

**Project Level Process/Expectations & Owners  
GOALS AND OBJECTIVES  
DRAFT 11/16/06**

**Don't forget to go back to consider maintenance and other projects...  
Determine if the strategy applies to all projects or just significant projects...**

**Goal A: Implement requirements of the Work Zone Safety and Mobility Policy (23 CFR 630 Subpart J)**

<b>Objective 1: Consider work zone impact during TIP development</b>	<b>OWNERS</b>		<b>COMMITTEE CONTACT</b>
	<b>Lead Unit:</b>	<b>Other Units affected:</b>	
<b>Revise existing "Feasibility Study" process to account for work zone impacts, such as network impacts</b> <i>Project Level Processes / Expectations:</i> The intent of this strategy is that work zone impacts are identified early on in the process so that funding can be obtained for any strategies that may be used for traffic. Some of the processes may include: <ul style="list-style-type: none"> <li>• FSU to coordinate with WZTCU (to include municipalities) to identify the significant projects and network impacts</li> <li>• FSU and WZTCU will create a checklist of items that are asked at each feasibility scoping meeting</li> <li>• WZTCU and FSU could work together to determine percentage of cost per project type</li> </ul>	FSU	WZTCU	Derrick Lewis/Nicole Hackler
<b>Consider appropriate project selection, project scope, and project limits</b> <i>Project Level Processes / Expectations:</i> The intent of this strategy is to minimize the impact on the users by proper sequencing and coordination of projects within the transportation network. Some of the process may include: <ul style="list-style-type: none"> <li>• FSU should coordinate with other to validate the project scope and project limits</li> </ul>	FSU/TIP Unit		Derrick Lewis/Nicole Hackler

<b>Objective 2: Consider work zone impact during project planning</b>	<b>OWNERS</b>		<b>COMMITTEE CONTACT</b>
	<b>Lead Unit:</b>	<b>Other Units affected:</b>	
<b>Identify "Significant" projects per developed process and criteria</b> <i>Project Level Processes / Expectations:</i> The intent of this strategy is to establish a project identity for significant projects at the planning stage that is consistent through the delivery of the project and transfers from planning to design to construction. Some of the process may include: <ul style="list-style-type: none"> <li>• Need a required field in PMii</li> <li>• Need a procedure for how this process will work (Significant Projects Subcommittee may be working on this)</li> </ul>	PDEA	TPB	Charles Cox, Debi Hutchings
<b>Revise existing project planning process to account for work zone impacts, such as network impacts, identification of "Significant" projects and environmental resources (Ask Mike Bruff) by considering other adjacent projects</b> <i>Project Level Processes / Expectations:</i> The intent of this strategy is to update the project planning process to account for work zone impacts. Some of the process may include: <ul style="list-style-type: none"> <li>• WZTCU needs to create an internal process to identify work zone impacts</li> <li>• Clarify how work zone impacts affect the environmental resources (construction noise?)</li> <li>• May affect PMii</li> <li>• Determine what role this would play during a public hearing meeting</li> <li>• Consider contract duration at the planning scoping stage</li> <li>• Identify all stakeholders that could impact coordination issues such as, utilities, enforcement, communities, etc</li> <li>• Update process to include municipalities and utility companies as stakeholders</li> <li>• WZTCU to coordinate with IM to determine strategies and add Incident Management to the checklist of items that PDEA addresses in the planning process</li> </ul>	PDEA	WZTCU/RDU/Divisions	Charles Cox
<b>Establish default traffic management strategies</b> <i>Project Level Processes / Expectations:</i> The intent of this strategy is to establish default traffic management strategies per project type based on impact that are then refined on a project-by-project basis. Some of the process may include: <ul style="list-style-type: none"> <li>• WZTCU to write the guidelines</li> <li>• FSU &amp; PDEA to implement the strategies</li> <li>• WZTCU and PDEA needs to develop a decision matrix for how to determine the traffic management strategies and fund them</li> </ul>	PDEA	WZTCU	Charles Cox

**Objective 2: Consider work zone impact during project planning**

	OWNERS		COMMITTEE CONTACT
	Lead Unit:	Other Units affected:	
<b>Consider funding for traffic management strategies early in the process</b> <i>Project Level Processes / Expectations:</i> The intent of this strategy is to be sure that the funding adequately accounts for traffic management strategies. Some of the process may include: <ul style="list-style-type: none"> <li>Coordinate project with any statewide ITS strategic plan</li> <li>Consider some of the strategies such as Transportation Management Centers, IMAP, ITS device deployments (ramp metering, weather stations, smart work zones, cameras, message signs, etc.)</li> </ul>	PDEA/TIP Unit	WZTCU /PS/ITS	Charles Cox
<b>Coordinate work zone activities with Incident Management (IM) during planning</b> <i>Project Level Processes / Expectations:</i> The intent of this strategy is assess how IM would be impacted by BOTH the work zone and the ultimate roadway improvement during the planning process so that design features and their associated costs could be factored into the project. Some of the process may include: <ul style="list-style-type: none"> <li>ITS Ops/ Division IM could develop a checklist to help planners make this assessment. Sample IM features might include: enforcement and accident investigation areas, IMAP, incident detection or cameras, towing, alternative access points for emergency vehicles, etc</li> <li>Determine the use of permanent devices in the work zone</li> </ul>	PDEA	WZTCU/ITS Ops/RWY/Division ITS	Charles Cox

