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TRANSIT COMPARISON STUDY

SOUTHERN CALIFORNIA RAPID TRANSIT DISTRICT

PREPARED BY
SCR TD PLANNING DEPARTMENT
DECEMBER 1965

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TRANSIT COMPARISON STUDY EXECUTIVE SUMMARY

INTRODUCTION

The Transit Comparison Study was designed to develop recommendations for policies and actions which will make the SCRTD competitive with municipal and private operators in the provision of transit services.

In formulating the study's recommendations, it was important to understand the prime factors which would constrain or contribute to a successful District competition with other operators for the provision of alternative transit services. Consequently, the study has the following two emphases:

- (1) Identification and analysis of the SCRTD cost factors and their trends.
- (2) Identification and analysis of cost factors of selected municipal, private, and national operators and a comparison of factors with those of the SCRTD.

To a lesser extent, the study also reviews SCRTD historical factors and trends which contributed to the current level of the District's operating costs. Finally, the study reviews cost reduction innovations of other large properties in the U.S. and analyzes the implications of the findings to the SCRTD.

MAJOR FINDINGS

The major findings within each area reviewed and analyzed by the Transit Comparison Study are presented below.

HISTORICAL PERSPECTIVES

- o The SCRTD was formed to consolidate and improve a multiple, fragmented bus system under local control and to plan, design, construct and operate a rapid transit system.
- o Historically, there is no one factor responsible for the SCRTD's current level of operating costs.
- o The SCRTD inherited a debt of \$40 million in bonds from the Los Angeles Metropolitan Transit Authority (LAMTA) that were issued to purchase two major private carriers in 1958. The last payment on the bonds was made by the District in 1983. In addition, LAMTA and the SCRTD spent another \$1 million to acquire 15 private transit carriers to be incorporated into the regional system.

These expenses did not have major impacts on the District's current level of cost. However, if this consolidation of transit services would have taken place today, the cost would have escalated to about \$150 million.

- o From the establishment of SCRTD in 1964, the base hourly wage of its bus operators was approximately the same as that of U.S. transportation and utility workers.

SCRTD COST FACTORS AND TRENDS

- o Between FY 1975 and FY 1984, District's labor cost per employee increased by 140%. This increase was about 50% above the 94% increase in the CPI during the studied period. From FY 1975 to FY 1984, District personnel increased by about 50%. This increase included operators (25%), mechanics (106%) and administrative personnel (76%).
- o From FY 1975 to FY 1984, total fringe benefits cost per employee increased by about 150%, primarily due to substantial increases in medical expenses and workers' compensation cost and other miscellaneous fringe benefits during the same period. These increases were due primarily to changes in state and federal law.
- o The cost of materials and supplies per mile has increased by about 270% between 1975 and 1984. This cost increase is specifically attributed to an increase of about 280% in fuel cost and an increase of about 950% for bus parts.
- o Personal liability and property damage (PL&PD) costs measured on a cost per mile basis has increased almost threefold from FY 1975 to FY 1984. The factors which escalated these costs were the sharp increase in medical, legal and vehicle repair costs.
- o The cost of operations as a portion of the District's total budget has decreased between FY 1975 and FY 1984. While the vehicle operations costs consumed 66% of the District's budget at the beginning of the study period, it consumed only 52% of the budget nine years later. This shift occurred because of improved efficiency and productivity of operations and because of higher expenses in the administrative and maintenance functions, as well as higher insurance costs.
- o The maintenance cost trend was the reverse of the operations trend. While in FY 1975 the maintenance costs were 18% of the total budget, by FY 1984 the maintenance costs had escalated to 27% of the budget. Total maintenance cost increased by about 500% during this period. The new Advance Designed Buses, with sophisticated equipment, as well as the expansion of maintenance facilities and personnel, contributed to the increase in maintenance cost.

- o Total administration cost increased slightly from 11% of the total budget in FY 1975 to 12% in FY 1984. This increase was a result of increased personnel due to more complex dealings with federal, state, and local agencies, as well as the provision of support services for service expansion.

Included in the increase in administrative personnel is the addition of a transit police department to ensure the safety of the District's passengers. The transit police force is equal in size to that of most municipalities within Los Angeles County.

- o The SCRTD cost per hour and mile have been increasing at a decreasing rate. For both indicators, average annual cost increases from FY 1975 to FY 1982 were higher than the same costs increases for the two following years.
- o The Fare Reduction Program resulted in an average annual increase in passengers of 15% in FY 1983 and FY 1984. As a result, cost per passengers in FY 1984 was about 10% lower than in FY 1982. This cost was \$1.03 and \$.92, respectively.

SCRTD COST COMPARISON WITH MUNICIPAL OPERATORS

- o Total costs per passenger boarding for SCRTD (\$0.92) are below the average cost for the municipal carriers (\$0.97), but total costs per total vehicle mile and per total vehicle hour for the SCRTD (\$4.01 and \$56.08, respectively) are significantly higher than the average costs per total vehicle mile and per total vehicle hour for the municipal carriers (\$3.10 and \$38.56, respectively).
- o For operation costs, the primary reasons for SCRTD's higher costs are attributable to a higher peak-to-base ratio, higher non-revenue mile levels, and more weekend service than the five municipal operators provide. Also, the District's scheduling and training functions are much more complex and time-consuming than the other carriers due to the number of lines operated by SCRTD. The District also maintains extensive data collection and analysis procedures which are not maintained by the other carriers. All of these factors cause significantly higher labor and fringe benefit costs than the five municipal operators.
- o For maintenance costs, the primary reasons for higher SCRTD costs appear to be due to the mix of vehicle types and models in the fleet, including a high proportion of Advanced Design Buses, and a significant expansion in the District's maintenance facilities.

- o For administration costs, the primary reasons for the District's higher cost levels are the scale of operation and support services, which are not provided by other operators in the region. These services include a transit police force, a public information system and a telecommunication/information system.
- o The SCRTD subsidy (i.e., revenues received from non-SCRTD sources) per transit passenger (\$0.62) is slightly lower than the average for the other five carriers (\$0.69).

SCRTD COST COMPARISON WITH PRIVATE OPERATORS

- o No clear source of data exists to substantiate that private operators can provide service at the generally quoted range of \$25 to \$35 per vehicle hour. Also, no audits exist that such costs have been offered and maintained for a significant period.
- o Attempts to collect data from private operators in the region failed due to their reluctance to provide specific cost information. However, it is likely that if the private operators will provide the range of support services and service levels provided by the SCRTD, their costs, in the long-term, will rise to a level similar to that experienced by the District.

EXPERIENCE OF OTHER LARGE OPERATORS

- o Subcontracting services by several large operators are only for suburban express service. In all cases the subcontracted operator is subsidized by the contracting public operator through a fixed annual, monthly or per hour fee.
- o In Houston, the cost of the contracting private operator escalated to the point where the contracting public operator could provide the service at the same cost. Consequently, subcontracting was greatly reduced.
- o All large operators analyzed have provisions for part-time drivers. The SCRTD part-time agreements seem to vary only slightly from the other operators' agreements.
- o Community Based Drivers (CBD), although discussed extensively, have not been used extensively by other operators. In fact, San Diego Transit only hires two or three CBDs during the summer.
- o Several operators have implemented cost-reduction techniques such as vacation buy-back, second medical opinion, restriction on wage raises, and non-pay personal business leave. SCRTD implementation of such changes in employees benefits will require union concurrence.

