

Transportation Management Plan (TMP) Strategy Matrix					
	Work Zone Mitigation Strategies	When to Consider	Potential Benefits	Potential Challenges	
Constructability Strategies	1	Construction phasing/staging	<ul style="list-style-type: none"> • Applicable to any work zone 	<ul style="list-style-type: none"> • Less traffic impacts during each construction phase 	
	2	Continuous Full Closure (for a project phase/stage or the entire project/'blitz')	<ul style="list-style-type: none"> • Detour routes available • Project needs to be completed in a compressed timeframe • Traffic volume through the project can be accommodated on detour route(s) • Highway facilities • Short project length 	<ul style="list-style-type: none"> • Faster construction • Easier, more efficient construction – larger work space with more flexibility • Safer for workers • Better construction (e.g., smoother ride) • Public feedback often positive • Reduces need to set up and take down traffic control 	<ul style="list-style-type: none"> • May increase cost to motorists (time and fuel) • Accessibility to businesses and residences • May significantly impact local roadways used for detours
	3	Off-Peak/Night/Weekend Full Closure	<ul style="list-style-type: none"> • Detour routes available • High traffic volumes • Low traffic volumes during work time period 	<ul style="list-style-type: none"> • Faster construction • Less traffic impacts • Safer for workers 	<ul style="list-style-type: none"> • May impact local roadways
	4	Reduced Lane Widths	<ul style="list-style-type: none"> • Applicable to any work zone 	<ul style="list-style-type: none"> • Can maintain existing number of lanes • Easier design • Ramps can remain open 	<ul style="list-style-type: none"> • Can reduce traffic capacity • May interfere with contractor access • Barrier could still be required for some drop-offs
	5	Lane closures	<ul style="list-style-type: none"> • When the remaining lanes provide adequate capacity to handle the traffic demand 	<ul style="list-style-type: none"> • Safer for workers • Can provide more worker space 	<ul style="list-style-type: none"> • May sacrifice project quality • May cause delays
	6	Reduced Shoulder Width	<ul style="list-style-type: none"> • When more work area is needed 	<ul style="list-style-type: none"> • Traffic remains on routes 	<ul style="list-style-type: none"> • May compromise safety • No room for break downs
	7	Shoulder Closure			
	8	Lane Shift to Shoulder/Median	<ul style="list-style-type: none"> • Enough space available • Where bridges can accommodate use • Shoulder has structural capacity 	<ul style="list-style-type: none"> • Traffic remains on routes • Low cost • Allows wider work area or maintains capacity 	<ul style="list-style-type: none"> • May compromise safety • No room for break downs • May damage the shoulder/median
	9	Shoulder Widening	<ul style="list-style-type: none"> • Need to maintain number of lanes 	<ul style="list-style-type: none"> • Number of lanes are maintained 	<ul style="list-style-type: none"> • Structural capacity to handle traffic • Cost
	10	Enhancements to Shoulders to Accommodate Traffic	<ul style="list-style-type: none"> • Need to maintain number of lanes 	<ul style="list-style-type: none"> • Need to maintain number of lanes 	<ul style="list-style-type: none"> • Cost
	11	Flagging Operation/One-lane, Two-Way Operation	<ul style="list-style-type: none"> • 2 lane highways • Rural areas • Project covering a short distance • Low traffic volume through the project 	<ul style="list-style-type: none"> • Easy to set-up 	<ul style="list-style-type: none"> • May result in long delays
	12	Temporary Signal/One-lane, Two-Way Operation			
	13	Temporary Stop Sign/One-lane, Two-Way Operation			
	14	Two-way traffic on one side of divided facility/Bi-Directional Traffic (Crossover)	<ul style="list-style-type: none"> • Long project duration • Projects with multiple construction stages/phasing • Concerns for worker safety • When detour routes and/or median or shoulder is not available 	<ul style="list-style-type: none"> • Provides a more efficient work space • Can reduce construction period • Safer for workers 	<ul style="list-style-type: none"> • Additional cost to construct crossovers and separations between opposing traffic • Difficulty handling ramps
	15	Rolling Closure/Slowdown/Roadblock	<ul style="list-style-type: none"> • Setting bridge beams • Placing overhead sign structures • Pulling power lines across the roadway • Blasting Operations • Installing cantilever trusses • Pavement repair • Moving Equipment Across the Roadway 	<ul style="list-style-type: none"> • Short duration work • Worker safety 	<ul style="list-style-type: none"> • Slow traffic • Requires coordinated communication effort • Law enforcement required to complete strategy (Law Enforcement Traffic Mitigation Contracts should be developed for this strategy)
	16	Split-lane Merge, 3+1 Counter Flow, 3-1 Split, 3+1	<ul style="list-style-type: none"> • High traffic volume • Limited availability of detours • Where incidents can create significant delays 	<ul style="list-style-type: none"> • Maintains safe and smooth freeway operations 	<ul style="list-style-type: none"> • Driver confusion • Requires more traffic control devices • Requires longer temporary concrete barrier (TCB)
	17	Reversible Lanes	<ul style="list-style-type: none"> • Where there are capacity limitations and no alternate routes • Significant directional peaking of traffic 	<ul style="list-style-type: none"> • Accommodates peak traffic flow 	<ul style="list-style-type: none"> • May be labor intensive • Cost
	18	Ramp Closures	<ul style="list-style-type: none"> • Alternative ramps/routes available • Shorter construction period required • High traffic volumes 	<ul style="list-style-type: none"> • Faster construction • Reduces mainline and cross road traffic congestion • May simplify the work zone 	<ul style="list-style-type: none"> • Diverts congestion elsewhere • Increases cost to motorists (time and fuel)

	19	Temporary Ramp	<ul style="list-style-type: none"> Need to maintain access to ramp (large business/hospital generator) 	<ul style="list-style-type: none"> Accommodates traffic 	<ul style="list-style-type: none"> Cost
	20	Freeway-to-Freeway Interchange Closures	<ul style="list-style-type: none"> Alternative routes available 	<ul style="list-style-type: none"> Construction duration can be reduced May simplify the work zone 	<ul style="list-style-type: none"> May significantly affect facility capacity Additional signage to route motorists
	21	Off-Peak Work/Night work/Weekend Work	<ul style="list-style-type: none"> High traffic volume during the day Long-duration projects with high truck volume High expectation for delay When significant reduction in capacity anticipated 	<ul style="list-style-type: none"> Maintains normal capacity during the day Fewer delays 	<ul style="list-style-type: none"> May be less safe due to lighting distractions, higher speeds, and increased driver impairment
	22	Designated Truck Lanes	<ul style="list-style-type: none"> When capacity/safety concerns exist for truck movements through work zone Passenger cars are expected to be significantly delayed due to 	<ul style="list-style-type: none"> Can increase capacity of the roadway 	<ul style="list-style-type: none"> Requires additional signage/personnel to enforce separate truck lane
	24	Bus Turnouts	<ul style="list-style-type: none"> High occurrence of bus traffic and stops 	<ul style="list-style-type: none"> Improves traffic flow and safety by minimizing traffic conflicts 	<ul style="list-style-type: none"> Cost
	25	Roadway/Intersection Improvements	<ul style="list-style-type: none"> Long project duration High expectation for delay When work zone results in major congestion that can be alleviated by street/intersection improvements Detoured traffic 	<ul style="list-style-type: none"> Provides increased capacity Improves motorists safety 	<ul style="list-style-type: none"> Cost
	26	Pedestrian/Bicycle Access Improvements	<ul style="list-style-type: none"> Significant pedestrian/bicyclist activities Existing sidewalks traverse the work zone A school route traverses the work zone 	<ul style="list-style-type: none"> Safer for pedestrians and bicyclists 	<ul style="list-style-type: none"> Cost
	27	Business Access Improvements	<ul style="list-style-type: none"> Where access to businesses may be reduced Anticipated impacts to businesses 	<ul style="list-style-type: none"> Accessibility to businesses Positive community relations 	<ul style="list-style-type: none"> Cost
Contracting Strategies	28	Design - Build	REFER TO FDM 11-2 (http://wisconsindot.gov/rdwy/fdm/fd-11-02.pdf#fd11-2)		
	29	"Enhanced" Liquidated Damages			
	30	Interim Liquidated Damages			
	31	Cost Plus Time Bidding			
	32	Incentive/Disincentive Clauses			
	33	Lane Rental			
Innovative Construction Strategies	34	Precast Members	<ul style="list-style-type: none"> Where traffic restrictions need to be minimized 	<ul style="list-style-type: none"> Reduces construction time Fewer traffic impacts 	<ul style="list-style-type: none"> Cost
	35	Rapid Cure Materials	<ul style="list-style-type: none"> When work activities need to be completed during night or weekend periods 		
	36	Accelerate Bridge Construction (ABC)	<ul style="list-style-type: none"> Emergency Bridge Replacement 	<ul style="list-style-type: none"> Reduced on-site construction time Minimized traffic impacts of bridge construction projects 	<ul style="list-style-type: none"> Traffic detour issues Technical issues related to seismic design, structure durability and reliability
	37	Prefabricated Elements & Systems (PBES)	<ul style="list-style-type: none"> Evacuation route or over railroad or navigable channel Costly temporary structure Remote site locations Limited construction periods 	<ul style="list-style-type: none"> Increased construction work zone safety Less disruption to the environment Increased constructability Increased quality and lowers life cycle costs Flexibility in design 	<ul style="list-style-type: none"> Poor communication and coordination between stakeholders Lack of technology for rapid bridge construction and replacement technologies for extreme events Development needed in design methodologies, contracting approaches, material supply chain management Cost of self-propelled modular transporter (SPMT)
	38	Geosynthetic Reinforced Soil (GRS)			
	39	Precast Pavement Repair	<ul style="list-style-type: none"> High public exposure High user delay Limited availability of detours 	<ul style="list-style-type: none"> Expedite project opening to traffic Minimize user delay Reduced lane closures Less traffic disruption Improved safety in work zone Low maintenance service life 	<ul style="list-style-type: none"> Higher cost of fabricating pavement slabs Higher initial learning curve May need justification

