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16. Abstract

This report presents the results of a Park-and-Pool survey undertaken at selected locations around the San Antonio and Houston, Texas, metropolitan areas. From the survey questionnaires, considerable information was obtained prompted them to begin carpooling. Data were also gathered on their use of the lots and their daily travel routines. This information should prove useful in a number of different ways including:

- The identification of various improvements which could be made in order to better meet the needs of area commuters; and
- The planning and design of future Park-and Pool facilities.

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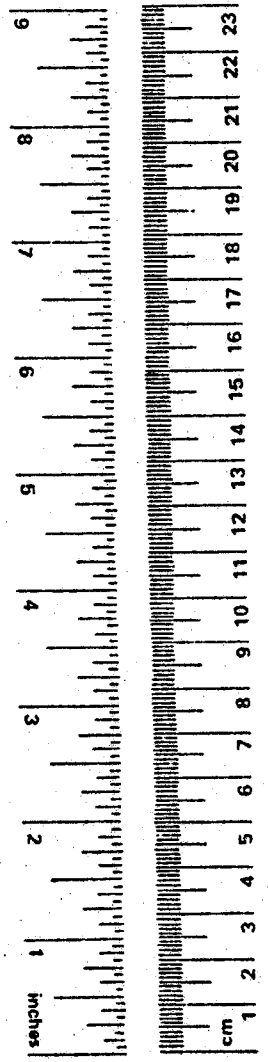
METRIC CONVERSION FACTORS

Approximate Conversions to Metric Measures

Symbol	When You Know	Multiply by	To Find	Symbol
		LENGTH		
in	inches	*2.5	centimeters	cm
ft	feet	30	centimeters	cm
yd	yards	0.9	meters	m
mi	miles	1.6	kilometers	km
		AREA		
in^2	square inches	6.5	square centimeters	cm^2
ft^2	square feet	0.09	square meters	m^2
yd^2	square yards	0.8	square meters	m^2
mi^2	square miles	2.6	square kilometers	km^2
	acres	0.4	hectares	ha
		MASS (weight)		
oz	ounces	28	grams	g
lb	pounds	0.45	kilograms	kg
	short tons (2000 lb)	0.9	tonnes	t
		VOLUME		
tsp	teaspoons	5	milliliters	ml
Tbsp	tablespoons	15	milliliters	ml
fl oz	fluid ounces	30	milliliters	ml
c	cups	0.24	liters	l
pt	pints	0.47	liters	l
qt	quarts	0.95	liters	l
gal	gallons	3.8	liters	l
ft^3	cubic feet	0.03	cubic meters	m^3
yd^3	cubic yards	0.76	cubic meters	m^3
		TEMPERATURE (exact)		
°F	Fahrenheit temperature	5/9 (after subtracting 32)	Celsius temperature	°C



Approximate Conversions from Metric Measures

Symbol	When You Know	Multiply by	To Find	Symbol
		LENGTH		
mm	millimeters	0.04	inches	in
cm	centimeters	0.4	inches	in
m	meters	3.3	feet	ft
m	meters	1.1	yards	yd
km	kilometers	0.6	miles	mi
		AREA		
cm^2	square centimeters	0.16	square inches	in^2
m^2	square meters	1.2	square yards	yd^2
km^2	square kilometers	0.4	square miles	mi^2
ha	hectares (10,000 m^2)	2.5	acres	
		MASS (weight)		
g	grams	0.035	ounces	oz
kg	kilograms	2.2	pounds	lb
t	tonnes (1000 kg)	1.1	short tons	
		VOLUME		
ml	milliliters	0.03	fluid ounces	fl oz
l	liters	2.1	pints	pt
l	liters	1.06	quarts	qt
l	liters	0.26	gallons	gal
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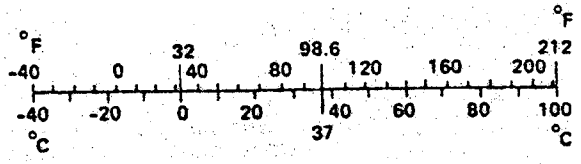
m^3	cubic meters	1.3	cubic yards	yd^3
		TEMPERATURE (exact)		
°C	Celsius temperature	9/5 (then add 32)	Fahrenheit temperature	°F



*1 in = 2.54 (exactly). For other exact conversions and more detailed tables, see NBS Misc. Publ. 286, Units of Weights and Measures, Price $2.25, SD Catalog No. C13.10:286.

PARK-AND-POOL FACILITIES

SURVEY RESULTS AND PLANNING DATA

by

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Research Report 205-13

Priority Use of Transportation Facilities
Research Study Number 2-10-74-205

Sponsored by

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To successfully undertake a project of this nature requires the cooperation and assistance of a number of different organizations and agencies. Texas Transportation Institute was provided with this assistance, and the cooperation of the following agencies during the course of this study is gratefully acknowledged: North Central Texas Council of Governments and the State Department of Highways and Public Transportation, Districts 12 and 15.

ABSTRACT

This report presents the results of a Park-and-Pool survey undertaken at selected locations around the San Antonio and Houston, Texas, metropolitan areas. From the survey questionnaires, considerable information was obtained concerning the types of people attracted by Park-and-Pool and what factors prompted them to begin carpooling. Data were also gathered on their use of the lots and their daily travel routines. This information should prove useful in a number of different ways including:

- The identification of various improvements which could be made in order to better meet the needs of area commuters; and
- The planning and design of future Park-and-Pool facilities.

Key Words: Park-and-Pool, Ride Sharing, Carpool, Vanpool

SUMMARY

In recent years, the increasing cost of commuting has resulted in the formation of numerous carpools and vanpools across Texas. To further encourage the carpooling effort, the State Department of Highways and Public Transportation is constructing many new Park-and-Pool lots at various locations around the state. To assist the SDHPT in the planning and operation of additional Park-and-Pool improvements, a Park-and-Pool survey was conducted at 25 selected locations in the San Antonio and Houston metropolitan areas. The purpose of the survey was to obtain information concerning characteristics of persons currently participating in the Park-and-Pool program and to identify factors that influence their decisions to carpool. Other pertinent information, including the commuters' use of the lots and their daily travel routines, were also collected.

Although the Park-and-Pool program was found to appeal to individuals for a variety of reasons, the most important reason commuters are pooling is to save money. The average commuter perceives a savings of about $68 per month. The high cost of fuel and the considerable amount of fuel required to travel long distances (distances which average 31 miles each way) account for a large percentage of the dollar savings. The high cost of downtown parking is also a factor, particularly in Houston, where 38% of the area poolers are commuting to the CBD.

Saving time does not appear to be as important a consideration as saving money. The average pooler, in fact, loses approximately 15 minutes each way. Time savings may be a consideration for poolers in Houston using one of the 2 lots located on I-45 north of the Contraflow Lane, however. Approximately 50% of those poolers determined eligible to use the priority treatment lane

claimed to save time; their perceived time savings averaged about 26 minutes each way.

Other concerns of poolers which dealt specifically with the Park-and-Pool lots included: the need to improve security at the lots and the need for lighting, telphones and trash receptacles at the lots. Paving or resurfacing the lots was also a major concern of poolers in the Houston area, where many lots are not surfaced.

Park-and-Pool lots represent an extremely popular transportation improvement provided by the State Department of Highways and Public Transportation.

IMPLEMENTATION STATEMENT

Over the years, the thrust of Project 205 has been to assist the State Department of Highways and Public Transportation (SDHPT) in planning and implementing improvements for high-occupancy vehicles. Park-and-Pool facilities are a component of these improvements.

Numerous Park-and-Pool lots have been constructed in many areas across the state, and the SDHPT has been instrumental in the planning and financing of many of these facilities. Prompted by increasing commuting costs, the use of these Park-and-Pool lots has continued to grow. This trend is expected to continue during the next few years, thereby creating the need for additional Park-and-Pool improvements. The information in this report should be of value in both the identification of improvements that could be made to existing facilities and in the planning and design of future Park-and-Pool facilities.

DISCLAIMER

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INTRODUCTION

During the past few years, the concept of one or more persons sharing a ride to a common destination has gained greater acceptance as a means of transportation. The result has been the formation of numerous carpools and vanpools throughout many areas of the country. As driving, gasoline, and parking costs have continued to increase, so has the number of carpools/vanpools as more people band together to share the cost of commuting.

Support of various ride sharing activities has come from many areas. For example, many large employers have initiated vanpool programs in an effort to:

- Expand the accessibility of their business to a greater areawide labor force;
- Improve employee attendance and on-time performance;
- Reduce or avoid expenditures for supporting parking facilities;
- Utilize their development site to full potential by minimizing low-intensity and nonproductive parking areas; and
- Provide mobility to employees having no alternative form of transportation (1)*.

Federal, state and local governments, on the other hand, envision ride sharing as a means to reduce traffic congestion created by peak-period automobile volumes and improve air quality through a reduction in total vehicle-miles traveled by commuters. The potential for reducing the amount of fuel consumed became a particularly important aspect of carpooling after the 1973 energy shortage. In fact, on January 15, 1974, the U.S. Department of Transportation requested that state highway departments cooperate in

*Denotes number of reference listed at the end of the main body of report.

attempting to reduce transportation-related energy requirements. Carpooling and other energy conservation programs were to be developed by making optimum use of existing Federal Highway Administration (FHWA) and Urban Mass Transportation Administration (UMTA) programs as well as utilizing the powers granted under the 1974 Emergency Highway Energy Conservation Act (2).

From the carpooler's perspective, however, the substantial savings in individual commuter costs is the most important reason to share a ride. In addition to saving on fuel, auto maintenance and parking costs, people enjoy carpooling for a variety of other reasons, including companionship and reduced stress as a result of not having to drive every day.

To further encourage the formation of carpools, many jurisdictions, such as the State Department of Highways and Public Transportation (SDHPT) in Texas, have established Park-and-Pool programs, in which parking lots are constructed in areas convenient for commuters to meet and ride together to common destinations. In Texas, these lots have typically been constructed by the State Department of Highways and Public Transportation using maintenance monies and personnel. Since their construction, the use of these facilities has continued to grow, yet relatively little is known about the people who use these Park-and-Pool lots. In response to this problem, TTI conducted a Park-and-Pool survey of a selected number of lots for the SDHPT. The lots surveyed were in highway districts with a major, dominant city--Houston or San Antonio. The results of this survey, which should provide useful guidelines for the planning, development and operation of Park-and-Pool facilities, are presented in this report. This report, in many respects, complements a previous report (Research Report 205-11) that identified characteristics of Park-and-Ride users and service.