- o The SCRTD's total cost per vehicle mile is about 25% lower than the average comparable cost for the all-bus operators studied. This cost differential is attributable to a higher than average revenue service speed and the lowest peak-to-base ratio in the comparison.
- o Feasibility studies of articulated buses by the District and by other operators show that only very heavily patronized lines justify the use of larger buses. To date, articulated buses have not provided the hoped-for operating cost savings for the District and other U.S. transit properties. Higher maintenance and public liability costs than standard sized buses may make articulated buses feasible only when demand warrants their additional capacity.

TRANSIT SERVICE ALTERNATIVE

All service alternatives evaluated, except for user-side subsidies, involve service subcontracting in different forms. Therefore, any realistic, successful implementation of alternative services will require union concurrence to remove existing restrictions from the current labor contracts.

The Board could pursue the following three overall strategies to encourage District participation in the provision of alternative services:

- o Develop policies which will maintain an integrated regional transit system while providing the District with the opportunity to compete with private and public operators for the provision of alternative services. This includes requesting the LACTC to ensure that cities coordinate new services with established services, recommending lapsing Local Return Funds to be reallocated for regional projects and requesting the LACTC to develop and enforce minimum efficiency criteria for new services.
- o Communicate the District's capability and desire for the provision of service alternatives to the regional funding agencies and to the local communities receiving Local Return Funds.
- o A combination of the two.

Below are additional policy and action recommendations as they relate to specific service alternatives evaluated by District staff.

- o Service contracting includes: (1) direct contracting, (2) participation in the bidding process, (3) provision of transit brokerage service, and (4) subcontracting of low-productivity lines. Each of these approaches necessitates District initiative in identifying and evaluating potential transit needs of local communities.

- o Develop a policy which will encourage District provision of transit brokerage services. Under this alternative, the District will use its expertise of running a transit agency to administer and manage a transit service operated by a contract carrier. This type of subcontracting will maintain service operated by others, under the control of the District, and will lead to good coordination with the regional transit system. Additionally, this option will eliminate the need for the District to invest in new equipment and facilities. The District will also receive revenues from providing this type of service.
- o Support a policy which will encourage paratransit systems to supplement fixed-route systems rather than substitute for them.
- o Develop and actively seek policies which will minimize fragmentation of the regional system as a result of transportation zones. These policies should include the following objectives:
 - Focus transportation zones on local circulation systems.
 - Establish transportation zones at the fringes of the District's service area.
 - Support criteria which will minimize fragmentation and demonstrate cost savings when establishing a transportation zone.
 - Transfer cost savings resulting from transportation zones to the basic system operated by the regional carrier.
- o Insist in negotiation with funding agencies and cities on their participation in the existing subsidy programs for elderly, handicapped and students.

CONCLUSION

There is a growing sentiment from various sources that the District must make serious efforts towards cost containment. Many of the suggested approaches, such as privatization and/or subcontracting, will continue to be a source of criticism if no serious attempt is made to experiment with these approaches.

This study has shown that it is very difficult to obtain actual verified costs of the municipal carriers. It appears that some of the five municipal operators' costs are absorbed within regular city budgets. Therefore, a true and fair comparison with the SCRTD operation on a cost basis is very difficult to obtain without a cooperative study with all involved agencies. Finally, there is also a reluctance on the part of private operators to provide cost information.

Recognizing that SCRTD's various sources of revenue have limitations and will probably decrease in future years, a careful evaluation must be conducted in order to determine the validity of cost savings and service improvement claims in order for the Board to provide policy direction on these matters.

Conclusions reached in studies conducted by local funding agencies suggest that the private sector can provide the same service as the public operator at a substantially lower cost. These conclusions are based only on "quotes" by private operators. No data exists to substantiate that these "quotes" have been offered and maintained for significant periods. It is felt that these "quotes" could change significantly if there were actual bids for service to be delivered.

Given the real cost of providing services by the municipal and private operators, the District could be successful in competing with them. However, to accomplish this, the Board needs to actively pursue the recommendations presented in this study.

1.0 INTRODUCTION

The Transit Comparison Study provides a perspective of the SCRTD transit operations and costs in relation to other private and public transit operations, as well as to its historical developments. This section specifies the objectives of the study and describes its framework and methodology.

1.1 PURPOSE OF STUDY

Substantial changes have been taking place with respect to the cost factors and transit operations of the SCRTD since its formation. With the change in the allocation of Proposition A funds, beginning July 1, 1985, the District will receive less in FY 1986 than in FY 1985. The District is in the process of adjusting its service levels and fares in order to provide the best transit service with a reduced budget. In addition to the unavoidable changes in service and fares, the District also is evaluating other ways to reduce costs and increase revenues.

The principal objective of this study is to analyze, evaluate and recommend to the Board the major steps necessary to reduce internal and external constraints which limit the SCRTD participation in the competitive transit provision market. A comparison of District cost factors with the costs incurred by the private and the municipal operators is also included.

One key issue that continues to surface is the concept that the private sector can provide certain types of service for less cost than the District. Although it is argued that the private sector can succeed where public transit districts have "failed," it is important to note that the private sector's failure to operate transit districts at a profit resulted in local municipalities taking over troubled, deficit-ridden, private bus companies and developing today's transit structure.

The role of private sector "competition" in helping contain costs is a concept that has been talked about in recent years. However, there is very little hard data to back up statements of massive savings because of competitive bidding. Where data are available, such as in Houston, Texas, where significant experience in subcontracting express service has been obtained, current competitive bids in some cases are at least as high at the cost of service provided by the local public transit operator. The initial bids of private operators may be lower in order to gain a foothold in the transit market; however, once the private is established, the long-term results may be different than expected. Rising costs resulting from employees organizing for higher wages, system fragmentation, and loss of control over quality of service are factors to be considered.

This study provides an analysis of District cost factors and examines alternatives for delivering transit service. The intent of the study is to assist the Board of Directors in developing both short- and long-term solutions in the transit arena.

1.2 STUDY DESCRIPTION

The Transit Comparison Study is divided into four major sections. The description below highlights the major elements within each section.

In order to understand the current available service option to the District, the first section (Historical Perspective) describes transit conditions in the Los Angeles region prior to, and during, the formation of the SCRTD. The transition from a region of many transit providers to one regional transit operator reduced duplication of efforts, fragmentation, and confusion to the passenger. However, this transition contributed to the present high cost of operations. These issues and questions are addressed in the first section.

The second section contains the essence of the study. It analyzes the major cost factors of the District budget over time and identifies efficiency trends and changes in total costs and cost per unit of output. The District's current costs are then compared to the cost factors of the region's municipal operators and to the cost of the private operators. Special attention is given to a cost comparison of shuttle operations by the District and by private carriers. Finally, this section analyzes cost issues of other large transit properties in the country. In particular, cost reduction innovations are explored and their application to our region is evaluated.

Alternative concepts for delivering transit services are explored in the third section. These alternatives include actual operation of new services by the District or the District's administration and management of a service subcontracted to another carrier. The cost and revenue implications of these alternatives to the District are also evaluated in this section.

