

San Antonio - Bexar County Regional Transportation Attitude Study (RTAS)

Submitted to

**San Antonio - Bexar County
Metropolitan Planning Organization**

by

**Telesurveys Research Associates
in association with
LKC Consulting Services, Inc.**

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EXECUTIVE SUMMARY

As a means of gaining statistically reliable data to document perceptions of regional transportation needs and issues, and determining preferences and priorities for transportation system enhancements, the San Antonio - Bexar County Metropolitan Planning Organization (MPO) contracted with Telesurveys Research Associates and LKC Consulting Services, Inc. to conduct the Regional Transportation Attitude Study (RTAS). RTAS consisted of an extensive review of the current Metropolitan Long Range Transportation Plan (MTP) and relevant transportation research, followed by a telephone survey of a random cross section of 1,200 adult residents of Bexar County. Demographic characteristics of the RTAS sample are sufficiently representative of the total adult population of Bexar County to ensure the projectibility of results.

At the request of the MPO Transportation Steering Committee, RTAS data were analyzed by major transportation corridor. Results of this additional analysis are incorporated into the text of the report. Also at the request of the Transportation Steering Committee, an oversample of 100 additional RTAS interviews were conducted with adult residents of the South of CBD transportation corridor. Results of this effort, which validated results obtained from South of CBD corridor residents who were interviewed as part of the original RTAS sample, are presented as Appendix F of this report.

Key RTAS findings and conclusions that have implications for selecting transportation system enhancement options for inclusion in the MTP update are as follows:

Traffic and Transportation Context

Although eight in ten (80 percent) Bexar County residents feel that traffic congestion in the area has increased in the past five years, traffic and transportation conditions and needs have not yet reached the threshold that would motivate a demand for expansion of transportation alternatives:

- Vehicle availability is high, with respondents reporting an average of 2.06 working vehicles that are available for use by the average of 2.18 household members who are licensed drivers. As such, there is a ratio of .94 working vehicles per licensed driver in Bexar County study area.
- High vehicle availability is reflected in current modes of commute travel, with eight in ten (80 percent) commuters indicating they travel to and from work in a single occupancy vehicle. As such, the single occupancy vehicle will constitute the primary competition for any transportation alternatives.

- While commute trip travel times have increased since the 1991 Home Travel Survey, they remain relatively short. Almost half (47 percent) of respondents who commute report morning commute travel times under 20 minutes. Four in ten (40 percent) report evening commutes that require less than 20 minutes.
- Short travel times are reflected in commuters' perceptions of their commute trips. Half (50 percent) of work and school commuters feel their commute trip times are very reasonable, and an additional 37 percent feel their commute trip times are somewhat reasonable.

Transportation Project Preferences and Priorities

Direct measures of preferences and priorities for different types of potential transportation system enhancements indicate no clear consensus or strong preference for any of the range of system enhancement options:

- Mean or average ratings of the priority of 12 different types of transportation projects all emerged in the "moderate priority" range, indicating no overwhelming preferences for any of the potential system enhancements.
- The difference between the highest and lowest mean priority ratings is very small, indicating that the entire range of transportation project options are of virtually equal importance to Bexar County adults.
- Although differences are small, the highest mean priority ratings center around infrastructure enhancements that would make travel in single or low occupancy vehicles easier, faster and/or safer. Ratings for these types projects are followed closely by a second tier of projects that would enhance existing transit and rideshare programs.
- While top priorities selected in ranking questions indicate some preference for projects aimed at enhancements that would support continuing to travel in single occupancy vehicles, predispositions are by no means strong enough to preclude the potential for building public support for other transportation alternatives.
- Although there are some differences, priority ratings provided by residents of each of the six major Bexar County transportation corridors are relatively uniform. While none of the differences are statistically significant, they do provide some into the subtle differences in priorities across corridors. Residents of the West Corridor, who are most likely to indicate

traffic congestion has increased a great deal, provide the highest mean priority rating on seven of the twelve project types. Conversely, residents of the North Corridor, who are least likely to indicate congestion has increased a great deal, provide the lowest mean ratings on ten of the twelve projects.

Transportation Project Planning Considerations

Direct measures of the importance of various urban planning considerations indicate that the general public has stronger feelings about transportation planning considerations than they do about the transportation projects being planned:

- While mean ratings for all transportation projects were in the moderately important range, eight of the 13 transportation planning considerations received mean ratings that indicate they are considered very important.
- Although improving safety emerged as the top priority, three of the five top priorities expressed through ratings of planning considerations involve environmental goals including protecting the Edwards Aquifer, improving air quality and saving energy.
- Planning considerations that Bexar County residents feel strongly about afford potential mechanisms for building support for the types of transportation projects that are more consistent with environmental mandates and urban planning goals than continued travel in single occupancy vehicles.
- As with transportation project ratings, residents of the six major Bexar County transportation corridors provide generally uniform ratings of the importance of planning considerations. None of the small differences that emerged across major corridors is statistically significant.

