture**

Rule Provisions – In a Nutshell



Rule Provisions in a Nutshell

- **Develop & Implement a WZ Policy**
- **Develop & Implement Agency Procedures**
 - *WZ impacts assessment & management*
 - *Training*
 - *Use of safety & operational data*
 - *Process reviews*
- **Develop & Implement Project Procedures**
 - *Identify significant projects*
 - *Develop transportation management plans (TMPs)*

Agency WZ Safety and Mobility Policy

- **Develop/Implement a policy for the systematic consideration and management of WZ impacts**
- **May vary based on project characteristics and expected WZ impacts**
- **Can be in the form of processes, procedures, and/or guidance**

Agency-Level Processes and Procedures

- **Agency processes and procedures help:**
 - Institutionalize, streamline, and standardize WZ safety and mobility practices
 - Support decision-making during the different stages of program and project delivery
- **Rule specifically addresses agency processes and procedures for:**
 - WZ assessment and management (encouraged)
 - Use of WZ data (required)
 - WZ related training (required)
 - Conducting process reviews (required)

What is WZ Impacts Assessment?

- **Process of understanding the safety and mobility impacts of a road construction, maintenance, or rehabilitation project**
- **Factors that will influence the level of impacts caused by a WZ include:**
 - Traffic conditions and characteristics
 - Project characteristics
 - Geographic/physical features
 - Aspects of the surrounding area (e.g., alternate routes, nearby businesses)
- **May involve a high-level, qualitative review of these factors for some projects, and a detailed quantitative analysis using modeling and/or simulation tools for other projects**

Impacts Assessment & the WZ Rule

- Rule encourages agencies to develop and implement systematic procedures for WZ impacts assessment and management
- Does not prescribe a specific approach



Training Element

States shall require that personnel involved in the development, design, implementation, operation, inspection, and enforcement of work zone related transportation management and traffic control be trained, appropriate to the job decisions each individual is required to make.

- **This may mean:**
 - **States/agencies change internal practices**
 - Training needs assessments
 - Training programs (new or modified)
 - **Develop or adapt contract language**



Use of WZ Data

- **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 (trends)
- **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 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 WZ 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.**
- **Project-level data/information from multiple projects may be compiled and analyzed to identify trends and determine if there are common problems that could be remedied by a change in policy or practices.**

WZ Process Reviews

- **Requires agencies to perform a process review at least every 2 years to assess the effectiveness of their WZ safety and mobility procedures.**
- **Process review results are intended to:**
 - Lead to improvements in agency WZ processes and procedures, data and information resources, and training programs
 - Ultimately enhance efforts to address safety and mobility on current and future projects.

Project-Level Procedures

- **Identify significant projects**
- **Develop transportation management plans (TMPs) for projects**
- **Include appropriate TMP provisions in the PS&Es**
- **Implement and monitor TMPs for projects**
 - (e) Responsible persons. The State and the contractor shall each designate a trained person at the project level who has the primary responsibility and sufficient authority for implementing the TMP and other safety and mobility aspects of the project.

Significant Projects

- **Projects anticipated to cause sustained WZ impacts greater than what is considered tolerable based on state policy and/or engineering judgment**
- **Can be from an individual project or from the combined effects of other projects in the same area**
- **Automatically includes Interstate system projects within a Transportation Management Area (TMA) that:**
 - Occupy a location for more than 3 days
 - Have either intermittent or continuous lane closures
 - State may request an exception for a project meeting these criteria
- **Identify as early as possible**

What is a TMP?

