





December 23, 2008

TO: Lorena Eng
Craig Stone
Kevin Dayton
Keith Metcalf

Don Whitehouse
Donald Wagner
Dan Sarles

THRU: Ted Trepanier 

FROM: Frank Newboles 
360-705-7392

SUBJECT: 2008 Statewide Construction Project Work Zone Report

The statewide work zone review was conducted this past summer by a joint FHWA/WSDOT team to help assess the effectiveness of the work zone traffic control processes and procedures used throughout the state. Annually each region is requested to select and schedule two active construction projects to participate in a statewide work zone review as a representation of their region construction programs.

The attached statewide report summarizes findings from the fourteen construction projects reviewed this year. The report captures the significant issues in four sections:

1. Improvement Opportunities
2. Follow-up Actions
3. Solutions/Innovations and Best Practices
4. General Recommendations

The overall effectiveness of our work zones remains positive and we continue to show improvement in those areas that have been problem areas in the past. The Work Zone Safety Task Force will continue to provide additional guidance on future report findings and recommendations.

I'd like to thank everyone that participated in the construction project work zone reviews this season.

Please route this package within your region as appropriate to disseminate the information.

Contact Frank Newboles in the WSDOT HQ Traffic Office at 360-705-7392 or Marty Weed at 360-705-7293 if you would like to discuss any of the information contained within the report.

TJT:mbw

Attachment: report

cc: w/attachment

Paula Hammond

Jerry Lenzi

Cathy Arnold

Pasco Bakotich

Morgan Balogh

Mark Bandy

Ed Barry

Dave Becher

Kirk Berg

Denise Cieri

Russ East

Susan Everett

Phil Fordyce

Marco Foster

Mike Frucci

Cathy George

Bart Gernhart

Rick Gifford

Chad Hancock

Todd Harrison

Steve Kim

Linea Laird

Mark Leth

Tom Madden

Dave McCormick

Pat McCormick

Gil McNabb

Phil Nickson

Brian Nielsen

John Nisbet

Ron Paananen

Matt Preedy

Amy Revis

Jennene Ring

Steve Roark

Ralph Robertson

Glenn Schneider

Messay Shiferaw

Randy Simonsen

Stacy Trussler

Harold White

John Wynands

D. Mathis, FHWA

D. Petersen, FHWA

2008 WSDOT Work Zone Report Summary Statewide - Construction Project Reviews

Work zone reviews were conducted in 2008 on fourteen projects across the state as listed below. Review teams were assembled from region and project staff, FHWA and the HQ Construction, Design and Traffic Offices. Contractor personnel and design builder staff also participated in a few of the reviews.

The safety and mobility performance of WSDOT work zones were evaluated statewide and those findings are summarized within this report. Specific details of the work zone reviews are contained in the individual project reports for each region.

Projects Reviewed:

North Central Region, June 17, 2008

Contract 7418, US 2, Peshastin East Interchange

Contract 7466, US 2, West of Cashmere Safety Improvements

South Central Region, July 22, 2008

Contract 7546, SR 221, SR 221 Prosser Hill to SR 22 - Paving

Contract 7567, SR 395, Columbia Dr Br 395/16 & Court St Br 395/103 – Bridge Repair

Eastern Region, July 15, 2008

Contract 7438, SR 25, Bossburg Road to Canada

North West Region, July 28 & 29, 2008

Contract 7431, SR 522, UW Bothell/Cascadia CC Campus South Access

Contract 7273, SR 539, Horton Road to Tenmile Road Widen to Five Lanes

Contract 7469, SR 539, Tenmile Road to SR 546 – Widening, Stage 1

South West Region, August 5, 2008

Contract 7324, I-5, Rush Road to 13th St I/C

Contract 7551, I-5, Castle Rock to SR 505 Vicinity Paving and Safety

Urban Corridor Office, August 14, 2008

Contract 7283, I-405, 112th Ave SE to SE 8th St Widening

Contract 7295, I-405, I-5 to SR 169 Stage 1 Widening

Olympic Region, August 25, 2008

Contract 7465, Interstate 5, Grand Mound to Maytown Stage One – Add Lanes

Contract 7521, US 101, West Fork Hoquiam River Bridges, 101/142 & 101/145

Overview

It was a challenge this year, as it is every year, to coordinate the individual project work schedules with the participant schedules in order to have timely reviews during significant phases of construction and unfortunately we were not always as successful in

those efforts as we would have hoped. In some cases the review was performed either too early or too late in a specific phase of the construction process and may not have necessarily provided a true reflection of the complexity of the project and for the respective projects on-going around the state as a whole. The region construction programs are collectively experiencing a downturn with fewer projects available to select from to participate in the review so this affects the scheduling ability when the smaller projects with shorter durations occur concurrently across the state.