Alternative Transportation Concept Tests

Results of Choice-Based Conjoint (CBC) Analysis that was used to test six alternative transportation concepts again reflect satisfaction with the current transportation situation in Bexar County and the resulting lack of motivation to change travel behavior:

- Even though consumers tend to overestimate their potential use of products and services that are not yet on the market, RTAS respondents indicate they would continue using their current transportation mode in over three quarters of choices between an alternative

transportation concept and the way they travel now. Even the most preferred configuration of the most popular alternative transportation project was selected less than half of the time it was presented.

- The transportation concept that was selected in the highest percentage of choice tasks involves expanded freeways and major thoroughfares with toll express lanes. Although this was the most popular concept, it was selected only 29 percent of the time it was presented.
- Commuter/Light Rail emerged as the most popular transportation alternative among those that are not available in Bexar County. Enhanced rideshare (with and without staging lots) concepts closely follow rail in popularity. Even when express routes operating on high occupancy vehicle (HOV) lanes are included in bus transit concepts, they are somewhat less popular than other alternative transportation concepts.
- Results of CBC choice tasks reflect some degree of preference for system enhancements that support continuation of travel in single or low occupancy vehicles. However, they further underscore findings that preferences are not overwhelming and that, with proactive public education and outreach, opportunities exist to mold preferences for transportation alternatives that are more consistent with environmental mandates and urban planning goals.

Section One
INTRODUCTION

As a means of gaining the statistically reliable public input needed to update the Metropolitan Transportation Plan, the San Antonio-Bexar County Metropolitan Planning Organization (MPO) contracted with Telesurveys Research Associates, Inc. (TRA), in association with LKC Consulting Services, Inc. (LKC) to conduct the Regional Transportation Attitude Study (RTAS).

BACKGROUND

The goal of RTAS was to set the stage for the continuation of the Metropolitan Long Range Transportation Plan (MTP) update process, which is scheduled to be completed by December 12, 1999. The MTP is the region's 20-year plan which addresses the mobility needs of the study area by identifying transportation improvements projects to add roadway capacity, maintain existing roadways, improve public transit services, and to facilitate pedestrian and bicycle travel. The process for developing the MTP involves extensive public involvement and is documented in the Transvision 2015 report. Although numerous public meetings were held and significant public input was received as a part of the creation of Transvision 2015, the MPO wanted to conduct a survey of the public in order to develop statistically valid conclusions about the public's perceptions, opinions, and attitudes regarding transportation issues and needs.

The purpose of RTAS was to capture the public's opinions, attitudes, beliefs and values about existing transportation modes and issues, changes in travel behavior and lifestyles, and perceptions about future alternative urban environments and transportation systems. The information gathered from RTAS will be used to create an initial vision and identify potential goals and objectives for the next MTP update.

An RTAS Oversight Committee, consisting of representatives from the MPO, the City of San Antonio, Texas Department of Transportation (TxDOT), VIA Metropolitan Transit, and business and community leaders provided guidance and feedback during the project. The RTAS Oversight Committee consisted of the following representatives:

<u>Name</u>	<u>Organization</u>
Dr. Ben Bradshaw	UT-HSPH at San Antonio
ReNee Cloud	VIA Metropolitan Transit Public Affairs
Bonnie Conner	Community Representative At-Large
Scott Ericksen	San Antonio-Bexar County MPO
Jesus Garza	City of San Antonio Planning Department
Janet Kennison	San Antonio-Bexar County MPO

<u>Name</u>	<u>Organization</u>
Leo Lopez	VIA Metropolitan Transit
Michael Martin, P.E.	Bexar County Public Works Department
Professor David Ribble	Trinity University-Biology Department
Shelley Whitworth	Alamo Area Council of Governments
Ken Zigrang	TxDOT - San Antonio District Planning

OBJECTIVES

The MPO wanted to assess the public's current knowledge of urban transportation needs and issues, and determine what the public would like to see in their future regional transportation system. Specific objectives of RTAS were as follows:

