



Federal Highway Administration, USDOT

**Making Work Zones Work Better:
The Final Rule on Work Zone
Safety and Mobility**

Updates to 23 CFR Section 630, Subpart J

*Presented by
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FHWA

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I am going to talk about the recently published work zone safety and mobility rule today, but before I get into the rule I want to put it in context. The overall goal of our FHWA work zone program is to “make work zones work better,” to reduce congestion and crashes due to work zones. The rule is only one tool, if you will, for helping to “make work zones work better.” In line with the title of today’s session, our hope is that the rule will help foster the use of good work zone management strategies that can reduce congestion in and around work zones.



Agenda

- Why update the work zone rule
- Overview of the final rule
- Influence on project delivery
- Outreach and implementation guidance

Why Update the Work Zone Rule

- Former rule dated
 - Original publication 1978
 - Minor amendments 1982 and 1986
- Work zones have changed
 - 70's was a decade of Interstate construction and completion
- Congressional intent expressed in ISTEA of 1991
 - Review current work zone problems and update the regulation



Rules, unlike the amendments to the constitution or the Bill of Rights, have a shelf life. The former rule outlived its shelf life. 25 years elapsed from the year the former rule was published in 1978 to the year the current rule was published (2004).

The 70's was a decade of Interstate construction and completion. Much of this construction was on new alignment.

Why Update the WZ Rule

- Legislative requirement
 - Congress required the FHWA to review current work zone problems and update the regulation to:

“Better reflect current needs for improved safety and to minimize disruptions to traffic during the construction of highway projects”

- So, we were told to update the regulation, but
- We also believe that it makes good sense to update it

We also believe that it makes good sense to update it, that it can help “make work zones work better.”

Why Update the WZ Rule

Influencing Factors:

- Growing traffic volumes and congestion
 - Vehicle travel up, but very little growth in road miles
- Our highways are approaching middle age
 - More construction and repair needed = more work zones
- More work is done under traffic
 - Compressed contractor schedules
 - Increasing night work
- Work zone safety continues to be a concern
 - Over 41,000 injuries and 1028 fatalities in 2003
- Travelers are not happy with work zones
 - Unexpected road conditions and inconsistency cause traveler frustration



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NOTES on “growing traffic volumes and congestion”

- Between 1980 and 2001, vehicle miles traveled increased by 82 percent, while highway lane miles only increased 4.2 percent during the same period.
- About 20 percent of the National Highway System (NHS) is under construction during the peak summer road work season.
- Work zones are estimated to account for nearly 24% of non-recurring delay and 10% of all congestion. 50% of all highway congestion is attributed to non-recurring conditions, such as traffic incidents, weather, special events and work zones.

NOTES on “more construction spending”

- Share of capital funds used for system preservation rose from 47.6 percent in 1997 to 52.0 percent in 2000.

NOTES on “more work is done under traffic”

- With more money being spent on system repair, it follows that more work is being done on roads that carry traffic. This leads to pressure to get the work done more quickly or do it at times when the road is carrying less traffic, like at night.
- Doing more work under traffic also leads to safety concerns.
- 53 percent of work zones are designated as day work, 22 percent as night work, and 18 percent are active all day or nearly all day (18 or more hours).

NOTES on “work zone safety is still an issue”

- In 2003, 1028 fatalities and over 41,000 injuries resulted from crashes in work zones
- In 2002, 1,181 fatalities and 52,000 injuries resulted from crashes in work zones
- In 2001, 1,079 fatalities & 40,000 injuries
- In 1999, 868 fatalities & 39,000 injuries

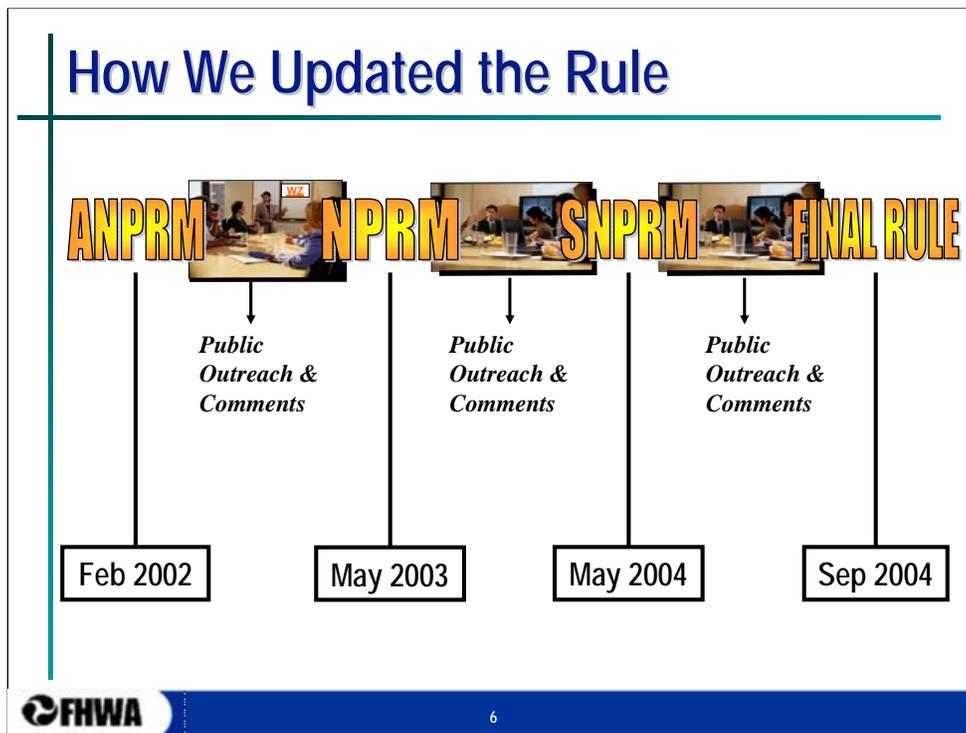
NOTES on “customers aren’t too happy either!”