Temporary Traffic Control Strategies	40	Temporary Pavement Markings (does not include chevrons or orange pavement markings)	<ul style="list-style-type: none"> When additional markings are necessary to guide road users through the work zone Applicable to any work zone 	<ul style="list-style-type: none"> Provides guidance and information for road users through the work zone Can be deployed on gradients up to 8% Robust transition design Easily installed on bridge decks and viaducts Available as a 26', 39' or 52' system Performance tested to open and close in under 2 minutes 	<ul style="list-style-type: none"> Visibility and durability of the markings may be limited by weather conditions and debris
	41	Steel Median Barrier Gate	<ul style="list-style-type: none"> When traffic needs to be rerouted for emergency access When access is needed for construction vehicles or emergency vehicles 	<ul style="list-style-type: none"> Quick and easy deployment Can be moved laterally or longitudinally to optimize traffic flow and work zone space High mobility provides flexibility Low deflection premium mobile steel barrier 	<ul style="list-style-type: none"> Initial procurement cost
	42	Temporary Steel Barrier	<ul style="list-style-type: none"> When long-term work zone activity is next to the travel lanes When high-speed opposing travel lanes are present Drop-Offs 	<ul style="list-style-type: none"> Enhances safety to workers by the physical separation of the motorists from work zone Enhances motorist safety by physically separating traffic traveling in opposite directions 	<ul style="list-style-type: none"> Potential for a reduction in capacity
	43	Temporary Concrete Barrier	<ul style="list-style-type: none"> Long project duration Projects with multiple construction stages/phasing High traffic volume When roadway capacity can be gained Roadways with capacity limitations in the direction of travel and no alternate routes When repeated barrier shifts are needed When frequent lane closures are anticipated When reversible lanes are used 	<ul style="list-style-type: none"> Rapid and safe reconfiguration of the traffic barrier system Can provide additional space for the contractor to work Enhances motorist safety by clearly delineating direction of travel 	<ul style="list-style-type: none"> Cost Labor for movement of barrier
	44	Movable Traffic Barrier Systems	<ul style="list-style-type: none"> High crash rate When temporary hazards (e.g., work zone vehicles and other work zone-related barriers) are in proximity to motorists 	<ul style="list-style-type: none"> Protects a temporary hazard Prevents vehicle intrusion into the work space Significantly enhances safety of both motorist and worker 	<ul style="list-style-type: none"> Cost Space and labor for placement
	45	Crash Cushions	<ul style="list-style-type: none"> Where flaggers are needed Short-term lane closures 	<ul style="list-style-type: none"> Improves worker safety by removing worker from the roadway 	<ul style="list-style-type: none"> Cost
	46	Automated Flagger Assistance Devices (AFAD)	<ul style="list-style-type: none"> Flagging Operations lasting longer than 1 hour 	<ul style="list-style-type: none"> Alerts motorists about the presence of work zone Alerts motorists to change in traffic pattern 	
	47	Temporary Portable Rumble Strips (TPRS)	<ul style="list-style-type: none"> Applicable to any work zone 	<ul style="list-style-type: none"> Helps to direct road users through the work zone Easy to set-up Delineates potential work zone hazards 	<ul style="list-style-type: none"> Errant vehicles are not prevented for intruding beyond these devices
	48	Channelizing Devices	<ul style="list-style-type: none"> When additional capacity is needed through the intersection in the work zone or on nearby roadways during construction 	<ul style="list-style-type: none"> Increases throughput of the roadway Improves traffic flow Optimizes intersection capacity Reduces frequent stops 	
	49	Signal Timing/Coordination Improvements and Upgrades	<ul style="list-style-type: none"> Project is on a freeway There are a number of entrance ramps near the work zone 	<ul style="list-style-type: none"> Maintains safe and smooth freeway operations Controls entrance of vehicles to the roadway 	<ul style="list-style-type: none"> May result in ramp queues on local streets Cost
	50	Ramp Metering/Temporary Suspension of Ramp Metering	<ul style="list-style-type: none"> High expectation for delay When safety needs to be improved for new (temporary) turning movements through the work zone When additional capacity is needed 	<ul style="list-style-type: none"> Improves traffic flow through and near the work zone Helps achieve re-routing of traffic from project location Improves driver safety by separating conflicting movements 	<ul style="list-style-type: none"> Cost
	51	Temporary Traffic Signals	<ul style="list-style-type: none"> When night work is being conducted Lighting currently exists 	<ul style="list-style-type: none"> Enhances visibility of devices and delineations in the work zone Improves worker safety Guides road users through the work zone particularly during night and under adverse conditions 	<ul style="list-style-type: none"> Cost
	52	Temporary Lighting Devices	<ul style="list-style-type: none"> Where significant reduction in capacity is anticipated on the mainline 	<ul style="list-style-type: none"> More efficient utilization of existing transportation facilities 	<ul style="list-style-type: none"> May require additional cost
53	Planned Detour Route				