It is important to recognize that every project represents a somewhat unique set of circumstances and challenges. It is not the intent of this report to compare or rate projects and region performance, but to focus on the overall effectiveness of the work zones on an individual project level and look for inconsistencies or trends that may have developed that may need to be addressed at the HQ level. While all of the work zones reviewed provide overall adequate levels of work zone safety and mobility there may be certain elements within the project that deserve more attention and offer opportunities for improvement or in simple terms, what works, what doesn't and what did we miss. Critical comments contained in the report are only intended to present the issue and recommend solutions. The information contained in the report is not punitive and is intended to be instructional statewide to learn from the experience of others.

Summary of Significant Issues

This report has been broken down into four sections in an effort to capture the significant issues extracted from the individual statewide review project reports, discussions and field observations.

1. Improvement Opportunities
2. Follow-up Actions
3. Solutions/Innovations & Best Practices
4. General Recommendations

1. Improvement Opportunities

Even the best work zones or most basic projects often contain one or two improvement opportunities. It is reasonable to expect more issues to materialize on complex or high traffic demand projects. The Project Engineer and staff are typically very responsive to these issues and work to develop solutions with the contractor.

The summarized improvement opportunities as taken from the complete reports are:

1. We are continuing to see inadequate consideration being made as to the overall quality of traffic control plans being designed in relation to the actual complexity of the project scope. The level of plan detail is often inconsistent (site specific plans vs. typical plans) with what is necessary to adequately address all the work operations. We continue to see typical plan layouts that overlay site specific plans. This makes for a confusing plan layout and plans not fitting actual field conditions.
2. The removal of existing conflicting pavement markings, ghost stripes and

- improper installation of temporary markings remains an issue statewide.
3. Closing of consecutive ramps during night time lane closure operations combined with poor or ineffective detour signing creates confusion. Providing clearer direction to drivers by using consistent standardized signing along with keeping appropriate ramp connections open during these operations would have been much more effective.
 4. Advance shoulder closure signs and devices prior to temporary barrier and attenuator installations along the shoulder are routinely being left out of the plans and not implemented in the field. This is an MUTCD and design issue and designers need to be aware of the requirement.
 5. Construction material stockpiled within work zone clear zone and not being removed or adequately protected.
 6. Lack of coordination with Motor Carrier Services and providing advance notice to oversize loads of a potential conflict within a work zone so they have the opportunity to make appropriate arrangements to transport their load was an issue on a few projects. The issue of addressing large loads must be a consideration during the design of the project and mitigated before construction begins.
 7. Appropriate consideration and coordination of special events came up on a couple projects where during construction special accommodation had to be made when they were not addressed as part of the PS&E.
 8. Traffic control devices in poor condition need closer inspection and should be evaluated against the Quality Guidelines for Temporary Traffic Control Devices book for replacement consideration.
 9. Determining the need and the proper use of Motorcycle Warning signs, Abrupt Lane Edge, Bump or Grooved Pavement signs, inconsistent use of these signs was observed and discussed on several projects.
 10. General “housekeeping” issues continue to be a consistent problem statewide. Many items that may be considered as a “house keeping” type issue when taken by themselves may not be a big issue, but when these issues are spread throughout a large project or are allowed to go unresolved they become a much larger problem and possibly indicative of a larger issue to the overall project.

2. Follow-up Actions

There were relatively few action items noted on the projects reviewed this year, mainly attributed to the lack of complexity of the projects and the phase of the work at the time of the review. Most follow-up actions that were noted were addressed quickly and effectively. Some items were basic and easy to correct while other issues were more complex and not easily resolved but were eventually addressed and the resolution to the action items are listed in the individual final reports.