The American public cited work zones as second only to poor traffic flow in causing dissatisfaction in a 2000 traveler survey

We hope that this rule serves as a tool for reducing congestion and crashes in work zones.

NOTE: All these statistics are from different sources and have been compiled on the FHWA Work Zone Website at http://ops.fhwa.dot.gov/wz/resources/facts_stats.htm

How We Updated the Rule



NOTES on “ANPRM” (*Solicited comments, guidance and suggestions from industry on a wide range of WZ related issues*)

- Identified major considerations that affect:
 - Policy; Planning; Design; Traffic control and operations; Public information; and Performance reporting
- Over-arching theme to reduce need for recurrent roadwork, duration of work zones, and disruption due to work zones
- Issues posed as questions to elicit comments, guidance, and suggestions

NOTES on “NPRM” (*Expanded key provisions to include: State-level and project-level provisions, work zone impacts, and Transportation Management Plans (TMPs)*)

- Addressed separate “policy-level” and “project-level” requirements
- Policy level provisions consisting of:
 - WZ safety and mobility policy; Training; Process review and evaluation; and WZ performance data
- Project level provisions consisting of:
 - WZ impacts analysis; TMP (TCP, TOP, PIOP); Pay items; Responsible persons

NOTES on “SNPRM” (*Addressed issues of flexibility, scalability, and documentation*)

- Responded to issues of “Flexibility and Scalability”
 - Clarified language for appropriate application to different project types (for e.g., the concept of significant projects was introduced)
- Removed “ambiguous terms” that could be interpreted subjectively (e.g., “assure,” “ensure.”)
 - Ambiguous terms → subjective interpretation → potential liability
- Removed “overall negative tone” from rule language
- Reduced “Documentation Requirements”
 - For e.g., removed the need for 3 separate plans in the TMP -- TCP, TOP and PIOP

NOTES on Final Rule (*Fine-tuned language in response to SNPRM comments*)

Fine tuned and clarified language for final publication.

Making the New Rule

- Industry participation sought
 - Consultation through national highway work zone safety program – 1995
 - Viewpoints sought through advance notice – 2002
 - Draft rule published and more comments sought – 2003
 - Redrafted rule published and more comments sought – 2004

Overview of the Final Rule

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

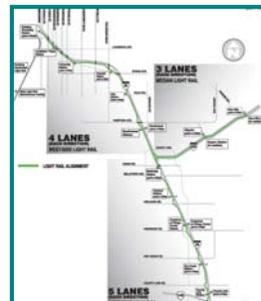


All state and local governments that receive federal-aid highway funding are required to comply with the provisions of the rule no later than October 12, 2007.

Overview of the Final Rule

Goal: To Make Work Zones Work Better by...

- **Expand thinking beyond the Construction Work Zone**
 - Shift considerations into project planning
 - Corridor, network, and regional issues
- **Expand Work Zone management beyond "traffic safety and control"**
 - Address mobility AND safety
 - Improve traveler satisfaction
 - Comprehensive planning for work zone impacts
 - Address current day issues with "operations and management" and "public information"
- **Advocate innovative thinking in WZ planning, design, and management**



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NOTES ON "EXPAND THINKING BEYOND THE WZ ITSELF"

- At the WZ level:
 - It is important to provide for road user accessibility, safety, and mobility
 - It is important to provide for a safe and accessible WZ for highway workers
- But, we need to understand that the WZ is part of a larger transportation network, and that there are corridor, network, and regional issues that need to be addressed, for e.g.,
 - Impacts on parallel corridors and alternate routes and modes; Impact of high truck volumes; Occurrence of special events; etc.

NOTES ON "EXPAND WZ MANAGEMENT BEYOND TRAFFIC SAFETY AND CONTROL"

- Following the same line of thought, at the WZ level:
 - We need to provide for safe and efficient passage through the WZ. For e.g., WZ and work area configuration, tapers, lane closure widths, etc.
- But we also need to provide for sustained operations and management of the WZ and the areas the WZ impacts. E.g.,
 - Using ITS to monitoring and manage WZ traffic; Adjusting traffic signal timing on alternate routes; Coordinating with regional Transportation Management Centers (TMCs); WZ incident management plans; etc.
- Further, we need to keep the public informed and updated, and if required, involve them. E.g.,
 - Public information prior to and during work; Information on alternate routes and alternate modes; Public input and feedback programs; etc.

The greater consideration of work zone impacts that is fostered by the rule should lead to reduced congestion from work zones.