1.3 METHODOLOGY

Chapter 3, Analysis of Cost Factors, required a high level of effort for data collection, analysis and interpretation. To retrieve the necessary data, a high degree of cooperation was needed internally from the other departments and externally from the regional transit agencies, the LACTC and SCAG, from the municipal and private operators and from the cities receiving Local Return Funds. It should be emphasized that cooperation by the private sector was very difficult and that even a minimum amount of data was hard to obtain.

District data were extracted from the Short Range Transit Plan (S RTP), the District's budget publication and special performance indices. Data for the municipal operators were obtained from UMTA's Section 15 report and from S RTP's for each of the carriers. The Section 15 Reports contain a variety of cost figures classified by function and

general purpose. These reports are required to be submitted annually to the U.S. Department of Transportation by each of the carriers that receive federal funds.

Cost factors and operating data for other large transit properties were obtained by a telephone survey, SRTPs and labor contract documents. Additional information was extracted from the UMTA Section 15 report.

2.0 TRANSIT OPERATIONS AND COSTS IN HISTORICAL PERSPECTIVE

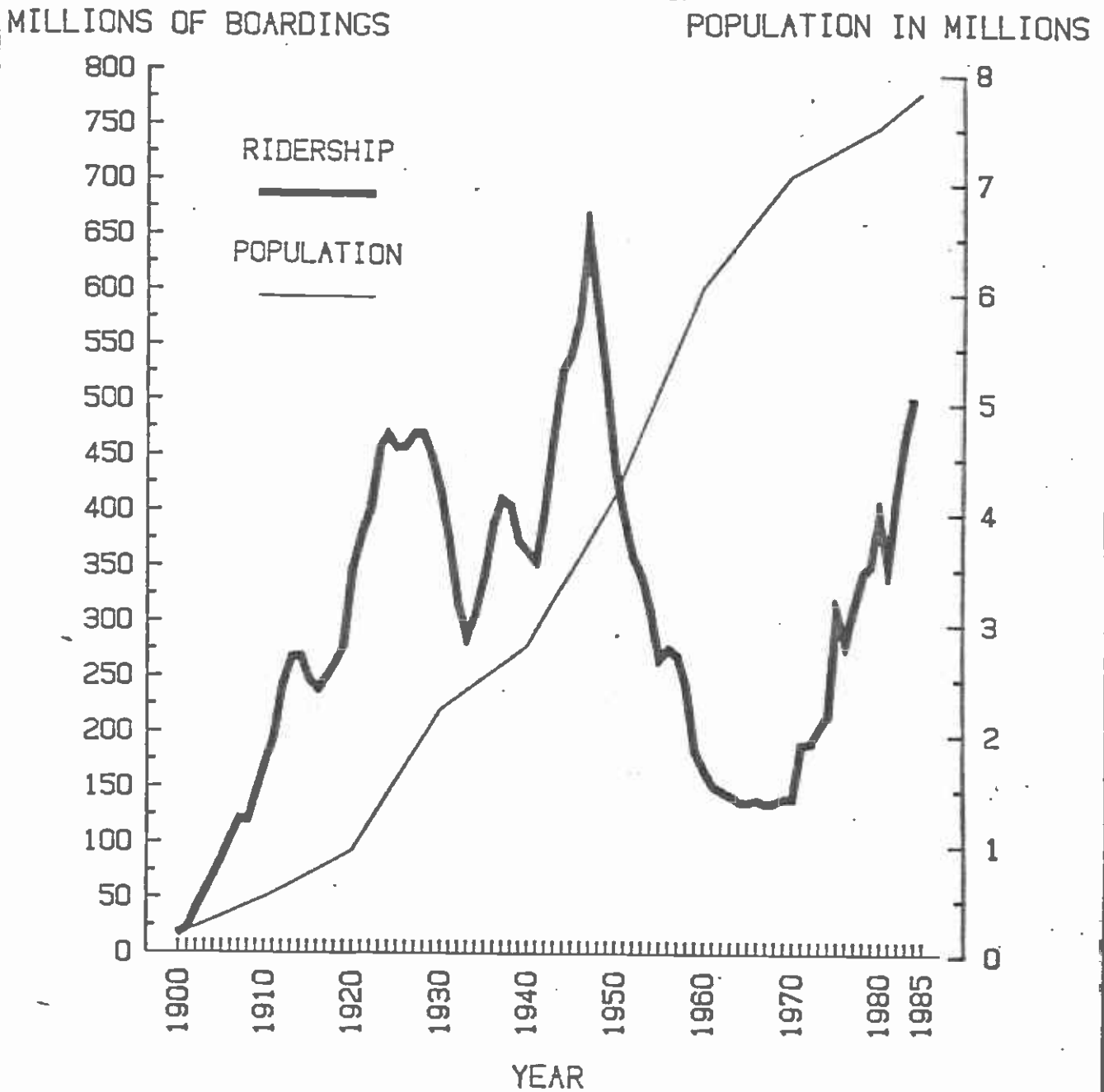
Public transit has been serving the people of Los Angeles County for more than 110 years. At least 220 companies have operated some form of transit -- horsecars, cable cars, incline railways, steam trains, electric streetcars, interurban cars, trolley buses and gas or diesel-powered buses during this era.

Throughout its long history, the public transit business has always attracted entrepreneurs. By offering new routes and faster, more frequent or cheaper service than the major transit operators, the small operations run by these entrepreneurs were often able to stay in business for several years. Most, however, were unable to remain profitable due to declining ridership, deteriorating equipment and under-capitalization. When they had no more money to lose, their operations were sold or merged with other companies.

Historical information examined points to several major trends in transit development:

- o Total boardings on major transit systems peaked during two periods prior to the formation of the SCRTD, 1923 to 1928 and 1943 to 1949. (See Figure II-1.)
- o Per capita boardings declined from over 300 per year in the 1920's to 30 or less in 1964 when the SCRTD was established.
- o Local base fares were generally static during the years before the 1970's. During the 70-year period before the SCRTD was established, base fares were raised only five times. (See Figure II-2.)
- o Average annual passenger revenue on major transit systems remained stable during the three decades prior to the formation of the SCRTD.
- o Average revenue per boarding on major operators was basically constant until World War II. From 1950 to 1964, revenue per boarding tripled. (See Figure II-3.)
- o From the establishment of SCRTD, in 1964, the base hourly wage of its transit vehicle operators was approximately the same as that of U.S. transportation and utility workers.
- o During the 20 years prior to SCRTD and Los Angeles Metropolitan Transit Authority (LAMTA), public transit reported a modest net profit. For example, Pacific Electric under Southern Pacific ownership from 1911 to 1953 turned a net profit only eight times. Net losses over this period were actually \$39 million.

LOS ANGELES COUNTY POPULATION AND TOTAL ANNUAL BOARDINGS ON SCRTD AND MAJOR PREDECESSORS



Commencing with July 1, 1972 "Year" designation was changed from a calendar to a fiscal year.

