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Transportation
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Jacksonville Transit Fare Prepayment Demonstration

**Final Report
September 1982**

UMTA/TSC Project Evaluation Series
Service and Management Demonstrations Program

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16. Abstract

This report describes the objectives and evaluation results of the Jacksonville Transit Fare Prepayment Demonstration. The purpose of the demonstration, which was funded through the UMTA Service and Management Demonstrations Program, was to assess the impacts that result when monthly transit passes are sold, distributed, and promoted by employers to their employees. A promotional pass discount program was also introduced in order to examine the sensitivity of pass price on pass sales.

In general, the employer-based "JaxPASS" program implemented by the Jacksonville Transportation Authority, was found to be a feasible and effective way to use employers to sell and promote transit passes. By their direct participation in the program, some employers also sold passes to their employees at a discount, thus further stimulating pass sales. It was observed, however, that relatively few employees were willing to buy transit passes that were priced initially at 20 round trips per month, which reflects a negligible discount compared to cash fares. Pass sales increased significantly, however, when a modest $2.00 discount was introduced and when certain employers began subsidizing passes. While some pass buyers were new transit riders, over 60 percent of the pass purchasers were already regular bus commuters. It was also observed that few new transit trips were taken by pass purchasers during off-peak or on weekends. Revenues lost because of the program were relatively small (about 0.3 percent of farebox revenues) since 75 percent of the passes are used only for commuting and because of the constrained size of the program.

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PREFACE

This evaluation of the Jacksonville Transit Fare Prepayment Demonstration Project was prepared in the Boston, Massachusetts office of Charles River Associates Incorporated (CRA) for the Transportation Systems Center (TSC) of the U.S. Department of Transportation (DOT) under Contract Number DOT-TSC-1757, as part of the Service and Methods Demonstration (SMD) Program, sponsored by the Urban Mass Transportation Administration (UMTA). Larry Doxsey of TSC served as technical advisor and monitor for the evaluation, while Vince Milione was the UMTA project manager.

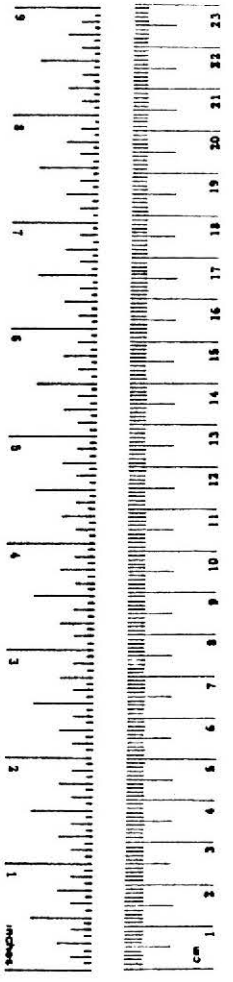
Many individuals contributed to the development of this evaluation report. Within CRA, Thomas E. Parody directed the evaluation and was the principal author of this report. Stephen Hendrick was responsible for the data processing that was required, while Jean Belding and Frank Kelly assisted in editing the final report. Other major CRA contributors included Janet Fearon, and Kathryn Davenport, Publications; and Sharon Nathan and Ellen Knox, Graphics. The efforts of all of these individuals were supervised by CRA's Officer-in-Charge of work conducted for the SMD program, Daniel Brand, who provided overall guidance and many helpful suggestions.

Although CRA accepts full responsibility for the information and conclusions presented in this report, the evaluation would not have been possible without the cooperation and assistance of many other individuals. In particular, Don Pill and Ruth Sargent of the Jacksonville Transportation Authority and Leo Hall of the Jacksonville Coach Company Lines were helpful in providing much of the data from the site. In addition, John Mullis and Rose Ella Feagin of Paragon Productions, Inc., were instrumental in conducting the various on-site surveys that were performed and arranging for this information to be transmitted to CRA.

METRIC CONVERSION FACTORS

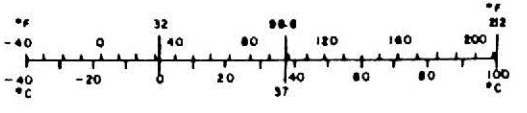
Approximate Conversions to Metric Measures

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	0.96	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	0.036	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
m^3	cubic meters	35	cubic feet	ft^3
m^3	cubic meters	1.3	cubic yards	yd^3
	TEMPERATURE (exact)			
°C	Celsius temperature	9/5 (then add 32)	Fahrenheit temperature	°F



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1. EXECUTIVE SUMMARY

1.1 INTRODUCTION AND DEMONSTRATION OVERVIEW

In October 1977 the Jacksonville Transportation Authority (JTA) received a demonstration grant from the Service and Methods Demonstration (SMD) Program of the Urban Mass Transportation Administration (UMTA) to enlist a fixed panel of employers who would then market and sell monthly transit passes to their employees. A promotional pass discount program was also incorporated into the demonstration in order to examine the sensitivity of alternative pass price levels. The principal objective of the demonstration was to evaluate the impact upon sales of monthly transit passes that are promoted and sold through employers. The intent of the program was to place as few demands as possible on the employers who are enrolled in the program while increasing the convenience to employees of purchasing a pass and using the transit system. Employers were encouraged to institute a payroll deduction plan as a pass payment option to further increase the convenience of purchasing a pass. Many of the employers eventually began subsidizing part of the pass price as a further incentive for their employees to buy a pass. Unlike other unlimited-use pass programs, passes sold through employers represent one way transit operators may be able to generate additional revenue.

Preoperational planning for the Jacksonville Transit Fare Prepayment (TFP) Demonstration began in November 1977 with the hiring of a project manager. Relying on personal visits with the chief executive officers (or other high senior officials) of major business establishments in the city of Jacksonville, the project staff was extremely successful in assembling a panel of 30 firms to participate in the TFP program after contacting only 34 employers.

Orders for the monthly transit passes -- called JaxPASS -- began in late February 1979 for passes valid for the month of March 1979. Passes were initially priced at $14.00, reflecting a breakeven usage rate of 40 one-way transit trips per month at the regular bus fare of $0.35. (The pass was valid on higher fare routes, by showing the pass to the driver and paying the difference in fare over the base fare.) However, after a disappointingly low level of pass sales during the first three sale months, the price of the pass was reduced by $2.00 to $12.00 starting in July 1979. The pass price remained at that level throughout the course of this evaluation. (Subsequently, however, the JaxPASS price increased to $18.00 on September 29, 1980, at the same time base transit fares were increased to $0.50. In addition, at the conclusion of the demonstration grant, JTA has continued to sell the pass at the $18.00 level, leaving intact the $2.00 discount over the pass price based on 40 one-way transit trips.) Table 1-1 presents a chronology of major events that occurred over the course of the demonstration.

Table 1-1. CHRONOLOGY OF DEMONSTRATION ACTIONS AND EVENTS

1977:	July 14	Application for demonstration grant submitted (version 3)
	October 18	Demonstration grant signed
	November 16	Project manager begins
1978:	January 24	Fare and TFP study initiated
	April 11	RFPs released for data collection, advertising, and PR consultant
	April 18	Fare study report submitted
	September 1	Contract signed with data collection and PR consultant
	September 17	Before on-board bus survey implemented
	October 1	Systemwide (base) fares increased from 25¢ to 35¢
1979:	January	Employer solicitation phase begins
	February	Before employee surveys administered
	March	Monthly JaxPASS begins (at $14.00)
	April 22	After on-board bus survey implemented
	July	JaxPASS price reduced from $14.00 to $12.00
	December	After employee survey administered
1980:	February	Phase I of TFP sale program concludes (additional firms now allowed to join program)
	May 11	2-week transit strike begins
	September 29	Evaluation phase concludes -- systemwide (base) fares increased from 35¢ to 50¢; JaxPASS price increased from $12.00 to $18.00

Throughout the demonstration, JTA continued to sell a weekly pass at its three regular sales outlets. This unlimited-use pass is priced on the basis of 20 boardings taken per week on regular bus routes and is therefore aimed mainly at regular transit users who must transfer (i.e., use two or more regular bus routes) to commute to and from work. So as not to compete with this weekly pass, JaxPASS was restricted by time and direction; specifically, it was valid on regular bus routes in the inbound direction between 6 a.m. and 9 a.m. and in the outbound direction between 3 p.m. and 6 p.m. on Monday through Fridays. The pass was valid for unlimited use under the following circumstances: 1) any time on the downtown shuttle buses; 2) during the off-peak hours on weekdays; and 3) all day on weekends in lieu of paying a regular bus fare. Use of the pass on routes with higher fares required a cash payment of the additional fare (e.g., 15¢ on a 50¢ express flyer route). Lastly, to reduce the possibility of transferring the pass to others, JaxPASS, like the weekly pass, was color-coded to denote male and female bus users.

1.2 SUMMARY OF DEMONSTRATION IMPACTS AND FINDINGS

The following three sections summarize the major demonstration impacts and findings that have been documented during the course of this evaluation as they pertain to employers, employees, and the transit operator. These are the three principal groups or actors affected by the pass sale demonstration.

1.2.1 Employer-Related Findings

The solicitation approach that was used to enroll employers to participate in the Jacksonville TFP program was very successful. Only 34 establishments were contacted over a period of about 2 months in order to obtain commitments from 30 firms willing to participate in the program. The approach undertaken relied heavily on scheduling personal interviews with senior officers at each potential firm. The basic philosophy was that this chief executive official would be likely to have the authority to make a direct decision to participate in the program. The alternative approaches of using letter correspondence or working through junior-level personnel were thought to be less productive as, in the final analysis, top management would need to be consulted in making a decision, and by not dealing with them directly, a certain amount of impetus generated by the initial solicitation would be lost.

Because only four firms declined to participate in the program in response to the solicitation approach, no particular pattern could be detected concerning the type of firms not likely to join this type of program. In addition, as firms were not selected on a random basis or even on a statistically stratified basis, some firms, such as construction companies, which may have a lower tendency to participate, were not approached. Thus, no specific findings on this subject can be made, except as noted in the next item.

Financial institutions such as insurance companies and banks were very receptive to participating in this transit pass program. Since this tendency was suspected at the outset, a high proportion of these companies were included in the sample of firms contacted. Of the initial 34 firms solicited to participate in the demonstration, 18 firms or 53 percent were in this category. Of the 23 firms that actively participated in the program over the first 12 months, 65 percent were in finance, insurance, or real estate. Consequently, these types of firms should be high on the list of potential establishments to contact when beginning a program of this type.

Three of the four firms that declined to participate in the program stated that they did so, at least in part, because of the perception that a large amount of administrative resources would be required. This reaction may have been accentuated by a belief that few employees would purchase a monthly pass if given the opportunity. However, administrative cost concerns were not a high-priority item among firms that did participate. In fact, none of the firms that sold passes at any time during the demonstration dropped out of the program because of the administrative requirements. Firms that dropped out did so because of very low, or no pass sales. In declining to participate, none of the firms cited as a reason the fact that they were a branch office of a firm headquartered elsewhere.

During the first 9 months of the demonstration, very few employers were willing to subsidize the price of the pass to their employees (only one firm subsidized the pass by $4.00). However, as a few other firms gradually started to provide subsidies, a cascading effect seemed to occur such that by the 18th month of the program over one-third of the employers were providing subsidies that ranged from a low of $4.00 (33 percent discount) to a high of $12.00 (100 percent discount).

It was initially hypothesized that firms would subsidize the pass if they lacked adequate employee parking. The results indicate that this was true, but only to a limited extent because few employers appeared to have severe parking problems, or would save money by reducing parking demand. The basic concept, however, is still a valid one, especially in areas that may have different parking supply characteristics.

Although suggested to employers during the solicitation phase as a desirable procedure for collecting the cost of the pass from employees, only 17 percent of the firms instituted a payroll deduction plan. Most of the firms opting for payroll deduction cited various efficiency reasons for doing so. Ironically, loss of efficiency was a reason given by many of the firms not implementing payroll deductions. Apparently, because internal administrative procedures differ from firm to firm, there is little similarity in how easy or difficult it is to integrate a payroll deduction plan into existing operations. Generally, the firms that could do so easily did implement payroll deduction. Those firms that could have technically implemented payroll deduction but declined to do so indicated that too few employees were purchasing passes each month to make the effort worthwhile.

The most common way of distributing passes to employees was the use of an "over-the-counter" approach. This method was used by 75 percent of the firms selling passes. The remaining 25 percent of the firms relied upon hand delivery of passes. No firm reported using an interdepartmental mail system to distribute passes, which is sensible as this is generally thought to be a more theft-prone approach. Presumably, employers selected a particular distribution procedure that could be easily integrated with existing internal procedures. This idea is best typified by one hospital which uses the facilities of its gift shop to distribute passes and handle cash payments.

All employers reported performing some type of activity to promote the use of the transit pass to their employees. Typically employers relied on using the material developed especially for this demonstration, which consisted of 1) JaxPASS posters, 2) JaxPASS brochures, and 3) a PR-type announcement describing the JaxPASS program and benefits. The announcement could be inserted in a company newsletter or distributed as an internal memorandum, depending on what was appropriate for each company. Some companies also reported that they held meetings with employees, made announcements over the public address system, or used their personnel department to inform newly-hired employees about the program. One firm reportedly staffed a special information booth over an entire day to answer inquiries about the JaxPASS program. In summary, employers should be encouraged to rely on marketing approaches that can fit in with their daily operation, but, at a minimum, they should be furnished with ready-made materials such as brochures and posters.

About one-third of the firms enrolled in the JaxPASS demonstration indicated that they sponsor some type of program to encourage carpooling and/or vanpooling. While no conclusions were drawn as to whether these types of firms were more or less likely to enroll in a transit pass program, it was observed that average transit pass penetration rates tended to be smaller for firms that have carpool/vanpool programs.

Nearly 90 percent of the employers that were surveyed believed that they obtained a net positive benefit by participating in the JaxPASS program. The majority of these firms stated that their involvement provided their employees a convenient way of purchasing passes at work. Thus, the companies felt that if their employees were benefiting from the program, then they were also.

In terms of more tangible or direct benefits, about one-third of the employers felt that the demand on the company-provided parking spaces was lessened. However, since very few of the employers were able to supply information on the cost of providing parking spaces for employees, it was not possible to calculate or quantify the value gained by this reduced parking demand.

The amount of time employers reported spending to set up and organize the JaxPASS program initially, and then to maintain it on a monthly basis,

appears to have been quite modest. During the first pass sale month, an average of about 4 person-hours were necessary to accomplish the initial administrative activities. In the following months, the amount of administrative time required was reduced by over 50 percent to an average of 1.6 person-hours per month. The actual amount of time is dependent, of course, on the number of passes that are sold. Firms selling more than 30 passes per month generally reported spending between 3 and 4 person-hours per month, while firms selling fewer than 20 passes per month expended between 0.5 and 1 person-hours per month.

1.2.2 Employee Impacts

JaxPASS sales increased dramatically when subsidies were provided. First, when the general, across-the-board $2.00 discount was introduced in July 1979, JaxPASS sales increased by 170 percent from an initial plateau of 120 per month to an average of 325 per month. Proportionately larger increases occurred in firms not subsidizing the pass than among the firms already subsidizing the pass.

Second, among the 3 firms that began subsidizing passes by an additional $4.00 midstream in the demonstration, average monthly pass sales increased by a factor of 5 for 2 of the companies and by a factor of 7 for the third. These large changes suggest that pass sales are highly sensitive to relatively small changes in the inherent breakeven price of a pass.

Temporal pass sale growth, based on pass penetration rates, was nearly nonexistent among nonsubsidizing firms. Conversely, pass sales among subsidizing firms tended to grow over time, although by only very minor amounts. This evidence tends to indicate that all else equal, pass sales per firm quickly reach an equilibrium level.

A 2-week bus strike during the month of May 1980 resulted in a drop in pass sales in the month following the strike. The decline in passes sold per firm was twice as large among nonsubsidizing firms than among subsidizing firms (-13.6 percent vs. -6.2 percent). Four months after the strike ended pass sales had not returned to their pre-strike level. However, the difference was still twice as large for nonsubsidizing firms (i.e., -7.6 percent versus -3.0 percent).

A significant and positive relationship was found between pass penetration rates and the amount employers charge employees for parking. An analysis of pass penetration rates by firms using payroll deduction yielded comparable results. That is, mean penetration rates are higher among the (4) firms using payroll deduction compared to the (19) firms not using payroll deduction.

Data from employee surveys conducted at the participating firms reveal that JaxPASS purchasers have socioeconomic characteristics that are very similar

to those of employees who regularly commute to work by transit but continue to pay with cash fares. This was particularly true for sex, age, number of licensed drivers in the household, and whether or not the individual holds a valid driver's license. JaxPASS purchasers, however, tended to own fewer automobiles. The most significant difference between the two groups of bus commuters was the much lower household incomes of employees purchasing a JaxPASS compared to employees who use the bus but do not buy a JaxPASS ($13,080 versus $17,078 respectively).

As a group, employees who did not buy a JaxPASS and who did not use the bus regularly to commute to work contained proportionately more males, had much higher average household incomes ($21,231), owned more automobiles, were more likely to have a driver's license, and thus more household drivers, and worked overtime more often than both groups of bus commuters (i.e, JaxPASS and cash-paying users). Age was the only characteristic that did not differ significantly among the three groups of employees.

With respect to transit travel behavior, JaxPASS purchasers are particularly distinguished by the regularity with which the bus is used to commute to work; in particular, 92 percent of these individuals indicated that they commute to work by bus 5 or more days per week. The travel behavior of these employees prior to buying a JaxPASS can be disaggregated into three groups. First, about 60 percent of the pass purchasers were already regular bus commuters and thus reported making no change in mode or transit trip frequency. The second group, representing about 20 percent of the purchasers, can be considered to have made a complete switch in modes and are therefore new transit users. Lastly, the remaining 20 percent of the purchasers that comprise the third group increased their use of transit by a more limited degree (e.g., by 1 or 2 days per week) since they previously used the bus 3 or 4 days per week to commute to work.

Although JaxPASS users commute to work more regularly by transit compared to cash-paying bus users, they did not make significantly more bus trips on weekdays for noncommuter purposes, nor did they make significantly more weekend transit trips compared to cash-paying bus users. The monthly JaxPASS, therefore, was basically thought of and used as a mechanism principally for the purpose of making commuter trips. Only one-quarter of the JaxPASS purchasers reported using their pass to make trips other than for commuting to and from work. And, of the bus trips that were taken for these noncommuter purposes, the vast majority (80 to 90 percent) were trips that were made by bus previously before the pass was purchased.

Reflecting upon the type of individuals eligible to purchase a JaxPASS -- that is, individuals employed mainly in white collar industries -- these results are not entirely unexpected. However, while the travel behavior characteristics of individuals purchasing a transit pass through employers in Jacksonville may be transferable to comparable employer-based programs elsewhere, this may or may not be true for those localities that sell transit passes to the general public rather than through employers.

Both JaxPASS purchasers and non-JaxPASS bus commuters have nearly identical transit access characteristics measured in terms of mean walk time from their residence to a bus stop from which they could take a bus to work. Nonbus commuters reported transit access times that were significantly higher than the mean for regular bus commuters (10 minutes and 7 minutes, respectively).

Compared to regular bus commuters who do not buy a JaxPASS, JaxPASS purchasers were twice as likely to transfer one or more times during the bus trip to work. This observation reflects the attractiveness of the "free" shuttle bus capabilities of the pass along with the few instances in which a combination looper and radial bus can be used to commute to work without paying an additional cash fare. Thus, individuals who could avail themselves of these services were more likely to purchase a pass because of the additional savings that were realized.

Although aggregate JaxPASS sales at most firms held steady or increased very slightly over time -- assuming no change in pass price or level of employer subsidy -- there was a fairly large amount of turnover from month to month in the particular individuals buying the passes. Among 3 employers who had the highest pass sales during the start of the program, between 40 and 58 percent of the employees who had purchased a pass during the first sale month were not buying the pass 1 year later. Because aggregate sales did not decline, however, these employees were replaced by other employees. Based on responses obtained from employees who discontinued buying a pass, it appears that the decision was a reflection of normal changes in transit travel behavior and work-related factors. Almost 10 percent of the individuals who stopped buying the pass did so because of a dissatisfaction with the time and directional restrictions on the pass.

1.2.3 Transit Operator Impacts

The administrative costs required to maintain the monthly JaxPASS program (as distinct from start-up costs) appear relatively modest. During the course of the demonstration, a relatively fixed panel of 25 to 30 employers participated. Because recruiting of new firms was held to a minimum, only 2 to 3 person-days per month were expended by staff at the Jacksonville Coach Company Lines, while between 1 to 2 person-days per month were expended by personnel at JTA. After data collection tasks were completed, the monthly pass program functions were able to be handled by existing staff personnel. Clearly, however, larger pass programs would require additional and possibly full-time staff members.

Partly because of the constrained size of the pass program, relatively few new transit riders began using the system strictly because of the availability of JaxPASS. Factors such as the $2 pass price discount, employer subsidies (typically $4.00 per pass), and the increasing cost of gasoline had a much more significant impact on an individual's decision to purchase a JaxPASS and use the bus mode for commuting.

Revenue impacts (positive or negative) of selling JaxPASS through employers were also small. If the $2.00 pass discount is considered as revenue, then JTA experienced a net revenue gain of about $500 per month. However, excluding this amount as revenue, the pass program resulted in a net revenue decrease of about $1,500 per month. This amount represents only 0.3 percent of the monthly farebox revenue collected by JTA. To the extent that more employers can be encouraged to subsidize the price of the pass as a fringe benefit to their employees, thereby inducing some of the marginal transit users to buy a pass, the potential revenue loss to the transit property will be reduced and, in extreme, positive revenue gains could be generated.

Although difficult to determine precisely, all available evidence indicates that very little revenue was lost due to passholders lending their pass to others for use on weekends or during off-peak hours. This type of activity was minimized by having male and female passes. Also, only individuals old enough to be working (e.g., 18 years of age or older) would be eligible to buy a pass. Bus drivers could therefore screen the use of the pass by children or young teenagers.

Unauthorized use of the pass was further reduced by the time and directional restriction of the pass since once an individual arrives at work, the pass is not valid again (except on the shuttle) until the morning peak period ends.

Lastly, no cash flow advantages of the JaxPASS were realized because of the relatively small amount of revenue obtained from the pass versus cash fares, and because some employers submit pass-sale receipts toward the end of the month, which tended to offset the cash flow gains by employers who submitted receipts early in the month.

1.3 TRANSFERABILITY OF DEMONSTRATION FINDINGS

Perhaps the most unusual feature associated with the Jacksonville demonstration was the time and directional restrictions that affected how the JaxPASS could be used. However, considering the Central Business District (CBD) location of employers participating in the demonstration (which reduces the need for transferring, except to the shuttle bus) and the type of employees eligible to purchase a pass, this JaxPASS restriction had only a small negative impact on sales. Only 6 percent of bus commuters who never purchased a JaxPASS stated that this was due to the time and directional restrictions on the pass. Likewise, only about 10 percent of the employees who once purchased a JaxPASS stated that they stopped buying the pass because of the time and directional restrictions.

The $2.00 discount, which reduced the breakeven level of the pass from 20 to 17.1 round trips per month, resulted in a significant impact on pass sales (i.e., sales increased by about 170 percent). Thus, the "mature" JaxPASS penetration rates observed at the end of the first year of pass sales are higher than they would have been without the $2.00 discount.

Average pass penetration rates during the second year of the demonstration increased at a faster pace than may be experienced elsewhere because of the higher proportion of employers who began subsidizing the price of the pass to their employees. By the eighteenth month of the demonstration, one third of the employers were offering subsidies, typically by an amount of $4.00. This action reduced the breakeven level to an extremely low 11.5 round trips per month. Thus, unless other areas could achieve such a favorable percentage of employers who are willing to subsidize the price of a pass, lower pass penetration rates are to be expected.

The introduction of the monthly JaxPASS resulted in a net diminution in transit revenues. The basic reason is that very few existing bus riders will buy a pass and end up paying more in transit fares than they were previously (just for the convenience aspect of the pass) compared to the many more bus users who will buy the pass and save money compared to paying cash fares. And, the revenue lost by passes purchased by these frequent transit users is not compensated for by "new" revenues from individuals who switch from another mode to transit because of the sudden availability of a transit pass -- barring additional subsidies from employers. This finding is likely to be true irrespective of the breakeven price of the pass, since whatever breakeven frequency level is used to price a pass, only bus riders that generally make a number of trips that equal or exceed that level will buy the pass. The only exception to this rule would be because of "outside" subsidies.

These "outside" subsidies, whether provided by nonlocal governmental agencies or by participating employers, may result in a net increase in revenues to the transit operator. The findings in Jacksonville revealed that whereas each JaxPASS sold represented a net revenue lost of about $1.50 to the program, JTA experienced a positive increase in revenues of about $0.50 per pass after taking into consideration the $2.00 price reductions provided from demonstration grant funds.

Only about 1 percent of the JaxPASS purchasers stated that they occasionally had let someone else use their pass to take trips on the bus system. While the true percentage is likely to be somewhat higher, since admitting to engage in this activity is to admit a wrongdoing, this type of behavior was not a significant occurrence. This may be due partly to the type of employees eligible to buy the pass and to the perception that the pass was for use mainly for commuting trips. Indeed, even in Sacramento where transferring of the pass is legal, little activity of this type was noted.

Unless there are exogenous factors (e.g., employers subsidizing passes, transit fare or gasoline price increases) one can expect that pass sales will rapidly reach equilibrium. Pass sale growth, therefore, can only be achieved by enrolling new employers in the program, rather than relying on growth from existing firms.

The outstanding success in enrolling employers to participate in the pass program can be accomplished elsewhere for the same or even similar-type programs, given that procedures similar to those used in Jacksonville are deployed. Although a large percentage of employers may still have participated if other procedures were followed, the techniques used in this demonstration certainly aided in the success and timely completion of this phase of the project.

The time and directional restrictions on the JaxPASS were established to be consistent with JTA's radial route structure and no free or reduced fare transfer privilege. It could be expected that transit systems with transit route networks that necessitate or encourage transferring would have relatively higher pass sales than observed here if the pass allowed unlimited use/boardings.

During the entire course of this demonstration, the monthly JaxPASS was available for sale only through employers enrolled in the program. Thus, pass sales might have been somewhat lower compared to a situation in which passes were sold through regular (street) sales outlets as well as through employers. However pass sales, among the employees currently buying a pass, were higher than they would have been if the pass was sold only through JTA's regular outlets. Slightly more than a majority of existing pass purchasers (56 percent) said that they would discontinue buying JaxPASS if it were only sold through these outlets and not through their employer. This is strong evidence that buying a pass through one's employer is much more convenient than obtaining it through street vendors. Of course, in the latter case, the chance of an employer subsidizing the pass would also be reduced.

2. DEMONSTRATION BACKGROUND AND OBJECTIVES

2.1 INTRODUCTION

The concept of selling and distributing transit passes through employers is the logical outgrowth of two trends that have emerged over the past decade. The first trend is the rapid growth (or renewed growth) in transit operators' use of transit fare prepayment (TFP) instruments, such as transit passes that are valid for trips taken over a specific period such as a calendar month. In early 1970, relatively few transit agencies in the United States offered regular transit riders the use of monthly transit passes. However, by 1975, some 36 transit systems were selling this type of pass. At the present time transit passes valid for trips taken during a particular week or month continue to be introduced by transit systems across the United States.

Paralleling this growth in new transit pass programs has been the advancement of the concept that places of employment have particular advantages in terms of establishing and coordinating programs to achieve ridesharing and other broad transportation goals. For example, beginning with the 1973 oil embargo, many major cities and employers began carpool matching programs and later employer-sponsored vanpool programs. Interest in improving air quality led to proposals that employee-provided parking be curtailed or reduced, especially by large firms located in major urban areas. With this trend toward relying more heavily on employers to assume additional responsibility in the commuting patterns of their employees came the notion that employers should participate in the sale, distribution, and promotion of the ever more popular monthly transit pass. In addition, to the extent that employers could be encouraged to subsidize the price of the pass to their employees, additional revenues could be generated by the transit operator, especially at a time when new revenue sources are much needed.

One of the earliest programs by which transit passes were sold through employers was begun by the Massachusetts Bay Transportation Authority (MBTA) in October 1974. By the end of its first year of operation 117 employers were participating in the program. Growth has been steady and substantial since then; by 1980, some 62,000 employees were buying passes from over 800 different employers.

In order to advance the concept of selling passes through employers as well as to monitor and evaluate the resultant impacts on transit operators, and the participating employees and employers, the Urban Mass Transportation Administration (UMTA) provided Service and Methods Demonstration (SMD) grants to Jacksonville, Florida and Sacramento, California to implement similar employer-promoted monthly transit pass programs. At the time these demonstrations began in 1977, there existed little documentation or published information that transit agencies could use to gauge, a priori, the demand, economic, and institutional reactions to adopting this type of program.

The Jacksonville Transit Fare Prepayment Demonstration, like its companion Demonstration in Sacramento, instituted a program by which monthly transit passes could be purchased by employees at their place of employment with a minimum of personal inconvenience. In Jacksonville, the monthly transit pass, called JaxPASS, was introduced and made available only through a panel of employers enrolled in the demonstration. However, in Sacramento the monthly pass, labeled "PASSpoRT", was already being sold to the general public prior to the beginning of the employer-sponsored demonstration, and it continued to be sold at regular sales outlets during the course of the demonstration.

The Jacksonville employer-based pass program consisted of three phases, the first being an organizational phase which commenced in October 1977 after the signing of the demonstration grant. This phase was initially scheduled to last about 6 months during which time various preoperational planning tasks were to be undertaken. The major task was the solicitation of competitive bids from firms to provide technical assistance to the Jacksonville Transportation Authority (JTA) in data collection (as needed to support the evaluation), advertising, and public relations activities. Promotional material and application forms for purchasing a JaxPASS were developed by JTA and the consultant that was selected, Paragon Productions. However, because of an impending transit fare increase and a separate study made of that fare increase, the organizational phase did not conclude until November 1978.

In the second or solicitation phase, a sample of major employers in the Jacksonville central business area, identified as eligible for participation in the program, was compiled and contacts were made with senior operating officials at each firm by JTA and Paragon Productions. This aspect of the demonstration was accomplished very successfully as only 34 firms needed to be contacted in order to enroll the prespecified panel of 30 employers.

The third or distribution phase of the demonstration began in February 1979 when employees at the participating firms became eligible to purchase a monthly transit pass that would be valid for particular types of trips taken on the transit system during the month of March 1979. This phase was initially scheduled to last 12 months. However, because of remaining grant funds, this phase was extended approximately 1 year and was subsequently divided into two separate time periods. The first period lasted 1 year (March 1979 to February 1980) during which time passes were sold by a relatively fixed panel of employers that were initially enrolled during the solicitation phase. The second period started in March 1980 and denotes when new companies were allowed to join the program. Also at that time 5 firms selling less than 5 passes per month were dropped from the program in order to reduce administrative costs.

When JaxPASS was first introduced, it was priced at $14.00 which represents a breakeven trip rate of 20 round trips per month. However, when it appeared after the first few months that pass sales had peaked at about 120 per month, the price of the pass was reduced by $2.00 to $12.00 beginning in July 1979.

This action was undertaken to stimulate sales as well as to collect data on pass price sensitivity. The price of the pass remained at $12.00 throughout the remainder of the demonstration.

During the entire course of the demonstration, JTA continued to sell a weekly pass at its three regular sales outlets. This unlimited-use pass is priced on the basis of 20 boardings taken per week on regular bus routes and is therefore aimed mainly at regular transit users who must transfer (i.e., use two or more regular bus routes) to commute to and from work. So as not to compete with this weekly pass, JaxPASS was restricted by time and direction; specifically, it was valid on regular bus routes in the inbound direction between 6 a.m. and 9 a.m. and in the outbound direction between 3 p.m. and 6 p.m. on Monday through Friday. The pass was valid for unlimited use under the following circumstances: 1) any time on the downtown shuttle buses; 2) during the off-peak hours on weekdays; and 3) all day on weekends in lieu of paying a regular bus fare. Use of the pass on routes with higher fares required a cash payment of the additional fare (e.g., 15¢ on a 50¢ express flyer route). Lastly, to reduce the possibility of transferring the pass to others, JaxPASS, like the weekly pass, was color-coded to denote male and female bus users.

2.2 PROJECT INNOVATIONS AND SMD OBJECTIVES

The primary innovations of this demonstration concern both transit pricing and fare collection procedures. Traditionally, transit fares are computed (roughly) on a fee for service basis and are collected in a farebox at the time service is rendered. Although many types of TFPs are used in the transit industry (particularly tickets and tokens), the sale, distribution, and promotion of transit passes (i.e., payment for service in advance on a weekly or monthly basis) through employment sites is a relatively new concept. The major objectives of the Jacksonville TFP demonstration were to evaluate the acceptability and use of this type of transit fare payment by employers and employees, and to assess ridership, revenue, or other impacts on the transit operator.

While the Jacksonville demonstration touches on a number of issues directly related to transit operations, the principal SMD objective to be addressed is the effect on transit productivity caused by implementing an employer-based monthly pass program. If the introduction of this type of program results in employees switching to transit from other modes for commuter work trips or increasing their transit trip frequency (if they already use transit), then an increase in total transit ridership will occur. However, because the particular monthly pass introduced in Jacksonville is aimed at the journey-to-work travel market, the possibility existed of exacerbating peak-period transit supply requirements. That is, if additional transit trips taken in the peak periods would require additional transit vehicles during the peaks, without a corresponding increase in transit trips made during the off-peak, average systemwide vehicle productivity could decrease.

Because no supply changes of this type were attributed to the JaxPASS program, however, this situation did not arise.

Increases in transit productivity could also occur if transit boarding times are reduced because of the prepayment of fares. However, because of JTA's exact fare system and the restricted market for pass sales, this type of contribution to transit productivity was not applicable in this instance.

2.3 DEMONSTRATION OBJECTIVES AND ISSUES

According to the original grant application, the primary objective of this demonstration was to evaluate the impact upon sales of monthly transit passes that are marketed and sold through employers. The intent of the program was to place as few demands as possible on the employers who are enrolled in the program while increasing the convenience to employees of purchasing a pass and using the transit system.

As secondary objectives, employers were encouraged to establish a "passive" payroll deduction plan to collect the cost of the pass from employees. (Passive implies that once an employee signs up for the program, he or she will automatically continue to receive a pass each month unless the employer receives advance notification to the contrary.) In addition, employers who subsidize all or part of the price of the pass (either as a new employee fringe benefit or in lieu of providing/expanding employee parking), add further useful insights into the responses of employees to this type of program.

Research issues important to the evaluation can be associated with one of the following three groups or actors involved in this type of pass program:

1. The employer who must agree to sell and distribute the monthly transit pass as well as to perform the administrative tasks of collecting, recording, and remitting revenues obtained;

2. The employee who decides whether to purchase a pass at his place of work -- which in turn may influence his or her use of the transit system; and

3. The transit operator who makes available the monthly transit passes and operates the transit system.

In many instances, there is a direct interdependency between issues and impacts to be evaluated within one of these three groups (e.g., transit trip frequency of pass purchasers) and among groups (e.g., effect of employer subsidy on employee pass purchase decision). The identification of these behavioral linkages can provide a useful framework both for structuring the evaluation issues and for presenting the findings of the demonstration.

As an illustration of this concept, Figure 2-1 presents a "causal chain" of impacts reflecting the interdependency of actions from one group to another and, to a more limited extent, within a group. Each rectangular box in the figure represents an action that is undertaken by a particular actor, while the arrows show how that action serves to influence an activity by either the same or a different actor. For example, given that a transit operator decides to introduce an employer-based TFP program, the operator must then formulate an approach for soliciting employers. The employer who is contacted and solicited by the operator may (or may not) decide to participate in the TFP program, depending on the effectiveness of the solicitation approach and other considerations. Given a decision to participate, the employer must institute a sales, distribution, and marketing program and must decide whether or not to subsidize the purchase price of the pass. In turn, the actions taken by the employer will have an influence on whether the employee will purchase the TFP.

The "chain" of cause and effect actions eventually traverses a full circle to the point where the transit operator examines how a number of indicators have changed (e.g., revenue, productivity, program cost) and reassesses the efficacy of continuing the program or redirecting resources into other, more productive areas.

Further descriptions of the three groups and specific issues that are of interest are presented below.

2.3.1 Employer Issues

Employers (the firms, companies, and establishments participating in the distribution and sale of TFPs) are an integral component of the demonstration. In particular, by participating in a program of this nature employers must undertake various functions that will result in an additional expenditure of time and materials, yielding benefits that may or may not be as direct. Consequently, the identification and quantification of employer-related concerns will be very useful to other localities contemplating the sale of transit passes through employment sites.

The first employer issue concerns reactions generated by a transit operator's use of a particular solicitation approach to enroll employers in the program. Of interest is the percentage of employers who express a favorable interest in joining the program and the underlying reasons for or against participation.