PARK-AND-POOL SURVEY

Park-and-Pool Survey questionnaires were distributed in June, 1980, at 25 different lots located around the San Antonio and Houston metropolitan areas. The purpose of the survey was to obtain information concerning carpooler/vanpooler participation in the Park-and-Pool program. When possible, survey forms were handed to individuals when they arrived at the lot. Otherwise, the form was left on the windshield with a return envelope. A copy of the survey questionnaire and letter of introduction is included in the Appendix.

Nine lots surrounding San Antonio (Figure 1) and 16 lots in the vicinity of Houston (Figure 2) were selected for the survey. That represented all the Park-and-Pool lots in operation in Districts 12 and 15 at the time of the survey. A description of each of the lots in terms of location, approximate capacity, and amenities available is presented in Table 1. Inspection of each of the lots revealed that, in San Antonio, all 9 lots were paved, all had marked parking spaces, had Park-and-Pool signs at the entrances, and all except the I-10 @ SH 46 lot were clearly visible from adjacent highways. Only one lot (U.S. 81 @ SH 97) was lighted, and none were fenced. In Houston, 4 out of 16 lots were paved; however, only two of these 4 had marked parking spaces. All but 2 lots had either Park-and-Pool, Carshare Info, or Commuter signs displayed at the lots. In addition, all lots except two were visible from the roadway. None of the 16 lots were lighted or fenced.

In San Antonio, 155 surveys were distributed. Of these, 77 were completed and returned, resulting in a 50% response rate. In Houston, the return rate was comparable. Of the 416 surveys distributed, 189, or 45%, were returned. A more detailed description of the survey procedures and techniques is presented in the Appendix.

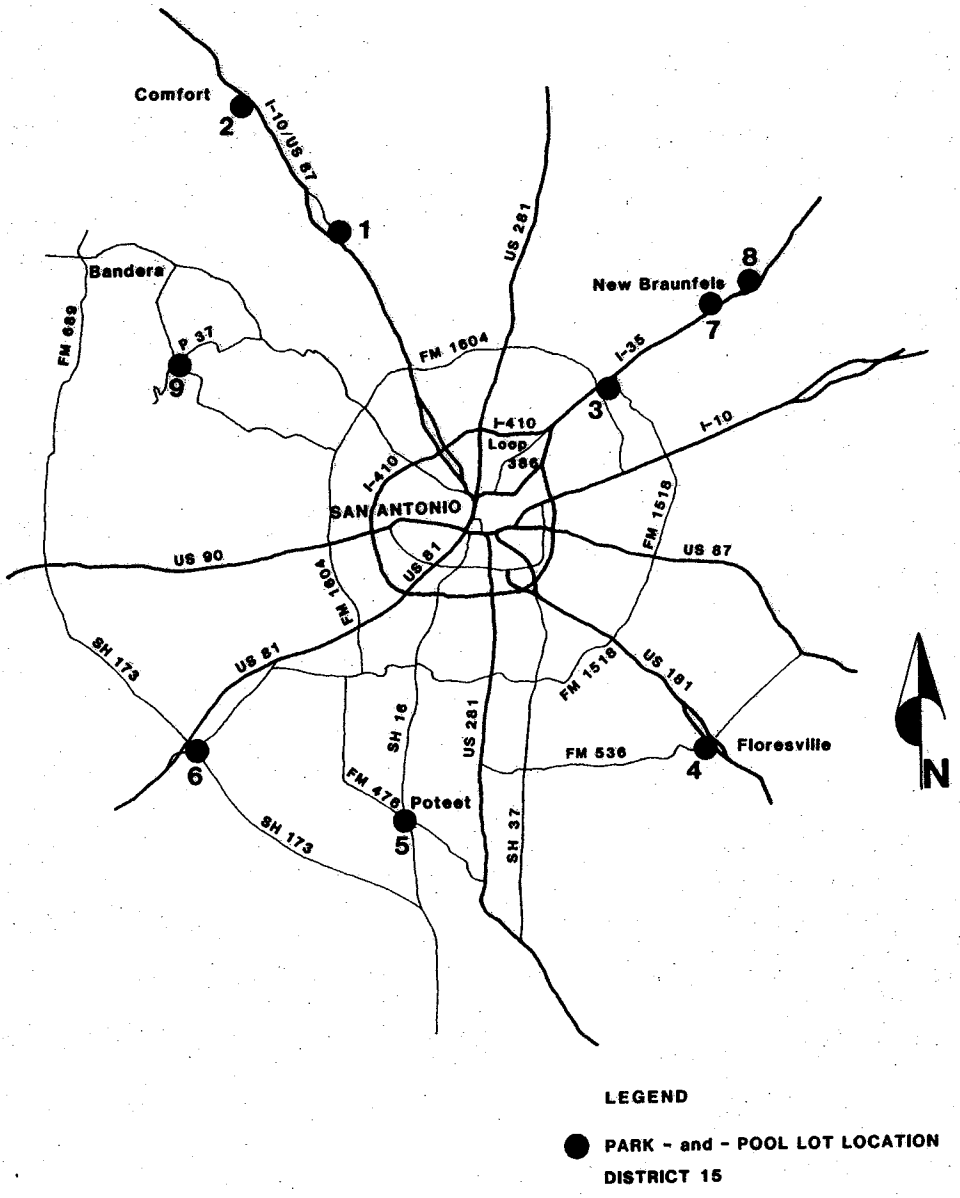

Figure 1: Locations of Park-and-Pool Lots Surveyed in San Antonio (District 15)

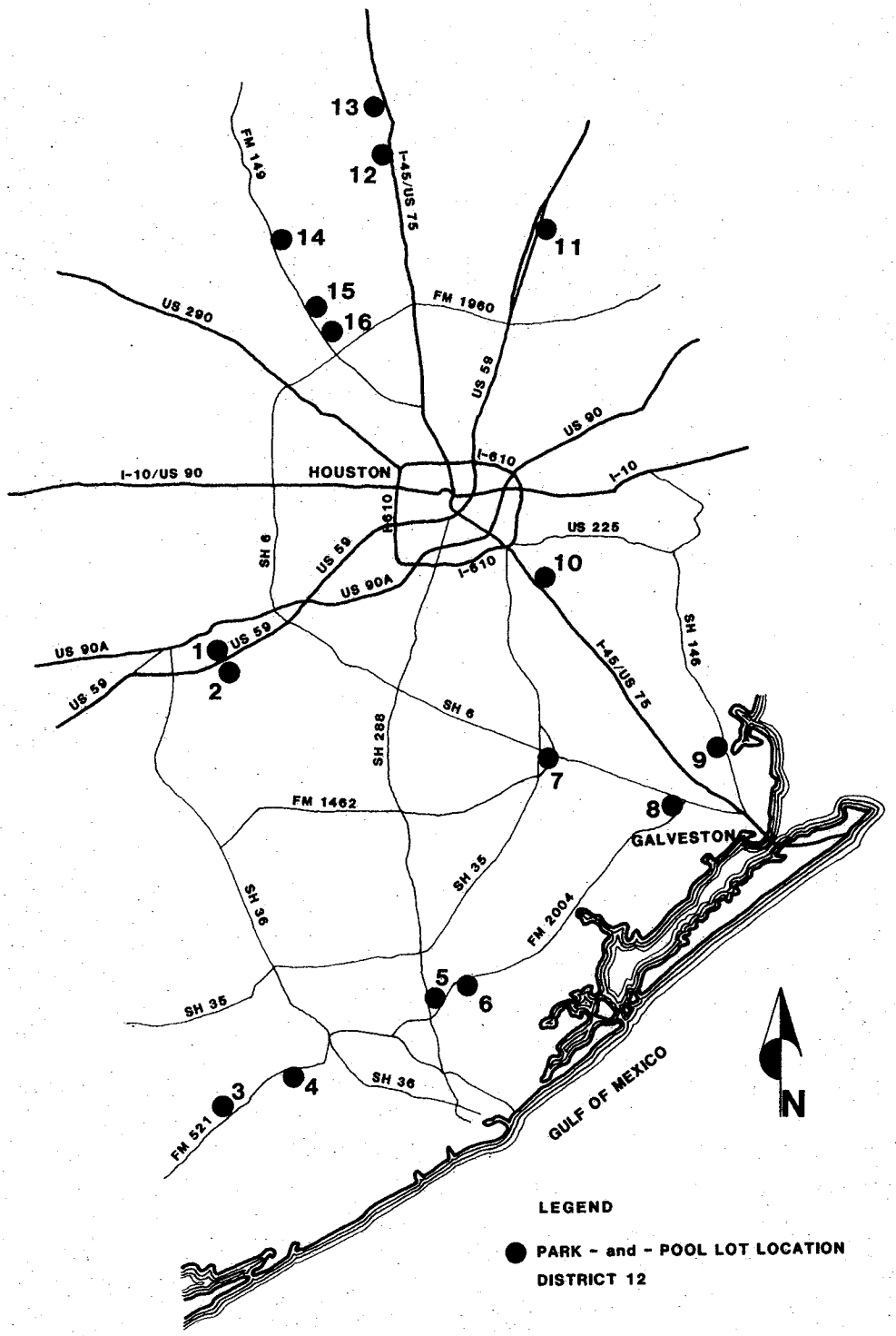

Figure 2: Locations of Park-and-Pool Lots Surveyed in Houston (District 12)

Table 1: Location, Approximate Capacity, and Amenities Available At Park-and-Pool Lots, Districts 12 and 15

Lot Location	Amenities Available						
	Approx. Capacity (# of spaces)	Paved	Lighted	Fenced	Marked Parking Spaces	Signed	Visible From Roadway
San Antonio (District 15)							
1. I-10 @ SH 46	22	x			x	x	
2. I-10 @ Cascade Caverns	16	x			x	x	x
3. I-35@ Loop 1604	73	x			x	x	x
4. US 181 @ SH 97	32	x	x		x	x	x
5. SH 16 @ FM 476	22	x			x	x	x
6. I-35 @ SH 173	20	x			x	x	x
7. I-35 @ FM 484	48	x			x	x	x
8. US 81 @ Loop 337	30	x			x	x	x
9. FM 1283 @ PR 37	12	x			x	x	x
Houston (District 12)							
1. US 59 @ FM 762 - N. Side	50					x	x
2. US 59 @ FM 762 - S. Side	75					x	x
3. FM 521 @ FM 457	8						x
4. FM 521 @ FM 524	25					x	x
5. SH 288 @ FM 2004	40					x	
6. FM 2004 @ FM 523	40					x	
7. SH 35 near SH 6	32	x			x	x	x
8. SH 6 @ FM 2004	10-15	x				x	x
9. SH 146 near Loop 197	10-15	x				x	x
10. I-45 @ South Belt	70					x	x
11. US 59 (3 mi. S. of FM 1485)	40					x	x
12. I-45 @ FM 1488	30					x	x
13. I-45 @ Gladstell	40	x			x	x	x
14. FM 149 (1 mi. N. of FM 2920)	15					x	x
15. FM 149 (1/4 mi. N. of Spring-Cypress)	40					x	x
16. FM 149 (1/2 mi. N. of FM 1960)	50						x

Note: Number shown in front of lot location relates to numbers shown in Figures 1 and 2.