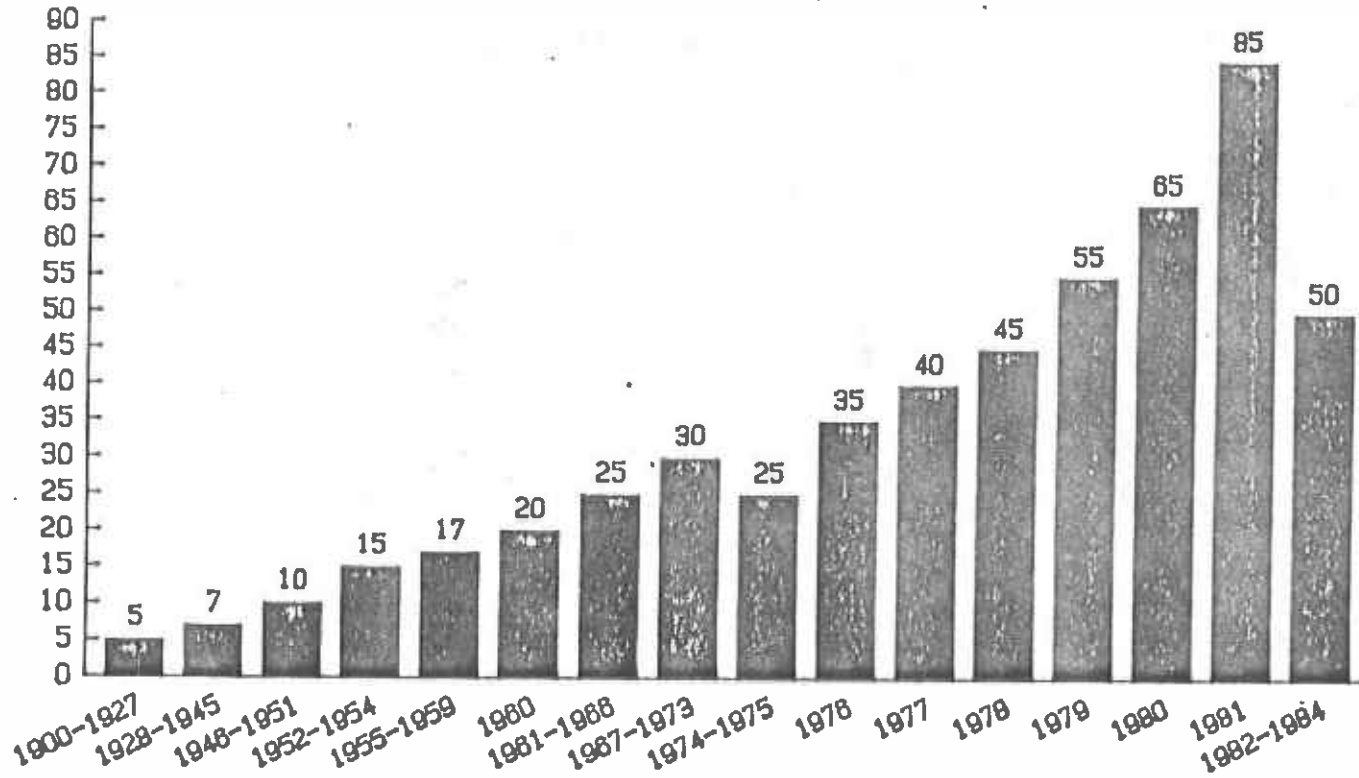


LOS ANGELES COUNTY POPULATION AND TOTAL ANNUAL BOARDINGS

FIGURE II-1

BASE FARE ON SCRTO AND MAJOR PREDECESSORS

BASE FARE (in cents)



Commencing with July 1, 1972 "Year" designation was changed from a calendar to a fiscal year.

YEAR

11-3

San J. TORRES



BASE FARES

FIGURE II-2

- o From the 1890s onward, there has been a trend towards consolidation of the public transit system. Major transit carriers have accounted for 90% or more of all boardings, despite the existence of 30 or more small competitors. In 1949, there were some 35 transit operators in the County. By the time the SCRTD was established (1964), there were only 21.
- o The trend towards transit consolidation has continued since 1958 as declining ridership, rising costs and deteriorating equipment forced small, private companies into bankruptcy. The LAMTA acquired four failed transit companies. The SCRTD acquired eight such companies.
- o There has been a trend towards control of public transit at the regional rather than the state level. The LAMTA Act of 1957 removed Public Utilities Commission jurisdiction except in matters of safety. The SCRTD Act of 1964 replaced LAMTA's Board of Directors, whose seven members were appointed by the Governor of California, with an eleven-member Board appointed by governmental agencies in Southern California.

2.1 WAGE RATES OF SCRTD BUS OPERATORS VERSUS U.S. TRANSPORTATION AND UTILITY WORKERS

Ever since the District was established, the operators of its transit vehicles received an hourly wage approximately equal to the average wage received by production workers in the U.S. transportation and utility industry. This industry largely consists of railroads, airlines, trucking, and warehousing firms as well as urban and interurban bus properties, taxi cab and utility companies, both public and private. Local and suburban transportation properties, such as the District, account for less than 2% of employment in this industry. Figure II-4 shows the similarity in these wage rates since 1964. The higher level for operators' wages is to be expected in the highly urbanized environment from which operators are hired. Operator wages, therefore, are at a level that is reasonable if the District is to compete for employees in the transportation labor market.

