



#### 6-6-20 One-Lane Bridges

June 2004

#### PURPOSE

The purpose of this subject is to provide some general guidelines for the selection of traffic signal control vs. stop sign controls at long-term (non-flagging) one-lane bridge construction sites. Since each one-lane bridge site is unique, a site-specific investigation of the factors affecting the selection *should* be done. A number of variables can influence the selection, so a definitive breakpoint between the two options cannot be defined. This subject will provide a discussion of the variables which *should* be analyzed and provide some general guidelines on the selection process.

#### FACTORS INFLUENCING THE CONTROL SELECTION

The following factors *should* be considered when evaluating the type of control at one-lane bridge sites.

1. Average Daily Traffic (ADT). This is a good general indicator in the selection process. Below 1,000 ADT or 100 vehicles per hour, a STOP sign control can usually be used without experiencing operational problems. Above 3,000 ADT, a traffic signal is usually a better choice for more efficient operation. These ADT values are not absolute and the other factors must be considered in the selection process.
2. Peak-Hour Traffic. If the bridge site is located near a larger city or on a recreational travel route or carries special event traffic, the peak-hour traffic will be a greater factor than the ADT. The bridge control must be able to accommodate the peak-hour traffic within a reasonable amount of time delay.
3. Directional Traffic Distribution. This again will be a factor if the bridge site is located just outside a large city on a route which is a major radial commuting route, or is a major recreational route.
4. Width Restriction. The width *may* influence the speed of traffic, increasing the clearance time necessary for a single vehicle to cross the bridge. The additional clearance time will reduce the capacity of both a stop-control and signal-control bridge site.
5. Time Duration of Project. For shorter projects (1-2 weeks), it *may* be acceptable to tolerate slightly oversaturated stop-control conditions, rather than implement a signal-control scheme.
6. Distance between Stoplines. This will greatly affect the one-lane capacity because it will dictate the clearance time necessary for a vehicle to cross the bridge. The stoplines *should* be kept as close as possible to the ends of the bridge allowing for necessary storage of construction equipment and placement of traffic control devices. Typically, each stopline *should* be placed about 150-250 feet from the end of the bridge. This allows workspace (usually less than 100 feet) for the contractor off the end of the bridge and a taper for the single-lane transition. With this constraint, the typical stopline-to-stopline distance is 300-500 feet, plus the length of the bridge. See SDD [15D33](#) (Traffic Control, One Lane Road with Temporary Signals) and [15D32](#) (Traffic Control, One Lane Road Stop Condition) for more details on dimensions and traffic control layout.

On projects which involve bridge approach resurfacing of several hundred feet, the bridge work involving the one-lane controls *should* be staged first, thus allowing the closest stopline-to-stopline distance possible. Then, after the bridgework is completed, the one-lane bridge controls can be removed. The approach resurfacing can be completed by using a flagging operation. Further discussion is found under Special Cases.

7. Sight Distance between Stoplines. This factor in itself could dictate the control type. If adequate sight distance is not available (if bridge is an overpass on a sharp crest, or construction equipment or temporary concrete barrier is expected to block site), then traffic signal control must be used to assign right-of-way across the one-lane bridge. The stop-control situation, which is self-regulating, would fail without adequate sight distance, because it relies on motorists to see each other in order to determine which vehicle has the right-of-way.

