



2022 Focus June Conference
June 15-16, 2022
Nashville, TN
Narrative

The Hidden Dangers of Highway Construction Zones

Introducing the concept of Maintenance of Traffic (M.O.T.)

Maintenance of traffic or Temporary Traffic Control, more commonly known as M.O.T., are the activities and provisions made to temporary conditions during road construction to keep the travel ways and paths safe. As the complexity and magnitude of roadway construction or maintenance vary so goes does the design and implementation of the temporary traffic control that allows traffic and construction to occur simultaneously. M.O.T. plans can be as simple as a shoulder closure for short term work outside of the travel lanes which can follows a typical standard or as complex as years of construction staging and lane shifts for a multi-lane reconstruction and roadway improvement projects that utilizes an engineered M.O.T. plan that can encompass hundreds of pages of plan sheets.

Standards of M.O.T.

For the simple projects, where M.O.T. can follow a typical standard application, it is important to ensure the typical standard chosen is appropriate for the project. Expectation is an important factor of roadway safety. Using the correct configuration for maintenance of traffic motorists can anticipate roadway changes caused by construction activities. Other things to consider are daytime versus nighttime activities, times of peak traffic volume, and duration of the project or task.

Complex Road Projects and M.O.T. Plans

For complex construction projects a M.O.T. plan can have multiple phases frequently broken down into stages and steps which the roadway will be constructed. This level of complexity requires the

M.O.T. plan to address issues of avoiding delays and keeping the project on schedule. As always safety is priority one including vehicular, pedestrian and bicycle traffic. By designing these elements prior to it enables the project to ensure no hazards are overlooked, enhancing safety for the public and the construction worker.

Maintenance of traffic design should identify the applicable temporary traffic control features needed to facilitate safe travel through the work zone. It is important to maintain pavement markings, signage, traffic signals, lighting, pedestrian walkways, and drainage throughout construction.

Maintenance of traffic is necessary and integral part of roadway construction. As stated in the Manual on Uniform Traffic Control Devices, the needs and control of all road users (motorists, bicyclists, and pedestrians including those with disabilities) through a Temporary Traffic Control (T.T.C.) Zone shall be essential part of highway construction, utility work, and maintenance operations. (Section 6A.01)

How M.O.T. Plans Help Keep Work Zones Safe

In these temporary conditions while traffic and construction occur simultaneously it is crucial that proper maintenance of traffic occurs to ensure the safety of the traveling public and the construction worker.

Maintenance of traffic design should identify the applicable temporary traffic control features needed to facilitate safe travel through the work zone. For M.O.T. implementation in the field, it is important to maintain pavement markings, signage, traffic signals, lighting, pedestrian walkways, bicycle lanes and drainage throughout construction. It is essential to consider and account for all forms of public travel in a work zone, as always safety is priority 1 including vehicular, pedestrian and bicycle traffic. The Manual on Uniform Traffic Control Devices (MUTCD) states:

Construction, maintenance, utility, and incident zones can all benefit from T.T.C. to compensate for the unexpected or unusual situations faced by road users.

Another important factor in temporary traffic control safety is Driver Expectation. It should be the goal of the designer and contractor alike to route users through temporary traffic control zones using roadway geometrics and features as close as possible to normal highway conditions. Application of this logic will maintain driver expectations and allow for the anticipation of upcoming decisions proactively rather than reactive. Visibility and a driver's available sight distance is another factor that influences

expectation. It is crucial to consider the appearance of M.O.T. during daytime and nighttime traffic and account for the additional provisions required to keep the roadway user informed.

The Basic Steps of a Successful M.O.T. Plan

As the complexity and magnitude of roadway construction or maintenance vary so does the design and implementation of the temporary traffic control. M.O.T. can be as simple as a shoulder closure for short term work outside of the travel lanes which can be implemented using a pre-engineered standard design from the MUTCD.

M.O.T. plans can also be complex requiring years of construction staging involving multiple lane shifts and changes to travel lane configurations for a multi-lane reconstruction and roadway improvement projects that utilize an engineered M.O.T. plan that can encompass hundreds of pages of plan sheets. With this level of complexity, the M.O.T. plan should be thorough, addressing all foreseeable issues in order to minimize delays and help keep the project on schedule. At the same time, the M.O.T. plan should be designed to meet all applicable standards and provide the contractor with clear and concise direction on the intent of the designer resulting in a temporary traffic control zone that maximizes safety.

Maintenance of traffic is necessary and an integral part of roadway construction. As stated in the Manual on Uniform Traffic Control Devices:

The needs and control of all road users (motorists, bicyclists, and pedestrians including those with disabilities) through a Temporary Traffic Control Zone shall be an essential part of highway construction, utility work, and maintenance operations.”

Following this guidance will help create an experience that ends in safe travels for the public and an incident free day for the construction worker.