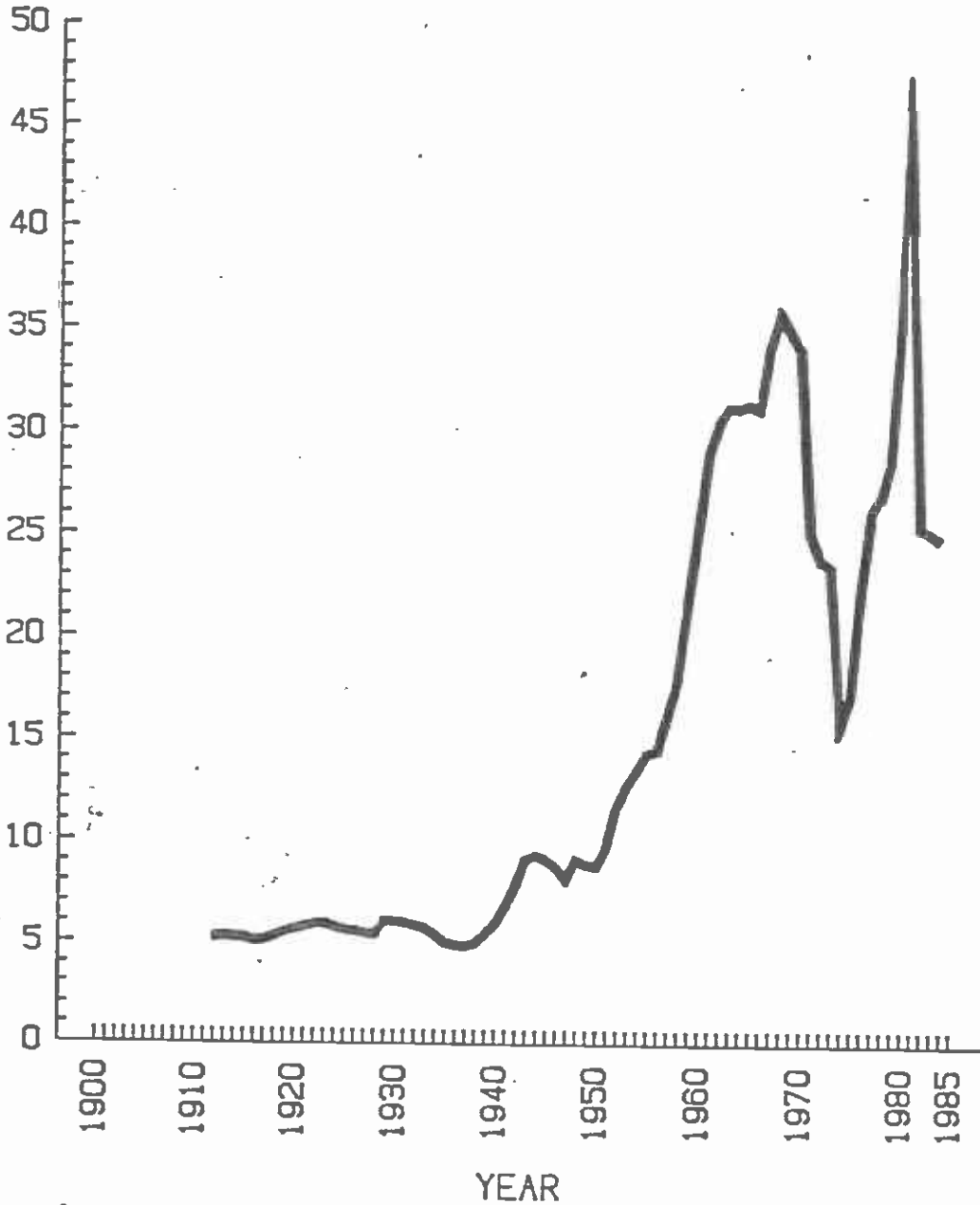
2.2 TREND TOWARDS TRANSIT CONSOLIDATION

During the first 15 years of street railway service in Los Angeles, the City Council issued 43 streetcar franchises. Other cities, such as Long Beach, Pasadena and Pomona, also issued franchises. In those early days, then, there was no unified system of transit in the county.

By 1893, however, the Los Angeles Consolidated Electric Railway (LACE) owned 90% of the street railways in Los Angeles and controlled the lines in Pasadena as well. The Los Angeles Railway (LA RY) succeeded LACE under the ownership of Henry Huntington, who, in addition, started the Pacific Electric to operate interurban lines. By 1907, Huntington, in partnership with the Southern Pacific Railroad, controlled two-thirds of the transit companies in the county.

AVERAGE REVENUE PER BOARDING ON SCRTD AND MAJOR PREDECESSORS

AVERAGE REVENUE PER BOARDING (in cents)



Commencing with July 1, 1972 "Year" designation was changed from a calendar to a fiscal year.

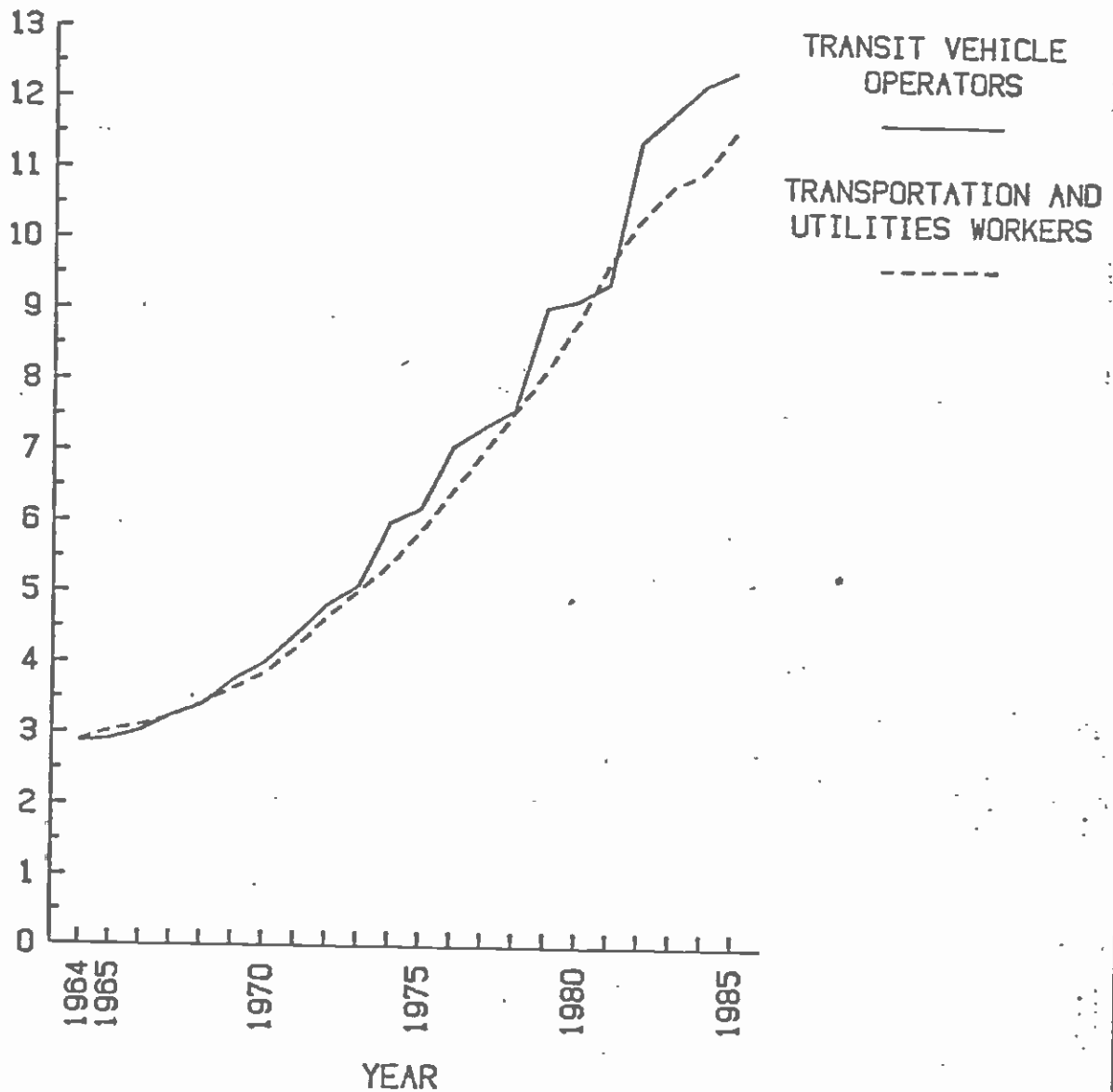


AVERAGE REVENUE
PER BOARDING

FIGURE II-3

HOURLY WAGES OF SCRTD BUS OPERATORS AND U. S. TRANSPORTATION AND UTILITIES WORKERS

HOURLY WAGES (in dollars)



Source of data: U. S. Department of Labor
Bureau of Labor Statistics



COMPARISON OF
HOURLY WAGES

FIGURE II-4

When the Huntington and Southern Pacific interests were separated in 1911, resulting in the Huntington-owned LA RY and the Southern Pacific-owned PE, there were only a handful of other small transit operators. However, competition in the form of motor stage companies began to emerge before 1920, and by 1927, there were at least 32 companies operating transit in the county.

In the late 1940's, there were 35 transit operators, but eight were controlled by the same interlocking interests. A 54-day strike against Metropolitan Coach Lines and Asbury Rapid Transit in 1957 lent impetus to the growing movement for legislation action to allow unified ownership and operation of Los Angeles County's regional transportation system.