	54	Use of Alternate Route	<ul style="list-style-type: none"> When a full road closure is used 	<ul style="list-style-type: none"> May reduce motorist delays 	<ul style="list-style-type: none"> May significantly impact roadways used for detours
	55	Local Detour Route	<ul style="list-style-type: none"> At the request of the local agency 	<ul style="list-style-type: none"> Reduce traffic flow on unsuitable roads 	<ul style="list-style-type: none"> Local agencies must designate the detour
Roadway Restriction Strategies	56	Work hour restrictions for peak travel	<ul style="list-style-type: none"> May significantly impact roadways used for detours 	<ul style="list-style-type: none"> Maintains normal capacity during traffic peak times Fewer delays 	<ul style="list-style-type: none"> May extend project duration
	57	Turn Restrictions	<ul style="list-style-type: none"> When turning vehicles are causing unreasonable delays or crash potential in the work zone When the geometric design or the available sight distance at the intersection does not adequately provide for a safe turning movement 	<ul style="list-style-type: none"> Simple, cost-effective Increases roadway capacity Reduces potential congestion and delays Improves safety 	<ul style="list-style-type: none"> Additional delays for turning vehicles Turning vehicles need to re-route
	58	Parking Restrictions	<ul style="list-style-type: none"> When significant reduction in capacity anticipated When traffic demand at the location can be reduced by parking restrictions When parking spots can be converted to an additional travel lane When restricting parking spots can improve work zone access and quicken work zone activity 	<ul style="list-style-type: none"> Simple, cost-effective solution Increases roadway capacity 	<ul style="list-style-type: none"> Affects local parking
	59	OSOW Truck/Heavy Vehicle Restrictions	<ul style="list-style-type: none"> Projects with high OSOW truck volume When significant reduction in capacity anticipated When capacity/safety concerns exist for truck movements through work zone 	<ul style="list-style-type: none"> Improves passenger car flow through the work zone by removing trucks from the traffic stream 	<ul style="list-style-type: none"> Provision of an alternate truck route may adversely affect other traffic or roads Requires additional signage/personnel to enforce truck restrictions
Traffic Control Signaling Strategies	60	Dynamic Late Merge System (DLMS)/Zipper Merge	<ul style="list-style-type: none"> Moderate traffic volume and congestion When needed capacity can be gained When frequent lane closures are anticipated 	<ul style="list-style-type: none"> Enhances mobility and safety Controls vehicle merging at the approach Reduces vehicle conflicts 	<ul style="list-style-type: none"> Cost
	61	End-of-Queue Detection (Queue Warning System (QWS) / Basic Queueing Warning System (BQWS))	<ul style="list-style-type: none"> Moderate traffic volume and congestion Queueing Expected History of Crashes Lane Closure Roadway Geometry 	<ul style="list-style-type: none"> Enhances mobility and safety Alerts drivers of upcoming traffic conditions (slow/stopped traffic) Reduces vehicle conflicts 	<ul style="list-style-type: none"> Cost
	62	Temporary Speed Limit Reduction	<ul style="list-style-type: none"> Where significant reduction in capacity is anticipated When there are lane or shoulder closures, traffic shifts, or other changes in geometry When work is adjacent to the traffic lane 	<ul style="list-style-type: none"> Enhances motorist and worker safety 	<ul style="list-style-type: none"> Traffic mobility Compliance with speed limit reductions is often poor
	63	Warning Signs	<ul style="list-style-type: none"> In a situation that may not be readily apparent (e.g., speed reductions, road or lane narrows, width restrictions, etc.) 	<ul style="list-style-type: none"> Reduces potential for incidents 	<ul style="list-style-type: none"> May be ignored or missed by motorists when a lot of signage is present
	64	Regulatory Signs	<ul style="list-style-type: none"> When necessary to inform road users of traffic laws or regulations 	<ul style="list-style-type: none"> Encourages reduced speeds Reduces incident potential 	<ul style="list-style-type: none"> May be ignored or missed by motorists when a lot of signage is present
	65	Guide/Information Signs	<ul style="list-style-type: none"> When detours are being used When advanced notice is necessary for road users to choose an alternate route 	<ul style="list-style-type: none"> Provides alternate route and work zone information to road users 	<ul style="list-style-type: none"> May be ignored or missed by motorists when a lot of signage is present
	66	Portable Changeable Message Signs (PCMS)	<ul style="list-style-type: none"> When work zone information is subject to frequent changes 	<ul style="list-style-type: none"> Effective way to communicate real-time information to road users Allows road users to adjust travel plans based on information Draws special attention to key information Can be used for incident management 	<ul style="list-style-type: none"> May be ignored or missed by motorists when a lot of signage is present Additional cost
	67	Arrow Panels/Board	<ul style="list-style-type: none"> Lane closures, particularly on high-speed roadways 	<ul style="list-style-type: none"> Assists motorists in navigating and merging through and around the work zone Effective method to alert motorists of lane closures Highly visible 	<ul style="list-style-type: none"> Additional cost
68	Dynamic Message Signs (DMS)	<ul style="list-style-type: none"> When work zone information is subject to frequent changes 	<ul style="list-style-type: none"> Effective way to communicate real-time information to road users Allows road users to adjust travel plans based on information Draws special attention to key information Can be used for incident management 	<ul style="list-style-type: none"> May be ignored or missed by motorists when a lot of signage is present 	

Coordination	69	Coordination with Other Projects	<ul style="list-style-type: none"> • May be beneficial to any project 	<ul style="list-style-type: none"> • Reduces motorist delay • Minimizes impacts to potentially affected businesses and communities • Reduces exposure time to road work • May increase efficiencies 	
	70	Right-of-Way Coordination	<ul style="list-style-type: none"> • May be beneficial to any project 	<ul style="list-style-type: none"> • Reduces construction duration and delay 	
	71	Utility Coordination	<ul style="list-style-type: none"> • May be beneficial for any project 	<ul style="list-style-type: none"> • Significant cost saving • Reduce and manage traffic disruptions from road work • Reduce project delays 	<ul style="list-style-type: none"> • Utility relocation may be required resulting in more expensive R/W • Utility construction activities may affect project phasing • Utility construction may occur during project construction • Utility work may not be completed prior to start of construction
	72	Coordination with Other Transportation Infrastructure (Rail, Harbors, Transit, Aeronautics)	<ul style="list-style-type: none"> • May be beneficial to any project 	<ul style="list-style-type: none"> • Minimizes potential impacts on other transportation facilities 	<ul style="list-style-type: none"> • May be difficult to identify coordination opportunities
	73	Project On-Site Safety Training	<ul style="list-style-type: none"> • Long project duration • In locations where worker and motorist safety are of particular concern 	<ul style="list-style-type: none"> • Improves worker safety due to the clear understanding on safety procedures and specific risks associated with the project by all workers 	<ul style="list-style-type: none"> • Cost of safety training for all personnel

Transportation Management Plan (TMP) Strategy Matrix			
Public Information and Motorist Mitigation Strategies	When to Consider	Potential Benefits	Potential Challenges
1 Brochures and Mailers	<ul style="list-style-type: none"> • Urban area • Long project duration • Alternate travel modes available • High public exposure • Significant business and residential impacts 	<ul style="list-style-type: none"> • Condensed format of brochures lends itself to brief, high-impact messages • Brochures have a relatively long shelf life, which is useful for projects of long duration • Low cost • Easy to distribute 	<ul style="list-style-type: none"> • Information (e.g., dates of road closures) may change and not be reflected in the printed materials • Often targets local motorists only
2 Press Releases/Media Alerts	<ul style="list-style-type: none"> • Large projects - Mega/Major projects • Projects with multiple phases/construction stages • High public exposure • Significant business and residential impacts 	<ul style="list-style-type: none"> • Cost effective if it uses free publicity to inform 	<ul style="list-style-type: none"> • Often targets local motorists only
3 Paid Advertisements	<ul style="list-style-type: none"> • Large projects - Mega/Major projects • Alternate routes available • High public exposure • Significant business and residential impacts 	<ul style="list-style-type: none"> • Gives travelers advanced warning to plan for delays or alternate routes • Covers a large or multi-jurisdictional area • Reinforces public awareness of the project • Can reach many people at one time 	<ul style="list-style-type: none"> • Requires advanced planning • Cost • Newspaper readers may skip over ads
4 Community Task Forces	<ul style="list-style-type: none"> • Long project duration • High public exposure • Significant business and residential impacts 	<ul style="list-style-type: none"> • Gets buy-in from different stakeholders 	<ul style="list-style-type: none"> • Requires coordination beforehand • May not be cost effective
5 Coordination with Media/Schools/Businesses/Emergency Services	<ul style="list-style-type: none"> • Long project duration • High crash rate • High public exposure • Significant business and residential impacts 	<ul style="list-style-type: none"> • Travelers at major activity centers can plan in advance to take alternate routes 	
6 Special Event Coordination	<ul style="list-style-type: none"> • Long project duration • High crash rate • High public exposure • Significant business and residential impacts 	<ul style="list-style-type: none"> • Notifies travelers of closures • Observe operational and safety issues on local roads 	<ul style="list-style-type: none"> • Requires advanced planning • Cost • May only target local motorists
7 Traffic Radio	<ul style="list-style-type: none"> • Long project duration • Projects with multiple phases/construction stages • Detour routes available • Alternate travel modes available • High public exposure 	<ul style="list-style-type: none"> • Can reach many commuters over a wide area • Little to no cost • Targets people who are likely to use the information 	<ul style="list-style-type: none"> • Accurate information
8 Public Information Meetings	<ul style="list-style-type: none"> • Long project duration • Projects with multiple phases/construction stages • When public involvement is required 	<ul style="list-style-type: none"> • Gets buy-in from different stakeholders 	<ul style="list-style-type: none"> • Often targets local motorists only
9 511 Traveler Information Website (project website, lane closures, motorist information, public information)	<ul style="list-style-type: none"> • Projects with multiple phases/construction stages 	<ul style="list-style-type: none"> • Projects with multiple phases/construction stages 	<ul style="list-style-type: none"> • Can be distracting to the driver if used on the road • Road users must have these personal devices
10 Dedicated Travel Time Information	<ul style="list-style-type: none"> • Detour routes available 	<ul style="list-style-type: none"> • Reduced congestion on mainline 	<ul style="list-style-type: none"> • Accurate information and travel time data
11 Freight travel information/Lane Closure System (LCS)	<ul style="list-style-type: none"> • Applicable to any work zone 	<ul style="list-style-type: none"> • Provides useful information to freight stakeholders 	
12 Traffic Management Center (TMC)	<ul style="list-style-type: none"> • Applicable to any work zone 	<ul style="list-style-type: none"> • Have access to real-time information on traffic and incidents and relay that to the traveling public through different media outlets • Integrate, maintain, operate, troubleshoot new equipment • Staffed 24/7, 365 days a year • Message Plan Development (DMS) • Operate and monitor permanent and temporary cameras 	<ul style="list-style-type: none"> • Detectors may be difficult to maintain while the work zone is taking place