NOTES ON "ADVOCATE INNOVATIVE THINKING IN WZ PLANNING, DESIGN, AND MANAGEMENT"

- We don't always have to think within the scope of the "traffic and traffic management box." There are several innovative design, procurement, and construction strategies that help provide for safe and efficient WZs. For e.g.,
 - Nighttime and weekend work; Full road closures; Long-life materials and design options; Accelerated construction techniques like pre-cast concrete members; Innovative contracting methodologies like design-build, A+B bidding, lane-rentals, incentive/disincentive contracting; etc.

Overview of the Final Rule

Specific Focus Areas:

- Institutionalize WZ processes, procedures, practices
- Advocate partnership, and multi-disciplinary approach
- Communicate more effectively with the public
- Advance WZ considerations throughout project delivery
- Address needs for different project types and classes
- Emphasize work zone focused training
- Emphasize performance monitoring and assessment



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NOTES:

- Institutionalize planning, design, and operational strategies that help reduce congestion and crashes due to work zones (WZs). With the changing face of our public agencies, the high rate of retirements and turn-over within state DOT's, and the expanded use of consultants to do more of the traditionally in-house work, we need to have processes and practices institutionalized. This is reflected through the state-based work zone policy component of the rule.
- Advocate a mood of partnership between project owners, relevant stakeholders, and contractors
- Improve public communication and outreach on WZs. This approach is perhaps the biggest bang for the buck on providing effective work zone transportation management. Give the traveler the information they need to make good travel decisions. This also applies to businesses, and those that provide goods and services. Let them know what is going on so they can plan!
- Advance WZ considerations as early as practical/possible in project delivery
- Allow for provisions that suit different project types and classes
- Emphasize importance of training. With a younger work force, high turn-over, and use of more consultants it is very important to be properly trained. Everyone in the project delivery process should have task appropriate work zone training.
- Emphasize importance of performance monitoring and assessment. If you don't measure it you really don't know how well it is performing. Measurements can be observational or analytical.
 - On ongoing projects should be monitored for safety and performance. Make changes that need to be made to improve the safety and performance in accordance with your agencies safety and performance policy or policies.
 - As you collect work zone safety and performance information and data USE IT to IMPROVE future project's work zones.

Provisions – In a Nutshell



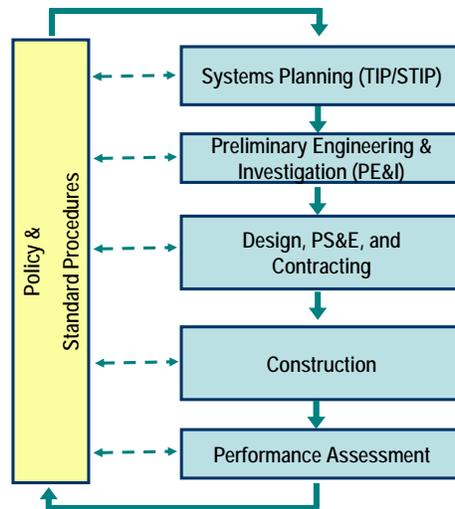
The Rule has 3 primary focus areas:

- Development and implementation of an overall, state-based work zone safety and mobility policy;
- Development of standard processes and procedures.
- Development of project-level procedures to address work zone impacts.

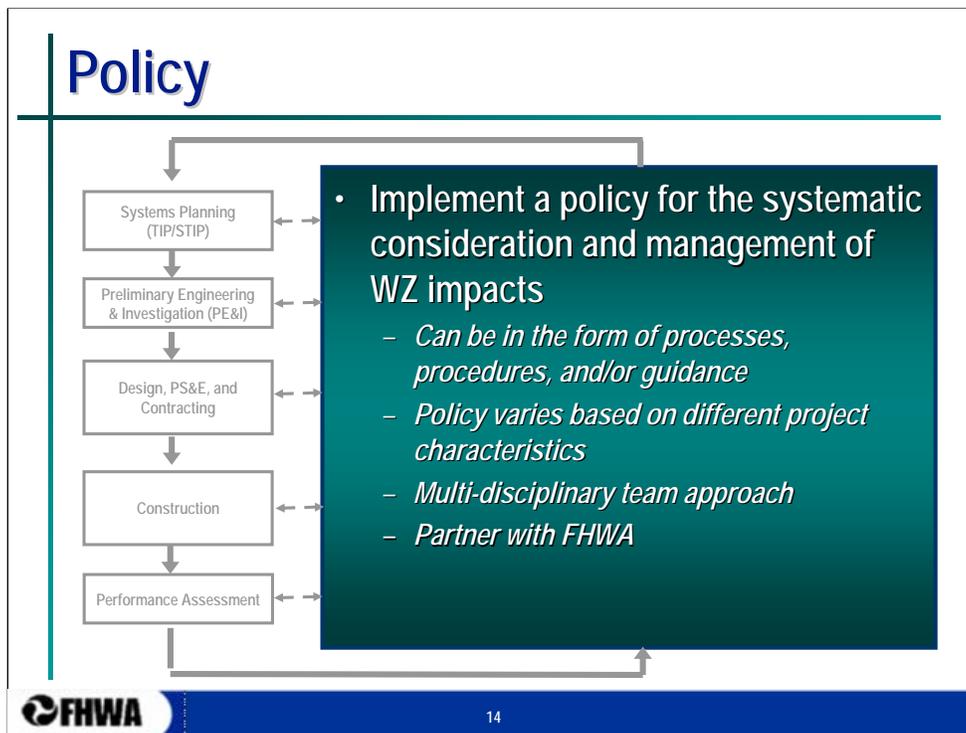
The Policy the State develops and implements will guide and influence its standard processes and procedures, which in turn also guide what the state does at the project level. In turn, as the agency sees how certain project-level efforts work in the field, it can use that information over time to refine its work zone policy and higher level processes and procedures. Dave's example of the crash data analysis in Ohio shows how a discovery on one project could lead to changes at a broader level.



