**Work Zone Questions for the Core Team**

**for Work Zone Traffic Management JSP (WZTM JSP) Development**

The following questions and considerations are intended to spur comprehensive discussion among the Core Team when developing a Work Zone Transportation Management Plan (TMP). The goal is to identify and mitigate as many concerns as possible that might adversely impact safety and mobility in the work zone. Where possible, the Core Team should incorporate specific requirements and repercussions into the contract (WZTM JSP) based on answers to the questions below (and any other similar questions).

The answers to the questions should be documented by the Core Team in the Core Team Minutes. Any changes to the work zone after the contract is awarded must come from the project office back to the Core Team for consideration based on how these questions were answered and the TMP was developed for the particular project.

1. Are the right people participating on the Core Team? Who else needs to participate to discuss the TMP and the following questions?
	1. Construction, Traffic, WZ coordinator, Maintenance (including local maintenance shed), Design, Community Relations, external partners, law enforcement, etc.
2. Consider holding a special core team meeting just to discuss the WZ on larger more complex projects with complex work zones.
3. When should the work take place?
	1. What year or what time of year?
	2. What time of day? Do we need work hour restrictions?
	3. Does the work need to be done at night? Example: Commercial areas with several entrances
	4. Are there special events in the area that could influence timing of the work?
	5. Are there natural or social environmental concerns that might restrict the timing of the work?
4. What are normal traffic volumes in the area?
	1. How does this impact which days or time periods work will be allowed?
	2. Use the Work Zone Impact Analysis spreadsheet ([EPG 616.13.2](http://epg.modot.org/index.php?title=616.13_Work_Zone_Capacity%2C_Queue_and_Travel_Delay#616.13.2_Interstate.2C_Freeways_and_Multi-lane_Roadways)) to identify projected backups and delays for different times of day.
		1. Available for interstates, freeways, and multilane facilities
		2. Does the queue back up beyond the signs that are in the TCP? If so, **strongly** consider adding another sign series to the project. The Work Zone Impact Analysis Spreadsheet will indicate the backup in miles.
	3. [EPG 616.13](http://epg.modot.org/index.php?title=616.13_Work_Zone_Capacity%2C_Queue_and_Travel_Delay)
5. Provide specifics of what it looks like for the contractor to continually monitor work zone safety and mobility. Make it contractual where possible.
6. Have you considered requiring the contractor to provide a formal work zone specialist?
	1. Required certifications/trainings, on-site availability, 24/7 response, etc.
	2. See [Standard Specification 616.3.3](http://www.modot.org/business/standards_and_specs/Sec0616.pdf)
7. What length of delay or queue is acceptable?
	1. What action will be taken if delays or queues extend beyond the acceptable limits?
	2. See question number 4(b)(ii) regarding queue backups beyond the traffic control signs.
8. What actions will be taken if a traffic crash or incident occurs in the work zone area?
	1. Who do you call? Who responds? The JSP Emergency Provisions and Incident Management Plan must be used.
	2. Does the contractor have an incident management plan?
	3. Consider developing an extensive project specific Transportation Management/Incident Plan for projects with complex traffic control plans and/or significant impacts to traffic (i.e. congestion). [See EPG 616.14.10 for examples of TMPs.](http://epg.modot.org/index.php?title=616.14_Work_Zone_Safety_and_Mobility_Policy)
9. Are there convenient and reliable detour/relief routes available in the area?
	1. Do the detour/relief routes have limitations (weight limits, vertical clearances, lane width, pavement conditions, etc.)?
	2. Ask Maintenance about this topic.
	3. Consider whether any pavement treatments (before or after work) will be necessary for the detour route.
	4. Consider coordinating with local cities and counties and provide detours on local roads where it makes sense to the traveling public.
10. If detour routes are available, should a full closure be considered to complete the work?
11. Limit exposure time (risk)
12. Consider Short-Term closures ex: paving jobs through a city with several side streets consider closing side streets for a few hours. Another example close the entire road/intersection down for the duration of the project if its short term.
13. Consider land use around the closures and closure times (ie weekend closures around places of worship, daily closures around schools or businesses). Can the work be coordinated around the normal hours of the owner or can enough notice be given for them to make other arrangements during construction? (Don’t forget to sell the benefits of the full closure)
