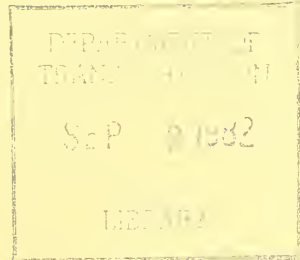


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CBD Fare-Free Transit Service in Albany, New York

**Final Report
December 1981**

**UMTA/TSC Project Evaluation Series
Service and Methods Demonstration Program**

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16. Abstract This report presents an evaluation of the impacts associated with the implementation of fare-free transit service in the Central Business District (CBD) of Albany, New York. The Albany demonstration began in November 1978; fares were eliminated for trips within the two-thirds square mile fare-free zone during off-peak hours on weekdays and from 9 AM to 5 PM on Saturdays. The local objectives for this evaluation were: revitalization of the downtown areas; reduced traffic congestion; increased fare-paying patronage; and improve public image of public transportation. Data collection involved surveys administered to population groups that included: bus patrons traveling within the CBD; downtown employees and residents; areawide residents; and patrons of downtown stores and restaurants. After fares were eliminated, transit ridership within the downtown area tripled on weekdays and increased by a factor of five on Saturdays. Increases were attributed to shifts in travel mode rather than induced travel. No reductions in transit service levels of any significance occurred after fares were eliminated. While the image of transit was enhanced as a result of a fare-free service, there was no evidence to suggest that this has led to an increase in fare-paying ridership. It does appear, that CBD fare-free service has had a positive impact on retail sales among downtown merchants. This report contains survey administration and questionnaires; a bibliography; and numerous tables depicting travel behavior, ridership characteristics, and CDTA service.					
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16. Abstract <p>This report presents an evaluation of the impacts associated with the implementation of fare-free transit service in the Central Business District of Albany, New York under UMTA's Service and Methods Demonstrations Program. In the Albany demonstration, which began on November 20, 1978, fares were eliminated for trips within the two-thirds square mile fare-free zone during off-peak hours on weekdays and from 9 AM to 5 PM on Saturdays. The evaluation focusses on the promotional aspects of CBD fare-free service, changes in transit ridership, travel behavior, transit level of service, and retail sales within the downtown area resulting from the elimination of fares, and the costs associated with providing fare-free service.</p> <p>After fares were eliminated, transit ridership within the downtown area tripled on weekdays and increased by a factor of five on Saturdays. These increases were attributed almost entirely to shifts in travel mode rather than induced travel. No reductions in transit service levels of any significance occurred after fares were eliminated. While the image of transit was enhanced as a result of fare-free service, there was no evidence to suggest that this has led to an increase in fare-paying ridership. It does appear, though, that CBD fare-free service has had a positive impact on retail sales among downtown merchants.</p>					
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PREFACE

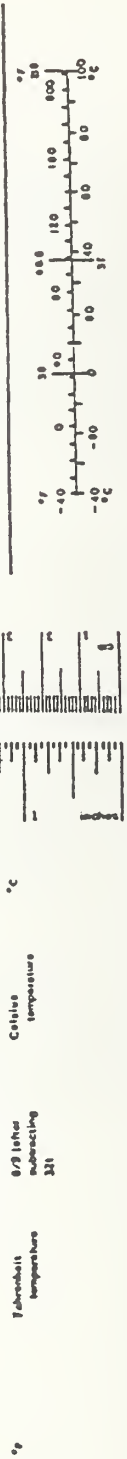
This document was prepared under Task Directive DOT-TSC-1405-14 as part of the Service and Methods Demonstrations Program sponsored by the Urban Mass Transportation Administration's (UMTA) Office of Service and Methods Demonstrations. This report presents the final evaluation of the impacts associated with the implementation of fare-free transit service in the Central Business District (CBD) of Albany, New York, on November 20, 1978. In addition to focussing on the analysis of changes in CBD retail sales, the magnitude and characteristics of ridership within the CBD and changes in travel behavior, the evaluation also addresses the impacts of CBD fare-free service on transit cost and level-of-service.

Cambridge Systematics had primary responsibility for the evaluation of the demonstration project. Terry Atherton, Cambridge Systematics' evaluation project manager, and Ellyn Eder are the principal authors of this report. The Capital District Transportation Authority (CDTA), assisted by its data collection contractor, Roger Creighton Associates, was responsible for administering the surveys used to obtain the travel data supporting the evaluation effort. Efforts earlier in this project on the part of Daniel Nagin, who was then Cambridge Systematics' project manager, are greatly appreciated. The assistance provided by the New York State Department of Taxation and Finance in supplying data on retail sales tax receipts is also appreciated. A special note of gratitude goes to Jack Reilly, CDTA's project manager for the demonstration, for his assistance in coordinating the data collection effort.

Valuable suggestions and guidance for this evaluation were provided by Bruce Spear and Woody Studenmund, the current and past evaluation managers at the Transportation Systems Center, respectively, and Vincenzo Milione, the UMTA project manager.

METRIC CONVERSION FACTORS

Approximate Conversions to Metric Measures				Approximate Conversions from Metric Measures			
Symbol	What You Know	Multiply by	To Find	Symbol	What You Know	Multiply by	To Find
LENGTH							
in	inches	2.5	centimeters	cm	centimeters	0.04	inches
ft	feet	30	centimeters	m	meters	3.3	meters
yd	yards	0.9	meters	km	kilometers	1.1	kilometers
mi	miles	1.6	kilometers	AREA			
AREA							
sq in	square inches	6.5	square centimeters	sq in	square inches	0.10	square centimeters
sq ft	square feet	0.09	square meters	sq yd	square yards	1.2	square meters
sq yd	square yards	0.8	square meters	sq mi	square miles	0.4	square kilometers
ac	acres	2.5	hectares	ac	acres	2.5	hectares (10,000 m ²)
MASS (weight)							
oz	ounces	28	grams	g	grams	0.035	ounces
lb	pounds	0.45	kilograms	kg	kilograms	2.2	pounds
short ton	short tons (2000 lb)	0.9	tonnes	t	tonnes (1000 kg)	1.1	short tons
VOLUME							
cup	cup	0.24	liters	ml	milliliters	0.03	fluid ounces
tblsp	tablespoons	15	milliliters	pt	pints	0.47	liters
fl oz	fluid ounces	30	milliliters	qt	quarts	0.95	liters
gal	gallons	3.8	liters	qt	quarts	0.95	liters
qt	quarts	0.95	liters	gal	gallons	3.8	liters
pt	pints	0.47	liters	cu ft	cubic feet	0.028	cubic meters
cu ft	cubic feet	0.028	cubic meters	cu yd	cubic yards	0.76	cubic meters
TEMPERATURE (exact)							
F	Fahrenheit temperature	5/9 (after subtracting 32)	Celsius temperature	C	Celsius temperature	9/5 (then add 32)	Fahrenheit temperature



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EXECUTIVE SUMMARY

PROJECT BACKGROUND

In November 1978, the Capital District Transportation Authority (CDTA) in cooperation with the Urban Mass Transportation Administration (UMTA) established a fare-free zone in downtown Albany, New York, as part of UMTA's Service and Methods Demonstrations (SMD) Program. This project eliminated fares for trips within the two-thirds square mile fare-free zone during off-peak hours (9AM to 3PM) during the week, and from 9AM to 5PM on Saturdays.

The fare-free zone contains most of the downtown's retail activity, the Empire State Plaza (the State Capitol office complex), several large private office complexes, and residential neighborhoods. About 35,000 employees work in the fare-free zone, of which approximately 21,000 are government employees. Population within the zone is about 8,000, with an additional 4,500 people residing within one block of the fare-free zone boundaries.

CDTA operates 20 bus routes which terminate or pass through the fare-free zone. In November 1979, a shuttle route operating between the Empire State Plaza and the downtown retail core from 11AM to 1PM on weekdays was added. Because these routes are concentrated on a limited number of paths through the zone, service within the zone is quite frequent, ranging typically from 8 to 26 buses an hour during midday. Prior to fare-free operation, which has been termed "Freewheeler" service by CDTA, the downtown merchants association subsidized a downtown circulator service which provided 10-minute headways along a 2-mile route and had a 5-cent fare. Once fare-free service began in November 1978, this 5-cent "Shoppers" bus service was discontinued.

At the time fare-free service was implemented, the regular cash fare on CDTA buses was 40 cents, with zone charges of up to 35 cents. The systemwide base fare was increased to 50 cents in April 1980. Prior to fare-free service, CDTA's general fare collection policy was one of pay-upon-entry. With the elimination of fares within the CBD, though, it was necessary to institute a revised fare collection procedure involving the use of fare receipts on outbound and through-routed buses. Over time, though, the use of fare receipts was discontinued and the fare collection policy evolved into what was essentially an honor-based system.

PROJECT OBJECTIVES

In recent years a number of transit operators have instituted programs involving some sort of fare reduction. These reductions have ranged in magnitude from relatively minor decreases to total fare elimination, and have varied in spatial and temporal scope from areawide application during the entire day to specific geographic locations during off-peak hours only. In general, transit fare reductions increase the attractiveness of transit relative to other travel modes, resulting in ridership increases as people shift to transit. Additional ridership increases may also result from induced travel. Transit fare policies such as these can contribute to satisfying a wide range of objectives and have been instituted for a number of reasons (e.g., increasing mobility, reducing air pollution, stimulating retail trade, increasing transit patronage, etc.)

Objectives of the Albany CBD fare-free demonstration were, in general, to increase transit vehicle utilization and to improve the economic vitality of the Albany CBD. Specific goals of UMTA's SMD program in funding this CBD fare-free project included the following:

1. to study the impact of CBD fare-free transit on the travel behavior and mobility of residents, employees and visitors to the downtown;
2. to study the effectiveness of CBD fare-free transit service in reducing auto congestion and associated auto-related impacts in the downtown area;
3. to examine the costs associated with geographically limited fare-free transit service;
4. to investigate the promotional aspects of fare-free transit service in increasing public awareness and perceptions, systemwide;
5. to study the influence of CBD fare-free transit service on retail sales and economic revitalization of a declining CBD; and
6. to explore the joint costs and benefits associated with a cooperative effort between a public transit and private entrepreneurs.

Local objectives for the evaluation, which were not very different from UMTA's, were stated in CDTA's grant application as follows:

1. revitalization of the downtown area;
2. reduced traffic congestion;

3. increased fare-paying patronage; and
4. improved public image of public transportation.

EVALUATION APPROACH

In assessing the extent to which these objectives were achieved, the evaluation effort focussed on the following major impact areas:

1. ridership levels and characteristics;
2. travel behavior;
3. transit level of service;
4. CBD retail sales;
5. perceptions of transit and CBD shopping opportunities;
6. secondary auto-related impacts; and
7. abuse of CDTA's honor-based fare collection policy.

This evaluation is somewhat unique in that unlike most earlier evaluations of fare elimination demonstration projects, ample time was available to collect data prior to the implementation of fare-free service. The major data collection effort supporting this evaluation involved surveys administered to several population groups potentially affected by the elimination of fares. These groups included:

1. bus patrons travelling within the CBD;
2. downtown employees;
3. downtown residents;
4. areawide residents; and
5. patrons of downtown stores and restaurants.

Each of these groups was surveyed immediately prior to the implementation of fare-free service and again one year later. In addition, data on retail sales tax receipts provided by the New York State Department of Taxation and Finance were used in the analysis of CBD retail sales.

KEY FINDINGS

This evaluation effort has led to a number of key findings related to the major impact areas identified in the previous section. These findings are summarized below:

Ridership

1. The implementation of fare-free service in downtown Albany has increased weekday ridership within the CBD by a factor of three. Ridership on Saturdays has increased five-fold. Prior to fare-free operation, internal ridership during off-peak hours on an average weekday was about 1,070. Internal ridership on Saturday was 270. After one year of fare-free operation, weekday ridership increased to 3,340, while Saturday ridership increased to 1,340.
2. As a result of fare-free operation the proportion of weekday ridership represented by downtown employees has increased significantly after one year from 55.6 to 66.8 percent. Fare-free service on Saturdays has been utilized most by downtown residents, as indicated by an increase in their proportion of Saturday ridership from 31.0 to 47.3 percent.
3. As shown in Figure ES-1, since weekday ridership has essentially tripled and Saturday ridership has increased five-fold, these revised proportions translate into a 275 percent increase in weekday ridership by downtown employees, and a 652 percent increase in Saturday ridership by downtown residents.
4. Corresponding to these increases, weekday fare-free ridership is characterized by higher average income and lower transit dependency, while Saturday ridership is characterized by lower average income and greater transit dependency relative to downtown ridership prior to fare-free operation.

Travel Behavior

1. The implementation of fare-free service has not resulted in a significant increase in the number of trips made within the CBD by either downtown employees or downtown residents.
2. Increased ridership by both downtown employees and downtown residents can be attributed almost entirely to shifts in mode. For downtown employees, increased ridership is the result of shifts from former walk trips. For downtown residents, increased ridership is the result of shifts from walk and, to a lesser degree, from auto.

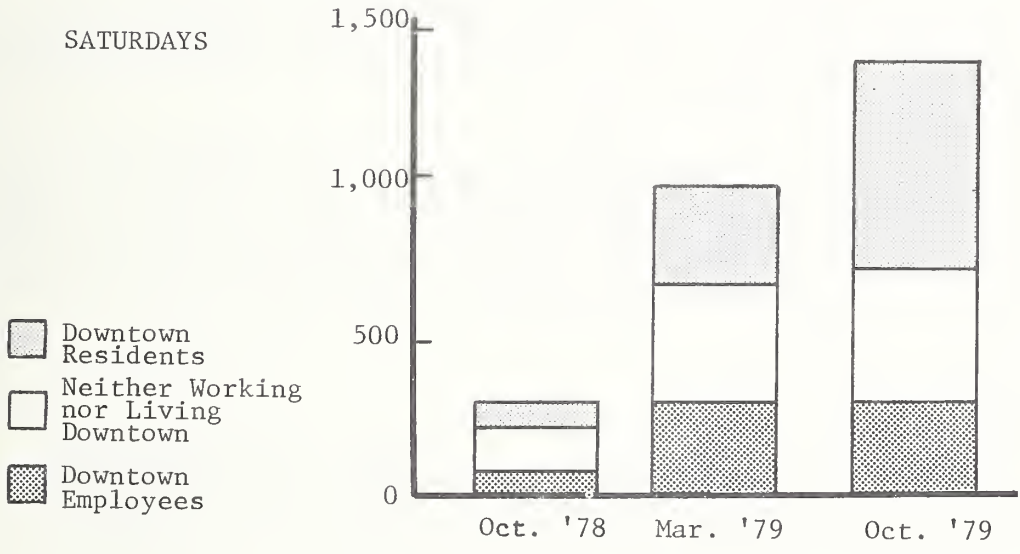
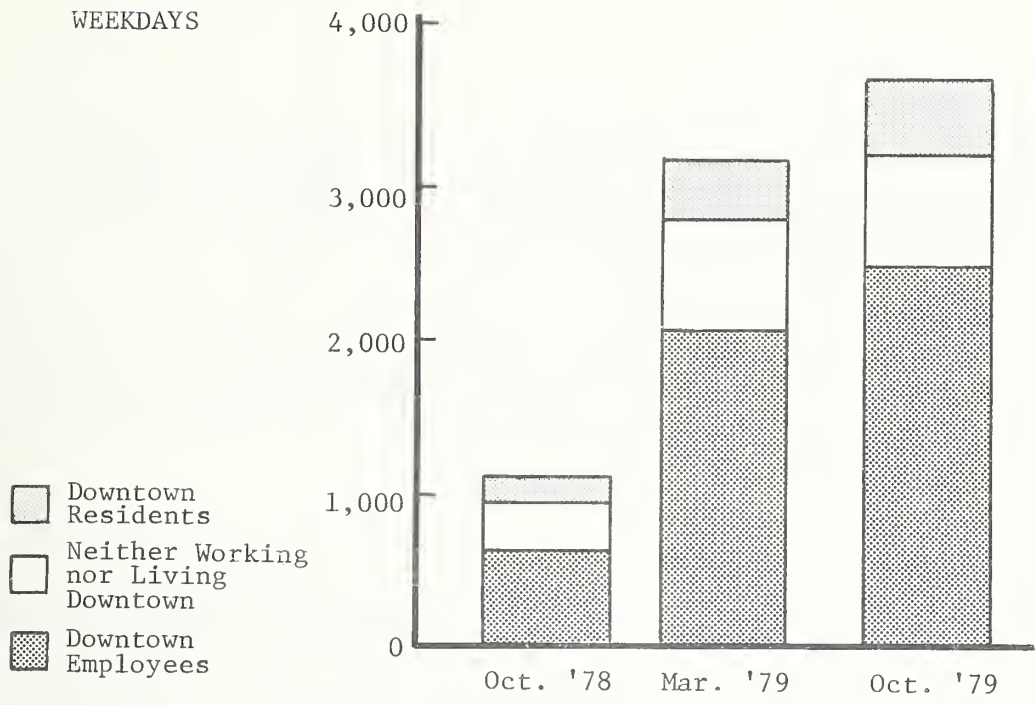


FIGURE ES-1. CHANGE IN CBD RIDERSHIP

3. Because most of the increased ridership within the CBD is drawn from former walk trips, the effect of CBD fare-free service on auto-related impacts such as energy, air quality and traffic congestion has been minimal. Overall, auto vehicle-miles of travel (VMT) have been reduced by only 353 miles per day.
4. Average trip length for CBD employees increased by about a third (from .39 to .51 miles), which, together with observed changes in trip purpose, would seem to indicate changes in destination choice on the part of downtown employees has occurred as a result of CBD fare-free service.

Honor-Based Fare Collection Policy

1. There is a relatively high incidence rate of fare abuse associated with the honor-based fare collection policy that has been adopted by CDTA in conjunction with fare-free operation. On weekdays, 9.2 percent of non-fare paying passengers boarding outbound and through-routed buses in the fare-free zone actually travel outside the zone. The corresponding rate for Saturday fare-free service is estimated to be 4.9 percent.
2. The incidence of fare abuse is highest on buses that are relatively crowded (13.5 percent) and lowest on buses with few passengers (4.9 percent). This reflects the increased difficulty on the part of drivers to detect occurrences of fare abuse when more crowded conditions exist.
3. A disproportionately high percentage of those abusing the honor-based fare collection policy are elderly. As shown in Table ES-1, the proportion of fare abusers who are elderly (41.4 percent) is considerably larger than the proportion of total fare-free ridership categorized as elderly (8.6 percent).

Revenue Loss

1. Estimated total annual revenue loss to CDTA resulting from the operation of fare-free service is \$119,285. \$103,238 of this amount is attributable directly to the elimination of fares; \$16,047 is attributable to abuse of the honor-based fare collection policy.
2. Although the image of transit has been enhanced as a result of fare-free service, there is no evidence to suggest that this has led to an increase in fare-paying ridership. Average systemwide monthly fare revenues during the 4-month period immediately prior to the implementation of CBD fare-free service were \$10,632 greater than those for the corresponding period one year earlier.

TABLE ES-1. CHARACTERISTICS OF FARE ABUSERS VERSUS CHARACTERISTICS OF OVERALL FARE-FREE RIDERSHIP

Characteristics		Percent of Fare Abusers	Percent of Fare-Free Riders
AGE:	Young	25.7%	19.9%
	Middle Aged	33.0	71.5
	Elderly	41.4	8.6
SEX:	Male	37.6	40.3
	Female	62.4	59.7

During the 4-month period following the elimination of fares, though, average monthly fare revenues were \$286 less than those for the corresponding period one year earlier.

Level of Service

1. Overcrowding has not been a major issue in the Albany demonstration. The absence of significant overcrowding problems is primarily attributable to the relatively low load factor (30 percent) on buses entering the fare-free zone during the off-peak period.
2. Bus reliability and travel times have not been significantly affected by fare-free operation. With the elimination of fares, the average number of boardings per bus within the fare-free zone increased from 1.6 to 6.3, with the result that average dwell times for buses operating within the zone have increased by about 26 seconds.
3. Unlike the Denver¹ and Trenton² fare-free projects, there is no evidence of any increase in the incidence of rowdiness or harassment on fare-free buses in the Albany demonstration. To some extent, this can probably be attributed to the much smaller geographic scope of the Albany demonstration relative to the Denver and Trenton fare-free projects, which were areawide in scope.

Retail Sales

1. There is evidence which suggests that CBD fare-free service has had a positive impact on retail sales among downtown merchants. Average quarterly sales tax receipts from a panel of 115 CBD retail establishments for the 7-quarter period after the implementation of CBD fare-free service were 4.9 percent greater than those for the 8-quarter period prior to the elimination of fares. Average quarterly sales tax receipts from all retail establishments in Albany County, though, decreased by 0.8 percent between these two periods.

¹Deleuw, Cather and Company, The Denver RTD Off-Peak Free Fare Transit Demonstration, UMTA/TSC Project Evaluation Series: Final Report No. UMTA-MA-06-0049-80-7, March 1980.

²Deleuw, Cather and Company, Trenton Off-Peak Free Fare Public Transit Experiment, UMTA/TSC Project Evaluation Series: Interim Report No. UMTA-NJ-52-0001-79-1, January 1979.

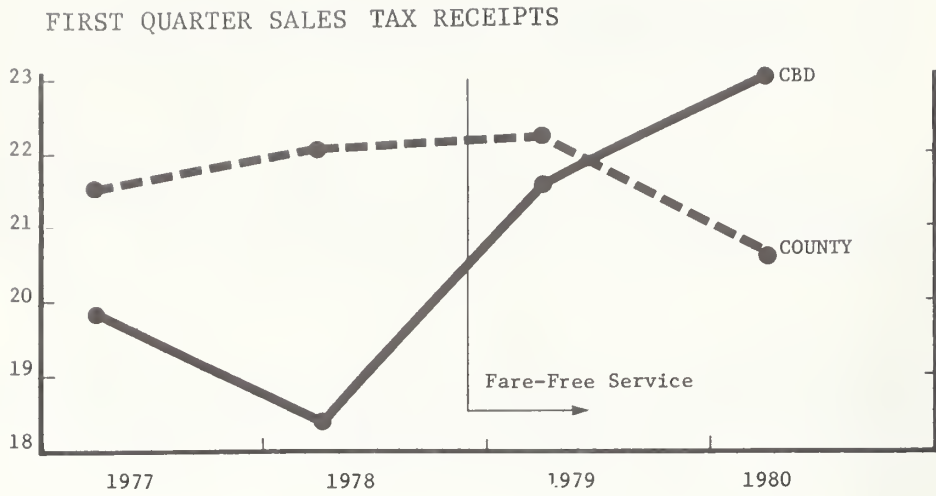
2. The increase in CBD sales has occurred primarily in first-quarter sales (December 1 through February 28), which corresponds to the holiday shopping season. On a seasonal basis, CBD sales exhibit trends similar to those observed for county-wide sales during second-, third-, and fourth-quarters. As shown in Figure ES-2, for example, while trends in third-quarter sales tax receipts from the CBD panel are almost identical to those for Albany County, first-quarter sales tax receipts from the CBD panel increased by 25 percent between 1978 and 1980, while during the same period county-wide sales tax receipts decreased by 5.6 percent.
3. The increase in first-quarter sales is occurring primarily among miscellaneous sales establishments (i.e., sporting goods, books, specialty and gift shops) and, to a lesser extent, among restaurants. First-quarter sales tax receipts from miscellaneous sales establishments increased by 71 percent between 1978 and 1980. Sales tax receipts from restaurants increased by 16 percent during this same period.
4. Since overall expenditures for holiday-related purchases decreased over this period, as evidenced by the decline in county-wide first quarter sales shown in Figure ES-2, one would expect the increase in miscellaneous sales in the CBD to be the result of a diversion of purchases formerly made outside the CBD.
5. In addition to the diversion of purchases to the CBD, fare-free service has also led to a redistribution of sales within the CBD. For example, as shown in Figure ES-3, third-quarter retail sales tax receipts from miscellaneous sales establishments located near major bus lines were \$1,970 more than those from more distantly located establishments in 1978, just prior to the implementation of fare-free service. One year later, though, this difference had increased to \$4,200. By 1980 this difference had further increased to \$10,600. These trends also provide further evidence of the linkage between CBD fare-free service and increased retail sales.

TRANSFERABILITY OF RESULTS

Increased Intra-CBD Ridership

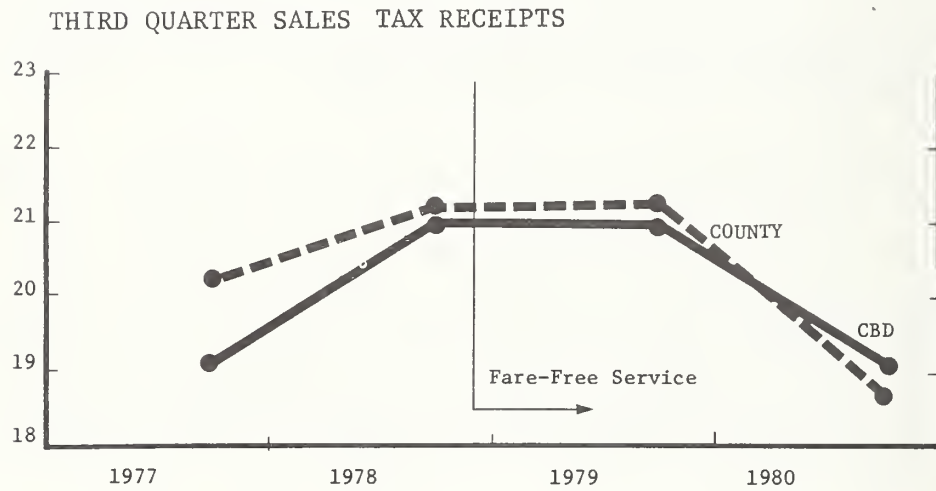
Although ridership can be expected to increase with the elimination of fares under practically any set of circumstances, the magnitude of this increase will depend on a number of factors. First, the extent to which ridership is increased appears to be quite dependent on both the number and characteristics of individuals for whom fare-free service is available. In

FIRST QUARTER (Dec., Jan., Feb.)
 SALES TAX: CBD PANEL (1967 \$ x 10⁴)



FIRST QUARTER (Dec., Jan., Feb.)
 SALES TAX: ALBANY COUNTY
 (1967 \$ x 10⁵)

THIRD QUARTER (June, July, August)
 SALES TAX: CBD PANEL (1967 \$ x 10⁴)



THIRD QUARTER (June, July, August)
 SALES TAX: ALBANY COUNTY
 (1967 \$ x 10⁵)

FIGURE ES-2. CBD PANEL VERSUS ALBANY COUNTY SALES TAX RECEIPTS BY QUARTER

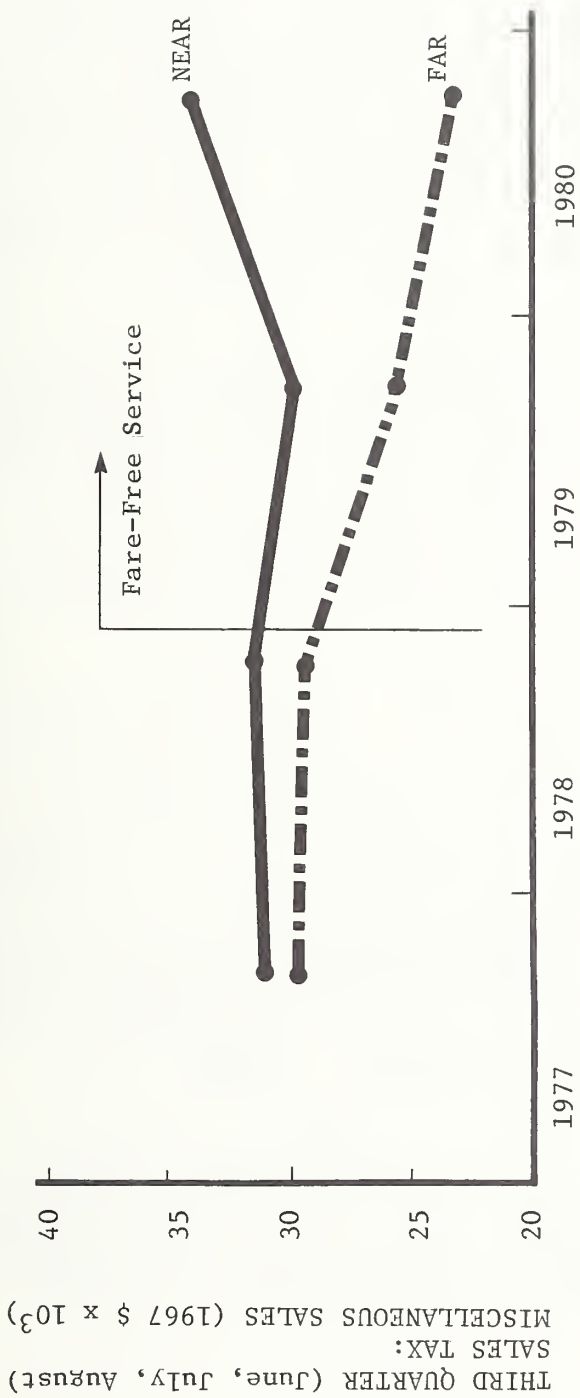


FIGURE ES-3. RETAIL SALES TAX RECEIPTS VERSUS PROXIMITY TO BUS LINES:
MISCELLANEOUS SALES

Albany, for example, ridership of CBD employees has increased by nearly 300 percent, while ridership of CBD residents increased by slightly less than 200 percent. For those neither working nor living in the CBD, though, ridership increased by only about 108 percent.

Another factor influencing the magnitude of ridership increases would appear to be the frequency of bus service. In Albany, several bus routes converge on a relatively small number of "paths" through the fare-free zones. As a result, along many of these paths headways are quite short (i.e., three to five minutes). In view of the very short distance of most trips within the fare-free zone, it is conceivable that with less frequent service, people would find it more convenient to walk rather than wait five or ten minutes for a bus, or time their trip to coincide with scheduled bus service. In those urban areas lacking extensive bus service in the downtown area, then, the increase in ridership resulting from the elimination of fares may not be nearly as great.

A third factor related to increased ridership is the distribution of employment, residential and retail activities within the fare-free zone in terms of not only distance but topography as well. In Albany, for example, much of the retail core is located near the western edge of the fare-free zone at the foot of a relatively steep hill. Much of the zone's employment and residential population, though, is located at the top of this hill. Undoubtedly this somewhat unique combination of topography and distribution of activity locations has accounted for at least some of the increased ridership observed in the Albany demonstration.

Travel Demand and Related Impacts

Prior to the implementation of fare-free service in Albany, walk trips accounted for about three-quarters of all intra-CBD travel by downtown employees between 9:00 AM and 3:00 PM, while travel by auto accounted for less than 10 percent. For downtown residents, about half of their travel within the CBD was accounted for by walk trips, and about 15 percent by auto. Not surprisingly, then, the major changes in travel behavior resulting from the elimination of fares were shifts in mode among downtown employees from walk to bus, and, among downtown residents, shifts from walk to bus and, to a lesser extent, from auto to bus. As a result, the impacts of fare-free service on energy, air quality and traffic congestion have been minimal.

To the extent that walk trips represent the greatest proportion of intra-CBD travel in most urban areas, it would be reasonable to expect that shifts similar to those observed in Albany would also occur in other urban areas implementing CBD fare-free service. In general, then, CBD fare-free projects would not be expected to have a significant impact on auto-related impacts such as fuel consumption, emissions, or traffic congestion.

In the Albany demonstration, the implementation of fare-free service has had essentially no impact on trip frequency for either downtown employees or downtown residents. This would imply that the elimination of fares has not created new travel opportunities to unique activities. In other words, it would appear that stores, restaurants, and other activities in the CBD are located sufficiently close to employment centers and residential areas to allow reasonable access by walking. With the implementation of fare-free service, then, people make essentially the same trips but by bus rather than walking, (or, in the case of downtown employees, the same type of trips to similar but more distant activities). To the extent that similar locational patterns of employment, population, and activities exist in other downtown areas, the findings of the Albany demonstration related to trip frequency would be transferable.

Operational and Level of Service Impacts

The extent to which fare-free operation leads to degradations in service levels requiring operational changes (usually in the form of increased bus service) depends essentially on two factors:

1. the magnitude of ridership increases brought about by the elimination of fares; and
2. ridership levels existing prior to fare-free service.

In the Albany demonstration, no reductions in service levels of any significance occurred after fares were eliminated. For the most part, this is attributable to relatively low load factors (i.e., about 30 percent) on buses entering and leaving the fare-free zone during off-peak hours.

Retail Sales

The analysis of retail sales tax receipts suggests that there is indeed a relationship between retail sales and the improved accessibility resulting from the elimination of fares. This analysis also indicated that the increase in sales was highly seasonal in nature, occurring primarily during the holiday shopping season, and tended to be higher for certain categories of sales than others. Additionally, there appeared to be a fairly definite relationship between the proximity of retail establishments to major bus routes and increased sales. Therefore, while in general the implementation of fare-free service could be expected to have a positive impact on retail sales, the magnitude of this impact would depend on the mix of sales within the fare-free zone and the proportion of retail establishments located very near major bus routes. In addition, results suggested that CBD employees rather than CBD

residents or other visitors to the downtown area were primarily responsible for the increase in retail sales. In transferring the results observed in Albany, then, consideration should be given to the relative proportions of these groups within the fare-free zone.

OVERALL FEASIBILITY OF FARE-FREE SERVICE

The findings developed for the Albany demonstration and their potential transferability together with the experiences with CBD fare-free service in other urban areas have a number of implications for CBD fare-free projects in general.

1. First, the analysis of retail sales tax receipts in Albany suggests that the elimination of fares has had a positive impact on CBD retail sales. More convincing, though, is the willingness of downtown merchants to not only continue their support of Albany's Freewheeler service beyond the demonstration period, but to increase the level of this support as well.
2. Second, the implementation of fare-free service has enhanced the public's image of CDTA bus service, inducing transit use by people who, without the elimination of fares, would not have been exposed to CDTA bus service. At this point, though, there is no evidence to suggest that this enhanced image has led to an increase in fare-paying ridership in Albany.
3. One area where CBD fare-free projects have not been effective is in reducing auto travel. For the most part, mode shifts from walk to bus appear to be responsible for the increases in ridership resulting from the elimination of fares. As a result, the impacts of these projects on energy, air quality and traffic congestion have been minimal.
4. Unlike the system-wide fare-free projects in Denver and Trenton, which experienced severe problems related to overcrowding and passenger conduct, the implementation of CBD fare-free service in Albany has been relatively problem-free, which, together with similar experiences in Portland and Seattle, demonstrates the feasibility of instituting fare-free service on a limited geographic basis.
5. Perhaps the best indication of the feasibility of CBD fare-free service, though, is the length of time that these projects have been in existence. Seattle's Magic Carpet was implemented in 1973, and has been expanded twice since then. In Portland, Tri-Met's Fareless Square was implemented in 1975, and has already been expanded once. In Albany, Freewheeler service has been continued beyond the two-year demonstration period with local funding.

6. Finally, one fundamental practical concern associated with fare-free service is who will cover the costs of providing this service. In Albany, it would seem that the primary beneficiaries of CBD fare-free service are the City of Albany and downtown merchants, while CDTA appears to have had the least to gain by providing fare-free service in the downtown area. To the extent that the benefits of CBD fare-free service are shared among several interest groups, the costs of providing such service, too, should be shared. CBD fare-free service in Albany, for example, is subsidized jointly by CDTA, the City of Albany, and the downtown merchant's association. The feasibility of such a funding arrangement, which is somewhat unique in that it represents a cooperative effort among the regional transit authority, city government, and private business interests, is particularly relevant in view of planned reductions in transit operating subsidies in years to come.

AREAS OF FURTHER RESEARCH

Impacts on Fare-Paying Ridership

The analysis of CDTA's monthly systemwide fare revenues provided no evidence which would indicate that the implementation of CBD fare-free service has resulted in an increase in fare-paying ridership. However, because a number of other factors could also have influenced fare revenues, it would not be possible to conclude from this analysis that an increase in fare-paying ridership did not occur. Further, due to the effects on ridership of gasoline shortages which began to appear in April 1979, four months after the implementation of CBD fare-free service, it was not possible to examine the longer-term impacts of fare-free service on fare-paying ridership. Since increased fare-paying ridership is one of the few tangible benefits which would justify a transit operator's support of CBD fare-free service, a more definitive finding regarding this issue could have important implications for the funding of such projects in the future.

CDB Revitalization

The findings of this evaluation related to the impact of CBD fare-free service on retail sales were based primarily on informal judgment of whether patterns in the data suggested that a change in retail sales had occurred as a result of fare-free service. While results indicate that fare-free service has had a positive impact on retail sales within the CBD, confirmation of these results based on more rigorous statistical analysis techniques would remove some of the uncertainty surrounding this finding.

The analysis of retail sales presented in this report focusses on a panel of retail establishments in the CBD that were in business throughout the 15-quarter period for which retail sales tax data were available. In order to more thoroughly assess the impacts of fare-free service on CBD retail sales, though, it would be useful to examine sales of other retail establishments in the CBD which were in business for part, but not all, of this 15-quarter period. This would not only provide a more accurate representation of total CBD retail sales, but may also account for trends in sales observed for certain retail categories of the CBD panel (e.g., the steady decline in restaurant sales after the first quarter of 1978). Another area of interest would be the longer term impacts of CBD fare-free service on the total number and type of retail establishments within the CBD. In particular, it would be quite interesting to see if Albany's downtown retail core continues to evolve into a shopping area oriented primarily towards serving the relatively large employee population located in the downtown area.

1. INTRODUCTION

1.1 FARE-FREE PROJECTS IN THE UNITED STATES

Paralleling the general shift in past years from private to public ownership of urban area transit systems was an increase in the number of transit operators instituting programs involving some form of fare reduction. For example, the Urban Institute describes 60 such programs that were implemented between 1972 and 1976 in urban areas as diverse in size and character as Akron, Ohio, Los Angeles, and Manchester, New Hampshire.¹ These fare reductions ranged in magnitude from relatively minor decreases to total fare elimination, and varied in geographic scope and time coverage from areawide application during the entire day to specific geographic locations during off-peak hours only.

Five fare elimination projects have been funded under the Urban Mass Transportation Administration's (UMTA) Service and Methods Demonstrations (SMD) Program. In two of these demonstration projects (Denver, Colorado and Trenton, New Jersey), fares were eliminated on a systemwide-basis during the off-peak period. In two other demonstrations (Albany, New York and Knoxville, Tennessee) fares were eliminated during the off-peak period for travel within the Central Business District (CBD) only. In a fifth project, (Scranton, Pennsylvania), off-peak fares were eliminated for a 1-month period on a systemwide basis primarily as a promotional effort. In addition to these five projects which have been funded through SMD demonstration grants, fare-free service in three other urban areas have been the subject of SMD case study evaluations. These include Seattle's Magic Carpet service and Portland's Fareless Square, ongoing CBD fare-free projects, and a 1-month systemwide off-peak fare-free promotion in Salt Lake City.

The elimination of fares within the CBD can serve a wide range of objectives. The focus of many CBD fare-free projects has been revitalization of the downtown area. By improving accessibility within the downtown area, for example, CBD employees may find it more convenient to accomplish their shopping needs by patronizing downtown merchants during their lunch hour rather than stopping off on their way home from work or making a separate trip during the evening or on weekends. Similarly, for people already shopping downtown, accessibility between various retail opportunities within the CBD would be improved. This potential increase in retail activity could spark a revitalization of an otherwise declining retail core. Furthermore, to the extent that the residential population of many downtown areas can be characterized as

¹Urban Institute, Low Fare and Fare-free Transit: Some Recent Applications by US Transit Systems, report prepared for US Department of Transportation, Urban Mass Transportation Administration, Washington, DC, 1977.

transit dependent, CBD fare-free service offers a significant increase in mobility for this group.

In many instances, CBD fare-free service can be viewed as a marketing tool for transit. Since the elimination of fares is likely to attract a number of new riders, many people could be exposed to transit who otherwise might not consider using public transportation. To the extent that these new riders find transit to be better than their original preconceptions, CBD fare-free service could ultimately lead to an increase in fare-paying ridership. Since the CBD represents a significant potential market of ridership for most transit systems, elimination of fares in the downtown area would be particularly effective in reaching this market.

Finally, CBD fare-free projects in some instances have been implemented in response to concerns related to air quality, energy and traffic congestion. However, since auto typically represents such a small proportion of travel within the CBD, the impact of CBD fare-free service on these auto-related impacts has, in general, not been significant.

1.2 PROJECT DESCRIPTION AND OBJECTIVES

In November 1978, the Capital District Transportation Authority (CDTA) in cooperation with UMTA established a fare-free zone in downtown Albany, New York, as part of UMTA's SMD program. This project, termed "Freewheeler," eliminated fares for trips within the two-thirds square mile fare-free zone during off-peak hours (9 AM to 3 PM) during the week, and from 9 AM to 5 PM on Saturdays.

In general, the objectives of this demonstration, from both CDTA's and UMTA's perspectives, were to increase transit vehicle utilization and to improve the economic vitality of the Albany CBD. Specific goals of the UMTA SMD program in funding this fare-elimination project included the following:

1. to study the impact of CBD fare-free transit on the travel behavior and mobility of residents, employees and visitors to the downtown;
2. to study the effectiveness of CBD fare-free transit service in reducing auto congestion and associated auto-related impacts in the downtown area;
3. to examine the costs associated with geographically limited fare-free transit service;
4. to investigate the promotional aspects of fare-free transit service in increasing public awareness and perceptions, systemwide;

5. to study the influence of CBD fare-free transit service on retail sales and economic revitalization of a declining CBD; and
6. to explore the joint costs and benefits associated with a cooperative effort between a public transit agency and private entrepreneurs.

Local objectives for the demonstration project, which were not very different from UMTA's, were stated in CDTA's grant application as follows:

1. revitalization of the downtown area;
2. reduced traffic congestion;
3. increased fare-paying patronage; and
4. improved public image of public transportation.

1.3 ORGANIZATIONAL ROLES

As the designated grant recipient of the Albany CBD fare-free demonstration, CDTA was responsible for the planning, implementation, and operation of the project. The deputy director of CDTA served as project manager, and project planning and operations were handled through CDTA's existing organizational structure. A project advisory committee was established composed of the following individuals:

1. Project Director, CDTA;
2. Public Information Officer, CDTA;
3. Manager of Transportation, CDTA;
4. Mayor, City of Albany;
5. representatives of the downtown merchant's association;
6. representatives of Albany Urban Renewal Agency;
7. representatives of Capital District Regional Planning Commission;
8. representatives of Capital District Transportation Committee;
9. representatives of New York State Department of Transportation; and
10. representatives of New York State Office of General Services.

This committee met occasionally as needed to review the status of the project and to make recommendations concerning its implementation and operation. The committee was used as a valuable resource for coordinating activities and ideas from various interested parties and for disseminating information.

Although the SMD grant for the Albany CBD fare-free demonstration was administered by UMTA, the Transportation Systems Center (TSC) was responsible for the monitoring and evaluation process. Cambridge Systematics, Inc., under contract to TSC, designed the data collection plan and carried out the analyses and evaluation. To assist in the data collection required for the project evaluation, CDTA contracted with a local consulting firm, Roger Creighton Associates, Inc., to administer the travel and purchase surveys described in Section 1.6. Figure 1-1 illustrates an organizational chart of the agencies involved in the Albany CBD fare-free demonstration and evaluation.