- Objective 1:** Measure opinions, attitudes, beliefs and values of the general public with respect to existing transportation modes and issues
- Objective 2:** Document past and predicted changes in travel-related and transportation behaviors and lifestyles
- Objective 3:** Assess perceptions of and preferences for future transportation system enhancement options

PROJECT OVERVIEW

RTAS involved two successive phases of research: a review of existing research and a telephone survey. The first phase involved a review of the MTP, transportation planning documents, and related transportation and urban planning studies to determine the critical elements to be included in the survey questionnaire. A brief description of each document can be found in Appendix A. The review identified seven issue areas around which transportation needs in San Antonio can be clustered. They are:

- **Preservation of the existing physical infrastructure:** Managing, maintaining, and reconstructing current roadways; maintaining and improving transit facilities including rail; and expanding pedestrian and bicycle facilities.

- **Congestion management:** Relieving the increasing congestion on the region's roadways through reconstruction of existing roadways and the implementation of Intelligent Transportation Systems (ITS); and decreasing the number of vehicles traveling the roadways by enhancing transit services and ridesharing programs in conjunction with the development of HOV lanes.
- **Access to opportunity:** Addressing the mobility needs of low-income residents, seniors, and persons with disabilities, as well as providing alternative modes of transportation for commuters and tourists.
- **Sustainable development:** Coordinating transportation, land use, economic development, historical/archeological heritage preservation, environmental quality, and community aesthetics locally and within the region.
- **Efficient movement of goods:** Improving the movement of freight within and through the region by surface transportation modes and by rail, air, and water, including the redevelopment of Kelly Air Force Base as a regional focus of goods distribution;
- **Safety and security in travel:** Decreasing the risk of personal injury and property damage on, in, and around transportation facilities;
- **Resource conservation:** Ensuring that the operation of the region's transportation system supports water (Edwards Aquifer), air (ozone attainment), land, and energy conservation objectives and mandates.

The seven issue areas identified in the literature review, along with input from the RTAS Oversight Committee, formed the framework for development of the second phase of the study. The second phase, which consisted of a telephone survey of a random cross section of 1,200 adult residents of Bexar County, included three major sections:

- General perceptions of transportation problems, needs, preferences and priorities;
- Choice-based conjoint (CBC) analysis of transportation system enhancement concepts to determine those that were most appealing to the general public;
- Demographic items that allowed analysis for key population segments as well as for the population as a whole.

Based on the literature review and preliminary meetings with the RTAS Oversight Committee, the following transportation system enhancement concepts were identified by the project team for testing in the RTAS questionnaire:

- Light rail and commuter rail
- Transit expansion and express bus service
- Major thoroughfare expansion projects
- High Occupancy Vehicle (HOV) lanes
- Freeway expansion projects
- Bicycle lanes and bike trail networks
- Pedestrian facilities and amenities
- Rideshare
- Intelligent Transportation System (ITS)
- Congestion pricing and toll roads

Preferences for potential transportation system enhancements were tested in the RTAS survey instrument through one of two mechanisms as follows:

- 1) Items designed to provide direct measures of preferences and priorities for various system enhancement concepts; and
- 2) CBC analysis to determine the specific features that drive preferences for various system enhancement concepts and specific concept configurations that are most appealing to the general public.

CBC analysis determines both overall preferences for specific concepts and the underlying values on which preferences are based through a series of questions that closely approximate the transportation mode decision-making process. In each question, or choice task, CBC presents respondents with a profile of one system enhancement concept consisting of specific features such as cost and travel time relative to current travel. Respondents were then asked to indicate whether they would choose to travel using the concept described for their commute or most frequent trip travel or continue making the trip using their current transportation mode. By varying each profile feature (e.g., increasing or decreasing costs) for each choice task, CBC provides mechanisms to determine:

- Overall preferences for each competing transportation system enhancement concept relative to the current transportation modes;
- The relative importance of each specific feature in determining overall preferences for competing system enhancement concepts; and

- The specific combination or configuration of features that would attract the highest share of the transportation market.

Further, because each choice task involves deciding between a transportation concept and the mode of transportation currently used, CBC provides a mechanism to determine the baseline conditions required to make any of the concepts sufficiently attractive to ensure they would be used by the general public.

METHODOLOGY

The following sections present an overview of key features of the research methods used in development and implementation of RTAS.

