B R I D G E  T R A F F I C  F O R E C S T S

Another component of the study process was to develop traffic forecasts for the TH 43 Bridge to assist in determining whether and when it needs to be expanded to 4 lanes. Traffic forecasts for the years 2033 (25-year) and 2058 (50-year) were developed. These forecasts were estimated based on the historical growth pattern for the TH 43 Bridge. The forecast 2033 average daily traffic (ADT) is 17,700 vehicles/day while the forecast 2058 ADT is 27,600 vehicles/day. Based on these forecasts it can be concluded that a 4-lane road is needed to accommodate the anticipated 2058 traffic, while the 2033 traffic will draw near the threshold for what a 2-lane bridge can handle.

ST U D Y  F I N D I N G S  A N D  I M P L I C A T I O N S

Some of the major findings and implications from the study analysis include:

- Inbound TH 43 Bridge traffic disperses quickly as it enters Winona.
- Similar to the inbound traffic, the outbound TH 43 Bridge traffic comes from a wide variety of routes that converge on the bridge touchdown point.
- It appears TH 43 Bridge traffic is primarily "local" traffic oriented to places within Winona.
- Broadway is the main east/west traffic carrier in this area, with 5th Street the next most important east/west traffic carrier. Fourth Street appears to be mainly a feeder to the TH 43 Bridge, rather than a major east/west route.
- The TH 43 route designation through downtown Winona does not appear to be a big factor in people's choice of routes. Only about 14% of the TH 43 traffic on the bridge is still on TH 43 south of Broadway.
- Overall, the TH 43 bridge traffic splits about 50% to the east and 50% to the west of Winona Street in Winona.
- Based on the Traffic Circulation Study, approximately 20% of the TH 43 Bridge traffic was destined north of 4th Street towards Riverview Drive (port area).
- The long-range (50-year) forecast traffic for the TH 43 bridge indicates that a 4-lane bridge is needed.

F O R  M O R E  I N F O R M A T I O N...

Individuals interested in obtaining additional information regarding the Winona Origin-Destination Study are encouraged to contact the Mn/DOT Project Manager:

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O R I G I N - D E S T I N A T I O N  S T U D Y  S U M M A R Y

The origin-destination (OD) survey was conducted using video cameras. Passing vehicle’s license plates were captured on tape for approximately 8 hours on a typical weekday. In total, over 20,000 vehicles were recorded. These tapes were later processed to generate a database containing fields for the vehicle license plate, location, direction, time, and type. Four survey station locations were established. These survey stations were considered the most likely routes that TH 43 Bridge traffic would use in Winona.

The OD survey station sites are shown in Figure 1 to the right and are as follows:

- Site 1, TH 43 Bridge
- Site 2, Huff Street
- Site 3, Main Street (TH 43)
- Site 4, Mankato Avenue

The vehicle license plate database was then used to match license plates at the four survey stations to determine which routes vehicles took in traveling to/from the TH 43 Bridge.

The results of the origin-destination analysis indicate that traffic crossing the TH 43 Bridge quickly spreads out along several routes as it enters Winona.

Ten-percent of this traffic passed the Huff Street location (#2), 14% passed Main Street (#3), and 9% passed the Mankato Avenue location (#4). The remainder of the traffic dispersed to other streets in the area. The data also indicated that truck traffic is a relatively small component of overall traffic on the studied streets. The TH 43 Bridge had an average of 4.3% trucks during the study period. This compares with a statewide average of about 10-percent trucks for State Trunk Highways.

Figure 1: Study Area With OD Survey Sites
TRAFFIC CIRCULATION STUDY SUMMARY

The second component of the overall process was the traffic circulation study which involved collecting and reviewing traffic volume information for roadway segments and intersections near the TH 43 Bridge in Winona. Field counts using tube counters were conducted on roadway segments to determine the average daily traffic (ADT) and the hourly distribution of traffic for a typical weekday. Turning movement counts were also conducted at ten intersections during the peak traffic periods of the day in order to see how traffic moved through the intersections near the TH 43 Bridge.

The existing weekday ADT for roadways near the TH 43 Bridge are shown in Figure 2 to the right. The information in this figure was compiled from the field count data, from ADT information available from Mn/DOT, and from estimates based on the turning movement count information.

Using the information from the turning movement counts, the directional distribution of traffic using the TH 43 Bridge was estimated. Figure 4 shows the estimated directional distribution of traffic from the TH 43 Bridge (traffic inbound to Winona), while Figure 5 shows the directional distribution of traffic heading to the TH 43 Bridge (traffic outbound from Winona). This information suggests that traffic using the TH 43 Bridge quickly disperses as it moves away from the bridge, with no one route receiving a majority of the traffic.