SURVEY RESULTS

From the 266 responses to the Park-and-Pool Survey questionnaire, considerable information was obtained concerning characteristics of the people currently participating in the Park-and-Pool program, their use of the Park-and-Pool lots, the various factors which influenced their decisions to carpool, and their daily Park-and-Pool travel routines. A summary of this data for both the San Antonio and the Houston area lots is presented in this section.

It should be noted that, due to the survey procedures used, the responses are somewhat biased toward the carpools/vanpools with the greatest number of occupants. This is the case since each occupant rather than each vehicle was surveyed.

Personal Characteristics of Park-and-Pool Participants

In order to obtain a profile of the "typical" Park-and-Pool participant, a series of questions were asked relating to the age, sex, level of formal education and current occupation of the individuals being surveyed. The information obtained from these questions is highlighted below.

Age

The first question concerning the personal characteristics of Park-and-Pool participants asked, "What is your age?" The responses to this question, which ranged from 16 to 62 in San Antonio and 19 to 60 in Houston, are illustrated in Figure 3. The age of carpoolers/vanpoolers from both the San Antonio and Houston areas averaged 37 years.

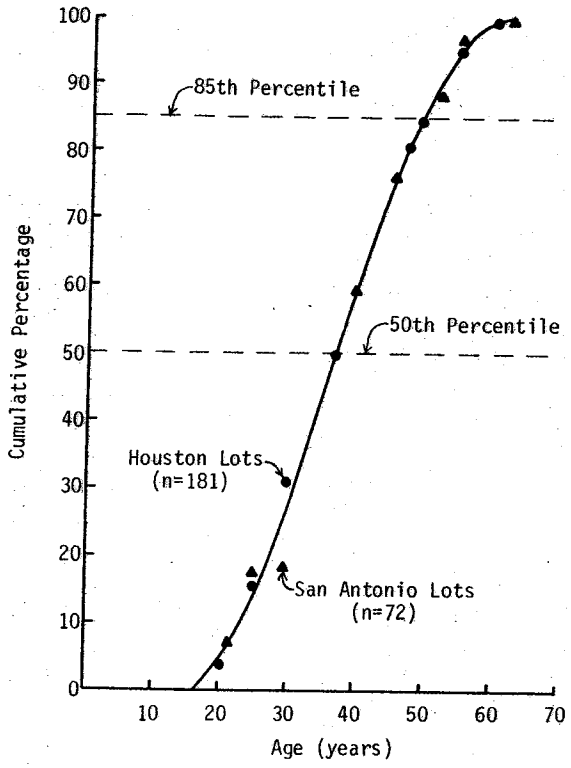

Figure 3: Cumulative Frequency Distribution, Age of Park-and-Pool Users

Sex

A subsequent question asked, "What is your sex?" The results of this question are presented in Table 2 . In San Antonio, there appears to be almost as many women as men who carpool/vanpool. In Houston, however, the split is considerably wider, with 65% of the total sample being male.

Table 2: Sex of Park-and-Pool Participants, Percentage

Sex	San Antonio Lots (n=72)	Houston Lots (n=182)	Total (n=254)
Male	51%	65%	61%
Female	49%	35%	39%
TOTAL	100%	100%	100%

Education

"What is the highest level of school you have completed?" was also asked. The 254 responses to this question (Figure 4) reveal that the Park-and-Pool participants are a relatively educated group.

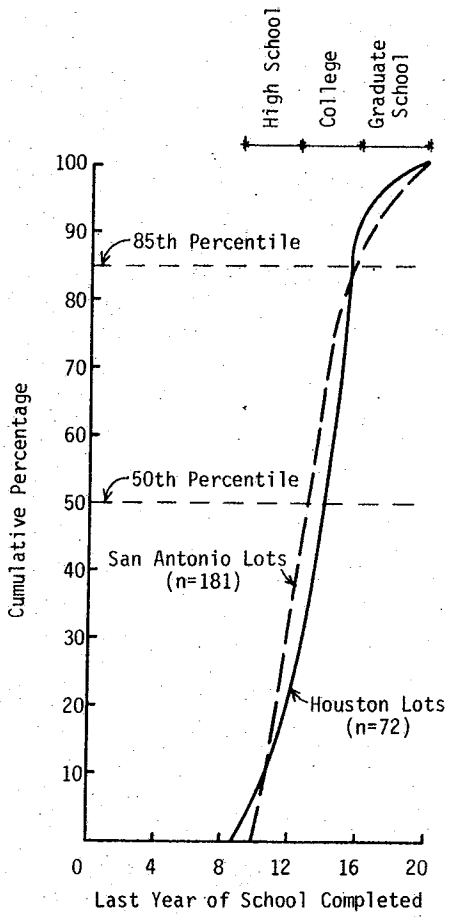

Figure 4: Cumulative Frequency Distribution, Education of Park-and-Pool Users

In San Antonio, 51% of those surveyed indicated that they have attended college, and 11% more stated that they have attended graduate school. In Houston, the percentage of carpoolers/vanpoolers who have attended college is higher (61%), while the percentage who have attended graduate school is

lower (8%). Although Park-and-Pool patrons are relatively educated, their level of education is still somewhat less than that found for Park-and-Ride users (Research Report 205-11).

Occupation

Another question asked, "What is your current occupation, in as specific terms as possible? (Also, please specify if retired, unemployed, student or housewife.)" Answers to this question were grouped into 13 categories; the results of this grouping are presented in Table 3.

Table 3: Occupation of Park-and-Pool Participants, Percentage

Occupation	San Antonio Lots (n=67)	Houston Lots (n=181)	Total (n=248)
Unemployed	--	--	--
Housewife	--	--	--
Student	7%	--	2%
Retired	--	--	--
Private Household Worker	--	--	--
Laborers	--	1%	1%
Operatives	--	1%	1%
Service Workers	--	1%	1%
Craftsmen	24%	25%	25%
Clerical	21%	21%	21%
Sales	1%	3%	2%
Managerial	8%	9%	8%
Professional	39%	39%	39%
TOTAL	100%	100%	100%

The responses to this question from the San Antonio area were almost identical to those from the Houston area in the top 4 categories of professional, craftsman, clerical, and managerial. A difference was noted, however, in the student category, where 7% of the San Antonio area respondents indicated that they were full-time students compared to a zero response in this category for the Houston area.

More blue collar workers (craftsmen) use Park-and-Pool than use Park-and-Ride (Research Report 205-11). This would be expected since Park-and-Pool serves many more destinations than does Park-and-Ride.

Park-and-Pool Lots

Other questions asked of participants in the Park-and-Pool program dealt specifically with the Park-and-Pool lots -- how area poolers learned about the lots, how the existence of the lots affected their decisions to carpool/vanpool, if there was always a space available at the lots, and if they felt it was safe to leave their cars parked at the lots unattended during the day. Area poolers were also asked if they would like bus service to be provided to the lots (i.e., Park-and-Ride rather than Park-and-Pool), and if they felt the State should spend more tax dollars on the development of additional Park-and-Pool lots. Their responses to these items are presented in this section.

How Carpoolers/Vanpoolers Learned of Lots

One of the first questions asked was, "How did you learn about the Park-and-Pool lot?" Information in Table 4 indicates that the majority of respondents in San Antonio noticed the lot being built, while the majority in Houston learned of the lot through friends, relatives or co-workers. Only a very small percentage (3% in San Antonio and 1% in Houston) read about the lot in the newspaper and no one responded that he or she learned of the lot on the radio or TV.

Table 4: How Users Learned About Park-and-Pool Lot, Percentage

How Learned About Lot	San Antonio Lots (n=76)	Houston Lots (n=188)	Total (n=264)
Friend, relative, co-worker	25%	44%	38%
Noticed lot being built	56%	35%	42%
Newspaper	3%	1%	2%
Radio/TV	---	---	---
Noticed highway sign	13%	16%	15%
Other	3%	4%	3%
TOTAL	100%	100%	100%

Effect of the Park-and-Pool Lots on Decision to Carpool

"How did this Park-and-Pool lot affect the formation of your carpool?" was asked in the survey. The responses to this question are presented in Table 5. Also presented in this table are the responses to a similar question asked of Dallas area poolers in a Park-and-Pool survey conducted by the North Central Texas Council of Governments in 1979 (3).

Table 5: Effect of Park-and-Pool Lot on Formation of Carpool, Percentage

Effect of Lot	San Antonio Lots (n=77)	Houston Lots (n=188)	Total S.A. & Hou. (n=265)	Dallas Lots (n=68)
Would not be carpooling if not for lot	5%	14%	12%	20.5%
Lot was one of several factors in decision to carpool	48%	52%	51%	62.0%
Lot had no effect on decision to carpool	47%	34%	37%	17.5%
TOTAL	100%	100%	100%	100.0%

Source: Reference 3.