1.4 DEMONSTRATION SETTING

1.4.1 Characteristics of the Albany CBD

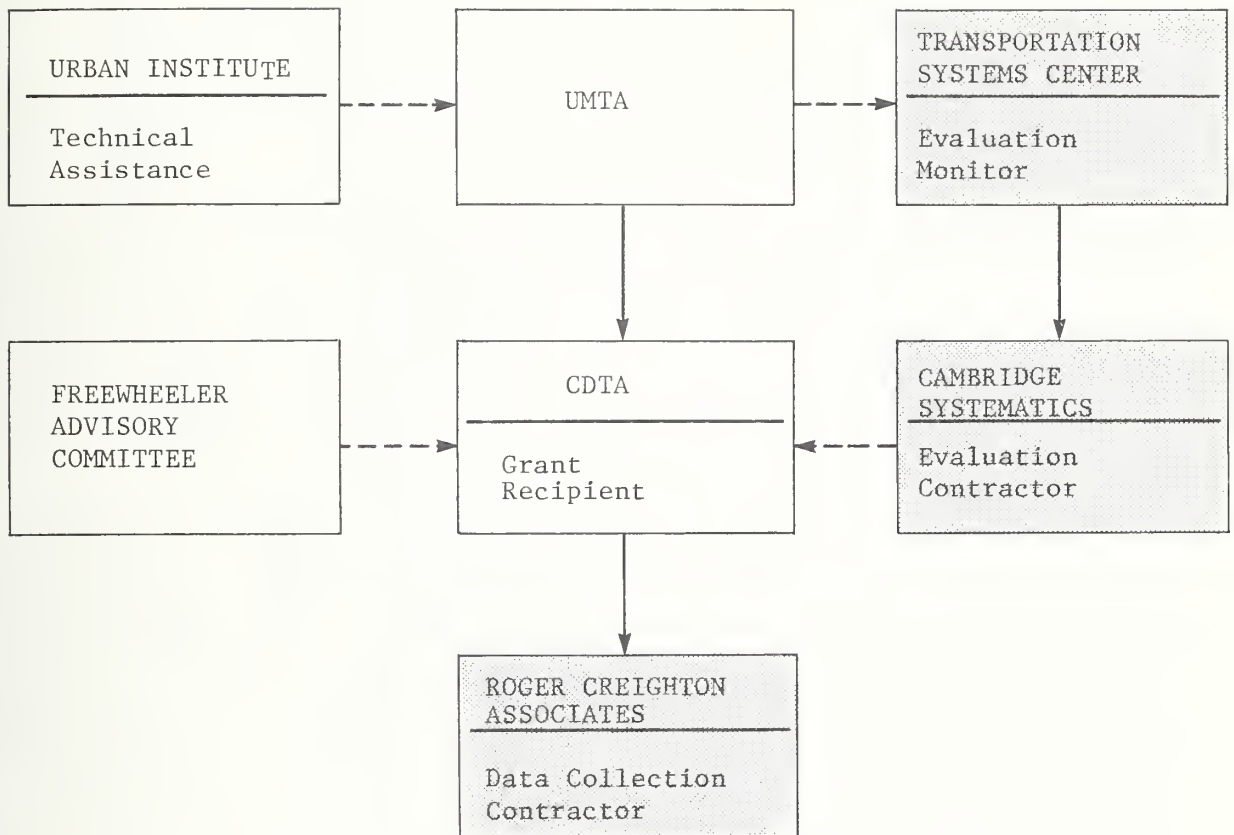
Albany, the capital of New York State, is the largest of three central cities in the Albany-Schenectady-Troy SMSA and is located on the Hudson River approximately 150 miles north of New York City. The city, encompassing 20.9 square miles of land, had a 1970 population of 115,800 (ranked 126 in the nation) which by 1980 had declined to 101,800.^{1,2}

As shown in Figure 1-2, the Albany CBD (as defined in the 1972 Census of Retail Trade) encompasses the fare-free zone and an area to the north along the Hudson River. This area has undergone many positive changes in the past decade, including:

1. completion of I-787 (Riverfront Arterial);
2. occupancy of the Empire State Plaza by state offices and some retail/service establishments;
3. a new Federal office building;
4. "boutique"-type retail use of renovated residential buildings;

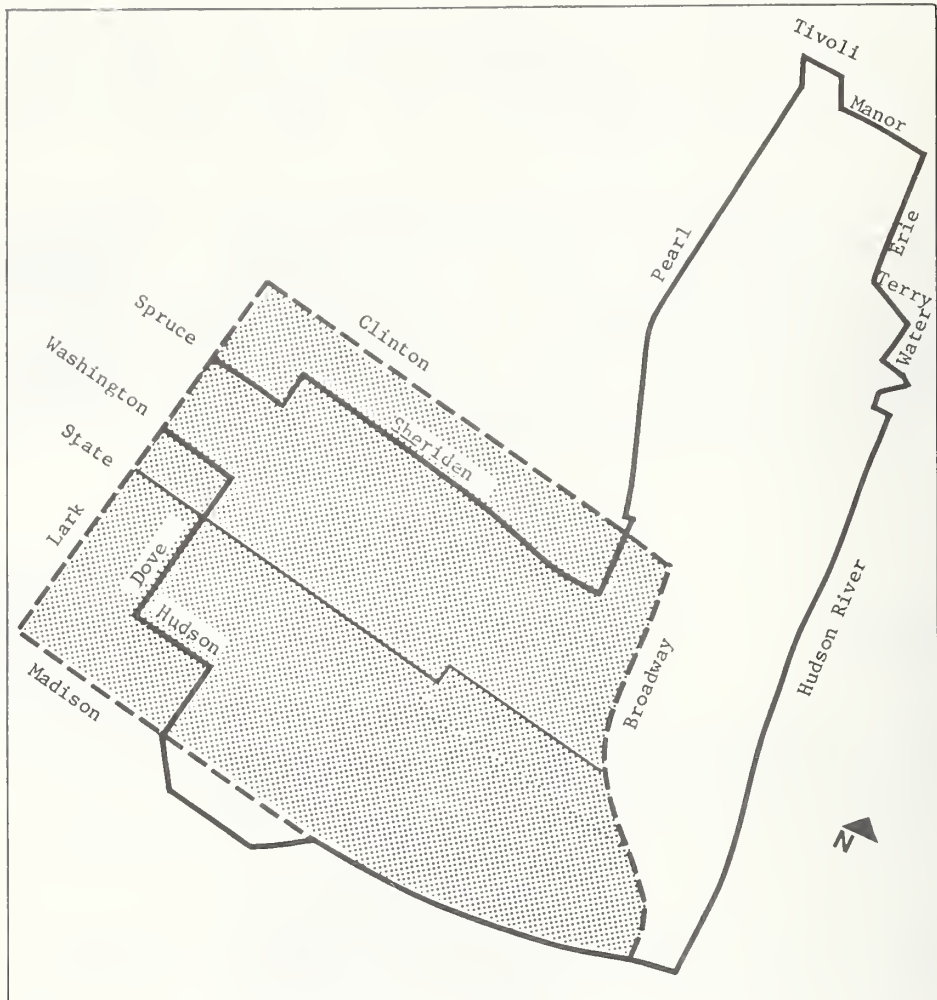
¹US Bureau of the Census, City and County Data Book 1972, Table 6: "Cities," Items 302 and 303, page 738.

²US Bureau of the Census, 1980 Census of Population, preliminary count.



NOTE: Shaded boxes indicate participation principally in the project evaluation.

FIGURE 1-1. ORGANIZATIONAL ROLES IN THE FREEWHEELER DEMONSTRATION AND EVALUATION





-  CBD (as defined in 1972 Census of Retail Trade)
-  Fare-free zone

FIGURE 1-2. ALBANY CENTRAL BUSINESS DISTRICT

5. new use of the Delaware and Hudson Building as offices for the State University of New York (SUNY);
6. closing of the SUNY Plaza (at the end of State Street) to vehicular traffic;
7. a new inter-city bus terminal; and
8. the proposed new use of Union Station.

Each of these has helped to intensify the focus on the area surrounding State Street, which is the heart of downtown Albany.

As shown in Figure 1-3, land use in the Albany CBD is dominated by government offices. The Empire State Plaza/ State Capitol/Smith Building complex, the major center of state government employment, comprises about 13 percent of the total land area in the CBD and about 26 percent of the total non-residential CBD land area. Estimated CBD employment in 1976 was 34,700, of which about 21,000 were city, state, and Federal employees.¹ The next largest employment categories, private office (7,500) and retail (4,000), together have only about half the employment of government offices.

The fare-free zone contains virtually all of the retail establishments in the downtown area, the State Capitol and Empire State Plaza, city, county, and Federal offices, several large private office complexes, and two residential neighborhoods: Center Square and Arbor Hill. Population within the fare-free zone (7,647 in 1970 and 7,713 in 1976) has remained fairly stable since the residential relocation in the late 1960's to clear land for the Empire State Plaza.² The number of people living outside the zone, but within one block is approximately 4,500.³

Retail activity within the Albany CBD has generally declined over the past 15 years. As shown in Table 1-1, in 1967 there were a total of 284 retail establishments located in downtown Albany. In 1972, this number had decreased to 198. By 1977, only 133 retail establishments remained in the CBD. As Shown in Figure 1-4, total retail sales in the CBD dropped by a factor of three between 1967 and 1977 in terms of constant 1967 dollars, while over the same period total SMSA sales increased by 20 percent. As a percentage of total SMSA sales, Albany CBD sales declined from 4.2 to 1.1 percent between 1967 and 1977.

¹Barton Aschman Associates, Inc. Albany Downtown Circulation Study, Technical Memorandum (Grant Application, Section 4-1, Figures 6, 7).

²US Census of Population, 1970, Albany-Schenectady-Troy, SMSA, Table P-2, page 13, Table 2, pages 5-9.

³Barton Aschman Associates, op cit.

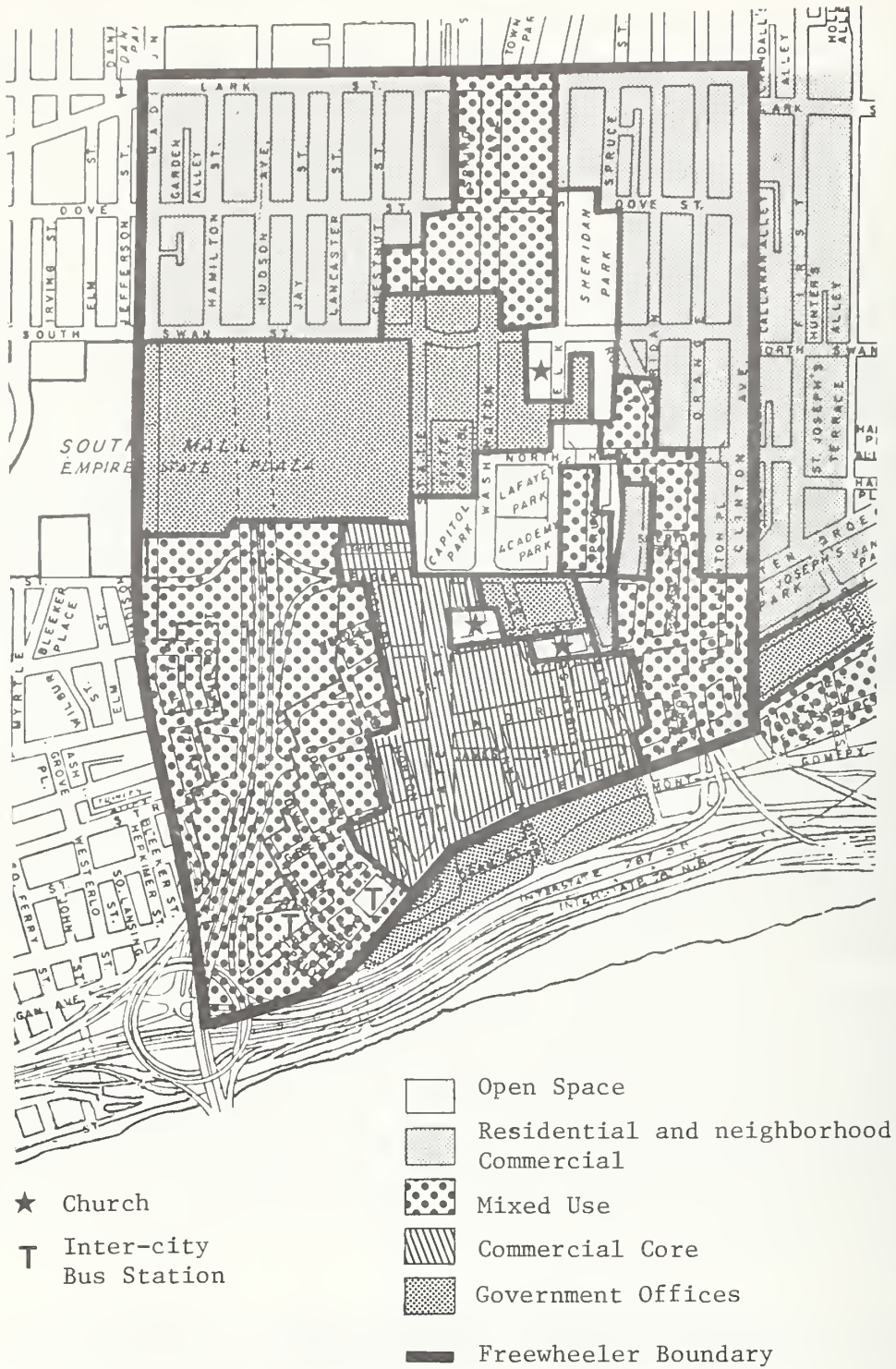


FIGURE 1-3. GENERALIZED LAND USE: ALBANY CBD

TABLE 1-1. RETAIL ESTABLISHMENTS IN THE ALBANY CBD:
1967, 1972, 1977

	Number (Percent) of Establishments					
	1967		1972		1977	
Department stores	2	(0.7%)	0	(0.0%)	0	(0.0%)
Food stores	19	(6.7)	13	(6.6)	7	(5.3)
Clothing stores	61	(21.5)	36	(18.2)	25	(18.9)
Home furnishing stores	4	(1.4)	0	(0.0)	0	(0.0)
Eating places	69	(24.3)	51	(25.8)	45	(33.8)
Drinking places (alcohol)	20	(7.0)	20	(10.0)	12	(9.0)
Furniture stores	5	(1.8)	6	(3.0)	2	(1.5)
Hardware stores	4	(1.4)	2	(1.0)	4	(3.0)
General merchandise	6	(2.1)	5	(2.5)	1	(0.8)
Automotive/gasoline	6	(2.1)	8	(21.0)	6	(4.5)
Appliance stores	8	(2.8)	4	(2.0)	2	(1.5)
Drug stores	4	(1.4)	3	(1.5)	1	(0.8)
Miscellaneous	76	(26.8)	50	(25.3)	28	(21.1)
	284	(100.0)	198	(100.0)	133	(100.0)

Source: US Bureau of the Census, Census of Retail Trade--Major Retail Centers, Albany-Schenectady-Troy SMSA, 1967, 1972, and 1977.

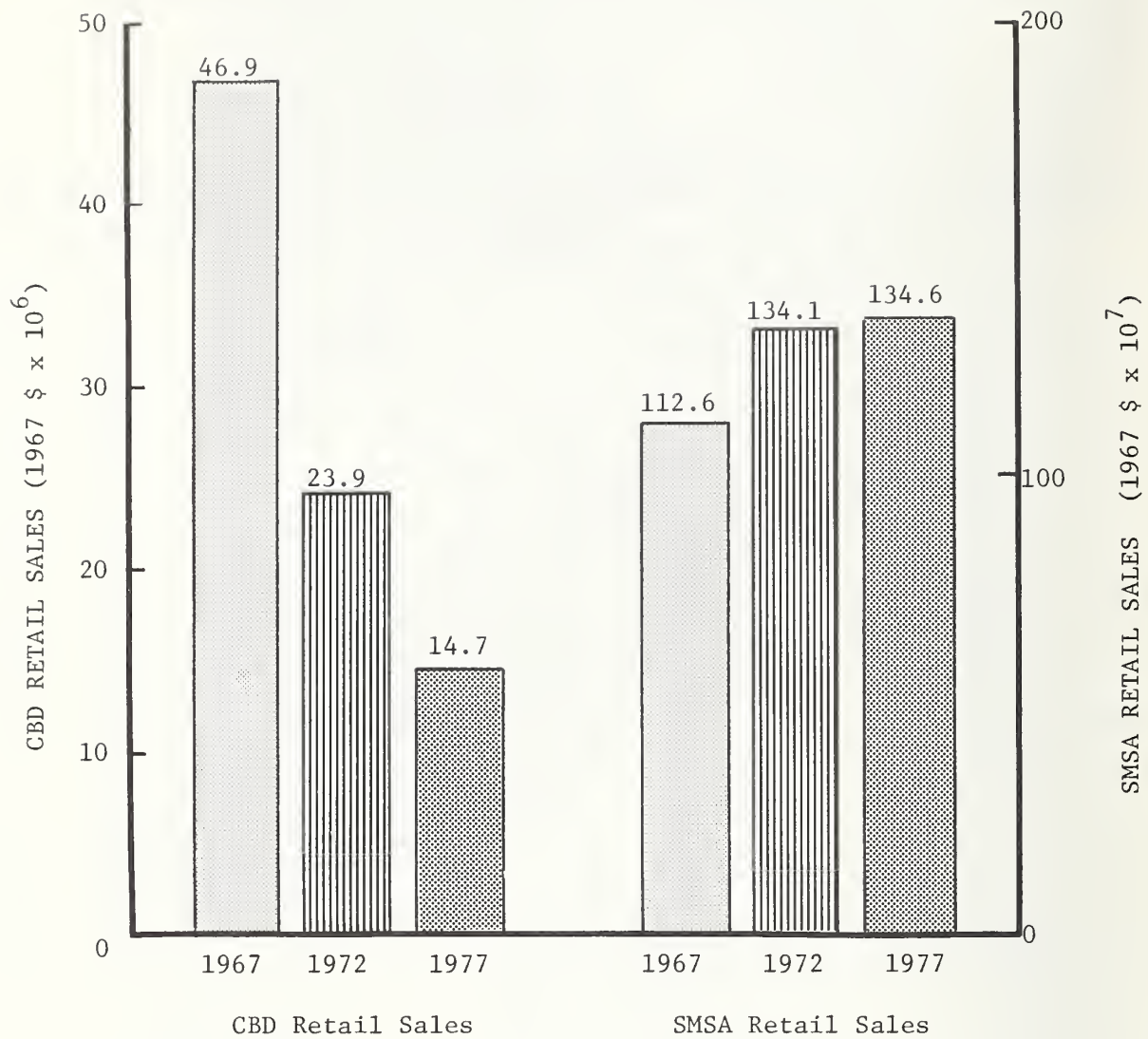


FIGURE 1-4. ALBANY CBD VERSUS SMSA RETAIL SALES

In addition to changes in the number of establishments and total retail sales, Table 1-1 reveals that changes in the characteristics of retail activity within the CBD have also occurred. In 1967, for example, two major department stores, four home furnishing stores, and eight appliance stores were located in downtown Albany. In 1977, both department stores, all four home furnishing stores and all but one appliance store had left the CBD. In contrast, although the number of eating places decreased in absolute terms from 69 to 45, the proportion of all retail establishments categorized as eating places increased by nearly 40 percent (i.e., from 24.3 to 33.8 percent of all establishments) between 1967 and 1977. As shown in Figure 1-5, between 1967 and 1977 the proportion of CBD sales for apparel and accessories decreased from 31.7 to 19.1 percent, while the proportion of sales representing eating and drinking establishments nearly doubled, from 15.7 to 29.5 percent. These shifts in the types of establishments forming the downtown retail core and changes in the distribution of sales are evidence of a transformation of the CBD from a regional shopping area to one more oriented towards serving the increasing employee population located in the downtown area.

1.4.2 Characteristics of CBD Transit

1.4.2.1 CDTA Service and Patronage - A total of 567 midday bus trips on 20 of the routes operated by CDTA follow one of seven major paths through the fare-free zone, resulting in very frequent service within the zone. As shown in Figure 1-6, for example, during midday a bus goes west along State Street and Washington Avenue towards Lark Street, on average, 26 times an hour, and crosstown on North Pearl Street seven times an hour. The midday load factors for buses entering the zone prior to fare-free service were between 15 and 30 percent. Prior to fare-free operation, midday ridership on regular CDTA service within the fare-free zone averaged 770 trips on weekdays and 300 trips on Saturdays.¹

In comparison, during each of the two peak periods (7:30 - 8:30 AM and 4:00 - 5:30 PM), approximately 320 CDTA buses enter the downtown area. As with midday frequencies, the greatest concentration of transit service is on State Street, while the second highest bus volumes are further west on Washington Avenue. Other streets with frequent service are Pearl and Broadway. Peak hour headways range from 12 to 20 minutes, and prior to fare-free service, peak period load factors generally exceeded 50 percent.

At the time fare-free service was implemented, the regular cash fare on CDTA buses was 40 cents, with zone charges of up to 35 cents. The systemwide

¹CDTA estimates were determined using on-board observers, on-street observers, driver checks, the CDTA passenger counting system, seasonal factoring, and "uphill" factoring to account for the propensity of people to ride a bus only westward on State Street due to the steep incline from Broadway to Eagle Street.

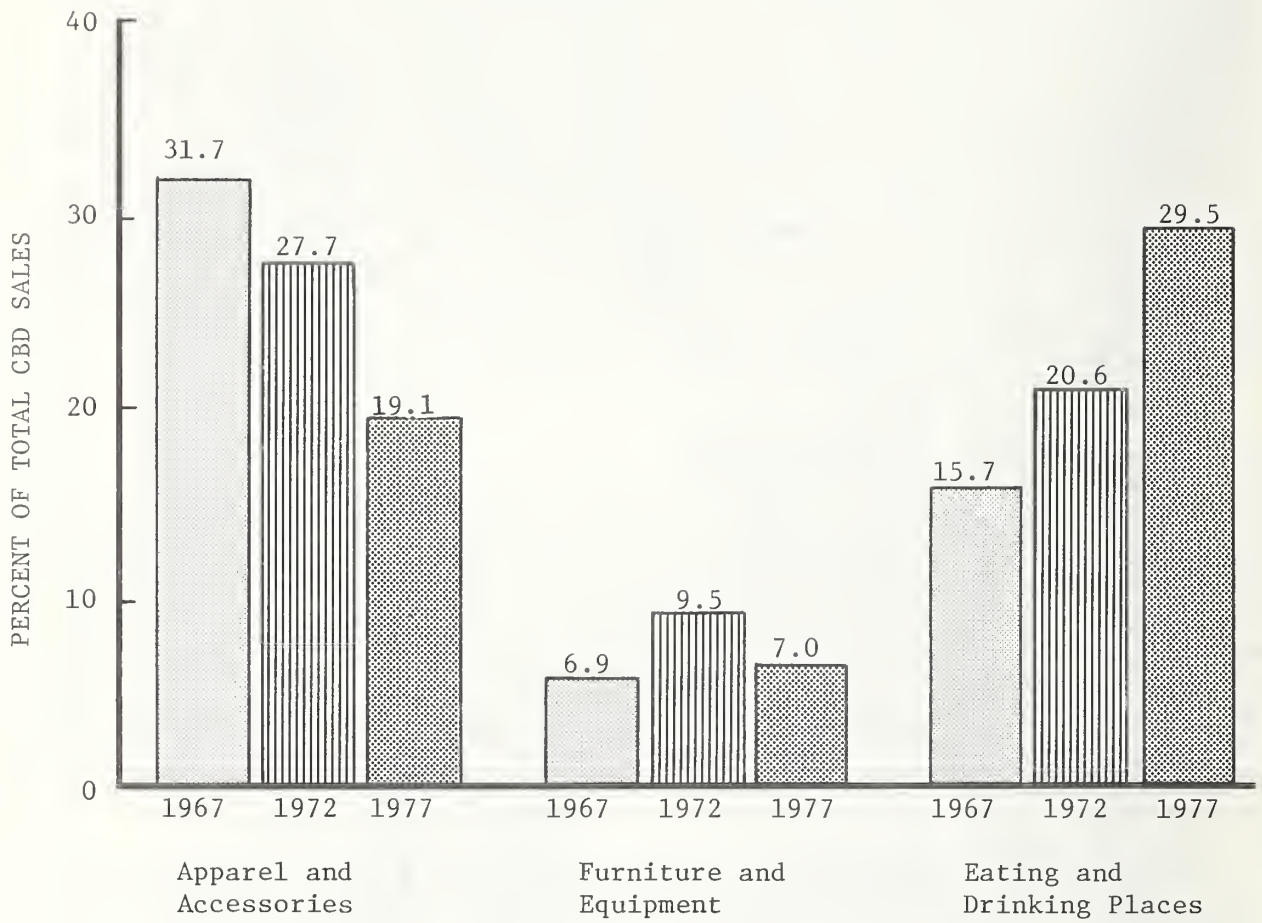


FIGURE 1-5. SHIFTS IN PROPORTIONS OF CBD SALES:
APPAREL, FURNITURE, EATING AND DRINKING PLACES

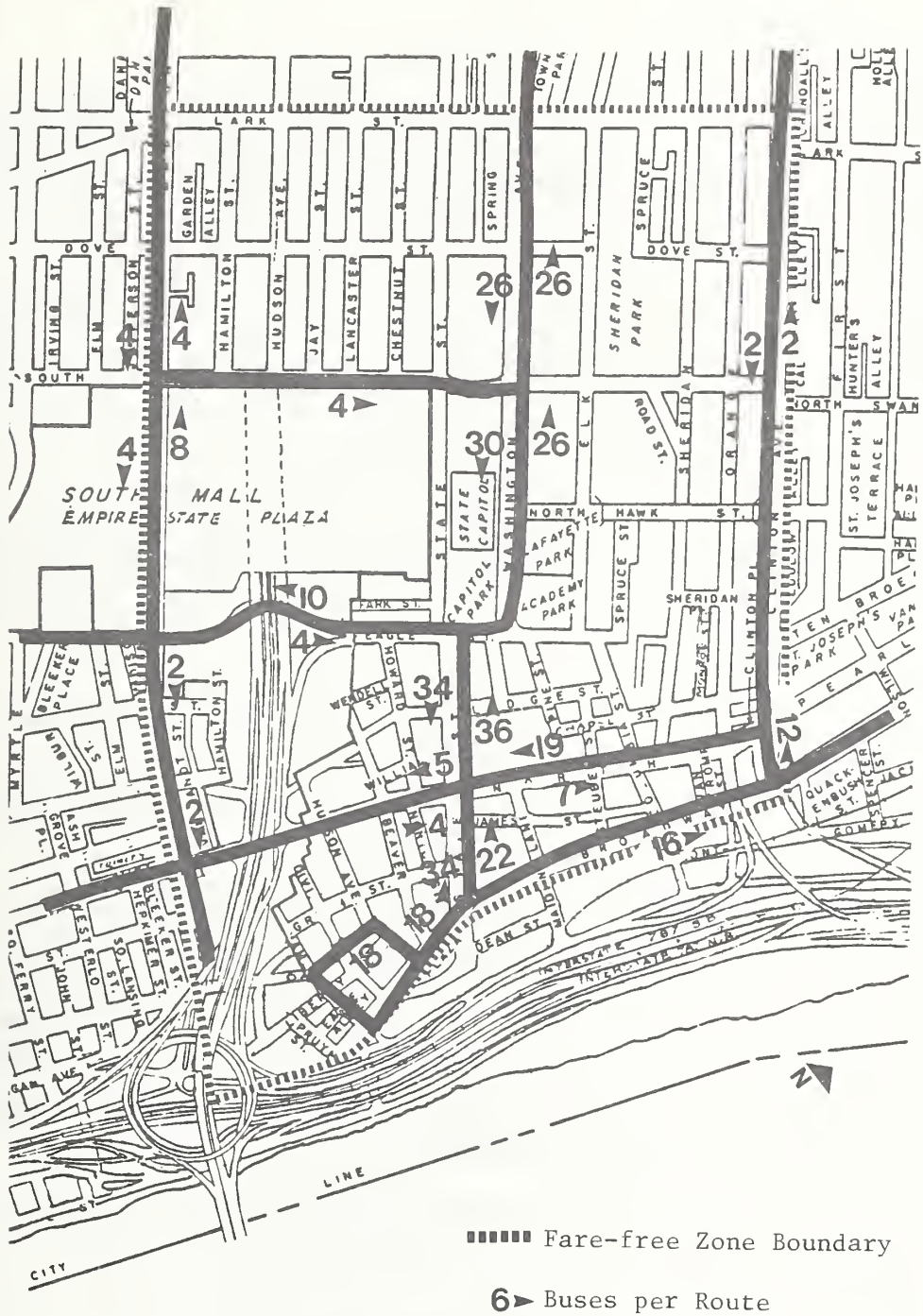


FIGURE 1-6. CDTA BUS VOLUMES DURING NOON HOUR (NOON TO 1 PM)

base fare was increased to 50 cents in April 1980. Sunday rides are half-price, transfers are free, and commuter passes are available which allow unlimited bus rides for a fixed monthly fee. Elderly and handicapped patrons ride for half-fare at all times. These fares cover 60 percent of CDTA's operating costs.

Prior to fare-free service, CDTA's general fare collection policy was one of pay-upon-entry. With the elimination of fares within the CBD, however, it was necessary to institute a revised fare collection procedure involving the use of fare receipts on outbound and through-routed buses. Over time, though, the use of fare receipts was discontinued and the fare collection policy evolved into what was essentially an honor-based system.

1.4.2.2 Other Bus Service - There were three non-CDTA scheduled bus services in downtown Albany prior to the implementation of CBD fare-free service:

1. a downtown midday circulator bus service, sponsored by the downtown merchants' association;
2. a fringe parking shuttle bus service, sponsored by the New York State Office of General Services; and
3. a shuttle bus service for university students, sponsored by the State University of New York at Albany.

The downtown circulator service was initiated in 1966 to provide free bus transportation within downtown Albany during the time period from 11:35 AM to 2:15 PM. The buses and drivers were chartered at cost by the downtown merchants' association from CDTA. The service was operated Monday through Friday, except on state holidays, utilizing three buses on 10-minute headways along a 2-mile route which included Washington Avenue and State, Dove, and Swan Streets. Ridership averaged 650 boardings per day before January 1976, when a 5-cent fare was instituted. When fare-free service began, this downtown circulator service was discontinued.

The New York State Office of General Services (OGS) has operated a peripheral park-and-ride service since late 1971 for State employees working in the downtown area. There are two peripheral parking lots: one on Washington Avenue near the State Office Campus (west of downtown) and the other on McCarthy Avenue near Exit 23 of the Thruway (south of downtown). Buses use the freeways between the lots and downtown Albany.

The service characteristics of the fringe parking shuttle are:

1. 5-minute peak headways between 6:55 - 9:15 AM and 3:30 - 5:30 PM;
2. 45-minute off-peak headways from 9:30 AM to 3:30 PM;

3. Last run at 6:30 PM;
4. \$5 per month charge for parking (including kiss-riders entering the parking area), no fee for bus trip; and
5. 18 over-the-road coaches providing the service under a \$300,000 annual contract.

This service cannot be halted nor the fee changed except through negotiation with the State Employees' Union.

The State University of New York at Albany operates a free shuttle bus service for its students and staff between downtown and the main campus located on the western edge of the city. This shuttle provides service principally between the main campus and student dormitories in the Washington/Western/State corridor, and makes one stop within the fare-free zone at the Wellington Hotel on State Street.

1.5 EVALUATION ISSUES

The purpose of the evaluation effort associated with the Albany CBD fare-free demonstration was to assess the extent to which the demonstration achieved the objectives of specific interest to CDTA and to UMTA discussed in Section 1.2. In making this assessment, the evaluation focussed on the following major impact areas:

1. ridership levels and characteristics;
2. travel behavior;
3. transit level of service;
4. CBD retail sales;
5. perceptions of transit and CBD shopping opportunities;
6. secondary auto-related impacts; and
7. abuse of CDTA's honor-based fare collection policy.

1.5.1 Ridership Levels and Characteristics

Based on results of other CBD fare-free projects, it was anticipated that the elimination of fares in the Albany CBD would result in a significant increase in ridership within the downtown area. Specific evaluation issues related to this increased ridership included:

1. Ridership Levels--What is the magnitude of the increase in ridership resulting from the elimination of fares? Are

increases occurring primarily on weekdays or on Saturdays? How do ridership levels vary over the 2-year demonstration period?

2. Characteristics of Riders--Who benefits most from CBD fare-free service? Are increases primarily attributable to downtown employees, or do downtown residents take advantage of fare-free service? To what extent does the elimination of fares benefit transit dependent people?
3. Characteristics of Trips--What trip purposes are attracted to transit as a result of the elimination of fares? Do average trip lengths decrease, indicating a shift from former walk trips? How does the time-of-day distribution of ridership change as a result of CBD fare-free service?

1.5.2 Travel Behavior

While the analysis of ridership was expected to reveal a number of important changes in the levels and characteristics of transit use within the CBD, it would not address directly the question of why these changes occurred. In order to explain these changes, then, the evaluation addressed the following issues related to travel behavior:

1. Trip Frequency--To what extent is the increased transit ridership within the CBD attributable to induced travel? If increases in trip frequency do occur, how do these increases vary among downtown employees, downtown residents, and patrons of CBD stores and restaurants?
2. Mode Choice--To what extent are ridership increases the result of changes in mode choice? What types of shifts in mode occur? Is increased ridership drawn primarily from former walk trips, or is auto usage reduced as well?
3. Destination Choice--Is CBD fare-free service used to travel to more distant locations within the downtown area, or do people travel to essentially the same destinations by bus rather than walking or driving?
4. Increased Fare-Paying Ridership--Do the people drawn to transit as a result of fare-free service also begin to use transit on a fare-paying basis as well?

1.5.3 Transit Level of Service

Associated with the increased ridership expected from the elimination of fares were a number of potentially negative impacts on transit level of service. These included the following:

1. Overcrowding--Are ridership increases great enough to result in severe overcrowding on heavily used routes, or is there sufficient excess bus capacity in the CBD to absorb these increases?
2. Reliability and Travel Time--Does increased ridership result in delays large enough to significantly increase travel times and prevent adherence to scheduled headways?
3. Passenger Conduct--Does the elimination of fares attract riders who contribute to an increase in the incidence of rowdiness or harassment of other riders?

1.5.4 Retail Sales

The Albany CBD fare-free demonstration was enthusiastically endorsed by downtown merchants who contributed more than \$20,000 to the demonstration project budget. At the time this project was implemented, however, the accumulation of empirical evidence on the extent to which sales are increased by downtown fare-free service was inconclusive. Typically, changes in retail sales are not measured directly, but instead are inferred from changes in transit ridership. Whether there is a link between changes in ridership and changes in retail sales was a major area of investigation for this evaluation. Evaluation issues related to retail sales included the following:

1. Aggregate Retail Sales--To what extent does fare-free service lead to increased retail sales within the CBD?
2. Type of Retail Establishment--Are increases in sales uniform across all types of establishments within the CBD, or are increases greater for some retail activities than others (e.g., restaurants versus clothing stores)?
3. Proximity to Bus Service--For a given type of retail activity, are increases in sales realized by all establishments within the zone, or are increases at those establishments located near major bus routes accompanied by decreases (or smaller increases) at others?
4. Purchase Patterns--What are the characteristics of the individuals who account for changes in retail sales within the zone? Are the changes primarily attributable to increased purchases by downtown employees, or do changes in travel patterns and purchase behavior of CBD residents (and possibly non-CBD residents or workers) play a major role?
5. Attitudes of Merchants--Do downtown merchants feel that CBD fare-free service has a positive impact on their businesses? Would they be willing to support the project after Federal funding lapses, even if it meant higher assessments?

1.5.5 Perceptions of Transit and CBD Shopping Opportunities

Another evaluation issue was the extent to which CBD fare-free service results in changes in the perceptions of public transportation and the CBD as a center of retail activity. Questions addressed by this evaluation included:

1. Perceptions of Transit--Does the implementation of CBD fare-free service enhance the public image of transit? How do perceptions vary among different population groups?
2. Perceptions of CBD Shopping Opportunities--Does the increased accessibility resulting from the elimination of fares improve perceptions of CBD shopping opportunities? Do perceptions differ among downtown employees, downtown residents and area-wide residents?

1.5.6 Secondary Auto-Related Impacts

To the extent that the elimination of fares results in reduced auto travel within the CBD, the following auto-related impacts were examined:

1. air quality;
2. energy; and
3. traffic congestion.

1.5.7 Abuse of CDTA's Honor-Based Fare Collection Policy

The fare collection procedures used in conjunction with fare-free operation evolved into what was essentially an honor-based system. Specific evaluation issues related to this honor-based fare collection policy included:

1. Extent of Abuse--How many people are abusing the honor-based fare collection policy? What are the revenue implications?
2. Factors Influencing Abuse--To what extent does fare abuse occur on crowded buses versus those with relatively few passengers? How does the incidence of fare abuse vary by age and sex of riders?

1.6 EVALUATION DESIGN

The evaluation effort associated with the Albany CBD fare-free demonstration was fortunate in that the opportunity existed for collecting data before

the project was implemented. As a result, particular emphasis was placed on designing an evaluation plan which would make use of a before/after analysis. The strategy for collecting data to evaluate the issues listed in Section 1.5 included the following data sources:

1. travel and purchase surveys;
2. CDTA records;
3. casual observation;
4. merchant survey; and
5. retail sales tax data

In addition, informal monitoring of the demonstration project yielded information about the implementation process and institutional issues which could not be collected using a formal, quantitative approach.

1.6.1 Travel and Purchase Surveys

Surveys were administered by CDTA to six groups potentially affected by CBD fare-free service. These included:

1. weekday intra-CBD bus riders;
2. Saturday intra-CBD bus riders;
3. patrons of downtown stores and restaurants;
4. downtown employees;
5. downtown residents; and
6. areawide residents.

Each group was surveyed in October 1978, just prior to the implementation of fare-free service, and again in October 1979. In addition, weekday bus riders were surveyed in March 1979 as well. The bus patron survey was administered "on-board;" the shopper survey was interviewer-administered to people leaving stores and restaurants; the employee survey was a "hand-out/hand-back" at the work place; the downtown resident and areawide resident surveys were administered as "mail-out/mail-back."

The surveys were designed to measure changes in bus ridership characteristics, changes in shopper characteristics (stores patronized, amount of purchases, and shopping trip mode choice) and changes in travel and shopping

behavior for both downtown employees and downtown residents. Questions which were common to each survey, with the exception of that administered to areawide residents, included:¹

1. trip destination;
2. trip purpose;
3. purchase information;
4. residence location;
5. employment location;
6. occupation;
7. auto availability;
8. income;
9. perceptions of downtown Albany; and
10. perceptions of CDTA service.

1.6.2 CDTA Records

Data from CDTA's passenger counting program (driver tabulations of paying passengers and transfers by time of day by route) were used to estimate changes in ridership occurring within the fare-free zone over the course of the evaluation. Periodic counts of senior citizens, commuter pass users, and other special-fare riders were used to determine the characteristics of bus patrons and the average fare per passenger per route prior to the elimination of fares. Also collected were the number of fare-free passengers and number of paying passengers whose trips traversed the fare-free zone. CDTA also supplied data required for documenting administrative and implementation procedures (e.g., changes in bus routes or schedules) and reported any of special problems such as fare evasion or harassment of drivers.

1.6.3 Casual Observation

Originally many of the evaluation measures related to changes in transit level of service outlined in Section 1.5 were to be obtained from measurements made by on-bus and on-street observers. However, because significant changes in these measures of transit level of service were not expected as a result of

¹Copies of the survey instruments are included in Appendix A.

fare-free service in downtown Albany, these measures were collected by observation, driver records, and reports of incidents or complaints by bus riders.

1.6.4 Merchant Survey

In October 1979, questionnaires were sent to approximately 175 merchants in downtown Albany. Merchants were asked for information concerning types of merchandise, floor area and number of employees at the establishment, perceptions of fare-free service and its effect on their business, previous financial support of Freewheeler, and willingness to continue and perhaps increase the amount of their future contribution. Because of the poor response rate, however, information from this survey was of limited use.

1.6.5 Sales Tax Data

For the purpose of measuring changes in retail sales, data on sales tax receipts were obtained from the New York State Department of Taxation and Finance (NYSDTF). Because data could not be released for groups of less than ten establishments for confidentiality reasons, businesses in downtown Albany were aggregated by type of merchandise or service and by proximity to the best-served bus corridor (Washington Avenue/State Street) in the fare-free zone. This classification permitted the data to be analyzed specifically with regard to the issues related to retail sales outlined in Section 1.5.4.

Data were obtained on a quarterly basis for two years prior to the implementation of fare-free service and for the 2-year period of the demonstration. Quarterly sales tax data for Albany County were obtained from NYSDTF for use as a control group.

1.7 OUTLINE OF REPORT

Chapter 2 of this report describes the implementation process for the Albany CBD fare-free project including the planning and financing of the demonstration, marketing, changes in operational procedures, and driver cooperation. Chapters 3 and 4 describe, respectively, the travel demand and related secondary impacts, and the cost, level of service, and operational impacts of CBD fare-free service. Downtown revitalization, including impacts on aggregate retail sales, changes in purchase patterns, perceptions of Albany CBD shopping opportunities, and merchant's attitudes are reported in Chapter 5. The final chapter contains the evaluation conclusions concerning the extent to which the demonstration objectives were achieved and the transferability of the evaluation's findings to other urban areas.

2. IMPLEMENTATION PROCESS

2.1 OVERVIEW

In May 1977 the Urban Mass Transportation Administration (UMTA) issued a solicitation of interest inviting transit operators to apply for transit fare experiments. Among the responses to this announcement was a letter of interest submitted by the Capital District Transportation Authority (CDTA) concerning a fare-free zone in Albany's Central Business District (CBD).¹ After evaluating these responses based on a number of selection criteria and field visits to three potential demonstration sites, UMTA, with assistance from its technical consultant, the Urban Institute, selected CDTA to submit a Service and Methods Demonstration (SMD) grant application. After some negotiation concerning project details, the final agreement was completed in June 1978. At that time, a 6-month planning and data collection period (of a total 30-month grant) began. Fare-free operation actually began in November 1978, which was early enough to gain high visibility during the holiday shopping season.

2.2 FINANCING

The SMD grant of \$325,904 from UMTA covered 80 percent of the project costs for a 6-month planning period and 24-month operating period. Contributions of \$21,600 each from the downtown merchant's association and the City of Albany and an additional \$38,276 contributed by CDTA made up the remainder of the project resources. The budget for the 30-month project is shown below in Table 2-1:

TABLE 2-1: ALBANY CBD FARE-FREE DEMONSTRATION PROJECT BUDGET

	Planning	Operations	Total
Administration and Management	\$12,965	\$ 30,725	\$ 43,690
Data Collection	13,080	21,910	34,990
Project Operations	7,000	240,000	247,000
Project Marketing	21,300	13,200	34,500
Contingencies	5,200	42,000	47,200
	\$59,545	\$347,835	\$407,380

¹A 1977 Albany circulation study done by Barton Aschman Associates for CDTA had recommended the implementation of a downtown fare-free transit zone.

2.3 MARKETING AND PUBLICITY

Publicity for the Freewheeler service was handled by several techniques, most of which were routinely used by CDTA to market all of its services. These techniques included radio, television, and newspaper advertisements, printed brochures, maps, and schedules, slide presentations to certain community groups, a portable display put in areas of high pedestrian traffic in downtown, outdoor transit advertising, and the "CDTA Info Bus" (a converted bus with extensive transit information).

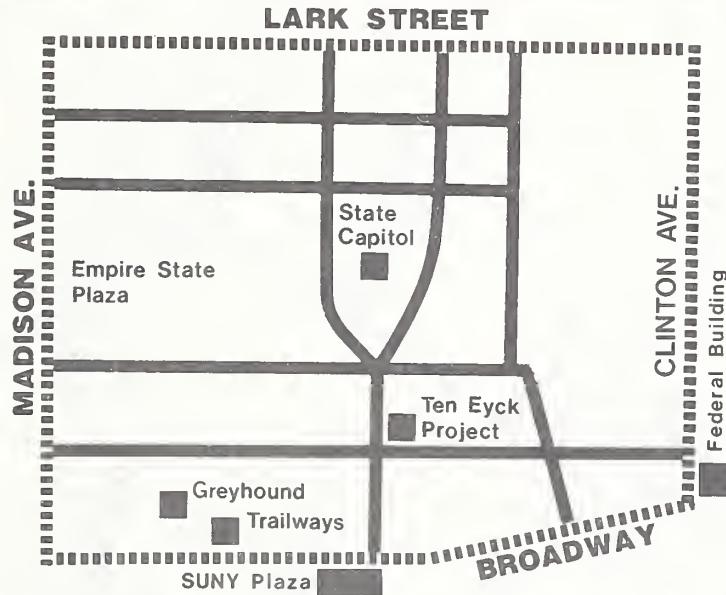
Although mass media advertising was intended to reach everyone in the Capital District, some marketing was focused principally on the following groups which were thought to be most likely to avail themselves of fare-free service:

1. downtown employees;
2. existing transit commuters;
3. patrons of downtown merchants;
4. clients of human service agencies located in the downtown area; and
5. residents of downtown Albany.

Employees were informed of the free bus service primarily by printed brochures distributed through major employers in the downtown area and by announcements in employee newsletters. Existing transit users received brochures and maps distributed on the bus and were also exposed to indoor and outdoor bus advertising. Additionally, every bus stop within the fare-free zone was marked by a sign identifying the stop as such (see Figure 2-1). Bus stop signs as well as farebox signs inside the buses described the hours and zone limits of fare-free service.

Downtown merchants distributed brochures and maps (see Figure 2-2) describing the Freewheeler project to their customers. Some merchants made a point of noting in their individual advertisements that they were located within the fare-free zone. The slide presentation about Freewheeler service was the principal publicity tool directed to human service organizations in and near the zone. Downtown neighborhood groups were shown the slide presentation, and brochures were delivered to all downtown residents.

During the week that fare-free service began, local newspapers carried articles and press releases announcing the new service. Opening day ceremonies, in which the Mayor and other officials took part, were publicized, and there were newspaper editorials praising the service and UMTA's role in its funding.



**RIDE FREE ON ANY CDTA
BUS WITHIN THIS ZONE
BETWEEN:**

9 a.m. - 3 p.m., Mon. - Fri.

9 a.m. - 6 p.m., Sat.