**Objective 3: Consider work zone impact during design**

	OWNERS		COMMITTEE CONTACT
	Lead Unit:	Other Units affected:	
<b>Develop TMP for all projects</b> <i>Project Level Processes / Expectations:</i> The intent of this strategy is clear. Some of the process may include: <ul style="list-style-type: none"> <li>WZTCU and IMPACT will need to coordinate to develop the TMP</li> </ul>	WZTCU	IMPACT	Stuart Bourne
<b>Establish a process during design to follow up on traffic management strategies that were determined in the planning process</b> <i>Project Level Processes / Expectations:</i> The intent of this strategy is to conduct a more detailed design level assessment of the work zone impacts of individual projects and develop appropriate TMPs. Some of the process may include: <ul style="list-style-type: none"> <li>Assess work zone impacts of the project through the various design iterations.</li> <li>Consider alternative design, construction, contracting, and transportation management strategies in the assessment of work zone impacts.</li> <li>Select appropriate transportation management strategies that will help manage the work zone impacts of the project.</li> <li>Develop the TMP based on these strategies.</li> <li>Include appropriate TMP items in plans, specifications, and estimates (PS&amp;Es) for the project. (FHWA Brochure)</li> </ul>	WZTCU		Stuart Bourne
<b>Formalize design guidelines for temporary traffic patterns during construction</b> <i>Project Level Processes / Expectations:</i> The intent of the strategy is to implement a traffic control design manual. Some of the topics that may be included, but not limited to: <ul style="list-style-type: none"> <li>Lane closure restrictions</li> <li>Road closure restrictions</li> <li>Minimum lane widths</li> <li>Minimum shoulder widths</li> <li>Minimum deceleration lane lengths (capacity)</li> <li>Minimum acceleration lane lengths (merging)</li> <li>Ramp closure restrictions</li> <li>Allowable queue lengths</li> </ul>	WZTCU	RDU/TEB/CU/DIV (DDC)	Stuart Bourne
<b>Consider impacts of geometric design on traffic management strategies</b> <i>Project Level Processes / Expectations:</i>	RDU	WZTCU	DeWayne Sykes
<b>Consider impacts of geometric design in temporary and final alignment</b> <i>Project Level Processes / Expectations:</i>	RDU	WZTCU	DeWayne Sykes
<b>Incorporate value engineering earlier in design</b> <i>Project Level Processes / Expectations:</i>	RDU	ADU	DeWayne Sykes

	OWNERS		COMMITTEE CONTACT
	Lead Unit:	Other Units affected:	
<b>Objective 3: Consider work zone impact during design</b>			
<b>Anticipate construction and maintenance needs during design, such as, full depth shoulders and adjacent or future projects</b> <i>Project Level Processes / Expectations:</i>	RDU	WZTCU/DIV	DeWayne Sykes
<b>Provide the most accurate contract duration estimate</b> <i>Project Level Processes / Expectations:</i>	PS	RDU/ WZTCU/ CU/ADU	DeWayne Sykes
<b>Use internal and external constructability reviews on all significant projects</b> <i>Project Level Processes / Expectations:</i>	ADU	WZTCU/ CU	Rodger Rochelle
<b>Allow more flexibility to the contractor to increase productivity</b> <i>Project Level Processes / Expectations:</i>	CU	WZTCU/PS/ DIV	DeWayne Sykes
<b>Coordinate work zone activities with IM during design</b> <i>Project Level Processes / Expectations:</i> - There would be an evaluation of IM issues during design so that specific features of the work zone and completed project would improve or at least not degrade Incident Management in the area. (See Goal A, Objective 2 for list of possible IM elements.) (Damron)	WZTCU	RDU/ ITS Ops/ DIV	Stuart Bourne

**Objective 4: Consider work zone impact during construction**

	OWNERS		COMMITTEE CONTACT
	Lead Unit:	Other Units affected:	
<b>Implement and monitor TMP strategies</b> <i>Project Level Processes / Expectations:</i> - Provide adequate DOT (or 3 <sup>rd</sup> party contractor) staff to run a TMC or an IMAP program. Work towards documented expectations for traveler information and IM . Maybe a combination of what Contractor and DOT provide. (Damron)	CU	WZTCU/ CU/ DIV/ ITS Ops	Wendi Johnson, Michelle Long
<b>Revise TMP strategies if necessary</b> <i>Project Level Processes / Expectations:</i> - Review and analyze traffic flow and accident data on regularly scheduled intervals during the life of the work zone and recommend and implement improvements. (Damron)	CU	WZTCU/ CU/ DIV/ ITS Ops	Wendi Johnson, Michelle Long
<b>Coordinate work zone activities with IM during construction</b> <i>Project Level Processes / Expectations:</i> - Working through local Interagency Incident Management Teams (or creating them where they do not exist) continually share and evaluate the work zone for its ability to support good Incident Management. Ensure after incident critiques are held that includes the Contractor and DOT Construction staff. (Damron)	DIV	CU/CU/ CU/ DIV/ ITS Ops	Wendi Johnson, Michelle Long

**Goal B: To develop an agency culture committed to the Work Zone Safety and Mobility Policy)**

"To develop an agency culture committed to the Work Zone Safety and Mobility Policy". To me, this statement seems to imply that we currently do NOT have a culture committed to WZ safety, which is simply NOT true. As with everything, the WZ safety culture could certainly be improved or enhanced. We need to recognize the significant improvement efforts that have already been made in the field pertaining to WZ safety. Perhaps FOSTER could be substituted for DEVELOP? Thx for the opportunity to review the draft. I apologize if I'm being too picky. (Pat Ivey)