Project Delivery Cycle



- This diagram is a simplistic illustration of the project execution process. Each box indicates a process and arrows indicate the general flow. The Policy & Standard Procedures box illustrates how these items influence many, if not all, of the project delivery processes.



The **development and implementation of an overall, state-level work zone safety and mobility policy** is at the heart of the entire rule. A work zone safety and mobility policy is necessary to support systematic consideration of work zone impacts across all stages of project development and to address the safety and mobility needs of road users and workers. The policy will help states institutionalize planning, design and operational strategies that help reduce congestion and crashes due to work zones.

The State is the action office when it comes to developing the appropriate work zone policy to address and manage work zone impacts. The rule provides direction on areas the state shall address in their work zone policy but the specifics are up to them to define. The Policy:

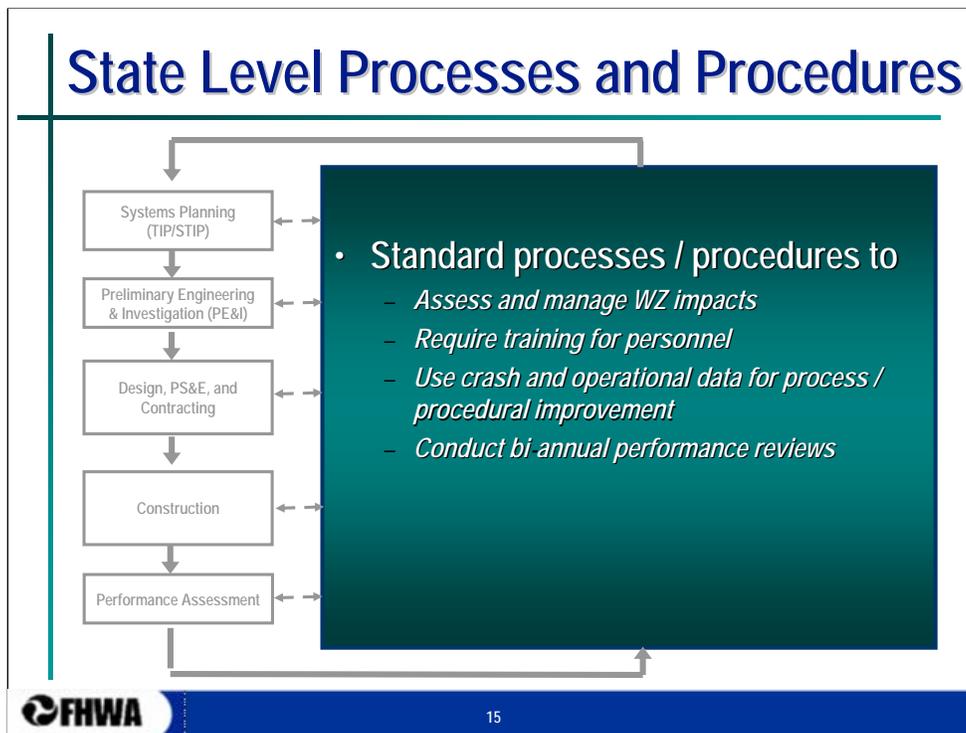
- Needs to provide for addressing WZ impacts throughout project development and implementation;
- May take the form of processes, procedures, or guidance; and
- May vary based on different project characteristics (classes of projects).

States should institute this policy using a multi-disciplinary team and in partnership with the FHWA. While the policy must apply to all Federal-aid highway projects, states may find that it makes sense and is beneficial to apply it to non-Federal projects as well.

Note: Some states have a problem with the term “Policy” due to state law and other governing factors, so there is language that says that the policy may take the form of processes, procedures, and/or guidance. No matter what it is called it will still be state’s guiding document on work zone management on all Federal-aid highway projects.

•§ 630.1006 Work zone safety and mobility policy.

•Each State shall implement a policy for the systematic consideration and management of work zone impacts on all Federal-aid highway projects. This policy shall address work zone impacts throughout the various stages of the project development and implementation process. **This policy may take the form of processes, procedures, and/or guidance,** and may vary based on the characteristics and expected work zone impacts of individual projects or classes of projects. The States should institute this policy using a multi-disciplinary team and in partnership with the FHWA. The States are encouraged to implement this policy for non-Federal-aid projects as well.



This provision of the rule addresses the development of standard processes and procedures, including to assess and manage work zone impacts, use safety and operational data, require training, and conduct process reviews.

Processes and Procedures to Implement and Sustain WZ Policy

- Systematic procedures to assess and manage WZ impacts
- Use available project data and information to manage impacts during implementation
- Analyze data from multiple projects (post-hoc) to improve processes / procedures
- Require training for personnel (appropriate to job responsibilities and decisions)
- Conduct reviews to improve WZ processes and procedures

§ 630.1008 State-level processes and procedures.

