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# Work on Multi-Lane Roadways

Design Manual

Chapter 9

Traffic Control

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When work activity encroaches onto the traveled way of a multi-lane facility, one or more traffic lanes need to be closed. This section presents various methods used to control traffic through work zones on multi-lane roadways.

## Single Lane Closure

For single lane closures, Standard Road Plans [TC-418](#), and [TC-419](#) provide the traffic control requirements.

## Multiple Lane Closures

When two adjacent lanes are to be closed on a roadway with six lanes or more, special layouts should be developed. Since most 6-lane facilities are located in urban areas, the designer must be aware of all entrance and exit ramps within the traffic control zone so that taper lengths and sign spacing may be adjusted to accommodate existing field conditions.

If the highway is in a rural area, the traffic volumes will probably be such that peak-hour traffic can be carried in a single lane. In urbanized areas, peak-hour traffic volumes may be large enough to cause long delays and traffic queues if any lanes are closed. A brief capacity analysis should be done to determine when lanes may be closed. The traffic control plan should list the hours when work is permitted and when lanes may be closed.

## Lane Closures Past Ramp Tapers

Standard Road Plan [TC-420](#) gives details for handling traffic in the vicinity of exit and entrance ramps.

## Road Closures on Multi-Lane Roadways

Temporary road closures may be necessary when setting or removing beams on overhead bridges or when performing other overhead tasks. The closure is usually permitted to last no longer than 20 minutes and must be scheduled during very low traffic flows. Detail Sheets 521-15A and 521-15B illustrate traffic control for temporary road closures.

## Two-Lane, Two-Way Operation (TLTWO)

Often the most efficient method of reconstructing a multi-lane divided highway is to close one roadway and to provide two-way operation on the other roadway. This is accomplished with high-speed crossovers at each end of the project. However, this situation violates what drivers normally expect and great care must be exercised in order for this scheme to operate safely.

Where TLTWO is used, the traffic control plan shall include provisions for the separation of opposing traffic except where:

- the TLTWO is located on an urban type street or arterial where operating speeds are low.
- drivers entering the TLTWO can see the transition back to one-way operation on each roadway.
- the FHWA has approved the nonuse of separation devices based on unusual circumstances.

Centerline striping, raised pavement markers, and complementary signing, alone or in combination, are not considered acceptable for positive separation purposes. In Iowa, the common method of positive separation is with tubular markers and CD channelizer/markers. Occasionally, temporary barrier rail (TBR) is used. Refer to 9B-9 for more information on the use of TBR.

The high-speed median crossovers used to switch traffic to the other roadway should be designed for the posted speed limit before construction. Detail Sheets 531-1C and 531-1D show crossover designs for various speeds and median widths. Standard Road Plan [TC-61](#) shows the traffic control details for TLTWO and median crossovers.

Ramp crossovers are necessary if ramp traffic is to be maintained. Detail Sheet 531-2 shows the design of a typical ramp crossover. The length of the crossover as well as the location may have to be changed to accommodate existing ramp geometry. Standard Road Plan [TC-252](#) gives details for traffic control at entrance and exit ramps within the TLTWO.

## **Chronology of Changes to Design Manual Section:**