**Objective 1: Promote organizational awareness by educating staff on how decisions made in their respective work unit's affect the success of the WZ Safety and Mobility Policy**

	OWNERS		COMMITTEE CONTACT
	Lead Unit:	Other Units affected:	
<b>Develop a program or method to educate staff at all levels on the policy</b> <i>Project Level Processes / Expectations:</i> • Educate staff on the policy	WZTCU	T&D/CU/All	Stuart Bourne
<b>Make policy easily available to all levels</b>	WZTCU	IT	Stuart Bourne

<i>Project Level Processes / Expectations:</i>			
<b>Participate in national committees</b> <i>Project Level Processes / Expectations:</i>	WZTCU		Stuart Bourne
<b>Host national or regional work zone safety conferences</b> <i>Project Level Processes / Expectations:</i>	WZTCU		Stuart Bourne
<b>Document and share initiatives and successes nationally</b> <i>Project Level Processes / Expectations:</i>	WZTCU	CU/IT/All	Stuart Bourne
<b>Develop a program or method to educate staff on how their timely decisions affect work zone safety and mobility, construction duration, and cost</b> <i>Project Level Processes / Expectations:</i>	WZTCU	CU/T&D/All	Stuart Bourne

**Goal C: To provide safe work zones for all workers and road users**

<b>Objective 1: Utilize ITS and enforcement strategies to enhance safety</b>	<b>OWNERS</b>		<b>COMMITTEE CONTACT</b>
	<b>Lead Unit:</b>	<b>Other Units affected:</b>	
<b>Use Smart Work Zone Technology to monitor traffic flow and adjust traffic strategies</b> <i>Project Level Processes / Expectations:</i> <ul style="list-style-type: none"> <li>- Consider keeping technology in place after project is over – don't just lease (Damron)</li> <li>- Implement "Smart Work Zones" where appropriate (but consider installing more permanent devices instead of just renting them). Define goals and performance measures of SWZ and evaluate and tweak operations during life of WZ. Integrate SWZ's into permanent ITS structure within a Division, esp in Divisions with TMC's. Allow SWZ to tie into permanent (NTCIP Compliant) ITS. (Damron)</li> </ul>	WZTCU	CU/ ITS Ops/ITS	Stuart Bourne
<b>Establish enforcement guidelines for matching enforcement strategy to type of work zone</b> <i>Project Level Processes / Expectations:</i>	CU	SHP/WZTCU/DIV	Michelle Long
<b>Use permanent ITS devices/programs more efficiently and cost effectively</b> <i>Project Level Processes / Expectations:</i> <ul style="list-style-type: none"> <li>- Use all available permanent ITS devices and statewide Traveler Information tools (TIMS/511) approaching work zones or logical diversion points. Have more real time information on ITS Devices and TIMS/511. (Possible strategy: Tie TIMS to HiCams, create Chief Engineer's Performance Measure, etc.) Do we/how do we make sure traffic signal systems are proactively optimized on detour or likely alternative routes during work zone. (Damron)</li> </ul>	ITS Ops	ITS/WZTCU/DIV	Kelly Damron
<b>Provide appropriate level of enforcement in work zone</b> <i>Project Level Processes / Expectations:</i> <ul style="list-style-type: none"> <li>- Coordinate with enforcement by evaluating and prioritizing our project needs for enforcement needs and keep updated</li> </ul>	CU	SHP/ WZTCU/DIV	Michelle Long
<b>Coordinate with other agencies to develop a program to familiarize law enforcement with work zone safety</b> <i>Project Level Processes / Expectations:</i> <ul style="list-style-type: none"> <li>- Work with local Interagency Incident Management Team. (Damron)</li> <li>- Target audience is local law enforcement agencies...sheriff, municipalities, dmv, etc.</li> </ul>	CU	WZTCU/SHP/other law enforcement agencies	Michelle Long

Objective 2: Provide a safe design with the work zone in mind	OWNERS		COMMITTEE CONTACT
	Lead Unit:	Other Units affected:	
<b>Establish criteria for the use of positive separation for temporary and final alignment</b> <i>Project Level Processes / Expectations:</i>	RDU (permanent) WZTCU (temporary)	Highway Design Branch/DIV	DeWayne Sykes (permanent) Stuart Bourne (temporary)
<b>Design safe and user friendly roadway alignments</b> <i>Project Level Processes / Expectations:</i>	RDU	WZTCU	DeWayne Sykes
<b>Use innovative methods and devices such as, temporary lighting, brighter/larger sheeting, better retroreflectivity, rumble stripes, delineation, and enforcement</b> <i>Project Level Processes / Expectations:</i> <ul style="list-style-type: none"> <li>- Recommend ADU involvement</li> <li>- Go back and determine if enforcement fits into this strategy or a new strategy need to be developed</li> </ul>	WZTCU	ADU	Stuart Bourne
<b>Analyze crash history on corridor, alleviate any deficiencies, and incorporate into successive stages and the final design</b> <i>Project Level Processes / Expectations:</i> <ul style="list-style-type: none"> <li>• Consider the entire network</li> <li>• Determine if this strategy is covered under objective 4. May be different but may need to be swapped to met the right objective.</li> </ul>	WZTCU	TEB/ RDU/PDEA	Stuart Bourne/ Terry Hopkins