A plan for managing WZ impacts

- **Set of coordinated transportation management strategies and how they will be used**
- **Must contain a temporary traffic control plan for all projects**
- **Transportation operations and public information components:**
 - Required for significant projects
 - Encouraged to consider for other projects

Possible TMP Management Strategies

I. Temporary Traffic Control Strategies

- I. Control Strategies (e.g., nightwork, ramp closures, alternate routes)
- II. Traffic Control Devices
- III. Project Coordination, Contracting, and Innovative Construction

II. Public Information Strategies

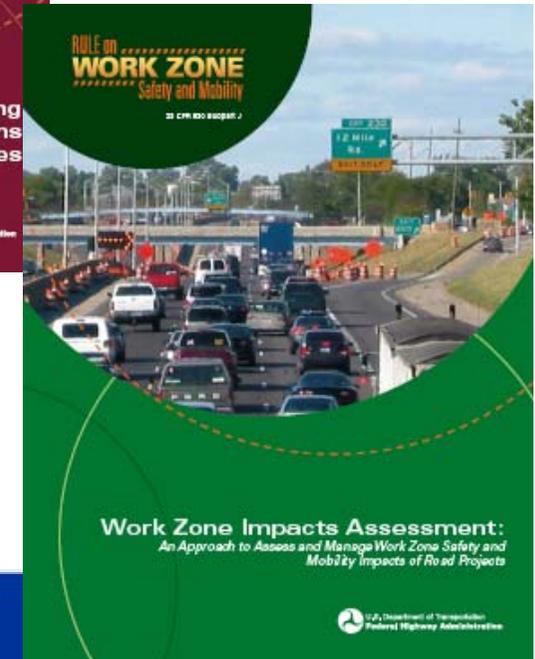
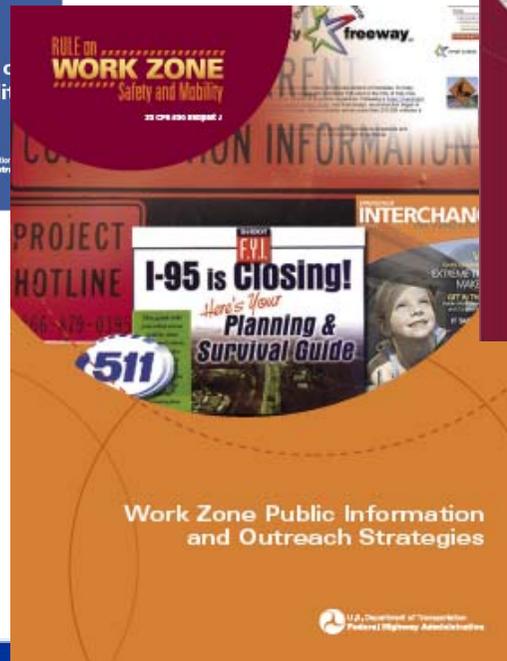
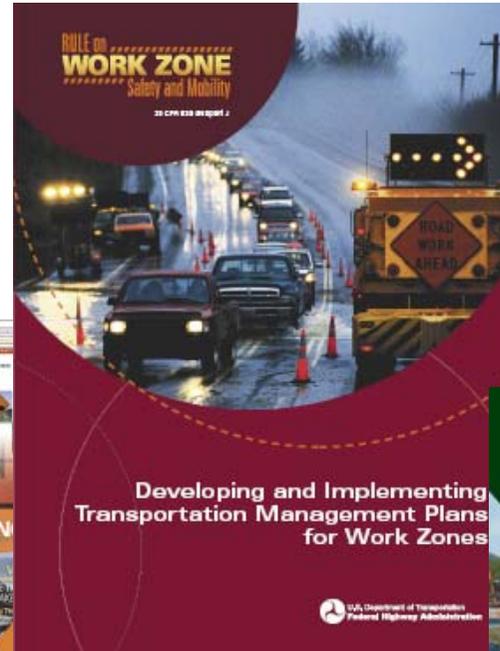
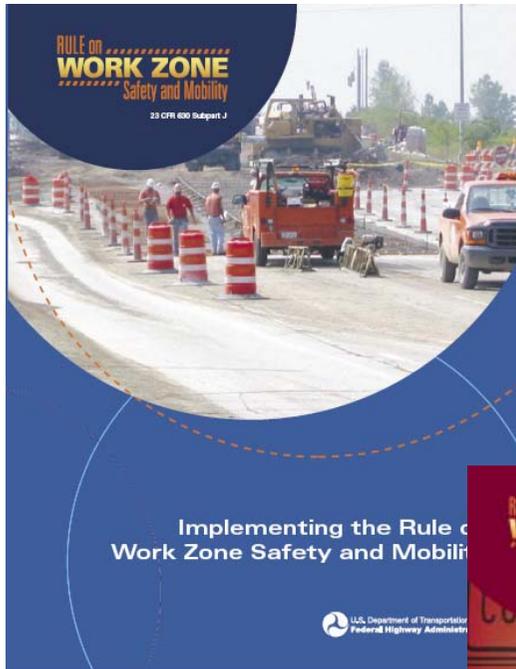
- I. Public Awareness
- II. Motorist Information

