



TRC9007

**Weigh Station Improvement Study  
(Phase I Crittenden County)**

Implementation Report

# **WEIGH STATION IMPROVEMENT STUDY**

**PHASE I  
CRITTENDEN COUNTY**

**TRC - 9007  
IMPLEMENTATION REPORT**

**Prepared by  
Planning Division  
Arkansas State Highway and Transportation Department**



**WEIGH STATION  
IMPROVEMENT STUDY  
CRITTENDEN COUNTY, ARKANSAS**

**November, 1989**

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## Summary

This study was conducted to determine needed improvements at the existing weigh stations in the West Memphis area. These stations include the Lehi Weigh Stations on I-40 west of West Memphis and the Marion Weigh Stations on I-55 north of West Memphis. The problems include equipment in need of renovation and weigh stations handling traffic beyond capacity.

The study revealed that an average of 3,600 trucks per day are entering each station, of which an estimated four percent is allowed to bypass the scales as a result of congestion. Before trucks are waved by the scales, long queues are extending into the main lanes of the Interstate, creating potential safety hazards with main-lane traffic. The total revenue lost each month because of the waving through of trucks is estimated to be \$7,000. By the year 2010, the volume is projected to increase to 5,500 trucks per day.

Reconstruction of the existing weigh stations was considered. The weigh stations would be required to shut down during reconstruction, resulting in lost revenue. Replacement parts for existing scales are no longer available. Also, reconstruction would solve only immediate problems at the weigh stations, and would not include major improvements to increase the station's capacity or improve its capability to monitor and control commercial vehicle traffic. Additionally, the land around some of the existing stations has developed to the point that the acquisition of the required right-of-way would be impractical. At the stations that have sufficient right-of-way to build behind the



existing facility, there would at times be a conflict between construction activities and weighing activities. If the stations are not temporarily shut down to avoid the conflicts, potential safety hazards will be created.

Because of these inherent shortcomings in reconstructing the existing stations, fifteen new location alternatives were chosen for study and evaluation. Of these, four sites are recommended for construction. These sites are shown in Figure 1, and their locations and total costs are as follow:

- Eastbound I-40 west of the existing Lehi Weigh Station (also monitoring U.S. 70 traffic) - \$1,606,000.
- Southbound I-55 between the U.S. 63 interchange and the existing facility - \$1,381,000.
- Westbound I-40 near the Mississippi River Bridge - \$2,631,000.
- Northbound I-55 near the Mississippi River Bridge, also monitoring U.S. 70 traffic - \$2,274,000.

## Recommendations

After a careful study of each alternative, four site locations are recommended based on the criteria in the Alternative Analysis section. These four are sites A', E, G, and I, and are shown in Figure 4. An added advantage of these sites is the elimination of trucks traveling between Little Rock and St. Louis on I-40 and I-55 being stopped twice as they are now.

Site A' is located on eastbound I-40 west of the existing weigh station at Lehi. This site will require partial relocation of U.S. 70, but the station will also have the capability to monitor traffic on U.S. 70. The total cost of Site A', including partial relocation of U.S. 70, is estimated to be \$1,606,000.

Site E is located on southbound I-55 in the general vicinity of the existing southbound Marion Weigh Station. The total cost of Site E is estimated to be \$1,381,000.

Site G is located on westbound I-40 near the levee of the Mississippi and will monitor traffic coming into the state. Site G and Site H have the same characteristics. However, site H would interfere with an existing interchange and was therefore, considered not viable. The total cost of Site G is estimated to be \$2,631,000.

Site I is located on northbound I-55 near the Mississippi River Bridge. This station will have the capability to monitor inbound traffic on I-55 as well as U.S. 70 traffic. The total cost of Site I is estimated to be \$2,274,000.

A breakdown of the costs for each weigh station is shown in the following table.