Objective 3: Provide a continuously safe work zone environment	OWNERS		COMMITTEE CONTACT
	Lead Unit:	Other Units affected:	
<b>Monitor and maintain work zone devices</b> <i>Project Level Processes / Expectations:</i>	WZTCU (develop procedure) DIV (maintain)		Stuart Bourne / Wendi Johnson
<b>Follow guidelines for managing speed limit reduction in work zones</b> <i>Project Level Processes / Expectations:</i> <ul style="list-style-type: none"> <li>• Follow guidelines during design</li> </ul>	WZTCU	TEB/DIV	Stuart Bourne
<b>Establish procedures for speed limit in work zones</b> <i>Project Level Processes / Expectations:</i> <ul style="list-style-type: none"> <li>•</li> </ul>	WZTCU	TEB/DIV	Stuart Bourne
<b>Continue to conduct safety meetings (tailgate meetings)</b> <i>Project Level Processes / Expectations:</i>	S&L/DIV	CU/Other units that are in field (L&S, Traffic Survey, etc)	Stuart Bourne/Wendi Johnson
<b>Include Incident Management Plan (IM) as part of TMP</b> <i>Project Level Processes / Expectations:</i> <ul style="list-style-type: none"> <li>- IM Elements identified in planning and design are implemented. Requires cross-pollination between Division Construction and Operations staff. Not always as easy as it may sound! (Damron)</li> </ul>	ITS Ops	WZTCU /DIV	Kelly Damron
<b>Conduct investigations on major incidents, implement improvements where appropriate</b> <i>Project Level Processes / Expectations:</i> <ul style="list-style-type: none"> <li>- Set threshold of crashes and investigate crashes that exceed threshold (T. Hopkins)</li> <li>- All crashes in work zones will be logged into TIMS and can be paged out to relevant subscribers. (? : What about those incidents that do not “impact traffic? Could create a separate place in TIMS for this – instead of creating some other reporting mechanism for all WZ incidents. Would need to modify TIMS to allow queries based on “Unusual Event in Work Zone” field.) (Damron)</li> <li>- Define incidents - not necessarily crashes</li> </ul>	WZTCU	ITS Ops /DIV/S&L	Kelly Damron

**Objective 4: Reduce Crashes in Work Zones**

	OWNERS		COMMITTEE CONTACT
	Lead Unit:	Other Units affected:	
<b>Improve method of collecting work zone crash data</b> <i>Project Level Processes / Expectations:</i> <ul style="list-style-type: none"> <li>- Accurately determine type of work zone (TIP/Maintenance/Utility/3<sup>rd</sup> party) (Kite)</li> <li>- Accurately identify severity of crash for each work zone crash (Kite)</li> <li>- All crashes in work zones will be logged into TIMS and can be paged out to relevant subscribers. (? : What about those incidents that do not “impact traffic? Could create a separate place in TIMS for this – instead of creating some other reporting mechanism for all WZ incidents. Would need to modify TIMS to allow queries based on “Unusual Event in Work Zone” field.) (Damron)</li> <li>- Possibly modify form for collecting information</li> </ul>	TEB	WZTCU/ITS Ops/Other units may be affected	Terry Hopkins
<b>Analyze and consider pre-work zone crash data in TMP design</b> <i>Project Level Processes / Expectations:</i> <ul style="list-style-type: none"> <li>- Analyze crash history on corridor, alleviate any deficiencies, and incorporate into successive stages and final design (T. Hopkins)</li> <li>- Is this the same as Objective 2 item 4?</li> </ul>	WZTCU	TEB/DIV	Stuart Bourne
<b>Develop a process to routinely analyze work zone crashes and operational data on projects</b> <i>Project Level Processes / Expectations:</i> <ul style="list-style-type: none"> <li>- Modify plans as needed (T. Hopkins)</li> <li>- Update any policies/procedures as needed (T. Hopkins)</li> <li>- All crashes in work zones will be logged into TIMS and can be paged out to relevant subscribers. (? : What about those incidents that do not “impact traffic? Could create a separate place in TIMS for this – instead of creating some other reporting mechanism for all WZ incidents. Would need to modify TIMS to allow queries based on “Unusual Event in Work Zone” field.) (Damron)</li> <li>- Right now TEB takes the lead, but down the road may be WZTCU responsibility</li> </ul>	TEB	WZTCU	Terry Hopkins