- (a) This section consists of State-level processes and procedures for States to implement and sustain their respective work zone safety and mobility policies. . . .
- (b) Work zone assessment and management procedures. States should develop and implement systematic procedures to assess work zone impacts in project development, and to manage safety and mobility during project implementation. . . .
- (c) Work zone data. States shall use field observations, available work zone crash data, and operational information to manage work zone impacts for specific projects during implementation. . . .
- (d) Training. 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. . . .
- (e) Process review. In order to assess the effectiveness of work zone safety and mobility procedures, the States shall perform a process review at least every two years.

Impacts Assessment

- Encourages agencies to develop and implement procedures for WZ impacts assessment
- Does not prescribe a specific approach
- Assessing WZ impacts intended to help transportation professionals:
 - 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



§ 630.1008 State-level processes and procedures.

(a) This section consists of State-level processes and procedures for States to implement and sustain their respective work zone safety and mobility policies. State-level processes and procedures, data and information resources, training, and periodic evaluation enable a systematic approach for addressing and managing the safety and mobility impacts of work zones.

(b) *Work zone assessment and management procedures.* States should develop and implement systematic procedures to assess work zone impacts in project development, and to manage safety and mobility during project implementation. The scope of these procedures shall be based on the project characteristics.

In addition to the areas benefits mentioned on the slide, Assessing WZ impacts may also help with:

- Identifying significant projects
- Developing a suitable TMP for a road project
- Implementing a TMP and manage the impacts of a project during construction
- Providing guidance to post-construction performance assessment

Project-Level Provisions

- Identify *significant projects* early in the project development process.
- Develop transportation management plans (TMPs)
- Include the TMP, or provisions for contractor to develop a TMP, in the PS&Es
- In PS&Es include pay item provisions for implementing the TMP—either unit pay items or lump sum pay items.
- Assign responsible person (state and contractor) to monitor the TMP and other safety and mobility aspects of the project



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Identify significant projects: Significant projects are those anticipated to cause sustained work zone impacts greater than what is considered tolerable based on state policy and/or engineering judgment.

TMPs: Consist of strategies to manage the work zone impacts of projects.

§ 630.1012 Project-level procedures.

(c) The Plans, Specifications, and Estimates (PS&Es) shall include either a TMP or provisions for contractors to develop a TMP at the most appropriate project phase as applicable to the State's chosen contracting methodology for the project. A contractor developed TMP shall be subject to the approval of the State, and shall not be implemented before it is approved by the State.

(d) The PS&Es shall include appropriate pay item provisions for implementing the TMP, either through method or performance based specifications.

(1) For method-based specifications individual pay items, lump sum payment, or a combination thereof may be used.

(2) For performance based specifications, applicable performance criteria and standards may be used (e.g., safety performance criteria such as number of crashes within the work zone; mobility performance criteria such as travel time through the work zone, delay, queue length, traffic volume; incident response and clearance criteria)

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.



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The identification of Significant Projects early in the project delivery process is one element that will effective allocation of resources later on in the project development and execution process.

§ 630.1010 Significant projects.

(a) A significant project is one that, alone or in combination with other concurrent projects nearby is anticipated to cause sustained work zone impacts (as defined in § 630.1004) that are greater than what is considered tolerable based on State policy and/or engineering judgment. Furthermore, all Interstate system projects within the boundaries of a designated Transportation Management Area (TMA) that occupy a location for more than three days with either intermittent or continuous lane closures are to be considered as significant projects.

(b) The applicability of the provisions in §§ 630.1012(b)(2) and 630.1012(b)(3) is dependent upon whether a project is determined to be significant. The State shall identify upcoming projects that are expected to be significant. **This identification of significant projects should be done as early as possible in the project delivery and development process, and in cooperation with the FHWA.** The State's work zone policy provisions, the project's characteristics, and the magnitude and extent of the anticipated work zone impacts should be considered when determining if a project is significant or not.

(c) All Interstate system projects within the boundaries of a designated

TMP Development

- **TMPs for significant projects must consist of:**
 - Temporary traffic control (TTC) plan
 - Transportation operations (TO) strategies
 - Public information (PI) strategies
- **TMPs for all other projects must consist of at least a TTC plan, and may include TO and PI strategies**