**Rides to points outside this
zone pay regular fare**

FIGURE 2-1. FREEWHEELER BUS STOP SIGN

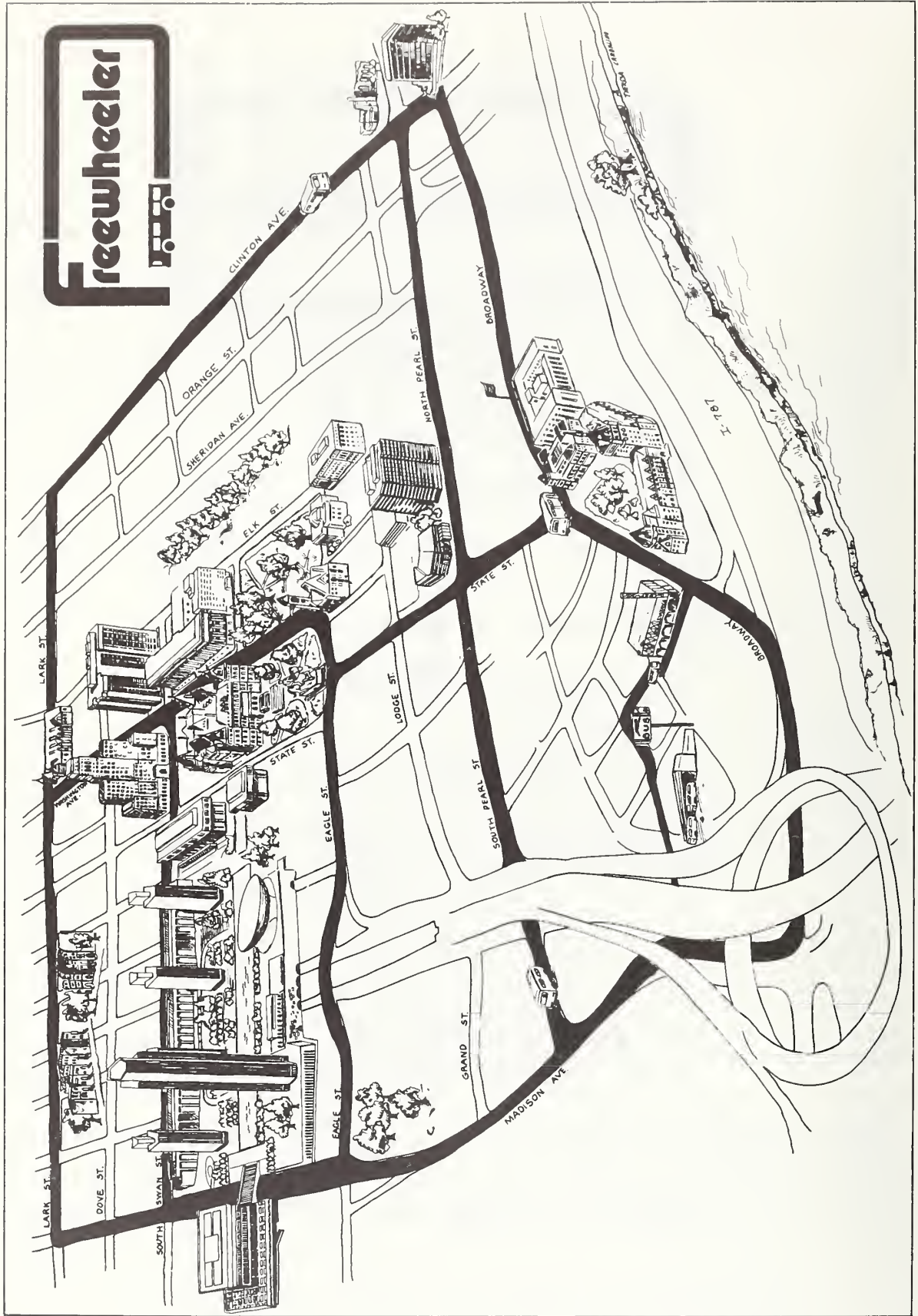


FIGURE 2-2. FREEWHEELER PROMOTIONAL MAP

Press releases also announced the administration of the before and after surveys in an attempt to elicit cooperation from downtown bus riders, shoppers, employees, and residents. Articles describing the Freewheeler project also appeared in both "Passenger Transport" and "In Transit," national publications oriented towards the transit industry.¹

2.4 OPERATIONAL CHANGES

Operational changes which accompanied the implementation of fare-free service included discontinuance of the 5-cent shopper's bus, revised fare collection procedures, and certain schedule modifications. Several alternatives were considered for the latter two changes, and contingency actions were also planned in the event that the proposed changes did not work out satisfactorily. All such changes were subject to review during the demonstration as CDTA wanted to give service which was most convenient for its Freewheeler patrons, fare-paying patrons, and drivers.

2.4.1 Discontinuance of Shopper's Shuttle

The downtown merchant's association (named Retail Organization for Albany Downtown, or ROAD, at the time of the grant application and later re-named Downtown Albany Unlimited) was a strong supporter of the Freewheeler concept. As described in Section 1.4.2, ROAD paid for a downtown, midday shuttle service (chartered from CDTA) beginning in 1966. The service was provided from approximately 11:35 AM to 2:15 PM and was free to riders until 1976 when a 5-cent fare was instituted. The main portion of the shuttle route was on the Washington Avenue/State Street corridor, although there was a loop at the west end of the route through the Center Square neighborhood. The shuttle service was eliminated when Freewheeler services began.

In November 1979 (after one year of fare-free operation) CDTA initiated a shuttle service between the Empire State Plaza and SUNY Plaza during the hours of 11:30 AM and 1:30 PM. The route of this shuttle is similar to that of the discontinued merchants' bus except that it travels east on Madison Avenue instead of Washington Avenue and State Street. Patronage on this shuttle began at about 150 boardings per day and rose to 300 boardings per day in December 1979.

2.4.2 Fare Collection Procedures

Prior to the demonstration project, CDTA had a general fare collection policy of pay-upon-entry. The introduction of CBD fare-free service essentially meant the addition of another zone (i.e., the fare-free zone) which

¹Copies of printed publicity matter and articles appear in Appendix B.

necessitated revisions to existing fare collection procedures. Specifically, it was necessary to devise some method for distinguishing fare-free from fare-paying passengers.

CDTA identified four types of bus routes which travelled through the fare-free zone and developed fare collection procedures appropriate for each.

2.4.2.1 Inbound Single-Zone Routes - When a bus on this route type crossed the boundary into the fare-free zone, the driver would place his or her hand over the top of the farebox and boarding passengers would pay no fare. No transfers would be issued and 2-door operation was to be maintained within the fare-free zone.

2.4.2.2 Inbound, Multi-Zone Routes - Only one route which entered the fare-free zone fell into this category, and, because of its multi-zone operation, patrons had always been given "zone check" receipts upon fare payment. These checks were collected from riders as they exited the bus, requiring 1-door operation. When downtown fare-free service was implemented, passengers boarding within the fare-free zone were also given "zone check" receipts to surrender upon exiting. A planned alternative which was eventually implemented was for the driver to collect all zone checks at a convenient place (e.g., a shopping mall) within the base fare zone and then to continue operating as a single-zone route.

2.4.2.3 Through-Routes and Belt-Routes - All persons wishing to exit this type of bus route after the bus had crossed through the fare-free zone (whether they had boarded before the bus entered the zone, within the zone, or after the bus left the zone) were required to surrender the "zone check" receipt they had been given when they paid the fare. Persons boarding and exiting before the bus crossed into the fare-free zone or riding only within the zone were not given zone checks. After crossing through the zone, all people were required to exit through the front door.

2.4.2.4 Outbound Single-and Multi-Zone Routes - Passengers paying a fare (whether boarding inside or outside the fare-free zone) were given a fare receipt. All passengers leaving the bus outside the free zone were required to surrender the fare receipt. If only a few passengers were on the bus at the zone boundary, the driver could opt to collect all fare receipts and proceed with normal 2-door operation.

CDTA felt that the major advantages of this method of fare collection were that:

1. there was little opportunity for conflict between passengers and drivers;

2. there was a relatively high degree of protection against abuse;
3. the manner of fare collection was not radically different from that already in use; and
4. the fare collection method could be used on all types of lines.

Alternative methods of fare collection which were considered but rejected as inconvenient for passengers, inconvenient for drivers, or unworkable for one or more bus route types were pay-upon-exit, driver check at zone boundary, and separated seating within each bus.

In the grant application, CDTA proposed to gradually phase out the newly adopted fare collection system in favor of an honor system fare collection procedure. (This was actually done earlier than CDTA had intended because many drivers neglected to distribute or collect fare receipts.) A study was made of the incidence of fare evasion and its impact on revenues when the honor system became the official policy. The evolution to an honor system and the fare evasion analysis is described in detail in Section 4.1.1.

2.4.3 Schedule Modifications

Midday bus service on major corridors in downtown Albany is fairly frequent as measured in terms of buses per hour or average inter-arrival times between buses. Nevertheless, CDTA recognized that there was the potential to reduce the waiting time between buses by making slight modifications to departure times on some routes from the downtown terminal. If bus departures were staggered by just a few minutes, service frequency could be improved. However, this could only be done for buses travelling westbound (i.e., bus trips originating at the downtown terminal). Buses travelling eastbound would be far from their suburban terminals by the time they reached the CBD and therefore would be so subject to variations in travel time that any attempt to regulate their spacing on the various corridors with the fare-free zone would be futile.

Examination of the five route paths of buses leaving the downtown terminal revealed that only one of them offered the opportunity for departure time modification. This was the State Street and Washington Avenue corridor, which was by far the most heavily used service corridor due to the high number of traffic generators as well as the high service frequency. The average time between buses in this corridor was 2.1 minutes. By delaying or advancing timetables for three routes travelling this path, the maximum waiting time of twelve minutes existing prior to the implementation of fare-free service was reduced to a maximum of eight minutes.

Despite these modifications to make CBD fare-free service frequent and convenient, there was initially overcrowding on some of the bus runs. People were congregating at 10-minute intervals at bus stops of the discontinued merchant's shuttle. After CDTA supervisors reminded people that they could board any bus at any stop for free, the spot occurrences of overcrowding eventually dissipated.

2.5 DRIVER COOPERATION

CDTA did not anticipate any serious problems in securing driver cooperation. Nevertheless, care was taken to make only changes which would not be difficult for them and to present the changes to the drivers in a clear and unambiguous manner by means of an audio-visual presentation with specific route-by-route instructions for procedures to be used in conjunction with fare-free operation.

There were no formal discussions with the driver's union since none of the operating changes were negotiable, nor did they infringe on working conditions. Nationally, the Amalgamated Transit Union supports free transit.¹

Some individual drivers appeared, to CDTA's project manager, to be apprehensive about the institution of free bus service. Many could not fully understand why rides were being given for free. Just prior to the beginning of fare-free service, one driver chose to drive a route not passing through the fare-free zone. When he heard from other drivers that there were no problems (such as rowdy youngsters, vandalism, confrontations over fares, etc.) this driver then went back to his regular "Freewheeler" route.²

Many drivers were not cooperative in the distribution of "zone check" or fare receipts (see Section 2.4.2). For some it was too bothersome; on low volume runs, there were few enough riders for the driver to remember who had paid. Some drivers announced the end of free rides at the zone boundary so that passengers could either pay or leave the bus. CDTA did not make an issue of receipt distribution and collection as it was not important enough to possibly strain driver relations and because, in general, drivers did not allow people to ride free if they did not qualify for it.

¹Amalgamated Transit Union, "A Solution: No Fare Transit." In Transit, 83, No. 10 (special edition).

²Drivers select routes quarterly based on seniority. Those with high seniority generally select the same route.

3. TRAVEL DEMAND AND RELATED IMPACTS

As one would expect, the elimination of fares in the Albany Central Business District (CBD) resulted in a significant increase in transit ridership within the downtown area. This chapter discusses the magnitude of the increase, how it varied over time, and what changes in ridership characteristics occurred. Also presented in this chapter is an analysis of the changes in travel behavior that occurred as a result of CBD fare-free service, and the implications of these changes on secondary impacts such as energy, air quality and traffic congestion.

3.1 AGGREGATE RIDERSHIP

The implementation of fare-free service in downtown Albany resulted in a significant increase in ridership for trips within the fare-free zone, both during the week and on Saturdays. Prior to fare-free operation, internal ridership excluding transfers was estimated to be about 1,070 during off-peak hours (i.e., 9 AM to 3 PM) on an average weekday (770 on regular bus service provided by the Capital District Transportation Authority, CDTA, and about 300 on the 5-cent Shopper's bus) and 270 between 9 AM and 5 PM on Saturdays.¹ As shown in Figure 3-1, just after fares were eliminated, average weekday ridership nearly tripled, while on Saturdays, ridership increased four-fold.

The first ridership counts following the implementation of fare-free service on November 20, 1978, were taken on Thursday, November 30. Estimated ridership (excluding transfers) on that day was 2,760. Following this initial measurement there was a 2-month period during which no reliable counts were made due to some confusion on the part of drivers regarding the counting procedures developed for measuring fare-free ridership. Regular counts began again late in January and continued through May 1979. During this period, weekday ridership appears to have increased slightly, rising to a level of about 2,900. Relative to this mean, day-to-day variations in ridership appear to be small. (The standard deviation of weekday counts is only about 10 percent of the mean.) In general, ridership tends to be highest on State government pay days. For example, the highest count during this period (3,450) occurred late in April on a day that happened to be a State government pay

¹Weekday ridership estimates prior to fare-free service are based on a fairly rigorous methodology developed by CDTA. Due to the cost involved in administering this procedure, though, it was not feasible to apply it to obtain an estimate of internal ridership on Saturdays. The latter estimate, then, is somewhat less reliable. Ridership estimates after the implementation of fare-free service are based on actual counts.

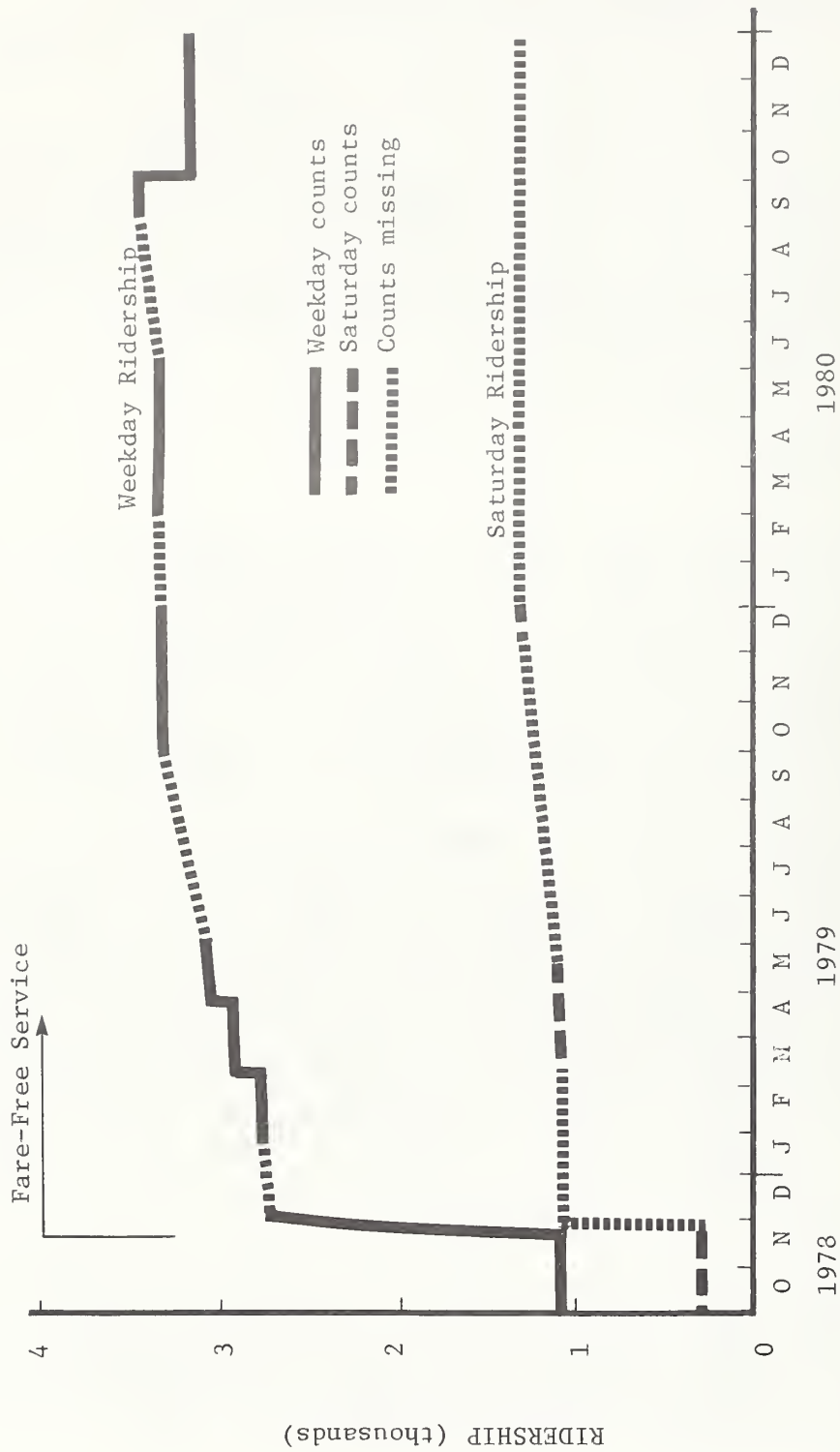


FIGURE 3-1. INTRA-CBD TRANSIT RIDERSHIP (EXCLUDING TRANSFERS)

day. Only two observations of Saturday ridership were made during this period, each of which were about 1,080.

After May 1979, the availability of fare-free ridership counts was severely limited. Originally, counts of fare-free riders were to be made every eight days and processed using CDTA's computerized passenger counting system throughout the demonstration period. After May 1979, though, other in-house computer needs (i.e., accounting, payroll, etc.) took precedence over passenger counting. As a result, aggregate counts could only be obtained by manually tabulating driver's tally sheets for each run entering the fare-free zone. These tabulations of fare-free ridership were made for 25 days throughout the demonstration period. However, there were a number of shortcomings associated with the tabulations supplied that limited their usefulness in analyzing changes in ridership over time.

First, no tabulations were available for June through September of 1979, January and February of 1980, or June through August of 1980. As a result, an analysis of seasonal variations in fare-free ridership was not possible. Second, there were many inconsistencies in the tabulations that precluded the use of the aggregate ridership numbers directly. For example, there were many instances where counts were missing for a number of runs on the days for which tabulations were provided. In addition, it appeared that in some cases total, rather than fare-free, ridership had been recorded. In order to take advantage of what data were available, the evaluation used counts for a sample of runs having the most consistent ridership data over the 25 days for which tabulations were provided. Changes in ridership for these runs then were expressed in terms of percentage changes relative to ridership levels at the beginning of fare-free service. These percentage changes relative to total fare-free ridership prior to May 1979 were used to obtain estimated counts after May 1979.

Based on these estimated counts, the trends in ridership shown in Figure 3-1 indicate that fare-free ridership generally increased over the course of the demonstration. Between November 1978 and November 1979, for example, ridership increased by about 20 percent, although it appears to have dropped off slightly in December 1980. Only one data point was available for Saturday ridership after May 1979. Based on this single observation, which was obtained in December 1979, Saturday fare-free ridership appears to have increased by about 24 percent relative to that in December 1978.

3.2 RIDERSHIP CHARACTERISTICS

One major focus of the evaluation was to identify the characteristics of those benefiting most from fare-free operation. For example, is the increase in ridership noted earlier attributable primarily to downtown employees or to downtown residents? What trip purposes are being served by the fare-free

trips? To what extent are low income, transit dependent persons utilizing the service? Does the distribution of trip length of fare-free riders suggest that they are using the service instead of walking, or has the implementation of CBD fare-free service resulted in decreased auto travel?

In the remainder of this section, these and related questions are addressed by comparing results of on-board surveys administered before and again during fare-free operation. Since the potential market for fare-free service during the week differs considerably from that on Saturdays, separate analyses were developed for each.

3.2.1 Weekday Ridership Characteristics

3.2.1.1 Purpose For Being Downtown - In terms of their primary purpose for being downtown, fare-free riders are categorized into the following three groups:

1. downtown employees (including those who live downtown as well);
2. downtown residents; and
3. those who neither work nor live downtown.

As shown in Table 3-1, the proportion of riders employed downtown increased after fare-free service began from an already high level of 55.6 to 65.4 percent after five months, and to 66.8 percent after one year. During this same period, the proportion of riders who lived downtown decreased from 13.3 to 10.9 percent, but then rose to 12.5 percent, while the proportion of ridership neither working nor living downtown declined consistently from 31.1 to 23.7 percent after five months, and then to 20.7 percent after one year.

Note, however, that while the proportions of the latter two groups decreased, because ridership tripled after fare-free operation began, the total ridership for each of these groups increased, although at different rates. For example, as illustrated in Figure 3-2, ridership of downtown employees increased by 275 percent one year after fare-free service began, while ridership of downtown residents and by those neither working nor living downtown increased by 194 percent and 108 percent respectively.

It should be noted that the tabulations of ridership characteristics in Table 3-1 and subsequent tables in Section 3.2 represent the characteristics of those individuals travelling by bus at the time that the on-board survey was conducted. However, to the extent that certain types of people are likely to use transit more frequently than others, these tabulations are not necessarily representative of the characteristics of individuals affected by the elimination of fares, since those individuals travelling by bus more

TABLE 3-1. WEEKDAY RIDERSHIP CHARACTERISTICS: ATTRIBUTES OF RIDERS

	Before Fare-Free Service October '78	<u>With Fare-Free Service</u> March '79 October '79	
	<u>Purpose for Being Downtown (percent)</u>		
Work Downtown	55.6%	65.4%*	66.8%*
Live Downtown	13.3%	10.9%	12.5%
Other	31.1%	23.7%*	20.7%*
<u>Socioeconomic Characteristics</u>			
Average Income (\$ x 1000)	14.0	17.1	16.6
Average Age (Years)	38.6	37.7	40.1
Percent Male	32.4%	44.2%*	40.3%*
<u>Transit Dependency</u>			
Average Household Auto Ownership	1.00	1.11	1.04
Percent with Zero Autos	33.2%	28.8%	29.7%
Licensed Driver	59.5%	73.4%*	72.5%*
Car Available This Trip	38.0%	44.6%*	46.4%*
Mode to Downtown			
Auto Driver	18.5%	29.6%*	29.5%*
Auto Passenger	8.3%	8.1%	8.4%
Bus	54.8%	44.1%*	54.4%
Walk	17.4%	16.8%	6.2%*
Other	1.0%	1.4%	1.5%
<u>Sample Size</u>	555	799	671

*Significantly different from October 1978 proportion at the 95 percent confidence level.

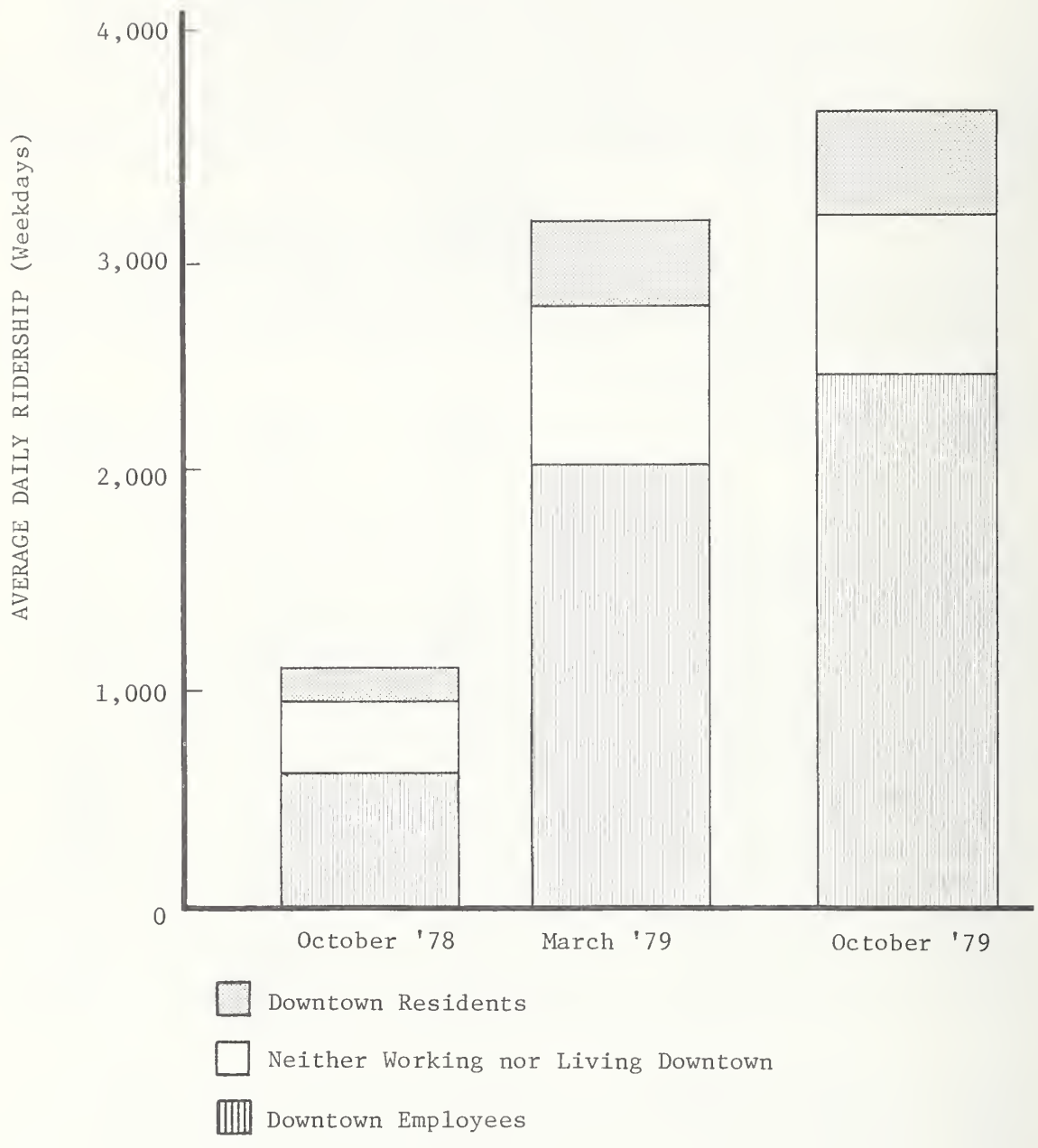


FIGURE 3-2. CHANGE IN AVERAGE WEEKDAY RIDERSHIP

frequently have a greater chance of being surveyed.¹ An analysis of the extent to which specific groups of individuals (e.g., downtown residents versus downtown employees) were affected by the elimination of fares is presented in Section 3.3, Changes in Travel Behavior.

3.2.1.2 Socioeconomic Characteristics - The most significant change observed in the socioeconomic characteristics of weekday ridership was the increase in the proportion of males. As shown in Table 3-1, males accounted for less than a third of weekday ridership immediately prior to fare-free service. Five months afterwards, though, the proportion of males increased to 44.2 percent. During this same period average household income increased by 22 percent, while average age dropped slightly from 38.6 to 37.7 years. After a year of fare-free operation, though, the proportion of males dropped to 40.3 percent, average age increased to 40.1 years, and average household income decreased slightly. It is not clear whether these differences in socioeconomic characteristics observed five months and one year after fare-free service began are due primarily to seasonal effects or whether behavioral response to the elimination of fares was still in a transitory phase.

3.2.1.3 Transit Dependency - Another interesting aspect of the change in ridership characteristics is the degree to which those utilizing fare-free service are dependent on transit as their primary means of mobility. A number of indicators representing various aspects of transit dependency are presented in Table 3-1. As shown, average household auto ownership of weekday riders increased by 11 percent (from an average of 1.00 to 1.11 autos per household) five months after fare-free service began, while the fraction of households not owning an automobile decreased from 33.2 to 28.8 percent. After twelve months, though, average auto ownership dropped to 1.04 and the fraction of households without an automobile increased to 29.7 percent. To the extent that auto ownership is correlated with income, this trend is consistent with that observed for household income.

The proportion of riders with driving licenses and the proportion of riders indicating that an auto was available to make their trip both increased sharply with the elimination of fares, indicating that fare-free service is attracting a greater proportion of riders who are not dependent on transit. This is further reinforced by the increase in the proportion of ridership (excluding downtown residents) who use auto as their means of travel to the downtown area from 18.5 to 29.5 percent. It should be noted, though, that

¹For example, if the population making use of the bus system is comprised of 1,000 employees with a mean income of \$20,000, and 1,000 residents with a mean income of \$10,000, the average income of those people affected by any change in service would be \$15,000. If, however, employees make on the average one bus trip per week while residents average five trips per week, the mean income of those people riding the bus at any given time would be \$11,667. The tabulations presented in this section, then, are representative of the latter.

since ridership tripled, the absolute number of transit dependents using transit also increased.

3.2.1.4 Trip Purpose - In addition to considering changes in ridership characteristics, a number of interesting comparisons can be made between attributes of the trips themselves, which are summarized in Table 3-2. For example, given the increase in the proportion of riders who are downtown employees, a corresponding increase in the proportion of work-based trips would be expected. As shown, this expectation is supported by the data: the proportion of trips to and from the place of work increased from 51.5 percent immediately prior to fare-free operation to 60.9 percent one year later. While much of this increase in work-based travel can be attributed to a greater proportion of trips for shopping and dining, most of this increase is in trips for work-related purposes. While the proportion of home-based travel decreased, from 34.8 to 30.8 percent, that for home-based shopping and dining increased from 8.0 to 11.4 percent. It is worth noting that while the proportion of trips for certain purposes decreased, since weekday ridership more than tripled, the absolute number of trips made for each trip purpose increased markedly. As shown in Figure 3-3, for example, while the percentage of CBD ridership corresponding to home-based work travel decreased from 12.8 percent prior to the implementation of fare-free service to 9.3 percent one year later, in absolute terms, the number of home-based work trips increased by 126 percent.

3.2.1.5 Trip Length - Another important change in trip characteristics was a significant decrease in average trip length, which apparently is the result of a substantial increase in the proportion of trips that were less than one-half mile in (round trip) length. As shown in Table 3-2, average trip length decreased from .70 miles immediately prior to fare elimination to .57 miles one year later. The corresponding proportions of trips less than one-half mile in length are 17.3 and 42.2 percent respectively. This increase in the proportion of shorter trips by a factor of nearly 2.5 is a clear indication that the source of a significant proportion of increased ridership are trips formerly made by walking.

3.2.1.6 Time-of-Day - As noted earlier in Table 3-2, there were no significant shifts in the time-of-day distribution of aggregate ridership. In examining the time-of-day distributions for downtown residents presented below in Table 3-3, though, an interesting change is observed.

TABLE 3-3. TIME OF DAY DISTRIBUTION OF TRAVEL BY DOWNTOWN RESIDENTS

	Travel Time-of-Day: Downtown Residents					
	9-10 AM	10-11 AM	11-12 AM	12-1 PM	1-2 PM	2-3 PM
Before	23%	14%	19%	11%	17%	17%
After (1 year)	26	21	15	9	9	20

TABLE 3-2. WEEKDAY RIDERSHIP CHARACTERISTICS: ATTRIBUTES OF TRIPS

	Before Fare-Free Service October '78	With Fare-Free Service	
		March '79	October '79
<u>Trip Purpose (Percent)</u>			
Home-Based: Work	12.8%	10.3%	9.3%*
Shop/Dine	8.0	8.7	11.4*
Other	14.0	9.0*	10.1*
Work-Based: Work	12.3	18.7*	17.0*
Shop/Dine	24.4	25.4	28.4
Other	14.8	15.2	15.5
Other	14.0	12.7	8.3*
<u>Trip Length (Round Trip)</u>			
Average (miles)	.7	.55	.57
Percent Less than 1/2 Mile	17.3%	46.8%*	42.2%*
<u>Time of Day (Percent)</u>			
9-10	9.8%	10.1%	11.6%
10-11	13.0	13.6	14.5
11-12	13.0	14.5	14.3
12-1	25.9	23.8	25.8
1-2	22.4	21.0	19.7
2-3	15.0	16.1	13.6
3	0.9	0.9	0.0
<u>Sample Size</u>			
	555	799	671

*Significantly different from October 1978 proportion at the 95 percent confidence level.

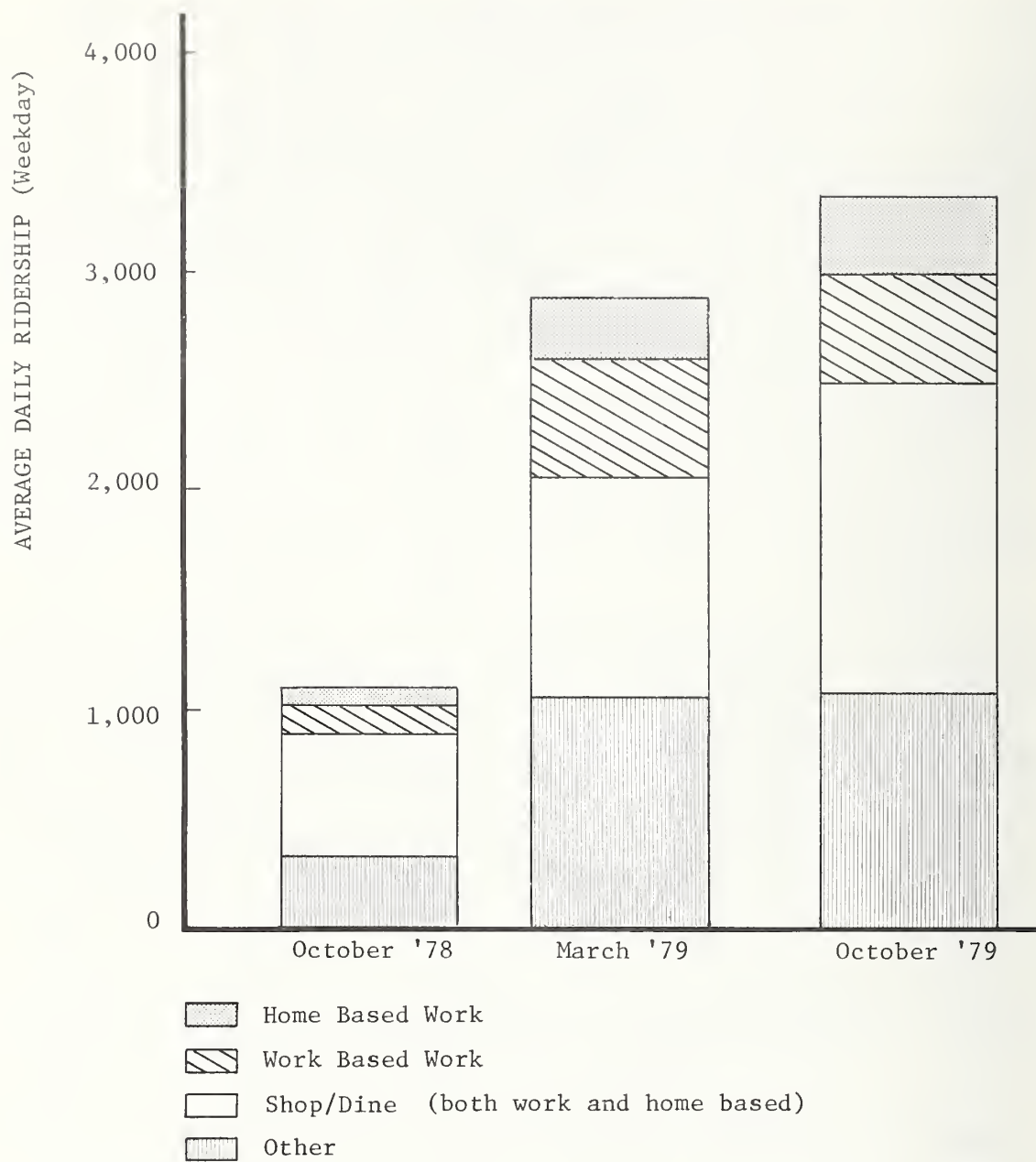


FIGURE 3-3. CHANGE IN TRIP PURPOSE

As shown, there is a definite shift away from utilizing fare-free service during the hours of 11AM to 2PM. This is most probably the result of increased crowding on buses due to the increase in ridership by downtown employees, who typically would be constrained to travel during their lunch hour. Downtown residents, though, have more flexibility in timing their trips, and therefore many elect to travel during those periods when crowding is minimal. In addition, the greater proportions of ridership between 9 to 10 AM and 2 to 3 PM together with the 126 percent increase in the number of home-based work trips made by bus within the CBD noted earlier may indicate changes in work schedules of those CBD residents who also work in the downtown area made in order to take advantage of fare-free service.

3.2.2 Saturday Ridership Characteristics

This section discusses changes in Saturday ridership characteristics in the downtown area immediately prior to the implementation of fare-free service, five months after, and again at twelve months, and contrasts these changes with those observed for weekday ridership.

3.2.2.1 Characteristics of Riders - Table 3-4 summarizes changes in the characteristics of riders that occurred as a result of fare-free service. In terms of the primary purpose for being in the downtown area, the proportion of ridership represented by downtown residents increased by a factor of over 1.5, from 31.0 percent immediately prior to fare-free operation to 47.3 percent one year later. Corresponding to this increase in the proportion of downtown residents, the proportion of ridership represented by those employed downtown on Saturdays decreased from 28.2 to 22.0 percent, and that for those neither living nor working in the downtown area decreased from 40.8 to 30.8 percent. However, since Saturday ridership increased nearly five-fold as a result of fare-free operation, total ridership for each of these groups increased significantly. As illustrated in Figure 3-4, ridership by downtown residents increased by 652 percent, while that for downtown employees and for those neither living nor working downtown increased by 287 and 275 percent respectively.

As shown in Table 3-4, this shift in Saturday ridership to downtown residents is reflected in the shifts in socioeconomic characteristics to greater proportions of riders with lower income, and who are older and retired. The degree of transit dependency also increased, particularly in terms of auto ownership, which decreased from an average of 0.9 to 0.5 autos per household. In contrast with weekday fare-free service, which is utilized primarily by higher income, less transit dependent downtown employees, downtown residents, who are much more dependent on transit, appear to benefit most from fare-free service on Saturdays.

TABLE 3-4. SATURDAY RIDERSHIP CHARACTERISTICS: ATTRIBUTES OF RIDERS

	Before Fare-Free Service October '78	With Fare-Free Service	
		March '79	October '79
<u>Purpose for Being Downtown (Percent)</u>			
Work Downtown	28.2%	31.3%	22.0%
Live Downtown	31.0%	35.7%	47.3%*
Other	40.8%	33.0%	30.8%
<u>Socioeconomic Characteristics</u>			
Average Income (\$ x 1000)	10.2	10.3	7.7
Average Age (Years)	37.8	40.7	43.9
Percent Male	40.3%	48.8%	53.5%*
Employed	53.2%	52.5%	48.7%
Retired	14.1%	16.7%	23.7%
<u>Transit Dependency</u>			
Average Household Auto Ownership	0.9	0.5	0.5
Percent with Zero Autos	48.0%	65.4%*	66.3%*
Licensed Driver (Percent)	32.8%	43.8%	35.6
Car Available This Trip (Percent)	36.4%	37.8%	25.8
Mode to Downtown (Percent)			
Auto Driver	-	6.6%	9.4
Auto Passenger	6.1%	6.6%	-
Bus	60.7%	42.3%*	68.8%
Walk	30.3%	41.0%	18.8%*
Other	2.9%	3.5%	3.0%
<u>Sample Size</u>	71	90	91

*Significantly different from October 1978 proportion at the 95 percent confidence level.

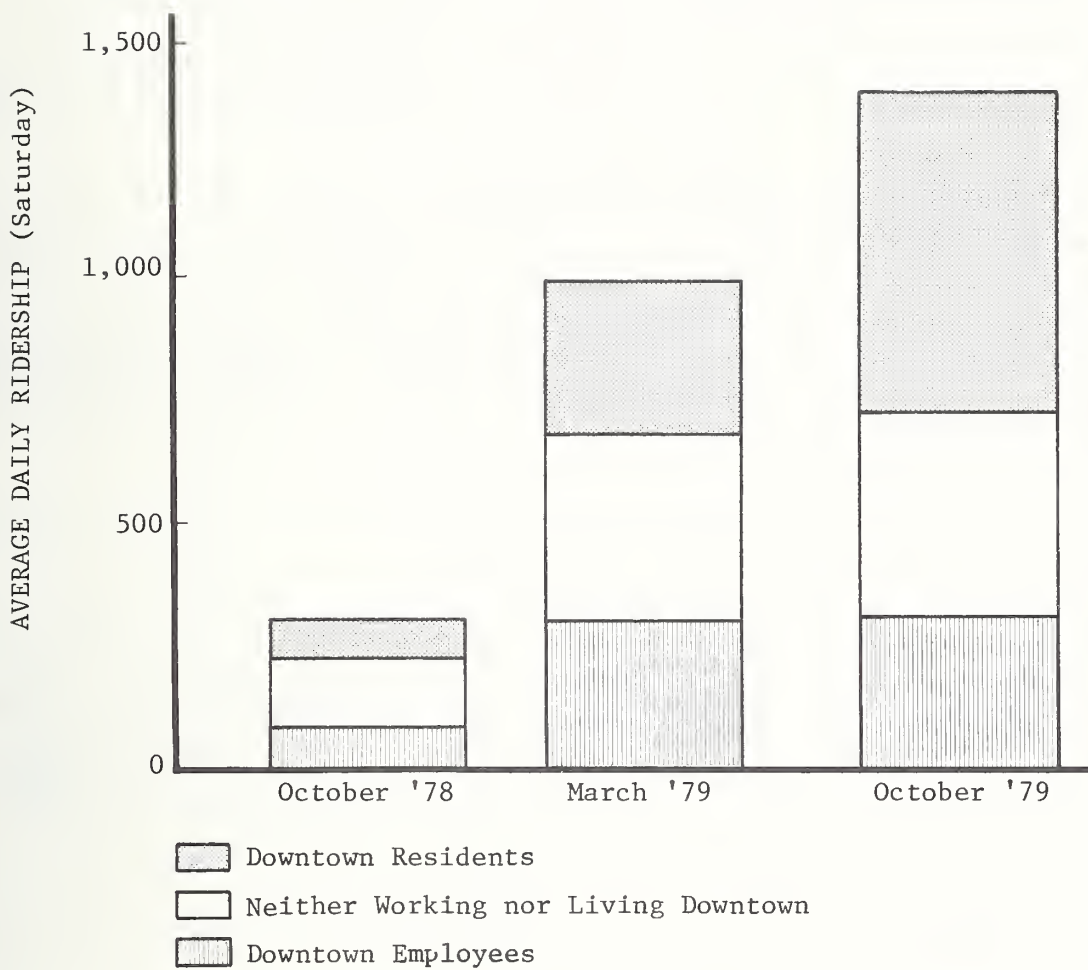


FIGURE 3-4. CHANGE IN AVERAGE SATURDAY RIDERSHIP

3.2.2.2 Characteristics of Trips - Table 3-5 summarizes changes in the characteristics of trips that occurred as a result of fare-free service. In terms of trip purpose, the most striking change is the increased proportion of shopping and dining trips, both home-based and work-based. As shown in Table 3-5, immediately prior to fare-free service these trips accounted for 30.9 percent of downtown ridership. One year later, this proportion had nearly doubled, reaching 58.6 percent. While this same type of change was observed for week-day fare-free ridership, its magnitude is much greater for Saturday ridership.

Saturday ridership exhibited similar changes in trip lengths as those observed for weekday ridership--i.e., average trip lengths decreased (from .85 to .68 miles) while the proportion of trips less than one-half mile in (round trip) length increased (from 9.9 to 42.2 percent). Again, this is an indication that some of the increase in ridership may be attributable to mode shifts from trips formerly made by walking. The time-of-day distribution of Saturday ridership also appears to have shifted somewhat, with a greater proportion of trips being made earlier in the day.

3.3 CHANGES IN TRAVEL BEHAVIOR

While the analysis presented in the previous section revealed a number of important changes in both ridership levels and ridership characteristics, it does not address directly the question of why these changes occurred. This section attempts to explain these changes in terms of changes in travel behavior of those population groups utilizing fare-free service. Specifically, this section analyzes changes in the travel behavior of the following four groups:

1. downtown employees;
2. downtown residents;
3. areawide residents; and
4. CBD shoppers and diners.

Because travel data were not obtained for Saturday, it was possible to analyze only changes in weekday travel behavior.

3.3.1 Downtown Employees

In the previous section the analysis of changes in both the level and composition of fare-free ridership indicated that ridership by downtown employees had increased by 275 percent one year after fare-free service was

TABLE 3-5. SATURDAY RIDERSHIP CHARACTERISTICS: ATTRIBUTES OF TRIPS

	Before Fare-Free Service October '78	With Fare-Free Service	
		March '79	October '79
<u>Trip Purpose (Percent)</u>			
Home-Based: Work	19.1%	8.9%*	10.3%*
Shop/Dine	29.4	33.7	50.6*
Other	17.6	20.3	14.9
Work-Based: Work	-	-	-
Shop/Dine	1.5	2.3	8.0*
Other	-	-	-
Other	32.4	34.9	16.2*
<u>Trip Length (Round Trip)</u>			
Average (miles)	.85	.61	.68
Percent Less than 1/2 Mile	9.9%	29.5%*	42.2%*
<u>Time of Day (Percent)</u>			
9-10	12.7%	6.3%	3.3%
10-11	-	13.4	8.8
11-12	7.6	22.3*	26.4*
12-1	15.5	10.7	19.8
1-2	11.3	8.0	14.3
2-3	22.5	8.9*	12.1*
3-4	9.9	7.1	5.5
4-5	14.1	14.3	4.4
5	7.0	8.9	5.5
<u>Sample Size</u>			
	71	90	91

* Significantly different from October 1978 proportion at the 95 percent confidence level.

implemented. As shown in Table 3-6, though, no significant increase in the average number of employee trips within the downtown area per day was observed as a result of fare-free service. Changes in trip frequency, then, account for very little of this increase in ridership. The changes in mode and trip length shown in Table 3-6 suggest that most of the increase in ridership by downtown employees can be attributed to a shift from walk trips to nearby destinations to fare-free bus trips to destinations somewhat more distant. For example, the increase in bus ridership appears to be drawn almost entirely from walking, the share of which decreased from 79.5 to 71.1 percent. The auto share for work-based travel actually increased slightly (but not significantly), from 8.9 to 9.3 percent. At the same time average trip length increased by about one-third, from .39 to .51 miles.