The Los Angeles Metropolitan Transit Authority (LAMTA) Act of 1957 allowed LAMTA to own, operate and form a transit system. In 1958, LAMTA issued \$40 million in bonds primarily to finance the purchase of Metropolitan Coach Lines, Asbury Rapid Transit and Los Angeles Transit Lines. LAMTA was, however, the only major public transit agency in the nation to operate out of farebox revenue alone. By 1963, LAMTA had experienced a long period of increasing wages, escalating costs and declining patronage. LAMTA's bus system was not considered an adequate answer to the transportation needs of Los Angeles because the buses were victims of the same traffic congestion faced by automobiles. LAMTA, the business community, the Los Angeles City Council, the Los Angeles County Board of Supervisors and the State Legislature all recognized the critical need for a rapid transit system and the need for local control of transportation matters. Financing a rapid transit system within the narrow confines of the LAMTA Act was not possible, and appointments to LAMTA's Board of Directors was the Governor's responsibility.

On August 22, 1964, the State Legislature created the Southern California Rapid Transit District to replace LAMTA. The new SCRTD was given twin mandates: to operate and improve the existing bus system and to plan, design, construct and operate a modern rapid transit system. Members of the Board of Directors were to be appointed from various jurisdictions at the local level.

2.3 REASONS FOR SCRTD FORMATION

The prime reason for formation of the SCRTD was to consolidate, unify, and operate the existing bus systems under local control. Another mandate was to plan, design, construct and operate a modern rapid transit system.

It was very evident that prior to the formation of the District in 1964, there was an imperative need for a consolidated transportation system in the Los Angeles basin. For example, in 1963 (two years prior to the Watts riots), there were 13 small, uncoordinated private operators in L.A. County. This is in addition to the Los Angeles Metropolitan Transit Authority (SCRTD's predecessor agency) and various municipal operators (a total of 26 operators in all). The presence of so many separate transit operators made extended trips difficult and

costly, frequently requiring payment of several base fares for a single trip. Even if the cost of riding these separate systems was affordable, there was no single unified source of route, schedule and cost data to make riding easy.

It was, therefore, recognized by the Legislature that adequate and economical public bus transportation was essential to the health and vitality of a community and should not be ignored. At the time of creation of the SCRTD, Los Angeles was the only major metropolitan area in the United States that did not subsidize the operating losses of public transportation. If the Los Angeles area was to have good public transportation, it could only be provided through a public subsidy in order to reduce fares, consolidate the uncoordinated and fragmented bus system and provide system-wide transfers. Public necessity, convenience, and safety demand such an approach.

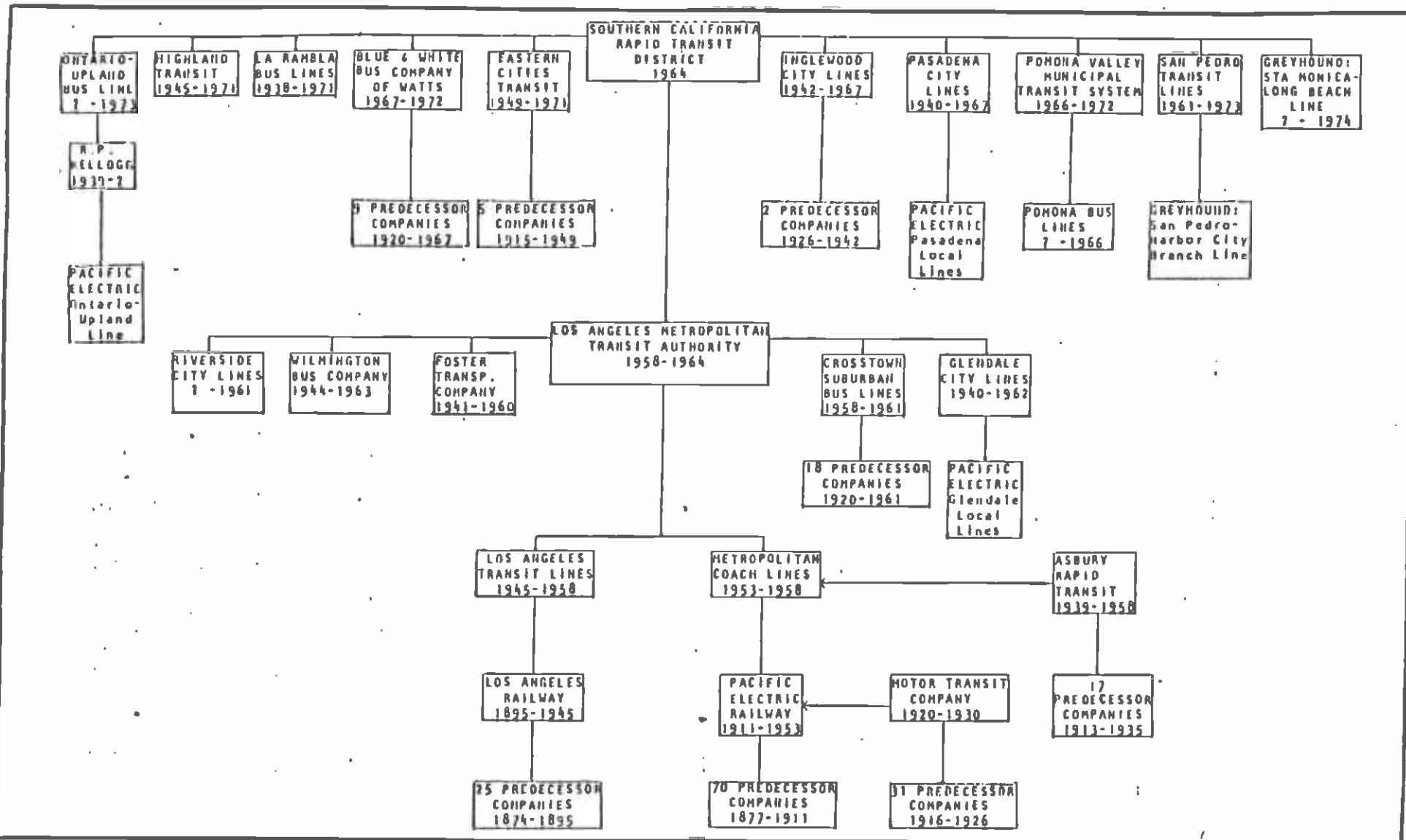
It was the intent of the Legislature to successfully develop a single unified transit provider. In retrospect, the mission of the SCRTD is one of the few aspects of the McCone Commission recommendations actually carried out in the 20 years since the Watts Riots. The existence of a single unified public transit system operator is a major and important benefit to a community for a myriad of reasons. Although the exact value of a unified transit system probably cannot be quantified, it is, nonetheless, substantial. The fundamental benefit to the transportation disadvantaged embodied in a single transit system which operates according to a single set of operating rules, fares, and standards is incalculable.

2.4 ACQUISITION OF OTHER TRANSIT OPERATIONS

Throughout the history of public transit in Los Angeles County, failing transit companies have been bought by healthier companies as a means to expand service. The LAMTA Act of 1957 allowed LAMTA to "obtain for cash or by exchange of its bonds, any publicly or privately owned bus line located within or outside the metropolitan area." The Authority is required to assume and observe all existing labor contracts, and no employee of any such utility shall suffer any worsening of wages, seniority, pension, vacation or other benefits by reason of the acquisition.