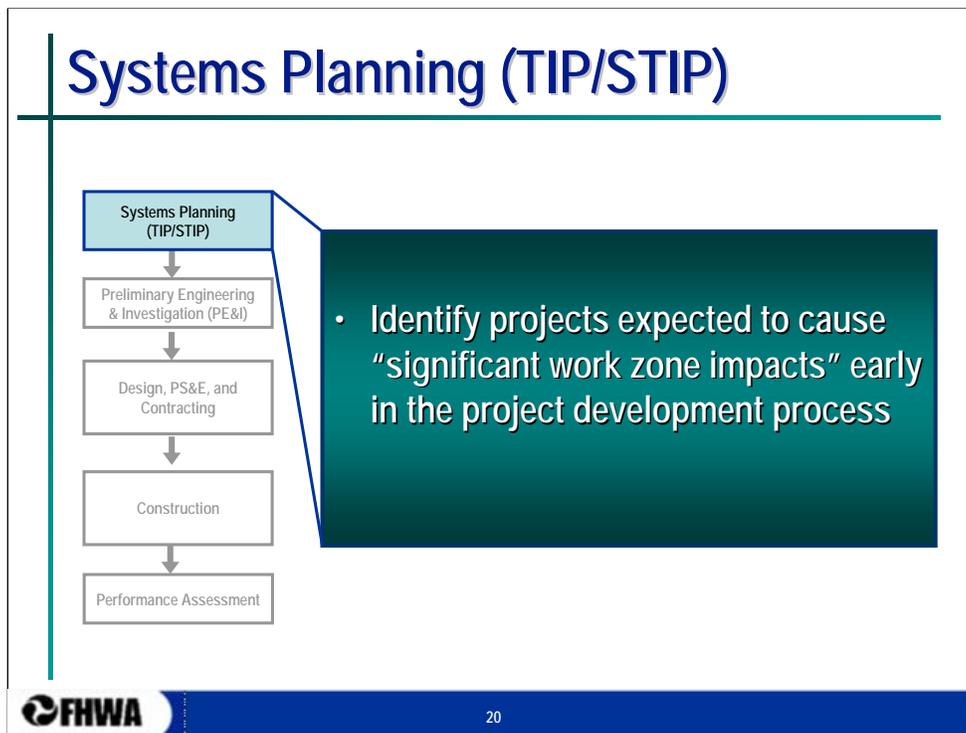


• **Transportation Management Plan (TMP).** A TMP consists of strategies to manage the work zone impacts of a project. Its scope, content, and degree of detail may vary based upon the State's work zone policy, and the State's understanding of the expected work zone impacts of the project. For significant projects (as defined in § 630.1010), the State shall develop a TMP that consists of a Temporary Traffic Control (TTC) plan and addresses both Transportation Operations (TO) and Public Information (PI) components. For individual projects or classes of projects that the State determines to have less than significant work zone impacts, the TMP may consist only of a TTC plan. States are encouraged to consider TO and PI issues for all projects.

• **Examples of TO strategies** include travel demand management, signal retiming, use of intelligent transportation systems (ITS), speed enforcement, and traffic incident management. The public information (PI) component addresses communication with the public and concerned stakeholders, both before and during the project, about the project, what to expect in and around the work zone, and available travel alternatives. Examples of PI strategies include using brochures, web sites, radio, and/or variable message signs to disseminate this information both pre-trip and in-route.

• **States should develop and implement the TMP** in sustained consultation with stakeholders (e.g., other transportation agencies, railroad agencies/operators, transit providers, freight movers, utility suppliers, police, fire, emergency medical services, schools, business communities, and regional transportation management centers).

• **For all projects a Temporary Traffic Control Plan will be prepared either by the state DOT or by the construction contractor using performance**



§ 630.1002 Purpose.

Work zones directly impact the safety and mobility of road users and highway workers. These safety and mobility impacts are exacerbated by an aging highway infrastructure and growing congestion in many locations. Addressing these safety and mobility issues requires considerations that start **early in project development** and continue through project completion.

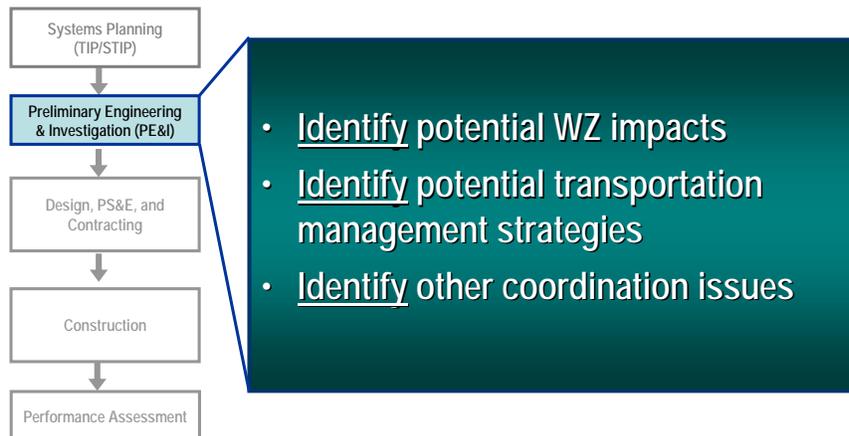
As I mentioned, the identification of Significant Projects early in the project delivery process is one element that will enable effective allocation of resources later on in the project development and execution process.

§ 630.1010 Significant projects.

(a) A significant project is one that, alone or in combination with other concurrent projects nearby is anticipated to cause sustained work zone impacts (as defined in § 630.1004) that are greater than what is considered tolerable based on State policy and/or engineering judgment.

(b) The applicability of the provisions in §§ 630.1012(b)(2) and 630.1012(b)(3) is dependent upon whether a project is determined to be significant. The State shall identify upcoming projects that are expected to be significant. **This identification of significant projects should be done as early as possible in the project delivery and development process, and in cooperation with the FHWA.** The State’s work zone policy provisions, the project’s characteristics, and the magnitude and extent of the anticipated work zone impacts should be considered when determining if a project is significant or not.

Preliminary Eng. / Investigation (PE&I)

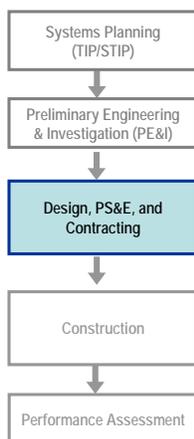


- This is the stage where the project starts to be further defined and the impacts of the work will have greater clarity. This stage may also be concurrent with the NEPA process
- It is critical to identify work zone mitigation strategies that will involve significant resources at this stage
- And to identify other coordination issues such as with utilities, enforcement agencies, special events in the community.

