The research is documented in the following reports:


Research Supervisors: William L. Eisele, TTI, bill-eisele@tamu.edu, (970) 845-8550. William E. Frawley, TTI, w-frawley@tamu.edu, (817) 462-0553.

**TxDOT Project Director**: Robert A. Appleton, Bryan District, bapplet@dot.state.tx.us, (979) 778-9707.

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**For More Details . . .**

**A Methodology for Determining the Economic Impacts of Raised Medians: Final Project Results**

Recent experiences by transportation officials show adjacent land owners are increasingly concerned by the effects raised medians might have on their businesses and property values. These same transportation officials are proposing to install raised medians because there is abundant research showing the operational and safety benefits of this type of increased access management. However, this research does not address a business owner’s concerns that a customer cannot make a left turn directly into his/her property. As traffic volumes grow on urban arterial roads, designers look for ways to make sure local access requirements do not hamper the true purpose of these facilities, which is carrying traffic. The raised median is an excellent tool for this. However, public involvement during urban project development would be easier if there were some answers to the questions about the economic impact of raised medians. There has not been a way to study or evaluate any economic impacts to adjacent properties and businesses. By using this methodology, designers could be better informed of the possible overall economic impact of a raised median on adjacent businesses and properties. The trends discovered through research using this method would provide the information the public and transportation officials seek.

**What We Did . . .**

In the first year of this four-year project, researchers developed and tested a methodology on one case study location in College Station, Texas. The team interviewed business owners along this corridor before and during a construction project with a raised median.

In the second year of the project, the research team sought additional case study locations. It identified and collected data in the following cities: College Station, McKinney, Longview, Wichita Falls, Odessa, Houston, Port Arthur and Amarillo. During this year the team tried both personal interviews and mail-out surveys.

In the third year of the project, the researchers studied data obtained in the second year. In the fourth and final year of the project, the team went back and collected after-construction data along the College Station corridor. Figure 1 shows the College Station corridor after construction of the widening raised median.
The researchers recommend that prior perceptions are harsher than the impacts indicated by business owners and managers after the raised median construction. This information could be presented to concerned business owners and managers before construction of the raised median to alleviate concerns.

The construction phase appears to have the most detrimental impacts on businesses. Suggestions to alleviate these impacts include (1) ensuring adequate and highly visible access to businesses during construction, (2) reducing construction time, and (3) performing the construction in smaller roadway segments (phases).

Open "house" formats for public meetings for raised median installation projects may provide a means to facilitate communication of these research results through one-on-one discussion and handouts to concerned citizens. The methodology developed for this research effort provides a logical sequence that can be used by TXDOT personnel and others interested in researching economic impacts of future raised median projects. The methodology includes performing surveys with materials and administration procedures developed in this research project. The surveys provide insight into perceptions of business owners and customers regarding raised median installation impacts.

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Figure 3. Raised median impacts of interest for businesses interviewed before construction

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What We Found …

One of the greatest challenges to Texas Department of Transportation (TxDOT) staff has been responding to business managers and property owners regarding potential economic impacts of raised medians. This research provided many findings that may help alleviate concerns regarding raised median installation. Key points include the following:

• When asked to rank factors that affect customers frequented by their businesses, business owners generally ranked “accessibility to store” below customer service, product quality, and product price. According to business owners, the most important elements used by customers when deciding where to shop or eat are factors controlled by the business owners themselves. In surveys of customers at five selected businesses along the Texas Avenue corridor in College Station, customers ranked “accessibility to store” in much the same way as the business owners.

• When combining all business types together, the research found that business owners who were present before, during, and after the median installation felt that their regular customers would be likely to continue to use their businesses. In contrast, those businesses that were interviewed prior to the installation of the raised median thought their customers would be less likely to continue to use their businesses. Therefore, for the case studies investigated in this project, the perceptions appear to be worse than reality. A similar question was posed to customers in College Station, and the customer survey responses seemed to match the business owner/s/manager’s opinions. Generally, customers indicated construction was a greater factor in deciding where to shop than the existence of the raised median.

• A majority of customers indicated that while the raised median made access more difficult, they would still frequent the five businesses where customer surveys were performed.

• The research found that business owners generally did not reduce their workforce after the raised median installation and even during the construction phase of the project when business was the most difficult.

• Business owners present before, during, and after the raised median installation indicated property values increased, while business owners interviewed before construction expected they would decrease.

• Figure 2 and Figure 3 further show the difference in perceived impacts from those business owners present before, during, and after the raised median installation (Figure 2) compared to those that were interviewed prior to the median construction (Figure 3). Perceptions of business owners summarized in Figure 3 were generally “worse” than those businesses in Figure 2. In particular, property access was “worse” in Figure 3 at a higher rate than in Figure 2. Similar results were also found for business opportunities, customer satisfaction, and delivery convenience.

• The construction phase seemed to impact customers per day and gross sales. After the construction of the projects with a raised median, business types such as durable retail, specialty retail, fast-food restaurants, and sit-down restaurants indicated increasing customers per day, gross sales, and property values. Gas stations, auto repair, and other service businesses indicated decreasing customers per day and gross sales after the raised median was installed.

• Overall, 61.5 percent of respondents indicated they had low public involvement in project development. This response indicates that there is a majority of business owners and/or managers that are not attending the public meetings for raised median projects.

• The personal interviews appear to have provided more reliable data than the mail-out surveys, and survey respondents appreciated the face-to-face opportunity to have their opinions heard. The average response rate for the personal interviews was higher (95 percent) than the response rate for the mail-out surveys (9 percent).
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TxDOT Implementation Status March 2001

There was one product identified for this project.

Product 1: Assessment of economic impacts at select raised median installations in Texas and development of recommended methodology for economic impacts estimation.

Status: The methodology provided is a research workplan, and not a tool for estimating economic impacts in general. The findings found specific applications in the Bryan and Tyler districts in preparing for public involvement on raised median projects. Because the results are not generalizable, no further implementation is planned.

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YOUR INVOLVEMENT IS WELCOME!

This research was performed in cooperation with the Texas Department of Transportation (TxDOT) and the U.S. Department of Transportation (FHWA). The contents of this report reflect the views of the authors, who are responsible for the facts and accuracy of the data presented herein. The contents do not necessarily reflect the official view or policies of TxDOT or the FHWA. This report does not constitute a standard, specification, or regulation, nor is it intended for construction, bidding, or permit purposes. Trade names are used solely for identification and not for product endorsement. The researchers in charge of this project were William L. Eisele (PE# 85445) and William E. Frawley.