Transportation Management Plan (TMP) Strategy Matrix			
Incident Management Mitigation Strategies	When to Consider	Potential Benefits	Potential Challenges
1 ITS for Traffic Monitoring/Management	<ul style="list-style-type: none"> • Can be applicable to all situations – to convey messages that communicate accurate, timely, and pertinent information to motorists about prevailing and anticipated traffic conditions • Long project duration • Presence of permanent ITS deployment and/or TMC • High expected delay • Projects with multiple construction stages/phasing • Available detour routes exist • Frequent lane and/or ramp closures expected • Existing and potential high incident locations 	<ul style="list-style-type: none"> • Provides real-time information to motorists • Enables agency to manage the transportation system in and around the work zone in real-time • Provides road users with information to divert or take other appropriate measures in response to an incident • Allows motorists to avoid hazards and delays, and respond properly to changing roadway conditions • Improves driver guidance and creates safer operations 	<ul style="list-style-type: none"> • Cost • Needs accurate and reliable information that is dependable
2 Surveillance [closed-circuit television (CCTV), loop detectors, Bluetooth, microwave detection]	<ul style="list-style-type: none"> • Long project duration • All situations - advanced warning/public information and signage is generally always beneficial 	<ul style="list-style-type: none"> • Verifies the presence of traffic problems and incidents • Helps to determine appropriate response to address an incident • Contributes to saving both motorist and worker lives by aiding quick, appropriate response from local incident response agencies 	<ul style="list-style-type: none"> • Cost
3 Traffic Screens/GAWK Screens/Glare Screens	<ul style="list-style-type: none"> • High traffic volumes • High crash rate • When headlight glare needs to be reduced • When construction is immediately adjacent to traffic 	<ul style="list-style-type: none"> • Reduces driver distraction • Reduces rubbernecking, which can prevent congestion • Reduces headlight glare 	<ul style="list-style-type: none"> • Cost
4 Mile-Post Markers (maintain or install temporary)	<ul style="list-style-type: none"> • Applicable to any work zone 	<ul style="list-style-type: none"> • Provides the motorist with the location information critical for getting quick help • Aids in responding to incidents or breakdowns • Helpful in managing traffic records and subsequent analysis 	
5 Freeway Service Team (FST)	<ul style="list-style-type: none"> • Long project duration • High public exposure/traffic volume • Where incidents can create significant delays • Where shoulder width reductions or closures are expected • High crash rate 	<ul style="list-style-type: none"> • Reduces the time required to remove the incident from the roadway 	<ul style="list-style-type: none"> • Cost
6 Incident/Emergency Management Coordinator	<ul style="list-style-type: none"> • Long project duration • Large complex project where on-going incident management is necessary • High public exposure/traffic volume 	<ul style="list-style-type: none"> • Provides a dedicated, responsible person for managing incidents and ensuring that traffic safety and mobility goals are met 	<ul style="list-style-type: none"> • Cost
7 Incident/Emergency Response Plan and Coordination with Emergency Responders	<ul style="list-style-type: none"> • Long project duration • Major/complex work zone projects where there is potential for recurring significant incidents • High public exposure/traffic volume 	<ul style="list-style-type: none"> • Prompt and appropriate response and clearance of incidents 	<ul style="list-style-type: none"> • Cost • Predicting and planning for potential incidents
8 Division of State Patrol Law Enforcement Mitigation Contract	<ul style="list-style-type: none"> • Long project duration • High crash rate • In large and complex work zone locations where enforcement is an issue or incident support is desired • Peak Hour Enforcement 	<ul style="list-style-type: none"> • Enhances safety of motorists and workers • Supports incident management • Promotes orderly traffic flow 	<ul style="list-style-type: none"> • Cost
9 Emergency Contractor Response	<ul style="list-style-type: none"> • Long project duration • High crash rate • In large and complex work zone locations where quick contractor support is needed to reset work zone devices and facilities 	<ul style="list-style-type: none"> • Quicker response times • Reduced incident clearing time 	<ul style="list-style-type: none"> • Road user costs needed to justify the added risk with the inclusion of the special provision

REQUEST FOR NON-STANDARD MITIGATION STRATEGIES APPROVAL

Complete this form for non-standard mitigation strategies before 90% TMP Submittal. Non-Standard mitigation strategies can be defined as any strategy not found in FDM 11-50 Attachments 5.8 – 5.10.

Requester Information:

Name: _____
Phone: _____
Email: _____
Region/Office: _____

Project Information:

Construction Project ID: _____ Mitigation Project ID: _____
Project Termini: _____ Project Length: _____
Highway: _____ County: _____
Affected Municipalities: _____
Anticipated Start Date: _____ Anticipated Completion Date: _____

Type of Strategy to be used: _____

Cost of Strategy: _____

Justification of Strategy: _____

Other Comments: _____

Follow up analysis is required to make sure strategy is effective and useful after 30 days.

Submit form through WisTMP.