In terms of trip purpose, the average number of purposes served per trip increased by 31 percent from 1.3 to 1.7. (More detailed analysis revealed that although the absolute number of walk trips appears to have decreased somewhat, this increase in the number of purposes served per trip was attributable almost entirely to a substantial increase in the proportion of walk trips serving multiple purposes). The purpose showing the greatest increase was that for work-related activities, which increased by 43.5 percent. Dining was listed as a trip purpose 37.5 percent more often, while the increase in window shopping was 40.0 percent. The purpose showing the lowest increase was shopping, which increased by 18.5 percent. In general, these results corroborate those obtained from the on-board surveys discussed in the previous section.

The mode to work by downtown employees appears to have changed little with the initiation of fare-free service. Although the mode share of auto decreased from 62.7 percent in October 1978 to 60.0 percent in October 1979, this difference is not significant (at the 95 percent confidence level.)¹ The proportion of employees travelling from home to work by bus remained essentially unchanged between October 1978 and October 1979. The time of day distribution of work-based travel, although inexplicably truncated at 11:00 AM in the post-implementation survey results, is otherwise similar.

3.3.2 Downtown Residents

Analysis of the on-board survey indicated that fare-free ridership by downtown residents increased by 194 percent. As shown in Table 3-7, none of this increase can be attributed to an increase in trip frequency, which

¹Although shortfalls in the supply of gasoline began to appear in April 1979, these results would suggest that while commuters may have shifted away from auto during that period, by October 1979 they had for the most part returned to their former commuting habits. Further, even if shifts in mode from auto to transit had been observed, it is unclear whether they would be attributable to gasoline shortages or an increase in transit use as a result of the promotional aspects of CBD fare-free service.

TABLE 3-6. CHANGES IN TRAVEL BEHAVIOR OF DOWNTOWN EMPLOYEES

	Before Fare- Free Service October '78	With Fare- Free Service October '79
<u>Trip¹ Frequency</u> (Downtown trips/day)	1.02	1.05
<u>Mode of Travel Within CBD (Percent²)</u>		
Walk	79.5%	71.1%*
Car	8.9	9.3
Bus	16.8	26.1*
Regular CDTA (Fare)	(8.9)	(3.7)
Shoppers' Bus	(7.0)	-
Fare-Free CDTA	-	(21.5)
Other Bus	(0.9)	(2.0)
Other	0.2	2.0
<u>Mean Trip¹ Length (Round Trip Miles)</u>	.39	.51
<u>Average Number of Purposes Per Trip¹</u>	1.3	1.7
<u>Trip¹ Purpose (Percent²)</u>		
Work	23.2%	33.3%*
Shop	23.9	28.4*
Dine	37.1	51.0*
Other	36.0	43.8*
Window Shop	8.5	11.9
<u>Time of Day (Percent)</u>		
9-11	13.1%	-
11-1	58.7	69.8%*
1-3	23.5	26.6
After 3	4.6	3.6
<u>Mode of Travel to CBD (Percent²)</u>		
Walk	3.8%	4.5%
Car	62.7	60.0
Bus	36.9	37.1
Other	0.4	0.5
<u>Sample Size</u>	537	533

¹ Round trip travel within the downtown area, including all legs of a multi-destination trip.

² Percents total to more than 100 because of multiple responses.

* Significantly different from October 1978 proportion at the 95 percent confidence level.

TABLE 3-7. CHANGES IN TRAVEL BEHAVIOR OF DOWNTOWN RESIDENTS

	Before Fare- Free Service October '78	With Fare- Free Service October '79
<u>Trip¹ Frequency</u> (Downtown trips/day)	1.45	1.46
<u>Mode of Travel (Percent²)</u>		
Walk	57.0%	49.9%*
Car	16.4	12.6*
Bus	29.6	41.7*
Regular CDTA (Fare)	(24.3)	(18.0)
Shoppers' Bus	(3.8)	-
Fare-Free CDTA	-	(22.2)
Other Bus	(1.4)	(1.5)
Other	3.7	2.5
<u>Mean Trip¹ Length (Round Trip Miles)</u>	.88	.91
<u>Trip¹ Purpose (Percent²)</u>		
Work	35.7%	34.1%
Shop	23.4	26.2
Dine	11.8	9.4
Personal Business	24.4	18.7*
Recreation	9.7	11.7
Other	14.1	16.9
<u>Time of Day (Percent)</u>		
Before 9	22.1%	25.4%
9-11	16.2	18.0
11-1	20.2	16.3*
1-3	15.4	15.3
After 3	26.0	25.1
<u>Sample Size</u>	535	362

¹ Round trip travel within the downtown area, including all legs of a multi-destination trip.

² Percents total to more than 100 because of multiple responses.

* Significantly different from October 1978 proportion at the 95 percent confidence level.

remained essentially unchanged. Instead, this increased ridership is attributable entirely to shifts in mode. In absolute terms, most of this increase is drawn from former walk trips. It is worth noting, though, that the proportional decrease in car and other modes (23.2 and 32.4 percent respectively) is greater than that for walk (12.5 percent).

Average trip length appears to have changed very little for downtown residents. The distribution of trip purposes, too, remained stable with the introduction of fare-free service. The small changes that do exist, though, are noteworthy. The proportion of trips made for shopping increased from 23.4 percent to 26.2 percent, while that for dining decreased from 11.8 percent to 9.4 percent. This is exactly opposite from the changes observed in the distribution of trip purposes for downtown employees.

In comparing the time-of-day distributions presented in Table 3-7, it appears that downtown residents made fewer trips between 11:00 AM and 1:00 PM. This observation is consistent with results of the on-board surveys and, as stated earlier, is probably the result of increased crowding on buses caused by the large increase in the number of employees utilizing fare-free service during their lunch hours.

In summary, it appears that with the exception of mode choice, the travel behavior of downtown residents changed very little as the result of fare-free service. Trip frequency remained essentially constant. Further, the very small changes in average trip length and the distribution of trip purposes would imply that little change in destination choice occurred. Shifts in mode to fare-free CDTA service, though, were quite significant. Combining these results with those from the on-board surveys, which indicated an increased proportion of home-based shop and dining trips, it would seem reasonable to conclude that the observed shifts to fare-free service occurred primarily for shopping and dining trips.

3.3.3 Areawide Residents

Characteristics of travel to downtown Albany by areawide residents are summarized in Table 3-8. As shown, the average number of trips per week for all purposes to the downtown area increased from 2.22 to 2.50 after fare-free service had been in operation for a year. Some of this increase, though, can be attributed to a greater proportion of those residents surveyed after fare-free service began who were employed in downtown Albany (40.5 versus 35.8 percent). Assuming five work trips were made by each employee during the week of the survey, the increase in the average number of non-work related trips to downtown Albany increased by 16 percent (from .99 to 1.09). The mode of travel to downtown appears to have remained essentially unchanged. The most significant changes in the distribution of trip purpose (i.e., increased proportion of work travel) reflects the increased proportion of CBD employees in the sample obtained for the post-implementation survey.

TABLE 3-8. CHANGES IN TRAVEL BEHAVIOR OF AREAWIDE RESIDENTS

	Before Fare- Free Service October '78	With Fare- Free Service October '79
<u>Average Number of Trips to Downtown in Past Week</u>		
Total	2.22	2.50
Excluding Work	.94	1.09
<u>Employed Downtown</u> (percent)	35.8%	40.5%*
<u>Mode to Downtown</u> (percent) <u>Most Recent Trip</u>		
Walk	1.9%	0.7%
Car	66.5	67.5
Bus	29.4	30.8
Other	2.1	0.6
<u>Purpose of Downtown Trip</u> (percent ¹) <u>Most Recent Trip</u>		
Work	44.6%	51.0%*
Shop	23.2	21.5
Dine	9.0	9.8
Recreation	9.3	7.6
Personal Business	29.7	25.9
Other	26.3	22.2
<u>Sample Size</u>	452	576

¹ Percents totals to more than 100 because of multiple responses.

* Significantly different from October 1978 proportion at the 95 percent confidence level.

3.3.4 Downtown Shoppers and Diners

The characteristics of those individuals patronizing downtown stores and restaurants prior to the implementation of fare-free service and those of downtown shoppers and diners one year later are presented in Table 3-9. As shown, the major differences between October 1978 and October 1979 are an increase in the proportion of downtown shoppers and diners who are employed downtown (with a corresponding decrease in the proportion of those who neither live nor work in the CBD), an increase in the proportion of males, and a decrease in the proportion of those dependent on transit. Other characteristics, particularly age and income, have remained relatively constant.

Changes in travel patterns of downtown shoppers and diners between October 1978 and October 1979 are presented in Table 3-10. As shown, the use of bus as the means of travelling to the downtown area increased from 31.6 to 38.4 percent. While some of this increased bus usage appears to be the result of reduced auto travel (i.e., the car share decreased from 59.2 to 56.6 percent), most of this increase is due to a shift from walk to bus (i.e., the share of walk trips decreased from 7.5 to 3.8 percent). This would seem to indicate, then, that the increased bus ridership occurred primarily as the result of people living in or near the fare-free zone taking advantage of fare-free service rather than walking to downtown shopping areas.

The proportion of trips to stores and restaurants made from the work place remained relatively constant--decreasing slightly from 58.0 percent in October 1978 to 57.1 percent in October 1979. In terms of mode to and from downtown stores and restaurants, there appears to have been a shift away from walk to both auto and bus. Overall, the average number of intra-CBD bus trips increased from 1.14 to 1.42.

3.4 SECONDARY IMPACTS

Associated with any decrease in auto use that occurred as a result of the implementation of fare-free service in the Albany CBD are a number of potential secondary impacts related to energy, air quality and traffic congestion. As mentioned in the previous section, though, the only statistically significant change in the mode share of auto was that observed for CBD travel of downtown residents. For this group, the proportion of CBD trips made by auto decreased from 16.4 to 12.6 percent.

Based on updated information from the 1970 Census of Population, there are about 7,200 residences in the fare-free zone. Results of the October 1978 survey indicate that 1.45 (round) trips within the CBD were made from each of these residences. Using the auto share of 16.4 percent from the October 1978 survey, and assuming an average auto occupancy of 2.2 and an average round trip length of two miles, the vehicle-miles of travel (VMT) associated with

TABLE 3-9. CHANGES IN CHARACTERISTICS OF DOWNTOWN SHOPPERS AND DINERS

	Before Fare- Free Service October '78	With Fare- Free Service October '79
<u>Purpose for Being Downtown (percent)</u>		
Live downtown	17.0%	16.5%
Work downtown	56.5	62.2*
Other	26.5	21.3*
<u>Socioeconomic Characteristics</u>		
Average Income (\$ x 1,000)	14.9	15.2
Average Age (Years)	39.4	39.5
Percent Male	45.0%	49.3%
Percent Employed	74.9%	71.8%
Percent Retired	9.7%	11.1%
<u>Transit Dependency (percent)</u>		
Licensed driver	71.1%	77.7%*
Car available this trip	54.4	63.0*
<u>Sample Size</u>	617	542

* Significantly different from October 1978 proportion at the 95 percent confidence level.

TABLE 3-10. CHANGES IN TRAVEL PATTERNS OF DOWNTOWN SHOPPERS AND DINERS

	Before Fare- Free Service October '78	With Fare- Free Service October '79
<u>Mode to Downtown (Percent)</u>		
Car	59.2%	56.6%
Bus	31.6	38.4*
Walk	7.5	3.8*
Other	1.7	1.2
<u>Trip from Work (Percent)</u>	58.0%	57.1%
<u>Mode to Interview Site (Percent)</u>		
Car	16.4%	21.1%*
Bus	17.0	19.2
Walk	65.6	59.1*
Other	0.9	0.6
<u>Mode from Interview Site (Percent)</u>		
Car	16.4	19.0
Bus	18.0	21.4
Walk	65.5	58.7*
Other	1.1	0.9
<u>Average Number of Intra-CBD Bus Trips</u>	1.14	1.42
<u>Sample Size</u>	617	542

* Significantly different from October 1978 proportion at the 95 percent confidence level.

intra-CBD travel by CBD residents was 1,557 miles on an average weekday. One year later, 1.46 trips were made with an auto share of 12.6 percent, resulting in an average weekday VMT of 1,204 miles, a decrease of 353 vehicle-miles per day.

While this represents a 23 percent decrease in VMT relative to intra-CBD auto travel by CBD residents prior to the implementation of the fare-free service, the implied decrease in fuel consumption and auto emissions would be relatively insignificant on an areawide basis. Further, since 50 percent of all intra-CBD trips by downtown residents were made between the hours of 9 AM and 3 PM, it is likely that most of the reduction in VMT occurred during the off-peak period. In terms of reducing localized peak period carbon monoxide emissions, then, fare-free service probably had little effect. Similarly, the impact on traffic congestion, typically a peak period problem, are likely to have been minimal.

4. COST, LEVEL OF SERVICE AND OPERATIONAL IMPACTS

Associated with the elimination of fares in the Albany Central Business District (CBD) are a number of potential cost, level of service, and operational impacts which affect the Capital District Transportation Authority (CDTA). Perhaps the most obvious impact is that by eliminating fares within the CBD, farebox revenues are reduced. In addition, though, there are a number of potential impacts on transit operations and level of service that could occur as a result of increased ridership levels. This chapter first discusses the cost implications of fare-free service in terms of revenue loss due to abuse of the honor-based fare collection policy that has evolved over the course of the demonstration and the elimination of fares for intra-CBD trips. Then, level of service and operational impacts associated with increased CBD ridership are discussed.

4.1 COST IMPACTS

4.1.1 Evolution of Honor-Based Fare Collection Policy

As discussed in Chapter 2, prior to the demonstration project CDTA had a general fare collection policy of pay-upon-entry. With the introduction of CBD fare-free service, though, it was necessary to institute a revised fare collection system that would permit fare-paying passengers to be distinguished from fare-free passengers. This revised fare collection procedure was based on the use of fare receipts and was designed to operate as follows:

1. Inbound routes terminating in the zone--No changes were required except that passengers boarding within the fare-free zone pay no fare.
2. Outbound buses originating in the zone--Passengers boarding within the zone are asked if they are travelling outside the zone. If they are, a fare is paid and the passenger is given a receipt. This receipt is surrendered upon exit as proof of fare payment. This system requires that all passengers boarding outside the zone also be given receipts.
3. Through-routed buses--All passengers boarding before entering the zone are asked if they will be travelling through the zone. If they are, they are given a receipt as proof of fare payment. Upon entering the zone, fare collection is done in the same fashion as that for outbound buses originating within the zone.

In practice, the fare receipt concept did not work out as planned. Drivers on congested buses felt that the receipt system resulted in unmanageable boarding and alighting delays. On non-congested buses, drivers felt that the system was unnecessary because it was relatively easy to monitor passengers. Over time, then, the use of fare receipts was discontinued and fare collection procedures gradually evolved into what was essentially an honor-based fare collection policy.

4.1.2 Incidence of Fare Abuse

One objective of the evaluation was to estimate the extent to which the honor-based fare collection policy was being abused. The evaluation approach was to observe a sample of individuals boarding buses within the fare-free zone and not paying a fare, and note the proportion of these individuals remaining on the bus outside the zone. In addition, the evaluation approach was designed to measure how fare abuse varied by the number of people on the bus, and by the approximate age and sex of passengers boarding the bus. The sample design that was developed, then, involved first estimating the proportion of fare abusers separately for the following three categories of bus trips based on the degree of crowding:

1. Low--no more than 15 boardings in the fare-free zone;
2. Medium--between 16 and 25 boardings in the fare-free zone; and
3. High--more than 25 boardings in the fare-free zone.

In addition to obtaining counts of fare abusers, on-board observers also noted sex and approximate age (i.e., young, middle-aged, elderly) of those riders abusing the honor-based fare collection policy.

The proportions of passengers boarding buses in the fare-free zone and not paying a fare who were observed remaining on the bus outside the zone are presented below in Table 4-1 for the three degrees of crowding:

TABLE 4-1. FARE ABUSE VERSUS DEGREE OF CROWDING

Degree of Crowding	Incidence of Fare Abuse
Low	4.9%
Medium	7.6
High	13.5

As one would expect, the incidence of fare abuse is greater for those buses that are more crowded, since it is more difficult for drivers to detect occurrences of fare abuse. Using CDTA's estimate that 38 percent of non-fare paying riders board buses with a "high" number of fare-free zone boardings (i.e., more than 25), 38 percent board buses with a "medium" number of boardings, and the remaining 24 percent board buses with a "low" number of boardings, the overall incidence of fare abuse is 9.2 percent.¹

The distribution of fare abusers by age and sex are presented in Table 4-2 below:

TABLE 4-2. DISTRIBUTION OF FARE ABUSERS BY AGE AND SEX

Characteristics	Percent of Fare Abusers	Percent of All Fare-Free Riders
Age: Young	25.6%	19.9%
Middle Aged	33.0	71.5
Elderly	41.4	8.6
Sex: Male	37.6	40.3
Female	62.4	59.7

As shown, males constitute a lower proportion of fare abusers (37.6 percent) than females (62.4 percent). However, since 40.3 percent of all fare-free riders are males, it would appear that there is no relationship between sex and the incidence of fare abuse. In terms of age, though, the proportion of fare abusers who are elderly (41.4 percent) is considerably larger than the proportion of total fare-free ridership categorized as elderly (8.6 percent). To a large extent, this relatively high incidence of fare abuse among elderly riders can be attributed to the location of two elderly housing complexes one or two blocks outside the fare-free zone. It seems reasonable to expect that elderly residents of these housing complexes could easily rationalize evading the fare since they were travelling only an "extra block" or so.

4.1.3 Revenue Loss

Under the current honor-based fare collection policy, two sources of revenue loss associated with the operation of CBD fare-free service can be identified. These are:

¹Counts were obtained only for weekdays. Assuming that buses are typically not crowded on Saturdays, the incidence of fare abuse observed during the week for buses with a low number of boardings (4.9 percent) would probably be most representative of fare abuse on Saturdays.

1. loss of revenue resulting from the elimination of fares; and
2. loss of revenue due to abuse of the honor-based fare collection policy.

4.1.3.1 Revenue Loss Due to Elimination of Fares - Based on results of the bus on-board survey conducted in October 1978, the method of fare payment for intra-CBD trips prior to fare-free service was as follows:

TABLE 4-3. METHOD OF FARE PAYMENT FOR INTRA-CBD TRANSIT TRIPS

Method of Payment		Weekdays	Saturdays
Cash:	Full-Fare	81.6%	79.4%
	Reduced Fare	8.5	11.7
Pass		9.8	8.8

Prior to fare-free service, the full fare was 40 cents and reduced fares (senior citizens, handicapped, etc.) were 20 cents. In April 1980, the base fare was increased to 50 cents (and reduced fares to 25 cents). Using the distributions of fare payment method above, under the current fare structure the average fare per intra-CBD trip in the absence of fare-free service would be 42.9 cents on weekdays and 42.6 cents on Saturdays.

As discussed in Chapter 3, prior to the implementation of fare-free service average daily ridership for intra-CBD travel (exclusive of transfers and ridership on the shoppers' shuttle¹) was 770 for weekdays and 270 for Saturdays. In addition to those trips made strictly within the CBD, it is likely that with the institution of fare-free service, some people boarded or exited within the fare-free zone and walked to or from locations outside the zone. Based on CDTA estimates, the intra-CBD ridership counts were increased by 15 percent to account for this. Using this assumption, the elimination of fares in the CBD has resulted in a loss of revenue from an average of 886 trips on weekdays and 311 trips on Saturdays. Using the average fare per intra-CBD trip presented above, the corresponding average daily revenue loss is \$380 for weekdays and \$132 for Saturdays.

¹The shoppers' shuttle was chartered from CDTA by the downtown merchants' association and was operated at a cost of about \$11,000 annually. However, since this was essentially a breakeven operation for CDTA, its discontinuance does not represent a loss in revenue.

Assuming that ten weekdays during the year are holidays and that ridership on these days would be most similar to that on Saturdays, the average daily revenue loss for Saturdays would apply to 62 days a year, and the average weekday revenue loss would apply to 250 days a year. With this assumption, the annual revenue loss attributable to the elimination of fares would be \$103,238.

4.1.3.2 Revenue Loss Due to Fare Abuse - A second source of revenue loss is abuse of the honor-based fare collection policy currently used in the fare-free zone. As discussed in Section 4.1.2, the incidence of fare abuse is highest among elderly (41.4 percent). Assuming that this group should be paying the reduced fare of 25 cents for senior citizens, and that young and middle-aged fare abusers should be paying the full 50 cent fare, the average fare revenue lost for each incidence of fare abuse would be 39.7 cents. Fare abuse is possible only on through-routed buses and those originating in the CBD. Assuming that ridership on these buses represents 50 percent of total fare-free ridership, about 1,669 trips on an average weekday and 669 trips on an average Saturday would be subject to fare abuse. Using the incidence rates for fare abuse of 9.2 percent on weekdays and 4.9 percent on Saturdays together with these ridership figures, annual revenue loss due to fare abuse is \$16,047.

4.1.3.3 Net Impact on Revenue - Total annual revenue loss, which is the sum of revenue loss attributable directly to the elimination of fares (\$103,238) and that attributable to fare abuse (\$16,047), is \$119,285. This revenue loss could be offset to some degree if as a result of improved perceptions towards CDTA service an increase in fare-paying ridership occurred. Potential sources of increased fare-paying ridership include the following:

1. increased use of transit for commuting by CBD employees;
2. increased bus use among downtown employees for trips outside the CBD during the day;
3. increased external bus trips by CBD residents; and
4. increased use of transit on the part of those patronizing downtown stores and restaurants.

The discussion of travel demand and related impacts in Chapter 3 addresses only two of the above potential sources of increased fare-paying ridership: the use of transit among downtown employees for commuting and the use of transit on the part of downtown shoppers and diners as the means of traveling to the CBD. With respect to the former, no change was observed. With respect to the latter, while the use of transit did increase somewhat, this was attributed primarily to shifts from walk trips to fare-free service among

individuals residing near the fare-free zone. Unfortunately, the appropriate data were not available to investigate the other two potential sources of increased fare-paying ridership. As a result, it is not possible to develop a firm conclusion regarding the impact of CBD fare-free service on fare-paying ridership based on an analysis of changes in travel behavior.

In an attempt to gain further insight into possible impacts on fare-paying ridership, CDTA's systemwide monthly revenues for the period from January 1977 through October 1980 presented in Figure 4-1 were examined. As shown, during the 23-month period prior to the implementation of CBD fare-free service, systemwide monthly fare revenues generally increased. During the 4-month period after fares were eliminated (December 1978 through March 1979), monthly fare revenues were at about the same levels as the corresponding months one year earlier. Beginning in April 1979, though, there was a steady increase in revenues relative to corresponding months in 1978, reflecting the impacts of shortfalls in the supply of gasoline which began to appear in the spring of 1979. The large increase in revenues beginning in May 1980 was the result of the fare increase from 40 to 50 cents instituted on April 20, 1980.

In terms of addressing the impact of fare-free service on fare-paying ridership, the results presented in Figure 4-1 are of somewhat limited usefulness. Any analysis using revenue data after March 1979 would be confounded by the effects of shortfalls in the supply of gasoline and, after April 1980, by effects of the fare increase. As a result, only fare revenue data prior to April 1979 would be appropriate for the analysis of changes in fare-paying ridership.

Table 4-4 presents systemwide fare revenues for the four months immediately prior to the implementation of CBD fare-free service and for the four months after fares were eliminated. Also presented are fare revenues for the corresponding months one year earlier, and the differences in fare revenues for the same months one year apart. Direct comparisons of revenues on a month-by-month basis are distorted somewhat by differences in the number of weekdays versus Saturdays and Sundays occurring in a given month from one year to the next. To compensate for this, average monthly fare revenues for the 4-month periods prior to and after the elimination of fares (and the corresponding averages for the two periods one year earlier) are also presented.

As shown in Table 4-4, average monthly fare revenues for the 4-month period immediately prior to the implementation of CBD fare-free service were \$10,632 greater than those for the corresponding period one year earlier. Average monthly fare revenues for the 4-month period immediately after the elimination of fares, though, were \$286 less than those for the corresponding period one year earlier, a difference in average monthly revenues of \$10,918. Based on the revenue loss calculations presented earlier in this section, average monthly revenues loss with a 40-cent base fare would be

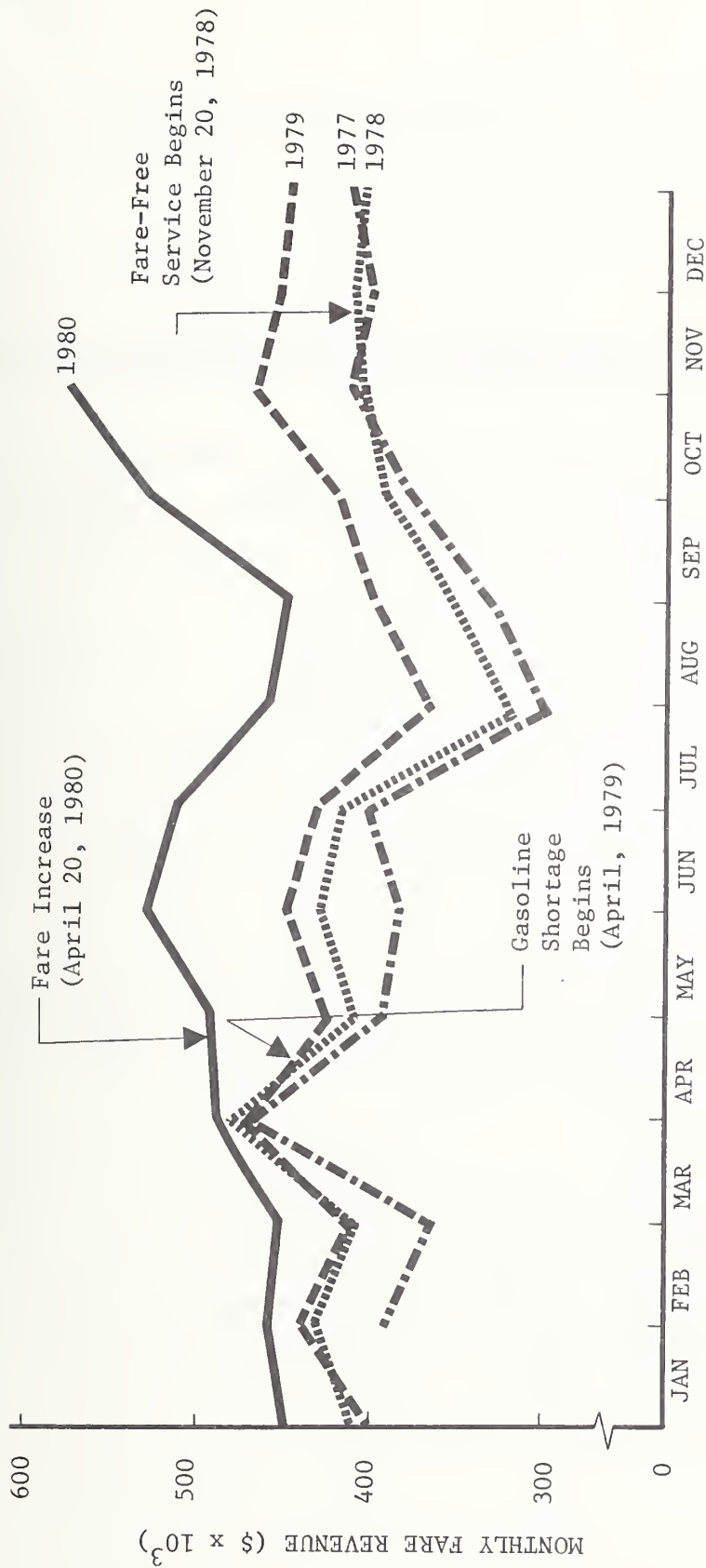


FIGURE 4-1. MONTHLY CDTA SYSTEMWIDE FARE REVENUE

TABLE 4-4. MONTHLY FARE REVENUES PRIOR TO AND AFTER FARE-FREE SERVICE

	Four Months Prior to Fare-Free Service (1978)	One Year Earlier (1977)	Difference (1978-1977)
August	\$348,692	\$326,072	\$22,620
September	391,035	375,901	15,134
October	405,476	412,408	-6,932
November	411,792	400,089	11,703
Average	\$389,249	\$378,618	\$10,632

	Four Months After Fare- Free Service (1978/1979)	One Year Earlier (1977/1978)	Difference (78/79-77/78)
December	\$403,516	\$411,734	-\$ 8,218
January	440,988	428,856	12,132
February	405,533	404,532	1,001
March	476,595	482,652	-6,057
Average	\$431,658	\$431,944	-\$ 286

\$7,952.¹ Although by no means conclusive, these results would suggest that the elimination of fares within the CBD has had no positive impact on fare-paying ridership.

4.2 LEVEL OF SERVICE

The increase in ridership accompanying the elimination of fares can have a number of negative impacts on transit level of service. These potential impact areas include:

1. overcrowding;
2. reliability and travel time; and
3. passenger conduct.

4.2.1 Overcrowding

One possible negative impact of fare elimination is overcrowding. This degradation in quality of service would impact not only those individuals travelling fare free, but also fare-paying passengers travelling to, from, or through the fare-free zone. If overcrowding were to become a severe problem, it is quite possible that some fare-paying passengers would switch to alternative modes of travel. Perhaps even more damaging would be the alienation of potential transit users that could result if the image of transit suffered greatly from the lower quality of service.

In the Albany demonstration, overcrowding was not a major issue. This absence of significant overcrowding problems is primarily attributable to the relatively low load factors of buses entering the fare-free zone between 9 AM and 3 PM. Seating capacity on CDTA buses is 49 passengers. CDTA estimates

¹It should be noted that the average monthly revenue loss estimate of \$7,952 is based on intra-CBD ridership counts obtained for September, October, and November of 1978 prior to the implementation of fare-free service, while the average monthly revenue loss of \$10,918 is based on the loss of fares for intra-CBD travel during the months of December 1978 through March 1979. As shown in Table 4-4, though, average systemwide monthly fare revenues between December 1977 and March 1978 were about 14 percent greater than those between August and November of 1977, which to a certain extent reflects seasonal trends in systemwide ridership. To the extent that intra-CBD ridership experiences similar seasonal trends, the expected average monthly revenue loss due to CBD fare-free service between December 1978 and March 1979 would be somewhat greater than \$7,952.

that buses entering the fare-free zone during the off-peak period have, on the average, less than 15 passengers aboard. Thus, the capacity utilization rate of buses entering the zone is at most about 30 percent.

Between 9 AM and 3 PM, the weekday hours of fare-free operation, 567 buses enter the zone. Currently, average daily ridership within the CBD (including transfers) is about 3,550 passengers. Thus, on the average, 6.3 fare-free passengers board each bus while it is operating within the fare-free zone; prior to the implementation of fare-free service an average of 1.6 internal passengers (i.e., travelling within the CBD) boarded regular CDTA buses. Average passenger loads have therefore increased by approximately 4.7 passengers per bus.¹ However, due to the peaking patterns in intra-CBD ridership, passenger loads have increased more substantially between 11 AM and 3 PM on Washington Avenue and State Street routes. Nonetheless, even these increases are not large enough to cause pervasive problems of overcrowding, since on the average, there are only 8.8 passenger boardings per bus during this period on Washington Avenue and State Street.²

Another indication that overcrowding has not been a problem in the Albany demonstration are the changes in perceptions of seating availability given by bus patrons, downtown residents, and patrons of downtown stores and restaurants in the October 1978 and October 1979 travel surveys. Table 4-5 presents the proportions of responses that were in the "excellent" or "good" category (versus "average," "below average," or "poor") for each of these groups prior to the implementation of fare-free service and again one year later. As shown, in each instance the proportions of those indicating their perception of seating availability as "good" or "excellent" actually increased between October 1978 and October 1979.

Given the increase in ridership, though, it is unlikely that seating availability has actually increased at all. One possible explanation for the changes in perceptions indicated in Table 4-5 would be that they can be attributed to changes in the perceptions of people who, prior to the implementation of fare-free service, did not ride the bus very often if at all, but began using transit more frequently once fares were eliminated. For example, in the October 1978 survey, many of these individuals could have had a neutral or perhaps negative perception of seating availability. Once they began using transit more frequently, though, they may have found seating availability to be much better than they had anticipated. On the other hand, the relatively

¹This probably represents a maximum estimate since in general the number of passengers actually on board at any given time is likely to be less than the average number of boardings. However, for short trips, such as those taken by internal passengers, the average number of boardings is probably a reasonable approximation of the average number of passengers aboard.

²There are mini-peaks at 12 and 1 PM on Washington Avenue and State Street that coincide with the beginning of lunch breaks. Buses stopping in the vicinity of employment concentrations at these times are frequently overcrowded, but within five to ten minutes, the congestion problem eases.

TABLE 4-5. PERCEPTIONS OF CDTA SERVICE: SEAT AVAILABILITY

	<u>Percent Responding "Excellent" or "Good"</u>	
	October 1978	October 1979
Bus Patrons: Weekday	81.6	86.0*
Saturday	72.7	90.8*
Downtown Residents	63.1	67.0
Downtown Shoppers/Diners	60.8	74.0*

*Difference between October 1978 and October 1979 proportions statistically significant at the 90 percent confidence level.

high proportion of "good" and "excellent" responses after the elimination of fares could reflect the fact that the service is free (i.e., it would be difficult to complain about something that one does not have to pay for). Nonetheless, if severe overcrowding had occurred, it is not likely that a vast majority of bus patrons would have characterized seating availability as good or excellent. Furthermore, regardless of why perceptions have improved, the demonstration appears to have been successful in meeting the objective of improving the image of transit.

4.2.2 Reliability and Travel Time

The elimination of fares within the CBD has the potential impact of increasing dwell time. While average boarding time per passenger may have decreased slightly since fares do not have to be collected from those passengers travelling within the CBD, given the magnitude of ridership increases that have occurred, this reduction in average boarding time per person has probably been more than offset by the increased number of passengers boarding in the CBD. If significant increases in dwell times occur on routes where little or no slack time in scheduling exists, fare elimination may result in an inability to maintain scheduled headways. In addition, any increase in dwell time would adversely affect in-vehicle travel time for both fare-free and paying passengers.

Although no before and after measurements of dwell times were made in conjunction with this evaluation, the change in dwell times can be estimated using relationships between boardings per bus and average dwell times measured in other areas. In a special evaluation comparing the operation of articulated buses versus standard buses, it was found that for standard buses, the various components of dwell time included 4 seconds per stop for opening and closing the doors and 1.89 seconds per passenger boarding or alighting.¹

In Section 4.2.1 it was mentioned that the average number of boardings per bus increased by 4.7. Assuming that the number of alightings, too, increased by 4.7 and that on the average two additional stops are made, the average increase in dwell time for buses operating in the fare-free zone would be 25.8 seconds. Except for possibly isolated occurrences during the lunch hour on Washington Avenue and State Street routes, then, increases in dwell time do not appear to have significantly increased travel times, nor have they caused any problems in maintaining scheduled headways.

Another indication that bus reliability has not suffered as a result of increased ridership due to the elimination of fares are the changes in perceptions of bus dependability given by bus patrons, downtown residents, and patrons of downtown stores and restaurants in the October 1978 and October

¹Cambridge Systematics, Inc., Articulated Bus Evaluation, draft final report prepared for the Transportation Systems Center, US Department of Transportation, Cambridge, 1980.

1979 travel surveys. As shown in Table 4-6, the proportions of individuals rating bus dependability as either "good" or "excellent" increased between October 1978 and October 1979 for each group surveyed. It is not clear, though, whether these changes are the result of an actual increase in dependability. As discussed in the previous section, these improved perceptions could either reflect changes in the perceptions of individuals not really familiar with bus service prior to the elimination of fares, or result from the fact that the service is free.

4.2.3 Passenger Conduct

One particularly important aspect of service quality is the conduct of individuals attracted to transit as a result of fare elimination. Even a moderate increase in the incidence of rowdiness or harassment on fare-free buses could have posed a threat to the success of the demonstration. In the Denver and Trenton fare-free demonstrations, for example, an increase in the number of disorderly passengers seriously jeopardized the continuation of both projects. Problems with criminal incidents and disorderly riders can also have secondary effects. If such problems become widespread, not only would potential riders be alienated, but it is quite possible that current riders may shift to other modes of travel to avoid any harassment.

In the Albany demonstration, there was no evidence of any increase in the number of such incidents. To some extent, this can probably be attributed to the much smaller geographic scale of the Albany demonstration (i.e., CBD fare-free service only) relative to the Denver and Trenton demonstrations, both of which were areawide in scope. In addition, many of the problems associated with passenger conduct in the Denver and Trenton demonstrations could be traced to teenage joyriding. Since there are no schools located within the fare-free zone in Albany, this problem would have been minimized in the Albany demonstration.

Further evidence that the incidence of rowdiness or harassment has not increased is provided by the perceptions of passenger conduct reported by bus patrons, downtown residents, and patrons of downtown stores and restaurants. As shown in Table 4-7, for each group the proportion of individuals rating passenger conduct as "good" or "excellent" increased between October 1978 and October 1979. Again, these increases may be attributable in part either to changes in the perceptions of individuals not familiar with bus service prior to the elimination of fares or to the fact that service is free.

Another interesting point related not only to the perceptions of passenger conduct but also to the perceptions of seating availability and dependability is that the perceptions of downtown residents are for the most part consistently lower than those of bus patrons and downtown shoppers and diners. One possible explanation for this is that as discussed in Chapter 3, downtown residents are much more dependent on transit for mobility. As a

TABLE 4-6. PERCEPTIONS OF CDTA SERVICE: BUS DEPENDABILITY

	<u>Percent Responding "Excellent" or "Good"</u>	
	October 1978	October 1979
Bus Patrons: Weekday	75.7	83.2*
Saturday	71.8	84.9*
Downtown Residents	55.8	63.5
Downtown Shoppers/Diners	58.5	74.5*

*Difference between October 1978 and October 1979 proportions statistically significant at the 90 percent confidence level.

TABLE 4-7. PERCEPTIONS OF CDTA SERVICE: PASSENGER CONDUCT

	<u>Percent Responding "Excellent" or "Good"</u>	
	October 1978	October 1979
Bus Patrons: Weekday	64.3%	77.4%*
Saturday	60.4	75.0*
Downtown Residents	47.4	57.1*
Downtown Shoppers/Diners	53.1	72.3*

*Difference between October 1978 and October 1979 proportions statistically significant at the 90 percent confidence level.

result, they may be more critical in their assessment of CDTA service relative to others whose use of transit is more a matter of choice.

4.3 TRANSIT OPERATIONS

Because existing capacity in the CBD during off-peak hours was able to absorb the increase in ridership occurring as a result of the elimination of fares, the institution of fare-free service has had little impact on transit operations. Aside from changes made prior to the implementation of fare-free service (i.e., revisions to fare collection procedures, discussed in Sections 2.4.2 and 4.1.1, and the rescheduling of buses on certain routes to reduce maximum wait times, discussed in Section 2.4.3), the only operational change was the implementation of a shuttle bus operating between the Empire State Plaza and the downtown Albany area during the noon-hour period from 11 AM to 1 PM on weekdays.¹ Further, this additional service was provided not in response to any operational problems, but rather to stimulate travel between the Empire State Plaza and the downtown shopping area.

¹The cost of operating the Empire State Plaza shuttle was funded almost entirely by the City of Albany and federal matching funds. Annual costs incurred by CDTA amounted to only about \$300 per year.

5. CENTRAL BUSINESS DISTRICT REVITALIZATION

5.1 RELATIONSHIP BETWEEN FARE-FREE SERVICE AND RETAIL SALES

A major factor motivating the implementation of downtown fare-free zones is the potential revitalization of the Central Business District (CBD) as a result of increased retail sales. As discussed in Chapter 3, the elimination of fares has led to significant increases in transit ridership. Further, the shifts observed for CBD employees from relatively short walk trips to longer trips by bus are fairly conclusive evidence that accessibility within the downtown area has increased. However, while the implementation of fare-free service has certainly improved accessibility within the CBD, the relationship between this increase in accessibility and increased retail activity is not totally understood. One of the major objectives of the evaluation, then, was to determine the nature of this relationship by analyzing the impact of fare-free service on CBD retail sales.

In developing an understanding of this relationship, it is probably best first to explore what changes in individual purchase patterns are likely to occur as a result of CBD fare-free service. In general, any increase in sales among CBD retail establishments would be the result of either an increase in the total amount of purchases made by those individuals able to take advantage of fare-free service, or a diversion of purchases formerly made at retail establishments located outside the downtown area.

With respect to the former, substantial increases in total purchases would occur only if accompanied by corresponding increases in purchasing power. Since the increase in purchasing power of individuals in the downtown area as a result of the elimination of fares within the CBD is, for all practical purposes, negligible, an increase in total purchases, particularly for large purchase items, would not be expected to be the primary mechanism by which CBD retail sales are increased. However, to the extent that the improved accessibility resulting from fare-free service exposes a greater number of people to more retail opportunities, one might expect an increase in impulse buying of small purchase items. In addition, the elimination of fares (or the need to pay for parking, in those instances where auto was formerly used) could be considered as a reduction in purchase price, which in turn could lead to an increase in total purchase expenditures for small purchase items and dining out for lunch.

However, while some increase in both sales of small purchase items and restaurant receipts may be the result of an increase in total purchases, any increase in the sales of more costly items (e.g., clothing, appliances, etc.) would almost certainly be the result of the diversion of purchases from areas outside the CBD. The incidence of this redistribution of purchases would to some degree depend on the extent to which the increased accessibility within the CBD makes it more convenient to shop in the downtown area relative to

other retail areas. For example, CBD employees may find it much easier to accomplish their shopping needs during their lunch hour rather than stopping off on their way home from work or making an additional trip either in the evening or during the weekend. For downtown residents, though, since most of their shopping was probably already done in the CBD prior to fare-free service, little diversion of purchases would be expected.

The remainder of this chapter discusses the impact of CBD fare-free service on retail sales by analyzing changes in aggregate retail sales tax receipts from CBD establishments, changes in purchase patterns and perceptions of CBD shopping opportunities of downtown employees, downtown residents, area residents, and by examining the attitudes of CBD merchants towards CBD fare-free service.

5.2 RETAIL SALES TAX RECEIPTS

The impact of fare-free service on retail sales in the Albany CBD was examined primarily using retail sales tax receipts provided by the New York State Department of Taxation and Finance (NYSDF). The basic approach involved a time series analysis of quarterly sales tax receipts over a 15-quarter period (from December 1976, through August 1980) for a panel of CBD retail establishments that were in business throughout the 15-quarter period. Quarterly sales tax receipts for all retail establishments in Albany County during the same period were also used in the analysis in an attempt to provide a control for exogenous economic factors in the region which could also influence retail sales.¹

The Albany CBD panel consisted of 115 retail establishments organized into the following seven groups based on type of sales:

1. full-service restaurants;
2. other restaurants;
3. apparel;
4. furniture and appliances;
5. food stores;
6. services (e.g., travel agencies, cleaners, tailors, etc.); and
7. miscellaneous sales (e.g., sporting goods, books, hardware, liquor, etc.).

¹Originally, quarterly sales tax receipts for a similar panel of retail establishments located in the Schenectady CBD were to serve as a control, but due to workload constraints, NYSDTF was not able to supply these data.

For three of these groups (i.e., other restaurants, apparel, and miscellaneous sales), establishments were further categorized by proximity to bus service. Two categories were used: near--defined as being located within one block of the Washington Avenue/State Street bus routes; and far--defined as being located beyond one block of these bus routes. The number of establishments included in each category is shown in Table 5-1.

In establishing whether or not fare-free service has had an impact on CBD retail sales, the preferred analysis approach would involve some formal, statistical trend analysis technique. For this evaluation effort, however, the number of observations available (i.e., aggregate retail sales tax receipts for 15 quarters) was not sufficient to estimate a regression equation. Instead, reliance was placed on informal judgment on whether patterns in the data suggested that a change in retail sales had occurred as a result of fare-free service. While this approach lacks the rigor of a formal statistical estimation procedure, it can provide valuable insights into the relationship between the improved accessibility brought about by CBD fare-free service and increased retail activity.

The analysis, then, is essentially based on comparisons of trends in retail sales of the CBD panel with those observed county-wide. However, by restricting the analysis to a panel of CBD retail establishments remaining in business over the 15-quarter period for which retail sales tax data were available, the opening or closing of other retail establishments within the CBD is not accounted for. This has two implications. First, results of the analysis will not necessarily represent the overall impact on total CBD sales resulting from fare-free service. For example, if results indicate that sales among establishments comprising the CBD panel remain unchanged as a result of fare-free service, total CBD sales still could have increased as the result of an increase in the number of retail establishments located in the CBD.

In addition, trends in retail sales observed for the CBD panel could be influenced by changes in the total number of CBD retail establishments. For example, while a decrease in sales for a given retail category in the CBD panel could indicate an overall decline in retail activity for that category, it could also reflect increased competition arising from a greater number of establishments in that category located within the CBD.