In San Antonio, 48% answered that the lot was one of several factors influencing their decisions to carpool/vanpool, and 5% indicated that they would not be pooling at all if not for the lot. The remaining 47%, however, indicated that the lot had no effect on their decisions to carpool. In Houston, the picture is somewhat different. A higher percentage of

respondents indicated that they would not be carpooling/vanpooling if not for the lot; a lower percentage stated that the lot had no effect on their decisions to carpool. In Dallas, the percentage who would not be carpooling if not for the lot is still higher, and the percentage in which the lot had no effect on their decisions to carpool is even lower. These responses would suggest that provision of Park-and-Pool lots is one of the more significant transportation actions that might be taken to increase average vehicle occupancy.

Availability of Parking

When asked, "Is there always a parking space available at the Park-and-Pool lot?" approximately 99% (n=77) of those in the San Antonio area answered "yes" compared to about 87% (n=187) in the Houston area. This might indicate a possible need for more lots or the expansion of existing lots in certain parts of the Houston area.

Security

A subsequent survey question addressed the matter of security at the lots. "Do you feel it is safe to leave your car parked at the Park-and-Pool lot?" was asked. From the responses in Table 6, it appears that security is much more of a problem at the Houston area lots than at the San Antonio area lots. Approximately 21% of those surveyed in Houston indicated that they had reason to believe that it was not safe to leave their cars parked at the lots during the day. These responses might suggest that increased provision of lighting, fencing, and telephones would be appropriate. The Park-and-Pool program will not be successful if large numbers of users and possible users consider security to be a problem.

Table 6: Security at the Park-and-Pool Lots, Percentage

Safe to Leave Car	San Antonio Lots (n=77)	Houston Lots (n=181)	Total (n=258)
Yes	91%	73%	78%
No	3%	21%	16%
Not Sure	6%	6%	6%
TOTAL	100%	100%	100%

Park-and-Ride Bus Service

Users of the Park-and-Pool lots were also asked, "If Park-and-Ride bus service were provided from this lot to your destination, would you prefer to: Continue to carpool (or) Ride the bus?" Their responses, as summarized in Table 7, indicate that the majority of San Antonio area respondents would ride the bus, while the majority of the Houston area poolers would prefer to continue to carpool. The responses suggest that many Park-and-Pool users are at least potential transit users. The extent to which they actually would use transit would be strongly related to the bus service provided (headways, schedule speed, reliability, etc.).

Table 7: Park-and-Ride Bus to Lots, Percentage

If Park-and-Ride Bus Service Offered	San Antonio Lots (n=71)	Houston Lots (n=174)	Total (n=245)
Continue to carpool	42%	69%	61%
Ride the bus	58%	31%	39%
TOTAL	100%	100%	100%

Devote More Tax Revenue to Park-and-Pool

The Park-and-Pool survey also included the following statement, "The State of Texas should spend more tax dollars in developing Park-and-Pool

lots." The extent to which area participants agreed or disagreed with this statement is presented in Table 8.

Table 8: Devote More Tax Dollars to Park-and-Pool, Percentage

State Spend More Tax Dollars on Park-and-Pool	San Antonio Lots (n=72)	Houston Lots (n=179)	Total (n=251)
Strongly Agree	29%	44%	40%
Agree	57%	48%	50%
Neutral	13%	7%	9%
Disagree	1%	1%	1%
Strongly Disagree	----	----	----
TOTAL	100%	100%	100%

Although a significant percentage of those surveyed in the San Antonio area indicated that they were "neutral" on the subject, 57% agreed, and an additional 29% strongly agreed that more tax dollars should be spent on Park-and-Pool lots.

In Houston, while a lower percentage merely agreed with the statement, a much higher percentage strongly agreed, resulting in a total of 92% who felt that more tax money should spent in developing Park-and-Pool lots. The stronger sentiment toward developing more lots expressed by Houston area respondents is consistent with their responses to a previous question in which a significant percentage indicated that there was not always a parking space available at their Park-and-Pool lots.

The responses in both San Antonio and Houston help emphasize the popularity of the lots. For a relatively low cost improvement, considerable public support is developed.

Factors Influencing Decision to Park-and-Pool

In addition to the question regarding what effect the existence of a

Park-and-Pool lot had on their decisions to carpool/vanpool, several other questions were asked to determine if saving time, money or energy were also important factors in influencing decisions to Park-and-Pool. Individuals were also asked if their employers provided any incentives for them to carpool. Responses to this series of questions follow.

Employer's Encouragement to Carpool/Vanpool

When asked the question, "Does your employer provide any incentives for carpools?" approximately 46% (n=61) of those responding in the San Antonio area and 48% (n=240) of those in the Houston area answered yes. Table 9 summarizes the different types of incentives the employers provide. Subsidized parking was the most commonly cited incentive in San Antonio, while vanpool programs headed the list in Houston.

Apparently, to a significant extent, Park-and-Pool lots complement incentives provided by the private sector to increase vehicle occupancy.

Table 9: Incentives to Carpool/Vanpool Provided by Employers, Percentage

Incentive	San Antonio Lots (n=25)	Houston Lots (n=82)	Total (n=107)
Vanpool program	24%	56%	49%
Subsidized parking	48%	22%	28%
Carpool matching	24%	4%	8%
Money	----	10%	7%
Free insurance	----	1%	1%
Flexible working hours	----	5%	4%
Other	4%	2%	3%
TOTAL	100%	100%	100%

Note: Just less than half of the persons using the park-and-pool lots are receiving an employer incentive to carpool/vanpool.

Time, Money, Energy Savings/Losses

Time

Individuals were also asked, "Do you save time using Park-and-Pool?" Responses to this question are presented in Table 10.

Table 10: Save Time Using Park-and-Pool, Percentage

Save Time Using Park-and-Pool	San Antonio Lots (n=73)	Houston Lots (n=181)	Total (n=254)
Yes	8%	21%	17%
No	47%	48%	48%
Not Sure	31%	22%	25%
No Difference	14%	9%	10%
TOTAL	100%	100%	100%

Almost half of those surveyed in both San Antonio and Houston indicated that they do not save time by using Park-and-Pool. (Figure 5 illustrates the extent of their perceived time losses.) This would be expected since driving to a Park-and-Pool lot probably increases total trip distance plus involving some time waiting at the lot to be picked up. Approximately 21% of those surveyed in Houston, however, indicated that they do save time using Park-and-Pool. (Figure 6 illustrates their perceived time savings.)

About 58% of those who stated that they save time use one of the 2 Park-and-Pool lots located on I-45 north of the Contraflow Lane. A more detailed analysis of responses from the I-45N lots was performed to determine if the respondents could belong to vanpools which use the Contraflow Lane and, if so, the use of this lane could be the reason for the time savings. (Note: To be eligible to use the Contraflow Lane, a vanpool must have a minimum of 8 passengers registered, including the driver.) Therefore, responses to the question "Do you save time using Park-and-Pool?" from the

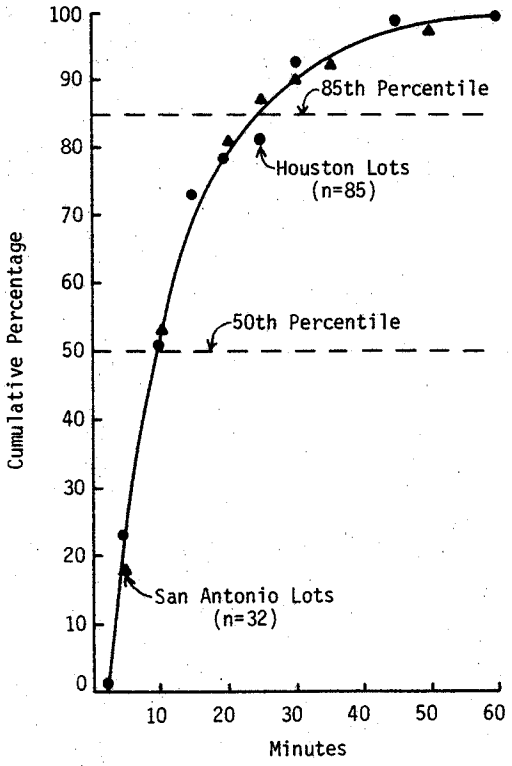

Figure 5: Cumulative Frequency Distribution, Time Lost Per One-Way Trip Using Park-and-Pool

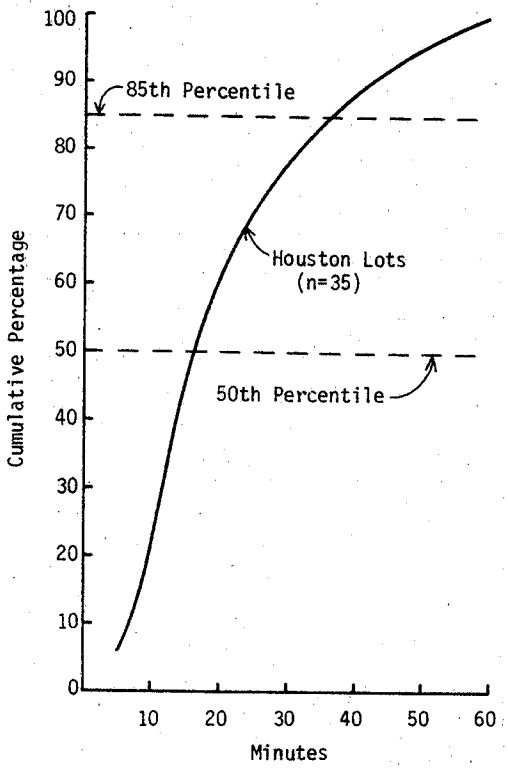

Figure 6: Cumulative Frequency Distribution, Time Saved Per One-Way Trip Using Park-and-Pool (Houston Lots)

I-45N lots were grouped into 2 categories: those with less than 8 persons normally in their vanpools and those with 8 or more persons normally in their vanpools. The results of this grouping are presented in Table 11.