**Goal D: To consider mobility and access in work zones**

**Objective 1: Utilize innovative technology in work zones**

	OWNERS		COMMITTEE CONTACT
	Lead Unit:	Other Units affected:	
<b>Use ITS (dynamic lane merge, Smart Work Zone)</b> <i>Project Level Processes / Expectations:</i> <ul style="list-style-type: none"> <li>- Consider keeping technology in place after project is over – don’t just lease (Damron)</li> <li>- Implement and effectively use strategies identified in planning and design phases. Need to have some MOE to assess whether or not the use is effective or not. (Damron)</li> </ul>	WZTCU	CU/ ITS Ops/ITS	Stuart Bourne
<b>Establish guidelines to match technology with work zone strategy</b> <i>Project Level Processes / Expectations:</i>	WZTCU	CU/ ITS Ops/ITS/DIV	Stuart Bourne
<b>Provide proactive “Real-time” Regional and Statewide notifications for significant projects, such as real time information to DMS, Welcome Centers, Trucking Association, etc.</b> <i>Project Level Processes / Expectations:</i> <ul style="list-style-type: none"> <li>- Improving quality, timeliness and credibility of TIMS entries will significantly improve this, since TIMS entries can help generate other ITS messages. With implementation of the 24x7x365 NCDOT Statewide Transportation Operations Center in Jan 2007 we could treat work zones (both Construction and Maintenance) just like we treat accidents and provide the same level of local, regional, statewide, or multi-state traveler information for “significant” work zones. (See “Special Alert Checklist for list of real time traveler information strategies.) (Damron)</li> </ul>	ITS Ops	CU/WZTCU/DIV	Kelly Damron
<b>Establish a project website for “Significant” projects to provide and exchange information to participants in the delivery system</b> <i>Project Level Processes / Expectations:</i> <ul style="list-style-type: none"> <li>- This website is for internal use</li> <li>- PDEA to begin but would affect all design units</li> <li>- TDSS Transportation Decision Support System (Glenn Dennison) may be already working on this</li> </ul>	OEQ/ IT	Project Manager/PDEA/All Design Units/ DIV	Charles Cox

**Objective 2: Minimize impacts to users**

	OWNERS		COMMITTEE CONTACT
	Lead Unit:	Other Units affected:	
<b>Implement IMAP in more areas across the state</b> <i>Project Level Processes / Expectations:</i> <ul style="list-style-type: none"> <li>- ? In Work Zones only? Would be fine if funds came from TIP Project – again would have had to have cost estimate and lead time accounted for early on in process. Will need to train drivers before beginning patrols and have folks understand this would be a temporary position. Alternative may be to have Contractors provide “IMAP” type service, where we could define service expectations. (Damron)</li> <li>- Clarify goal and problem trying to solve</li> <li>- May be more global, consider network</li> </ul>	ITS Ops	DIV/WZTCU	Kelly Damron
<b>Formalize coordination process with local travel stakeholders (schools, police, fire, etc.)</b> <i>Project Level Processes / Expectations:</i> <ul style="list-style-type: none"> <li>- Can offer real time TIMS alerts to local subscribers including area media. Would be great to institutionalize communicating TIMS and 511 to affected stakeholders. (Damron)</li> </ul>	PDEA (planning) WZTCU (design) CU (construction)	ITS Ops/DIV	Charles Cox/Michelle Long/Stuart Bourne
<b>Provide the contractor adequate access to the project to expeditiously complete the work</b> <i>Project Level Processes / Expectations:</i>	WZTCU	DIV	Stuart Bourne/ Wendi Johnson
<b>Provide the road users with adequate access to business and residences (where applicable) without minimizing efficiency of the work zone</b> <i>Project Level Processes / Expectations:</i>	PDEA (planning) WZTCU (design) CU (construction)	DIV	Charles Cox/Michelle Long/Stuart Bourne

**Objective 3: Minimize delays and reduce congestion in work zones**

	OWNERS		COMMITTEE CONTACT
	Lead Unit:	Other Units affected:	
<b>Monitor work zones (speed, volume, queue, lengths)</b> <i>Project Level Processes / Expectations:</i>	ITS Ops/WZTCU	TEB/DIV	Stuart Bourne/Kelly Damron
<b>Establish a process for collecting and analyzing data</b> <i>Project Level Processes / Expectations:</i>	ITS Ops (collecting) TEB (analyzing)	WZTCU	Kelly Damron/Terry Hopkins
<b>Establish and verify criteria for delays (thresholds)</b> <i>Project Level Processes / Expectations:</i>	WZTCU	TEB	Stuart Bourne
<b>Coordinate existing DOT data collecting efforts</b> <i>Project Level Processes / Expectations:</i> <ul style="list-style-type: none"> <li>- Use “Speed Info” areas (Damron)</li> <li>- What kind of data? Traffic data – ie speeds, volumes, etc. If so yes – need to work at getting more detection out there and getting self-serve web-based access to it for all DOT customers in real time. (Damron)</li> </ul>	ITS Ops/TSU	TEB	Kelly Damron/Mike Bruff
<b>Match the traffic management strategy to the desired construction duration and work zone impacts</b> <i>Project Level Processes / Expectations:</i>	WZTCU	PS/PDEA/CU/ADU	Stuart Bourne

**Goal E: To advocate innovative thinking in work zone planning, design, and management**

**Objective 1: Consider alternative/innovative design, construction, contracting, and transportation management strategies**

	OWNERS		COMMITTEE CONTACT
	Lead Unit:	Other Units affected:	
<b>Consider the use of innovative design strategies</b> <i>Project Level Processes / Expectations:</i>	RDU	Other design units	DeWayne Sykes
<b>Consider the use of innovative contracting techniques and materials</b>	PS	ADU/WZTCU/CU/DIV/RDU	DeWayne Sykes

**Objective 1: Consider alternative/innovative design, construction, contracting, and transportation management strategies**

	OWNERS		COMMITTEE CONTACT
	Lead Unit:	Other Units affected:	
<i>Project Level Processes / Expectations:</i>			
<b>Consider the use of innovative construction methods</b> <i>Project Level Processes / Expectations:</i>	ADU	All units/CU/DIV	Rodger Rochelle
<b>Improve accessibility to electronic project files/data for all affected parties</b> <i>Project Level Processes / Expectations:</i>	OEQ	IT/File Owners	DeWayne Sykes
<b>Emphasize “Get In, Get Out, Stay Out” mentality</b> <i>Project Level Processes / Expectations:</i>	Committee		Michelle Long