5.2.1 Trends in Retail Sales: CBD Panel versus Albany County

Average quarterly sales tax receipts by year for Albany County and the CBD panel are presented in Table 5-2. As shown, retail sales in Albany County increased by 2.9 percent in 1978 relative to 1977, and an additional 0.9 percent in 1979. In 1980, though, sales fell off markedly to 3.6 percent below their 1977 level. For the CBD panel, too, sales increased in 1978. In this case, the magnitude of this increase in percentage terms (11.5 percent) was nearly three times that for Albany County. Sales then increased in 1979

TABLE 5-1. COMPOSITION OF CBD PANEL

Type of Retail Establishment	Proximity to Bus Line		Total Establishments
	Near	Far	
Full-Service Restaurant	--	--	15
Other Restaurant	12	8	20
Apparel	5	14	19
Furniture and Appliances	--	--	7
Food Stores	--	--	12
Services	--	--	15
Miscellaneous Sales	10	17	27
Total	27	39	115

TABLE 5-2. AVERAGE QUARTERLY SALE TAX RECEIPTS BY YEAR:

ALBANY COUNTY VERSUS CBD PANEL

Year	CBD Panel			Albany County		
	Quarterly Sales Tax Receipts*	% Change from Prev. Year	% Change from 1977	Quarterly Sales Tax Receipts*	% Change from Prev. Year	% Change from 1977
1977	\$190,553	-	-	\$4,744,913	-	-
1978	212,386	+ 11.5	+ 11.5	4,882,453	+ 2.9	+ 2.9
1979	213,124	+ 0.4	+ 11.8	4,925,962	+ 0.9	+ 3.8
1980	209,091	- 1.9	+ 9.7	4,574,780	- 7.1	- 3.6

* Sales Tax Receipts expressed in constant 1967 dollars

by an additional 0.4 percent and dropped off slightly in 1980. For the CBD panel, though, 1980 sales were still 9.7 percent greater than in 1977.

These results indicate that relative to county-wide sales, CBD sales were much more stable in 1980. While this stability could be attributed to fare-free service in the CBD, another possible explanation could be differences in the mix of aggregate retail sales between Albany County and the CBD panel. As shown in Table 5-3, for example, the CBD panel has a much higher proportion of sales associated with apparel and eating and drinking establishments, while Albany County as a whole has a much higher proportion of auto and food sales.

If the distributions of retail sales by type for the CBD panel and Albany County were similar, one could argue that sales in each group would be similarly affected by exogenous economic factors. Under these somewhat ideal conditions, the use of county-wide sales tax receipts as a control for those observed for the CBD panel would be quite reasonable. Because these distributions of retail sales by type are different, though, consideration should be given to the differential impacts that changes in economic conditions would have on Albany County versus CBD panel sales. For example, the greater proportion of food sales (i.e., grocery stores, etc.) in Albany County would suggest that county-wide sales would be somewhat less sensitive to any changes in economic conditions. Further, the lower proportion of sales by eating and drinking establishments would also suggest that county-wide sales would be less sensitive, since these expenditures are likely to be much more discretionary in nature than those for groceries. On the other hand, the higher proportion of automobile sales would tend to make total county-wide sales more vulnerable to downturns in the economy, since people would tend to retain older cars rather than buy new ones during periods of recession.

Overall, then, it is not clear how the response of total county-wide sales would differ from those of the CBD panel. However, to the extent that the responses hypothesized above would tend to cancel each other, the use of aggregate Albany County sales tax receipts as a control for those of the CBD panel is not unreasonable. Therefore, the stability of retail sales of the CBD panel relative to county-wide sales might very well be attributed to fare-free service.

Trends in aggregate retail sales tax receipts for the CBD panel and Albany County as a whole during the 15-quarter period from December 1, 1976 through August 31, 1980 are presented in Figure 5-1. As shown, county-wide sales generally increased over the first two and one-half years, corresponding to the increases noted earlier in Table 5-2. In addition, there were fairly strong peaks in first-quarter sales (i.e., quarters beginning December 1 and ending February 28) during this period for Albany County, corresponding to the holiday shopping season. After mid-1979, though, sales declined steadily, with no discernible peaking in the first-quarter of 1980.

TABLE 5-3. DISTRIBUTION OF RETAIL SALES BY TYPE

Sales Category	Percent of 1977 Sales ¹	
	CBD Panel	Albany County ²
Food	2.4	20.6
Automobile	0.0	18.0
Gas Stations	0.0	6.3
Apparel	23.2	6.8
Furniture/Appliances	4.5	4.2
Eating and Drinking	39.7	10.0
Miscellaneous	30.3	34.0

¹Excluding Services

²Source: 1977 Census of Retailing

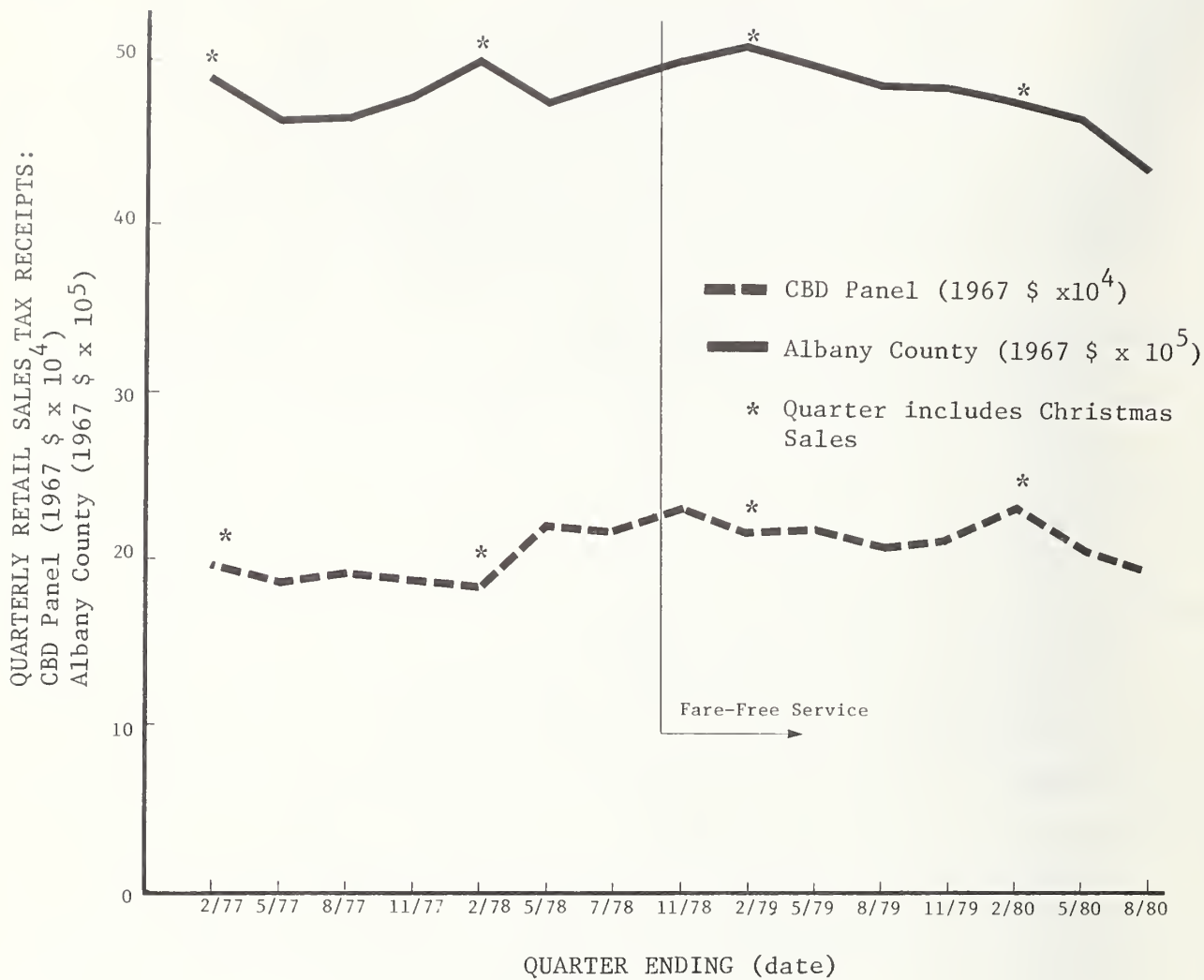


FIGURE 5-1. TIME SERIES OF CBD PANEL VERSUS ALBANY COUNTY TAX RECEIPTS

In contrast, CBD sales over the first two and one-half years exhibit no peaking in those quarters which include the holiday shopping season (i.e., first-quarters). In fact, the lowest quarterly sales during the 15-quarter period are observed for the first-quarter of 1978. A change in this pattern is observed in the first-quarter of 1980, though, which represents a definite peak in sales among establishments in the CBD panel. This would suggest that the relative stability of CBD sales in 1980 in comparison to the sharp decline in county-wide sales noted in Table 5-2 is due at least in part to an increase in sales during the holiday shopping season.

Another point worth noting with regard to the trend in sales among establishments in the CBD panel is the significant upturn in sales tax receipts which occurred in the second-quarter of 1978 (i.e., the quarter ending May 31, 1978). As shown, retail sales tax receipts for the CBD panel during this quarter were about \$35,000 greater than the previous quarter, an increase of 19 percent. During this same period, county-wide sales tax receipts declined rather sharply, which would indicate that the increase in CBD sales cannot be attributed to a general economic upswing. Other possible explanations for this increase could include either a coordinated promotional effort on the part of downtown merchants or a significant increase in CBD employment. However, discussions with the head of the downtown merchant's association and Albany Urban Renewal Authority staff, and a review of newspaper articles and advertisements during that period indicated that neither of these factors could account for the increase in aggregate sales among the CBD panel during this period.

Examination of trends in retail sales tax receipts of the CBD panel disaggregated by the type of establishment, presented in Figure 5-2, provides some insight into the nature of this increase. As shown, rather than being the result of a general increase in retail activity, this upturn in sales appears to have been brought about by a number of conflicting trends occurring among different types of retail establishments. During the last quarter of 1977 and the first-quarter of 1978 (September 1977 through February 1978), "far" miscellaneous sales establishments (i.e., those located beyond one block of Washington Avenue/State Street bus routes) and "near" other restaurants both suffered significant declines in sales. During the same period, though, sales at "near" apparel and furniture/appliance establishments increased. The net result was very little change in aggregate sales of the CBD panel relative to the three previous quarters. During the second-quarter of 1978, sales by "far" miscellaneous sales establishments and "near" other restaurants returned to their original levels, while furniture/appliance sales remained at their increased level, with the result that aggregate sales for the CBD panel increased.

5.2.2 Retail Sales by Quarter: CBD Panel versus Albany County

A clearer picture of the relationship between Albany County and CBD panel sales on a seasonal basis is presented in Figure 5-3. As shown, with the

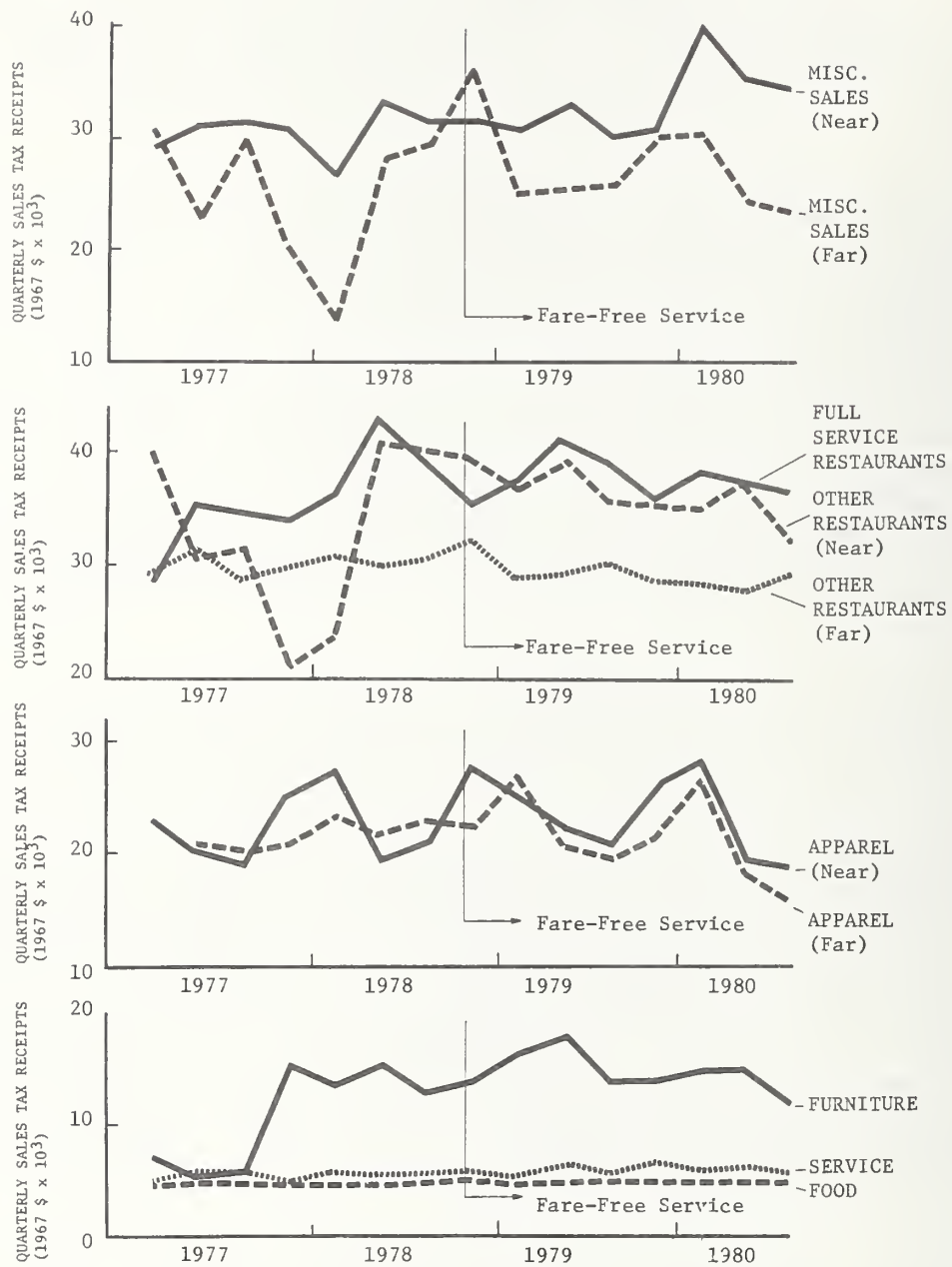


FIGURE 5-2. TIME SERIES OF CBD PANEL SALES TAX RECEIPTS BY TYPE OF ESTABLISHMENT

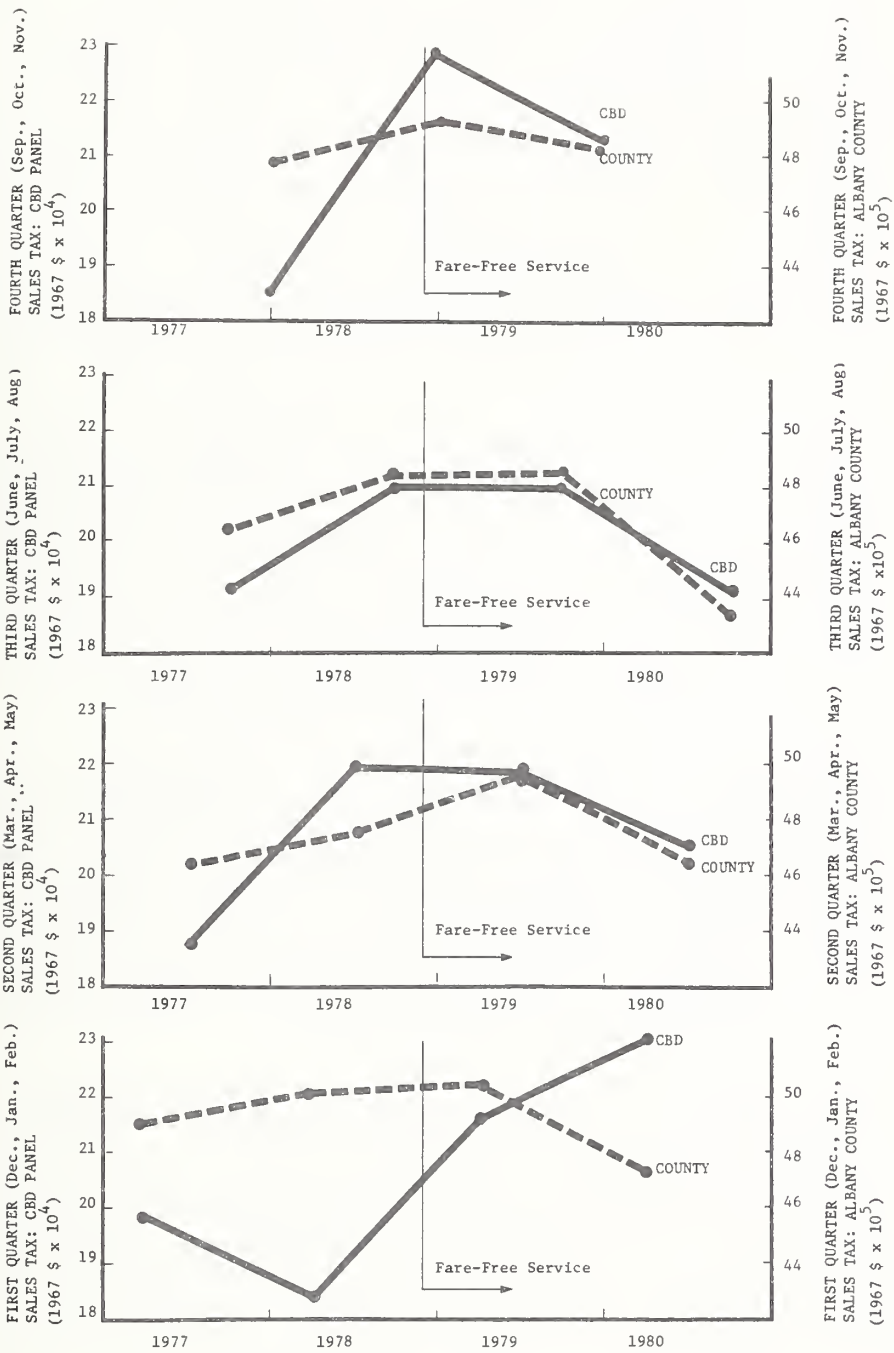


FIGURE 5-3. CBD PANEL VERSUS ALBANY COUNTY SALES TAX RECEIPTS BY QUARTER

exception of first-quarter sales, trends in CBD panel sales are quite similar to those of county-wide sales, particularly during the third-quarter of each year. The trend in first-quarter sales of the CBD panel, though, is quite different from that of Albany County. As shown in Figure 5-3, first-quarter sales for the CBD panel were declining prior to the implementation of fare-free service, and reached their lowest point in the quarter ending February 28, 1978. Once CBD fare-free service was in effect, though, first-quarter sales increased sharply, reaching a level in 1980 that was 25 percent greater than in 1978. County-wide first-quarter sales, on the other hand, increased slightly from 1978 to 1979, and then dropped off in 1980. During the 2-year period over which CBD panel first-quarter sales increased by 25 percent (i.e., February 1978 to February 1980), county-wide first-quarter sales declined by 5.6 percent.

It should be noted, however, that in the first-quarter of 1978, sales had dropped to an extremely low level for certain types of establishments in the CBD panel (i.e., "far" miscellaneous sales establishments and "near" other restaurants). To a certain extent, then, the increase in first-quarter sales observed between 1978 and 1979 for the CBD panel can be attributed to the return to normal sales volumes in subsequent quarters of 1978. Furthermore, first-quarter sales county-wide increased slightly between 1978 and 1979. To the extent that Albany County sales serve as an appropriate control, then, a similar increase would have been expected for the CBD panel.

The increase in CBD panel first-quarter sales between 1979 and 1980, though, cannot be explained by either a resurgence of CBD sales or a general upturn in retail activity in the Albany region. For both Albany County and the CBD panel, fourth-quarter sales between 1978 and 1979 and second- and third-quarter sales between 1979 and 1980 declined, most likely reflecting a change in economic conditions which had a similar effect on both CBD and county-wide retail activity. This effect is also reflected in the decrease in first-quarter sales between 1979 and 1980 for Albany County. For the CBD panel, though, first-quarter sales increased between 1979 and 1980.

In view of the similarities of the decreases in second-, third- and fourth-quarter sales tax receipts between the CBD panel and Albany County, a decline in CBD panel first-quarter sales between 1979 and 1980 similar to that observed for county-wide sales also would have been expected. For example, first-quarter sales tax receipts in Albany County dropped by 6.2 percent between 1979 and 1980. Had CBD panel sales experienced the same percentage decrease, 1980 first-quarter sales tax receipts, in 1967 dollars, would have been \$203,100. Actual 1980 first-quarter sales tax receipts, though, were \$230,200, which represents a 13.4 percent increase over what would be expected if CBD sales had followed the same trend as county-wide sales. With Albany County's 7 percent sales tax, this \$27,100 difference in sales tax receipts would translate into a \$387,100 difference in gross sales in 1967 dollars. In terms of 1980 dollars, this difference would be \$875,300.

The fact that CBD sales increased during this period suggests that there was some factor unique to the CBD which had a positive impact on first-quarter sales, the time period which includes most of the holiday shopping season (i.e., the month of December). One possible explanation is that these increased sales were the result of an intense promotional effort on the part of downtown merchants during the holiday shopping season. However, discussions with the head of the downtown merchants' association indicated that this was not the case.

Another possible explanation, although certainly not the only one, is that the impact of CBD fare-free service is most pronounced during the holiday shopping season. During this period, people typically purchase a large number of items (i.e., gifts) in a relatively short period of time. As a result, anything that makes shopping more convenient could have a fairly strong influence on where and when these purchases are made. In this case, for example, the elimination of fares in the CBD may have made downtown employees more inclined to accomplish their holiday shopping needs by patronizing downtown merchants during their lunch hour rather than contending with crowds at suburban shopping locations during the evenings or on weekends.

To the extent that fare-free service has an effect on CBD retail sales, then, these results suggest that the most significant impact occurs in December, during the holiday shopping season. This would account for the increase in CBD panel first-quarter sales between 1979 and 1980, and, probably to a lesser extent, the increase in first-quarter sales between 1978 and 1979. Since total expenditures for holiday-related purchases appear to have decreased over this period, as evidenced by the decline in county-wide first-quarter sales, these results would further suggest that the increase in CBD retail sales is primarily the result of a diversion of purchases from other shopping locations. Further, to the extent that CBD residents did most of their shopping in the downtown area prior to the implementation of fare-free service, these increases are most likely attributable to CBD employees and other non-CBD residents in the downtown area during the day.

5.2.3 Type of Retail Establishment

A second issue in the analysis of changes in retail sales is the extent to which these changes vary by type of establishment. This section discusses the distribution of aggregate quarterly sales tax receipts for the CBD panel among miscellaneous sales, apparel, restaurants, furniture/ appliances, food, and services.

5.2.3.1 Miscellaneous Sales - Quarterly sales tax receipts from miscellaneous sales establishments are presented in Figure 5-4. As shown, first-quarter miscellaneous sales increased dramatically after the implementation of fare-free service. From a low of \$41,000 in 1978, sales tax receipts for these

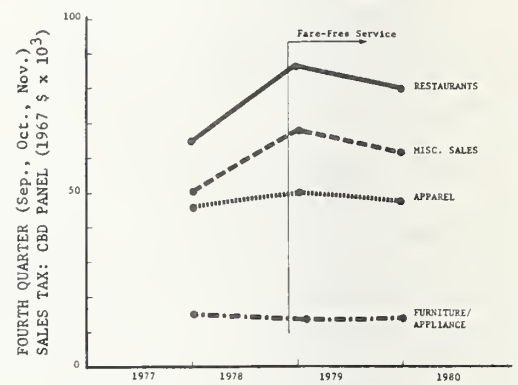
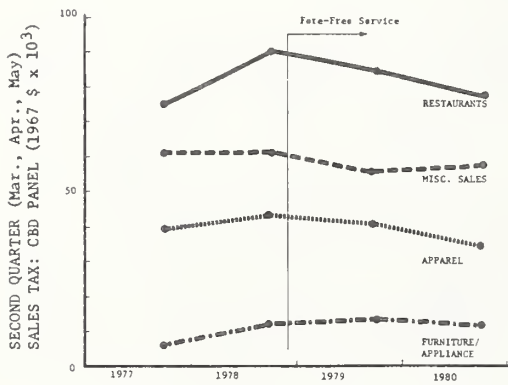
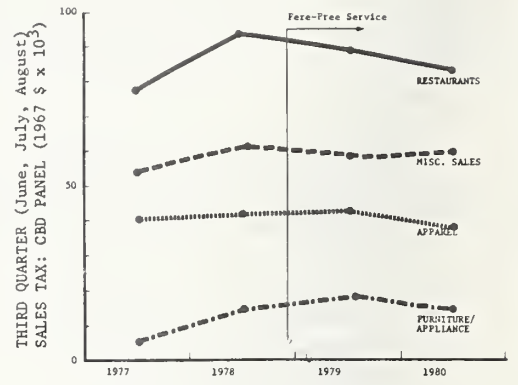
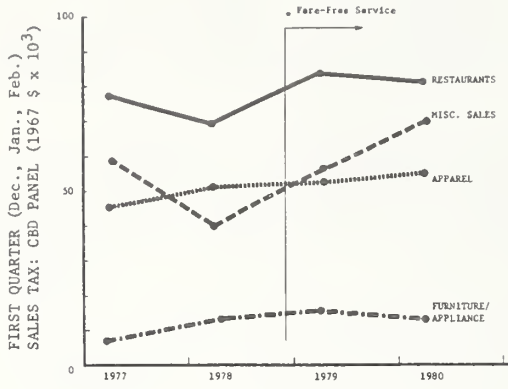


FIGURE 5-4. CBD PANEL SALES TAX RECEIPTS: RESTAURANTS, MISCELLANEOUS SALES, APPAREL, FURNITURE/APPLIANCES

establishments increased to \$70,000 in 1980--a 71 percent increase over this 2-year period. This increase accounts for 64 percent of the total increase in first-quarter sales tax receipts observed for the entire CBD panel during this same period. Second- and third-quarter sales tax receipts for miscellaneous sales remained relatively stable, while fourth-quarter sales increased from 1977 to 1978, and then declined somewhat in 1979.

Overall, then, to the extent that fare-free service has had an effect on retail sales, it would appear that miscellaneous sales have benefited most. Further, increased sales are observed only during the first-quarter periods, indicating that this increase is primarily the result of more purchases during the holiday shopping season. Since "miscellaneous sales" represent a wide range of specialty and gift shops, one would expect that the increase in holiday sales for the CBD panel noted earlier would occur to a great extent among establishments in this category.

5.2.3.2 Apparel - First-quarter tax receipts from apparel sales increased steadily over the entire 15-quarter analysis period. As shown in Figure 5-4, first-quarter sales increased from about \$46,000 in 1977 to \$54,000 in 1980, an increase of 17 percent. Since this increase occurs both prior to and after implementation of CBD fare-free service, though, it is not clear to what extent it can be attributed to the demonstration project. Apparel sales in second-, third-, and fourth-quarters appear to have been relatively stable, showing slight decreases in second- and third-quarters, and a slight increase in fourth-quarters.

In comparing average sales tax receipts across quarters, the seasonal nature of apparel sales can be observed. In first- and fourth-quarters, for example, sales tax receipts averaged about \$50,000, while the corresponding figure for second- and third-quarters is about \$40,000. Higher sales tax receipts during first- and fourth-quarters (which includes the period from September 1 through February 28) could reflect greater apparel sales activity at the beginning of the school year, during the holiday season, and post-Christmas sales.

5.2.3.3 Restaurants - Between 1978 and 1980, first-quarter sales tax receipts from restaurants increased from \$70,000 to \$81,000, an increase of 16 percent. This increase represents 23.9 percent of the total increase in retail sales tax receipts observed for the entire CBD panel during this 2-year period. It is quite likely that there exists a strong relationship between this increase in first-quarter restaurant sales and the similar increase noted earlier for miscellaneous sales. For example, if people have already decided to make a trip within the downtown area for shopping, they may be more inclined to eat lunch out as well.

In looking at the trends in tax receipts in other quarters, though, it appears that sales for restaurants included in the CBD panel reached a peak in late 1978, and have declined steadily since then. This general decline could indicate a decrease in expenditures for eating and drinking, which tend to be more discretionary, in response to a general downturn of the economy evidenced by the decrease in county-wide sales over this period. On the other hand, if the total number of restaurants in the CBD had increased during this period, the decline in sales for those restaurants included in the CBD panel could reflect the effects of increased competition. In terms of seasonal variations, it appears that restaurant sales are generally highest during second-quarters (i.e., March 1 through May 31) and lowest during fourth-quarters (i.e., September 1 through November 30).

5.2.3.4 Furniture and Appliances - Retail sales tax receipts from furniture and appliance establishments doubled between 1977 and 1978, and remained relatively stable throughout subsequent quarters. Sales appear to be highest during second-quarters, and lowest during third-quarters. Given the relative stability of sales from early in 1978 through 1980, it would not appear that fare-free service has had a significant impact on furniture and appliance sales within the CBD.

5.2.3.5 Food and Services - Quarterly sales tax receipts from food and service establishments are presented in Figure 5-5.¹ As shown, with the exception of second-quarter sales in 1978, retail sales tax receipts of food stores remained relatively stable at about \$4,500 throughout the entire 15-quarter period. Retail sales among services establishments show increases in all but third-quarters. This increase is greatest for fourth-quarters, with retail sales tax receipts increasing from \$4,600 in 1977 to \$6,300 in 1979, a 37 percent increase. Since these increases do not coincide with the implementation of CBD fare-free service, it is not clear that there is a relationship between the two.

5.2.4 Proximity to Bus Lines

In addition to comparisons between retail sales tax receipts of Albany County and the CBD panel, further insight into the relationship between retail sales and the improved accessibility brought about by CBD fare-free service can be gained by comparing sales among those establishments in the CBD panel located very near bus lines having frequent service with those establishments located at a greater distance from these bus lines. This section discusses

¹The New York State sales tax does not apply to groceries or personal services. Sales tax receipts from food stores, then, reflect the sales of items other than groceries. In addition, most retail activity of barber and beauty shops is likely to be non-taxable. To the extent that the mix of taxable versus non-taxable sales has remained constant, though, the data presented in Figure 5-5 would be representative of total sales by food and service establishments.

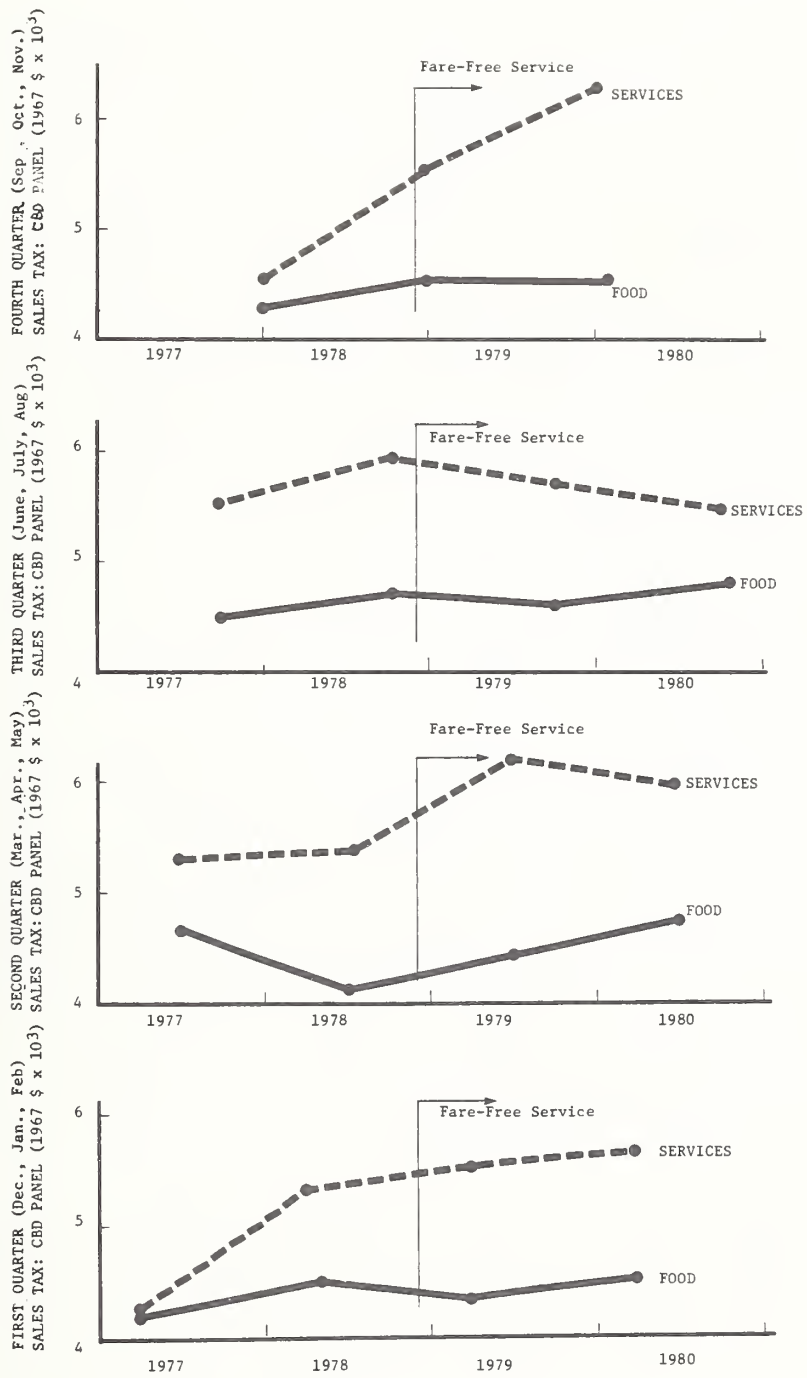


FIGURE 5-5. CBD PANEL SALES TAX RECEIPTS BY QUARTER: FOOD AND SERVICES

such a comparison for three types of establishments: miscellaneous sales, apparel, and "other" restaurants (i.e., other than full-service restaurants). As mentioned earlier, "near" is defined as within one block of the Washington Avenue and State Street bus lines, and "far" as beyond one block.

5.2.4.1 Miscellaneous Sales - The impact of proximity to bus service on miscellaneous sales is presented in Figure 5-6. In general, these results indicate that retail sales for those establishments located near major bus lines increased after the implementation of CBD fare-free service, while sales at more distantly located establishments either decreased or increased at a slower rate. For example, as shown in Figure 5-6, third-quarter retail sales tax receipts from "near" miscellaneous sales establishments were \$1,970 greater than those from "far" establishments in 1978, just prior to fare-free service. One year later, though, this difference had increased to \$4,200. In 1980, this difference had further increased to \$10,600. A similar trend is observed for second-quarter sales. Prior to fare-free service in 1978, second-quarter retail sales tax receipts from "near" establishments were \$5,100 greater than those from "far" establishments. After fare-free service was implemented, this difference increased to \$8,000 in 1979 and to \$11,000 in 1980. For first-quarter sales, although retail sales tax receipts from "far" establishments increased sharply between 1978 and 1979, the rate of increase between 1979 and 1980 was less than that observed for "near" establishments. As shown in Figure 5-6, 1979 first-quarter retail sales tax receipts from "near" establishments were \$5,700 greater than those from "far" establishments. In 1980, this difference had increased to \$9,100.

These trends suggest fairly strongly that establishments located along major bus routes benefited from fare-free service to a greater extent than other CBD retail establishments. Further, these trends are not restricted to any particular quarter, but appear consistently throughout the year. This would indicate that in addition to the possible diversion of sales from establishments located outside the CBD as a result of fare-free service, there appears to have been a redistribution of sales within the CBD as well. In addition, these results provide further evidence of the linkage between fare-free service and increased retail sales.

5.2.4.2 Apparel - The relationship between proximity to major bus lines and retail sales for apparel establishments is presented in Figure 5-7. As shown, this relationship is similar to that observed for miscellaneous sales. For example, third-quarter retail sales tax receipts for "near" establishments were \$1,600 less than those from "far" establishments in 1978 prior to fare-free service. One year later, though, receipts from "near" establishments were \$1,000 more than from "far" establishments, with this difference increasing to \$3,000 in 1980. Similarly, second-quarter retail sales tax receipts from "near" establishments were \$2,400 less than those from "far"

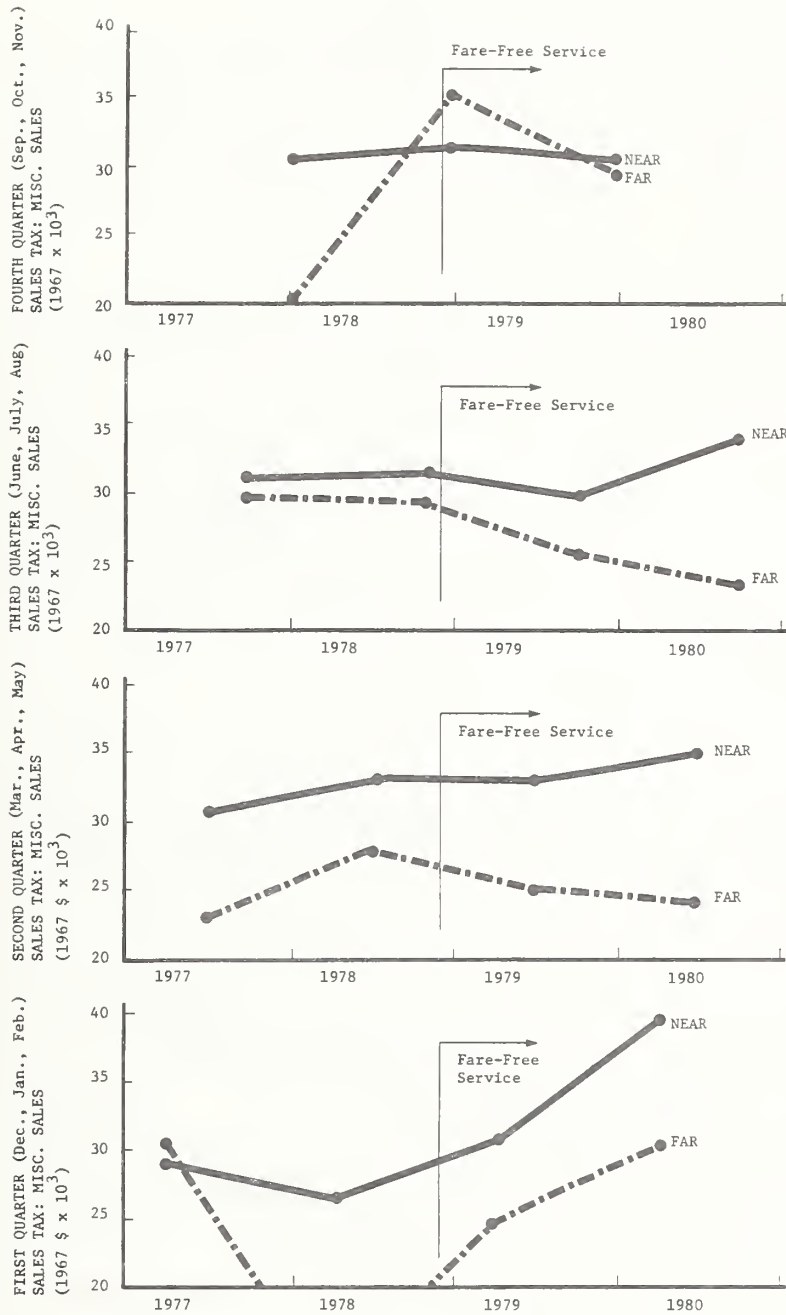


FIGURE 5-6. RETAIL SALES TAX RECEIPTS VERSUS PROXIMITY TO BUS LINES: MISCELLANEOUS SALES

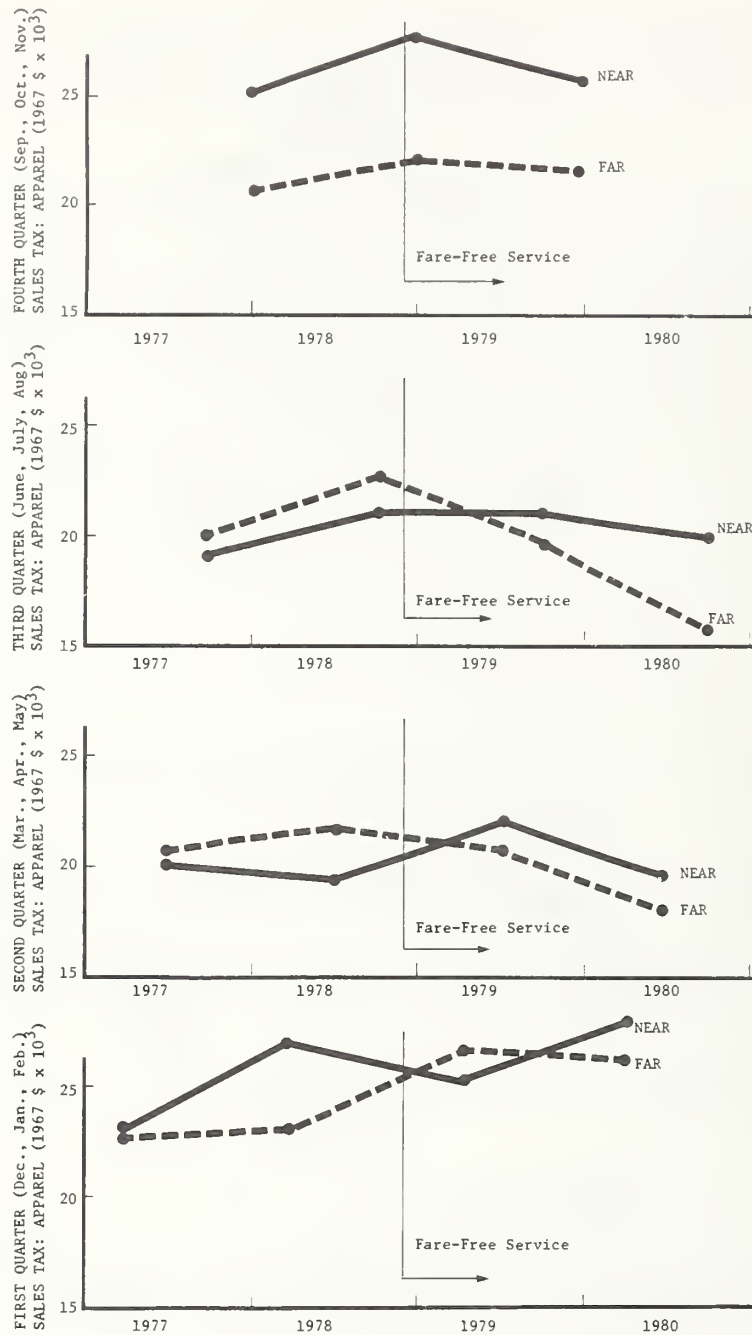


FIGURE 5-7. RETAIL SALES TAX RECEIPTS VERSUS PROXIMITY TO BUS LINES: APPAREL

establishments in 1978. One year later, "near" establishment tax receipts were \$1,200 greater. In 1980, this difference had increased to \$1,500.

First-quarter results are somewhat mixed. In 1978, prior to fare-free service, receipts from "near" establishments were \$3,900 greater than those from "far" establishments. One year later, though, "near" establishment tax receipts were less by \$1,000. In 1980, this pattern reversed again, with "near" establishment receipts being greater, but only by \$1,900. Overall, though, these results tend to support those noted earlier for miscellaneous sales.

5.2.4.3 Other Restaurants - The relationship between proximity to major bus lines and retail sales for other restaurants is presented in Figure 5-8. Again, trends similar to those observed for miscellaneous sales and apparel are also observed for other restaurants. For example, first-quarter retail sales tax receipts from "near" restaurants increased by 49 percent between 1978 and 1980, while tax receipts from "far" restaurants decreased by 23 percent during the same period.¹ A similar pattern is observed for fourth-quarter sales. Here, tax receipts from "near" restaurants between 1977 and 1979 increased by 69 percent, while those for "far" restaurants decreased by 12 percent.

Second-quarter tax receipts for both "near" and "far" restaurants decreased between 1978 and 1980. "Far" restaurant receipts decreased by 20 percent, though, while "near" restaurant receipts dropped by only 7 percent. Third-quarter sales tax receipts, too, decreased for both "near" and "far" other restaurants between 1978 and 1980. In this case, though, the decrease in "near" restaurant receipts, 21 percent, was greater than that for "far" restaurants, 12 percent.

5.3 PURCHASE PATTERNS

In addition to the analysis of changes in retail sales of CBD establishments, the evaluation also sought to determine the characteristics of those individuals who accounted for these changes. The basic approach taken involved the analysis of responses to questions related to the type and amount of purchases which were included in the various travel surveys administered during the demonstration project. The analysis focused on four groups:

1. downtown employees;
2. downtown residents;

¹Because the scales of retail sales tax receipts for "near" and "far" other restaurants in Figure 5-8 are different, changes are expressed in percentage terms rather than absolute dollars.

