
Intelligent Work Zone Applications

Design Manual

Chapter 9

Traffic Control

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Intelligent work zone (IWZ) applications can be used to advise motorists of changing conditions and give warning that traffic conditions are changing. The main goal of these systems is to provide dynamic advanced warning to improve traffic safety in, or adjacent to, construction work zones. Some of the systems also provide information to drivers allowing them to choose alternative routes to avoid the construction area. Details on these systems can be found at:

<https://drive.google.com/file/d/0Bzt5enYIA4xOLURCcXRBUFpidjQ/view>

IWZ applications are not included in the construction contract documents and are provided by a separate IWZ Vendor contract administered by the Office of Traffic Operations. Whenever an IWZ application is indicated, the project designer or district must contact the ITS Engineer in the Office of Traffic Operations to arrange for the IWZ system(s).

End-of-Queue Warning

When it is anticipated that construction activity will cause unexpected queueing of traffic, a queue warning system should be considered. This system alerts drivers of an upcoming traffic slowdown or stopped traffic, providing time to be prepared to stop safely or, in some instances, determine possible route alternates. The goal of this system is to reduce rear-end crashes.

Sensors for Monitoring

During project development and planning, it is sometimes necessary to obtain more detailed traffic data to facilitate mobility and safety mitigation selection. If these locations and projects are identified early enough during project development, traffic sensors can be placed in the area of the project to collect the appropriate data for these determinations. This is generally done the year before the planned construction to account for seasonal traffic volumes.

Speed Feedback

A speed feedback system alerts a driver of their current speed and the advisory or regulatory speed that is posted for the situation. Consideration should be given to a speed feedback system whenever workers are near the open lanes or there is a condition that offers increased risk to higher speed drivers.

Truck Entering Traffic

Slowly accelerating trucks from the construction site entering a faster moving traffic lane presents a safety risk that may be mitigated using a dynamic truck entering traffic warning system. This system should provide sufficient time for drivers to react appropriately, such as slowing down or changing lanes. Use of this system should be considered on projects involving frequent delivery of materials or equipment, especially where sight distance may be limited.

PDMS with Radar Warning

This system alerts drivers they have inadvertently entered a portion of the work zone at a speed substantially above the advised safe speed. The system provides sufficient time to slow down so the driver can safely negotiate the condition (e.g. a curve).

Signal Timing and Preemption

Freeway ramps often have traffic signals at the ramp termini. Construction work on the interchange bridges often restricts traffic flow through these signalized intersections, which may result in stopped traffic extending out onto the freeway mainline. This situation can be mitigated by providing for modified signal timing plans or signal preemption to allow the ramp traffic to proceed through the intersection reducing the queueing of traffic on the freeway mainline.

Travel Time

Travel time systems inform drivers what the estimated travel time is between their current location and a specific destination. This information allows motorists to decide whether to change routes, provides them opportunity to notify others of their estimated arrival time, and generally provides them sufficient information to calm tempers.

Alternate Route

If a viable alternate route is available that motorists can select, consideration should be given to providing comparative travel times on each route at a location allowing motorists to decide which route to take. This offers the opportunity to reduce demand when the construction activity causes additional delay not being experienced on the alternate route.

Chronology of Changes to Design Manual Section:

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