**Objective 2: Minimize third party delay on delivery of projects**

	OWNERS		COMMITTEE CONTACT
	Lead Unit:	Other Units affected:	
<b>Update current Utility, Rail, and Right of Way policies, procedures, specifications, and design manuals</b> <i>Project Level Processes / Expectations:</i>	PS/Rail/ROW/Utilities		DeWayne Sykes
<b>Include Utility, Rail, Municipality, and Right of Way coordination early in the planning process</b> <i>Project Level Processes / Expectations:</i>	PDEA	All other affected units	Charles Cox
<b>Include and use the appropriate level of Subsurface Utility Exploration (SUE) on all significant projects</b> <i>Project Level Processes / Expectations:</i>	RDU	L&S	DeWayne Sykes
<b>Investigate innovative ideas to minimize and eliminate 3<sup>rd</sup> party conflicts</b> <i>Project Level Processes / Expectations:</i> <ul style="list-style-type: none"> <li>3<sup>rd</sup> party should be defined</li> <li>Go back to look at this strategy again</li> </ul>	PS/Utilities		DeWayne Sykes

**Goal F: To improve credibility of work zones**

**Objective 1: Continue to provide and disseminate useful and essential information**

	OWNERS		COMMITTEE CONTACT
	Lead Unit:	Other Units affected:	
<b>Work with local media</b> <i>Project Level Processes / Expectations:</i>	CU	WZTCU/CO/DIV	Michelle Long
<b>Utilize ITS (Smart Work Zone Technology, permanent DMS)</b> <i>Project Level Processes / Expectations:</i> <ul style="list-style-type: none"> <li>See Goal C, Objective 1, Strategy c . Allow detection data from work zone to feed maps on ncsmartlink, auto-generate alerts to Contractors, Residents, TMC's, media, etc. (Damron)</li> <li>Must include the Goal and Objective when reading and understanding the meaning of the strategy</li> </ul>	ITS Ops	WZTCU/CU/DIV/ITS	Kelly Damron
<b>Include Public Information (PI) component into Transportation Management Plan (TMP)</b> <i>Project Level Processes / Expectations:</i>	WZTCU/CU	DIV/CO	Michelle Long

**Objective 1: Continue to provide and disseminate useful and essential information**

	OWNERS		COMMITTEE CONTACT
	Lead Unit:	Other Units affected:	
<b>Coordinate work zone activities better by using existing databases that captures on going construction activities on Interstates and US Highways (TIMS, STOC, Construction Progress Database, RTMS, “Speed Info” Areas)</b> <i>Project Level Processes / Expectations:</i> <ul style="list-style-type: none"> <li>- Not exactly sure where this one is aimed, but TIMS <i>should</i> be a good way to know, in “real time” what work zones (TIP, Division-let, Maintenance, etc.) are going on out there. Again, goes back to earlier strategy of getting better entries into TIMS and getting better, more credible communications between the folks that run our ITS devices and TMC’s across the state. (Damron)</li> </ul>	ITS Ops	WZTCU/CU/DIV/M	Kelly Damron
<b>Ensure better information is generated and entered into existing databases that capture construction activities</b> <i>Project Level Processes / Expectations:</i> <ul style="list-style-type: none"> <li>- Same as previous one. Need to clarify “better”. How can we motivate field folks to improve TIMS entries and coordination with ITS operators? (Damron)</li> </ul>	ITS Ops	WZTCU/CU/DIV/M	Kelly Damron