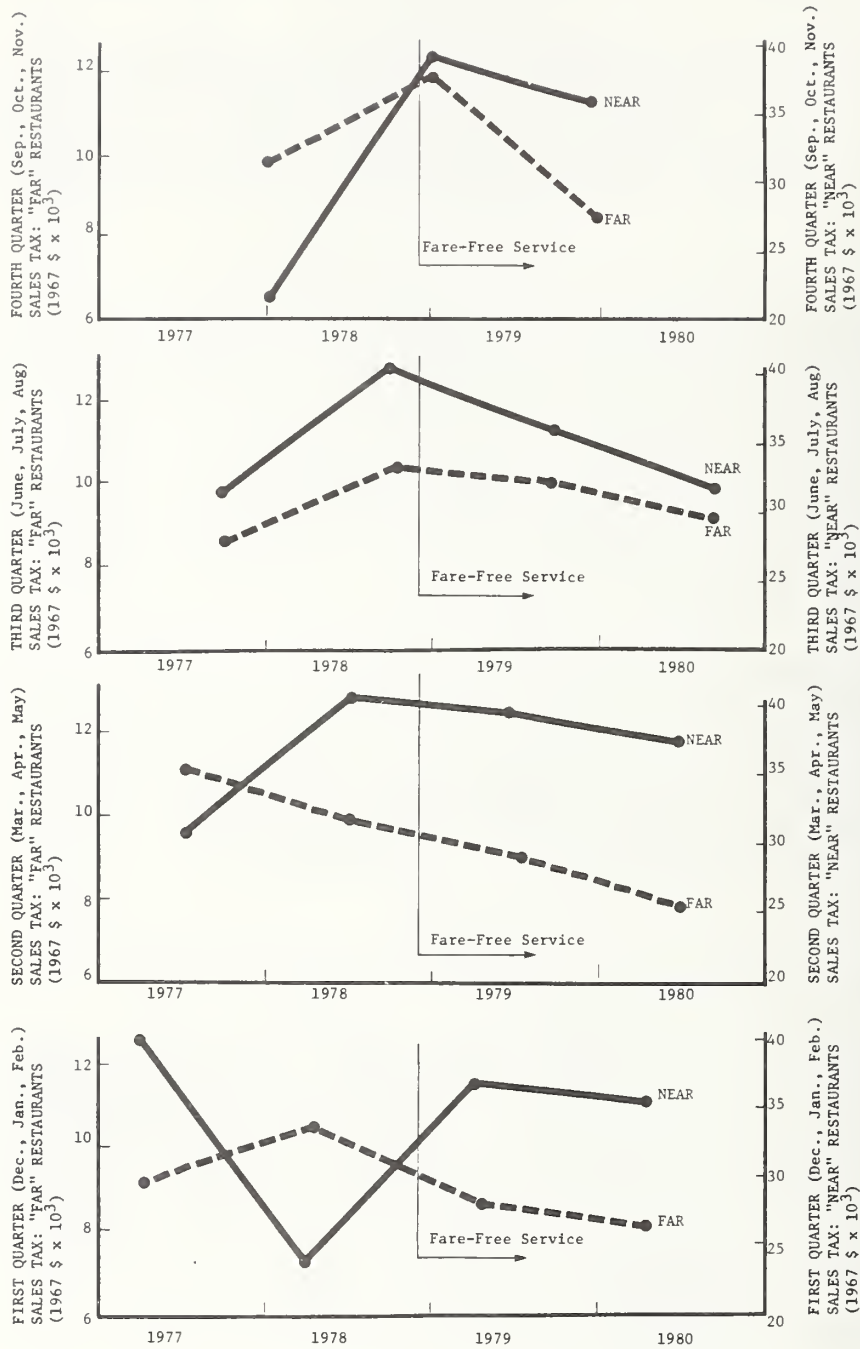


FIGURE 5-8. RETAIL SALES TAX RECEIPTS VERSUS PROXIMITY TO BUS LINES: OTHER RESTAURANTS

3. downtown shoppers and diners; and
4. bus patrons.

Travel surveys were administered to each of these groups in October 1978 (immediately prior to the implementation of fare-free service) and again in October 1979.

In comparing the changes in purchase patterns derived from the travel surveys with the time series analysis of CBD retail sales presented in Section 5.2, it is important to note that the travel surveys provide information on changes occurring in one point in time (i.e., mid-October) between 1978 and 1979. As indicated in Section 5.2, the increase in sales for the CBD panel occurred almost entirely during the first-quarter, corresponding to the holiday shopping season. The travel surveys, though, were administered in mid-October of 1978 and 1979, which would correspond to fourth-quarter sales. As a result, responses to questions in the travel surveys related to purchase patterns provide no insight into who is responsible for increased CBD sales. Further, since fourth-quarter sales for the CBD panel actually decreased by about 7 percent between 1978 and 1979, a corresponding decrease in reported purchases would be expected from the travel surveys as well.

5.3.1 Downtown Employees

Table 5-4 summarizes the responses of downtown employees related to purchase patterns. As shown, the percent of all midday employee trips in which at least one purchase was made had not changed, although the number of purchases made per trip (in which at least one purchase was made) decreased slightly. This, along with the significant increase in the percent of food purchases (i.e., at restaurants), indicates, perhaps, a slight increase in the number of employees taking trips to eat lunch and returning to work without making other purchases. The fact that the percent of employee trips to the North Pearl Street retail area has decreased somewhat is not surprising, since many of the new shopping and dining opportunities in downtown Albany are not in the vicinity of this major shopping street.

Mean and median purchase amounts for those trips in which at least one purchase was made are also presented in Table 5-4.¹ As shown, the median purchase amount per trip decreased slightly in terms of constant 1978 dollars from \$4.42 in October 1978 to \$4.37 in October 1979, a decrease of 1.1 percent. The mean purchase amount increased from \$9.90 to \$39.44. As shown in Table 5-4, though, most of this increase can be attributed to a higher incidence of very large purchases in the October 1979 survey. For example, the average of \$39.44 for October 1979 includes seven purchases of

¹Purchase amounts reported for October 1979 have been expressed in terms of 1978 dollars by deflating 1979 dollar values to account for an inflation rate of 9.8 percent during the period between October 1978 and October 1979.

TABLE 5-4. PURCHASE PATTERNS OF DOWNTOWN EMPLOYEES

	October 1978	October 1979
Percent of midday employee trips in which at least one purchase was made	61.1%	62.9%
Number of purchases per trip in which at least one purchase was made	1.32	1.24
Percent of employee trips destined to North Pearl Street (major retail street)	25.9%	21.6%*
Distribution of Purchase Types		
Food (i.e., - Restaurants)	44.8%	51.7%*
Groceries	3.2	1.7
Clothing	14.8	12.0
Books/Magazines	8.0	6.1
Housewares	1.8	2.2
Furniture	0	0.7
Drugs	16.8	14.0
Service	2.5	2.0
Entertainment	0.9	0.7
Other	7.3	8.8
Distribution of Purchase Amounts:		
< \$2.50	26.5%	26.8%
\$2.50-5.50	34.8	33.8
5.50-10.50	18.1	14.7
10.50-20.50	8.0	9.4
20.50-50.50	10.0	3.7
50.50-100.50	1.7	1.7
100.50-150.50	0.7	1.0
150.50-250.50	0.0	3.0
> \$250.50	0.0	6.0
Purchase Amount for Trips in which at least one a purchase was made		
Mean	\$9.90	\$39.44
Median	\$4.42	\$4.37

* Proportions in October 1979 are significantly different from those in October 1978 at the 90 percent confidence level.

TABLE 5-5. PURCHASE PATTERNS OF DOWNTOWN RESIDENTS

	October 1978	October 1979
Percent of midday downtown resident trips in which at least one purchase was made	52.9%	57.4%
Number of purchases per trip in which at least one purchase was made	1.41	1.40
Percent of resident trips destined to North Pearl Street (major retail street)	14.1%	15.0%
Distribution of Purchase Types		
Food (i.e, - restaurants)	22.3%	22.5%
Groceries	17.8	21.6
Clothing	9.6	8.7
Books/Magazines	11.0	10.1
Housewares	2.7	3.8
Furniture	0.4	0.2
Drugs	16.6	17.9
Service	5.1	4.5
Entertainment	5.3	3.2
Other	9.2	7.4
Distribution of Purchase Amounts:		
> \$2.50	18.4%	13.5%
\$2.50-5.50	24.3	26.5
5.50-10.50	23.4	22.2
10.50-20.50	16.9	18.2
20.50-50.50	12.8	12.9
50.50-100.50	3.6	4.9
100.50-150.50	0.6	0.9
150.50-250.50	0.0	0.6
> \$250.50	0.0	0.3
Purchase of Amount for trips in which at least one purchase was made		
Mean	\$13.30	\$16.30
Median	9.63	9.47

\$200, two purchases of \$250, five of \$300, five of \$400, three of \$500, one of \$600, three of \$700, and one purchase of \$998. Elimination of values \$300 or more would bring the average purchase amount for October 1979 down to \$13.75.

While \$39.44 may be the best estimate of the mean value of purchases made by downtown employees in October 1979, the fact that few major purchases were observed in October 1978 brings into question the comparability of the mean purchase amounts in these two surveys, since a relatively small number of observations (i.e., 18 out of 600) have such a great influence on the mean value (i.e., the mean purchase amount including these 18 observations is three times as great as the mean when they are excluded). In this case, median purchase amount may be a better indicator of purchase patterns.

5.3.2 Downtown Residents

As Table 5-5 indicates, there were no significant (at the 90 percent confidence level) changes in the purchase patterns of downtown residents. The median purchase amount decreased from \$9.63 in October 1978 to \$9.47 in October 1979, which represents a 1.7 percent decrease in terms of constant dollars. The mean purchase amount for trips in which purchases were made increased from \$13.30 to \$16.30. Again, though, the higher incidence of very large purchases distorts the comparison of mean purchase amounts. In October 1978, for example, no downtown residents reported a purchase price greater than \$150. In October 1979, however, the three highest amounts reported were \$200, \$238, and \$587.

5.3.3 Shoppers/Diners

The only question on the shopper/diner surveys related to purchase patterns was "How much did you spend here?" The median purchase amount reported by all people leaving retail and restaurant establishments decreased from \$2.25 in October 1978 to \$2.15 in October 1979, while the mean value decreased from \$9.90 to \$2.73. Again, the comparability of mean purchase amounts is questionable due to the presence of very large purchases in one, but not both, of the surveys. In this instance, though, these large purchase amounts occurred in October 1978 rather than October 1979. In 1979, the three highest values were \$49, \$50, and \$100, while in 1978 they were \$150, \$200, and \$606. Elimination of the \$606 purchase in 1978 results in a mean purchase amount of \$3.90, and elimination of the three highest purchases results in a mean of \$3.40. These inconsistencies among surveys (i.e., large purchase amounts in the 1979 surveys for downtown employees and residents versus large purchase amounts in the 1978 survey for downtown shoppers and diners) would seem to indicate that there is no trend of either increasing or decreasing frequency of large purchase amounts at CBD retail establishments.

5.3.4 Bus Patrons

Table 5-6 shows the percent of bus patrons who made purchases, the distribution of purchase amounts, and summarizes the mean and median purchases per trip. As shown, between October 1978 and October 1979 there was little change in the percent of bus patrons who made purchases. The median purchase amount on weekdays, though, decreased from \$11.00 to \$8.74, while the mean decreased from \$25.10 to \$18.12. On Saturdays, the median purchase amount increased from \$7.50 to \$12, while the mean decreased from \$20.70 to \$14.85. Purchase amounts in March (both weekday and Saturday) are considerably lower than in either October 1978 or October 1979. To a great extent, seasonal variations probably account for most of these differences.

5.4 PERCEPTIONS OF CBD SHOPPING OPPORTUNITIES

The bus patron, shopping/diner, downtown resident and area resident surveys each included questions related to perceptions of downtown Albany as a place to shop. Respondents were asked to rate as excellent, good, average, below average, poor, or no opinion the following dimensions of downtown shopping opportunities:

1. quality of merchandise;
2. variety of stores;
3. prices;
4. parking availability; and
5. overall rating of shopping opportunities.

The before and after survey responses for each population group were examined for overall changes in perceptions in each category, and differences were tested for statistical significance at the 90 percent confidence level. It should be kept in mind that while examination of surveys administered exactly one year apart accounts for possible seasonal variation, this approach provides only a "snapshot" picture of what was happening and what people thought during the particular week of the survey. The following sections summarize the ratings and changes in ratings of downtown shopping opportunities given by each group.

5.4.1 Bus Patrons

Figure 5-9 compares the bus patron responses for each of the three on-board surveys. The 1978 ratings reveal that weekday bus patrons were

TABLE 5-6. EXPENDITURES BY FREEWHEELER BUS PATRONS

	Weekday			Saturday		
	OCT 78	MAR 79	OCT 79	OCT 78	MAR 79	OCT 79
Percent Making Any Purchase	40.1%	41.4%	41.3%	44.1%	54.8%	44.2%
Distribution of Purchases:						
< \$2.50	10.9%	32.5%	13.6%	12.0%	43.1%	9.7%
\$2.50-5.50	20.4	26.9	23.8	24.0	7.8	16.1
5.50-10.50	17.4	16.9	23.4	28.0	19.6	22.6
10.50-20.50	22.9	11.3	17.3	20.0	11.8	32.3
20.50-50.50	18.7	9.1	16.4	12.0	15.7	16.1
50.50-100.50	6.8	1.6	3.7	0	2.0	3.2
100.50-150.50	3.0	0.6	0.9	4.0	0	0
150.50-250.50	0	0.6	0.5	0	0	0
> \$250.50	0	0.6	0.9	0	0	0
Mean*	\$25.10	\$15.00	\$18.12	\$20.70	\$11.30	\$14.85
Median*	11.00	3.00	8.74	7.50	2.60	10.93

*For all passengers making a purchase

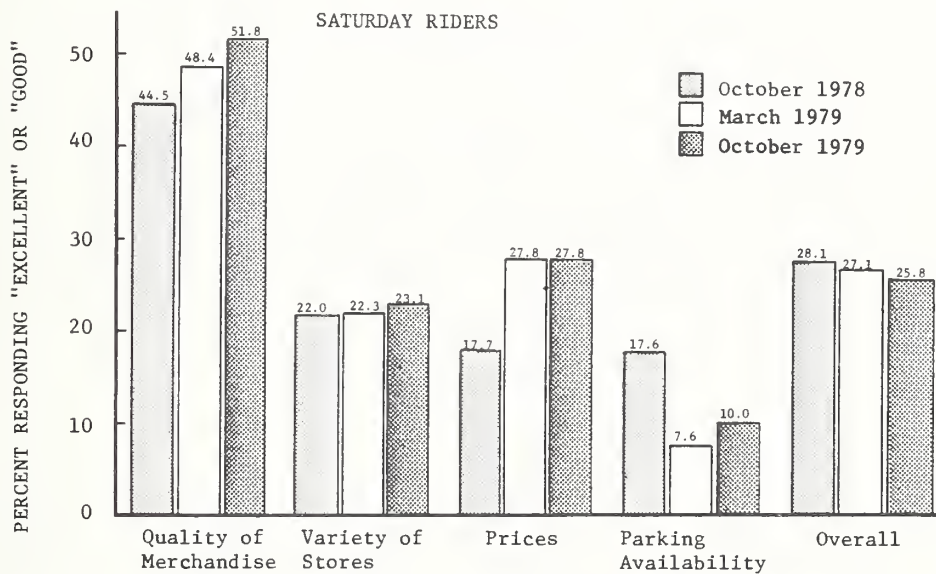
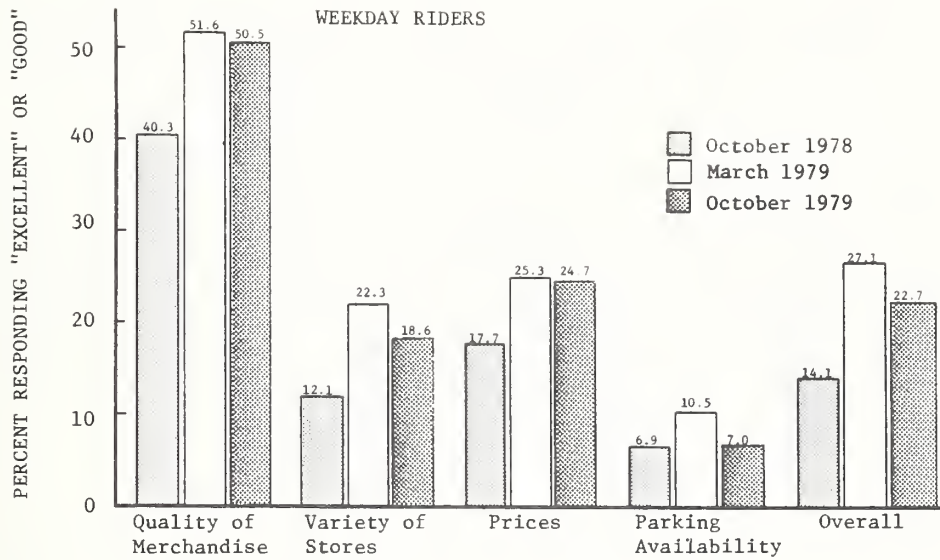


FIGURE 5-9. PERCEPTIONS OF DOWNTOWN SHOPPING OPPORTUNITIES: BUS PATRON SURVEY

generally unenthusiastic about downtown shopping opportunities except for "quality of merchandise." In March, though, the percent of people rating each category as excellent or good increased significantly. The results from October 1979 show significant changes from October 1978 in all but the "parking availability" category. It is unclear why each of the weekday excellent/good proportions decreased from March 1979 to October 1979 after having increased from October 1978 to March 1979.¹ To a large extent these decreases are most likely attributable to seasonal variations.

The survey results from Saturday bus patrons exhibit trends similar to those of weekday riders. Although smaller sample sizes make it difficult to claim statistical significance for many of the changes, there is definite evidence of fewer people rating each of the first four categories as "poor" and corresponding increases of ratings of "average" or "excellent" and "good". In the case of the "overall shopping" category, more Saturday bus patrons checked "average" in October 1979 than one year earlier, however fewer checked "good" as well as "below average" and "poor."

5.4.2 Shoppers/Diners

The perception ratings of shoppers and diners are more like those for the weekday bus patrons than are the other groups ratings (see Figure 5-10). There are increases in the "excellent/good" proportions which are statistically significant (at the 90 percent confidence level) for all except the "parking availability" category. It is not surprising that ratings of shopping opportunities increased for this group since shoppers (along with bus patrons) are most likely to be exposed to any improvements in downtown retailing opportunities. In addition to the introduction of CBD fare-free service after October 1978, there were also improvements in downtown shopping opportunities such as the opening of new boutique-type stores within one block of the Empire State Plaza. It is not clear, then, the extent to which these improved perceptions can be attributed to fare-free service as opposed to other improvements in the downtown area.

5.4.3 Downtown Residents

As discussed in Chapter 3, neither trip frequency nor the distribution of trip purposes for downtown residents showed any appreciable change between October 1978 and October 1979. These results, together with the fact that new shopping opportunities have been oriented primarily toward lunch-time employee shopping rather than grocery and general merchandise stores, account for the very small changes in the perceptions of downtown shopping opportunities by downtown residents. Figure 5-10 shows no significant changes in any category for the "excellent/good" proportion. There were, however, some small but

¹Statistically there is no difference in the March and October, 1979 ratings for "prices" and "quality of merchandise".

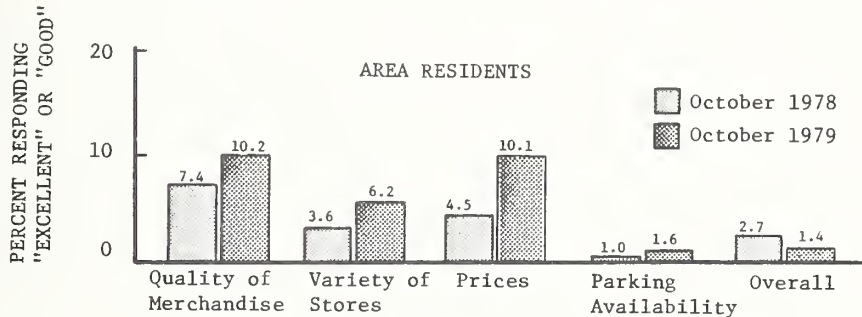
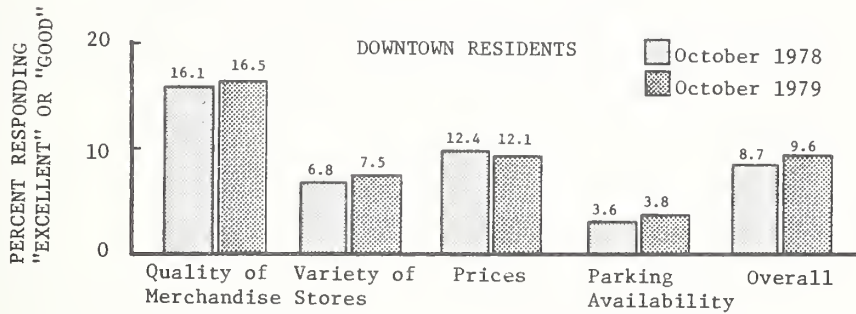
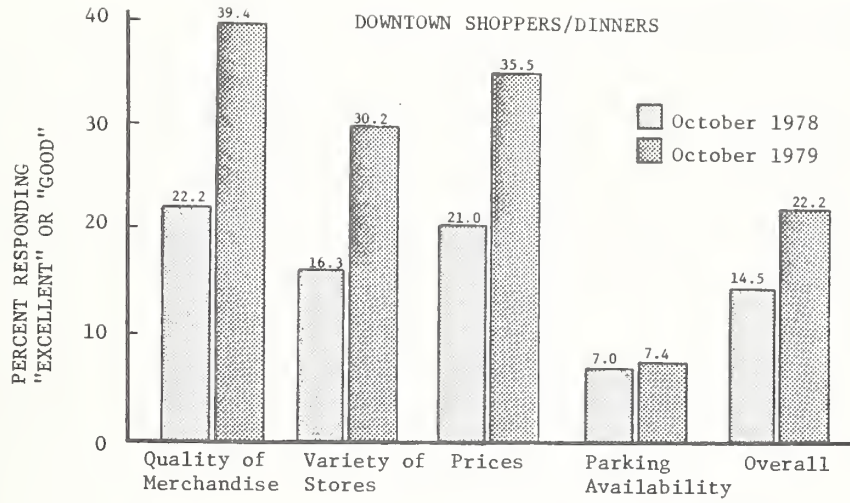


FIGURE 5-10. PERCEPTIONS OF DOWNTOWN SHOPPING OPPORTUNITIES: SHOPPERS/DINNERS, DOWNTOWN RESIDENTS, AND AREA RESIDENTS

significant changes for some categories in the proportions of "below average" and "average" ratings, indicating a slight trend towards an overall better perception of downtown shopping opportunities by CBD residents.

5.4.4 Areawide Residents

It is not surprising that area residents have, in general, lower opinions of downtown shopping opportunities relative to other groups. The average number of weekly trips to downtown by people in this group is 2.5. Of these, only 30 percent are for shopping and dining. This would indicate that a large proportion of area residents do not have firsthand experience with downtown shopping opportunities. Given the suburban retail competition in the Albany region, areawide residents might be expected to be prejudiced against downtown as a place to shop.

As shown in Figure 5-10, the change in the proportion of "excellent/good" ratings by this group shows a mixed reaction to developments in downtown Albany. Only "variety" and "prices" have statistically different proportions, and this may be attributable to an increase in the number of people employed downtown (41 compared to 36 percent) who completed the area resident survey in 1979. Although not significantly different in a statistical sense, it is not clear why the proportion for the "overall" category decreased. There was, however, a significant decrease in the "below average" rating for this category indicating, perhaps, a trend toward better perception of overall shopping opportunities by area residents.

5.5 PERCEPTIONS OF DOWNTOWN MERCHANTS

In addition to assessing the impacts of CBD fare-free service based on changes in retail sales tax receipts from the panel of CBD merchants and changes in the purchase patterns and perceptions of both potential and actual patrons of downtown retail establishments, an effort was made to elicit from downtown merchants their perceptions of and attitudes towards fare-free service. This was done by administering a mail-out/mail-back survey to approximately 175 merchants in the downtown area in the fall of 1979, about 11 months after fares were eliminated within the CBD. The response to this survey was far from overwhelming--only 28 questionnaires were returned. While this low response rate (16 percent) precludes any conclusions regarding the perceptions and attitudes of CBD merchants in general, analysis of the few questionnaires that were returned can provide some insight into the merchants' perception of fare-free service and what impact it has had on their business.

Table 5-7 presents results of the merchants' survey related to the perceived impacts of fare-free service disaggregated by type of retail establishment. As shown, 13 of the 28 merchants returning questionnaires had

TABLE 5-7. MERCHANTS SURVEY RESULTS: PERCEIVED IMPACTS

	Type of Establishment					Total
	Apparel	Restaurant	Misc.Sales	Furniture	Services	
Number of Responses	10	6	5	2	5	28
Contributed to Bus Fund	9	1	3	0	0	13
Felt Contribution was a Good Investment	9	1	2	NA	NA	12
Felt Fare-Free Service has Improved Business						
Yes	7	1	2	1	0	11
No	1	1	1	1	3	7
Not Sure	2	4	2	0	2	10
Changes in Customer Traffic						
Small Increase	5	1	2	1	0	9
No Change	0	0	2	1	2	5
Cannot Tell	5	5	1	0	3	14
Changes in Purchase Amount per Customer						
Small Increase	2	0	1	0	0	3
No Change	4	2	3	2	3	14
Cannot Tell	4	4	1	0	2	11

contributed to the bus fund. By type of establishment, the proportion of merchants contributing was highest for apparel establishments (90 percent), while none of the merchants representing furniture and service establishments contributed to the bus fund. Of the 13 merchants reporting that they had contributed, all but 1 felt that the contribution was a good investment. While to a certain extent this may be the result of "post-purchase rationalization" on the part of these merchants, it is nonetheless indicative of a positive attitude towards fare-free service on the part of downtown merchants after nearly one year of operation.

Of the 28 merchants responding to the survey, 11 indicated a feeling that fare-free service had improved their business. Among those merchants reporting a positive impact was one representing a furniture establishment who had not contributed to the bus fund. About one third of the merchants reported a small increase in the amount of customer traffic as a result of fare-free service. Three merchants also reported a small increase in the average purchase amount per customer.

Merchant attitudes toward continued fare-free service are summarized in Table 5-8. As shown, 15 merchants were in favor of continuing fare-free service after federal funding had lapsed. Of these, 11 indicated support for increased assessments of merchants if required. Not surprisingly, all 11 of these merchants were contributors to the bus fund. Of the two other merchants out of the 13 who contributed to the bus fund, one indicated that he would not support increased assessments and another was not sure. The majority of merchants responding to the survey indicated that both size of business and proximity to Washington Avenue and State Street should be factors in determining the magnitude of the assessment for a particular establishment.

TABLE 5-8. MERCHANTS SURVEY RESULTS:
 ATTITUDES TOWARDS CONTINUED FARE-FREE SERVICE

	Type of Establishment					Total
	Apparel	Restaurant	Misc.Sales	Furniture	Services	
Number of Responses	10	6	5	2	5	28
Fare-Free Service Continued After Funding Lapses						
Yes	7	4	2	0	2	15
No	0	1	1	1	1	4
Not Sure	3	1	2	1	2	9
Support Increased Assessments of Merchants						
Yes	8	1	2	0	0	11
No	0	2	2	2	2	8
Not Sure	2	3	1	0	3	9
Size of Business as as Factor in Determining Assessment						
Yes	7	2	3	0	0	12
No	2	1	0	1	1	5
Not Sure	0	0	0	0	1	1
Proximity to Washington & State Sts. as Factor in Determining Assessments						
Yes	6	4	2	0	1	13
No	0	0	1	1	1	3
Not Sure	4	1	1	1	2	9

6. SUMMARY AND CONCLUSIONS

6.1 SUMMARY

Presented in this report are results of an evaluation of the Albany Central Business District (CBD) fare-free demonstration project. The objectives of this demonstration, from the perspective of both the Capital District Transportation Authority (CDTA) and the Urban Mass Transportation Administration (UMTA), were generally to increase transit vehicle utilization and to improve the economic vitality of the Albany CBD. More specifically, the goals of the UMTA Service and Methods Demonstrations (SMD) program in funding this fare-elimination project included the following:

1. to study the impact of CBD fare-free transit on the travel behavior and mobility of residents, employees and visitors to the downtown;
2. to study the effectiveness of CBD fare-free transit service in reducing auto congestion and associated auto-related impacts in the downtown area;
3. to examine the costs associated with geographically limited fare-free transit service;
4. to investigate the promotional aspects of fare-free transit service in increasing public awareness and perceptions, systemwide;
5. to study the influence of CBD fare-free transit service on retail sales and economic revitalization of a declining CBD; and
6. to explore the joint costs and benefits associated with a cooperative effort between a public transit agency and private entrepreneurs.

In assessing the extent to which these objectives have been achieved, the evaluation effort has focussed on the following major impact areas:

1. ridership levels and characteristics;
2. travel behavior;
3. transit level of service;
4. CBD retail sales;

5. perceptions of transit and CBD shopping opportunities;
6. secondary auto-related impacts; and
7. abuse of CDTA's honor-based fare collection policy.

This evaluation is somewhat unique in that unlike most earlier evaluations of fare elimination demonstration projects, ample time was available to collect data prior to the implementation of fare-free service. The major data collection effort supporting this evaluation involved surveys administered immediately prior to the implementation of fare-free service and again one year later. In addition, data on retail sales tax receipts provided by the New York State Department of Taxation and Finance were used in the analysis of CBD retail sales.

In this chapter, findings of the evaluation are first discussed in terms of the demonstration's objectives and then compared with results observed in other CBD fare-free projects. Based in part on this comparison, the transferability of these findings to other urban areas is discussed. Conclusions then are presented regarding both the implications of these findings for other CBD fare-free projects and the feasibility of the CBD fare-free concept itself. Finally, possible areas of further research regarding the impacts of CBD fare-free service are identified.

6.2 FINDINGS

6.2.1 Travel Behavior and Mobility

The elimination of fares in the Albany CBD had a significant impact on transit ridership within the downtown area, with weekday ridership increasing three-fold and Saturday ridership increasing by a factor of five. One of the objectives of the Albany CBD fare-free demonstration was to determine what changes in travel behavior occurred to cause this increase, and what the implications of this increase were in terms of mobility of those groups affected by CBD fare-free service (i.e., downtown residents, downtown employees and other visitors to the downtown area).

The greatest increase in weekday ridership, in both absolute and percentage terms, was observed among downtown employees. Immediately prior to the implementation of fare-free service, the proportion of weekday ridership within the downtown area represented by CBD employees was 55.6 percent. One year later, this proportion had increased to 66.8 percent, which, together with the three-fold increase in weekday ridership, translates into a 275 percent increase in transit ridership within the CBD among downtown employees.

This increased transit ridership can be attributed almost entirely to shifts in mode from walk to fare-free CDTA service among downtown employees; no significant increase in the number of midday trips within the CBD was observed. In addition, though, average trip length increased by about 31 percent, which, together with shifts in the distribution of trip purposes, would suggest that changes in destination choice among downtown employees also occurred as a result of CBD fare-free service. It would seem, then, that by making more distant opportunities more accessible, fare-free service has increased the mobility of downtown employees.

Weekday ridership among downtown residents increased by 194 percent as a result of fare-free service. As in the case of downtown employees, this increase can be attributed entirely to shifts in mode, with trip frequency remaining essentially unchanged. Unlike downtown employees, though, mode shifts were observed from auto as well as walk. This would suggest that downtown residents have utilized fare-free service to reduce their travel costs beyond that resulting from the elimination of fares for existing transit trips. This shift from auto for intra-CBD travel could also indicate an indirect increase in the mobility of downtown residents for travel outside the CBD, since it represents an increase in auto availability for other household members.

Only minor changes in both average trip length and the distribution of trip purposes for travel in the downtown area were observed among CBD residents, which would suggest that fare-free service has had little impact on their choice of destination. In terms of mobility within the CBD, then, while the elimination of fares has made travel more convenient and less expensive, downtown residents appear not to have taken advantage of this increased accessibility to the extent that downtown employees have. One possible explanation for this is that downtown residents, with a mean household income of \$11,800 (versus \$18,700 for downtown employees), have a much lower discretionary income and, as a result, may be less able to afford to take advantage of the increase in accessibility for dining out, etc.

Visitors to the CBD (other than employees) appear to have benefited least from the implementation of fare-free service. While transit ridership within the CBD increased by 108 percent for this group, the proportion of ridership represented by this group decreased from 31.1 percent prior to the implementation of fare-free service to 20.7 percent after fares were eliminated.

6.2.2 Auto-Related Impacts

Another objective of the Albany demonstration was to determine the extent to which CBD fare-free service reduced auto travel and related fuel consumption and emissions as a result of shifts in mode from auto to transit. In the Albany demonstration, the only significant change in the mode share of auto was that observed for CBD travel of downtown residents. For this group,

the proportion of CBD trips made by auto decreased from 16.4 to 12.6 percent, which translates into a decrease of 353 miles per day. On an areawide basis, then, the impact of CBD fare-free service on fuel consumption and air quality was negligible. Further, since this reduction in auto travel occurred primarily during the off-peak period (i.e., the hours of fare-free service), it is unlikely that traffic congestion within the CBD was measurably affected.

In general, significant auto-related impacts would not be expected from the elimination of fares within the CBD, since auto typically represents a small proportion of intra-CBD travel. In downtown Albany, for example, the proportion of trips within the CBD prior to the implementation of fare-free service was 16.4 percent for downtown residents and only 8.3 percent for downtown employees.

6.2.3 Promotional Aspects

CBD fare-free service is often viewed as a marketing tool for transit. By attracting new riders, the elimination of fares could expose many people to transit who otherwise might not consider using public transportation. To the extent that these new riders find transit to be better than their original preconceptions, CBD fare-free service could ultimately lead to an increase in fare-paying ridership.

In the Albany demonstration, reported perceptions of transit service increased markedly after the introduction of CBD fare-free service. As shown in Figure 6-1, increases in the proportion of "good" and "excellent" responses were observed for all attributes of CDTA transit service. However, while some of these service parameters may have actually improved with the elimination of fares (e.g., "reasonable fare"), others, such as seat availability, are more likely to have either decreased or remained the same.

One possible explanation for these improved perceptions, then, would be that they reflect changes in the perceptions of people who, prior to the elimination of fares, did not ride the bus very often if at all, but began using transit more frequently once fare-free service was implemented. On the other hand, these improved perceptions could reflect the fact that the service is free, since it would be difficult for people to complain about something that does not cost anything. Nonetheless, regardless of why reported perceptions have improved, the demonstration appears to have been successful in meeting the objective of improving the image of transit.

However, there is no evidence which suggests that these improved perceptions have led to an increase in fare-paying ridership. Analysis of fare revenues during the 4-month period prior to the implementation of CBD fare-free service and the 4-month period after fares were eliminated indicated that at least in the short term there was no increase in fare-paying ridership. Analysis of fare revenues after the 4-month period following the

DOWNTOWN SHOPPERS/DINERS

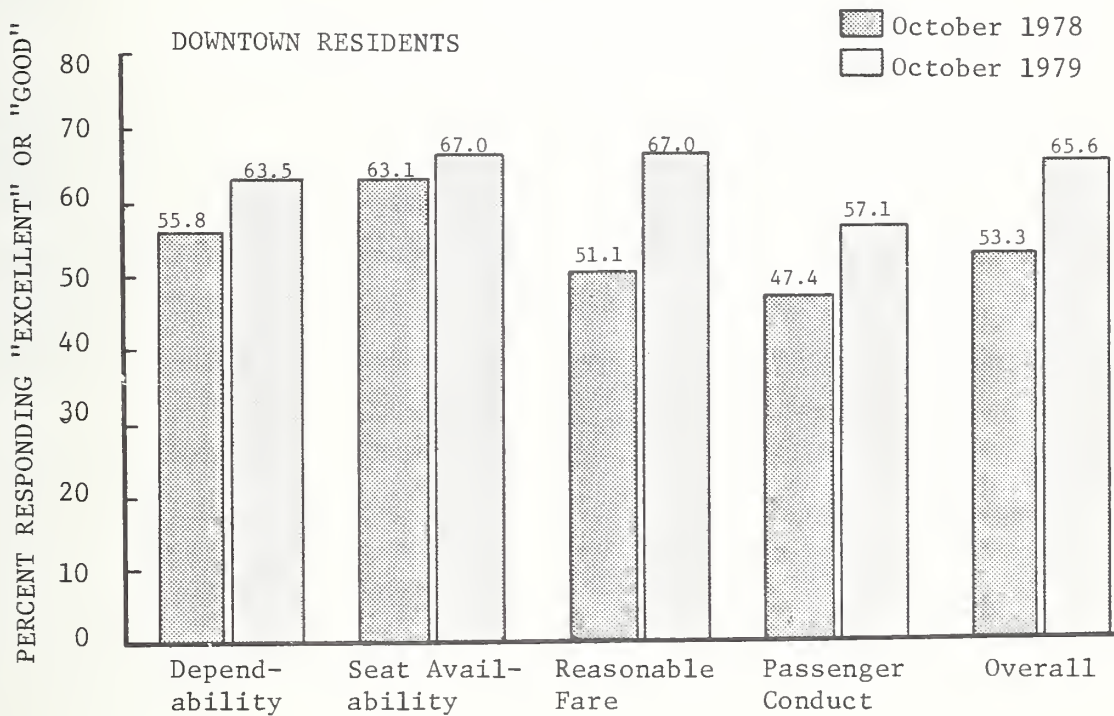
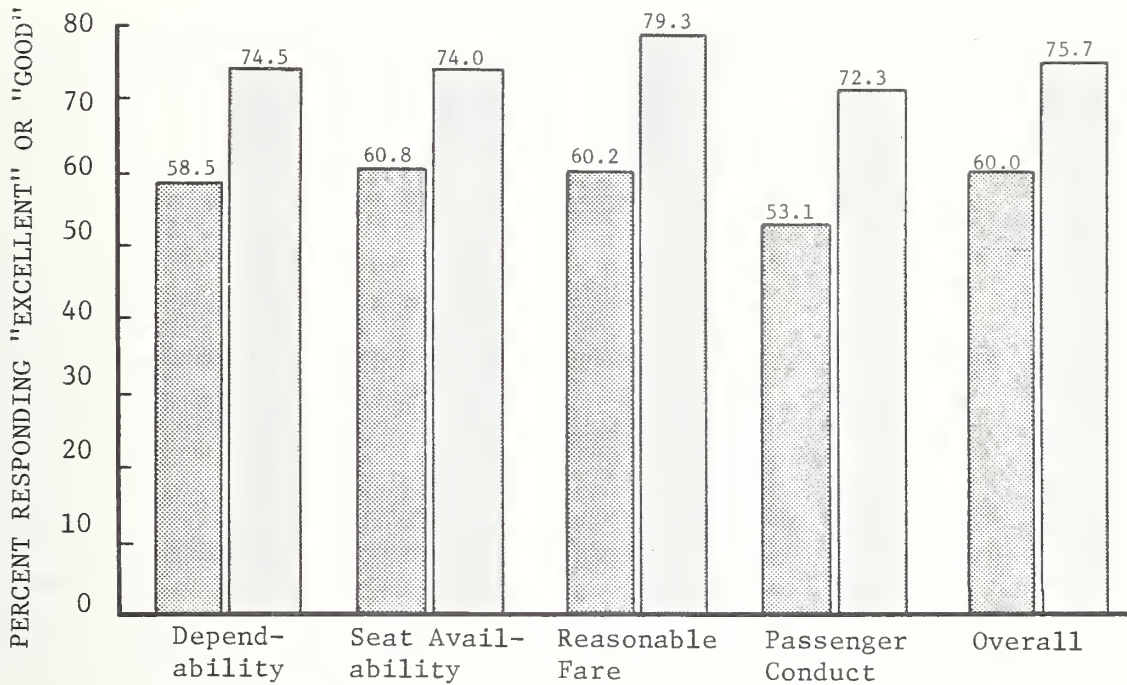


FIGURE 6-1. PERCEPTIONS OF CDTA SERVICE: DOWNTOWN SHOPPERS/DINERS AND DOWNTOWN RESIDENTS

implementation of fare-free service was confounded by the effects of gasoline shortages which began to appear in the spring of 1979 and the fare increase which was instituted in April 1980. The question of longer term impacts of CBD fare-free service on fare-paying ridership, then, remains unresolved.

6.2.4 CBD Revitalization

Retail sales among Albany's downtown merchants had declined steadily during the 10-year period prior to the implementation of CBD fare-free service. A major objective of the demonstration project, then, was to assess the impact of fare-free service on retail sales based on an analysis of retail sales tax receipts from a panel of 115 CBD retail establishments relative to county-wide sales tax receipts.

Results indicate that the elimination of fares in the downtown area has had a positive impact on CBD retail sales. While trends in second-, third-, and fourth-quarter sales for the CBD are quite similar to those for Albany County as a whole, first-quarter sales (i.e., the 3-month period from December 1 through February 28 which includes much of the holiday shopping season) for the CBD panel increased by 25 percent over the two first-quarter periods following the implementation of fare-free service (i.e., between the first quarter of 1978 and the first quarter of 1980), while first-quarter county-wide sales during the same period decreased by 5.6 percent.

In addition to the implementation of fare-free service, though, there are other factors which could account for at least some of this increase in sales among the CBD panel. Specifically, after dropping to an unusually low level in the first quarter of 1978, there was a resurgence of sales among the CBD panel in the second, third, and fourth quarters of 1978 which probably accounts for some of the increase in first-quarter sales between 1978 and 1979. Further, there was a slight increase in first-quarter sales county-wide during this period as well. To the extent that Albany County sales serve as an adequate control for sales among the CBD panel, then, a similar increase would have been expected for first-quarter CBD sales between 1978 and 1979.

After the first quarter of 1979, both county-wide and CBD panel sales declined somewhat in subsequent quarters of 1979. In the first quarter of 1980, however, while county-wide sales continued to decline, CBD panel sales increased. Considering only changes in sales between the first quarter of 1979 and the corresponding period in 1980, first-quarter sales among the CBD panel in 1980 were 13.4 percent greater than what would have been expected had CBD sales followed trends similar to county-wide sales. In terms of 1980 dollars, this translates into an increase of \$875,300 in gross sales among retail establishments in the CBD panel.

While there are certainly a number of factors other than the implementation of fare-free service which could account for this increase in first-quarter sales among the CBD panel, this increase cannot be attributed to

either a general resurgence of CBD sales, which declined somewhat in subsequent quarters of 1979, or to an overall increase in sales region-wide, which also declined throughout 1979 and in the first quarter of 1980 as well. In addition, discussions with the downtown merchants' association and advertising agencies having accounts with CBD retail establishments indicated that this increase was not due to any sort of intense promotional effort on the part of downtown merchants during the holiday shopping season. Further, this increase cannot be accounted for by any sudden increase in population or employment within the CBD.

This process of elimination would suggest, then, that fare-free service was at least partially responsible for the increase in first-quarter sales of the CBD panel between 1979 and 1980 and, to a lesser extent, for the increase in first-quarter sales between 1978 and 1979 as well. In addition, since total expenditures for holiday-related purchases appear to have decreased over this period, as evidenced by the decline in county-wide first-quarter sales, these results would further suggest that the increase in CBD retail sales is primarily the result of a diversion of purchases from shopping locations outside the CBD. Results of the survey of individuals patronizing downtown stores and restaurants indicated that the proportion of downtown shoppers and diners represented by CBD employees increased from 56.5 to 62.2 percent after the implementation of fare-free service, while that of other visitors to the CBD decreased from 26.5 to 21.3 percent. This would suggest, then, that the increase in CBD panel sales is attributable primarily to downtown employees.

Further evidence of the linkage between CBD fare-free service and increased retail sales is provided by trends in retail sales of those retail establishments located very near the frequently served Washington Avenue/State Street corridor relative to more distantly located establishments. Among the 27 "near" establishments in the CBD panel, average quarterly sales tax receipts for the seven quarters after the implementation of CBD fare-free service were 6.3 percent greater than for the eight quarters preceding the elimination of fares. Among the 39 "far" establishments, though, average quarterly sales tax receipts after fare-free service were 3.4 percent lower than before.

The increases in first-quarter sales among the CBD panel does not reflect an overall increase in retail activity among all types of retail establishments. Instead, these increases are attributable primarily to one retail category: miscellaneous sales, which includes primarily gift and specialty shops such as sporting goods, books, hardware, etc. Between the first quarter of 1978 and the corresponding period in 1980, sales among this category of retail establishments increased by 71 percent, accounting for nearly two-thirds of the increase in first-quarter sales for the entire CBD panel during this period. As a proportion of total first-quarter sales among the CBD panel, miscellaneous sales increased from 21.9 percent in 1978 to 30.4 percent in 1980.

These results suggest that to the extent fare-free service has led to an increase in CBD retail sales, it has also reinforced shifts in the character of Albany's retail core from a regional shopping area to one more oriented towards serving the employee population located in the downtown area. In addition to changes in the distribution of sales within the CBD panel, further evidence of this transformation is found in the increased number of specialty shops appearing in the downtown area.

6.2.5 Costs and Benefits

The budget for the Albany CBD fare-free demonstration project was \$407,380, which covered a 6-month planning period and a 24-month operating period. Over 60 percent of the total budget (\$247,000) was allocated to project operations, which covered revenue loss over the 2-year demonstration period, the preparation of bus stop signs for the fare-free zone, and the printing of fare receipts and data cards. Marketing accounted for \$34,500, while \$47,200 was set aside for contingencies. The remaining \$78,680 covered project administration and other demonstration-related activities such as data collection. Of the total cost associated with the demonstration project, 80 percent was covered by UMTA's SMD grant. Of the remaining 20 percent, CDTA contributed \$38,276, while the City of Albany and the downtown merchants' association each contributed \$21,600.