III. Transportation Operations Strategies

- A. Demand management
- B. Corridor/network management (traffic operations)
- C. Work zone safety management
- D. Traffic/incident management and enforcement

RULE on WORK ZONE Safety and Mobility

Implementation Resources

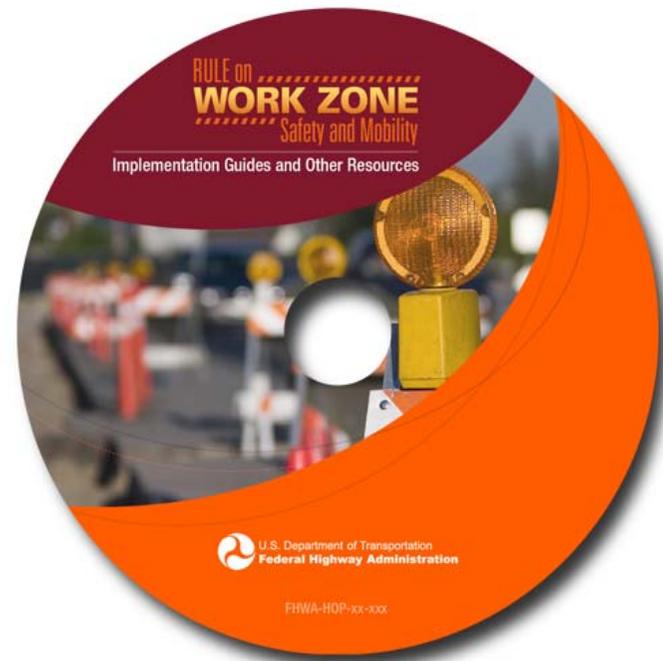


Implementation Guidance

- **Overall Guide - Implementing the Rule on WZ Safety and Mobility**
- **Technical Guides:**
 - **WZ Public Information and Outreach Strategies**
 - **Developing and Implementing Transportation Management Plans (TMPs) for WZs**
 - **WZ Impacts Assessment: An Approach to Assess and Manage WZ Safety and Mobility Impacts of Road Projects**
- **Frequently Asked Questions (FAQs)**

Additional Tools/Resources

- Resource CD
- Compliance Checklist
- NHI Advanced WZ Course
- Evaluating Need for Other Materials



Ongoing Implementation Support

- **Distributing Implementation Guides**
- **Updating FAQs**
- **Sharing Examples**
- **Providing Technical Assistance**
- **Presentations at Selected Conferences**
- **Monitoring Progress**