§ 630.1008 State-level processes and procedures.

- (b) Work zone assessment and management procedures. States should develop and implement systematic procedures to assess work zone impacts in project development, and to manage safety and mobility during project implementation. The scope of these procedures shall be based on the project characteristics.

Design, PS&E, and Contracting



- Assess WZ impacts (progressively and comprehensively)
 - Address alternative design, construction, contracting, and management strategies in the assessment
- Develop appropriate TMP
- Include appropriate TMP items in PS&E



• This stage of design is where concrete decisions are made that will influence the ultimate shape, duration, and operation of the resulting work zone(s). Taking the early planning and programming information, combining it with the preliminary investigation and engineering will facilitate effective work zone mitigation strategy development in the final design phase.

• A Transportation Management Plan or TMP consists of strategies to manage the work zone impacts of a project. Its scope, content, and degree of detail may vary based upon the State’s work zone policy, and the State’s understanding of the expected work zone impacts of the project. For significant projects, the TMP needs to consist of a Temporary Traffic Control (TTC) plan and address both Transportation Operations (TO) and Public Information (PI) components. For individual projects or classes of projects that the State determines to have less than significant work zone impacts, the TMP may consist only of a TTC plan. States are encouraged to consider TO and PI issues for all projects.

• The transportation operations (TO) component addresses operations and management of the transportation system in the work zone impact area. Examples of TO strategies include travel demand management, signal retiming, use of intelligent transportation systems (ITS), speed enforcement, and traffic incident management. The public information (PI) component addresses communication with the public and concerned stakeholders, both before and during the project, about the project, its expected work zone impacts, and changing conditions. Some examples of PI strategies include providing information about lane closings, traffic delay, or available travel alternatives, pre-trip via flyers and websites or in-route via electronic signs or radio. Implementing strategies like these has the potential to reduce congestion considerably. In some states people have been amazed when the work zone congestion problem everyone expected when a project started, never materialized after a good public information campaign. (full closures)

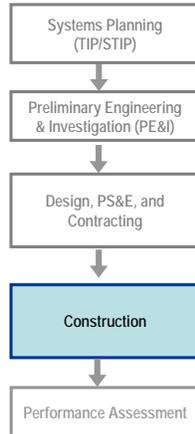
• At this phase, for significant projects, the transportation management strategies that will make up the TMP will be clarified and delineated into a final PS&E version of the TMP.

• For all projects a Temporary Traffic Control Plan will be prepared either by the state DOT or by the construction contractor using performance criteria developed by the state DOT that would be included in the PS&E. A TTC plan describes TTC measures to be used for facilitating road users through the work zone. The TTC plan plays a vital role in providing continuity of reasonably safe and efficient traffic flow and highway worker safety when a work zone temporarily disrupts normal flow.

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• The TTC plan shall be consistent with the provisions under Part 6 of the MUTCD and with the work zone hardware recommendations in Chapter 9 of the American Association of State Highway and Transportation Officials (AASHTO) Roadside Design Guide. Chapter 9, of the AASHTO Roadside Design Guide; Traffic Barriers, Traffic Control Devices, and Other Safety Features for Work Zones.

Construction



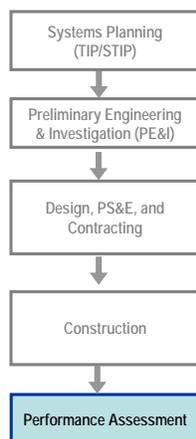
- Implement TMP requirements
- Monitor safety and mobility
 - Use field observations, crash data, and operational information to manage impacts
- Consult with appropriate stakeholders
- Review random projects as appropriate

•At the Construction stage the TMP is implemented. How well the TMP is working should be monitored, and adjustments made as needed. For example, if long queues are forming that were not anticipated, some adjustments to permitted lane closure times may be needed. This could affect both the current project and also lead to an adjustment to the state’s work zone policy or standard procedures.

•States should develop and implement the TMP in sustained consultation with stakeholders (e.g., other transportation agencies, railroad agencies/operators, transit providers, freight movers, utility suppliers, police, fire, emergency medical services, schools, business communities, and regional transportation management centers).

•Process review. . . . the States shall perform a process review at least every two years. This review may include the evaluation of work zone data at the State level, and/or review of randomly selected projects throughout their jurisdictions. . . .The results of the review are intended to lead to improvements in work zone processes and procedures, data and information resources, and training programs so as to enhance efforts to address safety and mobility on current and future projects.

Performance Assessment



- Analyze crash and operational data from multiple projects
 - *Towards improving processes and procedures*
- Maintain data and information resources to support improvements
- Conduct bi-annual process reviews
 - *WZ data analysis and/or project reviews*
 - *Improve WZ processes and procedures, data and information resources, and training programs*

§ 630.1008 State-level processes and procedures.

(c) Work zone data. States shall use field observations, available work zone crash data, and operational information to manage work zone impacts for specific projects during implementation. States shall continually pursue improvement of work zone safety and mobility by analyzing work zone crash and operational data from multiple projects to improve State processes and procedures. States should maintain elements of the data and information resources that are necessary to support these activities.