Sampling

RTAS results reported in this document are based on 1,200 telephone interviews conducted with a random cross section of adult residents of Bexar County. The sample size of 1,200 provides an overall margin of error of +/-2.85% at the 95 percent confidence interval. This means that, if RTAS was replicated 20 times, results would be within 2.85% of those presented in this report in at least 19 of the 20 replications. All interviews were conducted with adult residents of households whose telephone numbers were included in a random digit dialing (RDD) sample of telephone numbers drawn from all Bexar County telephone exchanges. To ensure an accurate geographic distribution, telephone numbers were drawn from each exchange in direct proportion to residential listings. Further, because the last four digits in telephone numbers were randomly generated, the sample provided equal access to households with listed telephone numbers and to households with unlisted and non-published numbers. The random digit sample was obtained from Survey Sampling, Inc., a nationally recognized professional sampling organization.

Survey Instrument Design

The RTAS survey instrument was developed by the TRA/LKC research team working in close consultation with the MPO and RTAS Oversight Committee. In addition to input from these sources gained in two working sessions and reviews of preliminary questionnaire drafts, critical issues and essential survey elements were also identified through an extensive review of the current Metropolitan Long Range Transportation Plan (MTP) and of completed and ongoing San Antonio area transportation and transit studies. Based on RTAS objectives and input from the above sources, the RTAS questionnaire was designed to measure preferences for alternative transportation system enhancements and the underlying values that drive preferences.

Direct measures of preferences and priorities were designed to reflect the entire range of potential system enhancements and transportation issues identified in consultation with the RTAS Oversight Committee and through the review of previous plans and transportation research conducted as part of Phase I. Although 13 system enhancement concepts were identified initially, constraints of the CBC program resulted in the combination of many of the "like" concepts. A total of six concepts were considered to be key alternatives including rail service, expanded bus service with HOV lane, expanded bus service without HOV lane, rideshare with a staging lot, rideshare without a staging lot, and major thoroughfare/freeway expansion (referred to as SOV) with toll express lanes. CBC analysis concentrated specifically on those alternatives that, because of the capital commitment involved, would define focus and direction for transportation system enhancements.

Survey Administration

The RTAS was administered as a telephone survey using computer assisted telephone interviewing (CATI) technology, in which the survey instrument and all branching and skip patterns are programmed for computer administration. With a CATI system, interviewers read survey questions that are displayed on a computer monitor screen. As interviewers enter responses into the CATI database, the computer displays the next question on the monitor screen. This ensures that all appropriate questions and only the appropriate questions are asked of all respondents in the proper sequence. CATI technology also provides for direct entry of all survey data into an automated database as it is being collected.

Prior to actual survey interviewing, the RTAS questionnaire and CATI program were pretested for length, flow, and clarity of questions by conducting 20 pretest interviews with adult residents of Bexar County who were not included in the random sample. The questionnaire and program were finalized in consultation with the RTAS Oversight Committee on the basis of pretest results. The finalized English version of the questionnaire was translated into Spanish using methods designed to ensure the equivalency of both versions. The English version of the questionnaire is included in this report as Appendix B.

Also prior to the actual survey, all interviewers selected to participate in data collection were thoroughly briefed on the RTAS survey instrument by the professional staff of TRA. The briefing, which was conducted in a two hour session, included an overview of RTAS objectives, an exhaustive review of the survey instrument, and opportunity to practice through mock interviews conducted with staff members. Bilingual interviewers received an additional hour of briefing on the Spanish language version of the RTAS questionnaire to ensure equal facility with both versions.

The 1,200 RTAS telephone interviews were conducted in English and Spanish by TRA's professionally trained, experienced interviewing staff, which includes bilingual interviewers. All interviewing was conducted from centrally monitored telephone facilities located in Houston, Texas under direct supervision of bilingual data collection management staff. Quality control measures that were used for the duration of the RTAS data collection effort included on-line, unobtrusive monitoring of interviews, an edit of all completed interviews for internal consistency, and verification of five percent of each interviewer's work that was not directly monitored by recontacting respondents and verifying key items.

RTAS interviewing was initiated on May 21 and completed June 18, 1997. Interviewing was conducted primarily during weekday evenings from 5:00 to 9:00 pm, on Saturdays from 10:00 to 4:00 pm, and on Sundays from 1:00 to 6:00 pm. However, limited weekday daytime calling between 9:00 am and 4:00 pm was also used to eliminate business and government numbers from the telephone sample and to accommodate respondents who requested contact during these hours.

To maximize RTAS response rates, multiple attempts were made at different times of day and on different days of the week to contact all households whose telephone numbers were included in the random digit sample. In addition, all potential respondents who initially declined to participate in the survey were recontacted by experienced supervisory personnel in an effort to gain cooperation. Finally, at least two messages were left on all telephone answering machines encountered. Answering machine messages explained the purposes of the call, asked potential respondents to contact TRA, and provided a toll free number to call.

