

Chapter 7 – Evaluation of Riverside Drive Closure



City of Austin

This chapter discusses the Riverside Closure model. The objective for developing this model was to determine the traffic impacts of closing Riverside Drive to vehicular traffic. Travel time was the MOE used for evaluating the impact of the street closure.

Background

In the southern part of the study area, Riverside Drive runs through Town Lake Park and provides access to and from Lamar Boulevard, South 1st Street and Congress Avenue. Some members of the public are of the view that Riverside Drive should be closed between South 1st Street and Lamar Boulevard, in order to make the park a more bicycle- and pedestrian-friendly area. This model was developed in order to make a determination of the potential traffic operational impacts of closing Riverside Drive.

Model Development

The Riverside Closure model is based on the Future E+C model, but with Riverside Drive closed between South 1st Street and Lamar Boulevard, as shown in Figure 7-1. The north end of Dawson is also closed. To accommodate the road closures, traffic was redistributed to the rest of the downtown network - 40% of the traffic was redistributed to both South 1st and Barton Springs and 20% to Congress Avenue. For example, the average PM peak hour westbound volume on Riverside Drive is 1200 vph in the Future 2005 E+C Network, as shown in Figure 7-2 (a). In the Riverside Closure model, a total of 480 vph were distributed to South 1st Street, 480 vph to Barton Springs Road, and 240 vph to Congress Avenue, as shown in Figure 7-2 (b).

The transit network for the Riverside Closure model was the same as that used for the Future E+C model. Traffic signal optimization was limited to the signals in the lower part of the downtown network from Barton Springs to Cesar Chavez. Traffic signal timing for the rest of the network was the same as for the Future 2005 E+C Network.

Traffic Operations

Closing Riverside Drive would mean traffic using the roadway must be re-routed to alternate paths. Since most drivers traveling westbound on Riverside Drive are destined to travel northbound on Lamar Boulevard and across Town Lake, traffic would be re-routed to Lamar Boulevard via Barton Springs Road, or across Town Lake via the Congress Avenue or South 1st Street bridge. This increases the traffic load on the other facilities and negatively impacts traffic currently traveling across Town Lake on the three arterial street bridges (Lamar, South 1st, and Congress). Figures 7-3 and 7-4 show the peak hour total travel time in both directions between Barton Springs Road and 3rd Street on each arterial with a bridge crossing, both with and without the Riverside Drive connection between South 1st Street and Lamar Boulevard. The PM peak hour figure shows an increase in travel time of 17%, 53%, and 27%, respectively, on Lamar Boulevard, South 1st Street, and Congress Avenue, as a result of the closure of Riverside Drive. Overall, the weighted average of travel time (travel time weighted by traffic volume) increases across all bridge crossings by 37 percent in the morning peak hour and 33 percent in the evening peak hour, as shown in Figure 7-5.

FIGURE 7-2
RIVERSIDE TRAFFIC VOLUME REDISTRIBUTION
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(a) PM Peak Westbound Volume on Riverside



(b) Redistributed PM Peak Riverside Westbound Volume

FIGURE 7-3
 TOTAL AM PEAK TRAVEL TIME IN BOTH DIRECTIONS
 BETWEEN BARTON SPRINGS AND 3RD STREET
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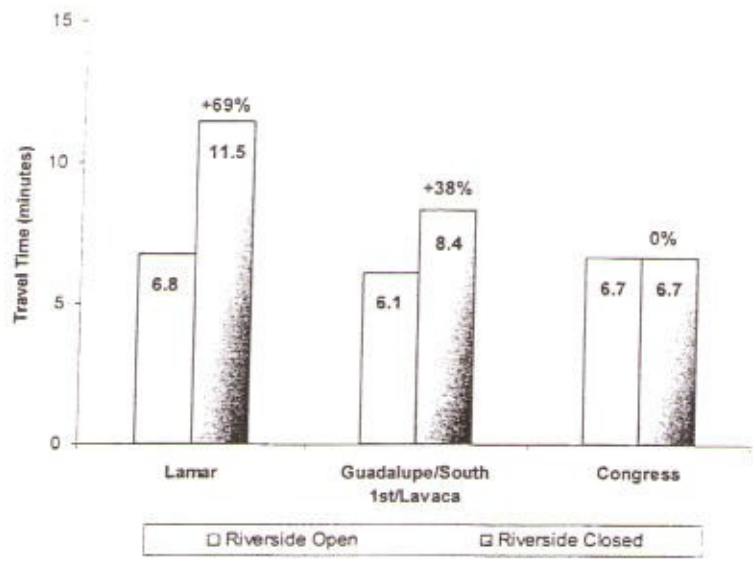