Conduct process reviews to assess the effectiveness of work zone safety and mobility procedures.

- California's assessment of TMP effectiveness is a good example of doing this.

Outreach and Implementation Guidance

Final Rule Implementation

- **Working with FHWA field offices and industry associations**
 - Held web conferences with Field for awareness, understanding of rule content and intent
 - Held workshops at AASHTO Annual Meeting (Sept 2004) and ARTBA WZ Conference
 - Work with FHWA Field to establish Field expertise
- **4 Guidance documents**
- **Brochure and fact sheets**
- **Presentations at conferences and on web conferences**
- **Materials being posted on FHWA WZ website**
- **Articles (ITE Journal, Public Roads, etc)**



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The brochure and fact sheets were initially distributed at the January 2005 TRB Annual meeting. They have been slightly modified and will be available in print and online by summer 2005.

The April 2005 ITE Journal article gave an overview of the entire rule.

The Sept/Oct Issue of FHWA's magazine, Public Roads will include a brief notice of the upcoming implementation guidance documents. An article about implementing the rule is planned for the Jan/Feb 2006 issue.

FHWA plans to print an article regarding the rule in its June issue of Focus magazine.

We hope to have other articles in journals and newsletters that focus on specific aspects of the rule.

Policy Workshops

- Held in conjunction with the Sept. 2004 AASHTO WZ Policy Task Force meeting and the November 2004 ARTBA meeting
- Gain Insight From States/Practitioners



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In coordination with the AASHTO Annual Meeting and the ARTBA meeting, FHWA held two policy workshops to gain insight as to practitioner needs for implementing the rule. These workshops also helped FHWA gain a better understanding of how to best reach out to practitioners. A select group of people, mainly State DOT and field representatives at the AASHTO meeting and representatives from contracting firms, OSHA, and associations at the ARTBA meeting, were invited to attend these policy workshops. Each workshop was attended by approx. 15 people.

After hearing a presentation similar to this one, the attendees participated in a facilitated discussion, in which they were asked five questions:

What other outreach could be done to inform the maximum number of practitioners on the Final Rule?

What features/information on the Work Zone web site, in your opinion, would be helpful to you in implementing the Final Rule?

What are your biggest concerns about implementing the Final Rule?

In your opinion, what products would be valuable to you or practitioners in helping you to implement the Final Rule or what areas do you think help might be needed?

Where/How do you think current processes could be modified to conform with the requirements of Final Rule?

The questions generated group discussion. In many cases, the answers went beyond answering the questions and have proven to be very helpful as the implementation guidance and marketing materials are developed and disseminated.

Final Rule Implementation

- **Guidance Documents under development**
 - Overall implementation guidance document
 - 3 Specific/focused guidance documents
- **Plan to complete the content of all guidance documents by AASHTO Annual Meeting in Sept 2005**
- **Plan to publish guidance in late 2005**
 - Make available in hard copy and electronic formats
- **Brochure, Fact Sheets on overall rule and on 3 specific guidance documents**



Implementation Guidance

- Overall Implementation Guidance Document
- Specific/Focused Guidance Documents
 - Work Zone Impacts Assessment
 - Transportation Management Plans (TMPs)
 - Public Information and Outreach Strategies
- NHI Course - Advanced WZ Management and Design
- Related Guidance and Tools
 - Roadside safety audit guidance
 - Training for Law enforcement in work zones
 - Nighttime work zones applications
 - QuickZone



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FHWA is currently focused on the development of several implementation guidance documents to assist practitioners with implementing the elements of the rule that may be unfamiliar to them. An overall implementation guide is being developed that will clearly explain the content and intent of the final rule and provide information for implementing all elements of the rule. In addition, documents will be developed for:

- Work Zone Impacts Assessment
- Transportation Management Plans (TMP)
- Public Information and Outreach Strategies

These documents will provide suggested methodologies for implementing the elements of the rule, as well as examples and resources for more information. In addition, The guidance documents are now in their early draft stages. These documents will be developed in coordination with representatives from FHWA Field Offices and in the case of the overall Implementation Guidance document, AASHTO has convened a review group, in order to ensure that these documents are useful to practitioners. It is expected that the documents will become available in late 2005. Once available, these documents will be available electronically and in hard copy.

In addition to implementation guidance, FHWA is developing a new NHI course entitled Advanced Work Zone Management and Design. The goal of this course will be to provide learners with the skill and knowledge of both technical and non-technical aspects of work zone traffic control practices. The course will include principles of "best practices" in the Planning, Design, Project Management, and Contract Issue techniques. The course is expected to be available for delivery around Summer 2005.

There are also several existing tools that can be useful to implementation of the rule. These tools include:

- Roadside safety audit guidance
- Work zone training subject matter and availability (being further developed)
- Law enforcement in work zones (training under development)
- Nighttime work zones applications (NCHRP research)
- QuickZone

More information about these tools is available on the FHWA Work Zone Mobility and Safety Web Site.

For More Information...

- FHWA Final Rule Website

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

- 23 CFR Section 630 (Final Rule Language)

http://www.ops.fhwa.dot.gov/wz/docs/wz_final_rule.pdf

- FHWA Work Zone Mobility and Safety Web Site

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

- FHWA Office of Safety Web Site

<http://safety.fhwa.dot.gov>