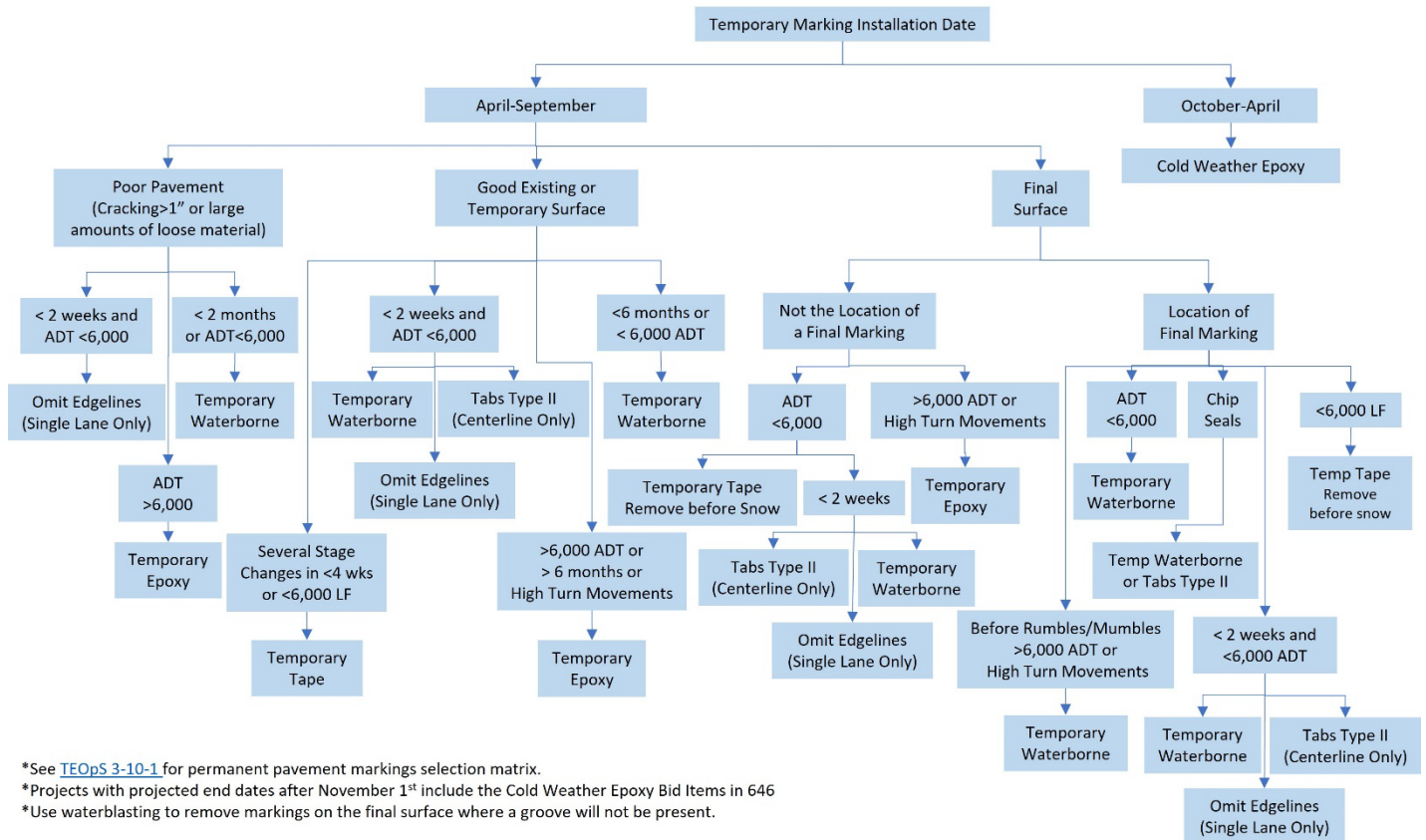
**GENERAL**

Temporary Pavement Markings help delineate the roadway during a construction project.

**POLICY**

Temporary Pavement Markings **shall** resemble the width and color of the permanent pavement markings. Temporary Pavement Markings can be one of the markings listed below:

1. Transition Areas, Lane Shifts, and Crossovers *may* use the following marking for emphasis:
  - Contrast lane lines (removable tape)
  - Type I temporary raised pavement markers
  - Solid lines (any product)
2. Same Day Marking
  - When the final marking needs to be placed quickly because the roadway is open to traffic.

**Temporary Marking Selection**

\*See [TEOpS 3-10-1](#) for permanent pavement markings selection matrix.

\*Projects with projected end dates after November 1<sup>st</sup> include the Cold Weather Epoxy Bid Items in 646

\*Use waterblasting to remove markings on the final surface where a groove will not be present.