For employers who decide to participate, other issues of interest include the extent to which employers subsidize the cost of the pass to employees; the types of TFP sale, distribution, and accounting procedures that are used; the types and levels of internal TFP marketing that are performed; and the net perceived cost (pass subsidies, administrative resources, and reduced parking costs) of participating in the program. The evaluation presented in later

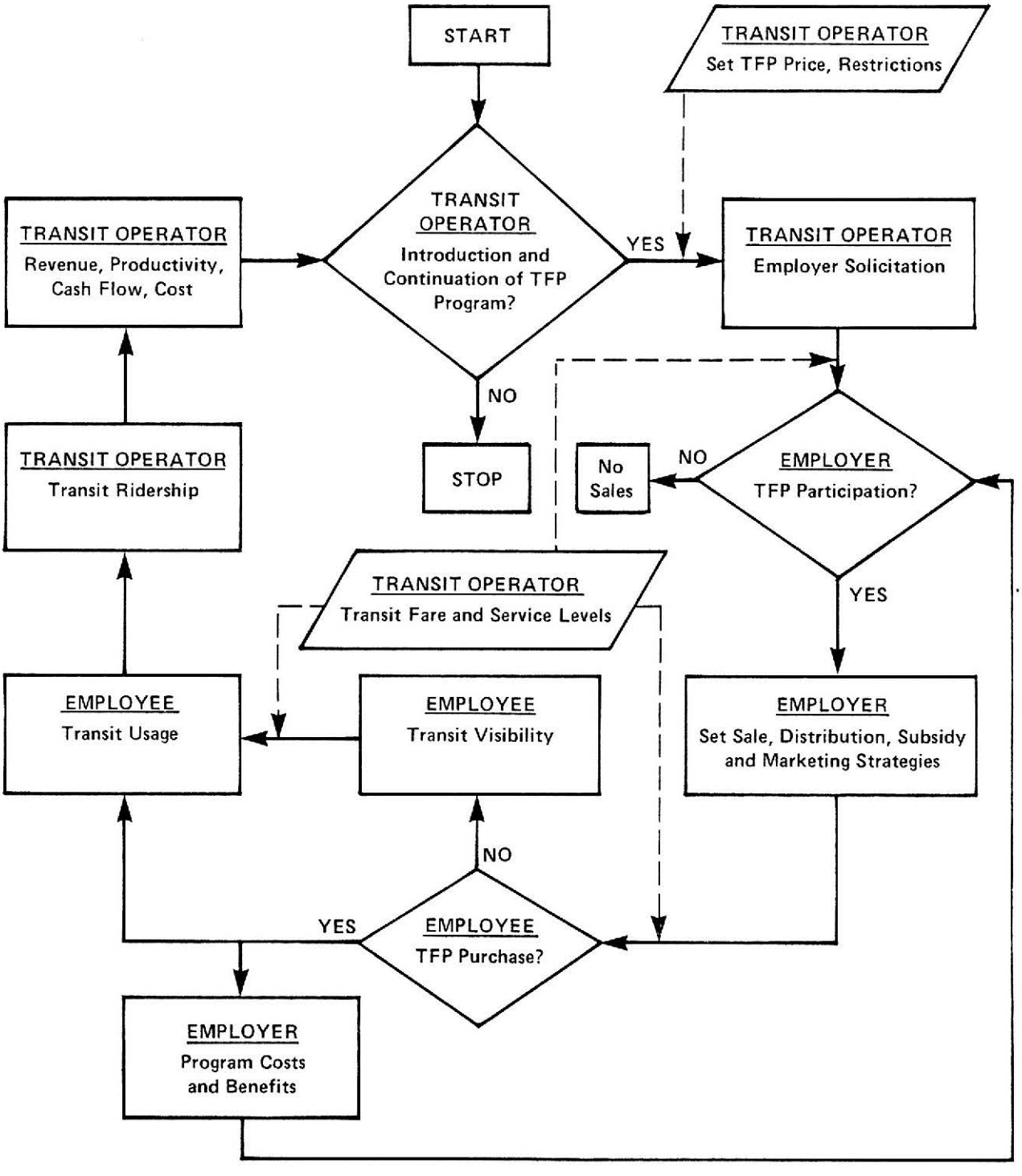


Figure 2–1. CAUSAL CHAIN OF CAUSE-AND-EFFECT ACTIONS FOR EMPLOYER-BASED TFP PROGRAM

sections examines the extent to which employer behavior with respect to each of these issues is correlated with general employer characteristics (e.g., size, transit accessibility, parking availability, parking cost), as well as an employer's participation in other emerging transportation programs such as carpooling and vanpooling.

2.3.2 Employee Issues

Since employees comprise the principal target group of the demonstration, employee issues are an important component of the evaluation. A TFP program will not be of much value to either transit operators or employers if employees do not take advantage of it. If this were to occur, both employers and transit operators would question the efficacy of continuing the program or, in the more general case, of instituting a similar program in other cities.

As might be expected, most employee issues of interest to the demonstration are linked to those discussed above for employers and to certain transit operator issues discussed in the following section.

The principal employee issues concern the decision to purchase a pass and how that decision is influenced by employer actions (e.g., pass subsidies, parking cost and availability) and transit operator policies (e.g., price, time/directional restrictions). Once a pass has been purchased, the issue then is the extent to which an individual changes his or her transit frequency for trips taken to and from work as well as for other trip purposes.

The demand response of employees to a monthly pass sold at the work site is likely to vary as a function of an employee's socioeconomic and trip-making behavior as well as by a variety of employer-related characteristics. Exploration of these relationships provides useful information for other areas, allowing resources and marketing campaigns to be focused on those groups of employees most likely to benefit from this particular type of pass program.

The final category of employee issues is oriented toward identifying the effect that actions taken by employers have on employee participation in the program. The basic unit of measurement for this issue is the proportion of employees who purchase a pass. For example, one important issue is the impact on pass sales that can be attributed to either a full or partial subsidy provided by an employer. Subsidization by employers reflects positively on the commitment evidenced for this type of program, and stimulation of sales may lead to additional transit revenues.

2.3.3 Transit Operator Issues

From the perspective of the transit operator, two important issues of the employer-based TFP program are the changes that occur in transit revenue and transit ridership. Net revenues will increase or decrease depending on the number of frequent users of the transit system who buy the pass compared to the number of new transit riders diverted from other modes. The change in system revenues will also be influenced by the number of firms subsidizing the pass to their employees. Ridership increases will depend on the number of pass-purchasing employees who make additional work and/or nonwork trips by transit. This would affect the number of trips made during the peak and off-peak periods. In addition, if a pass purchaser allows other individuals to use the pass, additional transit usage, over and above that generated by the employee, may be noted. To the extent that this occurs, some revenue loss or "leakage" may result if these "other" trips were previously paid for by cash fares.

The remaining transit operator issues that are investigated and evaluated involve identifying the administrative costs and resources required to support the monthly pass program. With regard to benefits, the cash flow position of the transit operator may change with the implementation of the pass program. The cash flow position of the transit operator will improve if the monies collected by employers for passes sold to their employees are received by the operator earlier (e.g., in the month prior to the sale month) than they would have been in the absence of the program. Alternatively, if receipts from the sale of passes are submitted at the end of a given sale month, then the cash flow position of the transit operator may become worse. (The latter has been known to happen when private institutions such as banks sell TFPs -- or more generally, other prepaid scrips such as food stamps -- and turn in all funds collected at the end of a given 1-, 2-, or even 3-month period.)

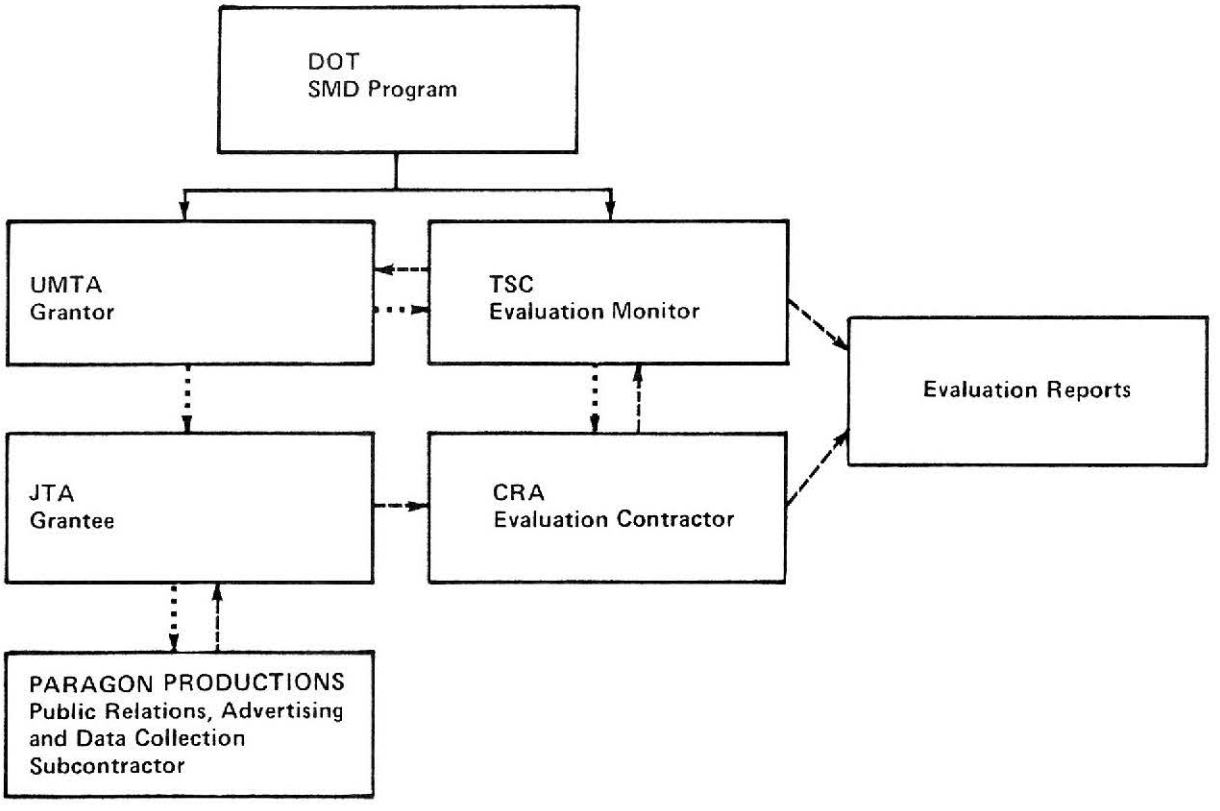
The final transit operator issue, discussed earlier in the context of SMD objectives, focuses on evaluating the extent to which the pass program affects transit productivity. On a systemwide basis, any change in demand or supply attributable to the demonstration may result in transit productivity changes.

2.4 ORGANIZATIONAL ROLES OF EVALUATION PARTICIPANTS

The organizations involved in the Jacksonville demonstration and their relationships to one another are shown in Figure 2-2. Below we briefly describe the role that each organization played in the demonstration.

2.4.1 Urban Mass Transportation Administration (UMTA)

UMTA, the Service and Methods Demonstration (SMD) sponsor for the Jacksonville project, is responsible for overall supervision and management.



LEGEND

▬▬▬▬► Evaluation Data

▪▪▪▪▪▪▪► Contract

DOT = U.S. Department of Transportation
UMTA = Urban Mass Transportation Administration
TSC = Transportation Systems Center
JTA = Jacksonville Transportation Authority
CRA = Charles River Associates

Figure 2–2. ORGANIZATIONS AND ROLES FOR THE JACKSONVILLE DEMONSTRATION

2.4.2 Jacksonville Transportation Authority (JTA)

The JTA, the recipient of the demonstration grant from UMTA, is responsible for administrative and budgetary control of the project as well as for overseeing the data collection activities used to support monitoring and evaluation activities. The JTA operates as an independent agency of the state of Florida and owns and operates the bus system in Jacksonville. In addition, JTA performs planning, financing, and construction activities for expressways, bridges and toll facilities within the city of Jacksonville. The day-to-day management of the bus systems, including the distribution of monthly transit passes to employers participating in the demonstration, is performed by City Coach Lines, Inc., a subsidiary of the Jacksonville Coach Company Lines and the former owner of the bus system.

2.4.3 Transportation Systems Center (TSC)

Overall responsibility for the evaluation rests with the Transportation Systems Center, which is a division of the Research and Special Programs Administration of the U.S. Department of Transportation. It is TSC's task to select and monitor the activities of the evaluation contractor as well as to specify the technical direction of the evaluation. Both TSC and the evaluation contractor interact with the grant recipient to obtain the data necessary for the evaluation of the demonstration. TSC also coordinates and synthesizes the findings of the present evaluation with those from other similar demonstration projects.

2.4.4 Charles River Associates (CRA)

CRA serves as the evaluation contractor under a separate contract to TSC. As such, CRA is responsible for monitoring and evaluating the demonstration project, including preparation of monthly Progress Reports, and this Final Evaluation Report. To this end, CRA, in consultation with TSC, was charged with developing appropriate data collection strategies, implementation procedures, and quality control checks for the reduction and transmittal of data.

2.4.5 Paragon Productions

Under contract to the JTA, Paragon Productions was retained to 1) design the promotion and advertising strategies for the demonstration, 2) work in conjunction with JTA to contact and solicit a panel of employers to participate in the program, and 3) carry out the required data collection functions as specified by CRA.*

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*See Charles River Associates, Evaluation Plan: Jacksonville Transit Fare Prepayment Demonstration Project, prepared for Transportation Systems Center (Boston, Mass.: CRA, March 1979).

3. CHARACTERISTICS OF THE JACKSONVILLE TRANSIT SYSTEM

3.1 OVERVIEW

The bus transit system in Jacksonville is owned and operated by the Jacksonville Transportation Authority (JTA). JTA acquired the bus system on December 11, 1972 from City Coach Lines which, at that time, was the private owner and operator of the system. Jacksonville Coach Company Lines (JCCL), a subsidiary of City Coach Lines, was retained by the JTA after the takeover to manage the day-to-day operations of the bus transit system. JCCL is responsible for maintaining equipment, employing and supervising personnel, and meeting schedules and other operating standards designated by JTA. (In addition to these transit-related duties, JTA is also responsible for planning, financing, and constructing expressways, bridges, and toll facilities in Jacksonville.)

During the time period of this demonstration, bus service was provided on about 50 bus routes on weekdays and on somewhat fewer routes on weekends (e.g., the Express Flyers do not operate on Saturdays or Sundays). The radial nature of the JTA bus route network is illustrated in Figure 3-1. A total of approximately 19,350 scheduled bus-miles are run on a typical weekday with base headways ranging from 10 minutes to 1.5 hours. Currently, JTA has about 200 buses in its fleet. To indicate the condition of the equipment being operated by the property, Table 3-1 shows the number of buses, classified by seating capacity and age.

Commuter park-and-ride lots are located at various entry points to the downtown on major suburban commuter highways and are served by frequent shuttle buses. Prior to April 1, 1979, there was no charge for parking in these fringe parking lots shown in Figure 3-2; users only paid the regular 10¢ shuttle bus fare. However, after that date a monthly parking permit sticker was required to park in the park-and-ride lots. JTA sold the shuttle parking permit together with a pass that allowed unlimited use of the shuttle buses for $10.75 monthly or $30.00 quarterly. The three different shuttle routes shown in Figure 3-3 are used by other individuals for CBD circulation and for trips during lunch-time hours.

Before the October 1978 fare increase, JTA ridership was averaging slightly more than 50,000 passengers per weekday. Figure 3-4 shows JTA annual ridership trends expressed on a passenger and a passenger/vehicle-mile basis from 1962 through 1980. As can be observed, ridership was declining well before a fare increase that occurred in 1970. Ridership increases began in 1972 when public ownership of the system resulted in a fare decrease from $.30 to $.25 and a simultaneous improvement and expansion of service. From 1972 to 1980 annual bus miles operated increased by about 30 percent from 4.9 to 6.4 million bus miles. As a result of these changes, current ridership has returned to the levels enjoyed in the early 1960s. However, the $.10 fare increase in October 1978 had a dampening effect on ridership growth with

Figure 3–1. MAJOR TRIP GENERATORS AND TRANSIT ROUTES

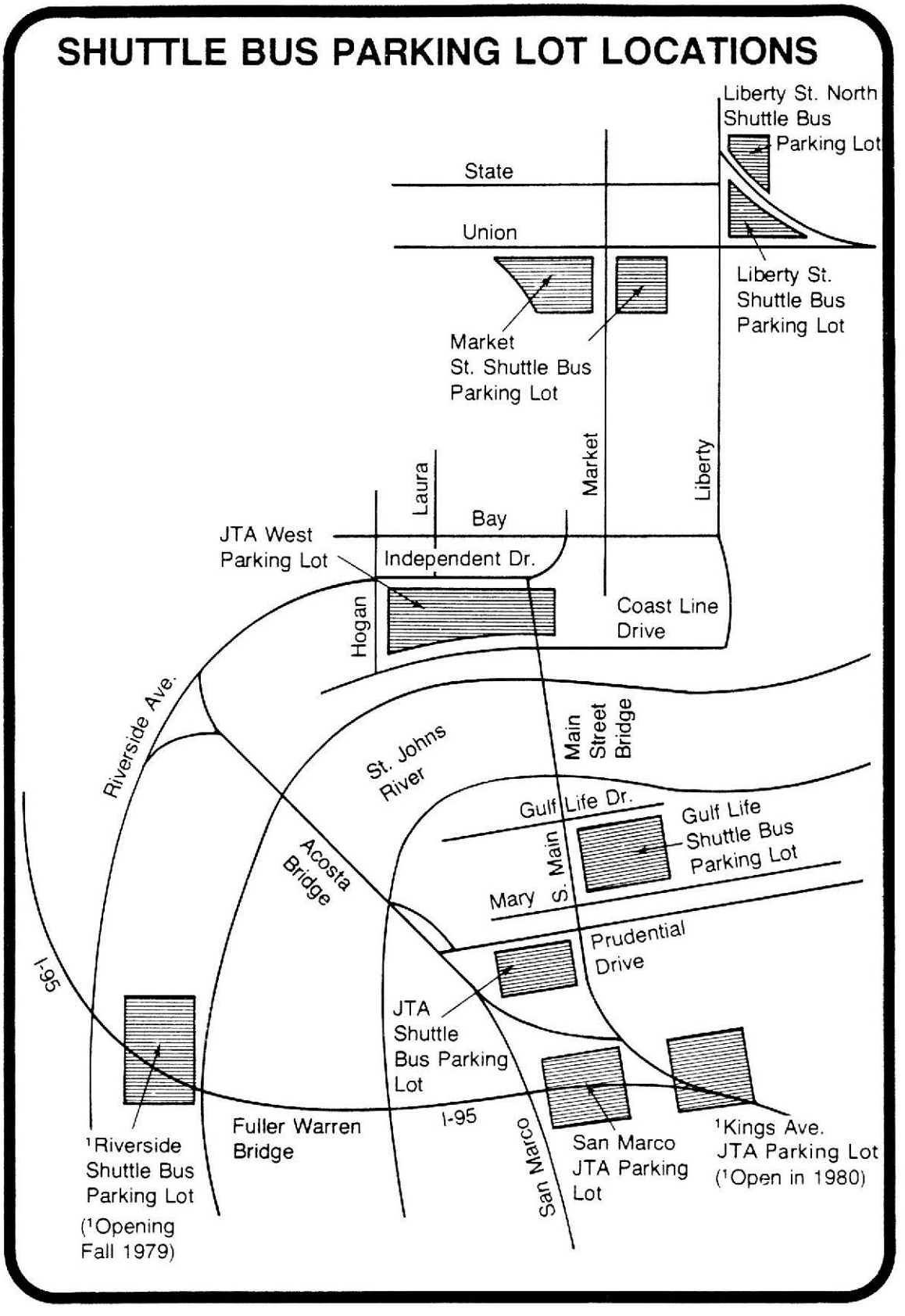
Table 3-1. BUS FLEET IN JACKSONVILLE, 1977

Seating Capacity of Bus	Number of Buses
26-45 seats	145
46 seats and over	55
Total	200

Age of Bus	Number of Buses
0-5 years	113
6-10 years	10
11-15 years	35
Over 15 years	42
Total	200

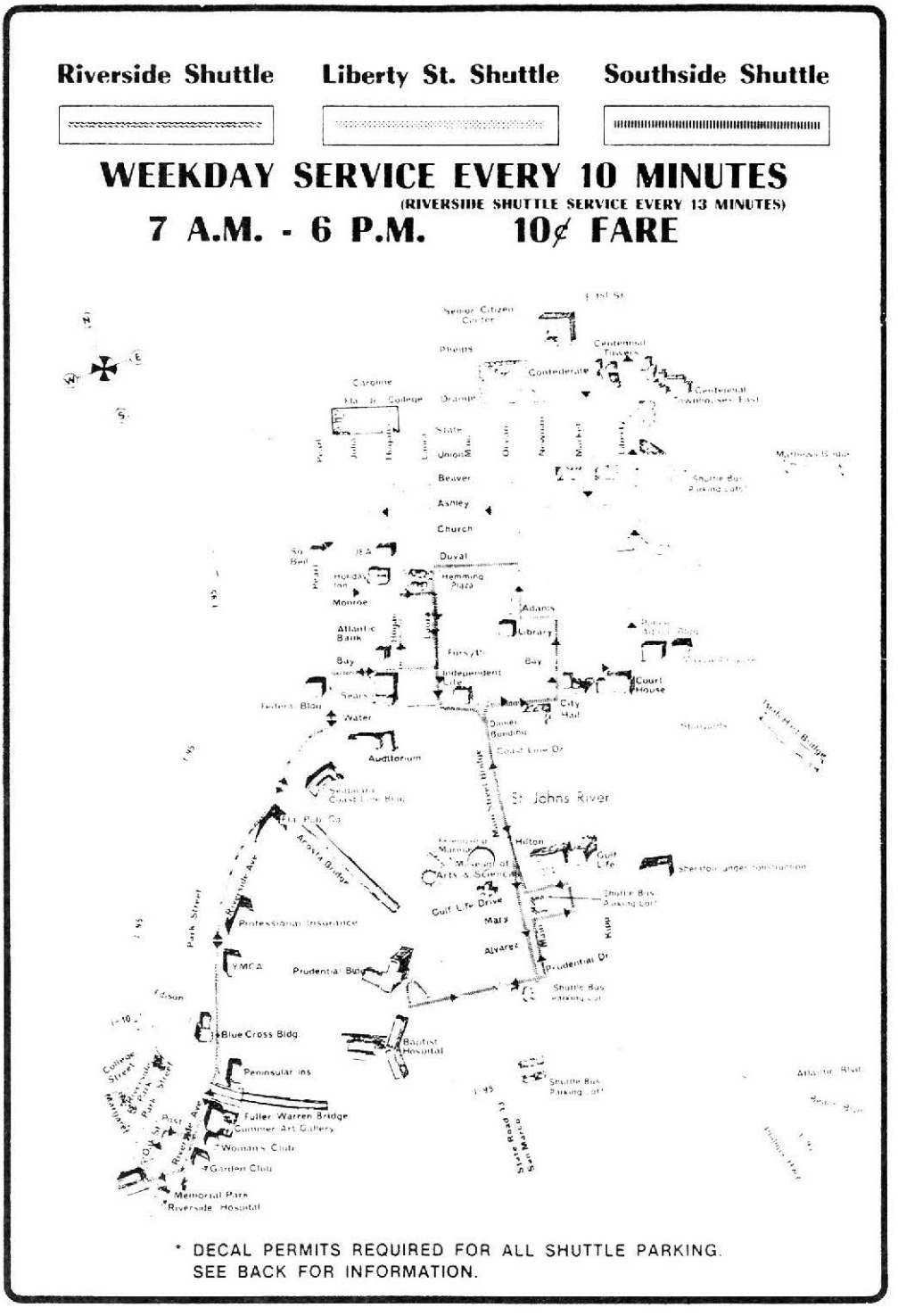
Average = 7.7 Years

SOURCE: Jacksonville Transportation Authority, JTA Annual Update (Jacksonville, FL: JTA, Spring 1977).



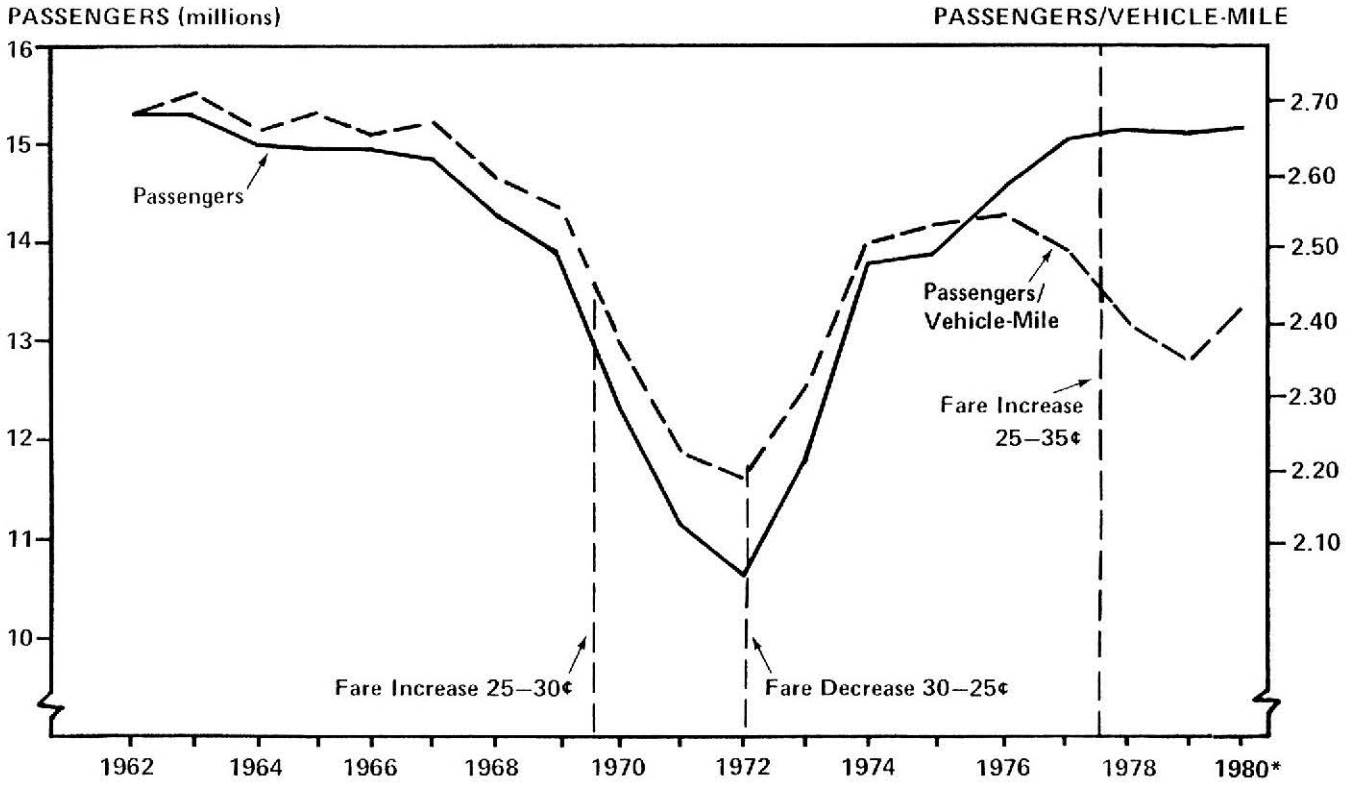
SOURCE: Jacksonville Transportation Authority

Figure 3–2. SHUTTLE BUS PARKING LOT LOCATIONS



SOURCE: Jacksonville Transportation Authority.

Figure 3–3. JTA SHUTTLE BUS ROUTES



* Bus Strike, May 12–23, 1980.

SOURCE: Charles River Associates Incorporated, *Jacksonville Fare and TFP Study* (Cambridge, Mass.: CRA, April 1978); and Jacksonville Transportation Authority.

Figure 3–4. JACKSONVILLE RIDERSHIP AND VEHICLE PRODUCTIVITY TRENDS (1962–1980)

the result that ridership remained at a constant level in 1979, even though gasoline prices increased by over 50 percent in this same period. (Table 3-2 presents average gasoline prices at the pump for regular-grade gasoline.)

Also shown in Figure 3-4 is the trend in vehicle productivity expressed in passengers carried per mile of bus operation. This statistic remained fairly constant from 1974 to 1977 but has declined in the last couple of years as ridership growth has not kept pace with the addition of more service (i.e., bus-miles). This indicates that the latest increases in bus miles operated are attracting disproportionately fewer new passengers (e.g., as routes are extended to less populated areas). Based on comparable statistics in the 1974 National Transportation Report, the average vehicle productivity in Jacksonville is about the same as for other cities of its size.*

Ridership and bus productivity is also illustrated in Figure 3-5, which shows annual ridership and bus miles operated as a percentage of their respective 1962 levels for the 1962 to 1980 period. Bus miles are shown to have declined each year in the period before the fare increase of 1970. More significant is the fact that in the same period, ridership decreased at a faster rate than did bus miles. If no other supply changes were occurring this would imply that the demand elasticity with respect to bus miles was greater than +1.0. However, certain fare categories were increased in 1966 and later in 1968, and this would tend to reduce the resulting bus-mile elasticity. Since becoming a public operation in 1972, bus miles operated has increased in all but 1 or 2 years. The decline in 1980 was mainly the result of a 2-week strike of bus personnel that occurred in May 1980.

Figure 3-6 shows the trends in total farebox revenue, revenue per bus mile, total operating expenses, and operating expenses per bus mile for the 1961 to 1980 "fiscal year-end" period. It should be noted that the definition of "Fiscal Year Ending" changed once during this time period. Prior to public acquisition in 1972, the fiscal year ended with the calendar year. Since 1972, it has ended on September 30. (Data for fiscal year 1973 were extrapolated from existing information.)

Figure 3-6 clearly illustrates that until the 1978 fare increase, yearly changes in revenue were minor compared to changes in operating expenses. (Jacksonville is not unique in this respect. An examination of the same statistics for the transit industry nationwide reveals a comparable trend.) For the one-year period after the fare increase, however, the absolute increase in revenue closely matches the absolute increase in operating costs.

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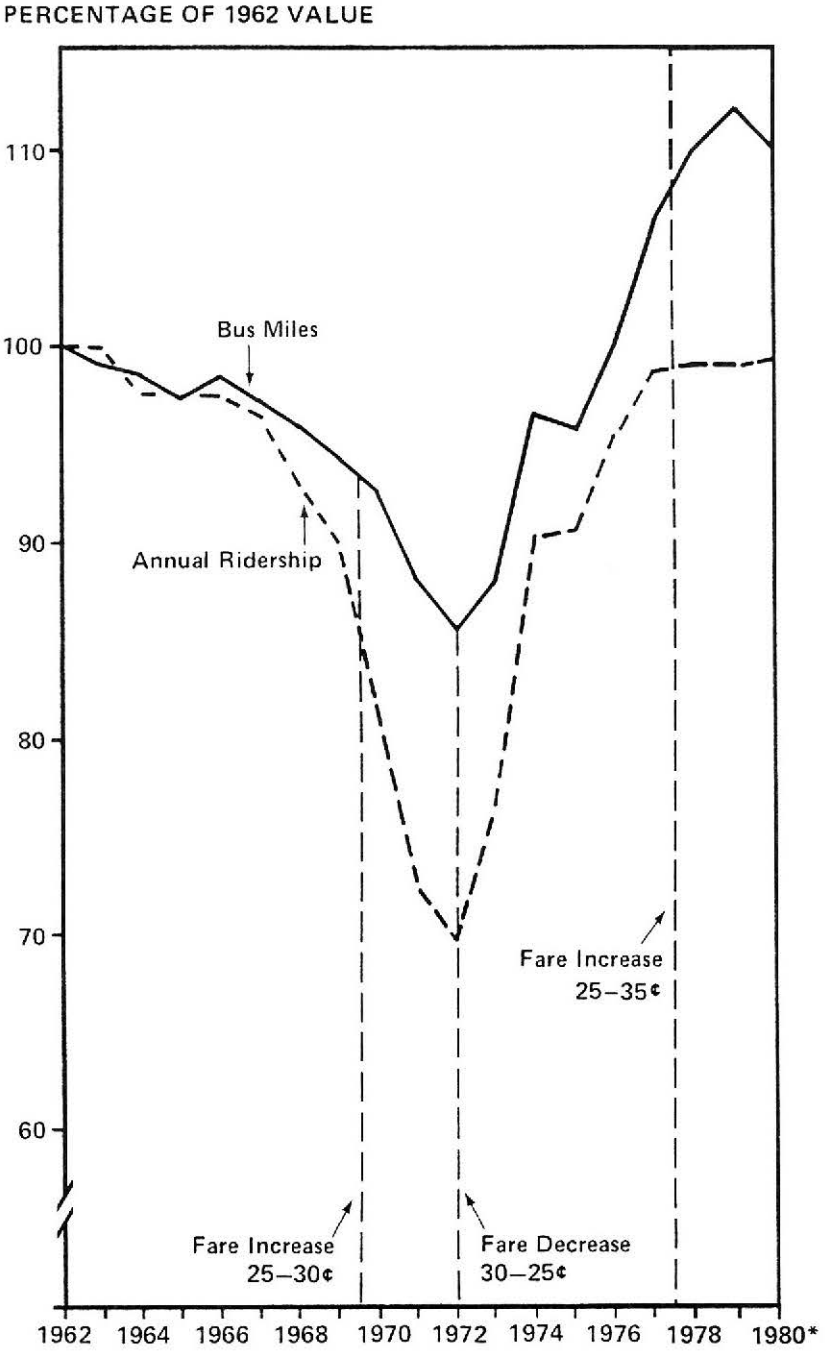
*Wells Research Company and Control Data Corporation, 1974 National Transportation Report: Urban Data Supplement (Washington, D.C.: U.S. Department of Transportation, May 1974).

Table 3-2. JACKSONVILLE AVERAGE GASOLINE PRICES

(Regular Grade; Name Brand Stations)

Month	Pump Price (cents)
January 1978	63.7
January 1979	70.5
February	71.5
March	73.3
April	75.5
May	79.0
June	83.0
July	88.2
August	93.5
September	96.5
October	97.8
November	100.0
December	103.0
January, 1980	108.2
February	116.0
March	120.0
April	121.0
May	121.0
June	121.0
July	121.0
August	121.0
September	120.3

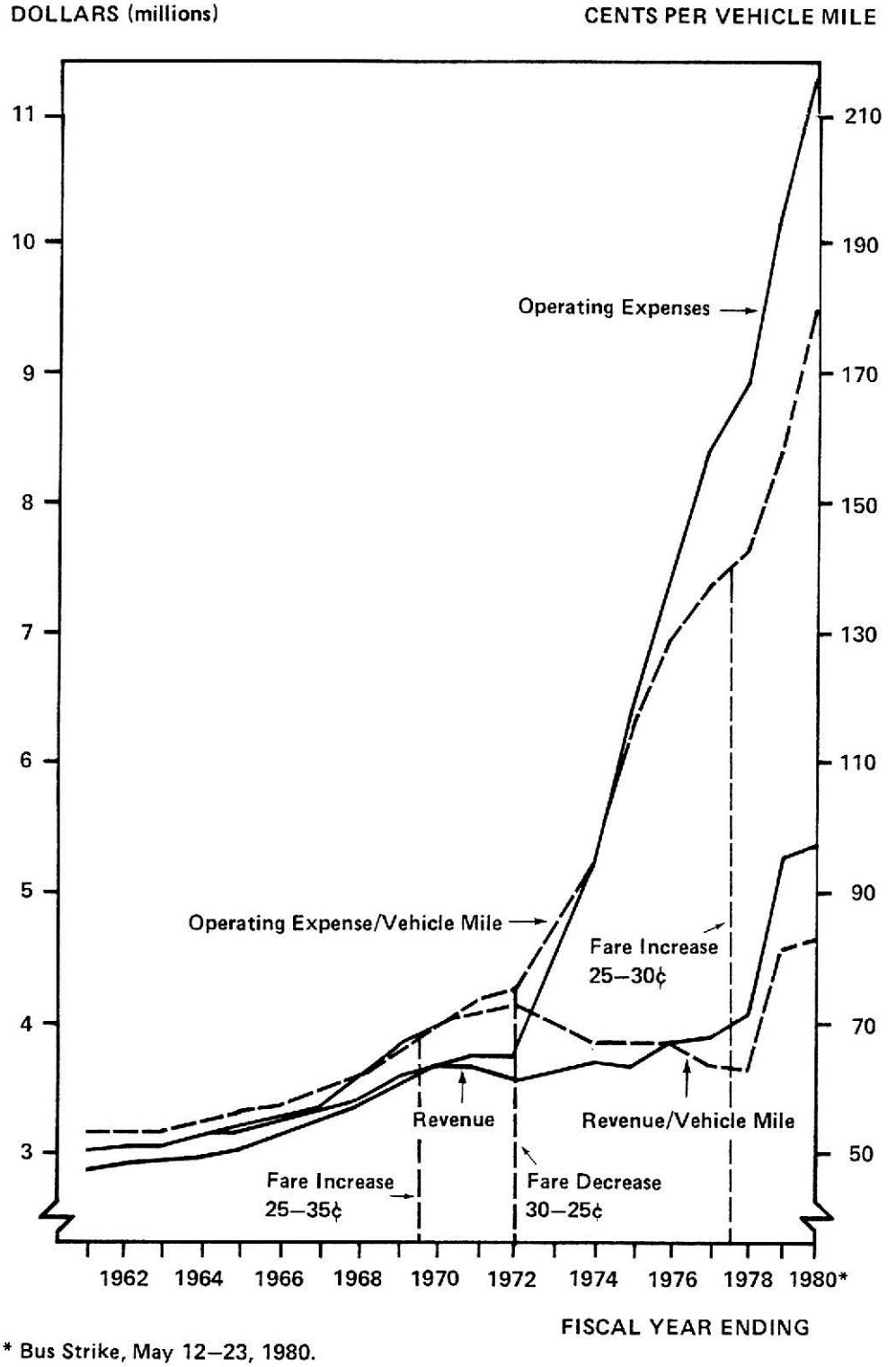
SOURCE: Oil and Gas Journal, various issues.



* Bus Strike, May 12–23, 1980.

SOURCE: City Coach Company.

Figure 3–5. RIDERSHIP AND BUS MILES AS A PERCENTAGE OF 1962 VALUES (1962–1980)



* Bus Strike, May 12–23, 1980.

SOURCE: Jacksonville Transportation Authority.

Figure 3–6. JACKSONVILLE TRANSIT OPERATING AND REVENUE TRENDS (1961–1980)

In addition to scheduled bus service, JTA also provides limited Dial-A-Ride (DART) service for qualified elderly and handicapped people. This service uses four lift-equipped vans. The fare is $1.00 within the base zone and increases with additional zones traveled to a maximum of $2.00. The hours of operation are between 7:00 a.m. and 10:00 p.m. daily. Additional transportation services for the elderly and handicapped are provided by RIDE, Inc., a private nonprofit corporation of 26 different social service agencies in Jacksonville. JTA coordinates with RIDE and currently handles dispatching of buses and vans.