14. If you’re moving traffic onto the shoulder during construction, have you considered whether or not the existing pavement will hold up under traffic?
	1. If not, can you rebuild the shoulder? Do you have the budget for it? Can the roadway handle traffic during the shoulder reconstruction?
	2. Are there rumbles in the current shoulder that need addressed?
15. Have you involved law enforcement in the Core Team discussions and how might law enforcement be utilized during construction to improve safety and mobility of the work zone?
	1. Money is set aside in the STIP for law enforcement. Contact Highway Safety Division for more information on this funding. See [EPG 616.16](http://epg.modot.org/index.php?title=616.16_Law_Enforcement_Services).
	2. Law Enforcement should be a requirement not an option for work zones especially on rural interstates.
	3. Every work zone should be considered to have law enforcement with special focus on peak crash time of mid-week, afternoon hours and divided highways.
	4. Do you have a safe location for law enforcement to watch over the work zone and to safely pull vehicles over if necessary?
	5. If law enforcement is used on a project, use JSP-15-03 Law Enforcement in the Work Zone.
16. Are there other work zones with traffic impacts in the area?
17. Have you coordinated with bordering districts on work zones near boundaries? This must be done on interstates and divided highways.
18. Other active STIP projects?
19. Does Maintenance have any planned work in the area?
20. Does the project detour or closure conflict with an existing (permanent) incident by-pass route?
21. How do nearby access points (ramps, intersections, entrances) interfere with work zone mobility? See [EPG 616.13.4](http://epg.modot.org/index.php?title=616.13_Work_Zone_Capacity%2C_Queue_and_Travel_Delay#616.13.4_Capacity_Guidelines_for_Ramps).
	1. Should they be closed during construction?
22. What technologies might be beneficial on this project? See [EPG 616.13](http://epg.modot.org/index.php?title=616.13_Work_Zone_Capacity%2C_Queue_and_Travel_Delay).
	1. Detectors for travel time/traffic speed information and reporting
	2. Detectors for traffic backups
	3. Text/email alerts of traffic conditions for construction inspectors/contractors
		1. [Text alert instructions](http://sharepoint/systemdelivery/TR/mo/travinfoitsworkzonemanagment/freewymgmt/Shared%20Documents/Traffic%20Data/HERE%20Text%20Alerts/Instructions%20for%20Using%20MoDOT%20Text%20Alerts.docx).
	4. Cameras to remotely monitor work zone conditions
	5. CMS to communicate information to motorists
	6. Messages on permanent DMS where available (keep in mind that incident messages may supersede the work zone messages at times)
	7. Radar Speed Advisory Assembly to tell motorists how fast they’re driving
	8. Real-time traffic data from HERE and RITIS
	9. Sequential lights
	10. Consider the use of the [Work Zone Intelligent Transportation System JSP](https://spexternal.modot.mo.gov/sites/de/JSP/NJSP1532.doc).
23. If the work is on an interstate, what is the plan for coordinating with the TMCs to provide DMS messaging and camera surveillance for the work zone?
24. Would a pilot car be beneficial on the project?
25. To what extent should public information be provided for the work zone?
	1. Notifications/information for motor carriers
	2. Local businesses and schools
	3. Churches/Hospitals/Fire stations
	4. Emergency responders (are they prepared for detours, closures, etc.)
	5. Transit facilities
	6. Non-Motorized Traffic (Pedestrian & Bicycles)
	7. Government entities
	8. General public (news media, social media)
	9. Local Post Office/Letter Carrier
	10. Local Residents (especially if Pilot Car is used)
26. How will we consider, justify, communicate, and evaluate alternative traffic management plans if proposed by the contractor during construction?
	1. If changes are considered, who from the Core Team must be consulted before accepting the changes (PM, Traffic, AE, WZ coordinator, etc.)?
	2. If changes are accepted, how will they be evaluated to ensure they are working?
		1. Example: The contractor wants to work outside of the recommended time restrictions. Can we use real-time data to evaluate traffic and ensure the change is possible? Use real-time data and on-site observations to evaluate the adjusted work hours to see if they are acceptable or need to go back to the original work hours.
27. For a list of strategies related to a specific condition/concern, utilize the TMP Matrix in [EPG 616.14.9](http://epg.modot.org/index.php?title=616.14_Work_Zone_Safety_and_Mobility_Policy#616.14.9_Assessment_of_Work_Zone_Impacts).
	1. Example: Strategies to consider when project needs to be completed in a compressed timeframe.
28. Typical Applications (TAs) are typical work zone setups for designers to utilize and can be found in the [EPG 616.8](http://epg.modot.org/index.php?title=616.8_Typical_Applications_%28MUTCD_6H%29).