3. Solutions/Innovations & Best Practices

Solutions/Innovations noted:

1. Coordination and communication between the Project Engineer Office and Contractor to address traffic control issues not covered in contract plans.
2. Increased emphasis and coordination effort in use of region Public Information

- Office staff, project webpage's, Highway Advisory Radio, Portable Changeable Message Sign, CB Alert Radio and public radio stations for public notification.
3. The use of web page blogs and flickr photo site has provided additional information to the public about projects and methods to interact with the public.
 4. Design effort to accommodate needs of pedestrians and bicycles through use of detours.

Best Practices noted:

1. Development of a written communication plan for projects.
2. Use of temporary high mast illumination.
3. Management of traffic task force to discuss and resolve traffic control issues on a routine basis.
4. Dual PE stamping of traffic control plans by the region Traffic Engineer and the Project Engineer.
5. Traffic control plan index detailing which Traffic Control Plan to use for specific work operations.
6. Overbuilding of roadway to accommodate staged construction.
7. Contractor incentives for early completion, disincentive for not performing work.
8. Design to accommodate bike and pedestrian access.
9. Good communication with local agencies, businesses & public from early in design all the way through construction.
10. Several project incorporating work zone ITS devices such as portable camera systems, Portable Changeable Message Signs, Highway Advisory Radio, CB Alert Radio for monitoring work zone operations, traffic management and driver information.
11. Good coordination effort in use of region Public Information Office staff, project webpage and media for public notification.
12. Including photos in action item responses by PEO to verify that items had been resolved.

4. General Recommendations

It is important to remind the regions that this statewide review is not a replacement to existing internal region review efforts and it is critical that those regional reviews continue with a higher emphasis.

Discussion item for the Work Zone Safety Task Force: Inform the regions that there is an expectation for each region to routinely review and evaluate their construction projects and proactively work to minimize and eventually eliminate reoccurring issues from the projects by the regions taking the lead on region reviews with assistance from the HQ Traffic office.

HQ Traffic office to work with HQ Design and Construction to include as an element to the Project Management Process and the Construction Management Process a higher emphasis on work zone reviews to ensure compliance to the contract plans and standards. This would require that reviews be documented to ensure any items that do not meet

compliance to contract requirements would be followed up upon for a timely resolution. A copy of these reviews would be available to HQ Traffic and FHWA Division office. These reviews would supplement or in some cases take the place of the annual work zone review with HQ and FHWA.

Discussion item for the Work Zone Safety Task Force: Streamline the review process to a smaller group of review participants, lessen the design discussion and concentrate more on the field reviews in an effort to review more projects in each region. Scheduling of these reviews to meet the individual needs for all the participants continues to be a major hurdle along with lining up with the construction schedule of the projects. By limiting the number of participants in each of the reviews will help ease the scheduling needs to some degree and then further concentrating on HQ Traffic control team reviewing multiple projects in each region with an abbreviated design discussion would allow for greater number of project reviews.

As we look to future reviews, the HQ Traffic office is open to feedback on how to improve the review process to make it more meaningful for everyone.

Status of Work Zone Performance

Mobility issues as part of the overall traffic control performance continue to be a difficult challenge but are generally being managed at an effective level. All indications are that work zone conditions continue to make general improvement and there is an appropriate level of awareness and vigilance, knowing that at any given time there may be issues to address.

The overall statewide performance and effectiveness of the mobility and safety of work zones meets acceptable standards and in many cases exceeds those standards. The dynamic nature and constant demands placed on work zones can lead to poor performance issues, but those are usually short term or isolated and are generally addressed at an acceptable level. The work zone safeguards in place through standards, restrictions, enforcement, hardware and oversight provide an overall positive level of safety. With the development of the upcoming traffic control design course we anticipate an improvement in the overall quality of the work zone program statewide. Each year we see incremental improvements statewide in the overall work zone effectiveness which lead to substantial improvements over many years and continue to build the safety and mobility structure of our program.

Distribution of this report is to all involved groups statewide. The individual region final reports are distributed by e-mail to the appropriate region only. All individual region reports are available by request to those that may want more specific project information.