3.2 JTA TRANSIT FARE STRUCTURE

3.2.1 Fare Levels Prior to October 2, 1978

Prior to the October 2, 1978 fare increase in Jacksonville, three types of weekly passes were sold: an adult weekly pass priced at $5.00 and a senior citizen and student weekly pass, each costing $2.50. The first two passes allowed unlimited travel; they were valid for all routes (including $.50 and $.75 runs), seven days a week, any time of the day. The student pass could be used on all routes but was valid only on weekdays. The purchase patterns of these passes are discussed in the following section.

The three types of passes were sold at three locations in Jacksonville: Hemming Park, Regency Square (a large suburban shopping center located about seven miles east of the Jacksonville CBD), and three Lil Champ Food Stores located in the Jacksonville Beach area. Regency Square and Lil Champ outlets are paid a 10 percent commission on all passes sold. Of the 1,400 adult passes sold each week in 1977, about 1,220 passes (85 percent) were purchased at Hemming Park which is centrally located in the CBD where most bus routes terminate. Approximately 20 passes were sold at Regency Square, and the remaining 160 were sold at Lil Champ stores.

Sales of passes by type of pass are shown in Table 3-3 for the years 1972 through 1981. The cost of these passes was held constant from January 1973 until October 2, 1978, when JTA instituted a general fare increase and some revisions in its fare structure in order to increase revenues. The following section describes the JTA fare structure that was in existence from October 2, 1978 until September 28, 1980 -- a span of time covering the entire Jacksonville employer-based transit pass demonstration.

3.2.2 Fare Levels from October 2, 1978 to September 28, 1980

In order to increase revenues and remove potential inequities in its fare structure, JTA increased base fares by $.10 on October 2, 1978. It also discontinued selling the weekly senior citizen and student passes which were sold at half the price of a regular pass. The senior citizen pass was

Table 3-3. YEARLY SALES OF WEEKLY PASSES IN JACKSONVILLE BY TYPE OF PASS, 1972-1981

Year	Adult		Student		Senior Citizen	
	# Sold	% Change	# Sold	% Change	# Sold	$ Change
1972	87,127		9,009			
1973	83,367	- 4.3	10,929	21.3	21,628	
1974	76,690	- 8.0	10,197	-6.7	19,909	-7.9
1975	71,595	- 6.6	12,682	24.4	18,096	-9.1
1976	70,136	- 2.0	19,125	50.8	18,516	2.3
1977	68,313	- 2.6	25,119	31.3	17,563	-5.1
1978	72,987	+ 6.8	Discontinued 10/1/78		Discontinued 10/1/78	
1979	76,326	+ 4.6				
1980	70,935	- 7.1				
1981	62,829	-11.4				

SOURCE: Jacksonville Coach Company Lines, Inc.

eliminated because it was believed that many of the purchasers of this pass were individuals aged 65 and over who worked on a regular basis and rode transit during peak hours; but, by using a pass were paying only 50 percent of the regular fare. Senior citizens may still travel at half fares during off-peak hours; however, all trips made during peak hours now cost a full fare.

When the student pass was being sold, college students as well as high school and grade school students, were eligible to purchase and use the pass. Again, it was believed that many of the older college students would purchase a pass not only for regular school trips, but also for (unlimited) work trips. Since it was thought that farebox revenue was being lost in this manner, the student pass was also discontinued. Students are still eligible to purchase school tickets as before although the base price has increased from $.125 to $.20. A complete list of the fare structure for the JTA system, both prior to and during the initial 1-year phase of the demonstration, is given in Table 3-4. No change was made in the previous full fare charged for transferring passengers (without a pass). That is, since transfer slips are not used in Jacksonville, transferring passengers are treated the same as any other boarding passenger.

3.3 DISCUSSION OF JTA TRANSIT PASSES

This section examines the different types of passes that either recently have been or are currently being sold in Jacksonville. This information is helpful in understanding how JaxPASS, the monthly pass introduced as part of this demonstration, compares to other passes that are (or were) available in Jacksonville.

During 1977, a restricted-use Monthly Commuter Pass priced at $10.00 was sold by JTA at its various sales outlets. This pass was only valid in lieu of a regular adult fare ($.25 at that time) so that a pass holder had to pay an additional $.25 for trips on a $.50 express flyer run and an extra $.50 for the $.75 beach run. (Recall that the weekly pass is valid on all routes including the higher-cost beach and flyer runs.) Perhaps more important than the fare restrictions, the monthly commuter pass was valid only for inbound trips between 12:01 a.m. to noon and for outbound trips between 12:01 p.m. to midnight, Monday through Saturday. On Sundays, the pass was valid on all routes at all times in either direction.* This pass, therefore, was aimed strictly at regular commuters making trips to the CBD and, because it was not valid for transfers due to the directional restrictions and the radial nature of JTA's routes, it did not compete with the weekly pass.

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*Charles River Associates, Jacksonville Fare and TFP Study. Prepared for the Transportation Systems Center (Cambridge, Mass.: June 1978).

Table 3-4. FARE STRUCTURE FOR THE JTA SYSTEM

Fare Type	1/22/73 - 10/2/78	10/2/78 - 9/28/80
Regular Cash Fare, Child	15¢ (less than 42")	25¢ (less than 42")
Regular Cash Fare, Adult	25¢	35¢
Regular Cash Fare, Dog Track	25-50¢	35-70¢
Tickets, Adult	25¢ (4 for $1)	35¢ (10 for $3.50)
Tickets, School*	12.5¢ (8 for $1)	20¢ (10 for $2)
Pass, Adult	$5/week (unlimited)	$7/week (unlimited)
Pass, Senior Citizen	$2.50/week (unlimited)	Discontinued
Pass, Student	$2.50/week (M-F)	Discontinued
DART (Dial-a-Ride for the Handicapped)	$1-2 (by zone)	$1-2 (by zone)
Downtown Special (shuttle)	10¢	10¢
Express Flyers (zone)	25-50¢	50¢
Beach Run (zone)	25-50-75¢	35-85¢
Senior Citizen**	10¢	15¢
Adult Transfers	Not Offered	Not Offered
Student Transfers*	Free	Free
JaxPASS, Monthly	---	$14.00 (3/79-6/79) $12.00 (7/79-9/80)+

*Student tickets/transfers may be used on school days during school hours, but not later than 5 p.m.

**Valid on weekdays, for all zones, between the hours of 9:00 a.m. and 3:30 p.m. and all day Saturday, Sunday and holidays with proper I.D. card.

+Pass discounted by $2.00 with Demonstration funds.

SOURCE: Jacksonville Transportation Authority.

The monthly commuter pass was discontinued due to poor sales which were averaging about 20 per month. JTA personnel felt that one reason for the low monthly pass demand was the lack of a formal marketing program which resulted in patrons not being aware of its existence.

To understand the effect of these restrictions it is instructive to examine the layout of the JTA bus routes. Almost all of the JTA's routes lead to the center city (see Figure 3-1). Given this radial or spoke-like design, a person living on one side of the city who wishes to travel to another side of the city must first take a bus into the center and then transfer to another bus going out of the city, paying a second full fare. This fact plays a key role in determining which travelers are most likely to purchase an unlimited-ride weekly pass versus a restricted-use monthly pass. In particular, a weekly pass user does not have to pay this second fare while a monthly pass user would, thus defeating the convenience or noncash-handling aspect of purchasing a JaxPASS. If most riders who transfer have lower incomes (and vice versa), then these individuals are more likely to purchase a weekly pass (and vice versa).

Currently, the weekly adult pass is breakeven-priced at 20 boardings per week (on base price routes). This is equivalent to making four bus boardings per day over a 5-day work week. That is, in order for this pass to be breakeven-priced for a person riding a $.35 bus, the user must transfer once to complete each one-way trip (assuming one round trip per weekday). The exceptions to this one-transfer, breakeven price are the $.50 express flyers and the $.75/$.85 beach runs. Since use of the weekly pass is unlimited, the adult user who rode only the $.50 flyer for one round trip a day, with no transfer, previously broke even on the purchase of the $5.00 pass before the October 1978 fare increase. Now, because the weekly cash fare cost of 10 trips taken on the express flyer is still only $5.00, the weekly pass, priced at $7.00 would not be purchased unless a transfer is involved.

Before the October 1978 fare increase, the $5.00 weekly passholder who patronized the $.75 beach run for one round trip per day, saved at least $2.50 per week (i.e., (.75 x 2)5 = 7.50 - 5.00 = 2.50). The current $7.00 weekly pass is still valid on the (now priced) $.85 beach route. However, the savings realized from using the bus each weekday is reduced to $1.50 per week (i.e., (.85 x 2)5 = 8.50 - 7.00 = $1.50). To the extent that the weekly pass is also used for shuttle bus service and weekend trips, additional savings are possible.

In terms of a restricted-use JaxPASS, which is valid in lieu of a regular $.35 fare, an individual commuting on a $.50 flyer would be required to deposit $.15 in addition to showing his or her pass. This would tend to defeat the convenience aspect of purchasing a pass. The other potential benefit would come in the form of "free" weekend and downtown shuttle trips. These same conditions would also apply to users of the $.85 beach routes.

Although the senior citizen pass is no longer available, a comparison of its selling price to the pre-October 1978 fare structure reveals why this pass was purchased. The analysis, however, is somewhat more complicated because of the senior citizen's option of off-peak travel for $.10 on all bus runs, including the higher-priced beach routes. Basically, senior citizens traveling exclusively during off-peak hours had to make at least 25 trips per week for the weekly pass to be economically attractive. However, if trips are normally taken during peak hours, only 10 one-way trips on $.25 bus routes; 5 trips on $.50 express bus routes; or 4 or more trips on a $.75 beach route begin to make the weekly pass attractive, since the elderly must normally pay full fare for peak trips. It was primarily the revenue loss from these types of trips, made during peak periods, that resulted in the discontinuance of the senior citizen pass.

4. DEMONSTRATION IMPLEMENTATION AND OPERATION

4.1 PROJECT HISTORY AND STATUS

In 1975, the Service and Methods Demonstration (SMD) program initiated a study to document past experience with various forms of transit fare prepayment (TFP) and to identify promising applications of the concept. A multitude of different TFPs such as tickets, tokens, permits, and credit cards were reviewed, in addition to transit passes.* Based on the results of that study, a search for demonstration sites was initiated to document the impacts associated with implementing a monthly transit pass program distributed through employment sites.** In 1977 two cities -- Jacksonville, Florida and Sacramento, California -- were selected for demonstrations of the employer-based TFP concept.*** At about the same time, reduced-price promotions of TFPs were the subject of SMD demonstrations in Austin, Texas and Phoenix, Arizona.+

A demonstration in Atlanta has examined how effectively a monthly, unlimited-use transit pass acts as a fare and transit integration instrument for intramodal and intermodal transit users.++ Also underway is a demonstration of a differentially-priced peak/off-peak monthly transit pass that is coupled with the marketing and implementation of an employer-based

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*W. R. Hershey et al., Transit Fare Prepayment, report prepared for Urban Mass Transportation Administration (Ann Arbor, Mich.: The Huron River Group, August 1976).

**Office of Service and Methods Demonstration, "The Promotion of Transit Fare Prepayment through Employers: An Outline Description for a Demonstration Project," July 1976.

***The Sacramento findings are described in Douglas Daetz and Michael Holoszyc, Sacramento Transit Fare Prepayment Demonstration: Final Report, prepared for the Transportation Systems Center (Los Altos, Calif.: SYSTAN Inc., September 1980).

+Pamela Bloomfield and John Crain, Transit Fare Prepayment Demonstration in Austin, TX and Phoenix, AZ, prepared for the Transportation Systems Center (Menlo Park, Calif.: Crain & Assoc., June 1979).

++Charles River Associates, Atlanta Integrated Fare Collection Demonstration, Final Report, prepared for the Transportation Systems Center, (Boston, Mass.: CRA, 1982).

flexitime and staggered work-hour program.* A summary of most of the existing employer-based transit pass programs has been compiled by the Urban Institute and the American Public Transit Association (APTA) for the U.S. Department of Transportation.**

Transit passes generally have finite time limits such as a day, week, month or year. Sometimes special purpose passes such as those for elderly and handicapped individuals may have an unlimited time duration. Until recently, however, transit passes were normally sold either on board a transit vehicle or at satellite distribution facilities such as banks, stores, or at one or more kiosks operated by the local transit authority.

Although some transit systems have promoted sales of TFPs through major employers located throughout a city, the Urban Mass Transportation Administration (UMTA) became interested in setting up controlled experiments in order to document more precisely the associated impacts on employees and agencies involved in such a program. Consequently, based on expressions of interest from different cities, two localities -- Jacksonville and Sacramento -- were chosen for implementing employee-based demonstrations of monthly transit passes. (Appendix A presents a description of various geographic, demographic, and economic characteristics of the Jacksonville area.)

The Grant Application for the Jacksonville demonstration was submitted in the summer of 1977 and approved by UMTA on October 18, 1977. At that time, JTA was selling about 2,000 unlimited-use weekly passes and only a few restricted-use monthly commuter passes. Because of the low demand for the monthly pass, attributed either to the absence of a marketing program or to certain time and directional restrictions on its use, the pass was discontinued to be redesigned and reintroduced as part of this demonstration.

The monthly pass introduced as part of this demonstration was sold during the first year only through a select number of employers that were asked to sign up for the experimental program. At the end of the first year of pass sales, additional employers were allowed to begin selling passes to their employees. In a few cases, employees of firms selling less than five passes per month were encouraged to obtain passes from other firms located nearby rather than from JTA directly. Through this consolidation, distribution expenses were reduced.

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*Charles River Associates, Evaluation Plan: Duluth Variable Work Hours/ Port Pass Demonstration Program, prepared for the Transportation Systems Center (Boston, Mass.: CRA, October 1981).

**Office of the Secretary of Transportation, "Transit Passes...Innovations from Business and Industry," April 1980.

The next section describes the project phasing over time and the activities undertaken during each phase.

4.2 DESCRIPTION OF PROJECT ACTIVITIES AND SCHEDULE

The Jacksonville employer-based pass demonstration was initially scheduled to last approximately 20 months.* However, when it became evident that JTA would be required to increase fares just prior to the start of the program, the date for beginning pass sales was delayed and a study was made of the demand impacts of a previous fare increase in Jacksonville in order to predict the demand and revenue consequences of a range of potential fare and TFP strategies.** In addition, as the date of the October 1978 fare increase approached, it was decided to perform a relatively modest before and after data collection study to determine how price elasticities vary by different market segments of bus users and to compare the observed systemwide fare elasticity to that obtained from a prior fare increase in Jacksonville. Although these activities have some relationship to the employer-based TFP demonstration, they are not reported on here.***

Because of these unanticipated events and the fact that funds contained in the original grant permitted passes to be discounted for a period longer than originally planned, the demonstration was extended to cover a 36-month period. (JTA continued to sell discounted monthly transit passes when the demonstration concluded.) Despite the demonstration's extention, the three principal phases of the project remained unchanged and consisted of 1) an organizational phase for planning and preparation, 2) a solicitation phase for contacting employers to participate in the program, and 3) the distribution phase in which passes were sold and impacts monitored.

Figure 4-1 illustrates the time duration for each of the three main phases of the demonstration. The organizational phase began in October 1977 with the signing of the demonstration grant. As mentioned above, this phase was extended in order to evaluate an impending fare increase. The employer solicitation phase lasted 3 months from December 1978 until February 1979. Finally, the pass sale and distribution phase began in March 1979. However,

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*Robert G. McGillivray, Plan for Demonstration of Transit Fare Prepayment Promoted by Employers in Jacksonville, Working Paper 5066-6-4 (Washington, D.C.: The Urban Institute, December 1977).

**See Charles River Associates, Jacksonville Fare and TFP Study, prepared for the Transportation Systems Center (Cambridge, Mass.: June 1978).

***For more information on this topic, see Charles River Associates, Jacksonville Fare Case Study, Final Report prepared for the Transportation Systems Center (Boston, Mass.: CRA, August 1980).

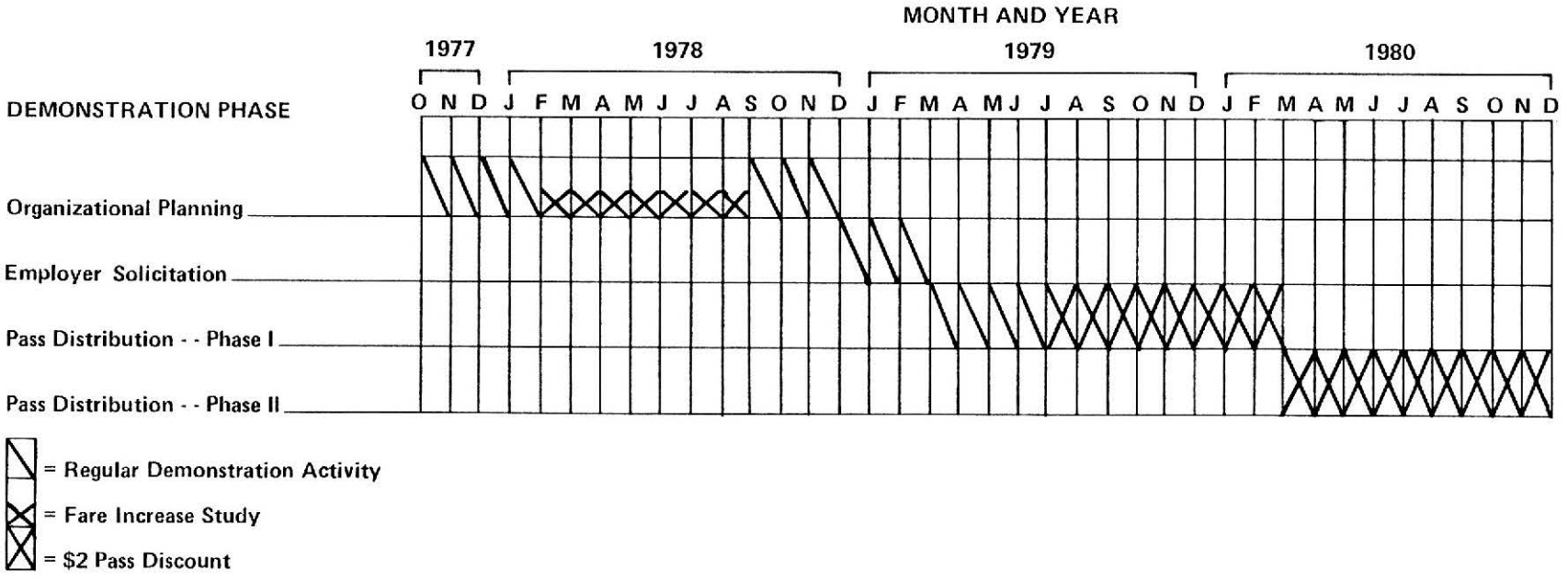


Figure 4—1. CHRONOLOGY OF DEMONSTRATION PHASES

after 4 months of pass sales, the price of the pass was discounted by $2.00 starting in July 1979. Pass sales have continued to be sold through employers at that reduced rate. Each of these three phases of the demonstration are discussed in more detail below.

4.2.1 Organizational Phase

The organizational phase was initially scheduled to last approximately 6 months. During this time a project manager was hired and one or more subcontractors were to be selected to perform advertising, public relations, and data collection functions which would be required throughout the course of the demonstration. The Project Manager began work on November 16, 1977, but because of the above-mentioned activities associated with analyzing and evaluating the impacts of the October 1978 fare increase, this phase of the demonstration was suspended for a number of months. After work on this phase resumed, the firm of Paragon Productions was selected to handle all three functions of advertising, public relations, and data collection.

Other activities undertaken during this phase related to planning for later demonstration activities, such as identifying and classifying potential employers to be solicited, establishing contacts with employers, and preparing promotional material describing the monthly pass program to both employers and employees.

One of the first tasks accomplished by JTA and its subcontractor was the development of the name "JaxPASS" for the monthly transit pass to be sold through employment sites. In order to minimize the potential for fare evasion, JTA decided to maintain its practice of issuing separate color-coded passes for males and females. Although not widely used in the industry, this technique is employed by some transit properties (e.g., SEPTA in Philadelphia) in lieu of implementing a more costly photo ID system to minimize the potential for fare evasion that may occur if passes are loaned to others. A stipulation that passes are nontransferable is very common in cities that sell transit passes, although in a few areas, such as Sacramento, passes are transferable. The rationale given is that no more than one trip could be taken in the peak period, and thus transit trips taken on a "borrowed" pass are likely to occur in the off-peak time period when excess capacity exists. Figure 4-2 illustrates the obverse and reverse sides of the JaxPASS for males and females. (Note that when first introduced in March 1979 the pass sold for $14.00, and it was subsequently reduced to $12.00 in July 1979.)

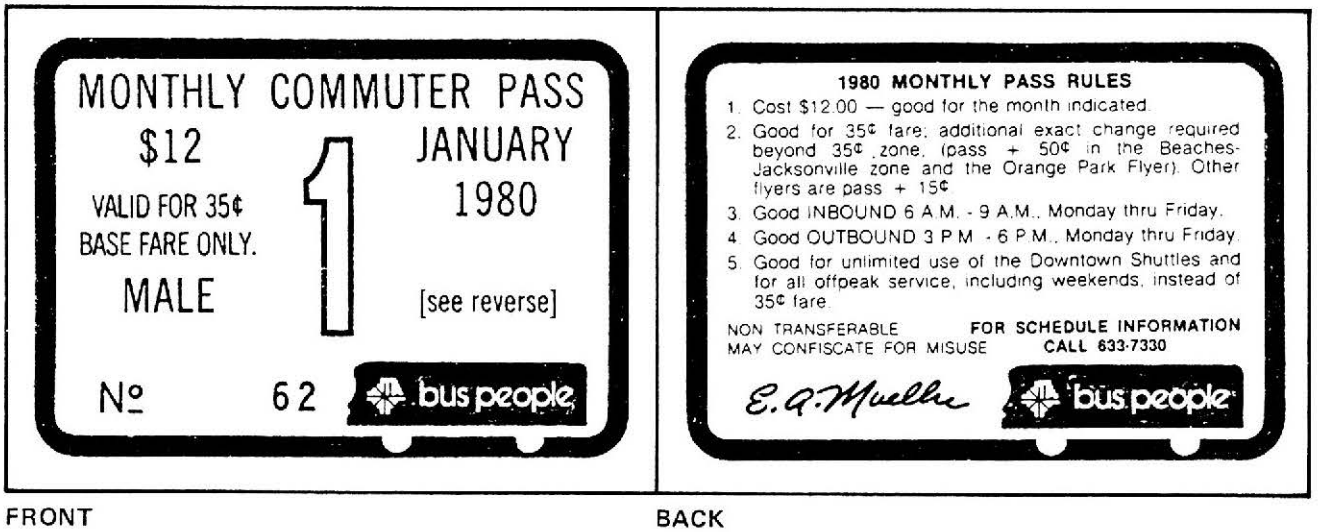
The next activity was the formulation of a coordinated promotional campaign first to solicit employers to participate in the demonstration and then to make employees at these firms aware of JaxPASS and the benefits that could be obtained by purchasing a pass.

To inform potential employers of the "rules" required in the sale and distribution of the monthly JaxPASS, a 10-page "Procedural Guide" was

FEMALE

FRONT BACK

MALE



FRONT BACK

SOURCE: Jacksonville Transportation Authority.

Figure 4–2. FACSIMILES OF MALE AND FEMALE JAXPASS

developed. (This guide is reproduced in Appendix B.) The main function of the guide was to provide employers with information on 1) the overall purpose and objectives of the program; 2) the various data collection activities (i.e., employer and employee surveys) that would be conducted over the first year of the demonstration; 3) the mechanics and timetable for ordering and returning unsold passes; and 4) the obligations assumed by JTA and the employer with respect to payment for passes sold.

Complementary material aimed at informing employees of the new JaxPASS was also developed. Eye-catching, four-color posters consistent with the yellow and orange color scheme of JTA were composed (see Figure 4-3). The posters were printed on heavy stock and came in two sizes (8.5" x 11" and 16" x 24"). The posters promoted the benefits of purchasing a JaxPASS -- Save Money... Save Time... Save Energy -- and said that further information and an application form could be obtained from one's employer. The benefits listed in the poster were an emulation of the very successful Massachusetts Bay Transportation Authority (MBTA) Employer Pass Program, which began in October 1974. Figures 4-4 and 4-5 show the face and back of a similar brochure/ application form developed for the JaxPASS demonstration. Each employer that agreed to participate in the program was furnished with a quantity of brochures equal to the number of employees in the organization. Employers were asked to distribute a brochure to each employee (e.g., at the time pay checks are distributed).

4.2.2 Solicitation Phase

The solicitation phase of the demonstration involved the selection and solicitation of establishments for participation in the pass program and the implementation of formal administrative procedures for coordinating demonstration activities with employers. Also, an initial presale or "before" self-completion survey of employees of all participating firms and establishments was administered.

To inform both the general public and potential participating employers (that were soon to be solicited) about the JaxPASS program, an article describing the major facets of the demonstration appeared in the local newspaper (see Figure 4-6). Throughout the first phase of the demonstration, however, there was no additional newspaper coverage concerning the JaxPASS program because, once the original 30 firms were selected, no other firms were allowed to join. Because of this closed-end feature, any additional news coverage would have only tended to frustrate other firms wanting to enroll in the program. As a consequence, the very low level of areawide publicity may be considered to be unique to this demonstration with the result that greater emphasis was inherently placed on the use of employer-based promotional material to reach the potential market of pass purchasers. It could be argued that it would be appropriate to emphasize employer-based promotions under most sets of circumstances. However, what may be lost are the reinforcing, and possibly synergistic, effects of a more diverse promotional campaign that uses

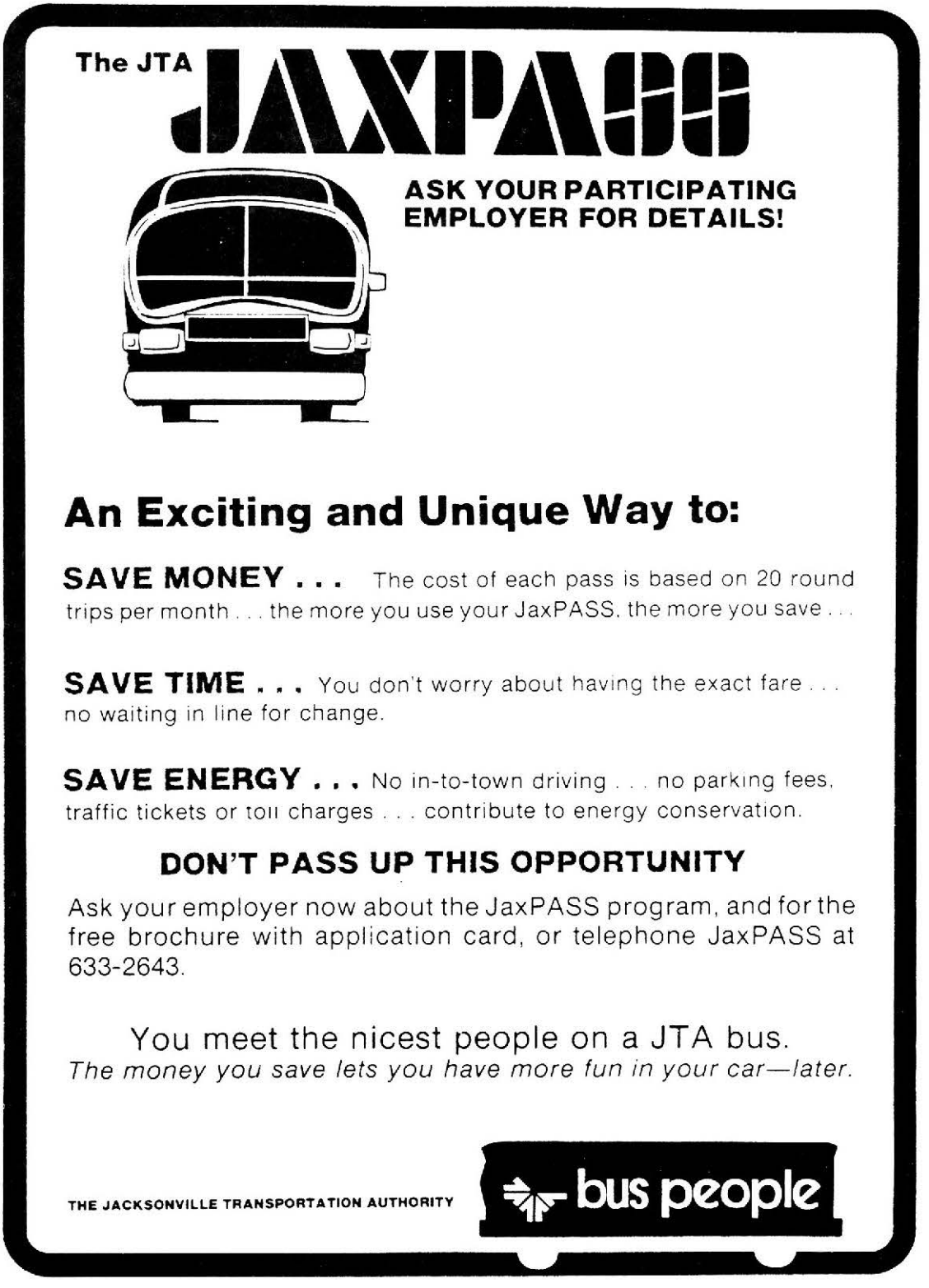


Figure 4–3. PROMOTIONAL MATERIAL: JAXPASS POSTER

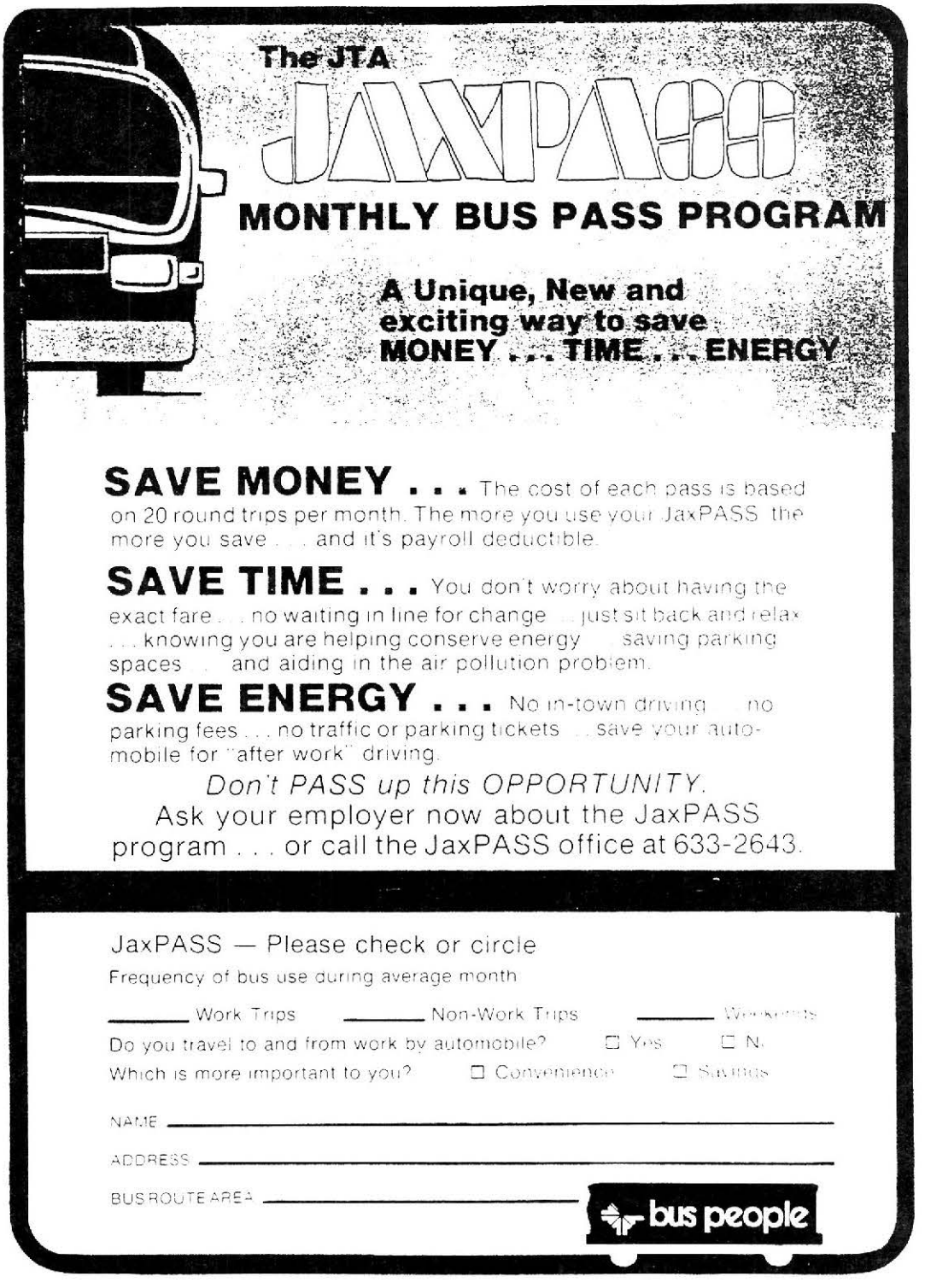


Figure 4–4. JAXPASS APPLICATION FORM: FRONT SIDE

Figure 4–5. JAXPASS APPLICATION FORM: BACK SIDE

JTA Offering New Bus Pass Benefit Plan To Businesses

By JANE ALBERTSON
Governmental Affairs Staff

The Jacksonville Transportation Authority is going to talk to more than 150 downtown firms and try to find 30 of them who will offer bus rides as a fringe benefit.

Starting tomorrow, the downtown businesses can expect a visit from the JTA, extending invitations to participate in its new JaxPass Program aimed at daily commuters.

Those holding the monthly pass are entitled to unlimited use of the JTA buses, except for certain limitations during peak hours. The authority is suggesting companies help subsidize the $14 monthly rate, offering the pass to workers as an employee benefit. It will not be mandatory for the firm to subsidize the cost in order for it to be selected.

The passes will be sold and operational for employees in 30 selected downtown companies starting March 1, said project director Don Pell. The employee'scost for the pass would be deducted automatically from the employee's paycheck.

"We are going to start selling this on Friday — we are going to start with the businesses we feel will participate," Pell said.

JaxPass is an experimental 20-month program funded by a $185,000 grant from the Urban Mass Transit Administration (UMTA). The program is being piloted in two cities, Jacksonville and Sacramento, Calif.

The federal funds pay the salaries of Pell and a secretary for 20 months, supplies, equipment, and for the hiring of subcontractor Paragon Productions, which will be responsible for both public relations and advertising, and data collection and rider survey work, said JTA marketing director Ruth Sargent.

In order to comply with grant requirements, 10 of the selected companies must have 50 to 99 employees, 10 must employ 100 to 199 persons, and 10 of the participating companies must employ over 200, Pell said.

Under the JaxPass plan, commuting employees of the selected companies will be able to purchase monthly prepaid bus passes for $14 through their companies. The price of the pass is based on two rides per day, five days per week, and four weeks per month. The pass is good for unlimited rides on JTA buses during the month specified, with the exception of certain limitations during

(Continued On Page 5)

(Continued From Page 1)

commuter rush hours, Mrs. Sargent said.

Under the rules of the program, the $14-a-month pass is valid in lieu of the 35-cent bus fare. Additional exact change is required beyond a 35-cent zone and Express Flyers cost a pass plus 15 cents.

The pass is valid for unlimited use of the Downtown Shuttle, and for all off-peak bus service in lieu of the 35-cent fare. During morning peak hours, 6 a.m. through 9 a.m., the pass is good only for inbound buses heading from the suburbs to the downtown area. During the afternoon peak hours, the pass will be valid only for outbound buses.

Mrs. Sargent said the limitations were imposed to prevent riders from crossing over from the $7 weekly pass allowing unlimited use of the JTA buses to the $14 monthly pass.

"We did much study over pricing the monthly pass because we couldn't lose revenues," Mrs. Sargent said. "We feel the crossover will be minimal because of the peak-hour limitations."

Mrs. Sargent said the goal of the program is to increase ridership by making prepaid passes conveniently available to commuters.

The JTA aso hopes to make the program attractive to the businesses.

"Part of UMTA's rationale was that it is cheaper for a company to subsidize its employees riding buses rather than subsidizing employee parking," Mrs. Sargent said.

The manuel printed for companies reads, "As an employer, you have the opportunity to offer these monthly passes to your employee as a service of your personnel department. Passes may be offered at full price, or subsidized by your firm and offered to your employee as a fringe benefit of working for your company...a benefit that becomes more valuable for both of you as it becomes more frequently used."

SOURCE: *Jacksonville Journal*, December 14, 1978. Reprinted by Permission.

Figure 4—6. NEWSPAPER ARTICLE DESCRIBING DEMONSTRATION ACTIVITIES

newspaper advertisements or features in combination with on-board bus ads and posters. (Sacramento RTD was resigned to using the latter approaches, not to encourage employees to sign up directly, but rather to encourage workers to contact their employer with the suggestion that the employer should sell transit passes, at which time the employee would be able to purchase a pass. This strategy was used because of a high refusal rate from employers who were solicited directly by the transit authority to begin a transit pass sale program.)

The first task undertaken in the solicitation phase of this demonstration was to select a sample of 30 establishments in the Jacksonville central business area, to contact them using a particular solicitation approach, and to obtain the necessary commitments for their participation in the program.

In order to evaluate different solicitation approaches, it would have been highly desirable from an experimental design point of view to select, on a purely random basis, the sample of employers to be contacted with a particular solicitation technique. In this way, as different solicitation strategies are tried on different sets of employers, it could be expected that the characteristics of one group of employers would not be significantly different from those of any other group. Thus, the results would not be biased as they would be, for example, if one particular solicitation approach was tried initially on a "favored" list of companies.

It was the perception of JTA, however, that the preferred solicitation approach was to schedule a personal interview with the most senior decision maker available at each firm. Because a decision to participate in the JaxPASS program would typically be made at a high level in the organization anyway, the most efficient strategy would be to involve top management directly and as soon as possible. This particular approach proved to be extremely successful; it was necessary to contact only 34 establishments to enroll the panel of 30 firms that would participate (at that point in time) in the year-long sale and distribution of transit passes. (The reasons given by employers both for and against participation in the program are discussed in Section 5.)