At the end of the 2-year demonstration period, CBD fare-free service was continued at a somewhat reduced level (i.e., the hours of fare-free service were limited to 10 AM - 2 PM versus 9 AM - 3 PM, and the size of the fare-free zone was reduced slightly) at an annual cost of \$65,000. Over half of this cost (\$37,500) is being covered by the City of Albany, while the downtown merchants are contributing \$15,000, and CDTA the remaining \$12,500. On an annual basis, this represents a 247 percent increase in the city's contribution, a 40 percent increase in the merchants' contribution, and a 35 percent reduction in CDTA's contribution relative to the corresponding figures during the 2-year demonstration period.

In terms of increased mobility, downtown employees appear to have benefited most from the implementation of fare-free service. The increase in transit ridership within the CBD was greatest for this group, with the proportion of ridership represented by downtown employees increasing from just over one-half prior to the implementation of fare-free service to nearly two-thirds after fares were eliminated. Further, the analysis of changes in travel behavior indicated that while there was no increase in the average number of midday trips within the CBD, there appeared to be some changes in destination choice, which would suggest that downtown employees enjoyed greater accessibility to more diverse shopping, dining, and other opportunities within the CBD.

While substantial ridership increases occurred among downtown residents, no changes in trip frequency or destination choice were observed for this

group. However, mode shifts from auto as well as walk to fare-free transit indicate that downtown residents have taken advantage of CBD fare-free service to reduce their travel costs beyond that resulting from the elimination of fares for existing transit trips. The smallest increase in transit ridership in the downtown area was observed among visitors to the CBD other than employees. It would appear, then, that this group has benefited least from CBD fare-free service.

To the extent that the increases in CBD retail sales can be attributed to fare-free service, downtown merchants appear to have done quite well with their investment of \$21,600. As noted earlier, increases in gross sales among retail establishments in the CBD panel in the first quarter of 1980 alone amounted to \$875,300. However, since these increased sales appear to be the result of a diversion of sales from other areas, any benefits accrued by downtown merchants as a result of CBD fare-free service would represent a corresponding loss to merchants outside the zone.

Further, benefits are not distributed equally among merchants within the fare-free zone. Nearly two-thirds of the increase in first-quarter sales between 1978 and 1980 were attributable to a single retail category, miscellaneous sales, which represents only 17 percent of the establishments in the CBD panel. In addition, results indicate that within any given retail category, establishments located very near major bus routes benefit from fare-free service to a greater extent than more distantly located establishments. However, because contributions on the part of merchants in support of CBD fare-free service are voluntary, the distribution of costs probably matches the distribution of benefits among downtown merchants.

Since the City of Albany is covering over one-half the costs of continued CBD fare-free service, one would expect benefits commensurate to this contribution. In the short term, the City of Albany could expect an increase in the amount of sales tax revenues rebated by Albany County. The 7 percent tax on sales in Albany County is comprised of a 4 percent State sales tax and a 3 percent county sales tax. Currently, Albany County rebates 40 percent of its sales tax revenues to municipalities based on the proportion of sales tax revenues generated. The \$61,277 increase in sales tax receipts in the first quarter of 1980, then, could have resulted in an increase of as much as \$10,505 in the amount of sales tax revenues rebated to the City of Albany by the county. This would represent a maximum estimate, however, since it is likely that at least part of the increase in CBD retail sales during this period was the result of a diversion of sales from other areas within the city.

In the longer term, by making a commitment to its downtown retailers through continued support of fare-free service, the City of Albany could stop or perhaps reverse the decline in the number of merchants remaining in the CBD. Further, any increase in retail activity resulting from fare-free service could help to spark a general revitalization of Albany's CBD, which in turn could lead to increased land values and a larger tax base for the City of Albany.

It should be noted that in one sense, the City of Albany, by supporting CBD fare-free service, is using revenues obtained from the city as a whole (including merchants outside the fare-free zone) to give what is essentially a competitive edge to downtown merchants. Further, the city's contribution can be characterized essentially as a transfer payment from the City of Albany, a public entity, to the private sector (i.e., downtown merchants). In view of the steady decline in retail activity in the CBD, though, anything that the city could do to reverse this trend, such as its support of fare-free service, would probably be justifiable.

CDTA is contributing the least to the continuation of CBD fare-free service and, not surprisingly, probably has the least to gain. In general, the benefits to CDTA are somewhat difficult to quantify. For example, CDTA's continued contribution to CBD fare-free service would tend to foster inter-governmental cooperation and to maintain its enhanced image among both downtown merchants and those using fare-free service. Further, fare-free service may result in additional benefits to CDTA in the form of longer-term increases in fare-paying ridership.

It should be noted that CDTA's support of fare-free service in downtown Albany is in effect a transfer payment to the extent that fares collected in other parts of CDTA's service area are used to subsidize ridership within the Albany CBD. Further, to the extent that merchants in downtown Albany benefit from fare-free service, CDTA's support of this service, as well as the city's, can be viewed as a transfer payment from CDTA, a public agency, to the private sector.

6.3 COMPARISON WITH OTHER CBD FARE-FREE PROJECTS

In order to put the impacts of the Albany CBD fare-free project into perspective, it would be useful to compare these impacts with those observed in similar projects. While a number of CBD fare-free projects have been implemented throughout the United States, relatively few have been subjected to a thorough evaluation. Two of these projects, though, Portland's Fareless Square¹ and Seattle's Magic Carpet,² have been the subject of case study evaluations under UMTA's SMD Program. The remainder of this section discusses some of the differences and similarities between these two projects and the Albany CBD fare-free demonstration.

The characteristics and impacts of these three CBD fare-free projects are summarized in Table 6-1. As shown, Seattle's Magic Carpet, implemented in

¹Deleuw, Cather and Company, Case Studies in Free-Fare Transit: Portland's Fareless Square, UMTA/TSC Project Evaluation Series: Final Report No. UMTA-MA-06-0049-79-2, April 1979.

²Deleuw, Cather and Company, Case Studies in Free-Fare Transit: Seattle's Magic Carpet, UMTA/TSC Project Evaluation Series: Final Report No. UMTA-MA-06-0049-79-3, April 1979.

TABLE 6-1. COMPARISON WITH OTHER CBD FARE-FREE PROJECTS

	Albany	Portland	Seattle
Year Implemented	1978	1975	1973
Hours of Operation	9 AM - 3 PM weekdays 9 AM - 5 PM Saturdays	All Day	All Day
Funding Source	CDTA City of Albany Merchants Assoc.	Tri-Met	City of Seattle Private Developer
Characteristics of Zone			
Dimensions	1.0 x 0.7 miles	1.5 x 0.7 miles	1.3 x 0.4 miles
Population	7,700	Several thousand	3,300
Employment	34,700	68,000	70,000
University Enrollment	-	16,000	-
Fare Prior to Fare-Free Service			
Regular Bus	40 cents	35 cents	20 cents
Downtown Circulator	5 cents	10 cents	10 cents
Buses Entering Zone	576 (9 AM - 3 PM)	120/hour	6,500/day
Intra-CBD Ridership			
Before Fare-Free Service	1,200	1,000	4,100
After Fare-Free Service	2,900	8,200	12,250
Delays due to Overcrowding	None	PM peak	Noon hour PM peak
Secondary Impacts (Air Quality, Energy, Traffic Congestion)	Minimal	Minimal	Minimal

1973, has been in operation for the longest period of time. Portland's Fareless Square, implemented in 1975, has been in operation for six years. Unlike Albany's Freewheeler, which offers fare-free service only during the off-peak period, in both the Seattle and Portland projects fares have been eliminated within the CBD during the entire day. As shown in Table 6-1, the funding sources supporting each project differ among the three areas. In Albany, fare-free service is subsidized jointly by CDTA, the City of Albany, and the downtown merchant's association. In Portland, though, the project is supported entirely by Tri-Met, that area's regional transit authority, while Seattle's Magic Carpet is supported for the most part by the City of Seattle, with some funding provided by a private developer.

In terms of geographic size, the fare-free zone in Seattle is somewhat smaller than that in Albany (one-half versus two-thirds square mile), while that in Portland is somewhat larger (one versus two-thirds square mile). The potential market for attracting fare-free riders appears to be much greater in Portland and Seattle, both of which have employment levels within the fare-free zone that are about twice that in Albany. In addition, Portland's Fareless Square encompasses Portland State University, which has an enrollment of about 16,000 students.

With 6,500 buses entering the fare-free zone each day (including both AM and PM peak periods and the evenings as well) Seattle appears to have by far the most extensive transit service within the zone. In Albany, about 576 buses enter the fare-free zone between the hours of 9 AM and 3 PM, while in Portland, with an average of 120 buses entering the zone per hour, the corresponding number for the same time period would be about 720. In all three cities a downtown circulator was in operation prior to the implementation of fare-free service. Before fares were eliminated, Seattle had the lowest fare level (20 cents) while Albany had the highest (40 cents). However, because the Albany project was implemented five years after that in Seattle, the difference in terms of constant dollars is not nearly as great.

Prior to the elimination of fares, intra-CBD ridership levels in Albany and Portland were quite similar (i.e., 1,200 versus 1,000), while in Seattle, average daily ridership was 4,100, about four times as great. In view of the much greater number of buses operating in Seattle's fare-free zone, though, this higher level of ridership would be expected. After the implementation of fare-free service in both Seattle and Albany, intra-CBD ridership tripled. In Portland, ridership increased eightfold, from 1,000 to 8,200. (Ridership between the hours of 9 AM and 3 PM, corresponding to the hours of fare-free operation in Albany, was estimated to be about 5,500). To a certain extent, the magnitude of this increase can probably be attributed to the relatively large student population located within Portland's Fareless Square.

As discussed in Chapter 4, because of the relatively low load factors for buses entering and leaving the fare-free zone during the off-peak period in Albany, no delays attributable to increased ridership levels have occurred there. In Portland, the only delays that have occurred are on outbound buses during the PM peak period. In Seattle, in addition to similar delays during the PM peak, delays also occurred during the noon hour. In both Portland and

Seattle, additional bus service has been provided to reduce the magnitude of these delays.¹ In terms of secondary impacts, the effectiveness of fare-free service in reducing fuel consumption, auto emissions and traffic congestion has been minimal in all three cities. Although little information was available related to retail activity in either the Portland or Seattle project, there is a general feeling that retail sales have increased slightly in both CBDs. These somewhat tentative findings would be reinforced by the increase in retail sales observed among merchants in downtown Albany.

6.4 TRANSFERABILITY OF RESULTS

Based on the evaluation results of the Albany CBD fare-free demonstration and comparisons with Portland's Fareless Square and Seattle's Magic Carpet, a number of points can be made regarding the transferability of these results to other urban areas.

6.4.1 Increased Intra-CBD Ridership

Although transit ridership can be expected to increase with the elimination of fares under practically any set of circumstances, the magnitude of this increase will depend on a number of factors. First, the extent to which ridership is increased appears to be quite dependent on both the number and characteristics of individuals for whom fare-free service is available. In Albany, for example, ridership of CBD employees has increased by nearly 300 percent, while ridership of CBD residents increased by slightly less than 200 percent. For those neither working nor living in the CBD, though, ridership increased by only about 110 percent. While intra-CBD ridership levels in Albany and Portland were both at about 1,000 per day prior to the implementation of fare-free service, ridership in Portland increased to 8,200 (5,500 during the mid-day), while that in Albany increased to about 3,500. The much larger increase in Portland can most likely be attributed to both the higher level of employment located within the fare-free zone (i.e., 68,000 versus 34,700) and the presence within the zone of Portland State University, with an enrollment of 16,000 students.

Another factor influencing the magnitude of ridership increases would appear to be the frequency of bus service. In all three cities, several bus routes converge on a relatively small number of "paths" through the fare-free zones. As a result, along many of these paths headways are quite short (i.e., three to five minutes). In view of the very short distance of most trips within the fare-free zones, it is conceivable that with less frequent service, people would find it more convenient to walk rather than to wait five or ten

¹In Albany, a shuttle bus operating between the Empire State Plaza and the downtown Albany area during the noon-hour period was implemented in November 1979. However, this additional service was provided not in response to any operational problems, but rather to stimulate travel between these two areas.

minutes for a bus or time their trip to coincide with scheduled bus service. In those urban areas lacking extensive bus service in the downtown area, then, the increase in ridership resulting from the elimination of fares may not be nearly as great.

A third factor related to increased ridership is the distribution of employment, residential and retail activities within the fare-free zone in terms of not only distance but topography as well. In Albany, for example, much of the retail core is located near the western edge of the fare-free zone at the foot of a relatively steep hill. Much of the zone's employment and residential population, though, is located at the top of this hill. Undoubtedly this somewhat unique combination of topography and distribution of activity locations has accounted for at least some of the increased ridership observed in the Albany demonstration.

6.4.2 Travel Demand and Related Impacts

Prior to the implementation of fare-free service in Albany, walk trips accounted for about three-quarters of all intra-CBD travel by downtown employees between 9 AM and 3 PM, while travel by auto accounted for less than 10 percent. For downtown residents, about half of their travel within the CBD was accounted for by walk trips, and about 15 percent by auto. Not surprisingly, then, the major changes in travel behavior resulting from the elimination of fares were shifts in mode among downtown employees from walk to bus, and, among downtown residents, shifts from walk to bus and, to a lesser extent, from auto to bus. As a result, the impacts of fare-free service on energy, air quality and traffic congestion have been minimal.

To the extent that walk trips represent the greatest proportion of intra-CBD travel in most urban areas, it would be reasonable to expect that shifts similar to those observed in Albany would also occur in other urban areas implementing CBD fare-free service. In general, then, CBD fare-free projects would not be expected to have a significant impact on auto-related impacts such as fuel consumption, emissions, or traffic congestion. This is supported by the CBD fare-free experiences in Portland and Seattle, both of which have had minimal auto-related impacts.

In the Albany demonstration, the implementation of fare-free service has had essentially no impact on trip frequency for either downtown employees or downtown residents. This would imply that the elimination of fares has not created new travel opportunities to unique activities. In other words, it would appear that stores, restaurants, and other activities in the CBD are located sufficiently close to employment centers and residential areas to allow reasonable access by walking. With the implementation of fare-free service, then, people make essentially the same trips but by bus rather than walking, (or, in the case of downtown employees, the same type of trips to similar but more distant activities). To the extent that similar locational patterns of employment, population, and activities exist in other downtown

areas, the findings of the Albany demonstration related to trip frequency would be transferable.

6.4.3 Operational and Level of Service Impacts

The extent to which fare-free operation leads to degradations in service levels requiring operational changes (usually in the form of increased bus service) depends essentially on two factors:

1. the magnitude of ridership increases brought about by the elimination of fares; and
2. ridership levels existing prior to fare-free service.

In the Albany demonstration, no reductions in service levels of any significance occurred after fares were eliminated. For the most part, this is attributable to relatively low load factors (i.e., about 30 percent) on buses entering and leaving the fare-free zone during off-peak hours. On the other hand, in Seattle, delays due to overcrowding during the noon hour were severe enough to warrant an increase in bus service during that time period. Based on available information, though, it is not clear whether these delays were caused primarily by exceptionally large increases in ridership on certain routes or by initially high load factors.

6.4.4 Retail Sales

The analysis of retail sales tax receipts presented in Chapter 5 suggests that there is indeed a relationship between retail sales and the improved accessibility resulting from the elimination of fares. This analysis also indicated that the increase in sales was highly seasonal in nature, occurring primarily during the holiday shopping season, and tended to be higher for certain categories of sales than others. Additionally, there appeared to be a fairly definite relationship between the proximity of retail establishments to major bus routes and increased sales. Therefore, while in general the implementation of fare-free service could be expected to have a positive impact on retail sales, the magnitude of this impact would depend on the mix of sales within the fare-free zone and the proportion of retail establishments located very near major bus routes. In addition, results suggested that CBD employees rather than CBD residents or other visitors to the downtown area were primarily responsible for the increase in retail sales. In transferring the results observed in Albany, then, consideration should be given to the relative proportions of these groups within the fare-free zone.

6.5 OVERALL FEASIBILITY OF FARE-FREE SERVICE

The findings developed for the Albany demonstration and their potential transferability together with the experiences in Portland and Seattle have a number of implications for CBD fare-free projects in general.

1. First, the analysis of retail sales tax receipts in Albany suggests that the elimination of fares has had a positive impact on CBD retail sales. More convincing, though, is the willingness of downtown merchants to not only continue their support of Albany's Freewheeler service beyond the demonstration period, but to increase the level of this support as well.
2. Second, the implementation of fare-free service has enhanced the public's image of CDTA bus service, inducing transit use by people who, without the elimination of fares, would not have been exposed to CDTA bus service. At this point, though, there is no evidence to suggest that this enhanced image has led to an increase in fare-paying ridership in Albany.
3. One area where CBD fare-free projects have not been effective is in reducing auto travel. For the most part, mode shifts from walk to bus appear to be responsible for the increases in ridership resulting from the elimination of fares. As a result, the impacts of these projects on energy, air quality and traffic congestion have been minimal.
4. Unlike the system-wide fare-free projects in Denver and Trenton, which experienced severe problems related to overcrowding and passenger conduct, the implementation of CBD fare-free service in Albany has been relatively problem-free, which, together with similar experiences in Portland and Seattle, demonstrates the feasibility of instituting fare-free service on a limited geographic basis.
5. Perhaps the best indication of the feasibility of CBD fare-free service, though, is the length of time that these projects have been in existence. Seattle's Magic Carpet was implemented in 1973, and has been expanded twice since then. In Portland, Tri-Met's Fareless Square was implemented in 1975, and already has been expanded once. In Albany, Freewheeler service has been continued beyond the two-year demonstration period with local funding.
6. Finally, one fundamental practical concern associated with fare-free service is who will cover the costs of providing this service. In Albany, it would seem that the primary

beneficiaries of CBD fare-free service are the City of Albany and downtown merchants, while CDTA appears to have had the least to gain by providing fare-free service in the downtown area. To the extent that the benefits of CBD fare-free service are shared among several interest groups, the costs of providing such service, too, should be shared. CBD fare-free service in Albany, for example, is subsidized jointly by CDTA, the City of Albany, and the downtown merchant's association. The feasibility of such a funding arrangement, which is somewhat unique in that it represents a cooperative effort among the regional transit authority, city government, and private business interests, is particularly relevant in view of planned reductions in transit operating subsidies in years to come.

6.6 AREAS OF FURTHER RESEARCH

6.6.1 Impacts on Fare-Paying Ridership

The analysis of CDTA's monthly systemwide fare revenues provided no evidence which would indicate that the implementation of CBD fare-free service has resulted in an increase in fare-paying ridership. However, because a number of other factors could also have influenced fare revenues, it would not be possible to conclude from this analysis that an increase in fare-paying ridership did not occur. Further, due to the effects on ridership of gasoline shortages which began to appear in April 1979, four months after the implementation of CBD fare-free service, it was not possible to examine the longer-term impacts of fare-free service on fare-paying ridership. Since increased fare-paying ridership is one of the few tangible benefits which would justify a transit operator's support of CBD fare-free service, a more definitive finding regarding this issue could have important implications for the funding of such projects in the future.

6.6.2 CBD Revitalization

The findings of this evaluation related to the impact of CBD fare-free service on retail sales were based primarily on informal judgment of whether patterns in the data suggested that a change in retail sales had occurred as a result of fare-free service. While results indicate that fare-free service has had a positive impact on retail sales within the CBD, confirmation of these results based on more rigorous statistical analysis techniques would remove some of the uncertainty surrounding this finding.

The analysis of retail sales presented in this report focusses on a panel of retail establishments in the CBD that were in business throughout the 15-quarter period for which retail sales tax data were available. In order to more thoroughly assess the impacts of fare-free service on CBD retail sales, though, it would be useful to examine sales of other retail establishments in the CBD which were in business for part, but not all, of this 15-quarter period. This would not only provide a more accurate representation of total CBD retail sales, but may also account for trends in sales observed for certain retail categories of the CBD panel (e.g., the steady decline in restaurant sales after the first quarter of 1978). Another area of interest would be the longer term impacts of CBD fare-free service on the total number and type of retail establishments within the CBD. In particular, it would be quite interesting to see if Albany's downtown retail core continues to evolve into a shopping area oriented primarily towards serving the relatively large employee population located in the downtown area.

APPENDIX A

SURVEY ADMINISTRATION AND QUESTIONNAIRES

The travel and purchase surveys were a major source of data supporting the evaluation of the Albany CBD fare-free demonstration project. There were essentially two administrations of the surveys. The first, in October 1978, was one month before fare-free service began; the second was one year later in October 1979. One of the surveys, that of weekday bus patrons, was conducted a total of three times with the additional survey administration occurring in March 1979, five months after the "before" survey. The five groups which were surveyed included:

1. bus patrons
2. shoppers and diners
3. downtown employees
4. downtown residents
5. area residents

In addition to these groups, merchants located in the fare-free zone were surveyed in October 1979. This appendix describes survey administration procedures, sample design, response rates, and questionnaires used in the merchants survey and the travel and purchase surveys.

A.1 BUS PATRONS

Bus riders travelling within the downtown area were surveyed on three separate occasions (October 1978, March 1979, and October 1979) using a self-administered, on-board questionnaire.¹ Interviewers boarded buses within the fare-free zone at predetermined locations. Questionnaires were distributed only to those people making trips within the fare-free zone and were collected as patrons left the bus. Interviewers exited each bus just as it left the zone or reached the downtown terminal, and then boarded the next arriving bus at that point.

¹Before Freewheeler service began, people making bus trips which would have qualified as free were surveyed.

The goal was 600 completed questionnaires for weekday riders and 100 completed questionnaires from Saturday riders. Additionally, special attention was given to routes and times of day with low ridership (i.e., 9-10 AM and 2-3 PM) to ensure a sufficient return from these riders.

In addition to sampling separately for weekday and Saturday riders, patrons of the 5-cent shopper's shuttle (which was discontinued when fare-free service began) were treated as a separate group from regular fare-paying patrons. Responses for these two groups were weighted before any analysis was performed so that summary statistics represent the correct proportions of people paying 40 cents relative to those paying 5 cents for their bus ride. (In the March and October 1979 survey administrations, this was not a consideration since the shopper's shuttle was no longer in operation.)

One other control which was applied to each survey administration for both the weekday and Saturday riders was the elimination of all responses from people who either had transferred from another bus or intended to transfer to another from the fare-free bus. Because CDTA allows one free transfer between buses for each paid fare, people who transfer to or from a Freewheeler ride are not realizing any savings from this program since they must pay a fare for one of the two buses. Also, people transferring between buses are not making internal CBD trips and, therefore, their travel and shopping behavior was not of interest as part of the bus patron survey.

The estimated number of daily Freewheeler-qualifying bus trips made before fare-free service was initiated was 1200 on weekdays and 300 on Saturdays. These estimates both include transferring passengers and the weekday number includes 900 patrons on regular CDTA buses and 300 patrons on the shopper's shuttle. The number of valid, completed questionnaires returned from non-transferring riders in the October 1978 survey administration was 555 and 71, respectively for weekdays and Saturday.

In March 1979, the number of weekday Freewheeler riders averaged 2870 per day, while on Saturday the average was 1080. The final number of surveys included in the analysis of the March administration was 799 for weekday patrons and 90 for Saturday patrons.

At the time of the October 1979 survey administration, average weekday fare-free ridership was up to approximately 3100 patrons, and Saturday ridership was still at about 1000. The total number of questionnaires returned and coded was 739 for weekday and 109 for Saturday. A breakdown by route by day-type is shown in Table A-1.

TABLE A-1. BUS ON-BOARD QUESTIONNAIRES RETURNED AND CODED, OCTOBER 1979

<u>Route Number</u>	Weekday		Saturday	
	<u>Forms Returned</u>	<u>Forms Coded</u>	<u>Forms Returned</u>	<u>Forms Coded</u>
1	114	88	6	6
2	29	17	1	1
3	86	64	44	40
4	40	34	1	1
5	35	33	0	0
6	2	0	0	0
8	3	0	0	0
9	48	36	7	5
10	79	64	10	9
12	69	70	3	2
13	88	78	25	22
14	2	1	0	0
15	7	7	0	0
18	119	108	11	7
19	2	1	0	0
22	14	12	2	1
30	66	57	13	11
31	3	3	0	0
32	0	0	0	0
55	<u>72</u>	<u>66</u>	<u>5</u>	<u>4</u>
TOTAL	878	739	128	109

Completed questionnaires from transferring patrons are included in this table.

A.2. SHOPPERS AND DINERS

The shopper/diner survey was interviewer-administered to people leaving stores and restaurants in the fare-free zone. It was conducted over a period of five days during both of its administrations. The establishments at which surveying was done were pre-selected to reflect both the level of CBD sales by different types of products and services and the proximity of establishments to bus service. Concurrent with the survey interviews, counts were taken of the number of people observed entering and leaving each establishment.

A minimum of 500 completed questionnaires were required for each administration; in October 1978, there were 617 and in October 1979 there were 662. In 1978, 6550 people were observed leaving the selected establishments during the specified interview periods. Based on this count 9.5 percent of the people leaving these stores and restaurants were interviewed. In 1979, 15.2 percent of the 4359 people seen leaving the selected establishments were interviewed.

A.3 DOWNTOWN EMPLOYEES

Downtown employees were surveyed with a self-administered questionnaire in both October 1978 and October 1979. A representative sample from the approximately 35,000 CBD employees was selected based on employer category and proximity to bus service. The four employer types considered were government office, private office, transportation/utilities/communication, and "other" employers.

Government office workers surveyed included employees at Albany City Hall and employees of certain state agencies. The sample of state agencies was selected so that one agency was surveyed within each state office building. Questionnaires were distributed to and collected from government employees by their supervisors who were contacted in advance to secure their cooperation.

Private office employees in five of the largest downtown office buildings (four bank buildings and the Arcade Building on Broadway) were surveyed with the same questionnaire as that administered to government employees, but using an alternative type of hand-out/hand-back administration method. Interviewers from the data collection contractor distributed questionnaires (only to people working in that building) at each building entrance from 7:30-9 AM. People were asked to leave completed forms in a return box left the building lobby, which were collected by the interviewer over the course of the day.

The telephone company, one of the largest private employers in downtown, was contacted to determine the best method for surveying its employees. However, since managers declined to allow their employees to be questioned, telephone company employees were not included in the survey.

Five-hundred completed questionnaires were required from downtown employees. In the 1978 administration, 537 surveys were coded and processed. In 1979, 533 surveys were completed out of 1139 distributed, resulting in a 46.8 percent response rate. Of these 534 completed questionnaires, 243 were from state employees, 23 from city employees, and 268 were from private office employees.

A.4 DOWNTOWN RESIDENTS

A hand-out/mail-back method was employed to survey downtown Albany residents in both the 1978 and 1979 survey administrations. People living within two blocks of the zone boundary (i.e., those within walking distance of fare-free zone) were surveyed along with people actually residing within the zone. Employees of the data collection contractor walked along pre-selected paths in downtown and hand delivered questionnaires to houses and apartment units. Questionnaires were delivered to every other residential building on each block as an approximately 55 percent distribution coverage was required.

The distribution of questionnaires to 55 percent of downtown residences was done to ensure (at a minimum response rate of about 13 percent) a return of 500 completed forms. In 1978, questionnaires were distributed to 4020 households and there were 535 completed forms (13.3 percent) which were processed. In 1979, questionnaires were delivered to 3735 residences; 546 (14.6 percent) were returned, but only 477 (12.8 percent) were coded for processing and analysis.

A.5 AREAWIDE RESIDENTS

People living outside the fare-free zone but within a radius of about 12 miles were surveyed by means of a mail-out/mail-back questionnaire. The names and addresses were selected randomly from the telephone book and a record was kept of the number of surveys mailed to each ZIP code zone.

A goal of 400 completed questionnaires was established for both administrations of this survey. In 1978, 452 completed questionnaires were returned. In 1979, 2490 surveys were mailed and 579 (23.3 percent) were returned.

A.6 MERCHANTS SURVEY

Merchants with establishments located in the fare-free zone were surveyed once, in October, 1979, to determine the impacts of free bus service on their businesses. Questionnaires were mailed to the approximately 175 restaurants

and retail establishments in the zone and owners or managers were asked to return completed forms in postage-paid envelopes which were provided.

Only 28 completed surveys were returned from fare-free merchants. Because this was a very small return and would have yielded summary statistics of low confidence (about 95 percent confidence of estimating true population characteristics within \pm 20 percent), no general conclusions regarding the attitudes of merchants towards fare-free service could be reached.

A.7 SAMPLE QUESTIONNAIRES

The following are sample questionnaires from the first five surveys described above. Only the October 1979 questionnaires have been included. Each place in which "Freewheeler" appears, the October 1978 questionnaires read "shopper's bus," have one less answer choice, or are adjusted in a similar manner.

CAPITAL DISTRICT TRANSPORTATION AUTHORITY
DOWNTOWN BUS SURVEY



Are you riding on FREEWHEELER today? If so, help CDTA evaluate this service by completing this questionnaire.

If not, please give this form back to the interviewer.
Thank you.

1. Where did you board this bus? (Please give building name, street address or closest intersection).

2. Where will you get off this bus? (Please give building name, street address or closest inter section).

3. Where were you just before coming to this bus stop?

<input type="checkbox"/> On another bus	<input type="checkbox"/> Doctor-Dentist
<input type="checkbox"/> Home	<input type="checkbox"/> School
<input type="checkbox"/> Work	<input type="checkbox"/> Restaurant
<input type="checkbox"/> Store	
<input type="checkbox"/> Other (specify) _____	

Are you a licensed driver?

Yes No (IF NO, SKIP TO QUESTION 6)

If Yes, did you have a car available for this trip?

Yes No

Do you generally have a car available for similar trips ?

<input type="checkbox"/> Always	<input type="checkbox"/> Rarely
<input type="checkbox"/> Usually	<input type="checkbox"/> Never
<input type="checkbox"/> Sometimes	

4. Where will you go immediately after leaving this bus?

<input type="checkbox"/> Transfer to another bus	<input type="checkbox"/> Doctor-Dentist
<input type="checkbox"/> Home	<input type="checkbox"/> School
<input type="checkbox"/> Work	<input type="checkbox"/> Restaurant
<input type="checkbox"/> Store	
<input type="checkbox"/> Other (specify) _____	

6. Do you work in downtown Albany?

Yes No

5. Do you live in downtown Albany?

Yes No.

IF NO, How did you travel to the downtown area?
Check as many as apply

<input type="checkbox"/> Walk	<input type="checkbox"/> Taxi
<input type="checkbox"/> Drove car	<input type="checkbox"/> CDTA bus
<input type="checkbox"/> Passenger in car	<input type="checkbox"/> Other bus
<input type="checkbox"/> Bicycle or motorcycle	
<input type="checkbox"/> Other (specify) _____	

7. Have you made any purchases in downtown Albany today?

Yes No (IF NO, SKIP TO QUESTION 8)

If YES, how much did you spend? \$ _____

Do you intend to make any more purchases today?

Yes No

8. About how often do you ride FREEWHEELER buses?

<input type="checkbox"/> less than one day per week
<input type="checkbox"/> 1 day per week
<input type="checkbox"/> 2 days per week
<input type="checkbox"/> 3 days per week
<input type="checkbox"/> 4 days per week
<input type="checkbox"/> 5 days per week or more

**PLEASE TURN OVER AND COMPLETE
OTHER SIDE**

No 349

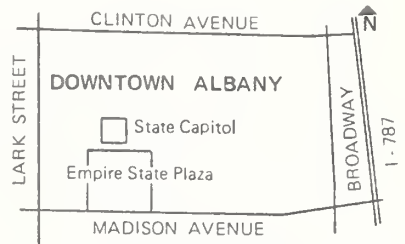
<p>9. What is your age?</p> <table style="width: 100%; border: none;"> <tr> <td><input type="checkbox"/> under 18</td> <td><input type="checkbox"/> 35 - 44</td> </tr> <tr> <td><input type="checkbox"/> 18 - 24</td> <td><input type="checkbox"/> 45 - 64</td> </tr> <tr> <td><input type="checkbox"/> 25 - 34</td> <td><input type="checkbox"/> 65 Or older</td> </tr> </table>	<input type="checkbox"/> under 18	<input type="checkbox"/> 35 - 44	<input type="checkbox"/> 18 - 24	<input type="checkbox"/> 45 - 64	<input type="checkbox"/> 25 - 34	<input type="checkbox"/> 65 Or older	<p>12. Are you:</p> <p><input type="checkbox"/> Male <input type="checkbox"/> Female</p>
<input type="checkbox"/> under 18	<input type="checkbox"/> 35 - 44						
<input type="checkbox"/> 18 - 24	<input type="checkbox"/> 45 - 64						
<input type="checkbox"/> 25 - 34	<input type="checkbox"/> 65 Or older						
<p>10. What is your total household income?</p> <table style="width: 100%; border: none;"> <tr> <td><input type="checkbox"/> Less than \$5,000</td> <td><input checked="" type="checkbox"/> 10,000 - 14,999</td> <td><input type="checkbox"/> \$15,000 - \$24,999</td> </tr> <tr> <td><input type="checkbox"/> \$5,000 - \$9,999</td> <td colspan="2"><input type="checkbox"/> \$25,000 or over</td> </tr> </table>	<input type="checkbox"/> Less than \$5,000	<input checked="" type="checkbox"/> 10,000 - 14,999	<input type="checkbox"/> \$15,000 - \$24,999	<input type="checkbox"/> \$5,000 - \$9,999	<input type="checkbox"/> \$25,000 or over		<p>13. Are you:</p> <p><input type="checkbox"/> Employed full time</p> <p><input type="checkbox"/> Employed part time</p> <p><input type="checkbox"/> Unemployed</p> <p><input type="checkbox"/> Student</p> <p><input type="checkbox"/> Homemaker</p> <p><input type="checkbox"/> Retired</p> <p><input type="checkbox"/> Other (specify)</p>
<input type="checkbox"/> Less than \$5,000	<input checked="" type="checkbox"/> 10,000 - 14,999	<input type="checkbox"/> \$15,000 - \$24,999					
<input type="checkbox"/> \$5,000 - \$9,999	<input type="checkbox"/> \$25,000 or over						
<p>11. How many autos are owned by your household?</p> <table style="width: 100%; border: none;"> <tr> <td><input type="checkbox"/> None</td> <td><input type="checkbox"/> Two</td> </tr> <tr> <td><input type="checkbox"/> One</td> <td><input type="checkbox"/> Three or more</td> </tr> </table>	<input type="checkbox"/> None	<input type="checkbox"/> Two	<input type="checkbox"/> One	<input type="checkbox"/> Three or more			
<input type="checkbox"/> None	<input type="checkbox"/> Two						
<input type="checkbox"/> One	<input type="checkbox"/> Three or more						
<p>14. In comparison to other shopping opportunities in the Albany area, how would you rate downtown Albany in terms of:</p>							
	<table style="width: 100%; border: none;"> <tr> <td style="width: 15%;">Excellent</td> <td style="width: 15%;">Good</td> <td style="width: 15%;">Average</td> <td style="width: 15%;">Below Average</td> <td style="width: 15%;">Poor</td> <td style="width: 15%;">No Opinion</td> </tr> </table>	Excellent	Good	Average	Below Average	Poor	No Opinion
Excellent	Good	Average	Below Average	Poor	No Opinion		
QUALITY OF MERCHANDISE	<table style="width: 100%; border: none;"> <tr> <td style="width: 15%;"><input type="checkbox"/></td> <td style="width: 15%;"><input type="checkbox"/></td> <td style="width: 15%;"><input type="checkbox"/></td> <td style="width: 15%;"><input type="checkbox"/></td> <td style="width: 15%;"><input type="checkbox"/></td> <td style="width: 15%;"><input type="checkbox"/></td> </tr> </table>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		
VARIETY OF STORES	<table style="width: 100%; border: none;"> <tr> <td style="width: 15%;"><input type="checkbox"/></td> <td style="width: 15%;"><input type="checkbox"/></td> <td style="width: 15%;"><input type="checkbox"/></td> <td style="width: 15%;"><input type="checkbox"/></td> <td style="width: 15%;"><input type="checkbox"/></td> <td style="width: 15%;"><input type="checkbox"/></td> </tr> </table>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		
PRICES	<table style="width: 100%; border: none;"> <tr> <td style="width: 15%;"><input type="checkbox"/></td> <td style="width: 15%;"><input type="checkbox"/></td> <td style="width: 15%;"><input type="checkbox"/></td> <td style="width: 15%;"><input type="checkbox"/></td> <td style="width: 15%;"><input type="checkbox"/></td> <td style="width: 15%;"><input type="checkbox"/></td> </tr> </table>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		
PARKING AVAILABILITY	<table style="width: 100%; border: none;"> <tr> <td style="width: 15%;"><input type="checkbox"/></td> <td style="width: 15%;"><input type="checkbox"/></td> <td style="width: 15%;"><input type="checkbox"/></td> <td style="width: 15%;"><input type="checkbox"/></td> <td style="width: 15%;"><input type="checkbox"/></td> <td style="width: 15%;"><input type="checkbox"/></td> </tr> </table>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		
OVERALL	<table style="width: 100%; border: none;"> <tr> <td style="width: 15%;"><input type="checkbox"/></td> <td style="width: 15%;"><input type="checkbox"/></td> <td style="width: 15%;"><input type="checkbox"/></td> <td style="width: 15%;"><input type="checkbox"/></td> <td style="width: 15%;"><input type="checkbox"/></td> <td style="width: 15%;"><input type="checkbox"/></td> </tr> </table>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		
<p>15. How would you rate CDTA bus service in terms of:</p>							
	<table style="width: 100%; border: none;"> <tr> <td style="width: 15%;">Excellent</td> <td style="width: 15%;">Good</td> <td style="width: 15%;">Average</td> <td style="width: 15%;">Below Average</td> <td style="width: 15%;">Poor</td> <td style="width: 15%;">No Opinion</td> </tr> </table>	Excellent	Good	Average	Below Average	Poor	No Opinion
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DEPENDABILITY (ON TIME)	<table style="width: 100%; border: none;"> <tr> <td style="width: 15%;"><input type="checkbox"/></td> <td style="width: 15%;"><input type="checkbox"/></td> <td style="width: 15%;"><input type="checkbox"/></td> <td style="width: 15%;"><input type="checkbox"/></td> <td style="width: 15%;"><input type="checkbox"/></td> <td style="width: 15%;"><input type="checkbox"/></td> </tr> </table>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		
SEATING AVAILABILITY	<table style="width: 100%; border: none;"> <tr> <td style="width: 15%;"><input type="checkbox"/></td> <td style="width: 15%;"><input type="checkbox"/></td> <td style="width: 15%;"><input type="checkbox"/></td> <td style="width: 15%;"><input type="checkbox"/></td> <td style="width: 15%;"><input type="checkbox"/></td> <td style="width: 15%;"><input type="checkbox"/></td> </tr> </table>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		
REASONABILITY OF FARE	<table style="width: 100%; border: none;"> <tr> <td style="width: 15%;"><input type="checkbox"/></td> <td style="width: 15%;"><input type="checkbox"/></td> <td style="width: 15%;"><input type="checkbox"/></td> <td style="width: 15%;"><input type="checkbox"/></td> <td style="width: 15%;"><input type="checkbox"/></td> <td style="width: 15%;"><input type="checkbox"/></td> </tr> </table>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		
PASSENGER CONDUCT	<table style="width: 100%; border: none;"> <tr> <td style="width: 15%;"><input type="checkbox"/></td> <td style="width: 15%;"><input type="checkbox"/></td> <td style="width: 15%;"><input type="checkbox"/></td> <td style="width: 15%;"><input type="checkbox"/></td> <td style="width: 15%;"><input type="checkbox"/></td> <td style="width: 15%;"><input type="checkbox"/></td> </tr> </table>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		
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<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		
<p>***PLEASE RETURN TO INTERVIEWER***</p>							

ALBANY AREAWIDE RESIDENTS SURVEY

This survey is being conducted by the Capital District Transportation Authority (CDTA) and the City of Albany to learn your views on the area's transit service. We would appreciate someone in your household over age 16 completing this questionnaire.

Since your household is one of a carefully selected sample of households in the Albany area for this survey, your response is quite important.

When you complete the questionnaire, please mail it back in the enclosed envelope. No postage stamp is necessary. All responses will remain confidential. Thank you for your cooperation.



1. In the past year, have you ridden a CDTA bus?

YES NO

2. How many trips to Albany have you made in the past week?

NONE 1 2 3 4 5 or more

If NONE, go to question # 6.

3. For your most recent trip to the downtown, how did you travel?

walked only CDTA bus
 drove car other bus
 passenger in car taxi
 motorcycle-bicycle other (specify)

4. What was the purpose(s) of your most recent trip? (MORE THAN ONE MAY BE CHECKED.)

work medical-dental
 shopping window shopping
 dining strolling
 personal business social-recreational
 (i.e. bank, lawyer)
 other (specify) _____

5. Are you aware of the free-fare bus service in downtown Albany called FREEWHEELER?

YES NO

If YES' have you ever used the FREEWHEELER service?

YES NO

If YES, how many times have you used the service in the past week? (Count round trips as two trips.)

NUMBER _____

6. Are you employed?

YES NO

IF YES, are you employed in downtown Albany?

YES NO

7. Are you a licensed driver?

YES NO

IF YES, do you generally have a car available during the day?

always rarely
 usually never
 sometimes

8. What is your age?

under 18 35 - 44
 18 - 24 45 - 64
 25 - 34 65 or older

9. What is your total household income?

less than \$5,000 \$15,000-\$24,999
 \$5,000 - \$9,999 \$25,000 and over
 \$10,000- \$14,999

10. In what city or town do you live?

town _____

ZIP Code _____

11. Are you: Male Female

12. In comparison to other shopping opportunities in the Albany area, how would you rate downtown Albany in terms of:

	Much Better	Above Average	Average	Below Average	Much Worse	No Opinion
QUALITY OF MERCHANDISE	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
VARIETY OF STORES	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
PRICES	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
PARKING AVAILABILITY	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
OVERALL	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

13. CDTA receives public funds from the local, state and federal governments because transit revenues are not sufficient to cover the full cost of providing bus service in the Capital District.

How would you rate CDTA's performance in using public funds to improve transit service in the Capital District?

Excellent Good Average Unacceptable No Opinion

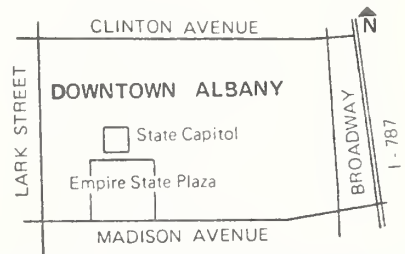
14. Listed below are some statements about urban transportation problems. Please indicate how you feel about each statement.

	Strongly Agree	Agree	Disagree	Strongly Disagree	No Opinion
A good bus system is essential to the growth and prosperity of the Capital District.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
When necessary, fares should be supplemented by tax monies to meet the cost of operating bus service.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

ALBANY DOWNTOWN RESIDENTS SURVEY

This survey is being conducted by the Capital District Transportation Authority (CDTA) and the City of Albany to obtain information on travel patterns in downtown Albany. We would appreciate someone in your household over age 16 completing this questionnaire. Your response will help us provide better transit service in the downtown area.

When you complete the questionnaire, please mail it back in the enclosed envelope. No postage stamp is necessary. All responses will remain confidential. Thank you for your cooperation.



1. Yesterday, how many one-way trips within downtown did you make from your home? (Include walk trips).

none 1 2 3 4 or more

IF NONE, Go to question No. 8.

2. What were the purposes for each trip included in question 1. CHECK ONE OR MORE for each trip made.

1st	2nd	3rd	4th	
TRIP				
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	work
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	shopping
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	eat meal
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	personal business (i.e., bank, lawyer)
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	medical-dental
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	window shopping or strolling
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	social-recreational
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	other (specify) _____

3. For each trip you made yesterday, check the box(es) indicating how you travelled.

1st	2nd	3rd	4th	
TRIP				
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	walked only (round trip)
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	walked one way
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	car
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	CDTA bus (with fare)
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	FREEWHEELER
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	other bus
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	taxi
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Motorcycle or bicycle
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	other (specify) _____

4. Were any of the places you visited within two blocks of the following eleven locations? CHECK ONE OR MORE FOR EACH TRIP MADE.

1st	2nd	3rd	4th	
TRIP				
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	SUNY Plaza (State & Broadway)
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Ten Eyck Plaza (State & Pearl)
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	North Pearl St. stores
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Federal Office Bldg. (Clinton & Pearl)
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Greyhound-Trailways Sta.
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	State Capitol (State & Eagle)
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Smith Bldg. (State & Swan)
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	New York State Museum (Madison near Eagle)
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Madison & Lark
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Army (Lark & Washington)
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Clinton & Lark

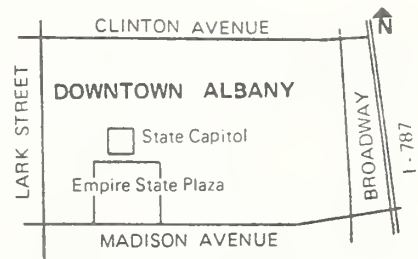
5. If you made a purchase during your trip, please indicate below by checking the appropriate purchase categories. Check 'NO PURCHASE' only if nothing was purchased.