Submittal Date: _____

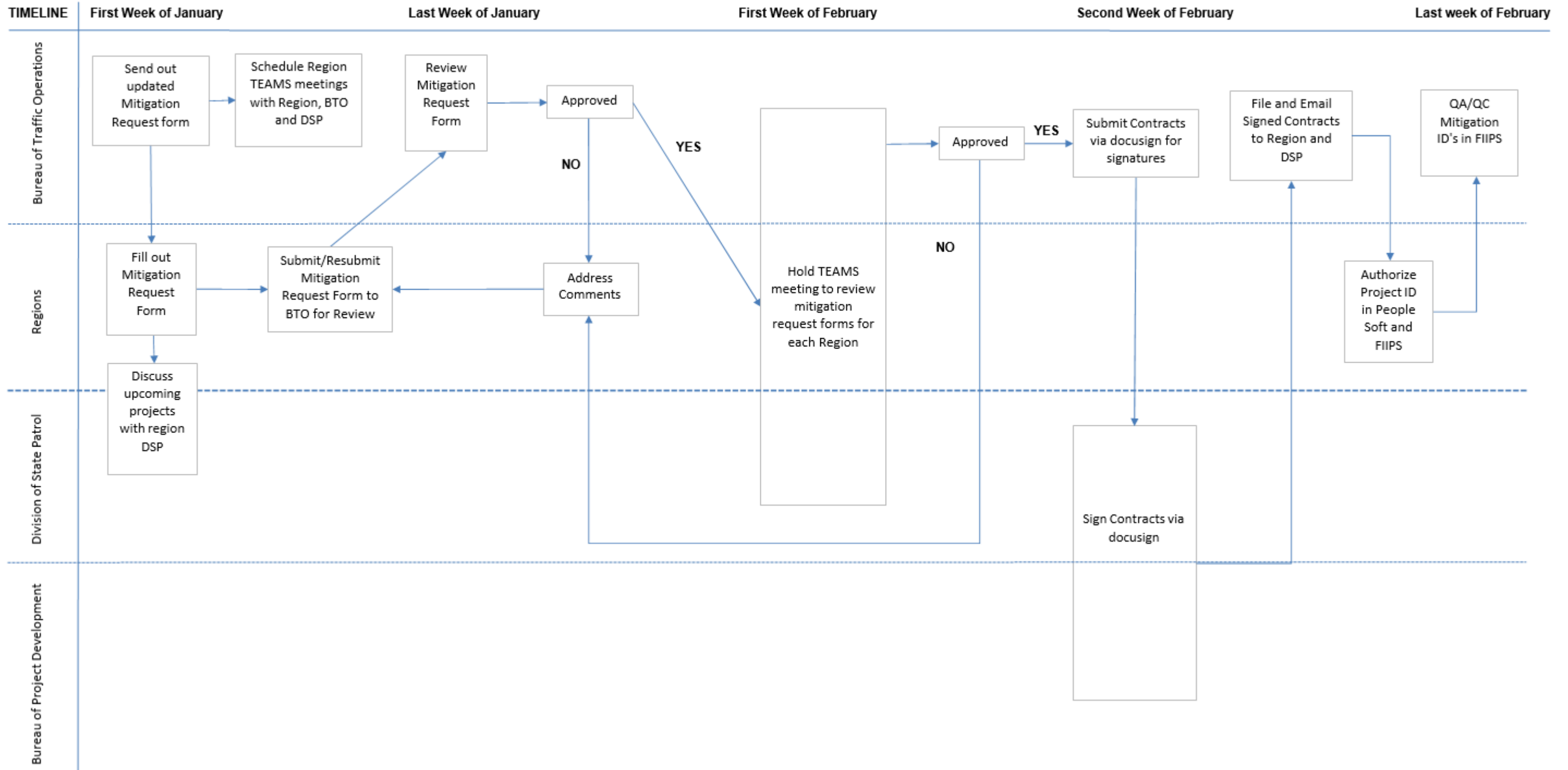
Four Approvers:

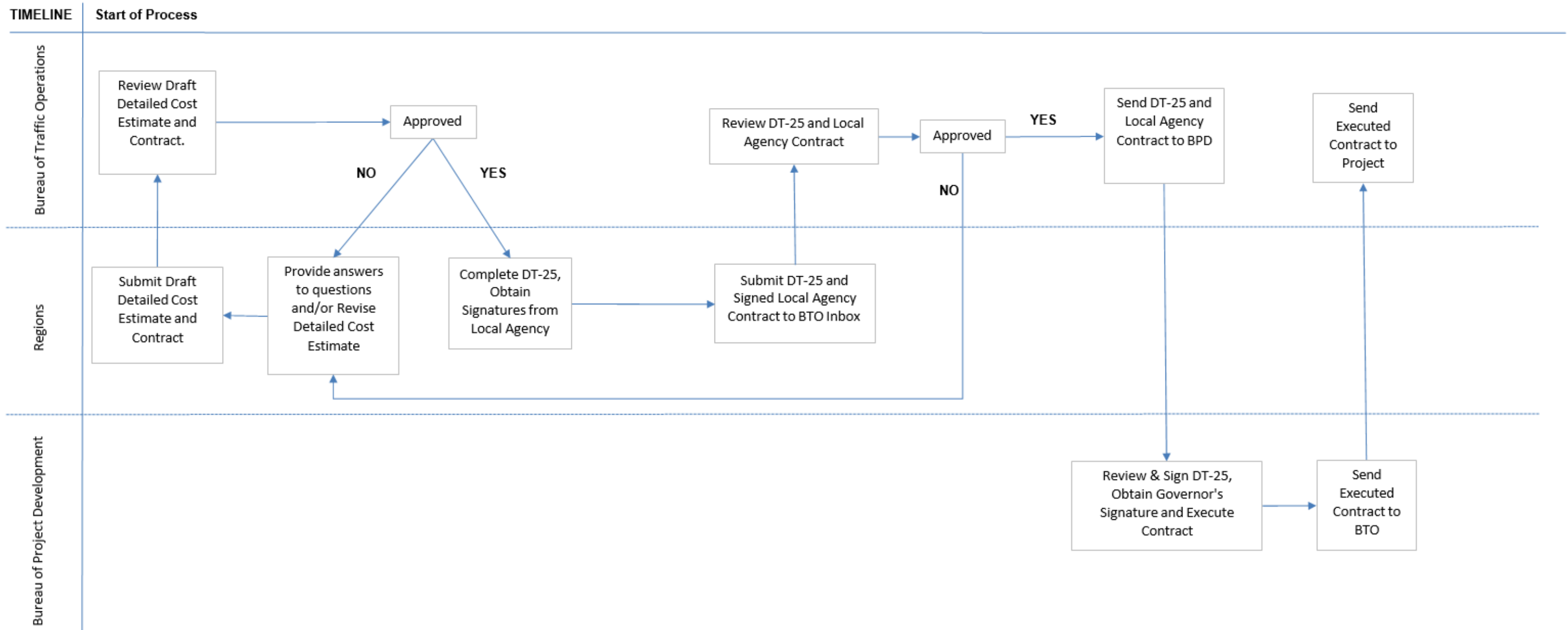
Bureau of Traffic Operations Director

Bureau of Traffic Operations, Traffic Engineering and Safety Section Chief

Two other Region Chief's not involved in project.

Approval Date: _____





A working copy of this file is at:

<https://wisconsin.gov/Pages/doing-bus/local-gov/traffic-ops/programs/workzone/workzone.aspx>

Public Information & Outreach Checklist (Use for TMP Type 2 & 3)

1. Project Information

Design ID: xxxx-xx-xx

TMP ID: xxxx

Date: October 5, 2021

2. Stakeholder Groups

The purpose of this document is to determine what Stakeholder groups need to be communicated with during construction.

Determine if the project will have impacts to the following Stakeholder Groups in this document. If there are impacts determine the contact information for the Stakeholders groups listed if possible. This information may come from the Public Involvement Plan.

Describe the extent of coordination that will be required and who the contacts are for each group. In developing this consider the strategies listed in FDM 11-50 Attachment 5.3 Standard Public Information and Motorist Mitigation Strategy Matrix and list any used in Section 7 of the TMP.

a. Road Users

Motorists

Generally only LCS and 511 will be needed in this section for this group. If the project is on the interstate system or will have a larger impact, other strategies may also be needed.

Mass Transit

If the box is selected include the extent of the coordination and who the contacts are for both the Mass Transit Agency and WisDOT

Pedestrians

Generally only LCS and 511 will be needed in this section for this group. Additional outreach may be needed if specific users are identified in the area.

Freight/OSOW

Generally only LCS and 511 will be needed in this section for this group. If the project is on the interstate system or will have a larger impact, other strategies may also be needed.

Bicycles

Generally only LCS and 511 will be needed in this section for this group. If the route is a well know bicycle route effort will be needed to identify and reach out to bicycle groups.

b. Impacted Area

Residents

Generally only LCS and 511 will be needed in this section for this group. If the project is on the interstate system or will have a larger impact, other strategies may also be needed.

Municipal/County Officials

Typically, these officials would be included in weekly project update meetings

Large Event Organizers

If the box is selected include the extent of the coordination and who the contacts are for both the event organizers impacted and WisDOT

Schools

If the box is selected include the extent of the coordination and who the contacts are for both the schools impacted and WisDOT

Businesses

If the box is selected include the extent of the coordination and who the contacts are for both the businesses impacted and WisDOT

c. Emergency Responders

Fire Department and Emergency Medical Services

If the box is selected include the extent of the coordination and who the contacts are for the impacted fire and EMS services and WisDOT

Law Enforcement

If the box is selected include the extent of the coordination and who the contacts are for both the local law enforcement impacted and WisDOT

d. Other Transportation

Bus Lines

If the box is selected include the extent of the coordination and who the contacts are for both the impacted bus companies and WisDOT

Rail

If the box is selected include the extent of the coordination and who the contacts are for both the impacted rail lines and WisDOT

Ferries

If the box is selected include the extent of the coordination and who the contacts are for both any ferries impacted and WisDOT

e. Outside impacts

Near-by Projects

If the box is selected include the extent of the coordination and who the contacts are for both projects impacted and WisDOT. These projects could be WisDOT projects, local projects, or large private developments.