A pilot test of the solicitation approach and the promotional material developed in the prior phase was made to the president of one firm in December 1978. At the close of the meeting, a tentative decision was made by the officer of the firm to participate in the program. Based on the success of this presentation, 29 other firms in the Jacksonville CBD area were contacted during the month of January 1979. Of these, 22 establishments made a positive commitment to join the program, 4 decided against joining, and 3 companies tentatively expressed an interest to join and in fact did formally agree to participate in the following month. Four additional firms were contacted in February and all agreed to participate. Thus the desired total of 30 firms was achieved.

The experience of the individuals engaged in this solicitation effort was that an average of two personal calls to each firm were necessary in order to obtain a definite commitment to participate in the program. The president or other senior official initially contacted usually would designate another individual in the firm as the JaxPASS administrator who from that point on would be responsible for the day-to-day operation of the program. To acquaint the JaxPASS administrator with the details of the program, at least one additional call to each firm was required.

The JaxPASS administrator was also furnished with a copy of the JaxPASS Procedural Guide and informed of the relevant administrative details such as submittal of JaxPASS orders, returning unsold JaxPASSes and receipts for sold JaxPASSes, and the handling of miscellaneous events such as lost passes, distribution of bus maps and schedules and related employee inquiries. The administrator was also given promotional material discussed above which consisted of wall posters, a sample PR announcement expounding on the benefits of purchasing a JaxPASS (that could either be retyped on company logo paper and sent through the interoffice mail or included in a company newsletter), and a sufficient quantity of the combination brochure/application forms that were to be distributed to all employees.

4.2.3 Distribution Phase

The distribution phase of the demonstration marked the beginning of the sale and distribution of the monthly JaxPASS through the panel of employers that were enrolled in the previous phase. As of February 15, 1979, the date that orders for March passes had to be received by JTA, 24 of the 30 firms had completed all the required paper work (i.e., to set up the administrative mechanics and being ready to accept pass orders from employees). (The six remaining firms formally began accepting JaxPASS orders the following month.) During this first month, 4 of the 24 firms received no employee requests to purchase a JaxPASS, and employees at these firms exhibited little interest to participate in the future. Consequently, these four firms decided to discontinue their involvement in the program. One firm, however, stated its intention to keep intact the administration machinery in the event that interest in the program would develop at a later date. (About 1 year later, this firm decided to begin subsidizing the price of the pass by $4, an it now regularly sells over 100 passes per month.) Six other companies also sold no passes during the first month but decided to stay in the program. However, after the second month of pass sales two of the these firms dropped out of the program because of the lack of pass sales.

JaxPASS sales declined during both the third and fourth months of the program, indicating that a plateau in sales had been quickly reached. In order to stimulate sales, it was decided to make use of the demonstration grant funds that had been budgeted originally for a 1- or 2-month long, 50 percent, deep-discount pass price experiment. However, as this concept was already in the process of being implemented and evaluated in Austin and

Phoenix (pass discounts of 20 and 40 percent in both cities) as well as in Sacramento (25 percent pass discount lasting 3 months), it was decided instead to institute a more modest $2.00 discount (14 percent) that would last over a much longer time period. The basic premise was that this reduction, which translated into a lower breakeven trip rate level (34.3 vs. 40), would tend to compensate for the time and directional restrictions on JaxPASS, thereby yielding results that are more comparable to other cities. In addition, many firms in Jacksonville apparently have a fringe benefit policy whereby employees with 4 weeks of good attendance (i.e., no sick leave) are compensated with one extra day of leave (or vacation). To the extent that this (vacation) day is taken on a monthly basis rather than left to accumulate reduces further the attractiveness of a pass priced at 20 round trips per month since an employee commutes one less day per month.

New JaxPASS promotional material was developed, such as shown in Figure 4-7, announcing the $2.00 reduction in price beginning with passes valid for the month of July 1979 and continuing through the end of the demonstration. Additional information on this phase of the demonstration including the impact on JaxPASS sales is presented in Section 6.2 of this report.

During the first year of pass sales (i.e., March 1979 through February 1980), it was envisioned that passes would only be sold through a fixed panel of 30 firms. In this way, sufficient information would be generated to address the issues and objectives of the demonstration while limiting administrative costs and, importantly, monies budgeted for discounting the price of the pass that were to occur later on in the demonstration. Beginning in March 1980, 1 year after the program started, frims that had been selling less than 2 or 3 passes per month were dropped from the program and new companies were allowed to join. To separate the effects of these two distinct periods of the demonstration, the first 12-month sale period is referred to as Phase I of the distribution period, while Phase II represents all time elapsed since the end of Phase I.

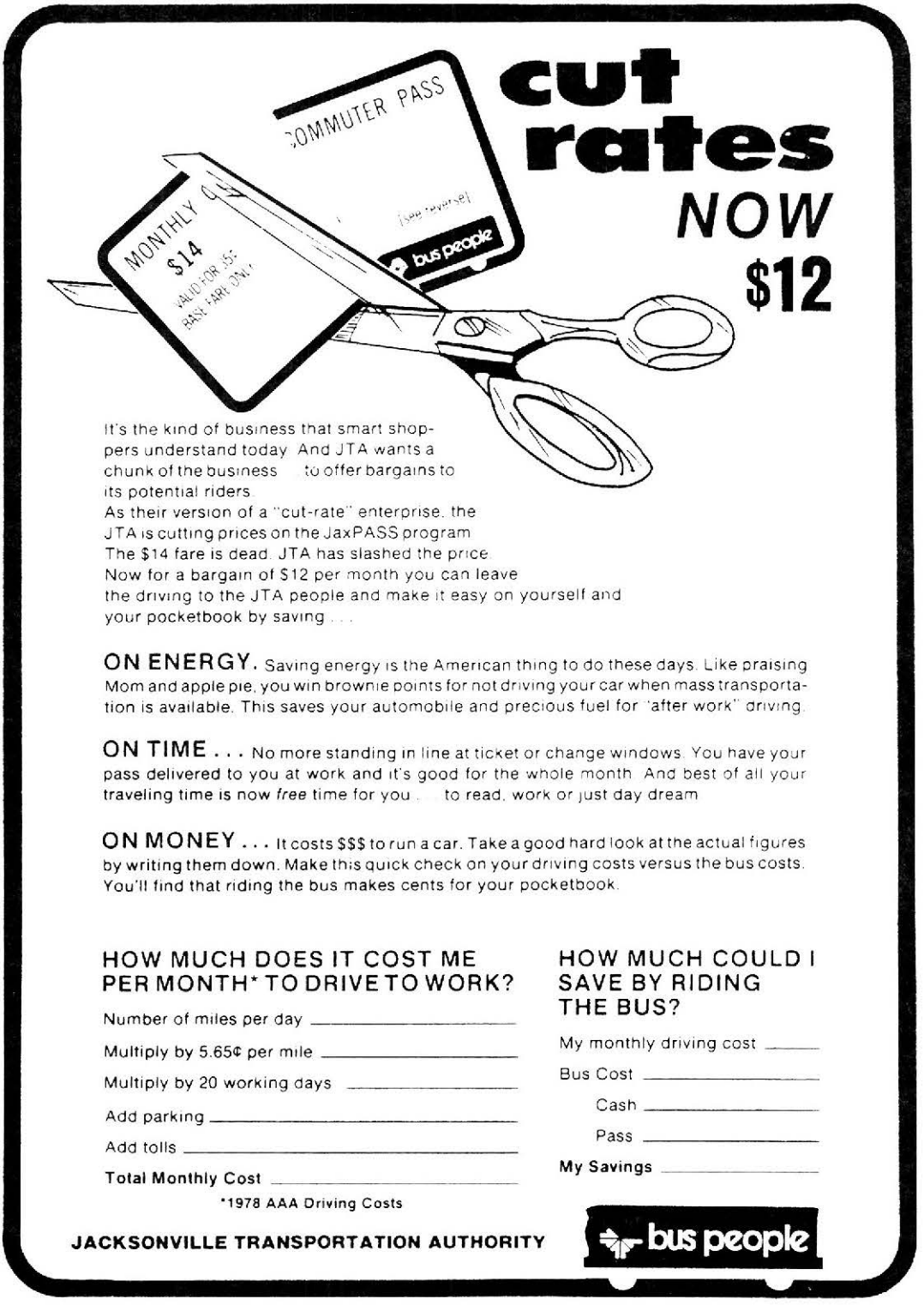


Figure 4–7. PROMOTIONAL MATERIAL FOR JAXPASS PRICE REDUCTION

5. EMPLOYER-RELATED RESULTS

This section of the report presents the actions and responses of employers to the JTA monthly transit pass demonstration. Generally, the employers who were contacted were found to be very receptive to participating in a program aimed at providing a benefit to their employees. After a slow beginning, nearly one-third of the employers enrolled in the program were selling passes to their employees at discount by the eighteenth month of the program. The cost to employers of administering the sale and distribution of passes was found to be small. During the course of the demonstration, no employer discontinued selling passes because of the administrative costs.

The following sections describe in more detail various employer-related issues that were examined as part of this evaluation.

5.1 EMPLOYER PARTICIPATION

5.1.1 Response to Solicitation

The enrollment of an initial panel of 30 employers to participate in the sale and distribution of monthly transit passes was accomplished very successfully; in fact, it was necessary to contact only 34 establishments. This high acceptance rate can be attributed to a few key factors. First, a personal visit was scheduled with each potential firm. Second, the person contacted at each firm was a high official (usually the chief executive officer), who typically had the authority to make a direct decision to either participate or not participate in the program. Third, the representatives of JTA involved in signing up employers were very familiar with corporate concerns in general and with the Jacksonville business community in particular, even to the point of being personally acquainted with some of the individual employers being contacted. Although a large percentage of employers may still have participated if other procedures were followed, these factors, either alone or in combination, certainly aided in the success and timely completion of this phase of the project.

It should be noted that during the period when firms were being solicited to participate, no mention was made to employers that if they enrolled in the program their employees would become eligible to buy a JaxPASS at a $2 discount 4 months later, since this aspect of the program was not formulated until a couple of months after all 30 firms were signed up. Of course, companies joining in Phase II of the distribution period knew that the $2 discount was in existence.

Three of the four companies that declined to participate in the JaxPASS program cited as a reason the "burdensome" administrative cost that would be incurred with distributing and collecting money for the passes. The fourth

firm, which consisted of many white collar employees, believed that few of its employees rode the bus or could be persuaded to ride the bus once the pass became available.

Although this is an extremely small sample there appear to be no other generic characteristics that set these firms apart from the companies that did join. By number of employees they ranged from small (less than 100 employees) to large (over 2,000 employees), while by industry type they consisted of a hospital, a real estate development agency, and a shipbuilder. (It is interesting to note that 18 months after declining to enroll in the JaxPASS program, one of these firms began selling passes to its employees.)

A diverse number of factors influenced an employer's decision to participate in the program. Initially, one principal hypothesis was that business establishments with employee parking demands that exceed available parking spaces (or resources) would be prime candidates to join the program. By doing so, employers might discover that some of their existing parking spaces could be freed for use by other employees. While it appears from the information collected that this hypothesis is basically true, only a minority of the firms were at the point where they felt they had a parking problem -- at least one that could be improved by selling a monthly transit pass.

One medium-sized insurance company (about 350 employees) that did have a parking capacity problem was the only firm out of 30 to subsidize the price of a JaxPASS from the beginning of the demonstration. Employees at this firm were eligible to buy the $14.00 pass for $10.00. When the price of the JaxPASS was reduced to $12.00 in July 1979, the company continued the $4.00 subsidy by selling the pass to their employees at $8.00. It was not until the program was in its tenth month that the second establishment (a banking company) also began subsidizing the pass price by $4.00. Unlike the first company, however, this firm had no parking capacity problem since it provided no parking spaces for its employees nor did it reimburse employees who parked in commercial parking facilities. The subsidy was provided simply as an employee benefit.

In February 1980, a survey was administered to the 20 employers who had a consistent record of JaxPASS sales. (A copy of the questionnaire is presented in Appendix D.) Of the 16 responses, only about one-third of the business establishments believed that "freeing-up parking spaces" was a benefit obtained by participating in the JaxPASS program.

5.1.2. Employer Turnover

Although 30 firms agreed at the outset to participate in the demonstration, only 24 of the firms were prepared to accept pass orders in February 1979 for passes valid for the month of March. The remaining 6 firms completed the administrative paper work and began accepting pass orders 1 month later. However, by that time, 5 of the initial 24 companies dropped out of the program (4 because of no pass sales and 1 because of a purported legal problem in collecting money from employees, and in effect, acting as an

"agent" for JTA). Therefore, 30 firms never sold passes in the same 1-month period. In addition, over the first year that passes were sold, some firms dropped out of the program either completely or in some instances temporarily as they later rejoined the program. Table 5-1 identifies 1) the number of firms subsidizing the cost of JaxPASS to their employees, 2) the number of firms that sold no passes in a given month, 3) the number of firms that sold passes at their normal price, and 4) the total number of firms enrolled in the program. The column on the far right identifies the employer turnover that occurred in any given month.

During Phase I of the demonstration, the number of firms enrolled in the program remained fairly constant, varying from a low of 22 to a high of 25. Similarly, the number of employees eligible to purchase a pass in any month varied from a low of 13,600 to a high of 15,660. Besides the initial shuffling of firms during the first 2 months of the program, the most significant change during Phase I occurred in December 1979, when 1 firm joined the program and 1 firm was reinstated to the program. Of particular importance, both firms belong to the same banking chain that included a third "sister" firm that had been selling passes from the start of the program, and all three divisions of this one banking chain began subsidizing JaxPASS by $4.00. Thus, the number of "firms" subsidizing the price of the pass jumped from 1 to 4.

At the end of Phase I, 4 firms that had no pass sales in February and 1 firm that had consistently been selling 1 pass per month were dropped from the program, in part, to reduce administrative expenses. (The very few pass purchasers at these firms were allowed to continue purchasing a JaxPASS from participating firms that were located nearby.) In addition, a low-level campaign was begun to enroll new firms and to encourage both new and existing firms to subsidize pass sales.

As shown in Table 5-1, the number of firms participating in the program during Phase II increased by almost 50 percent (from 19 to 28), while the number of firms subsidizing the pass more than doubled (from 4 to 9). The firms joining during Phase II, however, had the added incentive of knowing that the $2.00 discount was available immediately to their employees upon enrolling. The question, therefore, is how many of these new firms might have joined the pass program otherwise? The likely answer may rest with how many companies would continue with the program if the discount period were to expire. At a minimum, about one-third of the new firms that joined in Phase II also subsidize passes and thus would appear to have joined for reasons that extend beyond simply making available the reduced price transit pass to their employees.

Table 5-1. NUMBER OF ESTABLISHMENTS PARTICIPATING IN THE JAXPASS PROGRAM BY MONTH (March 1979-September 1980)

Month	Number Firms Subsidizing	Number Firms With No Pass Sales	All Other Firms Enrolled	Total Firms Enrolled	Employer Turnover
Phase I					
March 1979	1	10	13	24	
April	1	8	16	25	6 start; 5 drop out
May	1	5	17	23	2 drop out
June	1	6	16	23	
July	1	4	17	22	3 drop out; 2 reinstate
August	1	2	20	23	1 new firm
September	1	2	19	22	1 drop out
October	1	1	20	22	
November	1	1	20	22	
December	4	2	18	24	1 new; 1 reinstate
January 1980	4	2	18	24	
February	4	4	16	24	
Phase II					
March	4	0	15	19	5 drop out
April	6	0	14	20	1 new firm
May	8	0	15	23	3 new firms
June	8	0	15	23	
July	8	0	15	23	
August	9	0	19	28	5 new firms
September	9	0	19	28	

SOURCE: Jacksonville Transportation Authority, Project records.

5.2 PARTICIPATING EMPLOYER CHARACTERISTICS

5.2.1 Type of Company

Table 5-2 presents the distribution of industry types for the 30 firms that initially agreed to participate in the demonstration (i.e., in the February/March 1979 time period) and lists the total number of employees in the firms within each industry classification, and for the 23 firms that continued participation after the first 2 months. The column on the far right indicates the percentage of employees within each industry classification (for the entire Jacksonville area as given in Table A-2 for February 1979) that are employed by the 23 firms participating in the demonstration.

Although these percentages can be used to compare the types of employers participating in the demonstration with the population of all employers in the city of Jacksonville, the percentages are not a good representation of employees who work in the central business area, which is where all the 23 firms participating in the JaxPASS program are situated. This is because a disproportionately large, but unknown proportion of the banking and insurance industries are located in the central business area, and this is not likely to be true for other industry classifications.

Table 5-2 indicates that throughout the first year of the demonstration about 14,000 employees, representing 5 percent of the entire Jacksonville workforce, were eligible to buy a JaxPASS through their employer. An overwhelming majority of these employees were employed in a single industry classification -- Finance, Insurance, and Real Estate. (Within this group there were eight insurance companies, five banking firms, and two real estate developers.) Because firms were not randomly solicited to join the JaxPASS program it is not possible to conclude definitively on the types of employers most likely to enroll in an employer-based transit pass program. In general it was believed that firms in the construction industry tend to have many employees who move frequently between job sites, thus prohibiting them from using transit. On the other hand, it was believed that insurance and banking firms tend to take a strong interest in community affairs and therefore are much more likely to participate in a program of this nature. Thus, these firms were placed high on the list of potential companies to contact, and as the numbers in Table 5-2 clearly indicate these suppositions tend to be supported.

5.2.2 Company Size

Table 5-3 classifies the 23 participating employers into various size categories for each industry group. The table also presents the percentage of employers in the city of Jacksonville that are represented in the panel of 23 participating employers. The 21 nongovernment employers represent 3.3 percent of Jacksonville's 641 nongovernment firms that employ 50 or more employees (using Table A-3 as a base).

Table 5-2. TYPE OF EMPLOYERS ENROLLED IN THE DEMONSTRATION

Industry Classification	# Firms Enrolled as of Feb./March 1979	# Firms Enrolled as of April/June 1979	# Employees as of Feb./March	# Employees as of April/June	% of all Jacksonville Workers, April 1979
Contract Construction	0	0	0	0	0
Manufacturing	2	1	1,050	500	1.6
Transportation, Utilities	3	1	3,440	400	1.8
Wholesale Trade	1	1	115	115	0.2
Retail Trade	1	0	450	0	
Finance, Insurance, Real Estate	17	15	10,835	10,035	35.7
Services, Mining	3	3	2,085	2,085	3.8
Government	3	2	1,375	975	1.8
Total	30	23	19,350	14,110	5.0

SOURCE: Employer Surveys, 1980.

Table 5-3. SIZE DISTRIBUTION OF EMPLOYERS ENROLLED IN THE DEMONSTRATION

Industry Classification	50-99	100-249	250-499	500+	Subtotal
Contract Construction	0	0	0	0	0
Manufacturing	0	0	0	1	1
Transportation, Utilities	0	0	1	0	1
Wholesale Trade	0	1	0	0	1
Retail Trade	0	0	0	0	0
Finance, Insurance, Real Estate	2	4	4	5	15
Services, Mining	1	0	1	1	3
Government	0	1	0	1	2
Total	3	6	6	8	23
% of Jacksonville Employers (exc. Government)	0.8%	2.9%	12.0%	24.1%	3.3%

SOURCE: Employer Surveys, 1979-1980.

Since these firms employ about 5 percent of the entire Jacksonville workforce (including firms with fewer than 50 employees), there is an over-representation of large employers in the sample. In particular, of the 29 employers in Jacksonville (as of 1976) with 500 or more employees, 8 employers or 24 percent are included in the JaxPASS program. Conversely, less than 1 percent of the firms in Jacksonville that employ 50 to 99 people are enrolled in the program.

The small cell sizes prohibit a more disaggregate investigation of firm size by industry type, except for the Finance, Insurance, and Real Estate category. As Table 5-3 reveals, this category is heavily weighted with large firms of 500 or more employees. Of the 7 firms in the city of Jacksonville that were in this category as of 1976, 5 firms or 71 percent of the total number are included in the sample of 23 businesses participating in the demonstration.

Using logic similar to that used for industry types (see above), there was an a priori belief that by enrolling large firms in the program, there would be a greater opportunity to sell sufficient quantities of passes each month such that firms would continue their involvement in the JaxPASS program over the course of the 1-year demonstration.

It is not readily apparent, however, that such a hypothesis is always true. Of the 7 companies that dropped out of the program during the first 2 months of pass sales, 5 were in the 500 or more employee group. This represents an attrition rate of about 40 percent from the original number of 13 firms included in that category. Of the two remaining firms that dropped out, one was in the 50-99 employee size category, while the second was in the 250-499 category.

5.2.3 Employer Location

Initially, it was hypothesized that a firm's location with respect to its accessibility to JTA bus routes (in particular, the downtown shuttle bus service) would have an influence on the participation rates of both employers and employees. As it developed, however, all 30 of the original employers were located within a 1 to 2 block distance of 1 or more of JTA's 3 shuttle bus routes. Thus, the relationship between a firm's accessibility to transit and pass sales could not be evaluated with the Jacksonville data. In addition to being near the shuttle routes, a firm could be considered by its employees to have better (or worse) accessibility characteristics with respect to certain of the regular and express flyer bus routes, especially if those routes matched the travel desire lines of many employees. Only a detailed analysis of employee perceptions would reveal the extent to which this is true.

Referring to Figure 3-3, 16 of the original 30 firms were located north of the St. Johns River in the downtown central business district; 7 firms were

located south of the river in Southside; and 7 firms were located on the west bank of the river in Westside. Of the 7 firms that dropped out of the program, 6 were located in the central business area and 1 in Westside. All four of the firms that declined to participate in the demonstration have offices in the central business area. Three of the firms were located within 1 to 2 blocks of a shuttle bus route, while 1 firm was located more than 2 blocks away from a shuttle route.

5.2.4 Employer-Provided Parking

Each employer was asked whether they provide parking spaces for their employees and if so, the price that is charged. This type of information is used in Section 6.3.2 to evaluate whether parking availability and/or price have an effect on the number of passes purchased by employees.

Parking-related data were obtained for all 23 firms that were active in the demonstration over the first year that passes were sold. As shown in Table 5-4, almost three-quarters of the firms provide company-owned parking spaces to all of their employees. Two of the 22 firms have enough spaces for about 20 percent of their employees. (One of these firms subsidizes the price of JaxPASS by $4.00 and allocates parking spaces on a first-come, first-serve basis. The other company allocates parking spaces on the basis of rank in the organization.) Lastly, 4 companies provide no parking spaces to their employees. None of the 23 firms reimburse employees who park in commercial parking facilities.

Ten of the 19 firms that have their own parking facilities do not charge employees for parking. For companies that do charge for parking, the monthly fees range from $5.00 to $50.00. The company that began subsidizing the pass (by $4.00) from the start of the program has the highest parking fees ranging from $18.00 to $50.00 per month.

5.3 EMPLOYER SUBSIDIZATION OF JAXPASS

5.3.1 Distribution Phase I

From the start of pass sales in March 1979 and for a period of 9 months only 1 firm subsidized the price of JaxPASS by $4.00 per month. However, in December 1979, three divisions of one large banking firm also began subsidizing the pass by $4.00. Of these three divisions, one had been with the program from the beginning and had a consistent record of pass sales, the second was initially enrolled in the program but had dropped out because no passes were being sold, and the third division was completely new to the program. Because of these dissimilarities, these firms are counted separately.

Table 5-4. EMPLOYER-PROVIDED PARKING AND AMOUNT CHARGED

Employee Parking Provided	Monthly Parking Charge to Employees (Dollars) Free	$ 1-10	$ 11-20	$ 21-50	N/A	Total (%)
No Parking Provided	---	---	---	---	4*	4 (17.4%)
20% of Workforce	1	0	0	1*	---	2 (8.7%)
100% of Workforce	9	3	4	1	---	17 (73.9%)
Total	10	3	4	2	4	23 (100.0%)
Percent	43.5%	13.0%	17.4%	8.7%	17.4%	100.0%

*Location of the two firms subsidizing JaxPASS by $4.00 per month.

SOURCE: Employer Surveys, 1979-1980.

The firm that started subsidizing the price of JaxPASS during the first month of the program did so because of a severe parking capacity problem; over 100 of their employees were on a waiting list to obtain a parking space. Officials in this firm also reported that subsidizing the use of transit represented a desirable employee benefit that was of particular interest to the company.

The second "group" of firms began providing the subsidy in December 1979, some 10 months after the program began. As these firms do not provide parking spaces to their employees, the reasons given for subsidizing JaxPASS were not related to the limited parking issue, but rather to the simple or altruistic objective of encouraging employees to buy the pass and thus use transit. (As discussed in Section 6, instituting this subsidy dramatically increased JaxPASS sales.)

Table 5-5 classifies the reasons given by 14 firms that opted not to subsidize the price of JaxPASS to their employees (at least during the first year). (Most of the firms that did not respond to the questionnaire sold only 1 or 2 passes per month.)

As is very evident from the table, no single answer dominated the responses. Rather the reasons were fairly evenly split. One public utility and both of the governmental agencies that were participating responded that the politics associated with providing a new fringe benefit to public employees would prohibit the subsidization of passes. The public utility added that they were already under fire because of their perceived high rate structure and, thus, would find it difficult to justify an increase in employee benefits. Two firms indicated that the subject was never discussed by management, while one firm reported that the matter was voted down by their board of directors, without publicly stating why.

Ironically, some firms believed that because they provide free parking to their employees, they did not feel compelled to encourage the purchase of a transit pass by providing a subsidy. In other words, little consideration was given to implementing a balanced subsidy between commuters who use the company-provided parking spaces and commuters who use transit.

5.3.2 Distribution Phase II

From March 1980, when new companies were allowed to join the JaxPASS program, through September 1980, five additional companies began discounting the price of JaxPASS to their employees. Two of these companies had been with the program since the beginning and instituted the by-now-popular $4.00 subsidy. The four other companies were new to the program and began subsidizing the pass at the time they started JaxPASS sales. Three of these four firms provided a $4.00 subsidy while one small (12-employee) firm offered their employees a free JaxPASS (i.e., a full $12.00 subsidy) as an alternative to a company-provided parking space that was at that time being subsidized by

Table 5-5. REASONS GIVEN FOR NOT SUBSIDIZING PASSES
(14 Firms Responding)

Stated Reason	Number of Firms Citing
Too Few Employees Participating	3
Too Expensive	2
Parking Is Available	2
Unfair to Employees Who Cannot Use Bus	1
Governmental Agency Could Not Implement	3
No Stated Reason	3

SOURCE: Employer Survey, 1980.

$17.50 per month. Finally, the one firm that had been subsidizing the pass since the inception of the program increased its level of subsidy in August 1980 from $4.00 to $6.00, which at that time represented 50 percent of the JaxPASS cost. (Section 5.1.2 provides additional information on the growth that occurred during the demonstration in the number of firms that subsidize the cost of JaxPASS to their employees).

5.4 JAXPASS DISTRIBUTION AND PAYMENT PROCEDURES

According to the JaxPASS Procedural Guide, all employees participating in the program must transmit their order for a specific number of male and female JaxPASSes by the 15th of the month preceding the sale month. Ten days later, or by the 25th of the month, the schedule calls for JTA to hand deliver to each firm the passes that were ordered. Passes that are not sold by an employer can be returned for full credit if they are submitted to JTA by the first day of the sale month. Employers were requested to return unsold passes by a messenger or by registered mail. Use of the regular mail was discouraged in order to eliminate the "lost-in-the-mail" problem.

At the majority of firms, employees were not required to sign up in advance to purchase a JaxPASS. Rather, extra passes were ordered each month over and above the quantity sold in the previous month. About one-quarter of the firms did ask employees to order their JaxPASS in advance. Even in these instances, some firms ordered additional passes in anticipation of last-minute sales. Generally, firms with advanced order requirements also used payroll deduction to collect the cost of the pass from each employee.

Once the transit passes were received by employers they were held responsible for distribution and employee payment. Exactly 75 percent of the firms reported using some form of "over-the-counter" distribution procedure by which employees report to a designated place to pick up their pass. One medical facility distributes and sells passes through its gift shop because of its convenience and cash handling capabilities. The remaining 25 percent of the firms hand deliver the passes to each employee. None of the firms reported distributing passes through their interdepartmental mail system, which is typically perceived to be a more theft-prone approach.

Almost all firms distributed and sold the passes during normal working hours on the last 5 days of the month. Only one firm out of 16 reported that they restricted JaxPASS sales to a single day. Although employers were not specifically asked how they notify employees that passes have arrived and are available for sale, one firm indicated that the 30 to 40 employees who purchase a pass each month are called individually on the phone.

Initially it was hoped that many firms would institute a payroll deduction plan in order to maximize the perceived convenience of acquiring the pass each month and possibly as a way of minimizing the perceived cost of the pass. However, for the 23 participating firms, only 4 firms (17 percent)

implemented payroll deductions as a means of collecting the pass price from their employees. Table 5-6 lists the reasons given by the small number of firms deciding to use payroll deduction, while Table 5-7 lists the reasons for those firms who decided against using payroll deduction. It is interesting to note that the main reasons of efficiency and convenience that were cited by firms implementing payroll deduction were also used by other firms to justify why payroll deduction was not implemented. It would appear that to some extent firms that could easily convert to payroll deduction did so, while those that found it administratively difficult did not. Although the small sample sizes prohibit a statistical analysis, there does not appear to exist a common set of characteristics to describe the firms that implemented payroll deduction. With respect to size, they range from 125 to 1,650 employees; no more than 2 were in the same industry classification; and they sold an average of only 4 more passes per month compared to the firms that did not use payroll deduction.

5.5 RESOURCES REQUIRED BY EMPLOYERS

Employers were asked to report the amount of labor (in person-hours) required to set up the JaxPASS program initially and to maintain the program during an average or typical month. Information from 13 firms indicates that an average of 4.2 person-hours were required to set up the program in the first month, with a range from 1 to 8 hours and a standard deviation of 1.8 hours. Data from 15 firms indicate that an average of 1.6 person-hours per month is expected to maintain the program. The range was from 0.5 to 4 hours with a standard deviation of 1.2 hours.

A simple linear regression model was estimated to determine the strength of the relationship between number of passes sold by each employer during an average month and the administration time required. Using data for 15 firms the estimated model is:

$$\text{Time in hours} = \underset{(0.303)}{0.348} + \underset{(0.012)}{0.059}\ (\#\ \text{of passes sold})$$

$$(R^2 = 0.66)$$

The resultant R^2 from the regression indicates that the linear model does a fair job in explaining the relationship in the underlying data, especially given the small sample size and the rounding off that occurred when employers reported labor hours (e.g., 5 firms that sell between 6 and 26 passes per month all reported expending one-half hour per month in labor). Also, the "# of passes sold" variable is statistically significant at the 99 percent confidence level (t=5.1). In terms of a general rule of thumb, one-half hour appears to be the minimum amount of time required by employers who sell five or fewer passes per month. Thereafter, each additional 10 passes sold increases the time spent administering the program by little over one-half hour per month.

Table 5-6. REASONS GIVEN FOR USING PAYROLL DEDUCTION
(Four Firms Responding)

Stated Reason	Number of Firms Citing
Efficient, No Handling of Cash	1
Easier, More Convenient	2
Eliminate Use of Personal Checks	1
Reduce Front-End Money	1

(Multiple Responses Permitted)

SOURCE: Employer Survey, 1980.

Table 5-7. REASONS GIVEN FOR NOT USING PAYROLL DEDUCTION
(Ten Firms Responding)

Stated Reason	Number of Firms Citing
Too Few Employees Participating	4
Too Complicated and Costly, Administratively	3
Requires Computer Programming Change	2
Employees Change Mind	2
Employees Don't Buy Every Month	1
Haven't Addressed Issue	1

(Multiple Responses Permitted)

SOURCE: Employer Survey, 1980.

Figure 5-1 presents a scattergram of the administrative time expended by employers during an average month versus the average number of passes sold for the December 1979 through February 1980 period. The solid line is a plot of the linear regression results presented above. The shaded curve is shown to illustrate that scale economies begin to appear when sales start to exceed 40 to 50 transit passes per month.

5.6 EMPLOYER MARKETING OF JAXPASS

Each employer was asked to report on the type of promotional activities undertaken to familiarize their employees with the JaxPASS program at the time the firm first began selling transit passes. The same information was also obtained for activities undertaken on an ongoing or periodic basis throughout the course of the demonstration. Table 5-8 tabulates the employer responses.

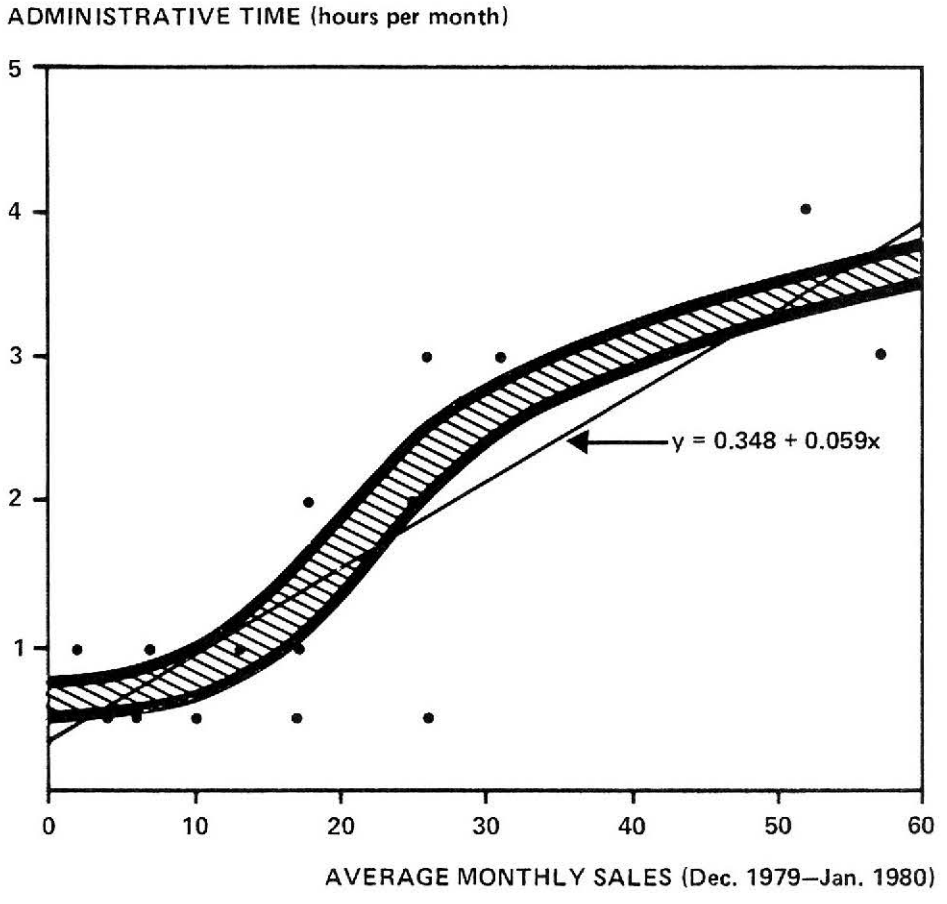
Employers had an open-ended opportunity to describe the type of pass promotion(s) undertaken. While this format does not constrain the responses that could be given, it is likely that the results underestimate all of the different approaches that were in fact used. Therefore, the information in Table 5-8 is, at best, indicative of the hierarchy and the range of techniques that were typically used.

Nearly every employer in the program stated that they displayed the JaxPASS poster (Figure 4-3) on company bulletin boards or other comparable locations. The next two most frequently-mentioned activities were distributing the JaxPASS brochures (Figure 4-4) to all employees and placing public relation (PR) announcements of the program in company newsletters. (Figure 5-2 is a reproduction of a JaxPASS announcement that one employer used at the start of the program in February 1979 and a second announcement that appeared in June 1979 describing the $2.00 discount program that began the next month.) Internal memoranda were the next most popular way of informing employees about the program and were likely used by firms that do not have a regularly published newsletter.

With respect to ongoing promotions, about the same mix of activities was reported. The one new method indicated was the use of the personnel department to inform new employees about the JaxPASS program. This method was apparently more widely used than Table 5-8 would indicate, as this source of JaxPASS information was checked by employees from different firms on the employee questionnaires.

5.7 EMPLOYERS' PERCEPTIONS OF BENEFITS

Each employer was asked to describe the benefits they obtained by participating in the JaxPASS program. The results can be used in other localities as testimonials when employers are being contacted to engage in a TFP program of this nature.



SOURCE: Charles River Associates Incorporated, November 1980.

Figure 5–1. SCATTERGRAM: EMPLOYER ADMINISTRATIVE TIME EXPENDED PER MONTH VS. AVERAGE MONTHLY JAXPASS SALES

Table 5-8. INITIAL AND ONGOING JAXPASS PROMOTIONAL ACTIVITIES UNDERTAKEN BY EMPLOYERS
(15 Firms Responding)

Type of Promotion	Number of Firms Citing	
	Initially	Ongoing
JaxPASS Poster	14	4
JaxPASS Brochure	7	2
Article in Company Newsletter	8	4
Internal Memorandum	4	2
Personnel Department	0	1
Word of Mouth	2	1
Employee Meetings	1	0
Public Address Announcements	1	1

(Multiple Responses Permitted)

SOURCE: Employer Survey, 1979.

CONSOLIDATORS

JaxPass Bus Fare Reduces In Price

JaxPass has lowered its price and has become an even better buy for regular riders of Jacksonville Transportation Authority buses.

The price of a monthly JaxPass has been cut from $14 to $12. Through JaxPass, you can ride a city bus to and from work, five days a week for four weeks a month at less than the standard 35 cent fare.

JaxPass may also be used on weekends and holidays.

"We felt people needed to be given a better incentive for purchasing a JaxPass each month," said Don Pill, JTA Project Manager. "That's why the Authority is offering the pass at a substantial savings."

