

Converting Back to Two-Way Streets in Downtown Lubbock

THIS IS THE FOURTH OF FIVE FEATURES ON DOWNTOWN CIRCULATION. LUBBOCK CONVERTED ONE SET OF ONE-WAY STREETS TO TWO-WAY STREETS IN THE CBD AND IS PROCESSING ANOTHER PAIR. THIS CHANGE HAS BEEN BENEFICIAL TO THE BUSINESS COMMUNITY, AND DOCUMENTED TRAFFIC AND COLLISION DATA INDICATE ONLY A MARGINAL IMPACT TO THE TRAFFIC FLOW AND SAFETY IN THIS AREA.

BY JERE HART

WE ARE ALL AWARE THAT ONE-way streets carry traffic more efficiently than two-way streets, and they produce fewer conflicts at intersections. However, one of the main functions of streets also is to provide access. The purpose of this feature is to present one city's experience in converting some of the downtown streets back to two-way streets from one-way streets.

Lubbock, Texas, USA, is home to Texas Tech University, located one mile west of the central business district (CBD), and to approximately 200,000 people proud to be residents of this medium sized city. Of the households in Lubbock, over 80 percent own at least one vehicle and 50 percent have two or more.¹ Mass transit, walking and bicycling are other modes of available transportation, but the majority of the population travels in privately owned vehicles.

Conventional beliefs for smaller cities have been to follow the transportation methods of larger cities, but times are changing. Small towns are taking pride in their livability, accessibility and desire for the "small town" feeling to remain. To facilitate this approach, city governments are modifying existing facilities to encompass changes in everything from parks to utilities and community services to street landscaping. Traffic patterns and street usage are changing along with these developments.

The CBD for Lubbock is mixed with one- and two-way streets which range from two to five lanes (see Figure 1). In recent years, citizens have requested some of the existing one-way streets to be converted back to two-way streets. Main Street and 10th Street are primary examples. These two streets were established as one-way streets in 1960 as the retail and commercial business was thriving and traffic was increas-

ing. However, in the early 1970s much of the retail business began moving to the major shopping areas in the southwest part of the city, and a major tornado in March 1970 destroyed a portion of the downtown area after which some businesses did not rebuild.

THE PROCESS

In August 1994, a group of 32 citizens petitioned the mayor and city council for the conversion of Main Street to a two-way street. The mayor forwarded the request to the Citizens Traffic Commission (CTC), a nine-member citizen panel which serves as a buffer for the city council in its role of reviewing traffic congestion, parking and traffic safety issues. In September 1994, one of the major property managers on Main Street presented this petition to the CTC. He cited the inconvenience of downtown travelers to be required to go several blocks out of the way to drive in the direction of their choice and that over 100 people in his building alone were affected daily by the direction of the street. The CTC requested the Traffic Engineering Department to evaluate this request and respond at the next meeting. An initial investigation of the eastbound Main Street (Avenue F to Avenue Q) revealed that it was installed as a couplet and any conversion to this street should require the conversion of its westbound partner, 10th Street. Traffic counts (see Table 1), collision data (see Table 2) and existing infrastructure were evaluated as to the impact that this modification would present. The effected streets are highlighted on Figure 1.

An inventory of existing signals revealed that 11 signal locations would need to be relocated partially to accommodate the two-way traffic. This transformation would include reborning

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conduit crossings (some of the existing conduits were crushed) and replacing and/or reusing existing signal poles, arms and heads. An important consideration was to maintain low costs; therefore, using existing or in-stock materials was a primary consideration.

Our initial review was presented at a public hearing before the CTC in October 1994. Letters were hand delivered or mailed to all the addressees on these two streets advising of the possible change. Several citizens attended the CTC meeting in favor of the conversion. Citizens opposed to the conversion were concerned about the perceived narrow width of the streets and the possible removal of available parking spaces. Staff presented the following factors for consideration.

For two-way conversion:

- ¥ Less confusing to motorists, especially visitors;
- ¥ Improved access to properties; and
- ¥ Reduced travel distance to destination.

Against two-way conversion:

- ¥ Costs: Approximately \$50,000 (reusing existing material and city labor);
- ¥ Increased congestion (only one lane in each direction in some blocks);
- ¥ Poorer two-way signal progression;
- ¥ Small town look; and
- ¥ Unlikelihood to convert back to one-way streets if additional capacity is needed in the future.

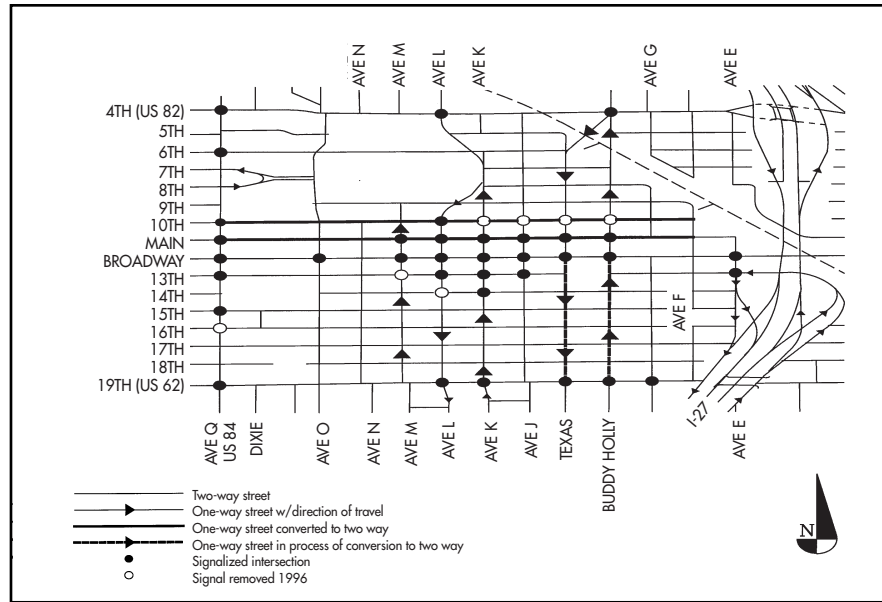


Figure 1. City of Lubbock CBD.