Through the use of multiple contact attempts, specific calling sequences and schedules, and efforts to gain cooperation from potential respondents who initially declined to participate, a 69 percent response rate was achieved for the RTAS. This response rate is sufficient to ensure the statistical reliability of RTAS survey results.

The final disposition of all telephone numbers included in the RTAS random digit telephone sample is presented on the following page.

RTAS Final Sample Disposition

TELEPHONE NUMBERS DRAWN		3,000
LESS: Disconnected Numbers	593	
Business/Govt. Numbers	348	
Fax/Modem/Pager	239	
Communication Barrier	87	
TOTAL DELETED	1,267	
NET SAMPLE		1,733
Completed Interviews		1,200 (69.2%)
English	1,145	
Spanish	55	
TOTAL	1,200	
Refusals		272 (15.7%)
Call Backs (Multiple Attempts)		135 (7.8%)
No Answer (Multiple Attempts)		126 (7.3%)

Transportation Corridors

At the request of the MPO Transportation Steering Committee, RTAS data were also examined to determine similarities and differences in opinions, preferences and priorities for transportation system enhancements among residents in different Bexar County major transportation corridors. For RTAS purposes, major transportation corridors were defined as zip codes surrounding major arteries that lead into the San Antonio Central Business District (CBD).

By using the CBD as the termination point for all corridors, major Bexar County transportation corridors identified are as follows:

- **West Corridor** from Medina County line to the CBD centering around U.S. 90;
- **Northwest Corridor** from the Kendall County line to the CBD centering around U.S. 87/IH-10/Northwest Expressway;
- **North Corridor** from the Comal County line to the CBD centering around U.S. 281;
- **Northeast Corridor** from the Guadalupe County line to the CBD centering around IH-35/U.S. 81;
- **East Corridor** from the Guadalupe County line to the CBD centering around IH-10/U.S. 90; and
- **South Corridor** consisting of both IH-35 and IH-37 from the Atascosa County line to the CBD.

Lists of all zip codes included in each of the major transportation corridors are included in this report as a part of Appendix C.

South of CBD Oversample

To address the MPO Transportation Steering Committee's concern that residents of the South Corridor were somewhat under represented in the RTAS sample, an oversample consisting of 100 additional interviews were conducted with adult residents of the corridor. When oversample data were combined with data collected as part of the primary RTAS sample, the margin of error for the South Corridor was comparable to margins of error for all other transportation corridors. Results of the combined analysis, which are presented as Appendix F of this report, validated the results of the original sample and provide indications that South Corridor residents are highly consistent with their counterparts in other corridors in terms of transportation perceptions, priorities and preferences.

Choice-Based Conjoint (CBC) Analysis

The CBC program constructed different versions of transportation concepts by randomly selecting one of the preset levels for each feature included in the profile and combining them into a single description such as:

"Would you use a rail service where you would go to a station near your home and catch a train if it had a positive impact on air quality; it was 5 minutes faster than the

way you travel now; trains ran every 15 minutes; it cost \$2.00 to ride; and the nearest station was 2 blocks or less from your destination."

Using CBC, respondents were asked to indicate whether they would use the transportation concept described or continue using the transportation mode they use now. Respondents who are employed or students were asked to indicate their choice for their work or school commute trips, and all other respondents were asked to choose for trips to the destination they travel most frequently.

By varying each profile feature for each choice task, CBC provided mechanisms to determine:

- Overall preferences for each of the six competing transportation system enhancement concepts;
- The relative importance of each specific feature in determining overall preferences; and
- The specific combination of feature levels that is most appealing to the general public.

Further, because choice tasks required respondents to choose between a computer-generated concept profile and their current mode of travel, CBC also provided a mechanism to gauge the share of the transportation market that could be attracted from current transportation modes.

Because of the number of features used to construct the concept profiles and the complexity of the study design, CBC had to be divided into two components due to limitations of the software program. The first component consisted of three choice tasks which tested variations of Concepts 1 through 3 (rail and bus). The second component, which also consisted of three choice tasks, tested variations of Concepts 4 through 6 (rideshare and SOV). This allowed all potential variations of each concept to be presented an approximately equal number of times, ensuring the functional equivalency of data from the two CBC components.

REPORT FORMAT

The report is organized by major topic areas. In Section 2, the survey results are presented, including the demographic information and the quantitative survey results of the RTAS questionnaire. Tables and charts provide supporting data. Section 3 presents the CBC results and the interpretation of the analysis. Documentation of all data analysis is located in Appendix D.