JaxPass is valid for unlimited rides on JTA buses during the month but with certain limitations during rush hours. Peak hour usage from 6-9 a.m. weekdays is restricted to inbound (to town) buses. From 3-6 p.m. weekdays, the pass is good only for outbound bus trips.

Although the JaxPass replaces having to have the proper change each time you board a bus, additional exact change is required when riding beyond the standard fare zone. For instance, to ride to or from the Beaches you will pay an additional 50 cents with JaxPass.

Express Flyer fares will be an additional 15 cents with the pass.

Passes are good for one month, from the first day of the month. There is a different color pass for each month.

They go on sale the 25th day of each month at two convenient locations: Room 107 (Public Parking Office) at City Hall and in the JEA Business Office, at Duval and Julia Sts.

Thirty local employers, including the city government and its independent agencies, are participating in the JaxPass program, one of only two projects of its type in the nation.

It is designed to increase bus ridership in this time of gasoline shortages, and to decrease downtown congestion and save time, money and energy for daily commuters.

JaxPass Saves Time, Money, Energy

JaxPass is here!

The monthly bus pass program of the Jacksonville Transportation Authority has been embraced by the city government and employees will be able to participate through the purchase of a monthly bus pass.

The program is a unique demonstration project, one of only two in the nation. It is being described as a unique way to save money, time and energy as people are being urged to alter their style of transportation to and from work.

Through JaxPass, City employees will be able to ride city buses to work and for pleasure trips by purchasing a bus pass for $14 each month.

The JaxPass is valid for unlimited rides on JTA buses during the month but with certain limitations during rush hours.

The $14 pass is used in place of paying the standard 35 cent fare. Cost of the pass is based on two rides per day, five days a week for four weeks each month. However, the more you use your JaxPass the more money you save.

When using JaxPass to ride beyond the standard fare zone, however, additional exact change is required. For instance, to ride to and from the Beaches you will pay an additional 50 cents with JaxPass.

Express Flyer fare will be 15 cents with the pass.

Peak hour limitations are from 6-9 a.m. when the pass is good only on inbound (to town) buses and between 3-6 p.m. when the pass is good only for outbound rides.

There will be a different color pass for each month. Passes are good from the first day of the month. New passes will be ready for issue on the 25th of every month.

JaxPass is good for rides anywhere in the JTA system on off-peak hours, including weekends and holidays and is good for unlimited rides on the Downtown Shuttles.

More information on JaxPass is available at the Information Center, City Hall, or phone 2500.

SOURCE: *Consolidators,* **Vol. II, No. 6, June 1979.**

Figure 5—2. EMPLOYER PROMOTION OF JAXPASS: IN-HOUSE NEWSPAPER

Table 5-9 lists the employers' responses to this question. About one-third of the employers mentioned that (some) company-provided parking spaces became available as (some) employees opted to commute by bus rather than by car. While this particular benefit accrues principally to the employer, many of the other reasons that were cited pertain to employees directly and the employer indirectly. Included in this group were two very similar responses, "Good Employee Benefit" and "Service and Convenience to Employee." By corollary, employers must have believed that the value of these benefits to them outweighed the costs of participation. A small number of employers believed that the program had wider social benefits in the form of energy savings by encouraging transit use, while a similar number of firms thought the program provided little or no direct benefit.

5.8 EMPLOYERS' RECOMMENDATIONS AND PROGRAM ASSESSMENT

Employers had the opportunity to provide their "assessment" of the JaxPASS program as well as list any recommendations that they felt could improve the program. Based on the responses obtained from the firms returning the employer questionnaire, almost all of the firms stated that the JaxPASS program was worthwhile and should be continued. (Recall that the survey was administered at the time the $2.00 JaxPASS discount was in effect, and there was some uncertainty as to whether the program would continue and whether a $2.00 discount would continue.)

As Table 5-10 reveals, all the remaining responses are suggestions for recommended changes to the program. Because one main attraction of the pass was free, unlimited use of the shuttle buses, one recommendation was to start shuttle bus service before 7 a.m., so employees who must be at work at 7 a.m. could take advantage of this JaxPASS benefit. The only present alternative for these employees is to take a regular bus for this CBD circulatory trip, but, because this would be in a "reverse" commute direction, a $0.35 cash fare would be required. A related option would be either to eliminate entirely the time and directional restrictions on the pass or make the pass valid in both directions on regular $0.35 buses in the CBD district only (e.g., if the route parallels a shuttle bus route).

Occasionally misunderstandings developed over the policy on passes lost by employees. The JaxPASS rules as given in the Procedural Guide stated that lost passes would not be replaced. However, since this rule was not stated on the JaxPASS or contained in the promotional material, employees were probably not aware of it until after they attempted to obtain a replacement pass, at which point frustrations developed.

A fair number of firms believed that better promotion of the pass was possible and/or that communications with JTA could be improved. As stated earlier, one of the drawbacks associated with a fixed panel of employers was that many avenues of promotion could not be used (e.g., newspapers, on-board

Table 5-9. EMPLOYERS' PERCEPTION OF JAXPASS PROGRAM BENEFITS
(15 Firms Responding)

Stated Perception	Number of Firms Citing
Free Up Parking Spaces	5
Good Employee Benefit	6
Service and Convenience to Employee	5
Expands Labor Market	1
Social Benefit -- Energy Savings	2
Little or No Direct Benefit	2

(Multiple Responses Permitted)

SOURCE: Employer Survey, 1980.

Table 5-10. PROGRAM ASSESSMENT AND EMPLOYER RECOMMENDATIONS
(15 Firms Responding)

Stated Response	Number of Firms Citing
Worthwhile -- Should be Continued	13
Start Shuttle Service Before 7 a.m.	3
Remove Time/Directional Restrictions	2
Remove Male/Female Restriction	1
Lost Pass Problem	2
Improve Promotion, JTA Communications	5
Problem of Additional Fare (Institute Flyer Pass)	2
Return Passes Other Than by Registered Mail	1

(Multiple Responses Permitted)

SOURCE: Employer Survey, 1980.

signs or flyers, TV and radio, etc.). As of this writing, however, there are no restrictions on the number of firms that can join the program and thus on the types of marketing that can be performed. In addition, the program is now under the direction of JTA's Marketing and Service Development Manager who can better facilitate and coordinate all types of requests for transit-related information.

6. EMPLOYEE IMPACTS

6.1 BACKGROUND INFORMATION

In describing the results of this part of the demonstration it is important to recall three particular characteristics of the Jacksonville JaxPASS program. First, monthly transit passes were not being sold in Jacksonville prior to the start of the demonstration. Therefore, it may have taken longer to familiarize individuals with the pass than it would in cities already selling passes to the general public prior to their being sold through employers. Second, since the JaxPASS was only being sold through a fixed number of employers (during the first year of the program), the "convenience" of purchasing a pass through one's employer versus buying a pass through more traditional outlets such as stores and banks had to be assessed using attitudinal questions rather than revealed preferences. Thus, the purchase location decision was not a factor in the Jacksonville pass program as it might be elsewhere.

Lastly, a fixed number of employers were enrolled to sell monthly transit passes during the first year of the program. This placed a finite limit on the number of employees who were eligible to buy a pass and therefore tends to limit pass sale growth compared to a situation in which growth in pass sales can be largely attributed to additional firms selling the pass. As discussed in Section 5.1.2 the former situation was (basically) true in Jacksonville during the first year of pass sales, while subsequent to that time, additional firms were allowed to join the program.

6.2 MONTHLY JAXPASS SALES

In late February 1979 approximately 15,000 employees at 24 participating firms in Jacksonville became eligible for the first time to purchase a transit pass through their employer that would be valid on the JTA bus system, under certain conditions, during March 1979. During that first sale period, 89 passes were purchased -- consisting of 14 male and 75 female color-coded passes. One year later, in March 1980, pass sales had increased to 522, and in September 1980 pass sales exceeded 1000 for the first time. The events associated with this growth in JaxPASS sales are described below. The analysis begins at the aggregate level and later focuses at the disaggregate or employee level.

6.2.1 Time Line Analysis

After an inauspicious first-month sale of 89 passes in March 1979, sales rose by almost 50 percent during the second month to 131. However, this turned out to be a short-lived gain, and in fact represented a "peak," as pass sales declined in the following 2 months, first to 120 and then to 113.

Recognizing that sales were unlikely to grow at any appreciable rate in the near term, it was decided that the funds allocated in the demonstration grant for a 1- or 2-month, deep-discount subsidy experiment be used instead to reduce the pass price by $2.00.

Figure 6-1 depicts the monthly variation in total pass sales from the start of the program in March 1979 until September 1980. Also shown in the figure are monthly pass sales for firms subsidizing the price of the pass (which amounts to $4.00 per pass for nearly all firms that subsidize) and the number of firms subsidizing the pass in any given month.

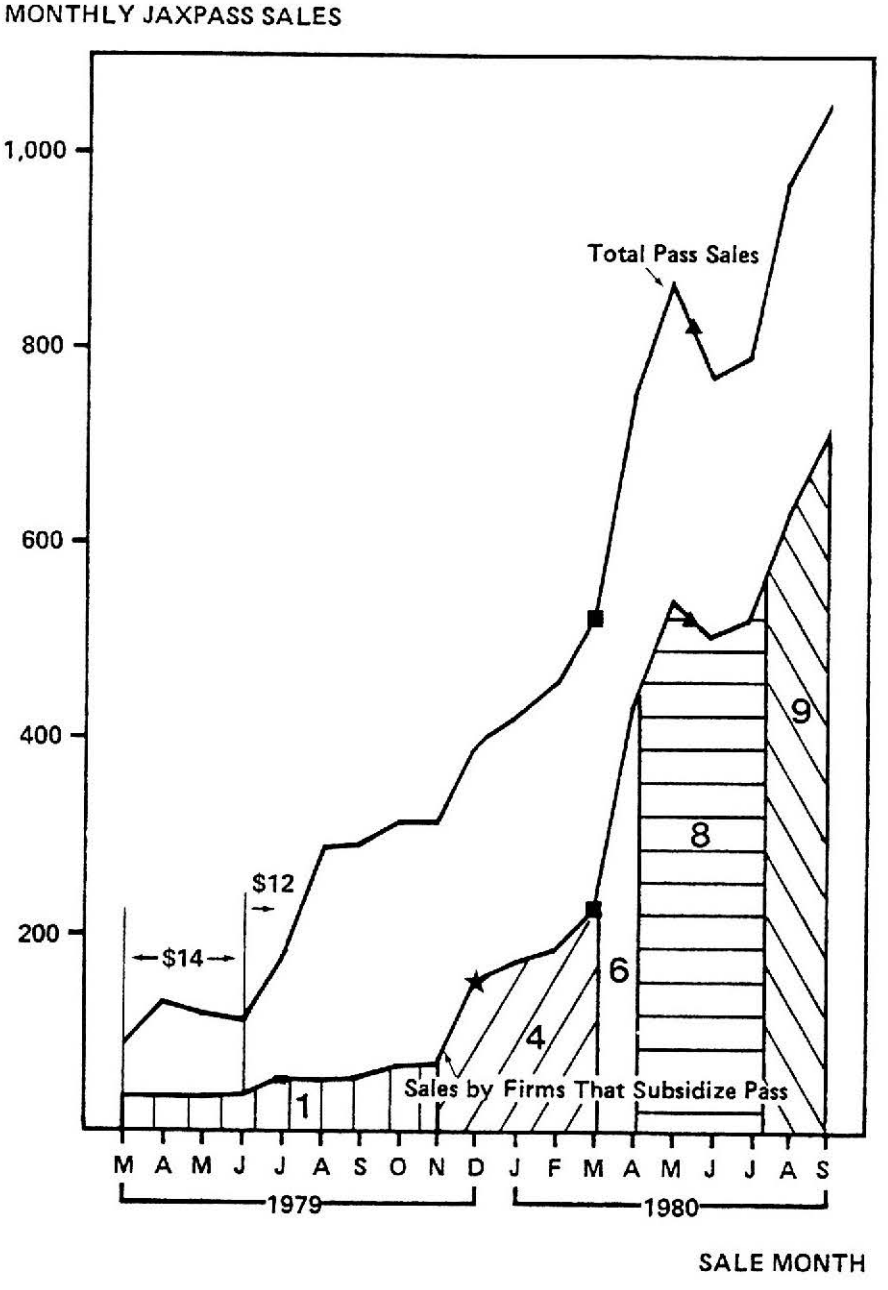
As Figure 6-1 illustrates, pass sales during the first 4 months of the program quickly reached a stagnant level of about 120. However, the institution of the $2.00 pass discount brought about a rapid rise in pass sales to a second, higher plateau of about 325 passes per month. Because only 1 firm was subsidizing the pass at that time and 21 firms were not, it appears from Figure 6-1 that most of the growth in pass sales after the introduction of the subsidy was concentrated in firms not subsidizing the pass.

Figure 6-2 normalizes monthly pass sales (and hence the change in pass sales) by taking into account the differing number of firms participating in any given month. A further and more exact normalization is possible by plotting the percentage of employees of participating firms who purchased a JaxPASS for both subsidizing and nonsubsidizing firms as has been done in Figure 6-3. This figure clearly shows the following:

1) Pass sales per employee are significantly higher for firms subsidizing the pass price compared to firms not subsidizing. In particular, over the first 12 months of the demonstration, JaxPASS penetration rates were 10 times higher for subsidizing firms than for nonsubsidizing firms.

2) Pass sales after the introduction of the general $2.00 discount increased relatively more for nonsubsidizing rather than subsidizing firms. For the firm already subsidizing the pass, average penetration rates (defined as percent of employees buying a pass) increased by 62 percent (from a 3-month average of 9.4 percent to 15.2 percent) after the introduction of the $2.00 discount. However, the increase in pass penetration rates for nonsubsidizing firms was about twice as large, or 122 percent (i.e., form 0.6 to 1.33 percent).

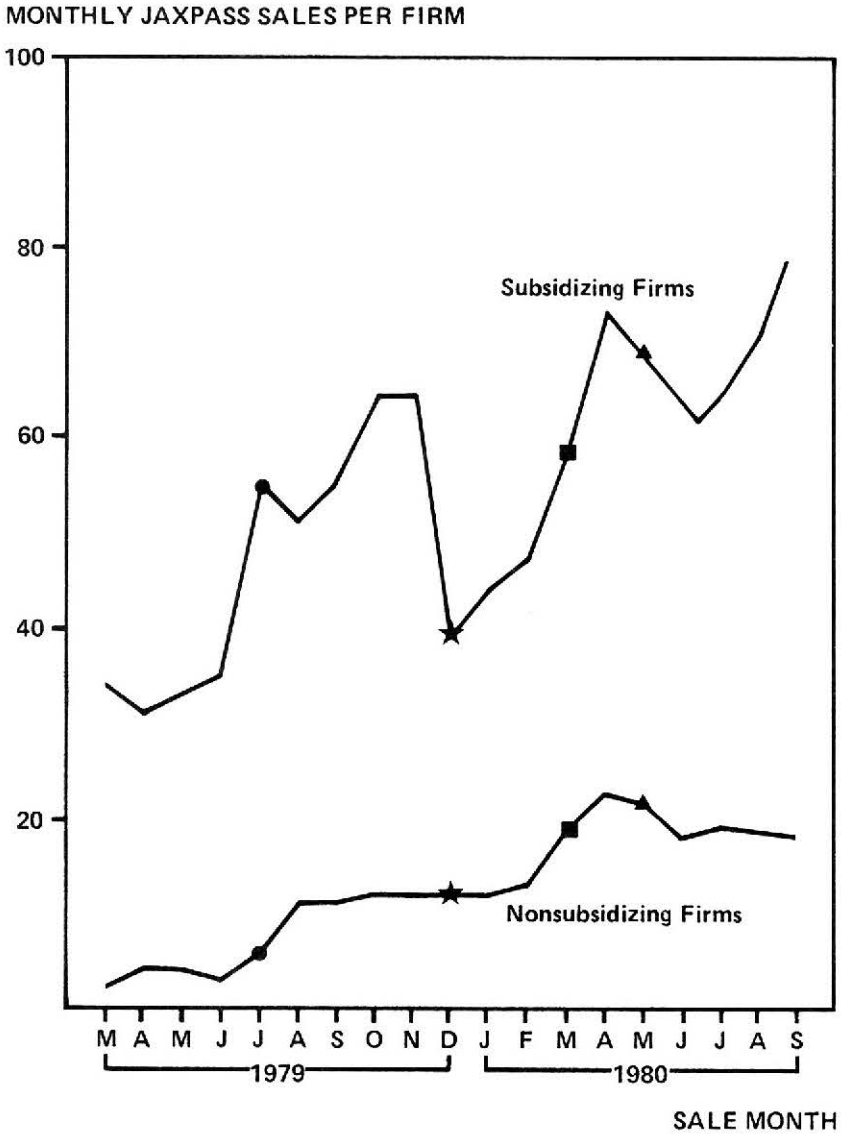
3) Little or no secular growth in pass sales occurred over time for either subsidizing or nonsubsidizing firms. Given no outside changes (such as the introduction of a subsidy), the number of passes sold by a firm quickly reached a level of stability. The inference is that within 1 or 2 months all employees who are likely to buy a pass will do so, all else equal.



O Number of companies subsidizing pass
★ 2 companies join, 3 start subsidizing
■ New companies allowed to join
▲ Bus strike

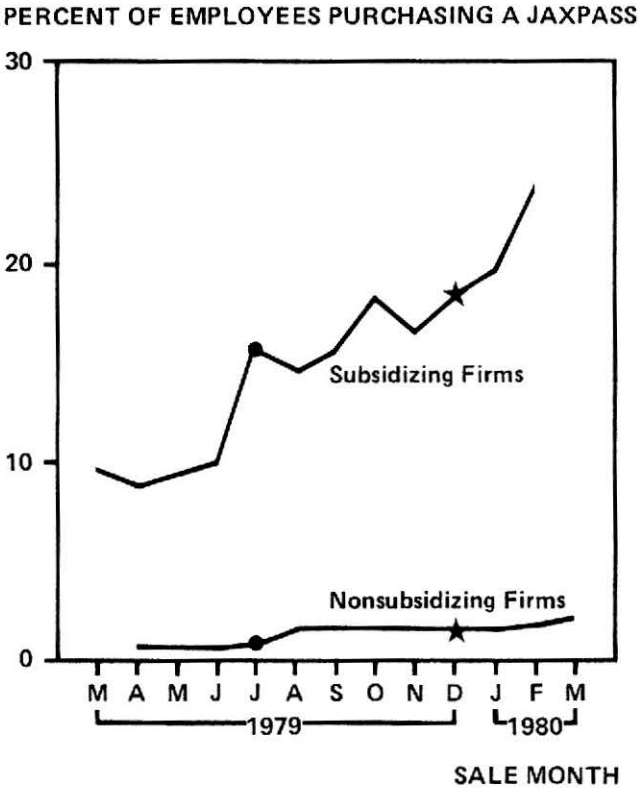
SOURCE: Charles River Associates Incorporated based on data obtained from Jacksonville Transportation Authority.

Figure 6–1. MONTHLY JAXPASS SALES, TOTAL AND BY SUBSIDIZING FIRMS (March 1979–September 1980)



SOURCE: Charles River Associates Incorporated based on data obtained from Jacksonville Transportation Authority.

Figure 6–2. MONTHLY JAXPASS SALES PER FIRM BY SUBSIDIZING AND NONSUBSIDIZING COMPANIES (March 1979–September 1980)



SOURCE: Charles River Associates Incorporated based on data obtained from Jacksonville Transportation Authority.

Figure 6–3. PERCENT OF ELIGIBLE EMPLOYEES PURCHASING A JAXPASS BY SUBSIDIZING AND NONSUBSIDIZING FIRMS (March 1979–March 1980)

6.2.2 Effect of Bus Strike

Bus service was suspended in Jacksonville when JTA employees went on strike on May 11, 1980. Anticipating that the strike would last more than a few days, JTA decided to make a 100 percent refund to individuals who purchased passes for the month of May 1980. This was done as a good will measure since purchasers had already used the pass for the first 10 days of the month, and, as an alternative, they could have been given a pro rata refund. The strike eventually lasted 2 weeks and service was resumed on May 24, 1980.

Because four firms joined the program around the time of the bus strike, Figures 6-1 and 6-2 cannot be used to assess the impact on pass sales for subsidizing and nonsubsidizing firms. However, by examining the change in pass sales for a fixed panel of employers that were participating both before and after the strike, the following observations are possible. JaxPASS sales declined by 6.2 percent in the month following the strike for firms subsidizing the pass, while the decline was slightly more than twice as large, or 13.6 percent for firms not subsidizing the pass.

Because of seasonal and other variations, less reliability can be placed in the magnitude of each change; however, the relative loss of twice as many individuals from nonsubsidized firms is likely to be a more robust result. In fact, 4 months after the strike, pass sales for the panel of subsidizing firms was 3.0 percent less than pre-strike levels, while the loss still remained at more than twice that level or 7.6 percent for firms not subsidizing pass sales.

6.3 EFFECTS OF EMPLOYER ACTIONS

Among the firms participating in the demonstration during the first 12 months of the program, there was a wide variation in both absolute pass sales (ranging from a low of 0 to a high of 60) and pass penetration rates (ranging from 0 to 20 percent). In an effort to understand this variability, one major evaluation issue (as illustrated by the cause-and-effect diagram of Figure 2-1) is the extent to which characteristics or actions taken by an employer affects sales of the monthly pass. From records maintained by JTA, information is available on the precise number of passes sold per month by each firm participating in the demonstration. These data can be used in conjunction with the results of a survey that was conducted during the month of February 1980 (see Appendix D for questionnaire) of employers who were actively participating in the program.

Because of the large variation in the size of firms enrolled in the program (as measured by number of employers) it is necessary to convert pass sales into penetration (or participation) rates. This is a more comparable unit across firms and is defined as the percent of employees at a firm buying a monthly pass. Data on the number of employees at each firm were obtained from the employer questionnaires. Pass sales at each firm were averaged for

a 3-month period (December 1979 through February 1980) to reduce month-to-month variation, and average penetration rates were calculated for each firm participating in the demonstration. How these JaxPASS penetration rates vary by employer characteristics and actions are analyzed in the following sections.

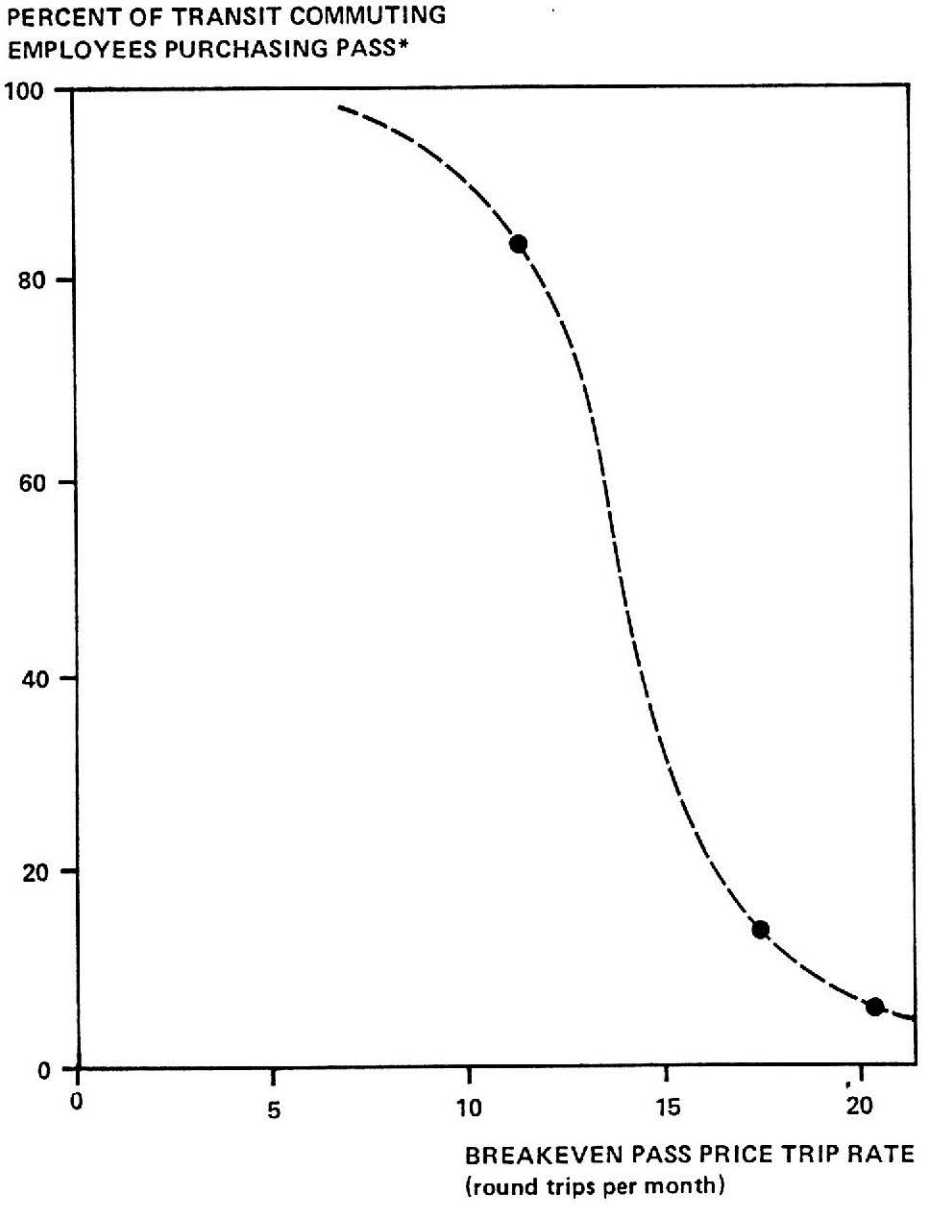
6.3.1 Employer Subsidy

As one would expect, firms that subsidize the price of the pass sell significantly more passes per month than firms that do not subsidize passes. For example, during Phase II, two companies that had been with the program from the beginning started subsidizing the pass by $4.00. The first firm had sold an average of 11 passes in each of the 3 months prior to beginning the subsidy but increased sales by a factor of 5 (to an average of 55 per month) in the 3-month period after the subsidy was introduced. A similar but slightly larger growth occurred for the second firm that began subsidizing; average pass sales increased from 20 to 138, representing a 7-fold increase for the 3-month period before and after the start of the subsidy.

These large changes suggest that pass sales are highly sensitive to relatively small changes in the inherent breakeven price of a pass. As an illustration of this point, Figure 6-4 depicts the percent of transit users who purchased a JaxPASS versus the breakeven transit trip rate. (For the first 4 months of the demonstration the pass was priced at 40 one-way trips. When the $2.00 discount was instituted, it dropped to 34.3 trips. For firms providing an additional $4.00 subsidy, the effective breakeven rate was 22.8 one-way transit trips.) The figure clearly shows that a relatively large change in pass penetration rates occurred when the breakeven level of the pass changed. Between 27 and 40 one-way transit trips per month, arc elasticities were computed and are fairly constant in the -5.0 to -6.0 range (i.e., a 1 percent decrease in the breakeven pass rate will result in a 5-6 percent relative increase in the percentage of transit users who purchase a pass.) In the 20-to-25 trip range, arc elasticities decrease to between -1.0 and -4.0, since at these lower breakeven rates most of the employees who could buy a pass would have already done so. Consequently, the percent change in penetration rates, and thus elasticities, becomes smaller.

In order to examine the significance of various employer actions and/or characteristics on employee pass sales a model of the following form was estimated:

$$\ln (P_e/1-P_e) = a + \sum_i b_i \text{ (employer characteristic, i)}$$



* Employees commuting by transit 3 or more days per week.

SOURCE: Charles River Associates Incorporated based on data obtained from Jacksonville Transportation Authority.

Figure 6–4. SENSITIVITY OF PASS PENETRATION RATE TO BREAKEVEN PASS LEVEL

where P_e = pass sale penetration rate for employer, e. Employer characteristics included in the model are employer subsidization of passes, monthly parking fees charged by employers, parking spaces provided by employers, use of payroll deduction as a method of pass payment and size of firm (represented by number of employees). A logistic functional form is used since penetration rates are limited to the range of 0 to 100 percent (or 0 to 1.0 as expressed in decimals). Because of heteroscedasticity, a weighting procedure is used to estimate the parameters rather than ordinary least squares.*

Table 6-1 presents the parameter estimates and associated asymptotic t-statistics for the equation given above. The positive sign and high t-statistic for the "pass subsidy" variable indicate that, all else equal, employer-provided subsidies have a statistically significant and positive impact on pass sales. In fact, for the range of observations included in the data, the model indicates that pass penetration rates would increase by about 7-fold if an employer began subsidizing the pass by $4.00. This result is quite consistent with the simple, "before and after" empirical findings presented above.

6.3.2 Parking Availability and Cost

Section 5.2.4 describes the parking characteristics and costs for the firms participating in the demonstration during Phase I. In brief, 16 of 23 firms provided parking spaces for all employees (with charges ranging from zero to $50.00 per month), while the remaining 6 firms provided few or no parking spaces to their employees.

From the multivariate regression results presented in Table 6-1 it is possible to conclude that those companies that provide parking spaces to their employees also had significantly higher pass penetration rates. This occurs because a few companies that do not provide parking have exceptionally low pass sales. Possibly, these companies are located where other parking is readily available while bus accessibility is relatively less convenient.

With regard to parking cost, the model results indicate that companies with higher parking fees have higher pass penetration rates. Again, it is likely that firms located in the heart of the CBD would have higher land rents (translated to higher parking fees) and greater accessibility to transit (and thus use of transit passes).

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*A discussion of this procedure is presented in Charles River Associates, A Disaggregated Behavioral Model of Urban Travel Demand, prepared for the Federal Highway Administration, (Cambridge, Mass.: March 1972), p. 5-40.

Table 6-1. WEIGHTED REGRESSION RESULTS FOR PASS PENETRATION MODEL

Variable	Parameter Estimate	t-statistic	Level of Significance
Constant	-4.71	-11.4	.01
Pass Subsidy	2.00	7.2	.01
Parking Cost	0.05	4.2	.01
Parking Provided	0.84	3.2	.01
Payroll Deduction	0.41	1.8	.09
Number of Employees	-0.43	-2.7	.02

Legend:

Dependent Variable = Log [Pass Penetration Rate ÷ (1 - Pass Penetration Rate)]
Pass Subsidy = 1 if employer subsidizes pass; 0 otherwise
Parking Cost = Monthly Parking Price (in dollars) charged by employers (if parking for employees is provided)
Parking Provided = 1 if parking is provided to all employees; 0 if parking is not provided
Payroll Deduction = 1 if employer uses payroll deduction
Number of Employees is in thousands

SOURCE: Charles River Associates.

6.3.3 Payroll Deduction

As part of the conceptual design phase leading up to this demonstration, it was felt that the convenience of purchasing a pass through one's employer would be enhanced if the pass was paid for automatically through payroll deduction. In addition to convenience, the "cost" of a pass purchased through payroll deduction may be perceived to be lower than the actual cost in a manner analogous to many "hidden" costs associated with driving an automobile.

According to regression results presented in Table 6-1, there is a mildly significant and positive relationship between firms that use payroll deduction and the percentage of employees purchasing passes. Thus, the concept of payroll deduction should be encouraged in the design of employer-based pass programs. It should be noted, however, that 60 percent of the employees who do not now use payroll deduction indicated that they would prefer not having the cost of the monthly pass automatically deducted from their paycheck. Although employees were not asked why they were for or against the use of payroll deduction, factors such as the relatively high turnover rate among pass purchasers and the possibility of being required to order the pass earlier under a payroll deduction plan (resulting in less flexibility and higher risk) would be likely reasons.

6.3.4 Employer Size

The results from the multivariate regression presented in Table 6-1 indicate that larger firms tend to sell proportionately fewer passes per employee than smaller firms. On an absolute basis, of course, larger firms sell more passes than smaller firms. It is likely that this result is influenced by other factors (such as transit accessibility) that are site-specific to Jacksonville and perhaps not transferable elsewhere.

6.3.5 Employer-Sponsored Carpool and Vanpool Programs

Five of the participating firms indicated that they have programs in place to encourage employee ridesharing (i.e., carpooling and/or vanpooling) through the use of preferential and/or reduced cost parking spaces, and, in at least one instance provide employees with the use of 18 company-owned vans. One hypothesis is that firms that actively encourage ridesharing would similarly take an active interest in marketing and promoting the use of monthly transit passes. However, an alternative hypothesis is that firms promoting carpooling will not be successful in diverting employees to the bus system, because of the competing incentives.

A multivariate analysis similar to the model presented in Table 6-1 was undertaken using a dummy variable for employer-provided carpool/vanpool programs, but on a smaller subset of the data. The results indicate that

pass penetration rates tend to be smaller for firms that do provide carpool and/or vanpool programs/incentives to their employees.

6.3.6 Employer Promotion of JaxPASS

As discussed in Section 5.5, most, if not all, of the employers either displayed and/or distributed the JaxPASS promotional material produced by JTA and its marketing consultant. This material consisted of a JaxPASS brochure/application form that was distributed to each employee, one or more JaxPASS posters, and a PR announcement that could be reproduced in memorandum form or included in company newsletters. Because there is little variation in the level of marketing performed, it is not possible to quantify the relationship between the level of marketing undertaken by employers participating in the demonstration and JaxPASS sales.

6.4 EMPLOYEE CHARACTERISTICS AND BEHAVIOR

To obtain information needed for the evaluation of employee-related issues, two surveys were planned and implemented. In the first, or pre-implementation survey, a questionnaire was distributed to all employees of firms enrolled in the JaxPASS program during the month of February 1979, the month prior to the start of pass sales. The objectives of this survey were to 1) obtain socioeconomic and travel behavior data on the entire population of employees that would soon become eligible to purchase a pass, and 2) identify each employee so that a panel could be formed to monitor changes in an individual's behavior -- as it related to purchasing a transit pass -- over the course of the demonstration.

As part of the initial evaluation plan, an "after" employee survey was scheduled to be conducted exactly 1 year later in order to focus on current travel and pass-purchasing behavior. Again the identity of each employee would be ascertained (e.g., using birthdates or the last four digits of one's social security number) so that the responses from the "before" and "after" questionnaires could be matched. Not only could this time series information be augmented by records maintained by JTA on who purchased a JaxPASS each month, but there would be the opportunity to shorten the after survey since most of the socioeconomic questions would not have to repeated.

In the time between the "before" and "after" surveys, new information resulted in the development of a revised strategy. In particular, because pass sales, 1 year after the program began, represented such a relatively small proportion of the employees eligible to buy a pass (less than 4 percent), it was likely, considering a normal response rate of about 30 percent for this type of survey, that the matched sample of responses would be too small for reliable analysis. (This particular problem was in fact encountered in the Sacramento TFP demonstration prior to the final planning of the Jacksonville "after" employee survey.)

In addition, a few employers instructed their employees not to respond to any of the questions that were to be used later to match responses from the two surveys (i.e., name, social security number, and/or birthdate). Thus for both of these reasons it became necessary to repeat the socioeconomic questions on the after survey as well as to include retrospective questions on pass purchasing behavior and resultant changes in travel behavior. This resulted in a longer questionnaire than was initially planned; however, the attribution of a change in behavior due to purchasing a pass is likely to be stronger than using the original approach since each employee was asked whether a particular change was the result of purchasing a JaxPASS.

6.4.1 "After" Employee Survey

Sufficient quantities of the "after" employee questionnaires were distributed in December 1979 to employees at each of the 22 firms that had been actively participating in the JaxPASS program since the beginning of the demonstration. The 11 firms that returned completed questionnaires accounted for (a nearly equivalent) 46 percent of the average number of passes sold in the 3-month period of December 1979 through February 1980. However, because these firms employed only 25 percent of the total population of employees eligible to purchase a pass, they tend to include an overrepresentation of firms with higher JaxPASS penetration rates. In other words, firms with lower pass sales appeared less likely to take a strong interest in following through with the employee survey. The only other employer characteristic that distinguishes respondents from nonrespondents is that both firms that subsidize the pass (at the time of the survey) are included in the group of employers who returned completed questionnaires.

Of the 3,830 questionnaires distributed to employees of the 11 firms returning questionnaires, usable responses were obtained from 1,388 employees. This resulted in a final response rate of 36 percent. Using the exact JaxPASS sale figures maintained by JTA, these firms sold an average of 153 passes per month, implying that 4 percent of the employees in this group of firms were JaxPASS purchasers. From the questionnaires returned, however, it was determined that 6.1 percent of the employees in the sample were JaxPASS purchasers -- about a 50-percent overrepresentation. Stated less dramatically, the sample of employee questionnaires returned underrepresented non-JaxPASS purchasers by only 2 percent (i.e., 96 percent versus 93.9 percent).

While these figures clearly show that, on a proportional basis, more JaxPASS purchasers filled out and returned the questionnaires, they also show that it is possible to determine the amount of overrepresentation of JaxPASS users in the sample. Unfortunately, it is not possible to determine whether there is a similar overrepresentation of cash-paying transit commuters (i.e., regular bus users who do not use JaxPASS). Because the focus of the questionnaire was on transit use in Jacksonville, the supposition is probably true that this group of users is similarly overrepresented in the sample. Fortunately,

considering the comparative analyses to be performed with these data (which are described below), the range of response rates by different market segments will not affect the results any more than is normally the case (e.g., distortions due to different response rates according to income, age, education level, etc.).

6.4.2 Socioeconomic Characteristics of JaxPASS and non-JaxPASS Employees

The after employee questionnaire asked each respondent to identify the number of days per week various modes were used to commute to work and, for bus users, the method of fare payment used. Depending on how these questions were answered, employees were classified into one of three possible groups. Employees who indicated that they paid their bus fare with a JaxPASS (alone or with an additional cash fare) were classified as JaxPASS users. Employees who used the bus to commute to work 3 or more days per week and did not use a JaxPASS to pay their fare were classified as Non-JaxPASS bus commuters. Lastly, employees not included in these two groups were classified as Nonbus Commuters. Basically, the last group included individuals who regularly commuted by other modes such as auto (drive alone and dropped off), carpool, vanpool, bicycle, and walk, or who might have occasionally (i.e., 1 or 2 days per week) used the bus to commute to work.