Adjacent Region

If the box is selected include the extent of the coordination and who the contacts are for both the other regions impacted.

Adjacent State

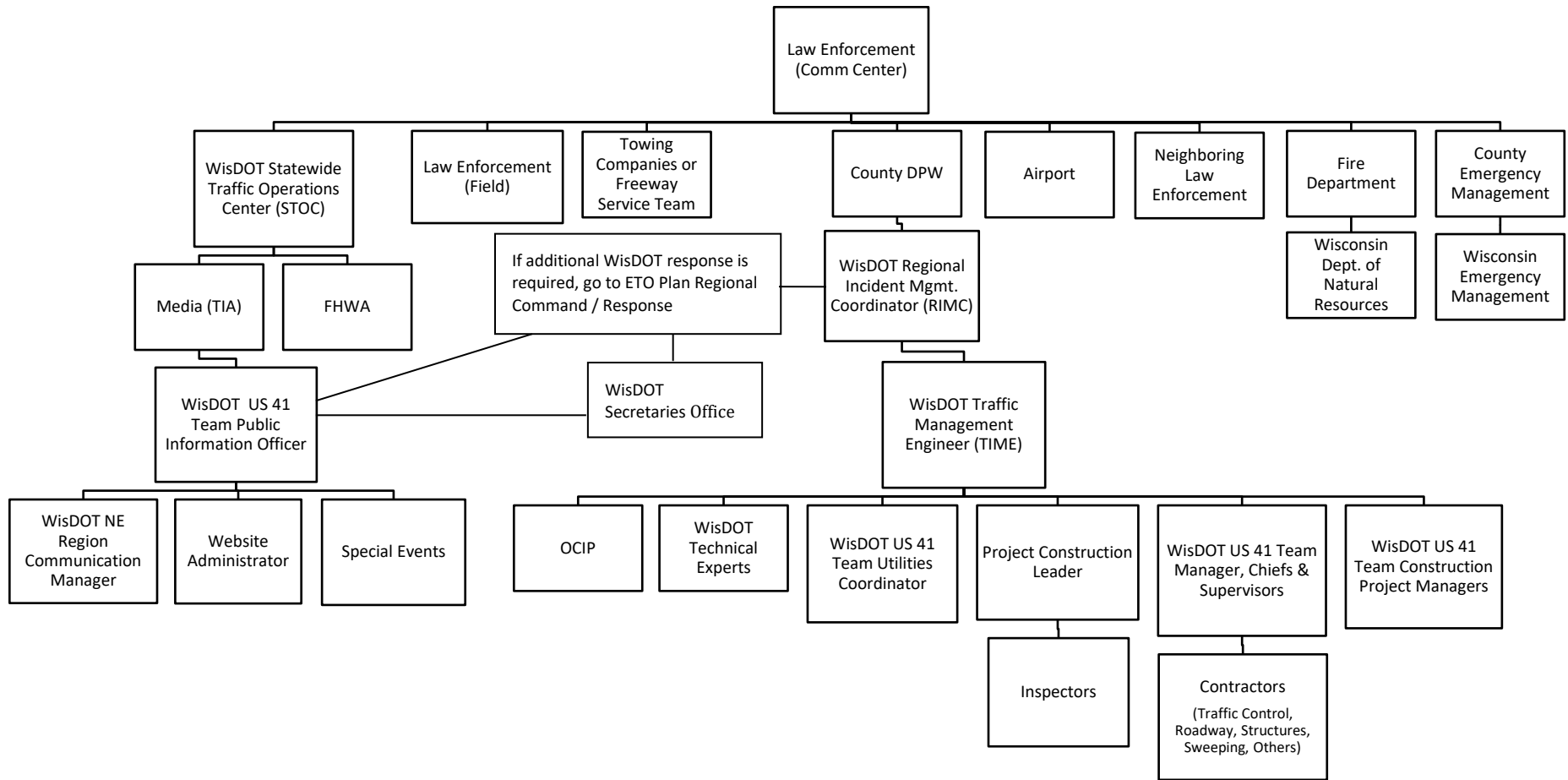
If the box is selected include the extent of the coordination and who the contacts are for the impacted state and WisDOT

Other:

If the box is selected include the extent of the coordination and who the contacts are for both the group impacted and WisDOT

Attach this document to Section 7 of the TMP prior to the 90% Review

Example Communications Control Diagram
US 41 Freeway Incident / Crisis Communication Plan General Communication Flow Diagram



NOTE: This communication flow diagram **does not** represent a hierarchy for responding agencies. Rather, this communication flow diagram is meant to illustrate the initial flow of communication between agencies.

Entities not highlighted will be contacted depending upon location and scope of emergency.