Table 11: Perceived Time Savings/Loses by Participants Who Use I-45N @ FM 1488 and I-45N @ Gladstell Road Lots North of Houston

Do you save time using Park-and-Pool?	Respondents with <8 in Pool	Respondents with 8+ in Pool*
Yes	1 (17%) saved 40 min. each way	11 (50%) saved an average of 26 min. each way
No	4 (66%) lost an average of 19 min. each way	6 (27%) lost an average of 23 min. each way
Not Sure	----------	4 (18%)
No Difference	1 (17%)	1 (5%)
TOTAL	6 (100%)	22 (100%)

*Vanpools with 8 or more passengers registered, including the driver are eligible to use the Contraflow Lane.

Of those respondents whose vanpools have the required number of passengers to use the Contraflow Lane, approximately 50% perceived a savings of 26 minutes each way by using Park-and-Pool and the Contraflow Lane. It might be noted that actual savings on the Contraflow Lane are in the range of 13 minutes, thus, perceived savings by users are twice actual savings. However, 27% felt they lost an average of 23 minutes each way. This feeling may be due to the fact that while some time may be saved by traveling in the Contraflow Lane, it does not, for example, offset the time lost in traveling from home to the lot or the time lost while waiting for other passengers to arrive at lot before the vanpool can depart for its final destination. Also, all vanpools with 8 or more persons do not necessarily have a destination that would make using the contraflow lane a viable alternative.

Of those individuals who apparently are not using the Contraflow Lane, 66% perceived a loss of an average of 19 minutes each way.

Money

Another question asked, "Do you save money by using Park-and-Pool?" The answers to this question (Table 12) reveal that the vast majority of respondents in both San Antonio and Houston do save money by carpooling/vanpooling. The amount they save is illustrated in Figure 7. On the average, poolers in San Antonio save about $67 each month, and those in Houston save about $71 per month.

Table 12: Save Money Using Park-and-Pool, Percentage

Save Money Using Park-and-Pool	San Antonio Lots (n=74)	Houston Lots (n=181)	Total (n=255)
Yes	88%	96%	94%
No	1%	----	----
Not Sure	11%	3%	5%
No Difference	----	1%	1%
TOTAL	100%	100%	100%

These dollar savings are two to three times greater than those perceived by Park-and-Ride users (Research Report 205-11). This would largely be the result of the greater average trip length. Money savings are certainly the major reason for carpooling at the Park-and-Pool lots.

Saving Money Versus Saving Energy

Answers to the following question further illustrate the importance of saving money. "In your decision to carpool, which of the following concerns was most important to you?" was asked. Out of the 3 possible answers, "Saving money," "Saving energy," and "Other, please specify," the overwhelming majority in both the San Antonio and Houston areas replied that saving money was most important (Table 13).

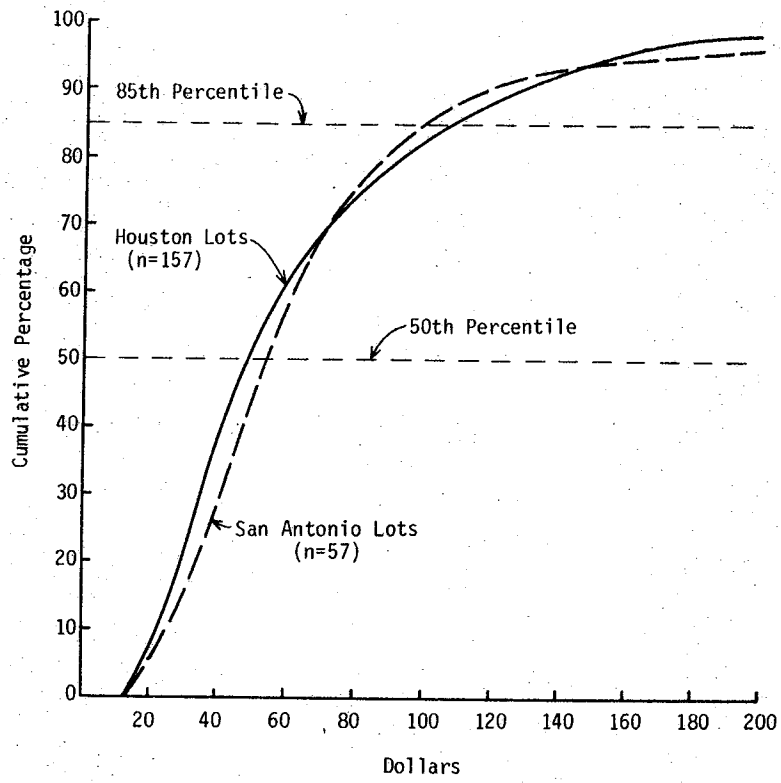

Figure 7: Cumulative Frequency Distribution, Dollars Saved per Month by Using Park-and-Pool

Table 13: Most Important Concern in Decision to Carpool, Percentage

Reason	San Antonio Lots (n=77)	Houston Lots (n=189)	Total (n=266)
Saving money	91%	90%	91%
Saving energy	8%	6%	6%
Other (Reduced stress by not having to drive)	1%	4%	3%
TOTAL	100%	100%	100%

As costs of owning and operating an auto increase, so will the potential to save more money through ride sharing. Increased provision of Park-and-Pool lots can enhance and encourage greater carpooling/vanpooling. Although the incentive to the individual is dollar savings, the individual's decision to carpool on that basis also provides society with an energy savings.

Inconvenience of Not Having Auto Available

When asked, "Does not having a car available during the day create a serious inconvenience?" the majority of those in the Houston area responded that it seldom, if ever, resulted in a serious inconvenience (Table 14). In the San Antonio area, however, a slightly higher percentage indicated that not having an auto available during the day frequently created a serious inconvenience. (Other factors, such as saving money, apparently overshadow the inconveniences sometimes experienced as a result of not having a car available during the day.)

Table 14: Inconvenience of Not Having Auto Available During the Day, Percentage

Inconvenient	San Antonio Lots (n=74)	Houston Lots (n=179)	Total (n=253)
Frequently	11%	5%	7%
Seldom	59%	68%	65%
Never	30%	27%	28%
TOTAL	100%	100%	100%

As would be expected, those persons needing an auto during the day for business purposes are not as likely to carpool unless they are the driver on a regular basis. Park-and-Ride surveys in the Dallas area (Research Report 205-11) suggest that about half of downtown employees perceive a need to have an automobile during the day.

Travel Patterns

In order to better understand past and present travel patterns, individuals were asked a number of questions relating to their previous modes of travel prior to participating in Park-and-Pool, how their carpools/vanpools were formed, the length of time they have been using Park-and-Pool, the number of persons normally in their carpools/vanpools, and how often they Park-and-Pool. Another series of questions dealt with mode of arrival at the lots, time of arrival at/departure from the lots, travel distances from their origins to the lots, the final destinations of carpools/vanpools, and the travel distances from the lots to these destinations. Answers to these questions are highlighted on the following pages.

Previous Mode of Travel

One of the first questions asked poolers was "Before you became involved in Park-and-Pool, how did you normally make this trip?" Their answers, as summarized in Table 15, indicate that while the overall majority of respondents drove alone, a significant number were already carpooling/vanpooling. This is especially true in the San Antonio area where 43% reported that they were carpooling/vanpooling prior to their involvement in this Park-and-Pool program. This response is consistent with the 47% of those surveyed who indicated (in a previous question) that the existence of the Park-and-Pool lot had no effect on their decision to carpool. Again, it appears that provision of Park-and-Pool lots is a relatively effective means of increasing average vehicle occupancy.

Table 15: Previous Method of Making Trip Before Becoming Involved in Park-and-Pool, Percentage

Previous Method of Transportation	San Antonio Lots (n=77)	Houston Lots (n=187)	Total (n=264)
Drove alone	53%	72%	67%
Carpool/vanpool	43%	25%	30%
Bus	---	2%	1%
Other	4%	1%	2%
TOTAL	100%	100%	100%

How Carpool/Vanpool Was Formed

The question "How was your carpool formed?" was also asked. The vast majority of responses -- 74% in the San Antonio area and 90% in the Houston area -- were that carpools/vanpools were formed at work (Table 16). These percentages are somewhat higher than the Dallas area where only 64% of the carpools were formed by co-workers (3). In San Antonio, an additional 20% replied that their carpool/vanpool was formed by classmates wanting to share a ride to campus. This 20% response in San Antonio falls in line with earlier responses to the question regarding occupation, where 7% indicated they were full-time students (Also, 15% of those categorized as professionals indicated that they were taking classes during the time of this survey).

Table 16: How Carpools/Vanpools Were Formed, Percentage

How Carpool/ Vanpool Formed	San Antonio Lots (n=70)	Houston Lots (n=168)	Total (n=238)
At the office	74%	90%	86%
METRO carshare	---	2%	2%
In neighborhood	3%	5%	4%
Private bus service	---	2%	1%
By classmates	20%	---	6%
Other	3%	1%	1%
TOTAL	100%	100%	100%

Length of Time Participating in Park-and-Pool

Responses to the question, "How long have you been participating in the Park-and-Pool program?" varied from one month to 27 years (Figure 8). These responses once again point out that many individuals were already pooling prior to the development of formal Park-and-Pool lots.

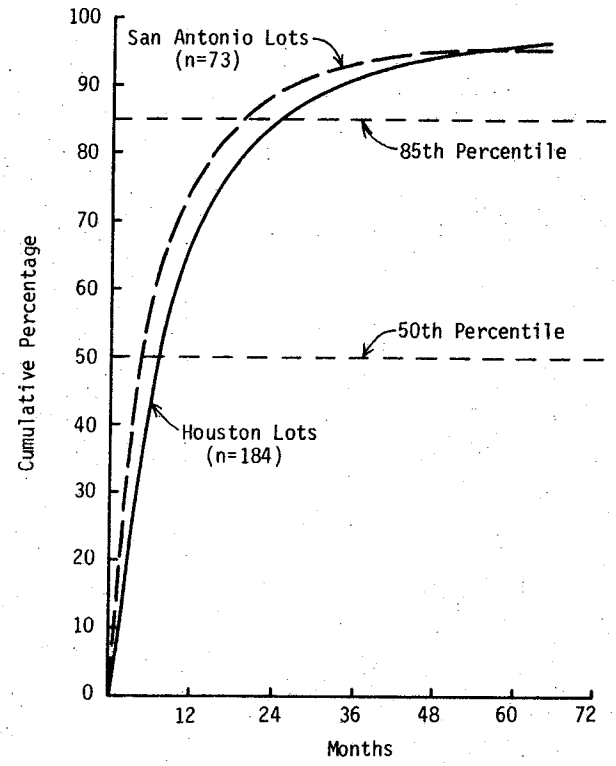

Figure 8: Cumulative Frequency Distribution, Length of Use of Park-and-Pool

On the average, those in the San Antonio area have been participating in Park-and-Pool 13 months while those in the Houston area have been pooling an average of 18 months.