The distribution of various socioeconomic characteristics for these three groups of employees are presented in Table 6-2, and the results of a test of means are given in Table 6-3. By and large the data indicate that the socioeconomic characteristics of JaxPASS users (except for household income) are nearly the same as those for non-JaxPASS bus commuters. However, bus commuters as a group differ significantly (along these same characteristics) from nonbus commuters. For example, a proportions' test between JaxPASS and Non-JaxPASS bus commuters reveals no difference by sex (t=0.98). However, the same test indicates that there are significantly more female bus commuters than female nonbus commuters (t=2.2). This is a common finding and, in part, is due to the fact that females tend to have lower incomes, and income tends to be highly correlated with transit use.* In this instance, the average household income of JaxPASS purchasers is $13,080 which was found to be significantly lower (t=2.5) than the average household income of $17,078 for non-JaxPASS bus commuters, which itself was found to be significantly lower (t=4.2) than the average household income of $21,231 for nonbus commuters.

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*For a discussion of the characteristics of monthly transit pass users in Atlanta see, Charles River Associates, Atlanta Integrated Fare Collection Demonstration: Analysis of the Characteristics of Cash and TransCard Individuals, prepared for Transportation Systems Center (Boston, Mass.: CRA, August 1980).

Table 6-2. SOCIOECONOMIC CHARACTERISTICS OF EMPLOYEES OF PARTICIPATING FIRMS (Percent)

Characteristic	Total Sample	Bus Commuter		Nonbus Commuter
		JaxPass (n=89)	Non-JaxPass (n=270)	(n=911)
Sex				
Male		25.3	20.3	27.6
Female		74.7	79.7	72.4
		(n=87)	(n=266)	(n=888)
Age				
<15		0	0	0
16-24		24.3	31.5	27.7
25-39		52.6	41.5	44.0
40-59		21.8	23.1	26.6
60-64		1.3	2.2	1.6
≥65		0	2.2	0.1
		(n=78)	(n=229)	(n=756)
	Average	33.3	33.8	33.8
Household Income ($)				
0 - 9,999		50.0	31.4	18.9
10,000 - 14,999		12.5	19.2	16.5
15,000 - 19,999		19.6	14.5	13.1
20,000 - 24,999		1.8	8.7	17.2
25,000 - 34,999		12.5	18.6	17.2
≥35,000		3.6	7.6	17.1
		(n=56)	(n=172)	(n=551)
	Average	$13,080	$17,080	$21,231
Driver's License				
Yes		84.1	84.4	97.0
No		15.9	15.6	3.0
		(n=88)	(n=262)	(n=881)
Autos Owned				
0		16.1	11.4	1.7
1		43.6	42.7	28.7
2		31.0	33.7	49.5
3+		9.2	12.2	20.1
		(n=87)	(n=255)	(n=871)

SOURCE: After Employee Survey, December 1979 to February 1980.

Table 6-3. COMPARISON OF MEANS: EMPLOYEE SOCIOECONOMIC CHARACTERISTICS

Characteristic		Pass Purchaser	Difference ◄— t —►	Nonpass Bus Commuter	Difference ◄— t —►	Nonbus Commuter
Household Income (in dollars)	[$\bar{X}$]	13,080	2.50	17,078	4.2	21,231
	[σ]	(10,079)		(11,131)		(11,746)
	[n]	56		172		522
Number of Household Autos		1.34	1.65	1.53	5.7	1.94
		(0.89)		(1.03)		(0.87)
		87		255		834
Number of Household Drivers		1.92	0.15	1.90	2.7	2.10
		(1.05)		(1.08)		(0.93)
		85		257		850
Number of Overtime Days per Week		0.81	1.0	0.63	2.1	0.83
		(1.43)		(1.23)		(1.51)
		78		246		726

SOURCE: After Employee Survey, December 1979 to February 1980.

While about 15 percent of individuals who use a JaxPASS have household incomes exceeding $25,000, exactly 50 percent of the pass users stated that their household incomes are less than $10,000 per year. Income was the only socioeconomic characteristic for which there was a significant difference between JaxPASS and non-JaxPASS bus commuters (see Table 6-3). Conversely, age was the only characteristic for which there was not a significant difference between any two of the three groups of employees. (N.B.: The socioeconomic characteristics of bus commuters presented here are not the same -- nor are they meant to be the same -- as the characteristics of all bus users or even all bus commuters who use the JTA system, since the population of employees surveyed as part of this demonstration is likely to be very different from the population of all bus commuters. As an example, the average household income of all bus users based on an onboard survey conducted in September 1978 was about $9,400, whereas some 15 months later, a survey of employed bus commuters at their place of work for this evaluation revealed an average household income of approximately $15,000.)

Whether or not a JaxPASS is used to pay one's bus fare, about 15 percent of bus commuters indicated that they do not have a valid driver's license. The percentage of nonbus commuters without a driver's license is significantly lower ($t=8.2$) -- at only 3 percent. An equally small number of nonbus commuters (1.7 percent) stated that they had no operating automobiles garaged at home as indicated by the distribution of responses given in Table 6-2. Nonbus commuters, on the other hand, have an average of 1.94 automobiles which is significantly higher ($t=5.7$) than the 1.53 average number of automobiles owned by non-JaxPASS bus commuters. Employees who purchased a JaxPASS have in their household an average of only 1.34 automobiles. A test that this mean is the same as the mean for non-JaxPASS bus commuters can be rejected at the 90-percent confidence level.

The number of days per week an employee works overtime was not found to be significantly different between JaxPASS users and non-JaxPASS bus commuters. However, as one might suspect, nonbus commuters report that they do work overtime more often than nonpass bus commuters. However, the hypothesis that the mean number of overtime days is the same between JaxPASS purchasers and nonbus commuters cannot be rejected.

6.4.3 Transit Travel Behavior

Once a JaxPASS is purchased by an employee, the bus becomes (if it is not already) a very regularly-used mode to commute to work. As shown in Table 6-4, about 92 percent of JaxPASS purchasers indicate that they commute to work by bus 5 or more days per week. Conversely, between 60 and 70 percent of bus commuters who do not purchase a JaxPASS use the bus this regularly. This latter group of bus commuters, however, includes a relatively large absolute number of employees who use the bus at least every work day but have decided not to purchase a JaxPASS at their place of work.

Table 6-4. DISTRIBUTION OF EMPLOYEE TRAVEL BEHAVIOR CHARACTERISTICS

Characteristic	Bus Commuter		Nonbus Commuter
	JaxPass	Non-JaxPass	
Use Car at Work			
Yes	24.7	22.0	51.5
No	75.3	78.0	48.5
	(n=73)	(n=223)	(n=811)
Walk Time to Bus Stop (minutes)			
0 - 5	67.9	64.2	51.7
6 - 10	15.4	21.9	24.6
11 - 15	6.4	6.2	8.7
16+	10.3	7.6	15.0
	(n=78)	(n=224)	(n=460)
One-Way Commuter Bus Trips per Week			
0 - 4	4.7	20.2	N/A
5 - 9	3.4	18.5	
10	86.0	58.8	
11 - 14	5.9	2.5	
	(n=86)	(n=243)	
One-Way Bus Fare			
10¢ (Shuttle)	0	9.4	N/A
35¢ (Regular)	55.4	58.8	
45¢ (Regular + Shuttle)	10.8	4.3	
50¢ (Flyer)	16.2	16.1	
70¢ (2 Regular)	8.1	5.9	
80¢ (2 Regular + Shuttle)	2.7	0	
85¢ (Beach)	6.8	5.5	
	(n=74)	(n=255)	

Table continued on following page.

Table 6-4 (Continued). DISTRIBUTION OF EMPLOYEE TRAVEL BEHAVIOR CHARACTERISTICS

Characteristic	Bus Commuter		Nonbus Commuter
	JaxPass	Non-JaxPass	
One-Way Non-Commuter Weekday Bus Trips/Week			
0	60.6	65.2	N/A
1 - 2	15.5	7.9	
3 - 4	7.0	8.8	
5 - 6	7.0	8.8	
7 - 10	7.0	7.9	
11+	2.9	1.4	
	(n=71)	(n=215)	
One-Way Weekend Bus Trips			
0	80.0	84.4	N/A
1 - 2	14.1	10.8	
3 - 4	4.7	3.2	
5 +	1.2	1.6	
	(n=85)	(n=250)	
Total Bus Trips Per Week			
0 - 9	6.0	30.0	N/A
10	52.2	38.9	
11 - 14	28.4	12.2	
15 - 20	9.0	16.1	
21+	4.4	2.8	
	(n=67)	(n=180)	
Number of Transfers			
0	76.1	87.2	N/A
1	17.1	8.5	
2	6.8	4.3	
	(n=88)	(n=258)	

SOURCE: After Employee Survey, December 1979 to February 1980.

As an approximate estimate, there are at least twice as many regular bus commuters who do not use a JaxPASS as there are employees who purchase a JaxPASS. (Because of the likelihood of a disproportionate response rate between these two groups, this number cannot be computed precisely.) Thus, there is potential for pass sale growth which in fact did occur during Phase II of the demonstration, particularly in firms that started subsidizing the price of the pass.

Assuming that commuting to work by bus is equivalent to taking two, one-way commuter bus trips per day, JaxPASS purchasers made an average of 9.7 one-way commuter trips per week compared to an average of 8.0 for other bus commuters. While these two means were statistically dissimilar (t=11.2) as shown in Table 6-5, there was not a significant difference between the mean number of noncommuter one-way bus trips made on weekdays by JaxPASS (mean of 2.2) and non-JaxPASS commuters (mean of 1.9). Similarly, the means for the number of one-way bus trips made on weekends between the two groups (0.6 versus 0.4 respectively) is also not significantly different (t=0.9). Thus, in terms of transit trip frequency, the major characteristic that distinguishes bus commuters who purchase a JaxPASS from those who do not, is the degree to which transit is used to commute to work. The data indicate that JaxPASS purchasers are not any more likely than other employed transit commuters to use the bus system at other times during the work week or on weekends.

The mean total number of one-way bus trips normally made per week by employees who purchased a JaxPASS was 12.1 (compared to 10.2 for other bus commuters). Assuming an employee works between 46 and 47 weeks of the year, then JaxPASS users take an average of about 47 trips per month. This represents about 7 more one-way trips compared to the breakeven level of 40 based on the normal $14.00 fare credited to JTA or about 12.7 additional trips compared to the breakeven level of 34.3 after taking into consideration the $2.00 discount that was in effect at the time the employee survey was administered.

Both JaxPASS and non-JaxPASS bus commuters report that they use a car at work only about one-half as often as nonbus commuters. Thus, the more likely that a car is required during the day for work, the less likely that an individual uses a bus as a commuting mode. Both groups of bus commuters have nearly identical access characteristics to a bus line near their place of residence (i.e., in terms of mean walk time), while nonbus commuters report a mean walk time to the nearest bus stop (from which they could take a bus to work) of nearly 10 minutes, which is significantly higher (t=3.0) than the mean of slightly more than 7 minutes for bus commuters. This may suggest that in the long run there is a joint decision (or in the short run, a conditional decision) being made between residential location (i.e., with respect to transit accessibility) and choice of mode. In other words, individuals with proclivities toward using transit tend to locate in areas with good transit access (and vice versa).

The majority of bus commuters use a regular $0.35 bus either as a single boarding or by transferring to a shuttle bus to reach their work place. More JaxPASS users than non-JaxPASS bus commuters opt for the latter combination as the shuttle bus is "free" with a JaxPASS. No one bought a JaxPASS just for the privilege of using the $0.10 shuttle alone. Since JaxPASS users must pay an additional $0.15 cash fare on express flyer routes or $0.50 on the beach route, there is no pure convenience incentive for individuals using these services to buy a JaxPASS, and this is reflected in the nearly equal distribution of JaxPASS and non-JaxPASS bus commuters who use flyer and beach routes (see Table 6-4).

Reflecting the combination of the CBD location of employers participating in the JaxPASS demonstration, and the very radial nature of the JTA transit route structure, over three-quarters of the JaxPASS purchasers and 87 percent of non-JaxPASS bus commuters do not make a transfer when commuting to work. JaxPASS users, however, transfer about twice as often as non-JaxPASS bus commuters on the trip to work, illustrating the popularity of the (free) shuttle bus attraction of the pass, and the few instances in which the combination of a $0.35 "looper" bus and $0.35 regular bus can be used to commute to work without paying an additional cash fare.

The fact that 844 nonbus commuters could estimate their travel time to work by automobile, while only 304 of these individuals could do the same for travel time by bus, indicates that a large share of employees are not familiar with using the bus for commuting (either by choice or because it is not available). Proportionately more bus commuters, on the other hand, were able to estimate the travel time that would be required if the automobile mode was used.

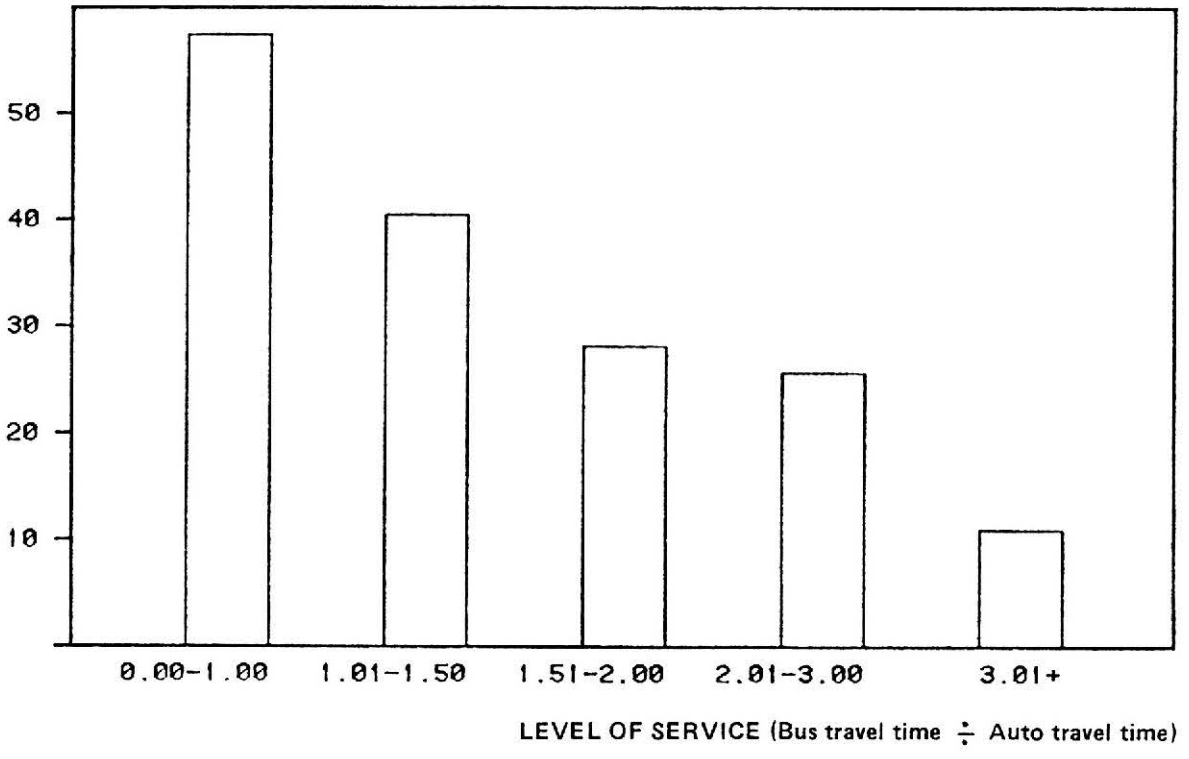
Across all three employee groups, commuting by bus averaged between 10 to 15 minutes longer than if an automobile were used (see Table 6-5). Automobile travel times were the same or even slightly less for bus commuters than for auto commuters. This may indicate that bus commuters have trip lengths that are about the same or slightly less than nonbus commuters. Total bus travel times are significantly less for bus commuters than for nonbus commuters, reflecting both better transit access characteristics and the tendency of automobile users to overestimate bus travel times.

A perceived level-of-service variable was constructed by taking the ratio of reported bus travel time to reported auto travel time. As shown in Figure 6-5, this variable is highly correlated with transit mode share. But, because of the varying response rates for the three groups of employees, this figure should be considered as illustrative of the changes in mode share for different levels of service rather than indicative of an actual mode split. As discussed earlier, because more transit users returned surveys, mode splits will be concomitantly higher.

Table 6-5. COMPARISON OF MEANS: EMPLOYEE TRAVEL BEHAVIOR CHARACTERISTICS

Characteristic	Pass Purchasers	Difference ← t →	Nonpass Bus Commuters	Difference ← t →	Nonbus Commuters
One-Way Commuter Bus Trips Per Week [$\bar{X}$]	9.67	11.2	7.95	--	N/A
[σ]	(0.992)		(1.73)		
[n]	86		243		
One-Way Non-Commuter Bus Trips Per Week	2.21	0.6	1.87	--	0.19
	(4.296)		(3.319)		(0.891)
	71		215		547
One-Way Weekend Bus Trips Per Week	0.65	0.9	0.41	--	0.01
	(2.24)		(1.28)		(0.138)
	85		249		574
Total One-Way Bus Trips Per Week	12.12	2.6	10.23	--	0.25
	(5.17)		(4.98)		(1.39)
	67		183		513
Walk Time to Bus Stop (minutes)	7.06	0.2	7.25	3.0	9.71
	(7.05)		(8.67)		(12.08)
	78		224		434
Auto Commute Time (minutes)	21.88	2.1	19.21	4.0	21.98
	(9.28)		(8.37)		(11.01)
	66		203		844
Bus Commute Time (minutes)	33.94	1.8	31.15	5.5	37.89
	(12.20)		(13.25)		(15.32)
	85		246		304

SOURCE: After Employee Survey, December 1979 to February 1980.



SOURCE: Charles River Associates Incorporated, December 1980.

Figure 6–5. TRANSIT MODE SHARE BY LEVEL OF SERVICE

6.4.4 Change in Behavior

In the after survey, employees who purchased a JaxPASS were asked how many additional days per week they now commute to work by bus compared to the time period before they bought the pass. A summary of the responses are as follows:

Number Additional Days per Week Bus Used to Commute to Work	Percent Responding
0	59.7
1	11.9
2	7.5
3	3.0
4	1.5
5	16.4
	(n=67)

These figures reveal that the majority of JaxPASS purchasers (i.e., 60 percent) were already regular users of the bus system who thus made no change in their commuting mode. Of the remaining 40 percent of the individuals, about one-half, or 20 percent, made a complete switch from another mode to the bus and can be considered new transit users. The remaining 20 percent are individuals who increased their use of transit to a more limited degree (e.g., by 1 or 2 days per week) as they were already using the bus to commute to work 3 or 4 days per week. (The mean number of additional days per week that bus was used to commute to work is 1.2, while for the subset of pass users who reported making an increase, the mean is 3.1 days.)

About 50 percent of the individuals who did increase their use of transit indicated that their previous mode was a single passenger automobile. Another 20 percent of the individuals stated that they were previously part of a carpool, while a similar number indicated that previously someone had dropped them off at work. Only 6 percent were former park-ride users, and an even smaller 3 percent indicated that walk was their previous mode. (It is possible this latter group included individuals who previously used the regular bus and walked to their final destination, but after buying the pass started using the downtown shuttle bus for this access/egress trip. If this is the case these people might not have made a change in their primary linehaul mode.) No one in the sample replied that they switched from the vanpool mode.

Although finer levels of disaggregation begin to result in sample sizes that are too small for statistical reliability, there is some evidence to suggest that individuals who switched from the carpool mode did so completely (i.e., a switch from using a carpool 5 days a week to using bus 5 days per week). This "all or nothing" behavior seems to be less true for individuals who previously used the automobile.

Slightly less than one-quarter of the JaxPASS purchasers indicated that they use their pass to make bus trips on weekends. As a result the mean number of one-way trips taken for all pass purchasers on weekends was a low 0.65. However, considering only the subset of individuals who did use their pass, the mean number of trips taken was 2.8.

One important question that was asked was how many of these trips were taken previously (by either bus or another mode) compared to being "new" or generated trips. Although sample sizes at this disaggregation are again small, the data indicate that about 80 percent of weekend bus trips were previously made by bus and that 20 percent of the trips were diverted from other modes. No one in the sample indicated that the bus trip taken represented a "new" trip, although, because of small cell sizes, the mean of the entire population of pass purchasers is not likely to be exactly zero.

JaxPASS users were asked a similar series of questions concerning trips taken by bus during weekday off-peak hours (i.e., from 9:00 a.m. to 3:00 p.m. and after 6:00 p.m.). Again only about one-quarter of the pass purchasers indicated that they used their pass to make bus trips at this time period. The mean number of one-way bus trips for the entire sample of pass purchasers (0.7) and the subgroup who did use their pass (2.7) are similar in magnitude to the mean number of trips taken on weekends by these same respective users. However, a somewhat larger fraction of these off-peak trips, 90 percent, were previously made by bus. Only 10 percent of the bus trips that were made were diverted from other modes or represented new trips.

JaxPASS purchasers who indicated that they changed from an automobile to the bus for commuter trips were asked what factor(s) were most important in making this decision. Although multiple responses were permitted, 60 percent of these JaxPASS purchasers checked "gasoline price increases" versus only 20 percent for "availability of JaxPASS." In fact, only 7 percent of the pass purchasers who switched from the automobile checked "availability of JaxPASS" and no other boxes. "Saving on parking cost" and "convenience of not having to drive" were each cited by about 40 percent of the pass purchasers.

From these responses it seems clear that a combination of factors are considered in the determination to switch to transit from some other mode, and the simple act of making JaxPASS available for purchase through employment sites is not necessarily an influential factor, especially when exogenous factors are taken into account. For example, from February 1979 to February 1980, the span of time from the before to the after employee surveys, average gasoline prices in Jacksonville rose by 62 percent from $0.715 per gallon to $1.16 per gallon (see Table 3-3). Also considering that over this same time period, the price of the pass decreased by $2.00 in nominal terms (i.e., from $14.00 to $12.00) and by even a larger amount in real terms, it seems apparent that pass sales in the absence of these exogenous changes would have been lower than what was experienced here. However, to the extent that future changes in these exogenous factors are consistent with the recent past, then no adjustments need be made.

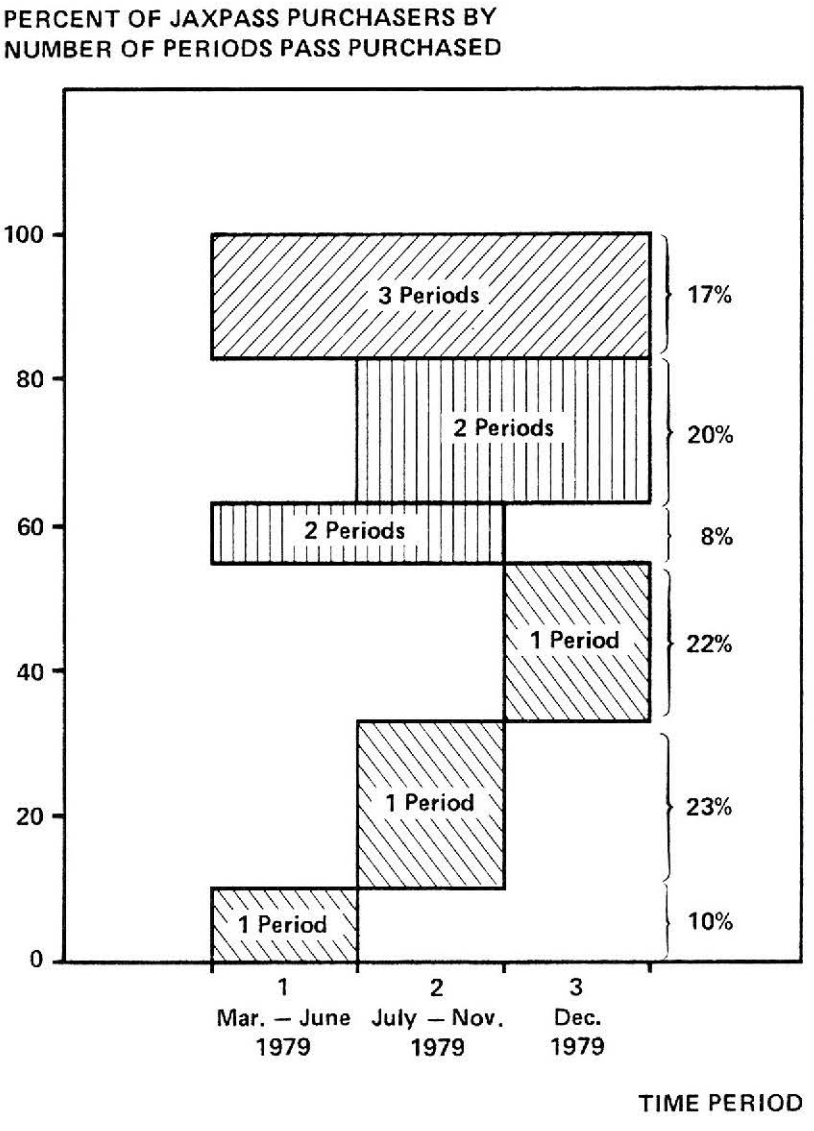
6.4.5 Turnover Among JaxPASS Purchasers

Although monthly JaxPASS sales have grown steadily since the beginning of the program, these aggregate numbers camouflage a fairly large amount of turnover among the individual employees who are buying passes. The amount of turnover by individual pass holders can be determined in two ways. First, in the after survey, employees were asked if they bought a JaxPASS during any of the following three periods: 1) March through June 1979, representing the first 4 months of the program when passes were priced at $14.00; 2) July through November 1979, representing the first 5 months of the $2.00 discount period when passes were sold at $12.00; and 3) December 1979, representing the month immediately prior to the time the survey was administered. Second, since information was collected every month on individual pass purchasers at each participating firm, it is possible to trace precisely the month-to-month pass purchasing behavior of employees.

Using the first approach, Figure 6-6 shows that of the 116 employees in the "after" employee data set who indicated that they purchased a JaxPASS for 1 or more months, only 17 percent bought a pass in all three time periods. A much larger share of the employees indicated that they started buying passes in the second time period, since that period denotes the beginning of the $2.00 pass discount. But, of employees who began buying passes in the second time period, slightly more than 50 percent (i.e., 23/(20+23)) did not buy a JaxPASS in the third time period even though the $2.00 discount was still in effect. Figure 6-6 illustrates that even fewer JaxPASS purchasers (18 percent) bought a pass in the first period but not in the third time period; however, this number could be biased downward, as pass-buying employees, who changed employers (or simply stopped working) prior to the time of the "after" employee survey, would not be included in the data set to begin with.

To obtain a better perspective on how many first-period pass purchasers were not buying a pass 1 year later, it is necessary to use the second analysis approach mentioned above. Because relatively few passes were sold in March 1979, the first pass-sale month, only employee purchasing behavior at the three companies selling the largest number of passes is examined. Of 22 employees buying a pass in March 1979 at the first firm, only 9 employees (41 percent) were also buying a pass 12 months later in February 1980. In the second firm, 4 (50 percent) of the original 8 employees were still buying a pass one year later. However, for the third firm, which has been subsidizing the pass by $4.00 since the beginning of the demonstration, 15 (58 percent) out of the initial 26 pass buyers were still with the program 1 year later. This is a slightly larger retention rate than exhibited by the other two firms that were not subsidizing the pass.

For these 3 firms combined, exactly 50 percent (i.e., 28 out of 56) of the initial pass purchasers were not buying a pass one year later. As it turns out, this is close to the drop-out rate observed from the employer survey. That is, the conditional probability of not buying a pass in time period 3,



SOURCE: After Employee Survey, December 1979 to February 1980.

Figure 6–6. ILLUSTRATION OF TURNOVER IN PASS PURCHASES

given that a pass was purchased in time period 1, is 51 percent (i.e., (10+8)÷(10+8+17)). Thus, it would appear that much of the turnover in pass sales is not due to turnover in employees working at a firm but rather is due to changes in the other factors that influence mode choice.

Employees who once purchased a JaxPASS, but had stopped buying the pass at the time of the "after" employee survey were asked why they stopped. The most frequent response given by one-third of the respondents was that they had stopped using the bus entirely, presumably for work trips anyway. Eighteen percent said that they continue to use the bus, but not often enough to save money with the pass. The time and directional restrictions on the pass was cited by 9 percent of the respondents. Six percent stopped buying a pass because of a change in work hours. No one in this (small) group indicated that they discontinued buying a pass because it was not convenient to buy it at their place of work.

Thus, much of the churning that affects the daily population of transit commuters is mirrored in the turnover in pass sales. This tends to suggest that periodic marketing programs are needed to inform employees of the availability of a transit pass. As discussed in Section 5, one way that this is accomplished for newly hired employees at one firm is through the personnel office when the employee fills in the required forms the day he/she begins work.

7. TRANSIT OPERATOR IMPACTS

7.1 RIDERSHIP IMPACTS

As discussed in Section 6, the JaxPASS program by itself generated a relatively small number of new transit riders (measured either against employees eligible to buy a pass or the number of daily transit riders). For example, about 60 percent of the pass buyers previously commuted by bus and made few or no additional trips after buying the pass. About 20 percent of the pass purchasers were occasional bus commuters before (i.e., used the bus 2 to 3 days per week) and became regular bus commuters after buying the pass. Lastly, about 20 percent of the pass purchasers indicated that they used a mode other than bus before buying a pass. It appears, however, that some of the individuals in this latter group would have become bus users without the existence of the pass program, reflecting normal turnover in the composition of bus riders. In addition, a number of individuals who purchased passes did so because of the $2.00 pass discount or because of the (larger) subsidy provided by their employer.

Very few of the pass purchasers made additional trips during off-peak hours or on weekends. (This is due in part because many of the individuals eligible to buy a JaxPASS are not as transit dependent when compared to the general population of transit users.) Thus, no peak-smoothing effects were evident. Most "new" trips were actually taken during normal, peak-period commuter hours. However, because of the relatively small number of these trips, no detectable changes in transit vehicle productivity were noted.

7.2 REVENUE IMPACTS

The revenue impacts of selling JaxPASS were minor in relationship to total farebox revenue. Using information on transit trip frequencies before and after buying a pass, Appendix E presents calculations of revenue changes to JTA that resulted by selling JaxPASS through employers. The figures indicate that JTA experienced a net revenue increase of about $500 per month if the $2.00-per-pass discount is counted as revenue to JTA. However, excluding this amount as revenue to JTA, net revenue decreased by about $1,500 per month. This amount represents only 0.3 percent of the approximately $435,000 collected each month by JTA as farebox revenue.

If it can be assumed that at least some of the JaxPASS buyers who switched to the bus mode would have done so in the absence of the pass program, then the amount of the revenue "lost" would be even less than that reported above.

Revenue lost because of the monthly pass may be less in Jacksonville than elsewhere (i.e., besides the fact that relatively few passes were sold) because 1) the individuals eligible to purchase a JaxPASS are not heavily dependent on the transit system for nonwork trips, and 2) the relatively

large number of employers who subsidize the pass inevitably encouraged some marginal transit users (i.e., with respect to transit trip frequency) to buy a pass. Thus, part of the subsidy provided by the employer in effect goes directly to the transit operator.

Information obtained from employee questionnaires indicates that very little revenue is lost because individuals "lend" or transfer their pass to others to make trips on the bus system. This may again be due in part to the type of individuals who were eligible to buy the pass (i.e., passes are purchased mainly for commutation purposes), and because of the male/female and time/directional restrictions on the pass.

Initially, it was hypothesized that selling passes through employers would result in a cash flow advantage to JTA. However, the Jacksonville Coach Company Lines (JCCL), which manages the day-to-day operation of the JTA bus system, indicates little detectable change in cash flow. First, the revenue from passes is a small percentage (3 percent) of overall farebox revenue. Second, offsetting the positive cash flow of those employers who pay for their passes early in the month are those employers (typically the same ones each month) who submit their check at the end of the month. On balance, therefore, no change in cash flow was noted in the JTA, JaxPASS demonstration.

7.3 ADMINISTRATIVE COSTS

The administrative costs incurred throughout the course of the demonstration are described in the following two sections. The first section presents the funds expended for all demonstration-related activities that are chargeable against the SMD/UMTA grant for the demonstration. The second section presents only those cost items related principally to maintaining the sale of monthly passes through employers. Because costs are not included for items related to demonstration reporting, etc., the figures presented in Section 7.3.2 should provide a good estimate of the magnitude of costs other transit properties might incur to support a pass program similar in size and scope to the JTA JaxPASS program.

7.3.1 Demonstration-Related Expenditures

Table 7-1 lists the budgeted amounts for each demonstration activity (from the grant application) and the amount and percentage of funds expended for these same activities for the 3-year period November 1, 1977 through November 1, 1980. Most of the funds expended were for direct labor costs, principally for the salary of the JTA JaxPASS administrator. However, many of his tasks were devoted to sustaining activities related to evaluating and reporting on the outcome of the demonstration (e.g., retaining and monitoring the activities of a data collection firm, monthly progress reports, etc.).

Table 7-1. DEMONSTRATION-RELATED EXPENDITURES -- NOVEMBER 1, 1977 THROUGH NOVEMBER 1, 1980

Activity	Budgeted Amount	Funds Expended	Percent of Total Expenditures
Direct Labor -- Managerial/Technical	$ 72,715	$ 64,689	38.0
Direct Labor -- Clerical	16,250	14,320	8.4
Travel	1,172	714	0.4
Supplies	4,051	7,312	4.3
Public Relations, Advertising, and Data Collection Consultant	59,812	59,812	35.1
Transit Operations (For Pass Discount)	23,000	19,888	11.7
Administrative Cost	1,288	1,288	0.8
Miscellaneous/ Contingency	6,712	2,160	1.3
Total	$185,000	$170,183	100.0
Local Share -- 20%	$37,000	$34,037	
Federal Share -- 80%	$148,000	$136,146	

SOURCE: Jacksonville Transportation Authority.

As the JaxPASS program matured and the demonstration data collection and monitoring activities came to a close, the services of this person were no longer required. Overall supervision of the JaxPASS program was then transferred to existing JTA staff to handle as part of their regular duties.

The second of the two major expenses was incurred to retain the services of a contractor to handle public relations, advertising, and data collection activities. Most of the funds expended by this consultant were devoted to data collection activities (e.g., employee, employer, and on-board bus surveys) which would not likely be required by transit operators except for evaluation purposes.

7.3.2 JaxPASS Program Expenses and Activities

As previously indicated, the demonstration expenses presented in the previous section included various start-up costs and other activities that would not normally be incurred if a pass program were started without the evaluation activities associated with the present demonstration. This section, therefore, describes those activities required principally to support the pass program. Rather than attempting to determine an average monthly cost, however, the approximate level of effort required for each activity is described. Determining average costs is difficult and possibly misleading because of the problem in separating fixed from variable costs and more importantly, in determining the marginal cost of an hour of labor. (For example, the number of passes sold per month, the number and geographical location of employers enrolled in the program, and the capacity constraints of existing staff would determine whether new personnel -- valued at full labor costs -- would be needed or if existing personnel -- valued at less than full costs -- could be used. This calculation can be performed on a case-by-case basis, given information on the type of activities required.)

Personnel from the JCCL were responsible for distributing the passes each month and recording payment of the passes from the employers. Each month the general manager of JCCL would prepare an envelope for each employer that contained a pre-specified number of consecutively numbered male and female passes along with an invoice. He would also monitor the invoices returned for the previous month to the accounts payable department and make sure that all accounts were in order. On average, 1 person-day of his time was required each month for these activities.

Another staff person would spend about 2 hours each month to drive around and personally deliver the envelopes, obtaining a signature from the pass administrator at each company. This did not require very much time because the 30 or so employers enrolled in the program were all centrally located. (Some employers were even located in the same building.)

Nearly all of the firms (i.e., about 90 percent) would mail back the invoice with a single check and any unsold passes. Most of these firms used the

regular U.S. mail, although a few used registered mail. The (few) remaining firms would personally drop off payment, but in a manner that was more burdensome to the accounts receivable department. For example, one firm which did not have their own checking account would pay in cash. Another very large firm would submit about 70 checks from the individual employees who bought passes that month rather than one combined check.

During the mature phase of the JaxPASS program, the JTA pass administrator would devote between 1 and 2 days per month to the program. Typical activities consisted of handling inquiries from pass buyers (probably more than would occur otherwise because of the time and directional restrictions on the pass); inquiries from existing and potential employers; ordering the printing of passes and assembling promotional material; and monitoring of monthly sales by employers. Depending on the desire to continually market the program to new employers, a much larger level of effort than that described here might be required.

8. SUMMARY AND CONCLUSIONS

The Jacksonville Transit Fare Prepayment Demonstration was implemented in order to evaluate the impacts that result when monthly transit passes are marketed and sold to individuals through their employers. The concept reflects a merging of two trends: the growing use by transit operators of prepaid transit fare instruments, such as weekly and monthly transit passes, and the increasing realization that transportation programs centered around employers may be effective ways to influence individual travel behavior.

As the preceding sections indicate, numerous observations concerning the impact of the present transit pass program on transit operators, employers, and employees have been made. The purpose of this chapter is to summarize and draw together the findings of the demonstration as they relate to the specific evaluation issues that were addressed, and to assess the transferability of demonstration findings to other areas.

8.1 SUMMARY OF FINDINGS

8.1.1 Employer-Related Findings

The solicitation approach that was used to enroll employers to participate in the Jacksonville TFP program was very successful. Only 34 establishments were contacted over a period of about 2 months in order to obtain commitments from 30 firms willing to participate in the program. The approach undertaken relied heavily on scheduling personal interviews with senior officers at each candidate firm. The basic philosophy was that this chief executive official would be likely to have the authority to make a direct decision to participate in the program. The alternative approaches of using letter correspondence or working through junior-level personnel were thought to be less productive as, in the final analysis, top management would need to be consulted in making a decision, and by not dealing with them directly, a certain amount of impetus generated by the initial solicitation would be lost.