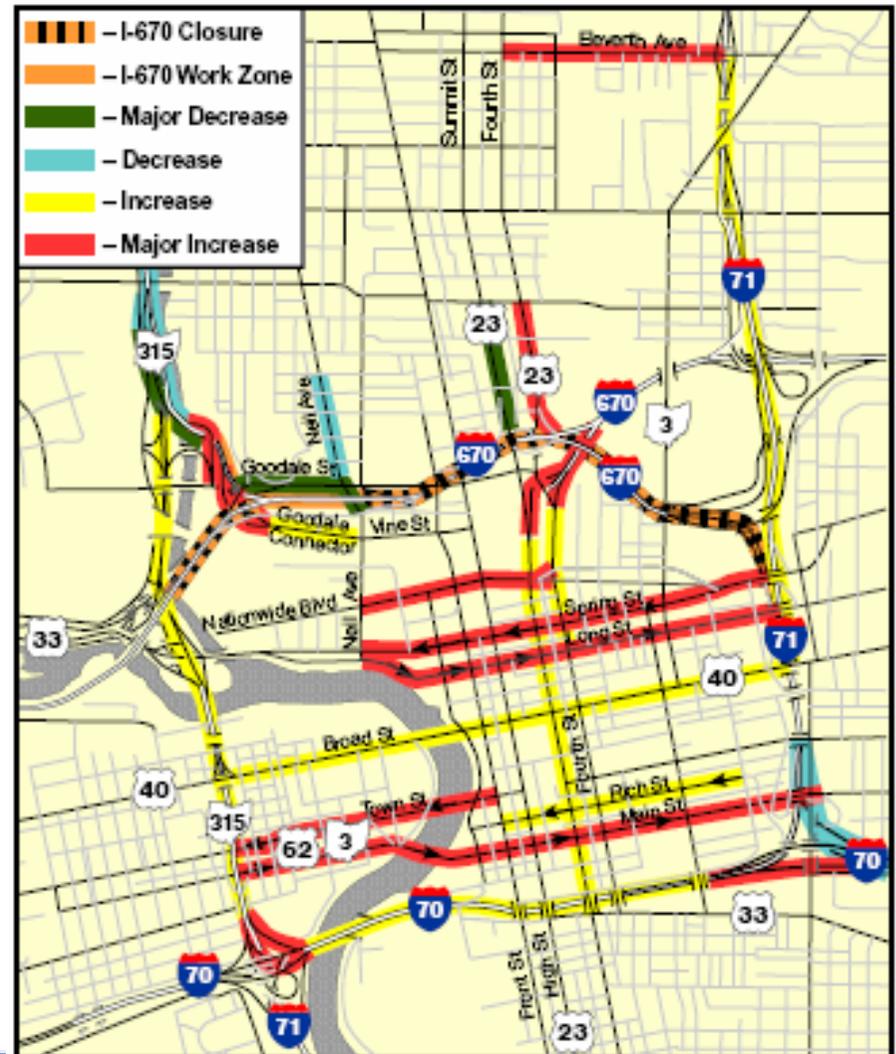
Where Are States in Implementing the Rule?

- **Many States formed a workgroup to implement the Rule**
- **Many States anticipate a year to fully develop all aspects of their policy and implement it**
- **Almost all States are well-underway**
 - There are a few who are not
 - At least 7 have completed their policy
 - At least 2 have achieved compliance

RULE on
WORK ZONE
Safety and Mobility

WZ Rule →
WZ Impacts Assessment
→ Traffic Modeling

Where Will Traffic Go?



What is WZ Impacts Assessment?

- **Process of understanding the safety and mobility impacts of a road construction, maintenance, or rehabilitation project**
- **Factors that will influence the level of impacts caused by a WZ include:**
 - Traffic conditions and characteristics
 - Project characteristics
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- **May involve a high-level, qualitative review of these factors for some projects, and a detailed quantitative analysis using modeling and/or simulation tools for other projects**

Why Assess WZ Impacts?

- **Current and future WZ safety and mobility issues demand it:**
 - Growing traffic volumes and congestion, little growth in road miles
 - More WZs
 - More work is on existing roadways, affecting traffic
 - WZ safety is a concern: Avg 41,000 injuries and 1000 fatalities in WZs each year
 - Travelers are frustrated with delays and unexpected road conditions from WZs
- **To meet 1) safety and mobility needs during highway maintenance and construction, and 2) expectations of the traveling public, we need to:**
 - Systematically assess the WZ impacts of projects
 - Take appropriate action to manage these impacts (TMPs)
- **Help identify significant projects**

Why have WZ Assessment Procedures?