**Objective 2: Provide consistency for all work zones, such as construction and maintenance**

	OWNERS		COMMITTEE CONTACT
	Lead Unit:	Other Units affected:	
<b>Require Contractor Certification</b> <i>Project Level Processes / Expectations:</i> <ul style="list-style-type: none"> <li>- This plan calls for a certified traffic control person. Who is going to certify these people? What about a certified DOT person? This plan covers every technique known to man for controlling traffic. When using the chart, what happens if you fail to meet one of the conditions? Do you drop down to the next level? Other states use flashing lights to tell that the work zone is active. We need to be careful not to go overboard on traffic control so as not to numb the public. (cry wolf syndrome). On major projects, traffic will be impacted to some degree. Maybe include a blanket statement that says disruptions will be minimized with available technology where practicable. Case in point - The Smart work zone on I-40 project was not effective and expensive. However, it worked on I-95 where there was a parallel roadway. (Pat Ivey, Division 9)</li> </ul>	WZTCU	TEB, DIV, CU	Stuart Bourne
<b>Establish state industry standards for traffic control devices</b> <i>Project Level Processes / Expectations:</i>	WZTCU	TEB, DIV, ITS Ops, Meredith’s Group, New Products Committee	Stuart Bourne
<b>Establish a statewide database that includes predetermined time restrictions on Interstates and US Highways based on location</b> <i>Project Level Processes / Expectations:</i> <ul style="list-style-type: none"> <li>- Similar to Maryland and Ohio</li> <li>- Could provide a waiver process for noncompliance</li> <li>- Clarification: Would probably need to be based on V/C, and somehow allow folks to plug in and assess those values as “real time” as possible. Goes back to earlier strategy on improving data collection. I understand IT is creating a “Division oriented” web page where they can get to various websites they need to use: TIMS, SBE/DBE tracking, etc. This could probably “live” there. (Damron)</li> </ul>	WZTCU	TEB (Traffic Safety), ITS Ops, CU, DIV, RM, IM, TSU, PS, IT	Stuart Bourne
<b>Establish a system for issuing lane closure permits for every lane closure</b> <i>Project Level Processes / Expectations:</i> <ul style="list-style-type: none"> <li>- Other states have this. Would be based on previous strategy. Basically we could look at a given time and say either :”yes, you can close a lane now” or not. I know this would be hard for Contractors and may cause them to increase prices and/or decrease production rates to account for uncertainty, but we would do it based on well known criteria – ie some kind of real time V/C measurement. Example – contract allows for lane closures beginning at 9 AM but an earlier accident on a route to which this is the best alternative has traffic tied up for miles and miles. Would we want them to close a lane? Or we have an evacuation scheduled to start in South Carolina? This would certainly be a trade-off between operations and construction cost and project completion date. (Damron)</li> <li>- Does this apply to all lane closures on all roads? Establish a level of road where this permit process is required. Lesser roads covered by guidelines. We tell the Contractor when he is allowed to close lanes. If he wants to close lanes at other times, the Contractor has to apply for a permit to do this.? Apply only to encroachment agreements.</li> </ul>	WZTCU/RM	District Engineers, DIV, TEB (RTE/CM), M	Scott Capps
<b>Educate DOT staff including residents, inspectors, etc about standards and specifications</b> <i>Project Level Processes / Expectations:</i> <ul style="list-style-type: none"> <li>- Ask for feedback or updates</li> <li>- Develop training materials / classes (Meredith McDiarmid?)</li> </ul>	WZTCU/CU	DIV, RM, PRECON (think about Municipalities & Utility Contractors)	Meredith McDiarmid

**Objective 3: Develop strategies to promote and ensure compliance with work zone policies and regulations**

	OWNERS		COMMITTEE CONTACT
	Lead Unit:	Other Units affected:	
<b>Require the Contractor to provide a certified Traffic Control Inspector</b> <i>Project Level Processes / Expectations:</i>	WZTCU	DIV, CU, ADU, RM, TEB	Stuart Bourne / Meredith McDiarmid
<b>Use work zone signing only when work zone could be affecting traffic</b> <i>Project Level Processes / Expectations:</i> Can this objective be added to the one below?	WZTCU	TEB (Traffic Safety), ITS Ops, RM, DIV, CU, PS (contract time committee), M	Stuart Bourne
<b>Develop strategies to enforce compliance with signing requirements</b> <i>Project Level Processes / Expectations:</i> <ul style="list-style-type: none"> <li>- Maintain adequate signing (Enforce compliance) (Wasserman)</li> <li>- Use lane closure signing only during times of lane closure (Enforce compliance) (Hutchings)</li> <li>- Agree. The new draft DMS policy is out for comment but there is really no DMS police out there to make sure we or the Contractors follow it. Its more of a hit or miss thing. How to overcome this with DMS and all signs? (Damron)</li> </ul>	WZTCU	SEE ABOVE	Stuart Bourne

**Objective 4: Provide responsive customer service during the entire project delivery process to both internal and external customers**

	OWNERS		COMMITTEE CONTACT
	Lead Unit:	Other Units affected:	
<b>Consider all target audiences during planning and early development stages of TMP strategies</b> <i>Project Level Processes / Expectations:</i>	PDEA	RDU, TEB, WZTCU, PRECON, DIV, M, RR, Utilites	Charles Cox
<b>Establish a project identity for significant projects at the planning stage that is consistent through the delivery of the project and transfers from planning to design to construction</b> <i>Project Level Processes / Expectations:</i> <ul style="list-style-type: none"> <li>- Move this strategy down to the 4<sup>th</sup> strategy “Establish a project website...”</li> </ul>			Stuart Bourne
<b>Provide timely responses to customers regarding work zones and work zone impacts</b> <i>Project Level Processes / Expectations:</i>	CU	DIV, CO, WZTCU, ITS Ops	Michelle Long
<b>Establish and maintain a project website for Significant Projects to provide information to the public</b> <i>Project Level Processes / Expectations:</i> <ul style="list-style-type: none"> <li>• Can this be linked to TIMS somehow so folks don't have to update (some) info in 2 places, plus helps keep construction folks thinking about TIMS. (Damron)</li> <li>- Please link to it from TIMS. It is hard enough to market TIMS to the world without having to compete with another DOT website. Another alternative would be to be clear about which site gives what info. As long as whatever we do is linked that should be fine. How would you promote the site? If you do a catchy name related to the project identity the link goes away when the project does. Would it be better to create a standing page and have links on it for big projects. Would allow you to mass produce marketing materials and not have to customize each time. Also – if there were changes we could make to TIMS that would make it more user friendly we would be glad to consider anyone's suggestions. GIS has assured us that the mapping feature will be there “soon”...?!?! (Damron)</li> </ul>	PDEA	IT, WZTCU, ITS Ops, CU, DIV, CO, PRECON, DDC, OEQ	Charles Cox