Because only four firms declined to participate in the program, no particular pattern could be detected concerning the type of firms not likely to join this type of program. In addition, as firms were not selected on a random basis or even on a statistically stratified basis, a type of preselection bias occurred when some firms, such as construction companies, which may have a lower tendency to participate, were not approached. Thus, no specific findings on this subject can be made, except as noted in the next item.

Financial institutions such as insurance companies and banks were very receptive to participation in this transit pass program. Since this tendency was suspected at the outset, a high proportion of these companies were

included in the sample of firms contacted. Of the initial 34 firms solicited to participate in the demonstration, 18 firms or 53 percent were in this category. While 65 percent of the 23 firms that actively participated in the program over the first 12 months were in finance, insurance, or real estate the increase in the proportion of these firms was not statistically significant. Still, these types of firms should be high on the list of potential establishments to contact when beginning a program of this type.

Three of the four firms that declined to participate in the program stated that they did so, at least in part, because of the perception that a large amount of administrative resources would be required. This reaction may have been accentuated by a belief that few employees would participate if given the opportunity. However, administrative cost concerns were not a high-priority item among firms that did participate. In fact, none of the firms that sold passes at any time during the demonstration dropped out of the program because of the administrative requirements. Firms that dropped out did so because of very low, or no pass sales. In declining to participate, none of the firms cited as a reason the fact that they were a branch office of a firm headquartered elsewhere.

During the first 9 months of the demonstration, very few employers were willing to subsidize the price of the pass to their employees (only one firm subsidized the pass by $4.00). However, as a few other firms gradually started to provide subsidies, a cascading effect seemed to occur such that by the 18th month of the program over one-third of the employers were providing subsidies that ranged from a low of $4.00 (33 percent discount) to a high of $12.00 (100 percent discount).

It was initially hypothesized that firms would subsidize the pass if they lacked adequate employee parking. The information obtained from employer interviews indicates that this was true, but only to a limited extent because few employers appeared to have severe parking problems, or would save money by reducing parking demand. The basic concept, however, is still a valid one, especially in areas that may have different parking supply characteristics.

Although suggested to employers (during the solicitation phase) as a desirable procedure for collecting the cost of the pass from employees, only 17 percent of the firms instituted a payroll deduction plan. Most of the firms opting for payroll deduction cited various efficiency reasons for doing so. Ironically, loss of efficiency was given by many of the firms not implementing payroll deductions. Apparently, because internal administrative procedures differ from firm to firm, there is little similarity in how easy or difficult it is to integrate a payroll deduction plan into existing operations. Generally, the firms that could do so easily did implement payroll deduction. Those firms that could have technically implemented payroll deduction but declined to do so indicated that too few employees were purchasing passes each month to make the effort worthwhile.

The most common way of distributing passes to employees was the use of an "over-the-counter" approach. This method was used by 75 percent of the firms selling passes. The remaining 25 percent of the firms relied upon hand delivery of passes. No firm reported using an interdepartmental mail system to distribute passes, which is sensible as this is generally thought to be a more theft-prone system. Presumably, employers selected a particular distribution procedure that could be easily integrated with existing internal procedures. This idea is best typified by one medical facility which uses the facilities of its gift shop to distribute passes and handle cash payments.

All employers reported performing some type of activity to promote the use of the transit pass to their employees. Typically, employers relied on using the material developed especially for this demonstration, which consisted of 1) JaxPASS posters, 2) JaxPASS brochures, and 3) a PR-type announcement describing the JaxPASS program and benefits. The announcement could be inserted in a company newsletter or distributed as an internal memorandum, depending on what was appropriate for each company. Some companies also reported that they held meetings with employees, made announcements over the public address system, or used their personnel department to inform newly-hired employees about the program. One firm reportedly staffed a special information booth over an entire day to answer inquiries about the JaxPASS program. In summary, employers should be encouraged to rely on marketing approaches that can fit in with their daily operation, but, at a minimum, they should be furnished with ready-made materials such as brochures and posters.

About one-third of the firms enrolled in the JaxPASS demonstration indicated that they sponsor some type of program to encourage carpooling and/or vanpooling. While no conclusions were drawn as to whether these types of firms were more or less likely to enroll in a transit pass program, it was observed that average transit pass penetration rates tended to be smaller for firms that have carpool/vanpool programs.

Of the employers that were surveyed, 87 percent believed that they obtained a net positive benefit by participating in the JaxPASS program. The majority of these firms stated that their involvement provided their employees a convenient way of purchasing passes at work. Thus, the companies felt that if their employees were benefiting from the program, then they were also.

In terms of more tangible or direct benefits, about one-third of the employers felt that the demand on the company-provided parking spaces was lessened. However, since very few of the employers were able to supply information on the cost of providing parking spaces for employees, it was not possible to calculate or quantify the value gained by this reduced parking demand. In general, savings on parking costs can only be realized when parking demand exceeds or is about equal to parking supply. If parking demand is below supply, no real savings will result unless the surplus parking facilities can be put to other uses.

The amount of time employers reported spending to set up and organize the JaxPASS program initially, and then to maintain it on a monthly basis, appears to have been quite modest. During the first pass-sale month, an average of about 4 person-hours were necessary to accomplish the initial administrative activities. In the following months, the amount of administrative time required was reduced by over 50 percent to an average of 1.6 person-hours per month. The actual amount of time is dependent, of course, on the number of passes that are sold. Firms selling more than 30 passes per month generally reported spending between 3 and 4 person-hours per month, while firms selling less than 20 passes per month expended between 0.5 and 1 person-hours per month. Because of the range of data, no information is available on the resources that would be required by employers selling 100 or more passes per month.

8.1.2 Employee Impacts

JaxPASS sales were dramatically affected when subsidies were provided. On an aggregated level, when the $2.00 pass discount was introduced in July 1979, JaxPASS sales increased by 170 percent from an initial plateau of 120 per month to an average of 325 per month. Among 3 firms that began subsidizing passes by an additional $4.00 midstream in the demonstration, average monthly pass sales increased by a factor of 5 for 2 of the companies and by a factor of 7 for the third. These large changes suggest that pass sales are highly sensitive to relatively small changes in the inherent breakeven price of a pass.

Temporal pass sale growth, based on pass penetration rates, was nearly nonexistent among nonsubsidizing firms. Conversely, pass sales among subsidizing firms tended to grow over time, although by only very minor amounts. This evidence tends to indicate that all else equal, pass sales per firm quickly reach an equilibrium level.

A 2-week bus strike during the month of May 1980 resulted in a drop in pass sales in the month following the strike. The decline in passes sold per firm was twice as large among nonsubsidizing firms than among subsidizing firms (-13.6 percent vs. -6.2 percent). Four months after the strike ended pass sales had not returned to their prestrike level. However, the difference was still twice as large for nonsubsidizing firms (i.e., -7.6 percent versus -3.0 percent).

Pass penetration rates were found to be significantly higher for firms charging their employees higher parking fees. An analysis of pass penetration rates by firms using payroll deduction yielded comparable results. That is, mean penetration rates tend to be higher among the firms using payroll deduction compared to the firms not using payroll deduction.

Data from employee surveys conducted at the participating firms reveal that JaxPASS purchasers have socioeconomic characteristics that are very similar to those of employees who regularly commute to work by transit but continue

to pay with cash fares. Characteristics were about the same for sex, age, number of licensed drivers in the household, and whether or not the individual holds a valid driver's license. The most significant difference between the two groups of bus commuters was the much lower household incomes of employees purchasing a JaxPASS compared to employees who use the bus but do not buy a JaxPASS ($13,080 versus $17,078, respectively). JaxPASS purchasers also tended to own fewer automobiles.

As a group, employees who did not buy a JaxPASS and who did not use the bus regularly to commute to work contained proportionately more males, had much higher average household incomes ($21,231), owned more automobiles, were more likely to have a driver's license, and thus more household drivers, and worked overtime more often than both groups of bus commuters (i.e, JaxPASS and cash-paying users). Age was the only characteristic that did not differ significantly among the three groups of employees.

With respect to transit travel behavior, JaxPASS purchasers are particularly distinguished by the regularity with which the bus is used to commute to work; in particular, 92 percent of these individuals indicated that they commute to work by bus 5 or more days per week. The travel behavior of these employees prior to buying a JaxPASS can be disaggregated into three groups. First, about 60 percent of the pass purchasers were already regular bus commuters and thus reported making no change in mode or transit trip frequency. The second group, representing about 20 percent of the purchasers, can be considered to have made a complete switch in modes and are therefore new transit users. Lastly, the remaining 20 percent of the purchasers that comprise the third group increased their use of transit by a more limited degree (e.g., by 1 or 2 days per week) since they previously used the bus 3 or 4 days per week to commute to work.

Although JaxPASS users commute to work more regularly by transit compared to cash-paying bus users, they did not make significantly more bus trips on weekdays for noncommuter purposes, nor did they make significantly more weekend transit trips compared to cash-paying bus users. The monthly JaxPASS, therefore, was basically thought of and used as a mechanism principally for the purpose of making commuter trips. Only one-quarter of the JaxPASS purchasers reported using their pass to make trips other than for commuting to and from work. And, of the bus trips that were taken for these noncommuter purposes, the vast majority (80 to 90 percent) were trips that were made by bus previously before the pass was purchased.

Reflecting upon the type of individuals eligible to purchase a JaxPASS -- that is, individuals employed mainly in white collar industries -- these results are not entirely unexpected. However, while the travel behavior characteristics of individuals purchasing a transit pass through employers in Jacksonville may be transferable to comparable employer-based programs elsewhere, this is less likely to be true for localities that sell transit passes to the general public rather than through employers.

Both JaxPASS purchasers and non-JaxPASS bus commuters have nearly identical transit access characteristics measured in terms of mean walk time from their residence to a bus stop from which they could take a bus to work. Nonbus commuters reported transit access times that were significantly higher than the mean for regular bus commuters (10 minutes and 7 minutes, respectively).

Compared to regular bus commuters who do not buy a JaxPASS, JaxPASS purchasers were twice as likely to transfer one or more times during the bus trip to work. This observation reflects the attractiveness of the "free" shuttle bus capabilities of the pass along with the few instances in which a combination looper and radial bus can be used to commute to work without paying an additional cash fare. Thus, individuals who could avail themselves of these services were more likely to purchase a pass because of the additional savings that were realized.

Although aggregate JaxPASS sales at most firms held steady or increased very slightly over time -- assuming no change in pass price or level of employer subsidy -- there was a fairly large amount of turnover in the particular individuals buying the passes. Among 3 employers who had the highest pass sales during the start of the program, between 40 and 58 percent of the employees who had purchased a pass during the first sale month were not buying the pass 1 year later. Because aggregate sales did not decline, however, these employees were replaced by other employees. Based on responses obtained from employees who discontinued buying a pass, it appears that the decision was a reflection of normal changes in transit travel behavior and work-related factors. Almost 10 percent of the individuals who stopped buying the pass did so because of a dissatisfaction with the time and directional restrictions on the pass.

8.1.3 Transit Operator Impacts

The administrative costs required by JTA to maintain the monthly JaxPASS program (as distinct from start-up costs) appear relatively modest. During the course of the demonstration, a relatively fixed panel of 25 to 30 employers participated. Because recruiting of new firms was held to a minimum, only 2 to 3 person-days per month were expended by staff at the Jacksonville Coach Company Lines, while between 1 to 2 person-days per month were expended by personnel at JTA. After data collection tasks were completed, the monthly pass program functions were able to be handled by existing staff personnel. Clearly, however, larger pass programs would require additional and possibly full-time staff members.

Partly because of the constrained size of the pass program, relatively few new transit riders began using the system strictly because of the availability of JaxPASS. Factors such as the $2 pass price discount, employer subsidies (typically $4.00 per pass), and the increasing cost of gasoline had a much more significant impact on an individual's decision to purchase a JaxPASS and use the bus mode for commuting.

Revenue impacts (positive or negative) of selling JaxPASS through employers were also small. If the $2.00 pass discounts that were being provided as part of the demonstration are considered as revenue to JTA, then JTA experienced a net revenue gain of about $500 per month. However, excluding this amount as revenue, the pass program resulted in a net revenue decrease of about $1,500 per month. This amount represents only 0.3 percent of the monthly farebox revenue collected by JTA. To the extent that more employers can be encouraged to subsidize the price of the pass as a fringe benefit to their employees, thereby inducing some of the marginal transit users to buy a pass, the potential revenue loss to the transit property will be reduced and, in extreme, positive revenue gains could be generated.

Although difficult to determine precisely, all available evidence indicates that very little revenue was lost due to passholders lending their pass to others for use on weekends or during off-peak hours. This type of abuse was minimized by having a color-coded male and female pass. Also, only individuals old enough to be working (e.g., 18 years of age or older) would be eligible to buy a pass. Bus drivers could therefore screen the use of the pass by children or young teenagers.

Unauthorized use of the pass was further reduced by the time and directional restriction of the pass since once an individual arrives at work, the pass is not valid again (except on the shuttle) until the morning peak period ends.

Lastly, no cash flow advantages of the JaxPASS were realized because of the relatively small amount of revenue obtained from the pass versus the farebox, and because some employers submit pass-sale receipts toward the end of the month, which tended to offset the cash flow gains by employers who submitted receipts early in the month.

8.2 TRANSFERABILITY OF FINDINGS

This section of the report describes various conditions or factors that may be more or less specific to the Jacksonville demonstration and presents an assessment of how these factors may influence the transferability or generality of the findings presented earlier in this chapter. Since it is virtually impossible to anticipate the many different types of environments that could exist in areas considering implementing a pass program of this type, it is not possible to cover all eventualities. Being so notified, the reader should feel free to make similar assessments based on the peculiarities evident in the Jacksonville demonstration and the subject area under consideration.

Perhaps the most unusual feature associated with the Jacksonville demonstration was the time and directional restrictions that affected how the JaxPASS could be used. Virtually all other cities that currently have monthly transit passes allow for unlimited travel by the purchaser, at least within some base zone. However, considering the CBD location of employers

participating in the demonstration (which reduces the need for transferring, except to the shuttle bus) and the type of employees eligible to purchase a pass, this JaxPASS characteristic had only a small negative impact on sales. Only 6 percent of bus commuters who never purchased a JaxPASS stated that it was because of the time and directional restrictions on the pass. Likewise, only about 10 percent of the employees who once purchased a JaxPASS stated that they stopped buying the pass because of the time and directional restrictions.

The $2.00 discount, which reduced the breakeven level of the pass from 20 to 17.1 round trips per month, also helped to minimize the impact of the JaxPASS time and directional restrictions. That is, even if a user did have to transfer and pay an additional full fare, savings were still possible compared to paying all fares by cash because of the relatively low breakeven level.

As described in Section 6, the $2.00 discount resulted in a significant impact on pass sales (i.e., an increase of about 170 percent). Thus, the "mature" JaxPASS penetration rates observed at the end of the first year of pass sales are higher than they would have been without the discount.

Average pass penetration rates during the second year of the demonstration increased at a faster pace than may be experienced elsewhere because of the higher proportion of employers who began subsidizing the price of the pass to their employees. By the eighteenth month of the demonstration, one third of the employers were offering subsidies, typically by an amount of $4.00. This action reduced the breakeven level to an extremely low 11.5 round trips per month. At this level the JaxPASS would be attractive even if an individual used the bus to commute only in one direction each work day. Thus, unless other areas could achieve such a favorable percentage of employers who are willing to subsidize the price of a pass, lower pass penetration rates are to be expected.

As discussed in Section 7, monthly transit passes will result in a net diminution in transit revenues. The basic reason is that very few existing bus riders will buy a pass and end up paying more in transit fares than they were previously (just for the convenience aspect of the pass) compared to the many more bus users who will buy the pass and save money compared to paying cash. And the revenue lost by passes purchased by these frequent transit users is not compensated for by "new" revenues from individuals who switch from another mode to transit because of the sudden availability of a transit pass -- barring additional subsidies from employers. This finding is likely to be true irrespective of the breakeven price of the pass, since whatever breakeven frequency level is used to price a pass, only bus riders that generally make a number of trips that equal or exceed that level will buy the pass. The only exception to this rule would be because of "outside" subsidies.

These "outside" subsidies, whether provided by nonlocal governmental agencies or by participating employers, may result in a net increase in revenues to the transit operator. The calculations presented in Section 7 revealed that whereas each JaxPASS sold represented a net revenue lost of about $1.50 to the program, JTA experienced a positive increase in revenues of about $0.50 per pass after taking into consideration the $2.00 discount being provided from demonstration grant funds.

A similar net gain in revenues to the transit operator is possible if sufficient numbers of employers provide subsidies which, in turn, attract sufficient numbers of marginal transit users; that is, users who would not buy a pass at the regular price because they would lose money, but would buy it at the subsidized price. In this way, part of the subsidy monies provided by employers would go to those "marginal" employees and the remainder would accrue to the transit operator. If revenue gains from marginal users exceed revenues lost from frequent transit users, then the net revenue change to the transit operator will be positive. Unfortunately, since most of the firms in the Jacksonville demonstration that began providing subsidies did so late in the program after the final employee survey was administered, data to evaluate this issue are not available.

Only about 1 percent of the JaxPASS purchasers stated that they occasionally had let someone else use their pass to take trips on the bus system. While the true percentage is likely to be somewhat higher, since admitting to engage in this activity is to admit a wrongdoing, this type of behavior was not a significant occurrence. This may be due partly to the type of employees eligible to buy the pass and to the perception that the pass was for use mainly for commuting trips. Indeed, even in Sacramento where transferring of the pass is legal, little activity of this type was noted.

Unless there are exogenous factors (e.g., employers subsidizing passes, transit fare or gasoline price increases) one can expect that pass sales will rapidly reach equilibrium. Pass sale growth, therefore, can only be achieved by enrolling new employers in the program, rather than relying on growth from existing firms. This result is likely to be true elsewhere and illustrates (again) that individuals are adept at rapidly determining what is their best economic interests vis-a-vis buying a pass.

The outstanding success in enrolling employers to participate in the pass program can be accomplished elsewhere, given that procedures similar to those used in Jacksonville are deployed. Although a large percentage of employers may still have participated if other procedures were followed, particular techniques used in this demonstration certainly aided in the success and timely completion of this phase of the project.

The time and directional restrictions on the JaxPASS were established to be consistent with JTA's radial route structure and no free or reduced fare transfer privilege. It could be expected that transit systems with transit

route networks that necessitate or encourage transferring would have relatively higher pass sales than observed here if the pass allowed unlimited use/boardings.

During the entire course of this demonstration, the monthly JaxPASS was available for sale only through employers enrolled in the program. Thus, pass sales might have been somewhat lower compared to a situation in which passes were sold through regular (street) sales outlets as well as through employers. However pass sales, among the employees currently buying a pass, were higher than they would have been if the pass was sold only through JTA's regular outlets (i.e., Hemming Park, Regency Square, and Lil Champ Food Stores). Slightly more than a majority of existing pass purchasers (56 percent) said that they would discontinue buying JaxPASS if it were only sold through these outlets and not through their employer. This is strong evidence that buying a pass through one's employer is much more convenient than obtaining it through street vendors. Of course, in the latter case, the chance of an employer subsidizing the pass would also be reduced.

APPENDIX A. DEMONSTRATION SETTING

APPENDIX A

DEMONSTRATION SETTING

A.1 GENERAL SITE DESCRIPTION

Jacksonville is a major east coast port city located in the northeast corner of Florida, 20 miles inland from the Atlantic Ocean (see Figure A-1). Currently, Jacksonville is the largest city in land area in the Continental United States, covering 766 square miles of land or 840 square miles of surface area if 74 square miles of the St. Johns River are included. The St. Johns River winds its way from the southern border of Duval County through the Jacksonville CBD and out to the Atlantic Ocean.

The present population (1978) of Jacksonville (which is conterminous with Duval County) is approximately 575,200 persons with a population density of 750 people per square mile of land area. Between 1960 and 1970, the Jacksonville population increased by 16.1 percent (adjusted for consolidation in 1968) compared to a population increase in the United States of 13.3 percent. Between 1970 and 1978, Jacksonville's population has increased 8.8 percent, while the population of the United States increased by 6.9 percent. The largest growth rates, by far, have occurred in the suburbs of Jacksonville. A more complete list of these and other demographic characteristics of Jacksonville are shown in Table A-1 and are also discussed in greater detail in the next section.

A.2 DEMOGRAPHIC DESCRIPTION

The median family income in Jacksonville for 1970 was $9,543, which approximately equaled the national median family income of $9,586 for the same year (see Table A-1). According to a recently completed home interview survey the average family income for the resident population was $15,250.* However, the average family income for JTA transit riders in 1977 was only about $9,000.** This is in close agreement with results obtained from personally-administered on-board bus surveys implemented in September 1978 and April 1979, both of which yielded average household incomes of about $9,400.*** Of the city's 131,938 households in 1970, 23.6 percent earned

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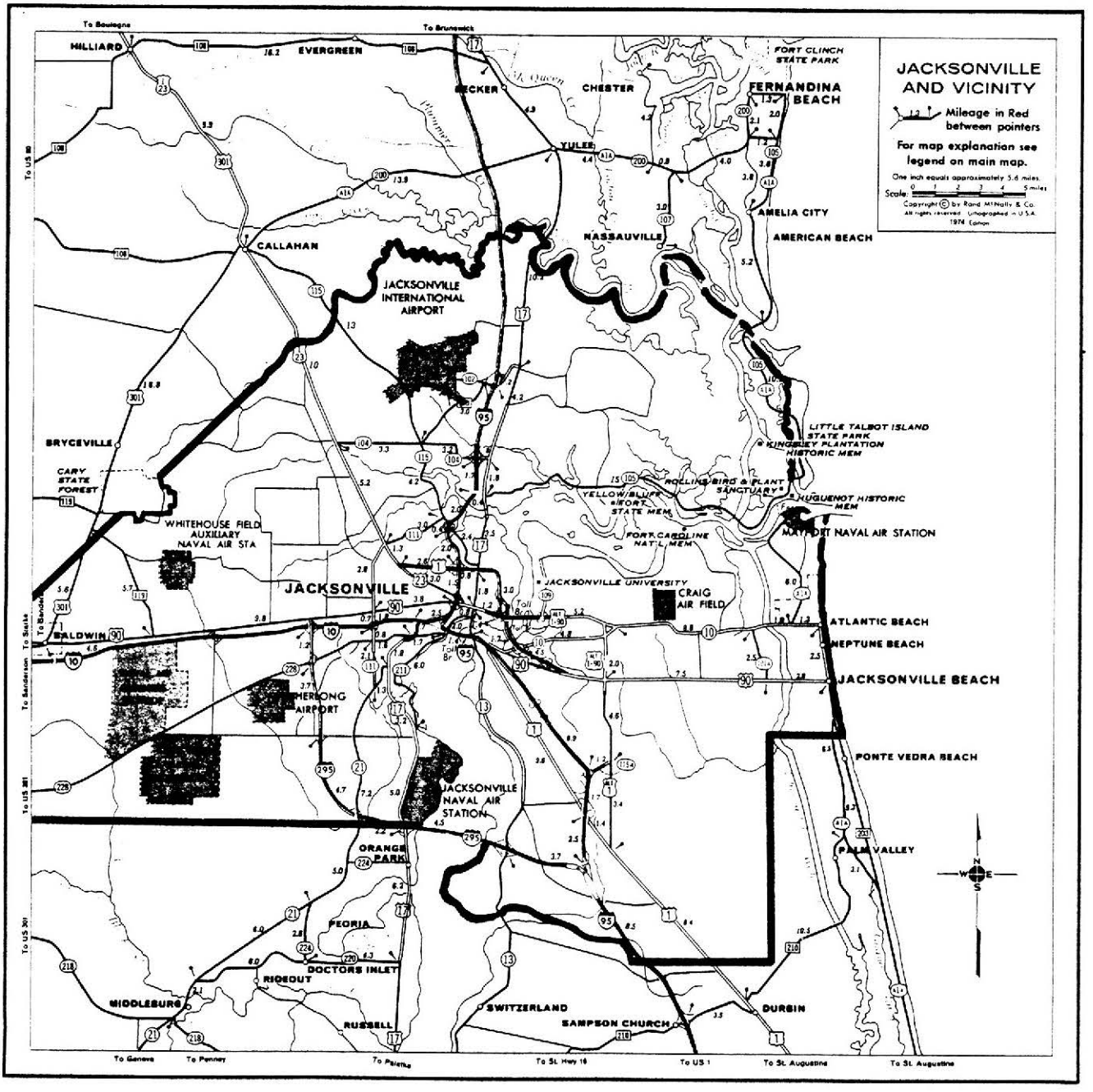
*Jacksonville Transportation Authority, "Home Interview Survey" (Jacksonville, Fla.: JTA, 1977).

**Robert Kendall, "A Bus Passenger Profile: A Public Opinion Survey of Jacksonville Transportation Authority Bus Users" (Jacksonville, Fla: The University of Florida, 1977).

***Charles River Associates, Jacksonville Fare Case Study, Final Report prepared for Transportation Systems Center (Boston, Mass.: CRA, August 1980).



SOURCE: Rand McNally and Company, 1974.

Figure A–1. LOCATION MAP OF THE JACKSONVILLE STUDY AREA

Table A-1. DEMOGRAPHIC CHARACTERISTICS OF JACKSONVILLE AND THE UNITED STATES
(For 1970 Unless Otherwise Stated)

Characteristic	Jacksonville	United States
1. Population	528,865 575,200* (1978)	217,265,200* (1978)
2. Square Miles (land)	766.0	
3. Density (pop/sq mi)	690 750.9 (1978)	
4. Median Age (years)	26.1	
5. Age Distribution		
% below 18	35.2	
% above 65	7.5	
6. Median Years Schooling	12.0	
7. Total # Households	131,938 186,100* (1978)	
8. Average # Persons per Household	4.008 2.94* (1978)	
9. % with Own Children Under 6 Years	26.5	
10. Suburban Work Location (% workers working outside county of residence)	2.6	
11. Median Family Income	$9,543.0	$9,586.0
12. Income Distribution		
% below $5,000	23.6	20.3
% above $15,000	16.3	20.6

Table continued on following page.

Table A-1. DEMOGRAPHIC CHARACTERISTICS OF JACKSONVILLE AND THE UNITED STATES
(For 1970 Unless Otherwise Stated)
(Continued)

Characteristic	Jacksonville	United States
13. # Persons in Labor Force	199,101	
# Females	81,874	
14. Unemployment Rate (%)	3.3	5.7** (2/1979)
	5.9** (2/1979)	
15. Employment Profile:		
% emp. - manufacturing	12.3	
% emp. - trade	25.2	
% emp. - service	10.4	
% emp. - government	17.2	
% emp. - white collar	21.9	
16. Modal Split		
% workers using public transit for work trip	6.7	
17. Growth Rate		
% change in population		
1960-1970	16.1	13.3
1970-1978	8.8	6.9*
18. Ethnic Breakdown		
% Black	22.4	
% White	77.0	
% Spanish-speaking	1.3	
19. Auto Ownership		
% Households with one or more autos	83.3	
20. Mean Temperature F		
January	55.9	
July	82.6	

Table continued on following page.

Table A-1. DEMOGRAPHIC CHARACTERISTICS OF JACKSONVILLE AND THE UNITED STATES
(For 1970 Unless Otherwise Stated)
(Continued)

Characteristic	Jacksonville	United States
21. Mean Precipitation (Inches)	53.36	
% Possible Sunshine	61.0	
Wind Velocity (mph)	8.8	

NOTE: Unless otherwise noted, all data are from U.S. Department of Commerce, Bureau of the Census, County and City Data Book, 1972: A Statistical Supplement (Washington, D.C.: U.S. Department of Commerce, 1972).

*Rand McNally & Co., Commercial Atlas and Marketing Guide (Chicago: Rand McNally & Co., 1978).

**U.S. Department of Labor, Bureau of Labor Statistics, Employment and Earnings, Vol. 26, No. 5 (May 1979).

less than $5,000 compared to 20.3 percent of the households in the United States. As an indication of the level of transit dependency in Jacksonville, slightly more than 83 percent of the households owned one or more autos as of 1970.

The median number of years of schooling in Jacksonville for persons 25 years and older in 1970 was 12. Approximately 39,665 people, or 7.5 percent of Jacksonville's 1970 population of 528,865, were over 65 years of age. Of the total population, 22.4 percent was black and 77 percent was white, with Spanish-speaking persons comprising 1.3 percent of the total.

A.3 CLIMATE

Jacksonville is north of Florida's tropical zone and as a result, has seasons. However, the seasons in Jacksonville are much milder than those in more northern cities. The year-round climate in Jacksonville is temperate, with mild, short winters and comparatively long, warm summers. The mean temperature in January is 55.9°F and rises to 82.6°F in July. Mean precipitation is 53.36 inches per year, the majority of which occurs in the summer afternoons. These relatively short afternoon showers operate as a natural cooling process. The average wind velocity in Jacksonville is 8.8 miles per hour.

A.4 ECONOMIC BASE

Jacksonville is the only large city within a 100-mile radius and, as a result, it is an important commercial, distribution, and financial center for both northeast Florida and southeast Georgia. It is also the home base of large insurance firms and military operations. The city has seaport facilities and is served by four railroad lines and two interstate highways. In 1970, the civilian resident labor force in Jacksonville was 199,101 people, 81,874 (41.1 percent) of whom were women. In February 1979, just prior to the beginning of JaxPASS sales, the unemployment rate in Jacksonville was 5.9 percent, slightly higher than the national unemployment rate of 5.7 percent for the same month.

A breakdown of employment levels at the beginning of the demonstration in February 1979 as well as for February 1978 and 1980 is shown in Table A-2. The table indicates the largest share of employment in Jacksonville is in trade activities. Table A-3 shows the number of establishments in Jacksonville with 50 or more employees by size class for the year 1976. This is a very useful table for determining the universe of potential employers that may be eligible for participation in the demonstration. Figure A-2 shows the spatial distribution of activity centers in Jacksonville.

The locations of major employment facilities adjacent to three separate shuttle bus routes are given in Figure 3-3. The central business district of

Table A-2. EMPLOYEES ON NONAGRICULTURAL PAYROLLS IN JACKSONVILLE

Industry Classification	Numbers Employed		
	Feb. 1978	Feb. 1979	Feb. 1980
Contract Construction	14,700	15,300	15,700
Manufacturing	31,600	33,800	34,300
Transportation and Public Utilities	21,800	22,900	23,500
Wholesale and Retail Trade	71,000	73,600	73,300
Finance, Insurance, and Real Estate	27,100	27,200	27,300
Services, Mining	52,300	56,300	58,800
Government	53,900	53,600	54,300
	272,400	282,700	287,200

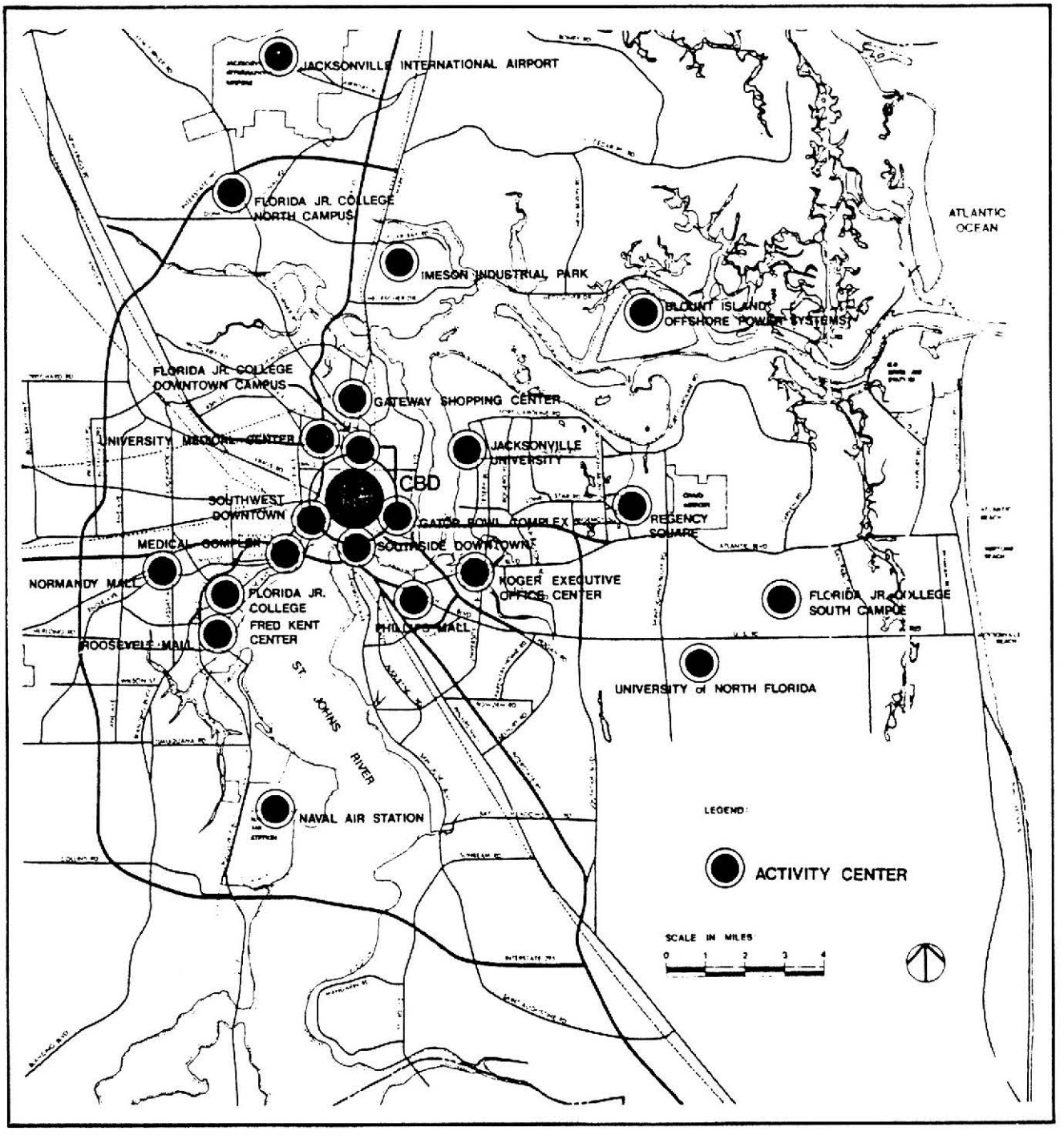
SOURCE: U.S. Department of Labor, Bureau of Labor Statistics, Employment and Earnings, Vol. 26, No. 4 (April 1979), p. 96; Vol. 27, No. 4 (April 1980), p. 94; Vol. 27, No. 5 (May 1980), p. 72.

Table A-3. NUMBER OF ESTABLISHMENTS IN JACKSONVILLE WITH 50 OR MORE EMPLOYEES BY EMPLOYMENT SIZE CLASS, 1976

Industry	50-99	100-249	250-499	500+	50 and over Subtotal
Agricultural Services Forestry, Fisheries	--	--	--	--	0
Mining	--	--	--	--	0
Contract Construction	18	13	3	1	35
Manufacturing	59	34	11	8	112
Transportation, Utilities	27	24	8	1	60
Wholesale Trade	49	11	4	1	65
Retail Trade	104	38	3	4	149
Finance, Insurance, Real Estate	49	23	7	7	86
Services	85	28	14	7	134
TOTAL	391	171	50	29	641

Note: Excludes government employees, railroad employees, and self-employed persons.

SOURCE: U.S. Department of Commerce, Bureau of the Census, County Business Patterns, 1976 (Washington, D.C.: U.S. Department of Commerce, July 1978), p. 53.



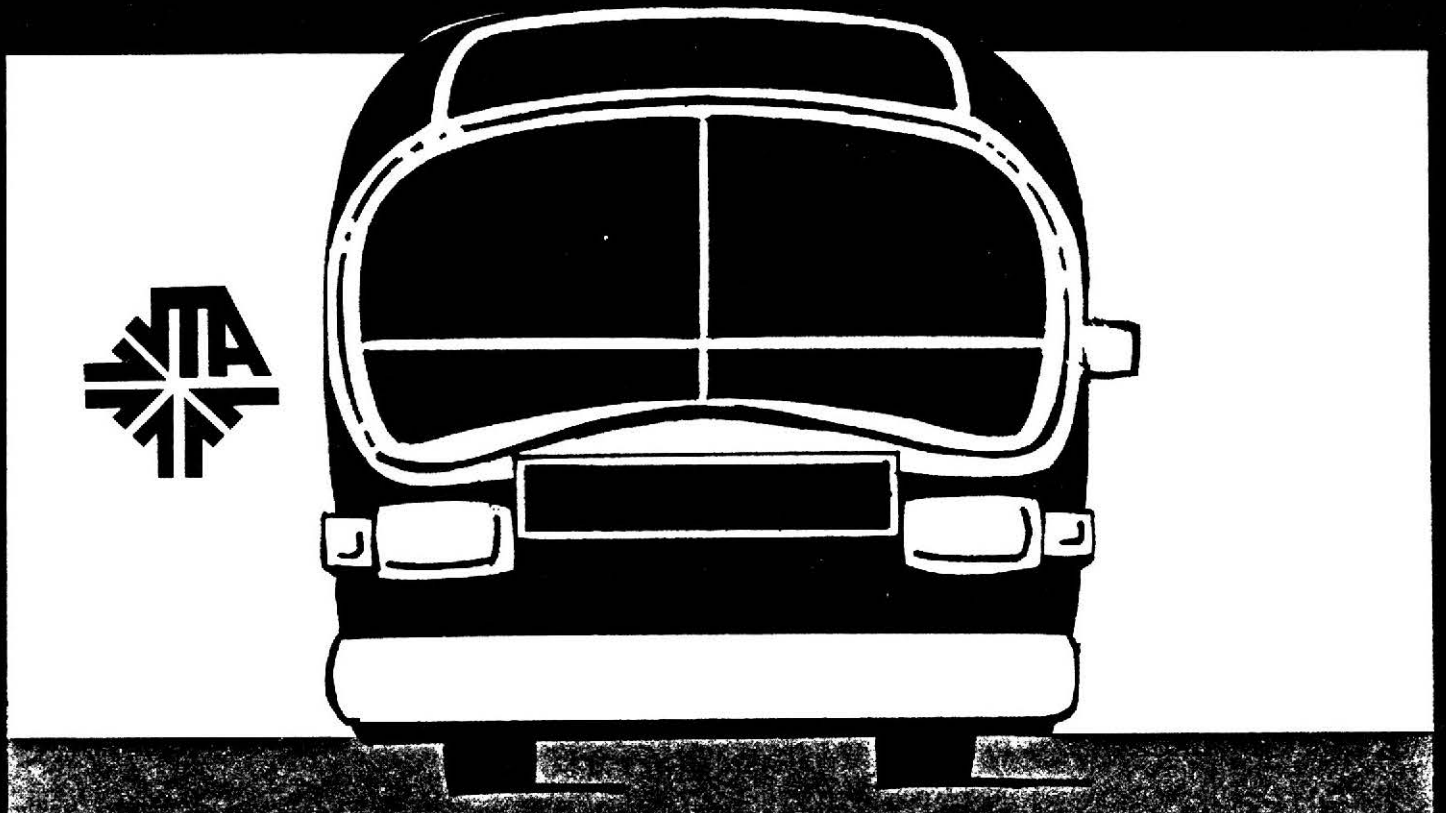
SOURCE: Campbell, Foxworth and Pugh Incorporated, Reynolds, Smith and Hills, "Jacksonville Urban Area Mass Transportation Study " (November 1974).