LAMTA expanded its service by acquisition of several failing or bankrupt operations, or by substituting service after such operators went out of business. Beginning in 1961, LAMTA acquired or replaced five transit companies. The SCRTD continued to acquire or replace failing transit companies. Between 1967 and 1974, the SCRTD acquired or replaced 10 companies.

Figure II-5 summarizes the consolidation of over 200 transit companies into what has become today's SCRTD. Table II-1 shows the acquisitions of other transit companies or service assumptions since 1961, along with their cost. Since 1961, LAMTA and SCRTD have acquired or replaced a total of 15 transit operators, at a cost of just over \$1 million. The acquisitions included 205 buses.



SCRTD'S PREDECESSORS

FIGURE II-5

LAMTA & SCRTD
ACQUISITIONS AND SERVICE ASSUMPTIONS
1961-1974

<u>Year</u>	<u>Company Acquired or Replaced</u>	<u>Cost</u>	<u>Buses</u>
1961	Foster Transportation	0	0
1961	Crosstown Suburban Bus Lines	\$275,000	82
1961	Riverside City Lines	0	0
1962	Glendale City Lines	0	0
1963	Wilmington Bus Company	5,000	0
1967	Pasadena City Lines	208,000	41
1967	Inglewood City Lines	72,800	19
1971	Eastern Cities Transit	210,000	6
1971	Highland Transit	0	0
1971	La Rambla Bus Lines	13,000	6
1972	Blue and White Bus Company of Watts	200,000	26
1972	Pomona Valley Municipal Transit System	0	19
1973	San Pedro Transit Lines	2,100	2
1973	Ontario-Upland Bus Lines	0	0
1974	Greyhound Lines: Santa Monica-Long Beach	53,500	4
	Totals	\$1,039,400	205



ACQUISITION OF
OTHER PROPERTIES

TABLE II-1

3.0 ANALYSIS OF COST FACTORS

The purpose of this section is to analyze and develop a comparison of the cost elements currently driving the District operational expense levels.

The cost comparison is analyzed on a functional basis by Vehicle Operations, Vehicle Maintenance, Non-Vehicle Maintenance and General Administration functions as defined in UMTA's Section 15 reports. However, vehicle maintenance and non-vehicle maintenance are combined when references are made to the maintenance function. Consequently, the maintenance function includes a higher level of expenditures than just for the District's Maintenance Department.

Cost differentials between the SCRTD and the municipal operators in the County are the focus of this comparison. However, service quality and operators' goals are also compared. Other topics addressed are transit service effectiveness and equity, District's special services, and a cost comparison for special services.

This chapter also includes a discussion of cost-reduction techniques by major transit operators in the country and a cost comparison analysis of five major all-bus operators throughout the nation. A discussion of the potential of large-capacity buses to reduce District operating costs concludes this chapter.

3.1 SCRTD COST FACTORS

The major SCRTD expenses are for labor, fringe benefits, materials and supplies, and personal liability and property damage (PL&PD) claims. Each of these expenses is analyzed in relation to the principal staff functions -- operations, maintenance, and administration.

Three years (FY 1975, FY 1982, and FY 1984) were selected for cost factor and revenue analysis in order to establish the District's cost and revenue trends. These years were selected because they reflect major fare and service changes that took place during these time periods.

Several sources were used to extract the necessary data for examining the District's financial trends. These sources include: the Revenue and Expense Statements, SCRTD Annual Reports, Short Range Transit Plans, and UMTA's Section 15 Reports.

In general, District operating costs and revenues have increased in absolute terms by about 300% from FY 1975 to FY 1984 (see Table III-1). In real terms, excluding inflation, the increase was about 200%. The major elements which contributed to this cost escalation were increases in total service provided, increases in personnel, and higher costs for materials and supplies. Figure III-1 also depicts the District's distribution of costs by function for FY 1975, FY 1982 and FY 1984.

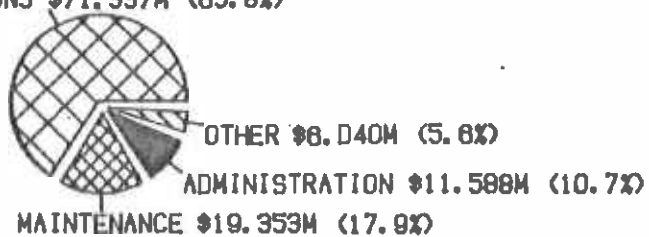
	RTD FY 75 Audited	RTD FY 82 Audited	RTD FY 84 Audited
COST OF OPERATIONS			
VEHICLE OPERATIONS (\$000'S)			
LABOR	\$44,525	\$111,185	\$125,858
MATERIALS/SUPPLIES	\$6,527	\$33,275	\$32,409
FRINGE BENEFITS	\$19,888	\$48,560	\$59,994
OTHER MISC.	\$397	\$2,001	\$1,910
TOTAL VEHICLE OPERATIONS	\$71,337	\$195,022	\$221,171
MAINTENANCE (\$000'S)			
VEHICLE MAINTENANCE (\$000'S)			
LABOR	\$8,879	\$43,457	\$55,852
MATERIALS/SUPPLIES	\$2,916	\$22,301	\$24,954
FRINGE BENEFITS	\$3,974	\$18,980	\$26,412
OTHER MISC.	\$257	\$2,258	\$2,376
SUBTOTAL VEHICLE MAINTENANCE	\$16,026	\$86,996	\$109,594
NONVEHICLE MAINT. (\$000'S)			
LABOR	\$1,714	\$2,731	\$2,007
MATERIALS/SUPPLIES	\$622	\$2,044	\$3,218
FRINGE BENEFITS	\$757	\$1,198	\$949
OTHER MISC.	\$254	\$631	\$229
SUBTOTAL NONVEHICLE MAINTENANCE	\$3,347	\$6,599	\$6,403
TOTAL MAINTENANCE	\$19,373	\$93,595	\$115,997
ADMINISTRATION (\$000'S)			
LABOR	\$5,085	\$18,536	\$25,019
MATERIALS/SUPPLIES	\$1,007	\$2,585	\$2,150
FRINGE BENEFITS	\$2,252	\$8,094	\$11,833
OTHER MISC.	\$3,234	\$9,641	\$12,720
TOTAL ADMINISTRATION	\$11,578	\$38,856	\$51,722
OTHER COSTS (\$000'S)			
PERSONAL LIABILITY/ PROPERTY DAMAGE (INSURANCE)	\$5,525	\$25,907	\$25,235
TOTAL RECONCILING	\$515	\$8,840	\$14,508
TOTAL OTHER COSTS	\$6,040	\$34,747	\$39,743
SUMMARY: TOTAL COST OF OPERATIONS (\$000'S)			
TOTAL LABOR	\$60,208	\$175,910	\$209,736
TOTAL MATERIALS/SUPPLIES	\$11,072	\$60,205	\$62,731
FUEL AND LUBRICANTS	\$5,229	\$29,763	\$27,800
BUS PARTS	\$1,041	\$19,322	\$22,764
OTHER MATERIALS AND SUPPLIES	\$4,802	\$11,119	\$12,167
TOTAL FRINGE BENEFITS	\$26,881	\$76,829	\$99,188
MEDICAL/DENTAL	\$3,799	\$15,278	\$21,122
WORKMAN'S COMPENSATION	\$738	\$4,481	\$13,739
OTHER FRINGE BENEFITS	\$22,344	\$57,070	\$64,327
TOTAL OTHER COSTS	\$10,162	\$49,278	\$56,973
TOTAL OPERATING EXPENSES (\$000'S)	\$108,318	\$362,220	\$428,628