- **WZ assessment and management procedures can provide a framework within existing project development processes to help agencies:**
 - Understand WZ safety and mobility impacts of road projects
 - Understand WZ safety and mobility implications of alternative project options and design strategies
 - Identify transportation management strategies that help manage WZ impacts of a project
 - Estimate costs and allocate appropriate resources for the implementation of the WZ management strategies

Tools to Assess WZ Impacts

- **Agencies are encouraged to look at developing or modifying existing tools to meet their needs. Some tools that can be used alone or in combination are:**
 - Sketch-planning and systems planning analysis tools like travel demand modeling tools, the ITS Deployment Analysis System (IDAS), etc.
 - Higher-level project impacts analysis tools like Highway Capacity Manual (HCM)-based tools, QuickZone, QUEWZ, Micro-BenCost, etc.
 - Operational-level traffic analysis and simulation tools like VISSIM, PARAMIX, CORSIM, NETSIM, etc.
 - CA4PRS – Construction Analysis for Pavement Rehabilitation Strategies
 - Others

WZ Impacts Assessment – State of Practice

Current practices vary widely

More common:

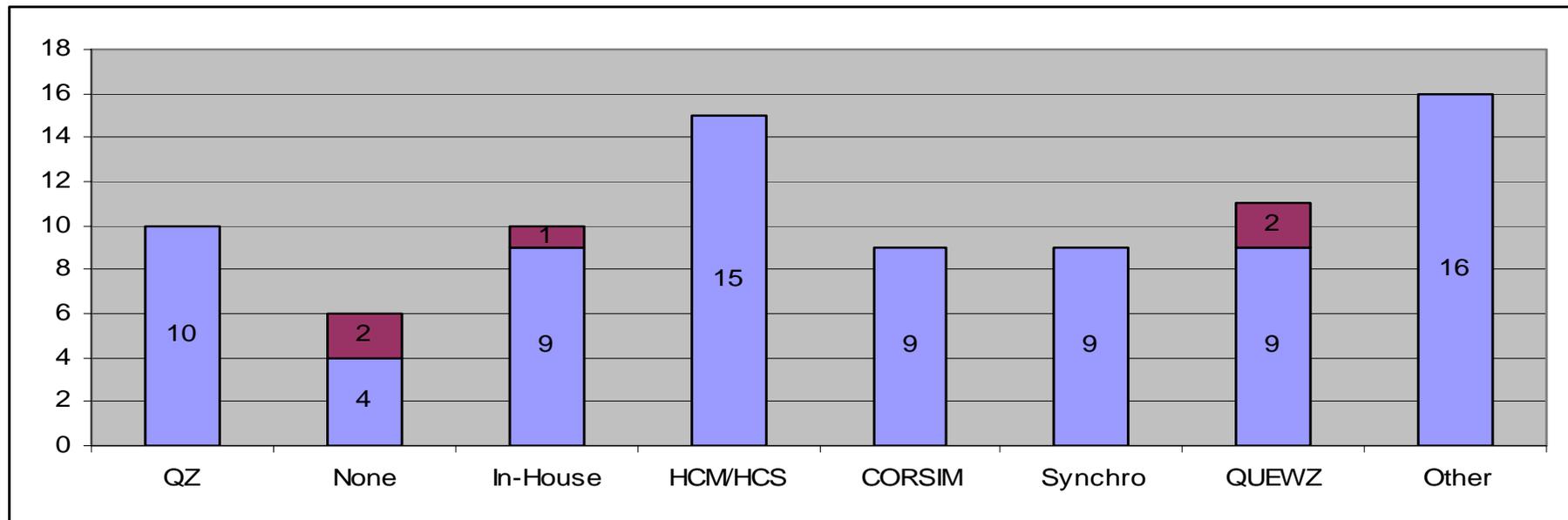
- **Basic capacity analysis for permitted lane closure maps**
- **Basic delay/road user cost estimates for calculating lane rental and damages**
- **Gut feel, Engineering judgment, Experience**

Less common:

- **Regular use of modeling in a consistent way**
- **Modeling for other than major projects**
- **Simulation modeling**

Use of Modeling Tools: What we Know

- 40 – 42 States are using some WZ traffic analysis tool(s)
- 4 – 6 States are currently not using any analysis tools
- 6 States - no data available on analysis tool use



Rule Web Site Content

http://www.ops.fhwa.dot.gov/wz/resources/final_rule.htm

- Implementation Guides (4)
- FAQs
- Brochure and fact sheets
- Rule language
- Presentations on the Rule
- Examples



FHWA Work Zone Web Site

<http://www.fhwa.dot.gov/workzones>