After much discussion among the CTC members, the issue was tabled until a scheduled construction project which would require use of one lane was completed within six to nine months.

One of the major property managers was dissatisfied with the CTC's decision and appealed it to the city council. Following this appeal, staff analyzed the traffic data and found that the highest peak hour volume on either street was below 600 vehicles per hour (vph) and

the two-way volume was below 1,000 vph. This data indicated that adequate capacity still would exist even if only one lane in each direction was available thus negating the concern for the reduction in lanes near the proposed building construction. Prior to the November 1994 city council meeting, staff learned that the majority of the council probably would favor the appeal; and with the capacity analysis, staff recommended the conversion and identified where the funding could be obtained as well as

Table 1. Daily traffic volumes.

Location	Year	EB*	WB	Two-Way Streets
Main Street (EB)/10th Street (WB) east of Avenue Q	1994	5912	4355	10287
Main Street east of Avenue Q	1998	1742	1982	3724
10th Street east of Avenue Q	1998	1825	2019	3844
Total: Main Street/10th Street east of Avenue Q	1998	3567	4001	7568
Main Street (EB)/10th Street (WB) east of Avenue M	1994	4083	2845	6929
Main Street east of Avenue M	1998	2140	1984	4124
10th Street east of Avenue M	1998	1404	1549	2953
Total: Main Street/10th Street east of Avenue M	1998	3544	3533	7077
Main Street (EB)/10th Street (WB) east of Avenue J	1994	3781	2942	6723
Main Street east of Avenue J	1998	1929	1633	3562
10th Street east of Avenue J	1998	1302	1576	2878
Total: Main Street/10th Street east of Avenue J	1998	3231	3209	6440

*EB = Eastbound; WB = Westbound.

Table 2. Number and cost of collisions.

MAIN STREET			
Year	Total # of collisions	Total cost of collisions	Average cost per month of collisions
1993	19	\$412,000	\$34,000
1994	26	\$292,000	\$24,000
April 1, 1995 through Oct. 31, 1995	22	\$369,000	\$53,000
1996	19	\$262,000	\$22,000
1997	33	\$284,000	\$24,000
10TH STREET			
Year	Total # of collisions	Total cost of collisions²	Average cost per month of collisions
1993	17	\$218,000	\$18,000
1994	31	\$407,000	\$34,000
April 1, 1995 through Oct. 31, 1995	15	\$212,000	\$30,000
1996	28	\$490,000	\$41,000
1997	36	\$757,000	\$63,000

the approximate construction schedule needed. The project was approved, and construction was completed the weekend of March 30, 1995; the street was open to two-way traffic by Sunday afternoon.

RESULTS

Since it was changed, the staff has not received any unfavorable comments except one request to improve the two-way signal progression. An indication of how popular these changes are with the business community is reflected by the next request being processed. The city currently is reviewing converting Buddy Holly Avenue (formerly Avenue H) and Texas Avenue between 19th Street and Broadway Street to two way also. Letters from 38 out of 86 affected properties have been received with 33 in favor of the conversion and five opposed to it (see Figure 1). The process again will include a public hearing before the CTC with letters sent to all property owners and public notice in the newspaper, and if approved by the CTC it will proceed to the city council for their final approval. Projected completion of this new project is the fall of 1998.

COMPARISON—BEFORE AND AFTER

Staff collected follow-up data on Main Street and 10th Street. Table 1 indicates that the total two-way volume has remained approximately the same in most locations. The west end of these streets (east of Avenue Q) has seen a significant decrease from 1994 to 1998. This decrease is probably due to the amount of traffic that formerly circled the block to access the drive-in banks at the corners of Avenue Q with both Main and 10th. Table 2 shows a comparison of the collisions at the intersections on these two streets for two years before, seven months immediately after and two years after the change. As expected, the number of collisions has increased by a small margin, but it has been no greater than the fluctuation from year to year. The higher cost of collision in 1997 is due primarily to one incapacitating injury at Avenue Q (US 84) and 10th Street at an estimated cost of \$200,000.² The city also removed four traffic signals on 10th Street in 1996 (see Figure 1) which may have caused an increase in the number of collisions. Eighteen out of the 36 collisions occurred at these four intersections vs. nine out of 31 for these intersections in 1994.

CONCLUSIONS

Lubbock's experience so far in converting one-way streets to two-way streets has been beneficial to the CBD's businesses. These businesses have been experiencing a minor growth rate after several years of decline and have been very interested in any changes which may help their business. This conversion has had only a minor impact to the public on the collision rate in this area. Staff's willingness to work with the business community also has helped to foster a good public image of the city and its Traffic Engineering Department as the "small town" look in the CBD is proving beneficial to this medium sized city.

ACKNOWLEDGMENTS

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References

1. U.S. Census data. Lubbock, Texas, USA, 1990.
2. *Motor Vehicle Accident Costs*. Federal Highway Administration Technical Advisory T7570.2, Oct. 31, 1994.



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