Number of People in Carpool/Vanpool

In a subsequent question, "How many people, including yourself, are normally in your carpool?" was asked. Answers to this question (Figure 9) reveal that vehicle occupancy of carpools/vanpools is considerably higher for the Houston lots than for the San Antonio lots. Average occupancy figures are 5.4 persons per vehicle in Houston compared to 4.1 persons per vehicle in

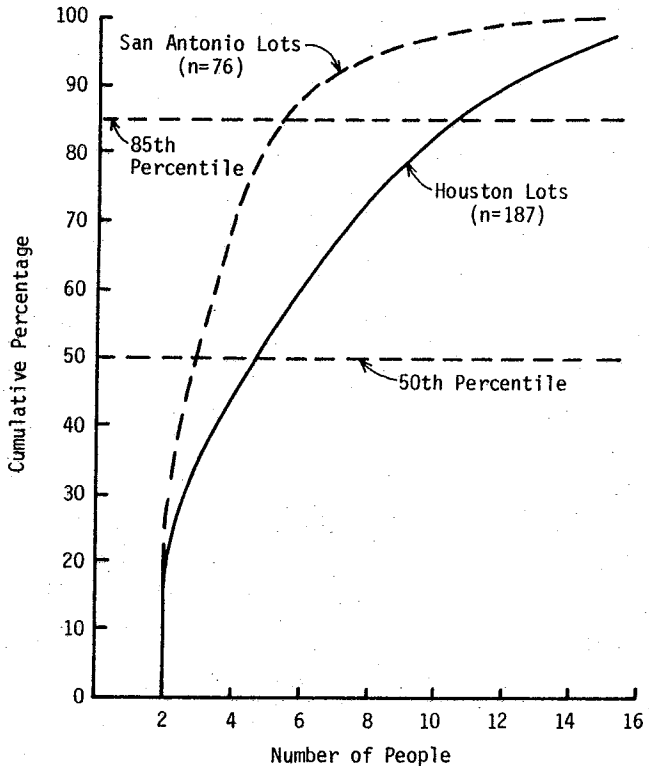

Figure 9: Cumulative Frequency Distribution, Occupancy of Carpools/Vanpools Using Park-and-Pool Lots

San Antonio. Both of these occupancy figures are higher than the 3.76 average occupancy of the carpools/vanpools surveyed in Dallas (3). The higher occupancy figure for Houston is consistent with the presence of an extremely extensive vanpooling program.

Frequency of Carpooling/Vanpooling

"How many days per week do you carpool?" was also asked. The responses to this question are presented in Table 17. These responses indicate that individuals Park-and-Pool an average of 4.8 days per week in San Antonio and 4.9 days per week in Houston.

Table 17: Number of Days per Week Individuals Carpool/Vanpool

Number of Days	San Antonio Lots (n=77)	Houston Lots (n-187)	Total (n=264)
2	1%	2%	2%
3	4%	1%	2%
4	9%	7%	8%
5	86%	88%	87%
6	---	2%	1%
TOTAL	100%	100%	100%

This would be expected. The carpool/vanpool trip is a work trip, and those trips will occur on a daily basis.

Mode of Arrival to Park-and-Pool Lot

Major differences were observed in the answers to the following question, "How did you arrive at the Park-and-Pool lot?" Approximately 90% of those responding in Houston replied that they drove alone (Table 18). An additional 6% rode with someone who also uses Park-and-Pool. In San Antonio,

however, a lower percentage (79%) drove alone, and a higher percentage (17%) rode with someone who also participates in Park-and-Pool.

Table 18: Mode of Arrival to Park-and-Pool Lots, Percentage

Mode of Arrival	San Antonio Lots (n=77)	Houston Lots (n=188)	Total (n=265)
Drove alone	79%	90%	87%
Rode with someone who also uses Park-and-Pool	17%	6%	10%
Dropped off by someone	3%	2%	2%
Other	1%	2%	1%
TOTAL	100%	100%	100%

Time of Arrival at/Departure from Park-and-Pool Lot

When poolers were asked "What time did you arrive at the Park-and-Pool lot this morning?" their answers ranged anywhere from 4:30 to 8:30 a.m. (Figure 10). The average time of arrival for those in the San Antonio area was 6:49 a.m., about 30 minutes later than Houston's average of 6:20 a.m. The earlier arrival time in Houston may be partly the result of greater congestion in that city; the morning work trip takes longer to complete.

Answers to the second part of this question, "What time did you leave the Park-and-Pool lot this evening?" varied widely, as illustrated in Figure 11. The average time of departure was 5:13 p.m. in Houston and 5:21 p.m. in San Antonio. In general, patrons in Houston arrived at, and departed from, their lots earlier than those in San Antonio.

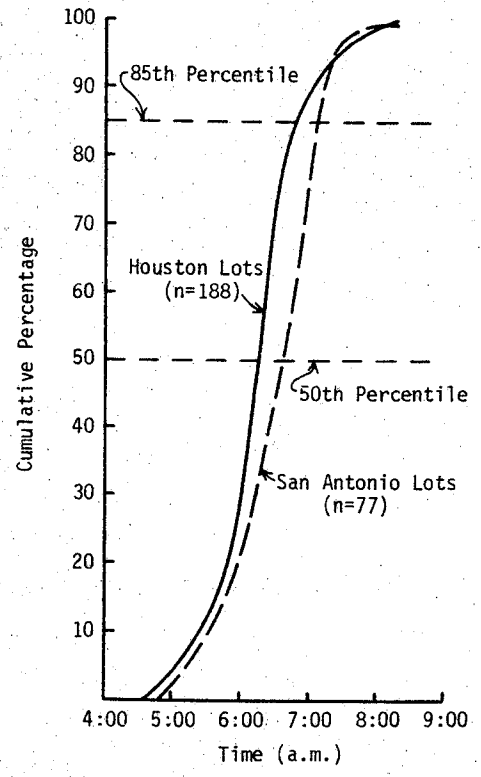

Figure 10: Cumulative Frequency Distribution, Time of Arrival at Park-and-Pool Lots

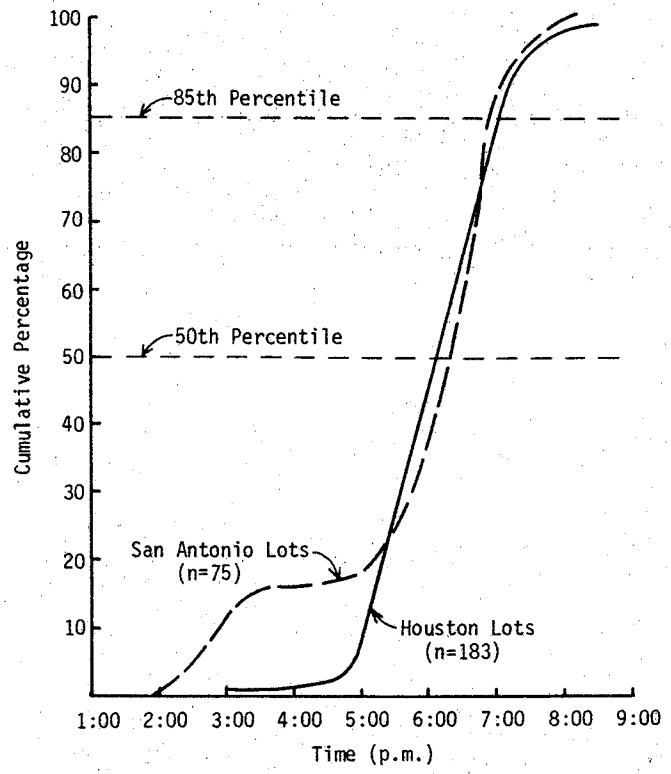

Figure 11: Cumulative Frequency Distribution, Time of Departure from Park-and-Pool Lots

Travel Distance to Park-and-Pool Lot

Responses to another question asked area poolers, "How far do you travel to arrive at the Park-and-Pool lot?" are illustrated in Figure 12. Median trip lengths in San Antonio exceeded 4 miles, and median trip lengths in Houston exceeded 3 miles. Users of Park-and-Pool travel almost as far just to get to the lot as the typical city driver does for his entire work trip.

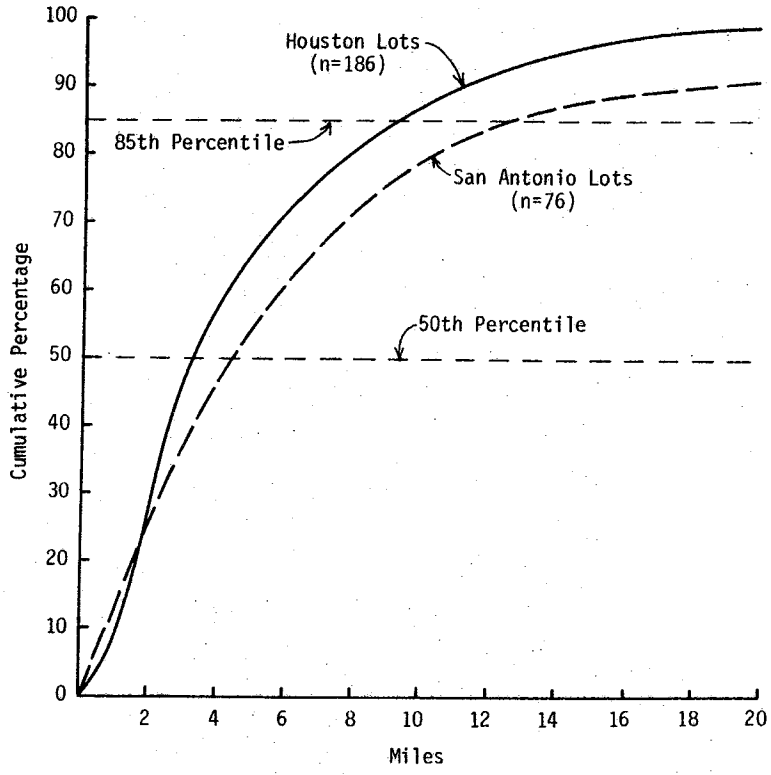

Figure 12: Cumulative Frequency Distribution, Distance Traveled to Park-and-Pool Lots

Destinations of Park-and-Pool Participants

It has been hypothesized that the vast majority of those participating in Park-and-Pool programs across the state are destined to the central business districts (CBD's) of the major cities. Such is the case in the Dallas area where approximately 76% of the poolers are traveling to destinations in the Dallas CBD (3). However, answers to the question, "What is your destination after leaving your car parked at the Park-and-Pool lot?" revealed that area poolers are destined to numerous other locations in addition to the San Antonio and Houston CBD's.