**Goal G: To continuously assess and improve work zone strategies, practices, and procedures**

<b>Objective 1: Assess, document, and implement successful strategies</b>	<b>OWNERS</b>		<b>COMMITTEE CONTACT</b>
	<b>Lead Unit:</b>	<b>Other Units affected:</b>	
<b>Evaluate work zone crash data to establish work zone strategies and procedures that reduce crashes in work zones</b> <i>Project Level Processes / Expectations:</i>	TEB (TSU)	WZTCU, DIV, CU	Terry Hopkins
<b>Solicit feedback and suggestions from field engineers through post-construction evaluations to develop lessons learned to improve design policies</b> <i>Project Level Processes / Expectations:</i>	WZTCU	DIV, TEB (RTE), CU, RWY, Other Design Units	Stuart Bourne
<b>Solicit feedback from contractors, law enforcement, road users, and municipalities</b> <i>Project Level Processes / Expectations:</i>	WZTCU	CU, DIV	Stuart Bourne

<b>Objective 2: Conduct project performance assessment and process reviews</b>	<b>OWNERS</b>		<b>COMMITTEE CONTACT</b>
	<b>Lead Unit:</b>	<b>Other Units affected:</b>	
<b>Conduct a bi-annual process review to assess wide scale performance of work zones with the goal of improving work zone processes and procedures</b> <i>Project Level Processes / Expectations:</i> <ul style="list-style-type: none"> <li>- Define the personnel and rank doing the reviews (Tate)</li> <li>- Representatives from planning, design, and construction (Tate)</li> <li>- Assess and document the success of all of the items identified in this policy in a sampling of Significant projects each year. (Damron)</li> <li>- This is broader than just the work zone assessment (Tate)</li> <li>- Waiting on an example of what this requirement means</li> <li>- This could be a follow-up of the self assessment</li> <li>- Come up with solutions to what we saw as deficiency in the self assessment</li> <li>- The self-assessment could be part of this strategy. Self assessment will identify the problems, and then work on those deficiencies.</li> </ul>	WZTCU	Planning, Design, and Construction Units	Stuart Bourne
<b>Regularly conduct “Windshield Review” of active construction project work zones</b> <i>Project Level Processes / Expectations:</i>	WZTCU	DIV	Stuart Bourne
<b>Conduct safety inspections/audits as needed to address specific problems that occur</b> <i>Project Level Processes / Expectations:</i> <ul style="list-style-type: none"> <li>- Some of this is done through the “Windshield review”</li> <li>- Existing forms</li> <li>- Should these audits include municipalities?</li> <li>- <b>Create and utilize an assessment checklist</b></li> </ul>	Committee (procedures)DIV (conduct)	WZTCU, TEB, CU, M	Stuart Bourne
<b>Participate in the FHWA Work Zone Self Assessment Program</b> <i>Project Level Processes / Expectations:</i>	WZTCU		Stuart Bourne
<b>Develop strategies to address non-compliance</b> <i>Project Level Processes / Expectations:</i> <ul style="list-style-type: none"> <li>- Measure of control with the Department</li> <li>- In general how to we enforce compliance on different areas (ex. flaggers signs left out when there is no flagger)</li> <li>- Explore making safety one of the bases for prequalification</li> <li>- Explore Leaving lane closure signs then assess liquidated damages</li> <li>- Don’t forget NOV for traffic control</li> </ul>	Committee		Stuart Bourne, Terry Hopkins, Michelle Long, Gus Jordi, Max Tate

**Objective 3: Provide and disseminate essential temporary traffic control design information to traffic control professionals**

	OWNERS		COMMITTEE CONTACT
	Lead Unit:	Other Units affected:	
<b>Set up communication web for traffic control professionals</b> <i>Project Level Processes / Expectations:</i> - What type of info would it contain? Who would maintain it? - Send out Stu's News to tc professionals	WZTCU	IT	Stuart Bourne
<b>Coordinate and/or provide training for traffic control professionals</b> <i>Project Level Processes / Expectations:</i> - May need to elaborate on who the professionals are...Designers in WZTCU, division design engineers, design-build engineers, and private engineering firm engineers - Who will do the training, provide updates? - <b>Continue to host Work Zone Traffic Control Rodeo</b> - <b>Provide training on updates, industry practices, NCDOT policies and procedures</b> - May be a better word for "coordinate and/or provide" - <b>Are we clear on providing training on work zone plan development? This is part of the final rule requirements.</b>	WZTCU		Stuart Bourne
<b>Develop Traffic Control Design Manual and standards</b> <i>Project Level Processes / Expectations:</i>	WZTCU		Stuart Bourne

**Key**

ADU - Alternate Delivery Unit  
 CM - Congestion Management  
 CO - Communications Office  
 CU - Construction Unit  
 DIV - All 14 Divisions  
 FSU - Feasibility Unit

IM - Incident Management  
 IMPACT - Public Information/Construction Unit  
 IT - Information Technology  
 ITS - Intelligent Transportation Systems (Greg)  
 ITS Ops - ITS Operations (Kelly)

L&S - Location and Surveys  
 M - Municipalities  
 OEQ - Office of Environmental Quality  
 PDEA - Project Development Environmental Analysis  
 PRECON - Preconstruction (all Design Units)  
 PS - Project Services  
 RDU - Roadway Design Unit  
 RM - Roadway Maintenance

ROW - Right of Way  
 SHP - State Highway Patrol  
 S&L - Safety and Loss  
 T&D - Training and Development  
 TEB - Traffic Engineering Branch  
 TSU - Traffic Survey Unit  
 WZTCU - Work Zone Traffic Control Unit