



STATE OF TENNESSEE  
DEPARTMENT OF TRANSPORTATION  
NASHVILLE, TENNESSEE 37243-0350

**INSTRUCTIONAL BULLETIN NO. 03-14**

Regarding Freeway Zone Work Zone Capacities

Effective immediately, the following Freeway Work Zone Capacity Tables shall be considered when establishing lane closure time restrictions on freeways.

These tables are derived from information contained in the Highway Capacity Manual and from traffic volume data collected statewide by DOT's Planning Division Traffic Planning and Surveys Section. Hourly capacities are converted to equivalent ADTs to simplify the procedure.

If existing ADTs (use Planning Division Traffic Flow Maps) for the project section exceed the ADTs listed in Tables A or B, lane closures should be avoided during those particular hours.

Table A contains maximum capacity ADTs for peak hours 6-9 AM and 3-7 PM Monday through Friday.

Table B contains maximum capacity ADTs for the hours of 9 AM to 3 PM and 7 PM to 10 PM Monday through Friday. Table B is also to be used for the hours of 6 AM to 10 PM Saturday and Sunday.

There is no table for the hours of 10 PM to 6 AM for any day of the week since lane closures generally do not adversely affect capacities during those periods.

For Saturday and Sunday, existing ADTs are to be adjusted by dividing the ADT by the factors contained in Table C Monthly Variation Factors by Day of the Week (Interstate Rural or Urban). In the future, this table will be available as part of the ADT Traffic Flow Maps booklet on TDOT's Intranet.

An example of this procedure follows Tables A, B, and C.

To evaluate hourly capacity impacts and compare them to the hourly lane closure capacities in the latest version of the Highway Capacity Manual, you must obtain hourly volumes from the Planning Division's Mapping and Statistics Office.

Original signed by Jeff C. Jones

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Design Division

DD:edt  
Attachments  
May 2, 2003

**Table A**

Lane Closures During Peak Hours  
(6 - 9 AM, 3 - 7 PM Monday through Friday)  
*Rural and Urban*

| No. of Lanes<br>(Normal) | No. of Lanes<br>Open | Max. Capacity<br>ADT * |
|--------------------------|----------------------|------------------------|
| 3                        | 1                    | 19,000                 |
| 2                        | 1                    | 24,000                 |
| 5                        | 2                    | 50,000                 |
| 4                        | 2                    | 54,000                 |
| 3                        | 2                    | 54,000                 |
| 4                        | 3                    | 84,000                 |

**Table B**

Lane Closures During Midday Off-Peak Hours  
(9 AM - 3 PM, 7 PM - 10 PM Monday through Friday;  
6 AM - 10 PM Saturday and Sunday)  
*Rural and Urban*

| No. of Lanes<br>(Normal) | No. of Lanes<br>Open | Max. Capacity<br>ADT * |
|--------------------------|----------------------|------------------------|
| 3                        | 1                    | 29,000                 |
| 2                        | 1                    | 36,000                 |
| 5                        | 2                    | 75,000                 |
| 4                        | 2                    | 81,000                 |
| 3                        | 2                    | 81,000                 |
| 4                        | 3                    | 126,000                |

\* Tables are based on a maximum directional split of 60/40.

Example:

A section of I-40 West between the SR-251 Old Hickory boulevard Interchange and Highway 70S Interchange is to be resurfaced in July. This will require a two-lane closure, thus reducing the number of lanes in one direction from three lanes to one.

**Will this lane closure create a capacity problem?**

**..... during peak hours Monday through Friday?**

*The existing ADT for this section of I-40 from the 2001 Traffic Flow Map is 53,700. Comparing this ADT to the capacities for three lanes to a one-lane condition (Table A) which is 19,000, it is apparent a lane closure during peak hours would create a severe capacity problem Monday through Friday.*

**..... during off-peak hours Monday through Friday?**

*Comparing the same ADTs to the capacities for off-peak hours in Table B (29000), it is again apparent that capacities are exceeded Monday through Friday from 9 AM to 3 PM and from 7 PM to 10 PM.*

**Should this work be done at night (10 PM - 6 AM)? Will this be a capacity problem if this work is done during the day on Saturday and Sunday?**

*Dividing the ADT of 53,700 by the Saturday and Sunday factors in Table C for July:*

$$\text{..... the ADT on Saturday is } \frac{53,700}{1.09} = \mathbf{49,266}$$

$$\text{..... the ADT on Sunday is } \frac{53,700}{1.30} = \mathbf{41,308}$$

*Using Table B for the 3-1 condition, it can be concluded that the capacity is exceeded on Saturday and Sunday for a 2-lane closure for this month of the year. Night work (10 PM - 6 AM) should be considered for this activity. Initiating a closure before 10 PM should be evaluated from hourly counts (see last paragraph of Instructional Bulletin).*