Example Emergency Alternatives Route Maps

NB SEGMENT M.P. 175AB-171C

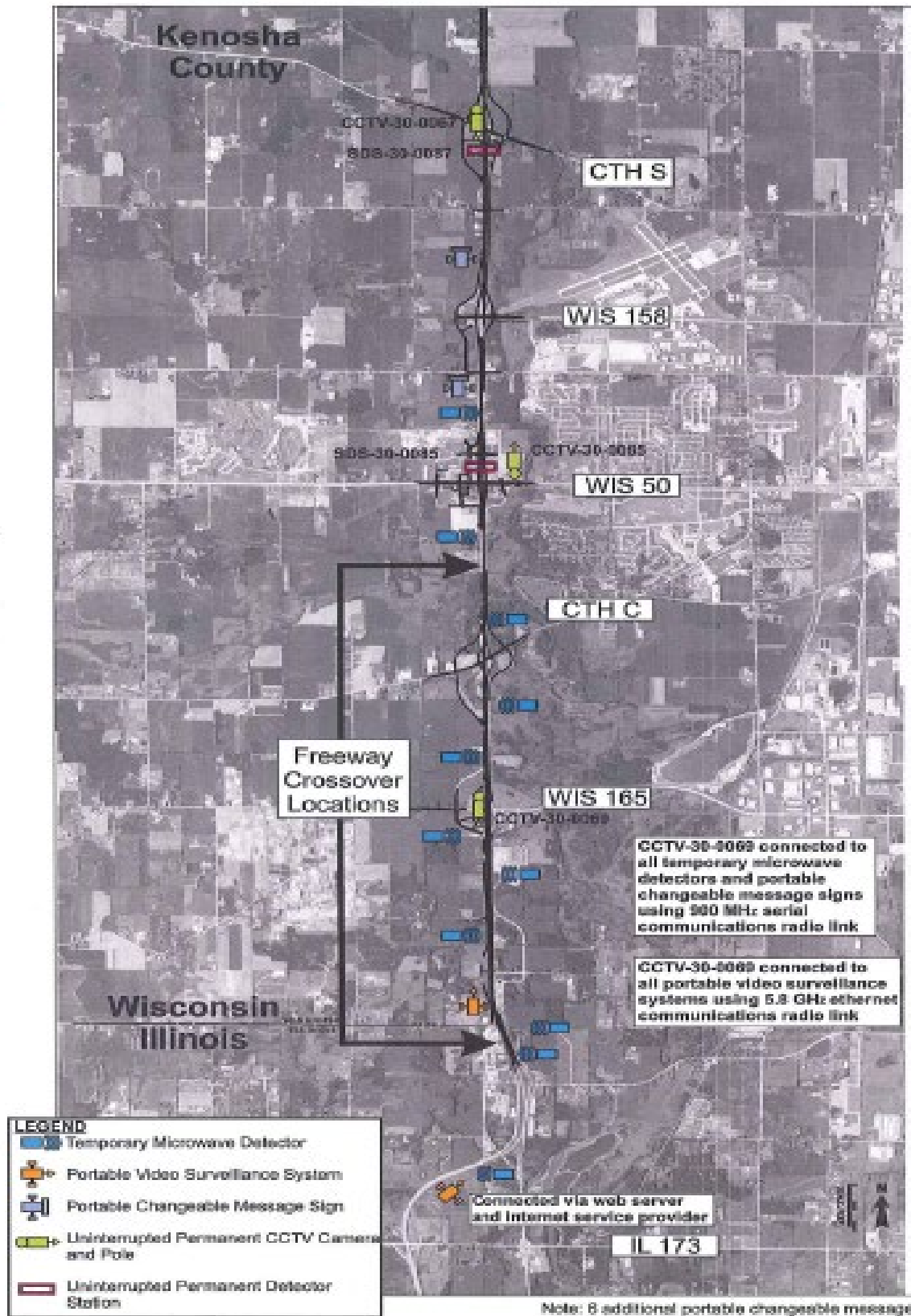


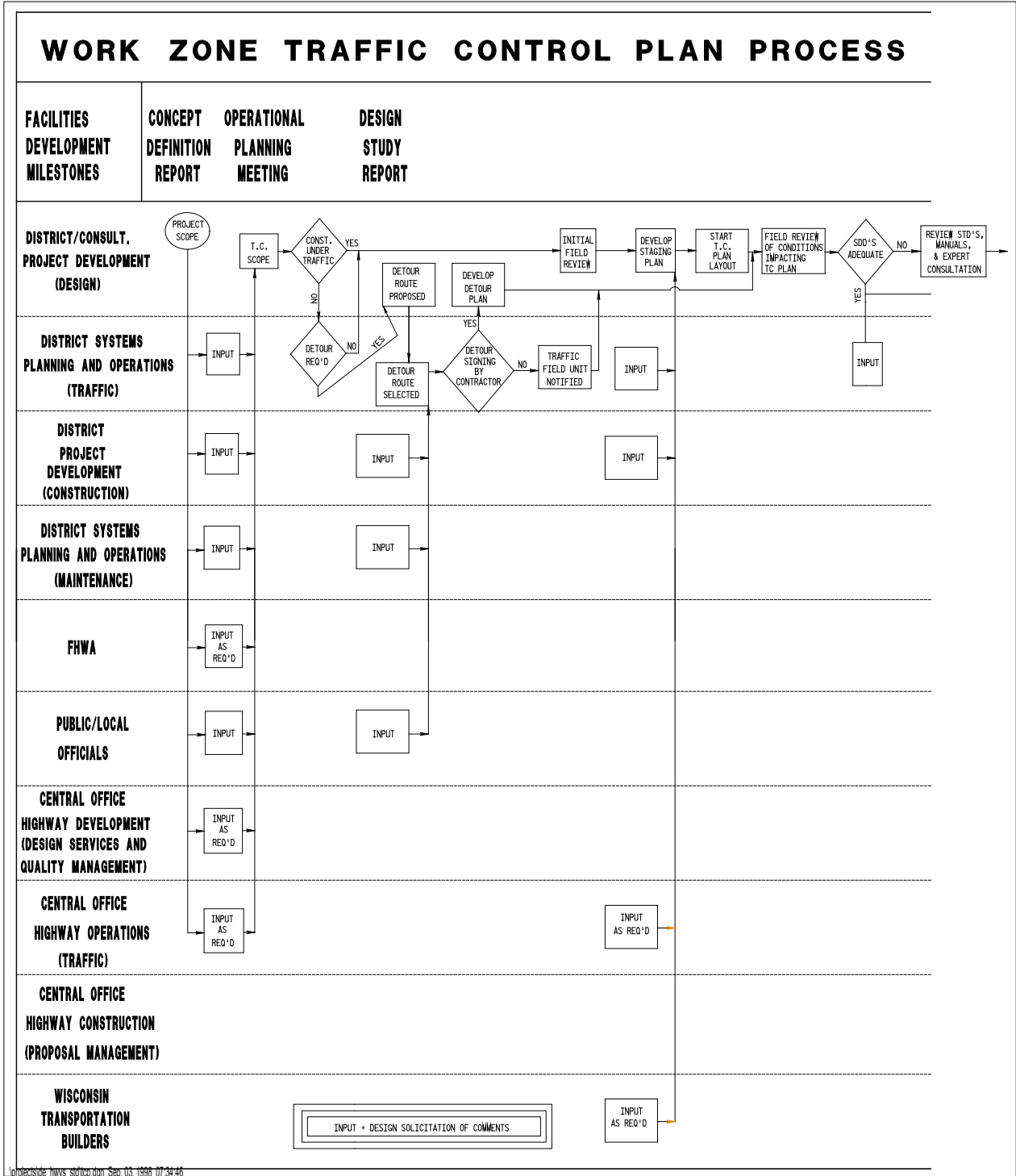
SB SEGMENT M.P. 171C-175AB

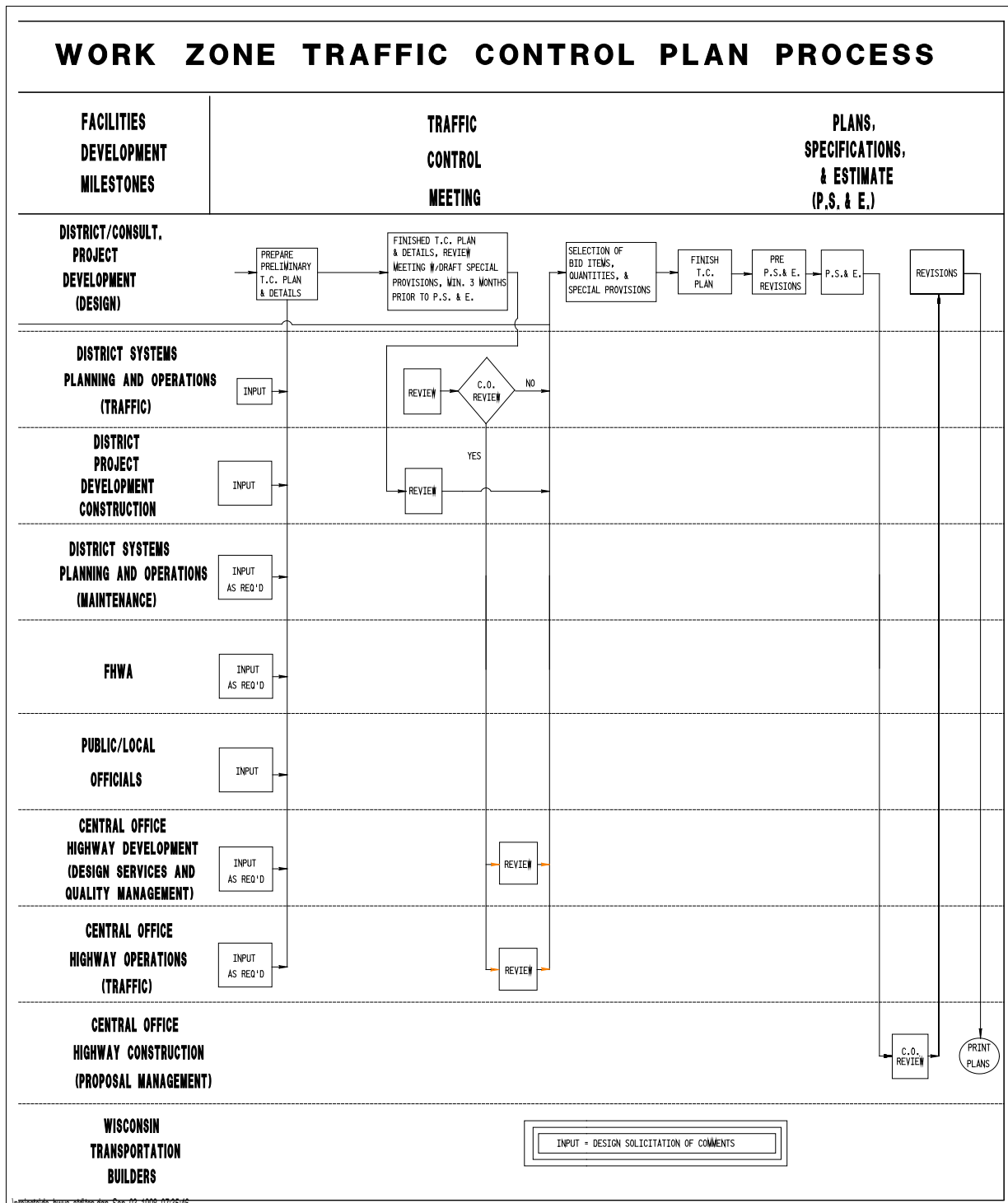


Example Emergency Access, Pullout and Traveler Information Equipment Locations Map

Provide a map of emergency access and pullout locations within the work zone and traveler information equipment, such as HAR, PCMS, DMS, and cameras within the project area.