In the San Antonio area, for example, while 53% of the respondents indicated that they are traveling into San Antonio to various locations, 47% are traveling out of San Antonio to destinations in neighboring cities (Table 19). In fact, the largest group of respondents (24%) are destined to Southwest Texas State University in San Marcos. Other destinations commonly listed are located in the areas of the South Texas Medical Center, the Central Business District and Kelly Air Force Base (all in San Antonio). The University of Texas in Austin also drew a sizeable percentage.

In the Houston area, approximately 71% of the respondents are traveling to destinations within the City of Houston with the remaining 29% traveling to neighboring cities (Table 20). Unlike San Antonio, over a third (39%) of Houston area respondents are pooling to destinations located in the Houston central business district. (This percentage of CBD-bound poolers is still considerably lower than the 76% for the Dallas area poolers, however.) In Houston, the Texas Medical Center Complex and the Galleria/Post Oak areas accounted for an additional 7.5% and 4.3% of the destinations, respectively.

Table 19: Destinations of Park-and-Pool Participants from the San Antonio Area Lots (n=63)

Destination	Percent
Within San Antonio	
South Texas Medical Center	12.6
Central Business District	11.0
Kelly Air Force Base	10.0
San Antonio Int'l Airport	1.5
San Antonio College	1.5
Randolph Air Force Base	1.5
Castle Hills	3.2
Northwest San Antonio	6.3
West San Antonio	3.2
South San Antonio	1.5
Outside San Antonio	
Bergstrom AFB - Austin	3.2
IRS - Austin	1.5
UT - Austin	8.0
New Braunfels	5.0
SW Texas State U. - San Marcos	24.0
Bandera	1.5
Falls City	1.5
Kerrville	1.5
Poteet	1.5
TOTAL	100.0%

The second part of this question asked "How many miles do you travel to reach your destination?" Figure 13 shows that San Antonio area poolers are traveling significantly farther from their Park-and-Pool lots to their final destinations. The number of miles traveled averaged 35.7 miles in San Antonio compared to 29.3 miles in the Houston area. This is largely the result of student travel from San Antonio to Southwest Texas State University in San Marcos and the University of Texas in Austin.

Table 20: Destinations of Park-and-Pool Participants from the Houston Area Lots (n=161)

Destination	Percentage
Within Houston	
Central Business District	37.9
Texas Medical Center Complex	7.5
Bellaire	2.5
Galleria/Post Oak	4.3
Chocolate Bayou	1.9
Greenspoint	.6
Sharpstown	3.1
Southbrook	.6
Brookhollow West	.6
Memorial	1.9
Sandal Wood	.6
Belt Way	2.5
Kirkwood	.6
W. Univ. Place	.6
Kenwood Place	.6
Greenway Plaza	.6
Tanglewood	1.3
Spoon Downs	.6
S.E. Houston	2.5
Katy	3.7
Alief	1.3
Outside Houston	
Alvin	1.3
El Campo	.6
Thompson	2.5
Sugarland	1.3
Mo. City	.6
Fallston	.6
Richwood	.6
Angleton	.6
Freeport	1.9
Galveston	.6
Texas City	3.7
Old Ocean	1.3
Clear Lake City	2.5
Galveston	1.3
Pasadena	.6
Baytown	.6
Channel View	.6
Addicks	.6
Conroe	.6
Spring	.6
Jersey Village	.6
Aldine	.6
TOTAL	100.0%

NOTE: 3 destination addresses could not be located.

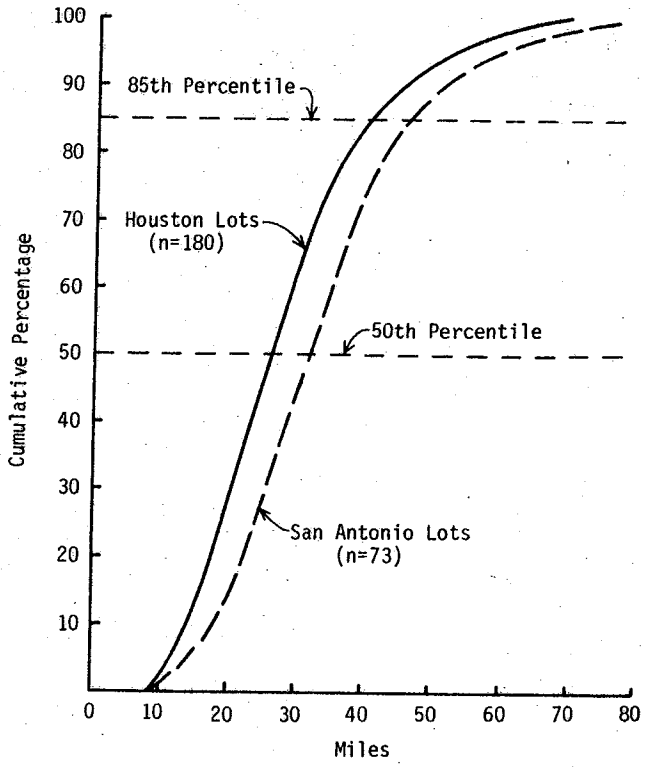

Figure 13: Cumulative Frequency Distribution, Distance Traveled from Park-and-Pool Lots to Final Destinations

Additional Comments

Space was also provided at the end of the survey questionnaires for respondents to list additional comments that they might have in areas which were not covered by the questions. A total of 55 individuals from the Houston area and 18 from the San Antonio area listed one or more comments concerning the Park-and-Pool lots. These comments were grouped into 9 categories; the results are presented in Table 21. These comments tend to further state the apparent popularity of Park-and-Pool improvements. It appears that certain desired improvements (e.g., telephones and trash receptacles) could be provided at modest costs.

Table 21: Comments Listed by Park-and-Pool Participants

Comment	San Antonio Lots	Houston Lots	Total	Percent of Total Responses
Appreciate Having Lot to Park In	6	20	26	26%
Lot Needs to be Paved/Resurfaced	-	10	10	10%
Need Better Security at Lot	3	17	20	20%
More Lots or Expand Existing Lots	3	12	15	15%
Need Telephone for Emergencies	3	3	6	6%
Lot Should be Lighted	4	10	14	14%
Need Bus Service to Lot	-	2	2	2%
Make Lots More Accessible	-	3	3	3%
Need Trash Receptables at Lot	4	--	4	4%
TOTAL	23	77	100	100%

In general, respondents expressed appreciation for having a convenient place to park their cars during the day while they take advantage of the benefits of carpooling. Several also listed areas which needed improvement. The need for better security at the lots was the comment must frequently listed. The need for lighting at the lots, which goes hand in hand with security, was also mentioned numerous times.

MAJOR FINDINGS

The Park-and-Pool surveys performed in District 15 (San Antonio) and District 12 (Houston) have provided insights into both the types of people who currently participate in Park-and-Pool and their daily travel routines. Of greater importance, however, is the information obtained concerning what factors led these individuals to their decisions to carpool, and how Park-and-Pool can be improved to encourage continued participation. This information should prove valuable in a number of areas including:

- The evaluation of existing Park-and-Pool programs;
- The possible need to upgrade certain features of the Park-and-Pool lots in order to better meet the needs of area commuters; and
- The planning and design of future Park-and-Pool facilities in the San Antonio and Houston areas or in other areas around the State.

Personal Characteristics and Travel Routine of Park-and-Pool Participants

From the responses to the Park-and-Pool survey questionnaires, it was determined that Park-and-Pool appeals to a wide variety of individuals traveling to a wide variety of destinations. On the average, however, the majority of participants are male, around 37 years old, have completed at least 2 years of college and are employed in white-collar professions. They typically travel alone about 6.3 miles each weekday to reach their Park-and-Pool lots, arriving at about 6:28 a.m. They carpool with 2 or 3 other people to destinations located about 31.2 miles from their lots. They return to the lots at the end of the day and leave at about 5:16 p.m. These characteristics are summarized in Table 22.

Table 22: Overview of Selected Personal and Transportation Characteristics of Park-and-Pool Users (Districts 12 and 15)

Characteristic	District 15 (San Antonio)	District 12 (Houston)	Total
Age (years)			
50th percentile	36.3	35.5	35.7
85th percentile	48.1	50.2	49.8
Sex			
Male	51%	65%	61%
Female	49%	35%	39%
Years of Education			
50th percentile	13.1	13.7	13.5
85th percentile	15.8	15.8	15.8
Occupation			
Professional	39%	39%	39%
Craftsman	24%	25%	25%
Clerical	21%	21%	21%
Managerial	8%	9%	8%
Previous Mode of Travel			
Drove alone	53%	72%	67%
Carpool/Vanpool	43%	25%	30%
Number of Persons in Carpool/Vanpool			
50th percentile	3.1	3.6	3.4
85th percentile	4.8	11.4	11.0
Distance Traveled (mi.), Home to Lot			
50th percentile	4.5	3.3	3.7
85th percentile	11.8	9.0	9.8
Distance Traveled (mi.), Lot to Destination			
50th percentile	33.5	25.8	28.0
85th percentile	47.5	41.5	44.7

Factors Influencing Decision to Carpool

One of the primary objectives of the survey was to determine what factors were important to the majority of individuals in their decisions to carpool. Was it saving time, saving money, saving energy, or was it some other reason? Finally, what role did the lots play in their decisions to Park-and-Pool?