Figure A–2. LOCATION OF MAJOR ACTIVITY CENTERS IN JACKSONVILLE

the city lies primarily north of the St. Johns River, as shown in Figure 3-3, but also extends south of the river to the "Southside" where a major hotel and other high-rise office buildings have recently been constructed. Access across the river is provided by five heavily-used bridges. Three of the outer bridges have 25¢ tolls which are collected to amortize construction costs, while two central bridges built around World War II have been paid for and are toll-free.

APPENDIX B. EMPLOYER PROCEDURAL GUIDE

JAXPASS



MONTHLY PASS PROGRAM

A Unique and Exciting Way to

SAVE MONEY . . . TIME . . . ENERGY!

Plus

Ease Crowded Parking Lots . . . and cut down on air pollution problems.

Be a smart commuter.

Be a JaxPASSenger!

bus people

JACKSONVILLE TRANSPORTATION AUTHORITY

JACKSONVILLE PREPAID FARE DEMONSTRATION

PROCEDURAL GUIDE - 1978

Jacksonville Transportation Authority
Pass Program
1022 Prudential Drive
Jacksonville, Florida 32207

633-2643

Acknowledgement

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Disclaimer

This document is a corrected copy as submitted by JTA. The opinions, finds and conclusions expressed or implied in this document are those of JTA. They are not necessarily those of UMTA nor the U.S. Department of Transportation.

CONTENTS

PROCEDURAL GUIDE

WELCOME TO THE MONTHLY PREPAID
PASS PROGRAM
OF THE
JACKSONVILLE TRANSPORTATION AUTHORITY

After months of careful screening, approximately 30 firms in the urban Jacksonville area have been chosen to participate in a Prepaid Fare Demonstration Program of the Jacksonville Transportation Authority and the Urban Mass Transportation Administration. This program has been planned to provide benefits to both the employer and employee of these pre-selected business firms in this area.

Under this plan, your commuter employees can purchase a monthly pass enabling them to ride the bus as many times as they choose per month with this prepaid pass, according to the rules printed on the back of the pass. The price of the pass is based on two rides per day, five days per week and four weeks per month.

As an employer, you have the opportunity to offer these monthly passes to your employee as a service of your Personnel Department. Passes may be offered at full price or subsidized by your firm and offered to your employee as a fringe benefit of working for your company... a benefit that becomes more valuable to both of you as it becomes more frequently used.

The demonstration portion of this program will begin with the selected Jacksonville companies on March 1st and continue for a full 12 months. This program, however, will continue to be offered to the employers of this area after the termination of the demon-

stration program.

EMPLOYER ELIGIBILITY

Participants in the Jacksonville Transportation Authority/Urban Mass Transportation Administration Prepaid Fare Demonstration Program have been selected on the following criteria:

1. Number of employees
2. Type of business
3. Geographic location
4. Frequency of transit service to company site
5. Cooperation in supplying data, allowing surveying of employees, and making monthly prepaid passes available through payroll deductions

THIS JTA/UMTA TEST PROGRAM MUST HAVE WORKABLE GROUND RULES AND HERE THEY ARE:

DATA REQUIREMENTS

We must know what administrative procedures you used in maintaining records of your monthly pass sales. Your procedure may prove to be the most practical and adopted on a national level. You must agree to assist in the distribution and collection of four employee self-completion survey forms and allow us to interview you or your representative periodically throughout the demonstration period.

ORDERING PASSES

All orders for passes should be received by the JTA's Pass Program office no later than the 15th day of the month preceding the ridership month. Orders that are a duplication of the previous month must still be sent to the JTA office.

DELIVERY OF PASSES

A messenger of the Jacksonville Transportation Authority will deliver your passes to you by the 25th of the month preceding the ridership month. These passes will be delivered directly to the person you have designated as being responsible for the acceptance and signing for these prepaid fare passes. Once your passes are delivered you will be responsible for the passes until they are (a) paid for or (b) returned to the JTA office. The JTA office is anxious to please you. Should there be a discrepancy in the number of passes you receive or return, please contact the JTA office immediately.

RETURN OF PASSES

The JTA will cheerfully accept and credit you for any returned passes. To receive this credit, please return any unsold passes no later than the first working day of the ridership month by messenger or by Registered Mail.

PAYMENT PROCEDURE

Payment for Prepaid Fare Passes sold should be made to the JTA no later than the first day of the ridership month. Two invoices will be enclosed with the passes when they are delivered to you. Please make your payment by Company check for passes sold, accompanied by one invoice to the JTA Prepaid Pass Office.

REFUNDS, REPLACEMENT

The JTA is anxious to cooperate with participating companies in every way possible. Refunds for unsold passes will be made at any time until the first day of the ridership month.

No replacements can be made for lost or stolen passes.

Your cooperation will be greatly appreciated.

For your convenience, we have included a list of key dates, addresses and telephone numbers. Please call the JTA office any time you have questions. We will be happy to assist you in every way possible.

KEY DATES

15th of the month:	Deadline for receipt of your order for passes for the coming month.
25th of the month:	Your passes for the coming month will be delivered by messenger to you by this date. Passes may be picked up by employers earlier by calling the JTA office at 633-2643
1st of the month:	Deadline for returning unsold passes for credit to your account. Please return these passes in person or by Registered Mail. Do not return passes by the regular mail service.

IMPORTANT ADDRESSES

Prepaid Fare Office of the Jacksonville Transportation Authority 1022 Prudential Drive Jax., Fl. 32207 633-2643	The pass program office will be happy to receive your order. Please direct any questions you may have about this program to this office. Please return your unsold passes to this office for credit. Do not use the regular mail service...if the mail is to be used, please return passes by Registered Mail only. This office will receive your company check and make sure you receive credit for payment. Please return ONE copy of your invoice with your check.

We ask that all employers establish their internal policies to comply with these procedures and key dates. Employees should be made aware of the importance associated with both JTA and employer policies.

(SAMPLE)

INTEROFFICE MEMO

TO: All Employees

FROM: J. C. Doe, President

RE: JaxPASS

The J. C. Doe Company is proud to cooperate with the Jacksonville Transportation Authority in the new JaxPASS commuter program. Once you have heard all the details on how you can SAVE time, energy and money....we think you will want to take advantage of the opportunity being made available to selected companies in our area.

JaxPASS can save you substantial money. By riding the bus to work you can save the monthly cost of parking....you save on gasoline....you save on bridge tolls and you help clear the air of automobile fumes during the rush hours.

The price of the JaxPASS is $14.00. (*Your company is making these passes available to employees for only $. All you have to do is make application. This amount of money will be deducted from your salary.) An application and complete information will be included with your next paycheck.

Your JaxPASS is good all month long....for as many rides as you want....during the week, evenings and on weekends. So....why not plan right now to leave your car at home when you come to work and join the Bus People. Your car will be waiting for you when you return home....and you'll have more money to enjoy it.

Buy a JaxPASS today....and become a JaxPASS-enger!

*This sentence applicable only to companies subsidizing cost of passes and/or using payroll deduction.

JAXPASS

SAVE MONEY . . . The cost of each pass is based on 20 round trips per month. The more you use your JaxPASS, the more you save . . . and it's payroll deductible.

SAVE TIME . . . You don't worry about having the exact fare . . . no waiting in line for change . . . just sit back and relax . . . knowing you are helping conserve energy . . . saving parking spaces . . . and aiding in the air pollution problem.

SAVE ENERGY . . . No in-town driving . . . no parking fees . . . no traffic or parking tickets . . . save your automobile for "after work" driving.

Don't PASS up this OPPORTUNITY.

Ask your employer now about the JaxPASS program . . . or call the JaxPASS office at 633-2643.

JaxPASS — Please check or circle

Frequency of bus use during average month:

_____ Work Trips _____ Non-Work Trips _____ Weekends

Do you travel to and from work by automobile? ☐ Yes ☐ No

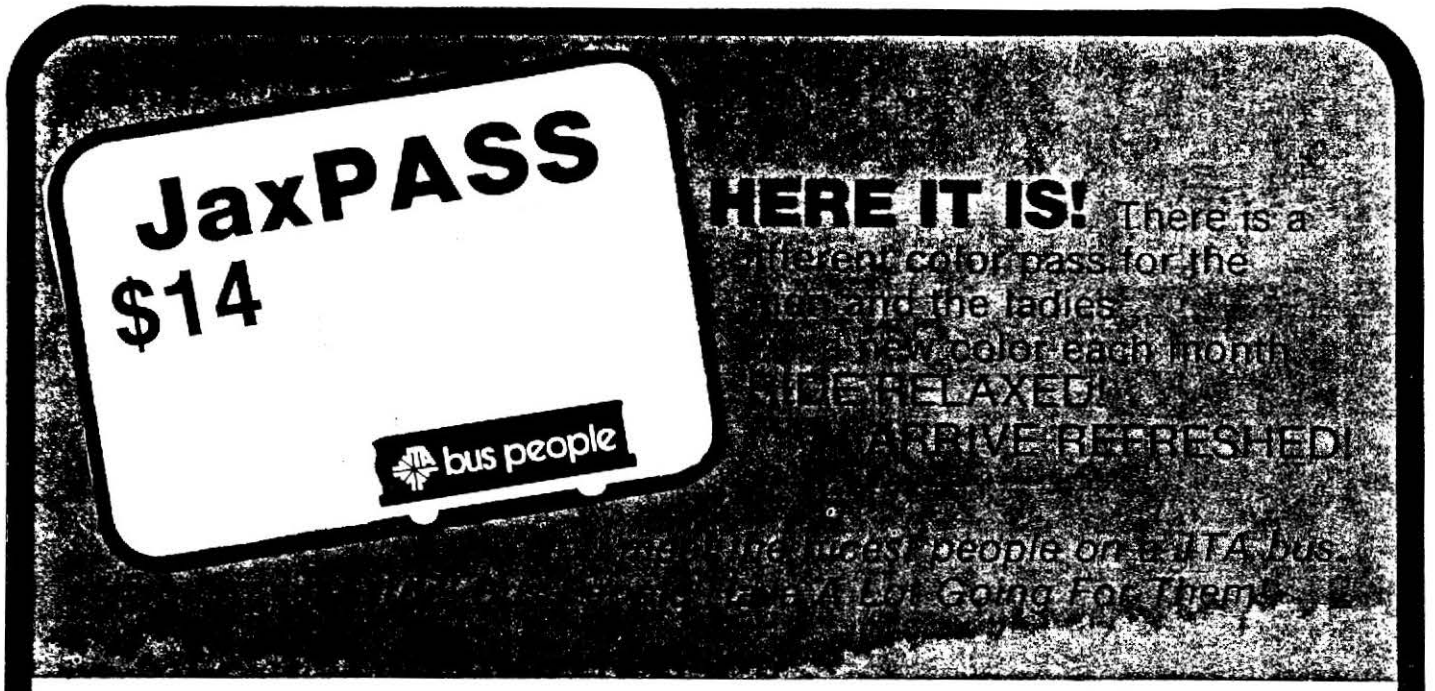
Which is more important to you? ☐ Convenience ☐ Savings

NAME _____

ADDRESS _____

BUS ROUTE AREA _____

bus people



NO TOLLS! NO PARKING FEES! SAVE ON FUEL! SAVE ON AUTO DEPRECIATION!

HOW TO BECOME A MEMBER OF THE JaxPASS GROUP . . .

It's simple! It's easy! And you will save time, money, energy! Just ask your department head about JaxPASS. He will tell you just how you can join this happy group of commuters. All you do is sign up. There is a different color for every month. Passes are good from the first day of the month until the last day. You will be issued a new pass on the 25th of every month. It's that easy!

IS IT ANY WONDER BUS PEOPLE HAVE MORE FUN?

APPLICATION FOR YOUR JaxPASS MEMBERSHIP

Please complete and return this application to your department head.

NAME _____ Male____ Female ____

ADDRESS _____

COMPANY _____

EMPLOYEE NO. (if any) _____ PAYROLL NO. _____

SIGNATURE _____ DATE _____

JACKSONVILLE TRANSPORTATION AUTHORITY

bus people

JACKSONVILLE TRANSPORTATION AUTHORITY
"MONTHLY JaxPASS" PROGRAM ADMINISTRATOR

Administrator _____

Company Name _____

Please show this identification card when you sign for receipt of JaxPASSES. If you have any questions about your order, please telephone 633-2643 for assistance.

_____

Signature of Administrator Date

FORM 1801 B

3739 UNIVERSITY BOULEVARD WEST
SUITE 212
JACKSONVILLE, FLORIDA 32217

To

J. C. Doe Company
1248 Bay Street
Jacksonville, Florida 32201

REFER TO

INVOICE NO 90326

DATE 2/15 19 79

DATE		DESCRIPTION	AMOUNT		TOTAL	
2/15/79	950	JaxPASS passes	$ 14	00	$13	300

Distribution

Approval

"MONTHLY JaxPASS PROGRAM "

Order Form

Date: _____

Company or Organization Name: _____

_____

Total # of $14.00 monthly passes _____

First time enrollment to JaxPASS Program _____

Please mail this form no later than the 15th of each month to the JaxPASS Office. Payment is due upon receipt of invoice.

_____
Signature of Administrator

"MONTHLY JaxPASS" PROGRAM

Change Notice

Date: _____

Name of Company: _____

Address change ☐ Administrator change ☐

Telephone No. change ☐

Effective date for change: _____

Requests for additional materials:

Application cards ☐ Posters ☐

Quantity needed: _____

PLEASE TYPE OR PRINT IN CORRECT INFORMATION FOR OUR RECORDS. THANK YOU.

_____

_____

_____

ADMINISTRATIVE REPORT

FOR THE MONTH OF: _____ DATE: _____

EMPLOYER NAME: _____ PAGE ____ OF ____

NUMBER OF PARTICIPATING EMPLOYEES: _____

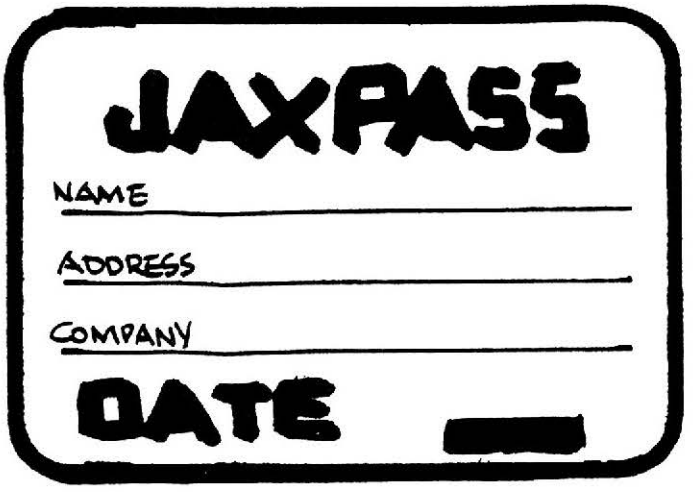
	PAYROLL DEDUCTION ADMINISTRATION	DISTRIBUTION OF PASSES TO EMPLOYEES	EMPLOYER INTERVIEWS/ EMPLOYEE SURVEYS	OTHER COSTS (PLEASE SPECIFY)
PERSONNEL TIME & VALUE				
SUPPLIES				
OTHER (PLEASE SPECIFY)				

COMMENTS: _____

_____

_____

_____



(FACSIMILE)

1979 MONTHLY PASS

RULES

1. Cost $14.00 - good for the month indicated.

2. Valid in lieu of 35¢ fare; additional exact change required beyond 35¢ zone, (pass + 50¢ in the Beaches-Jacksonville zone). Flyers are pass + 15¢.

3. Valid INBOUND 6:00 A.M. - 9:00 A.M. Monday thru Friday.

4. Valid OUTBOUND 3:00 P.M. - 6:00 P.M. Monday thru Friday.

5. Valid for unlimited use of the Downtown Shuttle and for all offpeak service in lieu of 35¢ fare.

APPENDIX C. BEFORE AND AFTER EMPLOYEE QUESTIONNAIRES

EMPLOYEE SURVEY

Jacksonville Transportation Authority

(All information provided will be held confidential)

OFFICE USE ONLY	
	0. Name: _____
6	1. Are you: (1) ☐male (2) ☐female
	2. How many days per week do you normally travel to work by each of the following ways:
7	(1) ☐ Drive alone ____ days per week
8-9	(2) ☐ Carpool (# of Persons ___) ____ days per week
10	(3) ☐ Park and ride bus ____ days per week
11	(4) ☐ Dropped off by auto at worksite ____ days per week
12	(5) ☐ Bus ____ days per week
13	(6) ☐ Walk/bicycle ____ days per week
14-15	(7) ☐ Other (specify) _____ ____ days per week
	3. If you normally come by bus, or if you park and ride the bus, a) what is your total fare for the bus trip, b) how is it paid, and c) how many times do you transfer from one bus to another?
16	a) Fare: (1) ☐25¢ (2) ☐35¢ (3) ☐50¢ (4) ☐60¢ (one way) (5) ☐75¢ (6) ☐85¢ (7) ☐other (specify) _____
17-18	b) Payment Method: (1) ☐Cash (2) ☐Ticket (3) ☐Weekly pass (purchased at _____) (4) ☐other (specify) _____
19	c) Number of Transfers: (1) ☐None (2) ☐one (3) ☐two (4) ☐other (specify) _____
	4. If you normally come to work in an automobile (or van/truck), how much on average do you pay to park?
20-23	$ _____ per day; or $ _____ per week; or $ _____ per month
24	4a. Check box if applicable: (1) ☐Employer provides you free space (2) ☐Employer subsidizes your space
	5. Besides trips commuting to and from work, how many one-way bus trips did you make during the 5 days (Monday-Friday) last week? (Note: a trip to and from home is counted as 2 trips)
25-26	_____
27-28	5a. What is the typical fare charged for these bus trips? _____
29-30	6. How many one-way bus trips did you make last weekend (Saturday-Sunday)? _____
31-32	6a. What is the typical fare charged for these bus trips? _____
	7. What fare payment method(s) did you use?
33	(1) ☐Cash (2) ☐Ticket (3) ☐Weekly pass (4) ☐Other (specify) _____
	8. How long does it take to walk from your house to the nearest bus stop from which you could take a bus to work?
34-35	_____ minutes —or— _____ = blocks
36	(1) ☐Don't know (2) ☐Bus service not available (3) ☐Local bus does not go by work place

OFFICE USE ONLY	
	9. Answer below how long it takes to travel from your home to work by the following ways and check whether this is a reasonably careful estimate or a rough guess.
37-42	auto: _____ minutes (1) ☐reasonable estimate (2) ☐guess bus: _____ minutes (1) ☐reasonable estimate (2) ☐guess
43	10. Do you have a valid driver's license? (1) ☐yes (2) ☐no
44	11. Including yourself, how many other licensed drivers are in your household? _____
45	12. How many passenger vehicles are garaged at home and operated by you and members of your household? _____
46-56	13. What are your normal working hours? ☐AM ☐AM ___ ___ : ___ ___ ☐PM To ___ ___ : ___ ___ ☐PM (1) ☐No Regular hours
57	14. How many day per week, on the average, do you work overtime? _____
58	15. What is the total annual income (before taxes) of your household? (1) ☐ $0- 9,999 (2) ☐$10-14,999 (3) ☐$15-19,999 (4) ☐$20-24,999 (5) ☐25,000 and over
59-60	16. Do you ever need to use your car in your business or for your work? (1) ☐No (2) ☐Yes (how many days per week? _____)
61-66	17. What is your birthdate? ___ ___ ___ month day year
67-75	18. Your social security number: ___ ___ ___ ___ ___ ___ ___
76	19. If you ride the bus and do not use the JTA weekly pass, is it because: (1) ☐don't ride the bus every day to make it economical (2) ☐selling place or hours not convenient (3) ☐don't know it exists (4) ☐afraid of losing it (5) ☐don't know where to buy pass (6) ☐do not transfer enough to make it economical (7) ☐can't afford to pay all at once (8) ☐other (state) _____

AFTER
EMPLOYEE SURVEY
Jacksonville Transportation Authority
(All information provided will be held confidential)

1. Are you: (1)☐ male (2)☐ female

2. How many days per week do you normally travel to work by each of the following ways: fill in #

(1)☐ Drive alone	_____	days per week
(2)☐ Carpool (# of Persons ____)	_____	days per week
(3)☐ Vanpool (# of Persons____)	_____	days per week
(4)☐ Park and ride bus	_____	days per week
(5)☐ Dropped off at work	_____	days per week
(6)☐ Bus	_____	days per week
(7)☐ Walk/bicycle	_____	days per week
(8)☐ Other (specify)_____	_____	days per week

If you do not take the bus to work, skip to Question #4.

3. If you normally come to work by bus, or if you park and ride the bus:

a) What is your total one-way fare? _____¢

b) How do you pay your fare:
(1)☐ Cash (2)☐ Ticket (3)☐ Weekly Pass
(4)☐ Monthly JaxPASS *only* (5)☐ JaxPASS *plus* cash fare (6)☐ Park-Ride Shuttle Pass (7)☐ Other
_____

c) How many times must you transfer from one bus to another?
(1)☐ None (2)☐ one (3)☐ two
(4)☐ other (specify_____)

d) If you have never purchased a monthly JaxPASS, is it because: (check one most applicable)
(1)☐ don't ride the bus every day to make it economical
(2)☐ don't know pass exists
(3)☐ afraid of losing it
(4)☐ can't afford to pay all at once
(5)☐ do not like time/directional restrictions on JaxPASS
(6)☐ Prefer to pay fares in cash
(7)☐ other (state)_____
_____

Skip to Question #5.

4. If you normally come to work in an automobile (or van/truck), how much on average do you pay to park?
$_____per day; or $_____per week; or $_____per month

4a. Check box if applicable: (1)☐ Employer provides you free space (2)☐ Employer subsidizes your space

5. Besides trips commuting to and from work, how many ONE-WAY BUS trips did you make during the 5 days (Monday-Friday) last week? (Note: a trip to and from home is counted as 2 trips) _____

5a. What is the typical fare charged for these bus trips?____¢

6. How many one-way bus trips did you make last weekend (Saturday-Sunday)? _____

6a. What is the typical fare charged for these bus trips? ____¢

7. What fare payment method(s) did you use?
(1)☐ Cash (2)☐ Ticket (3)☐ Weekly pass (4)☐ Monthly JaxPASS (5)☐ Other (specify)_____

8. How long does it take to walk from your house to the nearest bus stop from which you could take a bus to work?
(1)☐ ____minutes and/or _____# blocks
(2)☐ Don't know
(3)☐ Bus service not available
(4)☐ Local bus does not go by work place

9. How long does it take to travel from your home to work by the following ways:
auto: _____minutes (1)☐ reasonable estimate (2)☐ guess
bus: _____minutes (1)☐ reasonable estimate (2)☐ guess

10. Do you have a valid driver's license? (1)☐ yes (2)☐ no

11. Including yourself, how many licensed drivers are in your household?_____

12. How many passenger vehicles are garaged at home and operated by you and members of your household?_____

13. What are your normal working hours?
____:____ ☐AM ____:____ ☐AM
____:____ ☐PM ____:____ ☐PM
(1)☐ No Regular hours

14. How many days per week, on the average, do you work overtime? _____

15. What is the total annual income (before taxes) of your household?
(1)☐$ 0- 9,999 (2)☐ $10-14,999 (3)☐ $15-19,999
(4)☐$20-24,999 (5)☐ $25-34,999 (6)☐ $35,000 and over

16. Do you ever need to use your car for work during the day or to make trips during lunch time?
(1)☐ No (2)☐ Yes (how many days per week?) _____

17. What is your birthdate? ____/____/____ month day year

18. To maintain confidentiality, please list only the last four digits of your social security number:
☒☒☒ / ☒☒ / ____ ____ ____ ____

19. What is your home zip code? ___ ___ ___ ___ ___

20. When did you start working at your current place of employment?
(1)☐ before March 1979 (2)☐ March-June 1979
(3)☐ after July 1979

21. Have you changed your home address since February 1979?
(1)☐ yes (2)☐ no

22. How did you become aware of the monthly JaxPASS program at your company?
(1)☐ didn't know it existed until now
(2)☐ was told by a fellow worker
(3)☐ JTA poster on wall
(4)☐ circulation of company memorandum or newsletter
(5)☐ circulation of JTA brochures
(6)☐ other (state) _____

23. Did you buy a monthly JaxPASS this year in any of the following time periods?
(1) March-June (1)☐ yes (2)☐ no
(2) July-November (**$2 discount**) (1)☐ yes (2)☐ no
(3) December (fill in your Pass # ___ ___ ___) 1)☐ yes (2)☐ no

24. If you purchased the monthly JaxPASS for one or more months, but have since stopped buying the pass, check one of the following:
(1)☐ I do not use the bus anymore
(2)☐ Would rather pay with cash fares
(3)☐ Didn't use transit enough to save money
(4)☐ Was not convenient to buy JaxPASS at work
(5)☐ Changed location of residence
(6)☐ Disliked time/directional restrictions on JaxPASS
(7)☐ Changed working hours
(8)☐ Other (specify) _____

25. What is the HIGHEST price you would pay per month for a JaxPASS?
(1)☐ $0 (2)☐ $3 (3)☐ $6 (4)☐ $9 (5)☐ $12 (6)☐ $14
(7)☐ $16 (8)☐ $18 or more

IF YOU BOUGHT A JaxPASS THIS MONTH PLEASE ANSWER THE FOLLOWING QUESTIONS. IF YOU DID NOT BUY A JaxPASS THIS MONTH PLEASE STOP HERE – THANKS!

26. a. How many ADDITIONAL days per week do you use the BUS to commute to WORK with your JaxPASS compared to the time period BEFORE you bought your JaxPASS?
(0)☐ zero (1)☐ one (2)☐ two (3)☐ three (4)☐ four
(5)☐ five

b. On those days you did NOT use the bus before how did you generally travel to work?
(1)☐ Drove alone (2)☐ carpool (3)☐ vanpool (4)☐ parked and rode bus (5)☐ dropped off at work (6)☐ walk/bicycle
(7)☐ Other (specify _____)

27. If you previously used the auto to get to work, what was the most important factor that caused you to switch to the bus?
(Check more than one box only if necessary)
(1)☐ Availability of JaxPASS
(2)☐ Gasoline price increases
(3)☐ Savings in parking cost
(4)☐ Convenience of not having to drive
(5)☐ Other (state) _____

28. For what reasons did you buy a JaxPASS?
Rank your reasons below (1 = first reason, 2 = second reason)
(1)☐ save money (2)☐ Don't have to carry coins for bus fares
(3)☐ allows stopovers (4)☐ easier/faster to get on bus
(5)☐ employer subsidized price of pass (6)☐ like convenience of buying pass at work (7)☐ other _____

29. a. Do you use your JaxPASS to make trips by BUS during WEEKDAY off-peak hours? (i.e., 9am-3pm or after 6pm)?
(1)☐ no (2)☐ yes

b. If yes, how many one-way, off-peak trips do you usually make (on weekdays) per week? _____

c. How many of these trips did you make BEFORE you bought the JaxPASS:
by bus _____# of trips per week
other than bus _____# of trips per week
did not make _____# of trips per week

30. a. Do you use your pass to make trips by bus on Saturdays or Sundays?
(1)☐ no (2)☐ yes

b. How many ONE-WAY bus trips do you make on a weekend? _____

c. How many of these trips did you make BEFORE you bought the JaxPASS:
by bus _____# of trips per weekend
other than bus _____# of trips per weekend
did not make _____# of trips per weekend

31. a. For trips you take to and from work do you pay an additional cash fare because of the directional restriction on the JaxPASS? (1)☐ yes (2)☐ no

b. If yes, what is the ADDITIONAL fare for a typical trip?
_____ ¢

32. Do you pay for your pass through payroll deduction?
(1)☐ yes (2)☐ no (If no, would you prefer to have the cost of the pass automatically deducted from your paycheck? (1)☐ yes (2)☐ no)

33. Do other people occasionally use your pass to make bus trips?
(1)☐ no (2)☐ yes (If yes, how many bus trips do they make per MONTH? _____ How many of these trips would they have taken by bus anyway? _____# per month)

34. Would you continue to buy the JaxPASS if it was sold only at regular JTA outlets (i.e., Hemming Park, Regency Square, Lil Champ Stores)?
(1)☐ Yes (2)☐ No

THIS COMPLETES THE SURVEY.
THANK YOU FOR YOUR HELP AND COOPERATION.

APPENDIX D. EMPLOYER QUESTIONNAIRE

JACKSONVILLE TRANSPORTATION AUTHORITY

EMPLOYER SURVEY

Company Name: _____

Street Address: _____

Name and Title of Pass Administrator: _____

_____

How were you selected for this assignment: _____

_____

Could you describe the activities you must perform each month: _____

_____

1. What is the total number of employees at this location? _____

2. What is the approximate distribution of employees by work categories (e.g., % white/blue collar - or - % Management/Officer/Secretarial, etc)?

Category	Percent (or Number) of Employees
1. _____	_____
2. _____	_____
3. _____	_____

(Use additional lines if needed)

3. a. What are the typical working hours for your employees? _____

   b. How much flexibility do employees have in when they begin or end their workday? _____

4. Do employees work overtime hours? If yes, how is it scheduled? _____

   _____

5. What other types of transportation programs does the company participate in and how do they operate (e.g., carpool, vanpool)? _____

   _____

   _____

   _____

6. What type of system is used to distribute the monthly JaxPASS sold to your employees?

   ___ interdepartmental mail ___ over-the-counter pick-up

   ___ special hand delivery ___ other (specify) _____

7. How do employees pay for their JaxPASS?

   ___ automatic payroll deduction ___ over-the-counter sales

   ___ other _____

8. a. If over-the-counter sales are used, what are the usual days and hours of operation? _____

   b. Are employees required to sign up in advance to purchase a JaxPASS? If yes, describe details. _____

9. Why do you or don't you use payroll deduction to collect the cost of JaxPASS from your employers?

_____

_____

10. Have you changed the way you collect money for JaxPASS or the way you distribute JaxPASS to your employees since you began participating in the program? Please describe fully how and why any changes were made.

_____

_____

_____

_____

11. How much labor (i.e., person hours) and other expenses were required to set up the JaxPASS program 1) during the first month of pass sales, and 2) during the most recent or average month of pass sales?

	First Month	Average Month
1. Person-hours	_____	_____
2. Other expenses: Type	_____	_____
Amount	_____	_____

12. Do you subsidize the price of JaxPASS to your employees?

___ No ___ Yes Amount: $_____per pass

13. What were your reasons for deciding to subsidize or not to subsidize the price of the pass?

_____

_____

_____

14. Does the company have its <u>own</u> parking spaces for some or all employees?_____

a. If yes, what percentage of employees are eligible to use these spaces? _____

b. What is the criteria for eligibility? _____

_____

c. How much do these employees have to pay to park? _____

d. How many of your employees park in these spaces? _____

15. Do you reimburse employees who park at commercial facilities? _____

a. If yes, what percentage of employees are eligible for the subsidy? _____

b. What percentage of the parking cost is subsidized? _____

c. What is the criteria for eligibility? _____

_____

d. How many of your employees park in these spaces? _____

16. What is your total cost of providing employee parking? $_____per month, or

$_____per year

17. What changes, if any, have there been in the number or charge for parking spaces you provided to your employees since February 1979?

    number: _____

    charge: _____

18. Were any of these changes the result of the JaxPASS program, and if so, please describe why.

    number: _____

    charge: _____

    reason: _____

19. What benefits do you feel the JaxPASS program provides:

    a. to your company?: _____

    b. to your employees?: _____

20. Please describe all activities you have undertaken since you began participating in the JaxPASS program, to alert your employees about the availability of JaxPASS. (E.g., number and type of articles in company newsletters, meetings, posters, memorandum, etc.) Describe: 1) initial activities; 2) ongoing or monthly activities

    1) _____

    2) _____

21. What is your overall assessment of the JTA JaxPASS program?

    _____

22. What changes would you recommend to improve the program?

    _____

Thank you for your help and cooperation.

APPENDIX E.

COMPUTATION OF REVENUE CHANGES FROM SALE OF JAXPASS

APPENDIX E

COMPUTATION OF REVENUE CHANGES FROM SALE OF JAXPASS

The calculations below derive the change in revenues accruing to JTA that occurred because of the introduction and sale of JaxPASS through employers. However, because $2 of the regular pass price of $14.00 was being provided by outside demonstration grant funds, the change in revenue to the entire program is also presented. Two computation procedures are presented based on two different assumptions. The results, however, are farily close: 1) JTA experienced a net revenue increase of about $500 per month due to the sale of passes; and 2) accounting for the $2 pass subsidy, revenues to the entire program decreased by about $1500 per month.

COMPUTATION METHOD 1

Disaggregate JaxPASS purchasers into two groups; 1) 60 percent of JaxPASS purchasers who indicated that they did not change transit trip frequency, and 2) 40 percent of JaxPASS purchasers who make some change in transit trip frequency.

GROUP 1

- Cash Revenue paid before buying JaxPASS:

  12.12 transit trips/week x $0.35 fare/trip x 4 weeks/mo. x 600 pass users = $10,180

- Revenue to JTA after buying pass:

  $14.00/pass x 600 pass users = $8,400

- Revenue paid by employees/employers:

  $12.00/pass x 600 pass users = $7,200

- Revenue reduction to JTA:

  $10,180 - $8,400 = $1780 per month

- Revenue reduction to entire program (i.e., including $2.00 UMTA subsidy)

  $10,180 - $7,200 = $2,980 per month

GROUP 2

- Cash revenue paid before buying JaxPASS:

  6.0 transit trips/week x $0.35 fare/trip x 4 weeks/mo. x 400 pass users = $3,360

- Revenue to JTA after buying JaxPASS:

  $14.00/pass x 400 pass users = $5,600

- Revenue paid by employees/employers:

  $12.00/pass x 400 pass users = $4,800

- Revenue increase to JTA:

  $5,600 - $3,360 = $2,240

- Revenue increase to entire program (i.e., including $2.00 UMTA subsidy)

  $4,800 - $3,360 = $1,440

SUMMARY

- Net revenue change to JTA

  $2,240 - $1,780 = +$460 per month

- Net revenue change to entire program

  $1,440 - $2,980 = -$1,540 per month

COMPUTATION METHOD 2

Disaggregate JaxPASS purchasers into two groups: 1) 80 percent of JaxPASS purchasers who were mainly bus users, and 2) 20 percent of JaxPASS purchasers who are "new" transit users.

GROUP 1

- Cash revenue paid before buying JaxPASS:

  12 transit trips/week x $0.35 fare/trip x 4 weeks/month x 800 pass users = $13,440

- Revenue to JTA after buying pass:

  $14.00/pass x 800 pass users = $11,200

- Revenue paid by employees/employers

  $12.00/pass x 800 pass users = $9,600

- Revenue reduction to JTA:

  $13,440 - $11,200 = $2,240 per month

- Revenue reduction to entire program

  $13,440 - $9,600 = $3,840 per month

GROUP 2

- Cash revenue paid before buying JaxPASS:

  $0

- Revenue to JTA after buying pass:

  $14.00/pass x 200 pass users = $2,800

- Revenue paid by employees/employers:

  $12.00/pass x 200 pass users = $2,400

- Revenue increase to JTA:

  $2,800

- Revenue increase to entire program:

  $2,400

SUMMARY

- Net revenue change to JTA

  $2,800 - $2,240 = +$560 per month

- Net revenue to entire program

  $2,400 - $3,840 = -$1440 per month

APPENDIX F. REPORT OF INVENTIONS

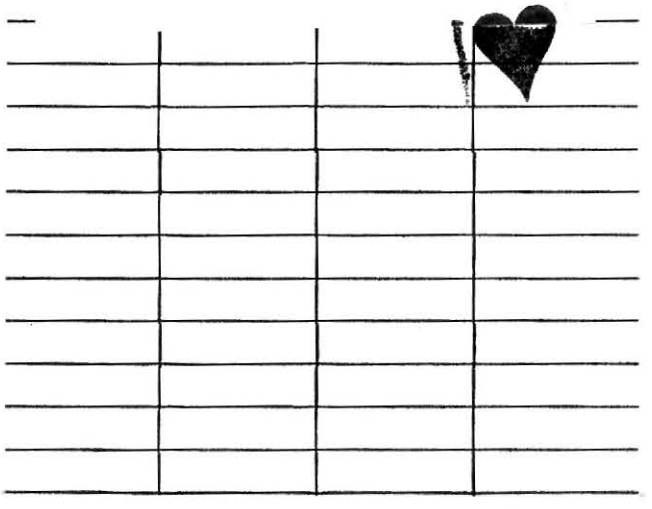
APPENDIX F

REPORT OF INVENTIONS

The work performed under this contract, while leading to no new inventions, has provided useful information and insights that can be used by transit properties interested in developing (or evaluating) their own employer-based transit pass programs.

300 copies

Jacksonville transit fare prepayment demonstration



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