1st	2nd	3rd	4th	
TRIP				
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	food (meal or take-out)
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	groceries
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	clothing or jewelry
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	book, magazine or record
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	housewares
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	furniture
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	drugs or toiletries
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	service (i.e., dry cleaning)
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	entertainment
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	other (specify) _____
NO PURCHASE				

<p>6. What is the approximate value of the purchases that you listed in question 5.</p> <p>Trip No. 1 \$ _____ Trip No. 2 \$ _____</p> <p>Trip No. 3 \$ _____ Trip No. 4 \$ _____</p>	<p>9. Which of the following do you have?</p> <p><input type="checkbox"/> CDTA Commuter Pass <input type="checkbox"/> CDTA Senior Citizen Card</p> <p><input type="checkbox"/> CDTA Student Pass <input type="checkbox"/> CDTA Handicapped Card</p> <p><input type="checkbox"/> CDTA Employee Pass</p> <p><input type="checkbox"/> NONE of these</p>																																										
<p>7. During what time of day did you begin each trip?</p> <table style="width: 100%; border-collapse: collapse;"> <tr> <td style="text-align: center;">1st</td> <td style="text-align: center;">2nd</td> <td style="text-align: center;">3rd</td> <td style="text-align: center;">4th</td> <td></td> </tr> <tr> <td colspan="4" style="text-align: center;">TRIP</td> <td></td> </tr> <tr> <td style="text-align: center;"><input type="checkbox"/></td> <td style="text-align: center;"><input type="checkbox"/></td> <td style="text-align: center;"><input type="checkbox"/></td> <td style="text-align: center;"><input type="checkbox"/></td> <td>before 9 am</td> </tr> <tr> <td style="text-align: center;"><input type="checkbox"/></td> <td style="text-align: center;"><input type="checkbox"/></td> <td style="text-align: center;"><input type="checkbox"/></td> <td style="text-align: center;"><input type="checkbox"/></td> <td>9 am - 11 am</td> </tr> <tr> <td style="text-align: center;"><input type="checkbox"/></td> <td style="text-align: center;"><input type="checkbox"/></td> <td style="text-align: center;"><input type="checkbox"/></td> <td style="text-align: center;"><input type="checkbox"/></td> <td>11 am - 1 pm</td> </tr> <tr> <td style="text-align: center;"><input type="checkbox"/></td> <td style="text-align: center;"><input type="checkbox"/></td> <td style="text-align: center;"><input type="checkbox"/></td> <td style="text-align: center;"><input type="checkbox"/></td> <td>1 pm - 3 pm</td> </tr> <tr> <td style="text-align: center;"><input type="checkbox"/></td> <td style="text-align: center;"><input type="checkbox"/></td> <td style="text-align: center;"><input type="checkbox"/></td> <td style="text-align: center;"><input type="checkbox"/></td> <td>after 3 pm</td> </tr> </table>	1st	2nd	3rd	4th		TRIP					<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	before 9 am	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	9 am - 11 am	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	11 am - 1 pm	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	1 pm - 3 pm	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	after 3 pm	<p>10. Are you aware of the free-fare bus service in downtown Albany called The Freewheeler?</p> <p><input type="checkbox"/> YES <input type="checkbox"/> NO</p> <p>If YES, have you ever used The Freewheeler service?</p> <p><input type="checkbox"/> YES <input type="checkbox"/> NO</p> <p>If YES, how many times have you used the service in the past week? (COUNT ROUND TRIPS AS TWO TRIPS)</p> <p style="text-align: right;">_____ Number</p>							
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<p>8. Are you a licensed driver?</p> <p><input type="checkbox"/> YES <input type="checkbox"/> NO If NO, skip to question 10</p> <p>If YES,</p> <p>Do you generally have a car available for trips between 9 am and 3 pm?</p> <p><input type="checkbox"/> YES <input type="checkbox"/> NO</p> <p>Do you generally have a car available for trips anytime after 3 pm?</p> <p><input type="checkbox"/> YES <input type="checkbox"/> NO</p>	<p>11. Do you work in downtown Albany?</p> <p><input type="checkbox"/> YES <input type="checkbox"/> NO</p>																																										
	<p>12. What is your total household income?</p> <p><input type="checkbox"/> less than \$5,000 <input type="checkbox"/> \$15,000 - \$24,000</p> <p><input type="checkbox"/> \$5,000 - \$9,999 <input type="checkbox"/> \$25,000 or more</p> <p><input type="checkbox"/> \$10,000 - \$14,999</p>																																										
	<p>13. Are you: Male <input type="checkbox"/> Female</p>																																										
	<p>14. What is your age?</p> <p><input type="checkbox"/> under 18 <input type="checkbox"/> 35 - 44</p> <p><input type="checkbox"/> 18 - 24 <input type="checkbox"/> 45 - 64</p> <p><input type="checkbox"/> 25 - 34 <input type="checkbox"/> 65 or older</p>																																										
<p>15. In comparison to other shopping opportunities in the Albany area, how would you rate downtown Albany in terms of:</p> <table style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th></th> <th style="text-align: center;">Much Better</th> <th style="text-align: center;">Above Average</th> <th style="text-align: center;">Average</th> <th style="text-align: center;">Below Average</th> <th style="text-align: center;">Much Worse</th> <th style="text-align: center;">No Opinion</th> </tr> </thead> <tbody> <tr> <td>QUALITY OF MERCHANDISE</td> <td style="text-align: center;"><input type="checkbox"/></td> <td style="text-align: center;"><input type="checkbox"/></td> <td style="text-align: center;"><input type="checkbox"/></td> <td style="text-align: center;"><input type="checkbox"/></td> <td style="text-align: center;"><input type="checkbox"/></td> <td style="text-align: center;"><input type="checkbox"/></td> </tr> <tr> <td>VARIETY OF STORES</td> <td style="text-align: center;"><input type="checkbox"/></td> <td style="text-align: center;"><input type="checkbox"/></td> <td style="text-align: center;"><input type="checkbox"/></td> <td style="text-align: center;"><input type="checkbox"/></td> <td style="text-align: center;"><input type="checkbox"/></td> <td style="text-align: center;"><input type="checkbox"/></td> </tr> <tr> <td>PRICES</td> <td style="text-align: center;"><input type="checkbox"/></td> <td style="text-align: center;"><input type="checkbox"/></td> <td style="text-align: center;"><input type="checkbox"/></td> <td style="text-align: center;"><input type="checkbox"/></td> <td style="text-align: center;"><input type="checkbox"/></td> <td style="text-align: center;"><input type="checkbox"/></td> </tr> <tr> <td>PARKING AVAILABILITY</td> <td style="text-align: center;"><input type="checkbox"/></td> <td style="text-align: center;"><input type="checkbox"/></td> <td style="text-align: center;"><input type="checkbox"/></td> <td style="text-align: center;"><input type="checkbox"/></td> <td style="text-align: center;"><input type="checkbox"/></td> <td style="text-align: center;"><input type="checkbox"/></td> </tr> <tr> <td>OVERALL</td> <td style="text-align: center;"><input type="checkbox"/></td> <td style="text-align: center;"><input type="checkbox"/></td> <td style="text-align: center;"><input type="checkbox"/></td> <td style="text-align: center;"><input type="checkbox"/></td> <td style="text-align: center;"><input type="checkbox"/></td> <td style="text-align: center;"><input type="checkbox"/></td> </tr> </tbody> </table>			Much Better	Above Average	Average	Below Average	Much Worse	No Opinion	QUALITY OF MERCHANDISE	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	VARIETY OF STORES	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	PRICES	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	PARKING AVAILABILITY	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	OVERALL	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
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<p>16. How would you rate CDTA transit service in terms of:</p> <table style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th></th> <th style="text-align: center;">Excellent</th> <th style="text-align: center;">Good</th> <th style="text-align: center;">Average</th> <th style="text-align: center;">Poor</th> <th style="text-align: center;">Unacceptable</th> <th style="text-align: center;">No Opinion</th> </tr> </thead> <tbody> <tr> <td>DEPENDABILITY (ON TIME)</td> <td style="text-align: center;"><input type="checkbox"/></td> <td style="text-align: center;"><input type="checkbox"/></td> <td style="text-align: center;"><input type="checkbox"/></td> <td style="text-align: center;"><input type="checkbox"/></td> <td style="text-align: center;"><input type="checkbox"/></td> <td style="text-align: center;"><input type="checkbox"/></td> </tr> <tr> <td>SEATING AVAILABILITY</td> <td style="text-align: center;"><input type="checkbox"/></td> <td style="text-align: center;"><input type="checkbox"/></td> <td style="text-align: center;"><input type="checkbox"/></td> <td style="text-align: center;"><input type="checkbox"/></td> <td style="text-align: center;"><input type="checkbox"/></td> <td style="text-align: center;"><input type="checkbox"/></td> </tr> <tr> <td>REASONABILITY OF FARE</td> <td style="text-align: center;"><input type="checkbox"/></td> <td style="text-align: center;"><input type="checkbox"/></td> <td style="text-align: center;"><input type="checkbox"/></td> <td style="text-align: center;"><input type="checkbox"/></td> <td style="text-align: center;"><input type="checkbox"/></td> <td style="text-align: center;"><input type="checkbox"/></td> </tr> <tr> <td>PASSENGER CONDUCT</td> <td style="text-align: center;"><input type="checkbox"/></td> <td style="text-align: center;"><input type="checkbox"/></td> <td style="text-align: center;"><input type="checkbox"/></td> <td style="text-align: center;"><input type="checkbox"/></td> <td style="text-align: center;"><input type="checkbox"/></td> <td style="text-align: center;"><input type="checkbox"/></td> </tr> <tr> <td>OVERALL</td> <td style="text-align: center;"><input type="checkbox"/></td> <td style="text-align: center;"><input type="checkbox"/></td> <td style="text-align: center;"><input type="checkbox"/></td> <td style="text-align: center;"><input type="checkbox"/></td> <td style="text-align: center;"><input type="checkbox"/></td> <td style="text-align: center;"><input type="checkbox"/></td> </tr> </tbody> </table>			Excellent	Good	Average	Poor	Unacceptable	No Opinion	DEPENDABILITY (ON TIME)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	SEATING AVAILABILITY	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	REASONABILITY OF FARE	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	PASSENGER CONDUCT	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	OVERALL	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
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OVERALL	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>																																					

ALBANY EMPLOYEES SURVEY

This survey is being conducted for the Capital District Transportation Authority and the City of Albany to obtain information on travel patterns in downtown Albany. We would like to ask you some questions about any downtown trips you made yesterday or your last work day. Your responses will help us provide better transit service in the downtown area. Please complete this questionnaire today and return it to the box in the building lobby marked CDTA SURVEY, the next time you leave the building. All responses will remain confidential. We thank you for your cooperation.



1. Yesterday (or on your last work day) how many downtown trips did you make out of this building during working hours, including your lunch period? (Please check the number of trips.)

None 1 2 3 or more

2. What was the purpose of each of your trips out of the building? check one or more for each trip made. CHECK ONE OR MORE FOR EACH TRIP MADE.

1 st	2 nd	3 rd	
TRIP			
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	work related
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	shopping
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	eat meal
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	personal business (i.e. bank, lawyer)
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	medical-dental
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	window shopping or strolling
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	social-recreational
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	other (specify)

3. How did you travel while out of the building? CHECK ONE OR MORE FOR EACH TRIP MADE.

1 st	2 nd	3 rd	
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	walked only (round trip)
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	walked one way
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	car
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	CDTA bus (with fare)
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	CDTA FREEWHEELER
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	other bus
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	taxi
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	motorcycle-bicycle
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	other (specify)

4. Were any of the places you visited within two blocks of the following locations? (Check one or more per trip.)

1 st	2 nd	3 rd	
TRIP			
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	SUNY Plaza (State & Broadway)
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Ten Eyck Plaza (State & Pearl)
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	North Pearl Street Stores
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Federal Office Building (Clinton & Pearl)
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Greyhound-Trailways Stations
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	State Capitol (State & Eagle)
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Smith Building (State & Swan)
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	New York State Museum (Madison near Eagle)
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Madison and Lark
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Armory (Washington & Lark)
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Clinton & Lark

5. If you made a purchase while out of the building, please indicate below by checking the appropriate purchase categories for each trip. Check 'NO PURCHASE' if nothing was purchased.

1 st	2 nd	3 rd	
TRIP			
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	food (meal or take-out)
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	groceries
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	clothing or jewelry
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	book, magazine or record
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	housewares
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	furniture
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	drugs or toiletries
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	service (i.e. dry cleaning)
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	entertainment
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	other (specify)
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	NO PURCHASE

6. What is the approximate value of the purchase(s) that you listed in question 5 above?

Trip No. 1 _____

Trip No. 2 _____

Trip No. 3 _____

7. When did you begin each of your trips? (Remember, do not count your commute between home and work.)

1 st	2 nd	3 rd	
TRIP			
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	9 am - 11 am
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	11 am - 1 pm
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	1 pm - 3 pm
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	other

8. How did you travel to and from work yesterday? (or your last work day). Check one or more in each column.

Home to Work	Work to Home	
<input type="checkbox"/>	<input type="checkbox"/>	walked only
<input type="checkbox"/>	<input type="checkbox"/>	drove car
<input type="checkbox"/>	<input type="checkbox"/>	passenger in car
<input type="checkbox"/>	<input type="checkbox"/>	CDTA bus (with fare)
<input type="checkbox"/>	<input type="checkbox"/>	Freewheeler bus
<input type="checkbox"/>	<input type="checkbox"/>	other bus
<input type="checkbox"/>	<input type="checkbox"/>	taxi
<input type="checkbox"/>	<input type="checkbox"/>	motorcycle-bicycle
<input type="checkbox"/>	<input type="checkbox"/>	OGS bus
<input type="checkbox"/>	<input type="checkbox"/>	Other (specify)

9. If you came to work by car, how did you get from your parking location to work?

walked bus

10. Are you a licensed driver?

yes no (IF NO, Skip to Question 11.)

If YES, did you have a car available to drive to work yesterday (or your last work day)?

yes no

11. In the past week, how many trips did you take on FREEWHEELER buses? (FREEWHEELER buses are any CDTA buses operating downtown during the mid-day.) COUNT ROUND TRIPS AS TWO TRIPS

_____ number

12. Please indicate the length of your lunch period.

_____ min./day OR flexible period

13. Which of the following do you have?

CDTA Commuter pass

CDTA Student Pass

CDTA Employee Pass

CDTA Senior Citizen Card

CDTA Handicapped Card

NONE of these

14. In what city or town do you live?

_____ _____

City or town ZIP Code

15. What is your total household income?

less than \$5,000 \$15,000 - \$24,999

\$5,000 - \$9,999 \$25,000 or more

\$10,000 - \$14,999

16. Are you: MALE FEMALE

17. What is your age:

under 18 34 - 44

18 - 24 45 - 64

25- 34 65 or older

18. What is your occupation?

sales

executive-professional

shop-factory worker

clerical-office

craftsperson-foreperson

other (specify)

RESTAURANT/SHOPPER SURVEY

BY INTERVIEWER: _____
 Date: _____
 Time: _____
 Site: _____

Respondent's Sex: M F

1. Do you live or work in downtown Albany? Live (Go to A)
 Work (Go to B) Neither (Go to B)

A. Are you a licensed driver? YES NO (Go to Question 2)
 Did you have a car available to come here today? YES NO
 Do you generally have a car available for similar trips?
 Always Usually Sometimes Rarely Never
 Go to Question 2.

B. Are you a licensed driver? YES No
 How did you travel downtown today?
 Walk only Passenger in car Motorcycle/bicycle
 Drove car Other bus Other _____
 CDTA Taxi

2. Did you come here from work? YES NO

3. How many stops in downtown did you make between (work/home) and here?
 None 1 2 3 or more

4. How did you travel to here? CHECK AS MANY AS APPLY, BUT CHECK
 WALK ONLY IF NO OTHER MODE WAS USED.
 Walk only Passenger in car Other bus
 Drove car CDTA bus (with fare) Bicycle or motorcycle
 Taxi CDTA FREEWHEELER Other _____
 If you drove, where did you park? _____
 What did you pay to park? _____

5. How do you intend to travel from here?
 Walk only Passenger in car Other bus
 Drive car CDTA bus (with fare) Bicycle or motorcycle
 Taxi CDTA FREEWHEELER Other _____

6. In the past week, how many bus trips have you made within downtown Albany?
 NONE 1 2 3 4 5 or more

7. Which of the following do you have?
 CDTA Commuter Pass CDTA Senior Citizen Flashcard
 CDTA Student Pass CDTA Handicapped Flashcard
 CDTA Employee Pass NONE of these

8. What is your age?
 under 18 25 - 34 35 - 45
 18 - 24 35 - 45 45 - 65

9. Are you: Employed full time Homemaker
 Employed part-time Retired
 Unemployed Other _____
 Student

10. What is your total household income?
 Less than \$ 5,000 \$15,000 - \$24,999
 \$ 5,000 - \$ 9,999 \$25,000 or more
 \$10,000 - \$14,999

11. What is your home town and ZIP code?
 _____ TOWN OR CITY _____ ZIP Code _____

12. Could you please rate on a scale from 5 to 1 with 5 highest and 1 lowest:
 a) Shopping in downtown in terms of:

Quality	Variety	Prices	Parking	Overall
_____	_____	_____	_____	_____

 b) CDTA Bus Service in terms of:

Dependability	Seating Avail.	Reason. Fare	Pass. Conduct	Overall
_____	_____	_____	_____	_____

APPENDIX B

FREEWHEELER NEWS ARTICLES
AND PROMOTIONAL MATERIAL

Grant Rolls Albany 'Freewheeler'

ALBANY — Free bus service will be available in downtown Albany sometime this fall because of a \$325,820 federal

grant and contributions from the City of Albany, Downtown Albany Unlimited (the merchants association) and the Capital District Transportation Authority (CDTA).

* * *
Nicknamed Freewheeler, the fare-free service will be available on all of CDTA's 19 bus routes operating within an area

bounded by Broadway, Lark Street, Clinton Avenue and Madison Avenue.

No fare will be charged within the zone from 9 a.m. to 3 p.m. weekdays and from 9 a.m. to 6 p.m. on Saturdays, officials of the CDTA and the merchants association explained yesterday at a news conference. Buses will continue to follow each other at any one stop every three to 10 minutes.

Passengers staying on the buses beyond the fare-free zone will continue to pay the regular fare.

The federal government selected Albany for the two-year experimental project in part because the merchants association sponsors a more limited shuttle bus service downtown.

The association sponsored a free shuttle along State Street for about 10 years and continues to sponsor a five-cent shuttle between the Alfred E. Smith Office Building and Broadway, Joseph Brown, president of the association, said.

"I can't see where it can hurt us; it can only help," Brown said of the Freewheeler service. It probably will bring more persons downtown, make more parking spaces available, and the increased business might attract a new department store downtown, he said.

The federal government will contract for an independent evaluation of the service to measure ridership, retail sales downtown, the number of trips between points downtown, travel times by bus compared to car and other factors.

If the free service succeeds, the federal government may agree to renew its grant or the merchants association may continue it, Dennis Fitzgerald of the CDTA said.

In addition to the federal share, the City of Albany and the merchants association will contribute \$21,600 each and the CDTA will add about \$47,000 during the two years. The merchants association now pays about \$21,600 every two years for its five-cent shuttle.

"This should give the public the most flexible service possible downtown and the most frequent service," CDTA Chairman Joseph Parillo said.

The CDTA's annual report a year ago noted a community affects a transit system just as the transit system affects the community. "This is a rather dramatic example of that. In this case, good community support and interest is bringing a valuable benefit to the public," he said.

Albany Times-Union 6/22/78

Editors' views:

Free bus service

Albany citizens and visitors to the capital city will join merchants and businessmen in the downtown area in a loud cheer for the news that there will be free bus service downtown.

It begins next fall, the result of a federal grant awarded Albany over 80 other cities by the federal government's Urban Mass Transportation Administration.

The area to be served takes in practically all the downtown section of the city, an area that little by little is returning to the life and vitality it once had as new construction, renovation and planning proceed. It is bounded by Clinton on the north, Lark on the west, Madison on the south and Broadway on the east. This is the heart of the city's business and commercial district, and also currently the target of both municipal and private planning designed to bring back a mix of residential housing—apartments and private single dwellings—as well as supporting units such as theaters, food stores and other businesses aimed at nearby residential customers.

The new service, while only a demonstration project for two years, is a big plus for the downtown merchants who sponsored a free or low-cost shuttle service, primarily for the thousands of state workers in town during the day, on State Street. The merchants and the city will continue to contribute cooperatively under terms of the federal grant, which amounts to \$325,820.

Bus service is quick, easy and convenient throughout Capitaland. It is growing in importance in all area communities, and along the routes that connect them. It is a healthy sign.

Free bus rides for downtown Albany

ALBANY — Free bus rides on Capital District Transportation Authority buses will become available in downtown Albany sometime this fall.

Authority Chairman Joseph Parillo, joined by downtown business community representative Joseph Brown, made the announcement in June. The "Freewheeler" bus service will be jointly sponsored by the federal Urban Mass Transportation Administration, the City of Albany, the downtown Albany business community and CDTA. Freewheeler will be a two-year demonstration project. Albany was selected from among several cities. The federal government will provide \$325,820 for the project; the city and the business community will provide up to \$21,600.

"Albany and CDTA will be used to answer some questions about how useful free downtown bus service is and how it can best be operated," Parillo said. "There are downtown shuttle buses in a number of cities, some of them free, others at a bargain fare. But,

there has been very little study of what these services really do for their cities or for the transit system. We will try to get answers that can be applied nationwide."

The Freewheeler zone will run from Broadway on the east to Lark Street on the west; from Clinton Avenue on the north to Madison Avenue on the south. Between 9 a.m. and 3 p.m. on weekdays and from 9 to 6 on Saturdays, anybody whose entire ride is within that zone, including its outside perimeter, will ride for free.

"One thing that is a little unusual is that we will not be running special downtown shuttle buses," Parillo said. "We have 19 bus routes running in the Freewheeler zone, and people will be able to ride any of them for free, as long as they do not leave the free zone. This should give the public the most flexible service possible within the downtown area — and the most frequent service as well. For instance, headway between buses running up and down State Street hill will be about two and a half minutes, on the average."

Capital District Business Review July, 1978

Free bus service survey being conducted in Albany

By ERIC FREDMAN
If you travel by bus in downtown Albany this week, don't be surprised if you're asked to answer a few questions about your downtown travel habits.

The interviews are part of a preliminary survey in connection with the start of the Capital Dis-

trict Transportation Authority free bus service project. Interviewers from Roger Creighton Associates, a research firm, are interviewing passengers and people who live, work or shop downtown. An authority spokesman said "Freewheeler" service is scheduled to begin Nov. 1, providing free bus transportation between Broadway, Madison Avenue, Lark Street and Clinton Avenue weekdays from 9 a.m. to 3 p.m. and Saturdays from 9 a.m. to 6 p.m. for passengers traveling entirely in the free-fare zone. The experiment will run two years.

The U.S. Urban Mass Transportation Administration is paying most of the cost of the \$356,000 project, including lost revenues for the authority, with the city of Albany and Downtown Albany Unlimited, a merchants' group, picking up the rest of the tab.

Albany ideal for test for free bus service

ALBANY — If it works here, it can work anywhere.

Freewheeler, the experimental free bus service in downtown Albany, began Monday. It will be a convenience for office workers, an attraction for shoppers and a real money saver for people who live in or near the downtown. But no one knows how it will affect the city's monumental traffic and parking problems.

The Federal Government is spending \$325,000 to find out, using Albany as a two year demonstration program to determine whether free bus service has a future. And it would appear that Albany is an ideal city for such a test — hordes of state workers funneled into the city by fine access roads, an estimated 7,600 fewer parking spaces than needed when they arrive, and virtually no system for regulating the resulting jam.

Freewheeler is, at best, a limited solution to that problem. It is an attempt to see if more can't be done with less. There will be no new routes, no shuttles to encourage office workers to park far from their offices, no new equipment. The only actual changes in service are to discontinue the present free downtown shuttle — now considered superfluous — and to reschedule some routes so that buses pass through the downtown at more regular intervals.

Even so, some routes will be more convenient than others. Traveling up and down State Street and Washington Avenue should be a snap (provided there's space on the buses), while state workers using the Madison Avenue exit of the Empire State Plaza will need special instruction to figure out which bus to take.

Here is the system: Between 9 a.m. and 3 p.m. on week days, and between 9 a.m. and 6 p.m. Saturdays, fares will not be charged for passengers whose entire trip is within the Freewheeler zone. That zone encompasses the entire downtown, from Broadway to Lark Street and from Clinton Avenue to Madison Avenue.

Downtown passengers need do nothing more than tell the driver how far they are going; passengers going outside the zone will be given a receipt when they pay their fare.

The key is education, and the Capital District Transportation Authority (CDTA) is going to some trouble to make riding the bus an attractive alternative to driving.

Special Freewheeler bus signs at 100 downtown stops will help riders pick the correct bus. The CDTA is advertising heavily, and will have information displays and literature sprinkled throughout the downtown.

"This is the kind of project we feel deserves first-class treatment," says Robert D. Manz, CDTA's executive director. The \$325,000 federal grant (which is augmented by \$25,000 from the city and from downtown merchants) is only a guess at the ultimate cost of the experiment. After administrative and start-up costs are accounted for, no one knows how much CDTA will be out in lost fares.

There is even the possibility that Freewheeler will generate enough new business — people taking the bus into the downtown to do their shopping or business — to make up for the downtown losses.

It's no fare, just free bus trips on Albany's new Freewheeler

"It's a whole new trip" — as the slogan goes — in downtown Albany with the start of the Freewheeler bus service Monday by the Capital District Transportation Authority.

What Freewheeler means is free bus rides within an area of downtown Albany between 9 a.m. and 3 p.m. weekdays, and between 9 a.m. and 6 p.m. on Saturdays.

Regular fares will continue to be charged outside the Freewheeler zone and at other times, transportation company officials said.

The established Freewheeler zone will be bounded by Broadway, Madison Avenue, Clinton Avenue and Lark Street. The demonstration project is funded by the U.S. Department of Transportation, Downtown Albany Unlimited, the transportation company and the City of Albany through community development fund.

Rides for bus patrons are free as long as they remain in the Freewheeler zone during the designated hours, officials said. On outbound buses, the driver will ask passengers how far they are going to determine whether or not to collect a fare.

Albany Times-Union 11/21/78

DOWNTOWN TO EMPIRE STATE PLAZA

SATURDAY

Route 30 From SUNY PLAZA	Route 22 From Federal Off. Bldg.	Route 3 From State & Pearl Sts.
9:50 AM	9:10 AM	9:28 AM
10:50	9:40	9:58
11:50	10:10	10:28
12:50 PM	10:40	10:58
1:50	11:10	11:28
2:50	11:40	11:58
3:50	12:10 PM	12:28 PM
4:50	12:40	12:58
5:10	1:10	1:28
5:50	1:40	1:58
	2:10	2:28
	2:40	2:58
	3:10	3:28
	3:40	3:58
	4:10	4:28
	4:40	4:58
	5:10	5:28
	5:40	

EMPIRE STATE PLAZA TO DOWNTOWN

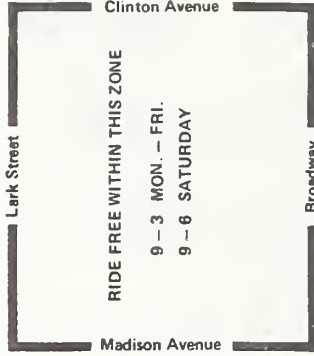
SATURDAY

Madison Ave. side only Route 3 Board on Museum side of Madison Ave.	Madison or Swan St. side Routes 14, 15 and 22 Board on Plaza side of Madison or along Swan
9:10 AM	9:00 AM
9:40	9:30
10:10	10:00
10:40	10:30
11:10	11:00
11:40	11:30
12:10 PM	12:00 PM
12:40	12:30
1:10	1:00
1:40	1:30
2:10	2:00
2:40	2:30
3:10	3:00
3:40	3:30
4:10	4:00
4:40	4:30
5:10	5:00
5:40	5:30



FREEWHEELER SERVICE

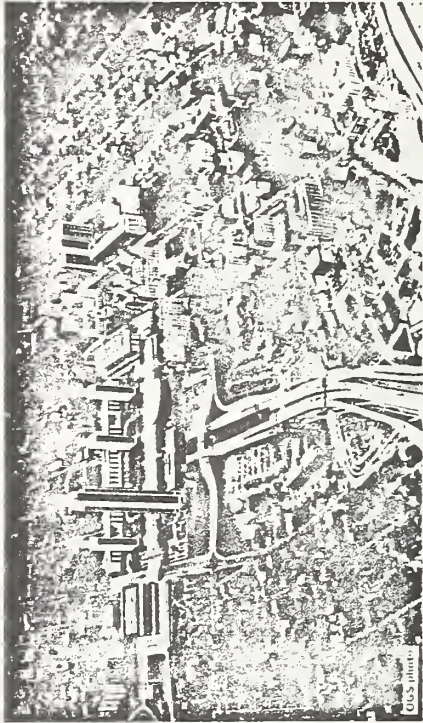
TO AND FROM EMPIRE STATE PLAZA



RIDE FREE WITHIN THIS ZONE

9 - 3 MON. - FRI.

9 - 8 SATURDAY



THE FREEWHEELER SERVICE FOR DOWNTOWN ALBANY WILL BE OF GREAT BENEFIT TO ALL THOSE WHO WORK AT, OR ARE VISITING, EMPIRE STATE PLAZA. INSIDE YOU'LL FIND THE BUS SERVICE LISTED WHICH SERVES EMPIRE STATE PLAZA DURING FREEWHEELER TIMES. FOR INFORMATION ON OTHER LINES SERVING THE PLAZA OUTSIDE THE FREEWHEELER FRAME, YOU SHOULD CHECK THE INDIVIDUAL LINE SCHEDULES. IF YOU HAVE ANY QUESTIONS YOU MAY CALL 482-8822 FOR FURTHER INFORMATION.

NOVEMBER 1978

THE FREEWHEELER PROGRAM

Freewheeler is the name of a unique new test program to provide free bus service within downtown Albany. Beginning November 20, 1976, you can ride free on any regular CDTA bus travelling within the Freewheeler zone (the zone is bounded by Broadway, Clinton Avenue, Lark Street, and Madison Avenue) between 9 A.M. and 3 P.M. on Monday through Friday and between 9 A.M. and 6 P.M. on Saturday.

Freewheeler is a test program, intended to complement the exciting revitalization of downtown Albany and to introduce more people to the advantages of public transportation.

Albany will be a model for the nation. What we learn from the Freewheeler program here may well be used by other transit operations across the country in the future. You, too, are part of the program and any assistance you can give to our Freewheeler survey teams and interviewers will be greatly appreciated.

This project is being financed by grants from the United States Department of Transportation, the Capital District Transportation Authority, and Downtown Albany Unlimited. Additionally, funds are being provided by the City of Albany through the U.S. Housing and Community Development Act of 1974.

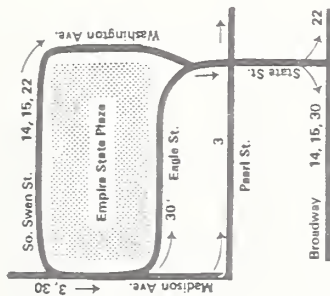
There's a wide variety of bus service which runs frequently in the Freewheeler zone and you're entitled to ride on any of these lines. Each Freewheeler bus stop is marked with a special sign showing which buses serve that stop and where they go in the zone. For approximate times you should check the regular public schedule.

Remember, free rides are available only in the Freewheeler zone and only during specified Freewheeler times. For rides outside the Freewheeler zone you pay the regular fare. At certain times regular and Freewheeler passengers may be given a paper receipt upon entering the bus. If you do get a receipt, please return the receipt to the driver and leave the bus through the front door.

We hope you enjoy Freewheeler. And we hope that, once you see how easy and convenient it is to ride the bus, you'll become one of the thousands of satisfied CDTA customers.

Should you have any questions about the Freewheeler program, feel free to call our information number at 462-8822.

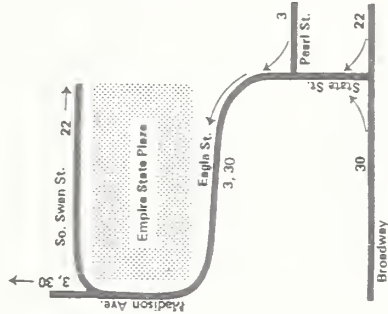
EMPIRE STATE PLAZA TO DOWNTOWN WEEKDAYS



Madison Ave. side only
Routes 3 and 30
Board on Museum side
of Madison Ave.

Route 3	Route 30	Routes 14, 15, 16	Route 22
9:10 AM	9:00 AM	Medison or Swan St. side	9:05 AM
9:25	9:25 AM	Routes 14, 15 and 22	9:25
9:40	9:55	Board on Plaza side	9:40
10:10	10:25	of Madison Ave.	9:45
11:00	10:55		10:10
11:40	11:25		10:30
12:10 PM	12:25 PM		10:45
12:40	12:55		11:10
1:10	1:25		11:15
1:40	1:55		11:27
2:10	2:25		11:50
2:25	2:40		12:10 PM
2:55	2:55		12:30
			12:45
			1:10
			1:15
			1:27
			1:45
			2:10
			2:15
			2:27
			2:45

DOWNTOWN TO EMPIRE STATE PLAZA WEEKDAYS



Route 30 From SUNNY PLAZA	Route 22 From Federal Off. Bldg.	Route 3 From State & Pearl Sts.
9:20 AM	9:05 AM	9:10 AM
9:50	9:45	9:25
10:20	10:05	9:40
10:50	10:25	10:00
11:20	10:45	10:30
11:50	11:05	11:00
12:20 PM	11:25	11:30
12:50	11:45	12:00 PM
1:20	12:05 PM	12:30
1:50	12:25	1:00
2:20	12:45	1:20
2:50	1:05	1:45
	1:25	2:10
	1:45	2:25
	2:05	2:40
	2:25	2:55
	2:45	



'best things in life are free'

By
Keith E. Barber
Public Information Officer
Capital District Transportation Authority
Albany, N.Y.

In one week, the Capital District Transportation Authority more than doubled midday ridership within downtown Albany, N.Y. This was the first tangible result of Freewheeler, a midday downtown fare-free policy. The program is set up as an UMTA demonstration project, with additional funds provided by the city of Albany and Downtown Albany Unlimited, a merchants' group.

When the federal grant was announced, work began in earnest on developing a marketing plan. There may be some truth to the attitude that free bus rides sell themselves. But, an intensive information campaign is necessary so the public will know about the free service, will know how to use it, and so the free service can have a substantial positive effect on the transit system's image.

To use the free service, potential riders had to know the boundaries of the free zone, the hours during which fares would not be charged, and the fact that any bus could be used. As we got into the information and marketing program, we found this

last fact had to be stressed repeatedly. "No, it's not a special bus. Just get on any bus and ride for free."

Executive Director Robert D. Manz appointed Senior Planner John Reilly to be completely in charge of the fare-free project giving him considerable delegated authority. Our small public information staff (Barry Bowman and myself) became deeply involved immediately. Bowman's ability to handle much of the nuts-and-bolts work on the fare-free project independently made it possible for the other work of this office to proceed without interruption. When the public relations staff is small, broad competence is required of all.

The first two tasks—selection of a name and design of a logo—were crucial. They would set the tone for the entire program. Remember, we wanted the fare-free program to have a substantial positive effect on our overall image, as well as improve downtown traffic flow and increase retail sales.

A name is important. It had to convey the concept of "free." The name should suggest that it has to do with transit; and it had to be interesting, pleasant sounding, and easy to remember. A number of skull sessions were exercises in frustration. We rejected a number of acronyms, such as FAT for Free Albany Transit, as inappropriate. Fare Free Albany had the same initials as a teen-age farm group and we didn't want to tread on that organization's toes. For several days, all three of us had this question in our minds at all times. Suddenly, Bowman shouted "Freewheeler." The two of us ran to Reilly's office, and the reaction was unanimous. "Freewheeler" not only met our stated criteria, but has the advantage of being appropriate to use in Troy or Schenectady if we should ever develop a fare-free program in those cities.

Then came development of a logo. It had to be attractive, easy-to-read and comprehend, be distinctive, yet blend in with our overall visual image—contemporary, yet refined. Predictably, a number of designs were rejected for various reasons. Then, inspiration hit again—this time in the form of a beer can. All of us had the logo problem in the back of our minds as we went about other activities. Late in the evening, watching television, I grabbed a can of beer from the refrigerator—and was struck with the "light" logo on the Utica Club Light can. It's not the brand I usually buy, and the graphics really had extra impact. The next morning, Bowman and I began working on a sketch, and called Reilly in for his input. We did not copy the Utica Club Light logo. But, stylistically, it gave us the inspiration to design Freewheeler's distinctive trademark.

We then lined up a free-lance artist to produce a final camera-ready, color-separated version plus a camera-ready stylized sketch of the downtown skyline and street network. It was the

best \$375 we spent because we got top-quality work quickly and avoided overburdening our own small office. These two graphic elements, with appropriate text or other features, formed the core of our visible marketing effort. Posters, transit advertising boards, shopping bags, window stickers, window stickers for contributing merchants, promotional and informational brochures, special bus stop signs, television commercials, and newspaper ads were developed using the new logo.

The bus stop signs were a feature that required considerable work. We decided to use the Freewheeler logo, a brief description of the program, and a route map superimposed on the boundaries of the free zone. Each sign shows the prospective rider which buses serve that particular stop, and where each of those buses goes within the free zone. Although the basic sign is the same, there are six different versions to accurately portray this route information in different downtown locations.

When it came to preparing the newspaper ads and the television and radio commercials, we tied Freewheeler in with our on-going advertising style. For two years, we've been using the "It's a whole new trip" package developed by Transit's New Image. The slogan was adapted to "Downtown Albany is a whole new trip." A version of the "Whole New Trip" jingle which had not been greatly exposed in the past was utilized for both radio and television. It all came together as a neat package, with each element complementing all the others.

Another major effort involved driver training. Drivers would have to know how to administer the program, and it would be

necessary to develop positive driver attitudes. There is always employee resistance to new procedures. But this was overcome with an automated audiovisual presentation explaining the program in considerable detail. Much of the program was devoted to developing attitudes explaining "how to do it." James McClure, superintendent of training and safety, showed the audiovisual presentation to drivers in groups of 25, then held question-and-answer sessions. Top management sat in on as many of the meetings as possible to demonstrate their interest in the drivers' concerns and to indicate the importance of Freewheeler.

Through all of this, Reilly maintained strong liaison with the city, the merchants' group, and other interested parties. A Freewheeler advisory panel was organized. Members included the mayor, representatives of the merchants, civic organizations, various planning bodies, and major downtown employers. These key people were kept informed and provided considerable input. Because they have a stake in Freewheeler—either in dollars or input—they continue to do what they can to make it work.

What has it accomplished? What has been the effect of these activities, plus the news conferences, the news releases, and the broadcast public service announcements? Of course, there's the obvious ridership count we mentioned at the outset. In addition, there's enthusiasm among the business community—an attitude that the local transit system is trying to help them. A restaurateur is advertising to the 15,000 downtown employees of New York state that they should use Freewheeler to come to his establishment for lunch. Another store mentions in its radio commercials that people who are downtown should use Freewheeler to reach that business and buy something.

The State Commerce Department plans a statewide radio broadcast plugging Freewheeler as a practical way to visit tourist attractions in downtown Albany. A newspaper reporter rides, interviews passengers, and comes up with a positive story headlined, "Freewheelers hail Albany bus scheme." It includes a quote from an out-of-town visitor who says, "I'm really impressed . . ." Television stations air similar stories, featuring filmed interviews with happy passengers. At the same time, viewers who do not ride buses can easily see that CDTA buses are clean, attractive, and that the passengers appear satisfied. Newspapers editorialize—all of them favorable. One even quotes the song "The Best Things in Life are Free." Complimentary letters and phone calls are coming in. Ride a bus during Freewheeler time, and you'll hear several spontaneous passenger remarks—all positive.

Freewheeler had to be marketed properly, because its success makes it an outstanding marketing tool for the entire transit system. It seems to be working.



FREEWHEELER MARKETING TEAM includes, from left: Robert D. Manz, Barry D. Bowman (seated), John R. Reilly, and Keith E. Barber.

AT LAST...

Michael S. Belluomo

The buses in Albany, New York, sport signs proclaiming "Ride the bus. It's a whole new trip." Beginning last November, the slogan took on new reality in Albany's downtown area — the ride became free.

Undoubtedly pleased by its selection as the recipient of a \$325,820 special grant from the federal government's Urban Mass Transportation Administration and notification of additional contributions of \$21,600 apiece from the city and Downtown Albany Unlimited (an area merchants' association), the Capital District Transportation Authority (CDTA) — Albany's municipal bus company — launched a two-year program that set up a free fare zone. The project, nicknamed "Freewheeler," allows riders to pocket their usual 40-cent fares when riding through downtown Albany's approximately one-square-mile area between 9 a.m. and

3 p.m. on weekdays and between 9 a.m. and 6 p.m. on Saturdays.

To determine the effectiveness of "Freewheeler," CDTA and UMTA officials will measure:

(1) Its effect on revitalizing Albany's downtown business district. (Merchants will be interviewed and their sales-tax receipts will be examined.)

(2) Its effect on both the speed and volume of traffic. (The state's DOT tube counters will measure for volume, and CDTA's buses' running time will be used for measuring speed.)

(3) Its effect on the public's perception of mass transit. (Interviews will be conducted with passengers, local residents and downtown area employees.)

Jack Reilly, a senior planner for CDTA, explains how the program developed, "In May of 1977, Albany was invited, along with 80 other cities across the country, by federal officials to compete for the demonstration grant. One of the factors in our selection was an ongoing similar program sponsored by our local merchants for years."

For some ten years downtown merchants chartered special buses for a free downtown shuttle up and down State Street, one of the area's major thoroughfares, from 11 a.m. to 2 p.m. weekdays. Lately, however, they began charging a 5-cent fare. Most capitaland residents viewed the merchants' shuttle service as beneficial to the locale's revitalization efforts; however, unlike the newer project, no hard data were gathered as to how effective such programs can

Michael S. Belluomo is a freelance photo-journalist living in New York City.

THE FREE RIDE

be. Responding to the official announcement of the new program, Joseph Brown, president of Downtown Albany Unlimited, told local reporters, "This can only be a boon to downtown business. It will unify and bring downtown closer together, as well as provide easy access to downtown stores for thousands of city, state and federal workers."

Brown's prediction has thus far proved correct: Since the project started, mid-day ridership within the "Freewheeler" zone has doubled.

With the implementation of "Freewheeler," CDTA estimates it is losing some 1,000 paying fares a day. And, even with supporting funds, the project will cost CDTA \$21,000 over the two year period. Nevertheless, Authority officials welcome the chance to measure how well such a program can aid their city's attempt at revitalizing its downtown area. As Joseph Parillo, CDTA's chairman, put it at a recent press conference, "Albany and CDTA will be used to answer some questions about how useful free downtown bus service is and how it can be operated." He added, "There are downtown shuttle buses in a number of cities, some of them free, others at a bargain fare. But there has been very little study of what these services really do for their cities or for the transit system."

In addition to "Freewheeler's" major objectives, UMTA's plans call for full documentation of the project's activities so as to provide information to other cities that may want to establish a similar type of project; and, equally important, to aid federal transportation officials in deciding if such free fare programs would be worthwhile on a broader scale.

Both federal and local supporters of the free-fare zone project agree that the city of Albany, with its metropolitan area population of some 740,000 residents, is an ideal test site. They say it would be hard to measure results in larger metropolitan areas. They point out that "Freewheeler" required no additional manpower or equipment and has utilized pre-"Freewheeler" scheduling procedures. In addition, an aggressive campaign over the past two years by CDTA's management, which included improved scheduling and newer vehi-

cles, achieved an increase of nearly a million passenger rides per year. Thus, proponents say, any additional improvement will be more easily attributable to "Freewheeler."

Keith Barber, CDTA's public information officer, argues that the city is well suited for the project because if it works in Albany it should work in most American cities. "We have a very good network of highways leading into the downtown area. Traffic jams are rare. If 'Freewheeler' helps lure some of this area's automobile riders on to the mass transit system, better results can be expected in those cities where traffic congestion is more prevalent."

Getting commuters to choose mass transit over their less energy-efficient passenger cars has become a major goal for nearly all of the nation's transit planners. Yet, despite traffic jams, higher fuel prices and stiff fines for parking violations, too many commuters refuse to leave their cars at home. Apparently, harsh tactics have not proved all that persuasive. Transit planners are ready to add a

bit of sweetener.

As one state transportation official sees it: "The biggest problem for mass transit, in most cities, is perception. Many commuters perceive such systems as being primarily for the less affluent residents of a city. Our job is to change that perception. Projects like 'Freewheeler' can help in attracting commuters who would otherwise be using their automobiles; a mode of transportation that for short trips is becoming increasingly bothersome and expensive. Perhaps a free ride can get people to at least try mass transit. Naturally, we feel once they do, they'll stay with it."

APPENDIX C

REPORT OF NEW TECHNOLOGY

A thorough review of the work performed under this contract has revealed no significant innovations, discoveries, or inventions at this time. In addition, all methodologies employed are available in the open literature. However, the findings in this document do represent new information and should prove useful throughout the United States in designing and evaluating future transportation demonstrations in general, and CBD fare-free transit service in particular.

APPENDIX D
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HE18.5 .A37 no. D01-1
UMIA-81-78
Atherton, Jerry J.

CHD fare-free transit
service in Albany, N

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