Saving Money

Generally speaking, saving money was determined to be the most important reason the largest percentage decided to carpool. Furthermore, it appears that individuals do perceive that they save money -- and save a considerable amount. Approximately 94% claim to save money, and the amount they save averages $68 per month. The high cost of fuel and the considerable amount required to travel long distances probably account for the majority of the savings in the San Antonio area. The high cost of downtown parking is also a factor in the majority of cases in the Houston area.

Saving Time

Saving time, on the other hand, does not appear to be as important as saving money. Indeed, individuals appear willing to pay a time penalty to realize a dollar savings. One fourth of those surveyed were not sure whether or not they saved time. An additional 10% replied that there was no difference -- no time saved, but no time lost either. Almost half, however, indicated that they definitely do not save time using Park-and-Pool. In fact, they claim to lose an average of 15 minutes each way. On the average, they feel they save about $1.50 to offset that 15 minutes of time.

Of the 36 responses from participants in the Houston area who use one of the two lots served by the Contraflow Lane, 22 were determined to be eligible to use the Contraflow Lane. Whether or not they actually do use the lane is not known, however. Eleven (50%) of these 22 indicated they do save time using Park-and-Pool -- probably due to their use of Contraflow. Their perceived savings average about 26 minutes each way. (Thus, priority treatment does have an effect on time savings.) Nevertheless, when asked which concern was most important (saving money, saving energy or other,

please specify), 10 out of 11 answered, "saving money." The eleventh answered, "reducing stress by not having to drive."

Saving Energy

Only 6% of those surveyed in San Antonio and Houston answered that saving energy was the most important factor which led them to carpool/vanpool. Far more were concerned with saving money. This sentiment may be the result of the fact that fuel is readily available once again. Nevertheless, regardless of the primary reason for deciding to pool, energy savings are realized.

Role of Park-and-Pool Lots

When asked what effect the Park-and-Pool lot had on their decision to carpool, about 63% of the total indicated that the lot had at least some effect on that decision. In fact, 12% answered that they would not be carpooling at all, if not for the lot.

Other information obtained concerned the use of the Park-and-Pool lots. Approximately 90% of those surveyed responded that there was always a parking space available at the lots, indicating that the capacity of the present lots is adequate in most cases for the current level of patronage. Respondents did voice that improvements could be made to the lots, however. Security at the lots was one item which could be improved, especially at the Houston area lots, where 21% did not feel it was safe to leave their cars parked there during the day; an additional 6% had mixed feelings. Other improvements area poolers would like to see at the lots include lighting, telephones, trash receptacles, paving or resurfacing of some lots, and the expansion of other lots.

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APPENDIX

Park-and-Pool Survey Procedure

A total of 16 lots in District 12 (Houston) and 9 lots in District 15 (San Antonio) were selected for in-depth analysis. A description of each lot in terms of location and physical characteristics is presented in Table 1 of the main body of this report. A Park-and-Pool survey was conducted at each of the 25 lots in June 1980. The purpose of the survey was to obtain information regarding Park-and-Pool user characteristics and what factors influence area commuters in their decisions to carpool/vanpool. Other pertinent information including the commuters' use of the lots and their daily travel routines were also collected from the survey.

In most cases, Park-and-Pool Survey questionnaires were distributed to commuters as they arrived at the Park-and-Pool lots in the morning. When this was not possible, questionnaires were left on the windshields of the cars parked at the lot. Commuters were asked to complete the questionnaires and return them in the stamped envelopes provided in the survey packages. Copies of the letters of introduction and the questionnaire contained in the survey packages are presented at the end of this Appendix.

In District 12 (Houston), 416 surveys were distributed. Of these, 189 were completed and returned, resulting in a 45% response rate. In District 15 (San Antonio), the return rate was slightly higher. Of the 155 questionnaires distributed, 77 or 50% were returned. The actual number of surveys distributed and completed, by lot, is summarized in Table A-1.

Table A-1: Number of Surveys Distributed and Completed, by Park-and-Pool Lot

Park-and-Pool Lot	Surveys Distributed	Surveys Returned	Response Rate
District 12 - Houston			
US 59 @ FM 762 - N. Side	27	12	44%
US 59 @ FM 762 - S. Side	47	24	51%
FM 521 @ FM 457	1	--	---
FM 521 @ FM 524	7	--	---
SH 288 @ FM 2004	31	9	29%
FM 2004 @ FM 523	6	2	33%
SH 35 near SH 6	41	14	34%
SH 6 @ FM 2004	24	5	21%
SH 146 near Loop 197	6	2	33%
I-45 @ South Belt	50	30	60%
US 59 (3 mi. S. of FM 1485)	40	15	38%
I-45 @ FM 1488	21	8	38%
I-45 @ Gladstell	51	24	47%
FM 149 (1 mi. N. of FM 2920)	10	8	80%
FM 149 (1/4 mi. N. of Spring-Cypress)	19	12	63%
FM 149 (1/2 mi. N. of FM 1960)	35	24	66%
TOTAL	416	189	45%
District 15 - San Antonio			
I-10 @ SH 46	30	23	77%
I-10 @ Cascade Caverns	6	5	83%
I-35 @ Loop 1604	50	19	38%
US 181 @ SH 97	25	8	32%
SH 16 @ FM 476	16	7	44%
I-35 @ SH 173	4	2	50%
I-35 @ FM 484	1	--	---
US 81 @ Loop 337	19	12	63%
FM 1283 @ PR 37	4	1	25%
TOTAL	155	77	50%

STATE DEPARTMENT OF HIGHWAYS AND PUBLIC TRANSPORTATION

IN REPLY REFER TO
FILE NO. D-10R
750.205
720.15

PARK-AND-POOL SURVEY

The Texas Transportation Institute, Texas A&M University, is conducting a study of Park-and-Pool lots in the Houston area. The purpose of this study is to obtain information about your use of, and opinions concerning, Park-and-Pool lots in order to assist in planning for additional lots.

Since there are only a small number of Park-and-Pool users, your participation is essential to ensure the success of the project.

Please complete the attached survey form and return it to us in the stamped envelope within one week. We are grateful for your participation in this project.

Sincerely,

Phillip L. Wilson
State Planning Engineer,
Transportation

PLW/bh
Enclosure

COMMISSION
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ENGINEER-DIRECTOR
B. L. DEBERRY

Cooperating Agencies:
Federal Highway Administration
City of San Antonio

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PARK-AND-POOL SURVEY

The Texas Transportation Institute, Texas A&M University, is conducting a study of Park-and-Pool lots in the San Antonio area. The purpose of this study is to obtain information about your use of, and opinions concerning, Park-and-Pool lots in order to assist in planning for additional lots.

Since there are only a small number of Park-and-Pool users, your participation is essential to ensure the success of the project.

Please complete the attached survey form and return it to us in the stamped envelope within one week. We are grateful for your participation in this project.

Sincerely,

Phillip L. Wilson
State Planning Engineer,
Transportation

PLW/bh
Enclosure

Park-and-Pool Survey

Undertaken by the Texas Transportation Institute, Texas A&M University in cooperation with the Texas State Department of Highways and Public Transportation and the U.S. Department of Transportation, Federal Highway Administration

This questionnaire is designed to be easy to complete and should take no more than 5 minutes of your time. All answers to the questions will remain confidential. Please return this form in the stamped envelope within one week.

1. Before you became involved in Park-and-Pool, how did you normally make this trip?

   _____Drove alone _____Bus
   _____Carpool/Vanpool _____Other

2. How did you learn about the Park-and-Pool lot?

   _____Friend, relative or co-worker _____Radio/TV
   _____Noticed the lot being built _____Noticed the highway sign
   _____Newspaper _____Other, Please specify_____

3. How did this Park-and-Pool lot affect the formation of your carpool?

   _____I would not be carpooling if it were not for this lot.
   _____This lot was one of several factors which encouraged me to carpool.
   _____This lot had no effect on my decision to carpool.

4. In making your decision to carpool, which of the following concerns was most important to you? (Please choose one answer)

   _____Saving money _____Saving energy _____Other, Please specify_____

5. How long have you been participating in the Park-and-Pool program?_____months

6. How many people, including yourself, are normally in your carpool?_____

7. How many days per week do you carpool?_____

8. How did you arrive at the Park-and-Pool lot this morning?

   _____Drove alone _____Dropped off by someone
   _____Rode with someone else who uses Park-and-Pool _____Other

9. What time did you arrive at the Park-and-Pool lot this morning?_____a.m.
   What time did you leave the Park-and-Pool lot this evening?_____p.m.

10. Is there always a parking space available at the Park-and-Pool lot?

    _____Yes _____No

11. Do you feel it is safe to leave your car parked at the Park-and-Pool lot?

    _____Yes _____No

12. How far do you travel to arrive at the Park-and-Pool lot?_____miles. Where does your trip originate? Street address or nearest intersection and City_____

OVER

13. What is your destination after leaving your car parked at the Park-and-Pool lot?
Street address or building, and City _____.
How many miles do you travel to reach your destination?_____miles.

14. Does your employer provide any incentives for carpools?

_____Yes _____No

If "yes", what incentives are provided?_____

15. Do you save money by using Park-and-Pool?

_____Yes/If "yes", how much do you save? $_____per month

_____No/If "no", how much do you lose? $_____per month

_____Not sure

16. Do you save time using Park-and-Pool?

_____Yes/If "yes", how much time do you save each way?_____minutes

_____No/If "no", how much time do you lose each way? _____minutes

_____Not sure

17. Does not having a car available during the day create a serious inconvenience?

_____Frequently _____Seldom _____Never

18. If Park-and-Ride bus service were provided from this lot to your destination, would you prefer to:

_____Continue to carpool _____Ride the bus

19. How was your carpool formed?_____

_____

_____

20. The State of Texas should spend more tax dollars in developing Park-and-Pool lots.

_____Strongly agree _____Neutral _____Disagree

_____Agree _____Strongly disagree

21. What is your age?_____ 22. What is your sex? _____Male _____Female

23. What is your current occupation, in as specific terms as possible. (Also, please specify if retired, unemployed, student or housewife).

_____

24. What is the highest level of school you have completed?_____

COMMENTS

THANK YOU FOR YOUR COOPERATION.