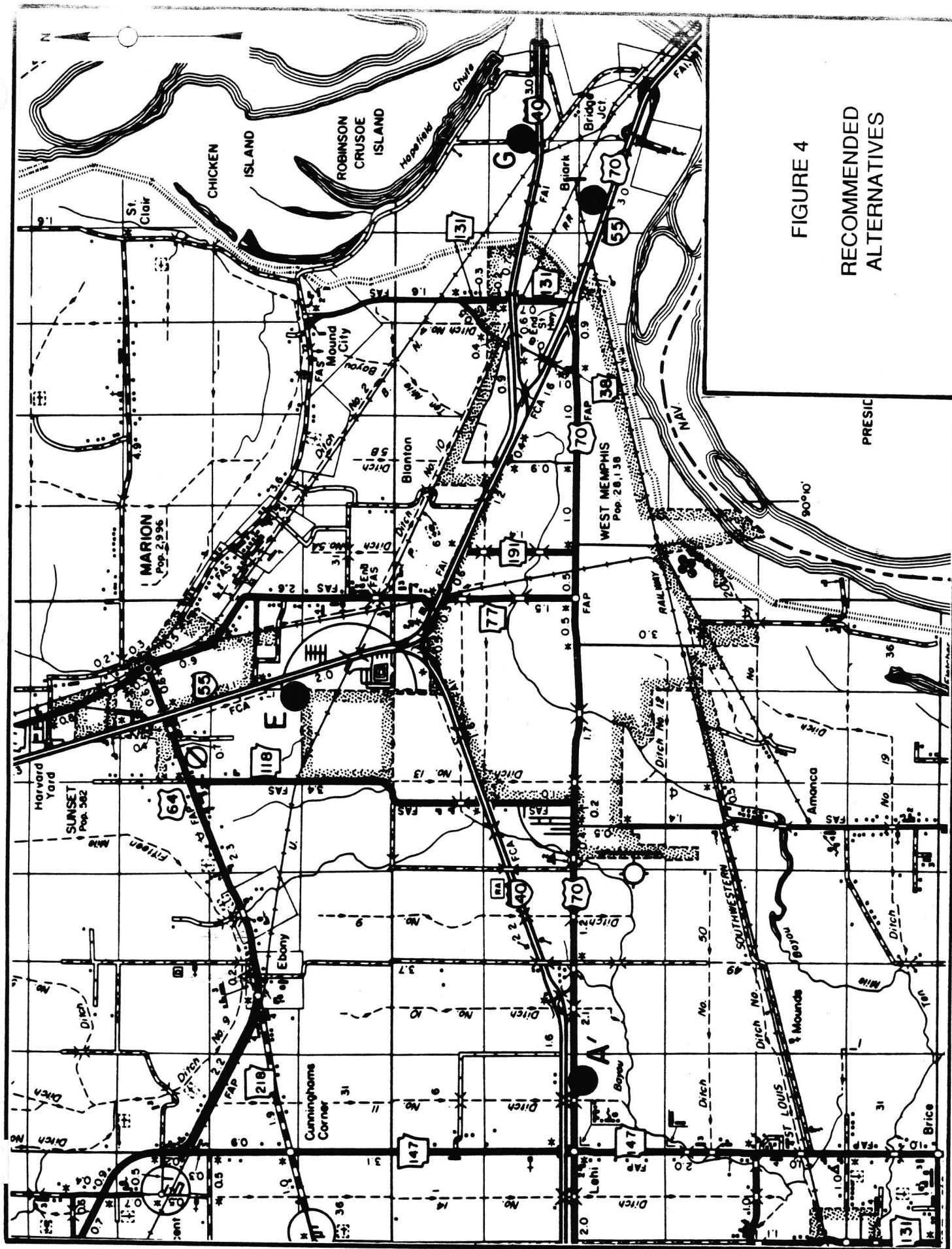


FIGURE 4  
RECOMMENDED  
ALTERNATIVES



**Table 2**  
**Cost Breakdown**

Site	Construction Cost	Roadway Cost	Right-of-Way Cost	Total Cost
A'	\$359,000	\$1,222,000	\$25,000	\$1,606,000
E	\$359,000	\$ 972,000	\$50,000	\$1,381,000
G	\$391,000	\$2,224,000	\$16,000	\$2,631,000
I	\$372,000	\$2,224,000	\$13,000	\$2,274,000

Construction costs include the scales, scale pits, building and building facilities. Roadway costs include earthwork, base and surfacing (with cost of partial relocation of U.S. 70 included for Site A').

The Subcommittee advises that weigh-in-motion (WIM) scales should be installed at each station for better efficiency. WIM scales would allow truck traffic to continually move over the scales without stopping. For maximum efficiency, an Automatic Vehicle Identification (AVI) System should be implemented in the future. Each truck would be equipped with a transponder or bar code which would provide pertinent permit and license requirements and current safety inspection status for that vehicle. If these requirements (and weight requirements measured by the WIM scales) are met, the vehicle may return to the freeway. If all requirements are not met, the truck will be directed to the static scales for inspection, and proper action will be taken.

Both the State and the trucking industry will benefit from a fully-automated system once a majority of the vehicles carry an AVI device. The system will save the trucking industry time,