Directions for use: The answer to each of these questions should be yes (Y) or not applicable (NA). If the answer is no (N), then modifications should be made to the plan. Refer to the text of this procedure or the region traffic section for guidance in making modifications.

No.	Design Plan Review Checklist for Work Zone Traffic Control	Y	N	N/A
GENERAL				
1.	Is the vehicle path vs. the work area clearly delineated?			
2.	Can cross street traffic identify the vehicle path?			
3.	Do intersection staging details allow for construction?			
4.	Has the work zone traffic control been field reviewed during the design process? (e.g., visibility of signs, devices, crossovers)			
5.	If the speed limit is reduced from 65mph, has a temporary speed zone declaration been completed and submitted to BTO?			
CAPACITY CONSIDERATIONS				
6.	Is turning traffic at intersections provided for?			
7.	Can the mainline handle the traffic volume?			
8.	Do the special provisions address work restrictions? (time of day, weekend, holidays, etc.)			
9.	Are the necessary parking restrictions shown in the plan?			
10.	Have the appropriate traffic personnel (Region, City, County, etc.) been consulted about special traffic control mitigation measures, e.g. temporary signals?			
PLAN AND SPECIAL PROVISIONS				
11.	Are SDD's and typical drawings used only when appropriate for the field conditions? NOTE: If SDD's and typical drawings are not appropriate, project specific drawings must be included.			
12.	Are all of the appropriate SDD's listed in the plan?			
13.	Do the special provisions include a "Traffic" article?			
14.	Are incidental items related to traffic control provided for under a "Traffic Control" special provision?			
15.	Is "Traffic Control" included in the estimate?			
16.	Are miscellaneous quantities for each WZTC item included?			
17.	Are the general notes and legends shown on the traffic control sheets?			
18.	Will the WZTC Plan be legible when reduced to "D" size?			

No.	Design Plan Review Checklist for Work Zone Traffic Control	Y	N	N/A
WORK ZONE SIGNING				
19.	Are the sign dimensions shown in the plan or indicated in the general notes?			
20.	Are warning signs which are typically manufactured in yellow, properly shown as "WO"?			
21.	Are advisory speed signs, WO 13-1, if needed, shown only in conjunction with a warning sign?			
22.	If a WO1-2 or WO1-4 sign is shown with an advisory speed (WO13-1), is the advisory speed greater than 30 MPH?			
23.	If a WO1-1 or WO1-3 sign is shown with an advisory speed (WO13-1), is the advisory speed 30 MPH or less?			
24.	Are the advance warning sign messages more specific as the driver gets closer to the beginning of the work zone?			
25.	If width restriction less than 15 feet exists, are the appropriate width restriction signs shown?			
26.	If the project length is more than 2 miles, are "ROAD WORK NEXT XX MILE" sign shown on each end of the project?			
27.	Is the sign spacing in accordance with Table 6C-1 in Part 6 of the MUTCD?			
28.	If flags are to be installed on signs, is a 16"x16" flag size indicated?			
29.	Are flags shown on all temporary stop signs?			
30.	If existing signs need to be moved due to traffic staging, are they noted in the traffic control plan and special provisions with the appropriate bid item included?			
31.	If a milled or loose surface will exist, are the "GROOVED PAVEMENT" or "LOOSE GRAVEL" signs provided for?			
32.	If project specific fixed message signs are to be installed by the contractor, are they bid separately and are sign details included in the plan?			
33.	If Type I or Type II signs require modification or covering by the contractor, are they bid separately and are details included in the plan?			
34.	Have Region Traffic personnel been consulted about the use of portable changeable message signs?			
35.	Are individual sign codes shown on the plan?			

No.	Design Plan Review Checklist for Work Zone Traffic Control	Y	N	N/A
CHANNELIZING				
36.	Are Type C lights shown on drums in "taper" areas?			
37.	Do the taper lengths match Tables 6C-3 and 6C-4 of Part 6 of the MUTCD?			
38.	For counter-directional traffic, have Region Traffic personnel been consulted about the separation devices?			
39.	Is the spacing of channelizing devices shown on the plan as specified in Section 6F.63 of Part 6 of the MUTCD?			
40.	Is a buffer space provided as shown in Table 6C-2 of Part 6 of the MUTCD?			
WORK ZONE MARKINGS				
41.	When temporary pavement marking is required, is the appropriate material specified for Temporary Pavement Marking? (Temporary Marking Paint vs. Temporary Marking Removable Tape vs. Temporary Pavement Marking Epoxy)			
42.	Is the proper width and method of payment specified for Temporary Pavement Marking? (e.g. 8" channelizing line must be a separate bid item)			
43.	If existing markings conflict with traffic handling or staging, is removal or covering provided for in the plans? (edge lines, centerlines, lane lines, channelizing lines, stop lines, arrows, words)			
44.	When removal is necessary, are the limits for the removal of existing or staged markings shown on the plans? NOTE: Various widths of pavement marking removal should be paid for separately per line width.			

[Municipality Letterhead]

Date

Name

Project Manager

WisDOT – xx Region

Street Address

City, WI xxxxx

To Project Manager:

The municipality name designates the following detour route for *local road*:

In the westbound direction, road A to road B to road C. In the eastbound direction, road C to road B to road A.

The detour will be in place for the duration of project xxxx-xx-xx.

Sincerely,

Municipality Official

Directions for use: The answer to each of these questions should be yes (Y) or not applicable (NA). If the answer is no (N), then modifications should be made to the plan. Refer to the text of this procedure or the region traffic section for guidance in making modifications.

No.	Design Plan Review Checklist for Work Zone Traffic Control	Y	N	N/A
	GENERAL			
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2.	Can cross street traffic identify the vehicle path?			
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4.	Has the work zone traffic control been field reviewed during the design process? (e.g., visibility of signs, devices, crossovers)			
5.	If the speed limit is reduced from 65mph, has a temporary speed zone declaration been completed and submitted to BTO?			
	CAPACITY CONSIDERATIONS			
6.	Is turning traffic at intersections provided for?			
7.	Can the mainline handle the traffic volume?			
8.	Do the special provisions address work restrictions? (time of day, weekend, holidays, etc.)			
9.	Are the necessary parking restrictions shown in the plan?			
10.	Have the appropriate traffic personnel (Region, City, County, etc.) been consulted about special traffic control mitigation measures, e.g. temporary signals?			
	PLAN AND SPECIAL PROVISIONS			
11.	Are SDDs and typical drawings used only when appropriate for the field conditions? NOTE: If SDD's and typical drawings are not appropriate, project specific drawings must be included.			
12.	Are all of the appropriate SDDs listed in the plan?			
13.	Do the special provisions include a "Traffic" article?			
14.	Are incidental items related to traffic control provided for under a "Traffic Control" special provision?			
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35.	Are individual sign codes shown on the plan?			

No.	Design Plan Review Checklist for Work Zone Traffic Control	Y	N	N/A
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37.	Do the taper lengths match Tables 6C-3 and 6C-4 of Part 6 of the MUTCD?			
38.	For counter-directional traffic, have Region Traffic personnel been consulted about the separation devices?			
39.	Is the spacing of channelizing devices shown on the plan as specified in Section 6F.63 of Part 6 of the MUTCD?			
40.	Is a buffer space provided as shown in Table 6C-2 of Part 6 of the MUTCD?			
WORK ZONE MARKINGS				
41.	When temporary pavement marking is required, is the appropriate material specified for Temporary Pavement Marking? (Temporary Marking Paint vs. Temporary Marking Removable Tape vs. Temporary Pavement Marking Epoxy)			
42.	Is the proper width and method of payment specified for Temporary Pavement Marking? (e.g. 8" channelizing line must be a separate bid item)			
43.	If existing markings conflict with traffic handling and/or staging, is removal or covering provided for in the plans? (edge lines, centerlines, lane lines, channelizing lines, stop lines, arrows, words)			
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