FIGURE 7-4
 TOTAL PM PEAK TRAVEL TIME IN BOTH DIRECTIONS
 BETWEEN BARTON SPRINGS AND 3RD STREET
 Downtown Access and Mobility Study
 Austin, Texas

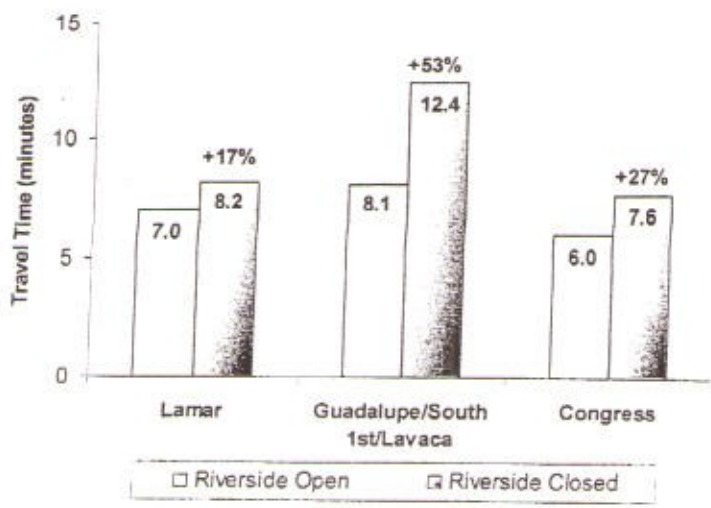
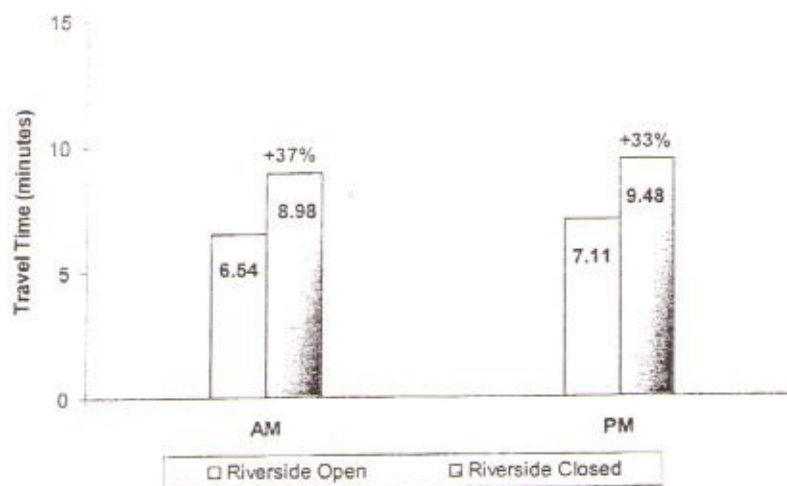


FIGURE 7-5
WEIGHTED AVERAGE OF
TRAVEL TIME INCREASE ACROSS ALL BRIDGES
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Remarks

Closure of Riverside Drive would have positive impacts for pedestrians and bicycles, especially with the presence of Town Lake Park. However, it is the professional opinion of this consultant team that the loss of mobility in the vehicular network and associated increase in vehicular travel times, especially in the westbound direction, are not an acceptable trade-off to improved pedestrian and bicycle movements. A compromise is the conversion of Riverside Drive to one-way westbound operation. This allows access to Lamar Boulevard, but reduces vehicular-pedestrian conflicts through the Town Lake Park area. With the prohibition of southbound left turns at the Lamar Boulevard/Riverside Drive intersection, eastbound travel on Riverside Drive is limited. Operation of Riverside Drive as one-way westbound only was modeled in CORSIM as part of Scenario 1 and did not adversely impact network traffic operations.

Another possible option that has been presented, is reducing the Riverside Drive cross-section to one lane in each direction through Town Lake Park, and then flaring the roadway to its existing section at the South 1st Street and Lamar Boulevard intersections to permit appropriate queue storage. Although this was not modeled, review of existing and projected traffic volumes on Riverside Drive indicates that one travel lane in each direction would provide sufficient capacity for traffic demand. During special events, Riverside Drive could be closed to all vehicular traffic since morning and evening weekday peak periods are the times when its capacity is needed most.