



Traffic Signal Design Manual

ORIGINATOR Director, Bureau of Traffic Operations		3-4-9
CHAPTER 3	Project Scoping Process & Geometric Design Considerations	
SECTION 4	Operational Considerations	
SUBJECT 9	Temporary Signals	

Temporary traffic signals are typically installed for traffic control, when an existing signalized intersection is partially or totally reconstructed, or as part of a bridge rehabilitation project. Consult with the regional traffic section as to the type of temporary signal installation (partial or full) that *may* be needed for the project. The Regional Traffic Unit **shall** make the final decision regarding the installation, design, and operation of temporary traffic control signals

The type of temporary signal installation is based on how much of the project work impacts the signalized intersection. The temporary signal could be as minor as overhead cable drops to the existing signal poles or standards or a complete overhead span wire signal head installation. When the signal heads are span wire mounted, the road work *may* require the signal heads to be moved on the plans for the different stages. If the scope of the project includes several stages, the temporary signal plan **shall** show the placement of the span wire signal heads for the various construction stages including temporary pavement markings, temporary signing, and placement of any work zone traffic control devices.

Before the temporary signal plan is developed, a field site review *should* be conducted to determine constructability. Additionally, all utilities *should* be located by contacting Diggers Hotline. Any utilities that are not on Diggers **shall** require a call directly to that utility to get their facilities located.

- Conduct a site review after all of the utilities have been located. The locate will only show any underground facilities.
- Check for any overhead facilities as fiber optic, telephone, cable TV, and electrical lines both primary and secondary voltages that could be in conflict with any signal poles, light poles, and temporary wood poles for the temporary traffic signal.
- Maintain span length less than 200 feet. If length exceeds 200 feet, an additional median wood pole is required.
- Consult the utility for their clear zone working clearances when working around their utilities.
- Place temporary signal wood poles free of overhead utility conflicts and free from any new utility installations that *may* be installed as part of the project. Sufficient right-of-way (or temporary limited easements) must be available to install down

guys, Temporary wood poles *should* be located away from the vehicular traffic or adequately protected from vehicle traffic.

- Determine the cabinet location during the site visit. Factors to consider for the cabinet location are the accessibility of the electrical service, good sight vision of the intersection from the cabinet, avoid low areas where the cabinet could be flooded, and located in an area to avoid being struck by vehicles.
- Provide for temporary lighting.
- Determine if coordinated signal operations need to be developed or maintained with adjacent signals. Typically time-based coordination is used.

Temporary left turn phasing during construction needs to be considered and approved by the Regional Traffic Unit prior to the project. Sight limitations and limited turning movements *may* require the use of split phasing or the use of protected left turn phases in place of a protected/permitted phase. Provide adequate turn lane storage and channelization during the project to avoid vehicles queuing into the adjacent thru lanes for turning movements. If appropriate turning accommodations cannot be made, consider restricting the turning movement at the intersection.

Due to construction activities, full temporary signals are typically operated in the pretimed mode. Time of day plans *should* be considered for efficient operations. Partial temporary signals *may* use newly installed detectors as staging allows. Typically providing detection for vehicles, pedestrians and emergency vehicles is constrained during construction. However if needed, detection can be accommodated and **shall** be discussed with the Regional Traffic Unit. Requirements *may* include:

- Show the type/placement of vehicular detection on the plan (temporary detection (video, microwave, etc.).
- Provide adequate refuge for pedestrian storage.
- Provide unrestricted access to pedestrian push button detectors.
- Show the placement of the EVP detector heads on the temporary signal plan.
- Show the EVP operation on the temporary signal sequence sheet.
- Refer to *MUTCD 6F.84, Temporary Traffic Control Signals*.

The temporary signal plan set will include construction staging plan, temporary pavement marking and signing plan, temporary timing plan, placement of work zone traffic control devices (barrel or wands), a temporary signal plan, and a sequence of operation sheet for the temporary signal. For more information on the temporary signal plan, refer to TSDM 5-2-1.

Section 661 of the *State of Wisconsin Standard Specifications For Highway And Structure Construction* and SDD 9g1 sheets a through g (Span Wire Temporary Traffic Signal) provide additional information about temporary traffic signal installations. These specifications define:

- Equipment to be furnished for temporary signals,
- Electrical service requirements, and
- Required working clearance is 17 to 19 feet for the signal heads and lower tether wire above the roadway.

The Regional Traffic Unit **shall** determine the need for and the provider for signal controller cabinets of full and partial temporary signal.

- Full temporary signals typically require the use of a separate (contractor furnished) traffic signal controller cabinet during the construction project. The use of a temporary control cabinet allows for a safe transition from the temporary signal operation to the permanent signal operation.
- Partial temporary signals *may* use existing controller cabinets if state maintained during construction.

Responsibility for developing temporary signal timing plans *should* be clearly established. For temporary signals within WisDOT jurisdiction, the Regional Traffic Unit will develop temporary signal timing plans unless it is consultant-developed. In that case, the Regional Traffic Unit **shall** review and accept the plan.