MAJOR COST TRENDS
FY 1975, FY 1982, FY 1984

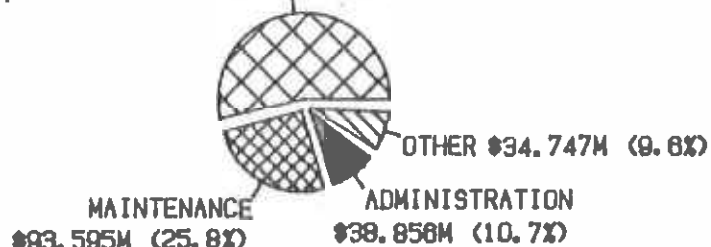
TABLE III - 1

OPERATIONS \$71.337M (85.8%)



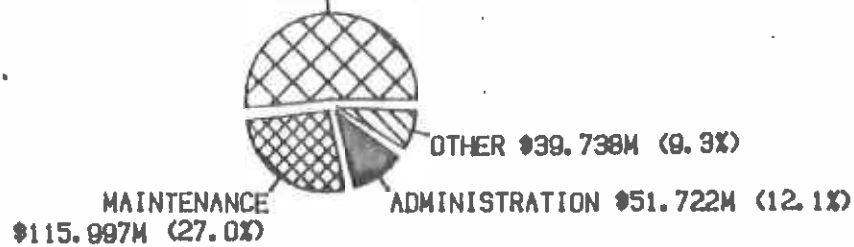
FY 1974-75
AUDITED

OPERATIONS \$195.022M (53.8%)



FY 1981-82
AUDITED

OPERATIONS \$221.171M (51.8%)



FY 1983-84
AUDITED



COST OF PROVIDING SERVICE

FIGURE III-1

3.1.1 MAJOR COST FACTORS AND TRENDS

The primary emphasis of this section focuses on a comparison of operating costs between FY 1975 and FY 1984. To show the most recent cost trends, a comparison between FY 1982 and FY 1984 was also conducted.

The following analysis of the major cost factors is performed in terms of cost per employee for labor and fringe benefits, cost per hour and per mile for material and supplies, and cost per passenger mile for PL&PD. Cost per hour and per mile indicators were also related to service and patronage levels. In addition, the Consumer Price Index (CPI) was introduced into the analysis as a benchmark comparison indicator. However, the CPI can only be used as a guide and not a true indicator of relative cost escalation in the transportation industry because it is not reflective of the major elements which drive transit operational costs.

.1 Labor Costs

Between FY 1975 and FY 1984, total labor costs have increased about 250% (see Table III-1). However, when compared on a cost per employee basis, these expenses rose 140% between FY 1975 and FY 1984 (see Table III-2).

The bulk of the rise in costs for salaries and wages and fringe benefits is partially attributable to a 48% increase in personnel (see Table III-3 and Figure III-2). This rise in the District's labor force was required to compensate for:

- o A 46% increase in service levels and a 133% increase in passenger loads.
- o Increased maintenance efforts, primarily on the more sophisticated Advanced Design Buses (ADB), and the expansion of SCRTD's maintenance facilities. Buses equipped with wheelchair lifts increased from 8% to 74% of the total fleet, and air-conditioned buses rose from 29% to 87% of the total active fleet between FY 1975 and FY 1984.
- o Increasingly more complex dealings with federal, state and local agencies; and
- o The addition of a transit police force equal in size to that of most municipal police forces in Los Angeles County. This function was added to ensure the safety of the District's passengers and in recognition of the rise in crime in general.

Contributing to the rapid rise in labor costs are compensation and fringe benefit packages for contract employee groups consistently equal to or higher than those of counterparts in the transit industry. On a cost per employee basis, salaries and wages and fringe benefits

TRANSIT COMPARISON STUDY - ANALYSIS OF COST FACTORS

	FY 1975 Cost per Employee	FY 1982 Cost per Employee	% DIFF. FY75/82	FY 1984 Cost per Employee	% DIFF. FY75/84	% DIFF. FY82/84
TOTAL OPERATING EXPENSES	\$17,613	\$46,582	164%	\$47,180	168%	1%
TOTAL SALARIES AND WAGES	\$9,789	\$22,622	131%	\$23,086	136%	2%
TOTAL FRINGE BENEFITS	\$4,371	\$9,880	126%	\$10,875	149%	10%
Medical/Dental	\$618	\$1,965	218%	\$2,316	275%	18%
Workmans Compensation	\$120	\$576	380%	\$1,506	1155%	161%
Other Fringe Benefits	\$3,633	\$7,339	102%	\$7,053	94%	-4%
TOTAL LABOR COST (Includes Fringe Benefits)	\$14,160	\$32,502	130%	\$33,961	140%	4%

Source: UMTA Section 15 Report and FY 1975 Revenue and Expense.

S-III



COST PER EMPLOYEE

TABLE III - 2

EMPLOYEE DISTRIBUTION
FISCAL YEAR 1975 - 1984

EMPLOYEE CLASSIFICATION	FY 1975		FY 1982		(FY75-FY82)	FY 1984		(FY75-FY84)	(FY82-FY84)
	(NO.)	(% TOT.)	(NO.)	(% TOT.)	% CHANGE	(NO.)	(% TOT.)	% CHANGE	% CHANGE
OPERATORS (UTU)	4040	65.7%	4349	55.9%	7.6%	5065	55.5%	25.4%	16.5%
MECHANICS (ATU)	944	15.3%	1654	21.3%	75.2%	1945	21.3%	106.0%	17.6%
CLERICAL (BRAC)	445	7.2%	622	8.0%	39.8%	709	7.8%	59.3%	14.0%
ADMINISTRATION (NON CONTRACT)	721	11.7%	1083	13.3%	43.3%	1269	13.9%	76.0%	22.8%
TRANSIT POLICE (TPOA)	0	0.0%	83	1.1%	NA	95	1.0%	NA	14.5%
SECURITY GUARDS (TEAMSTERS)	0	0.0%	36	0.5%	NA	38	0.4%	NA	5.6%
TOTAL NO. OF EMPLOYEES	6150	100.0%	7777	100.0%	26.5%	9121	100.0%	48.3%	17.3%

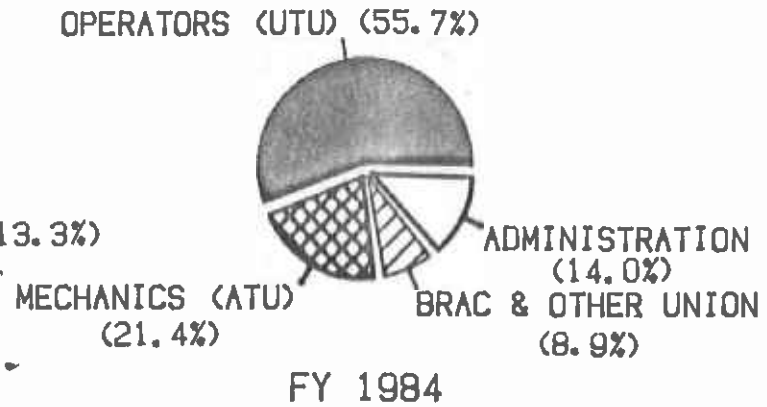
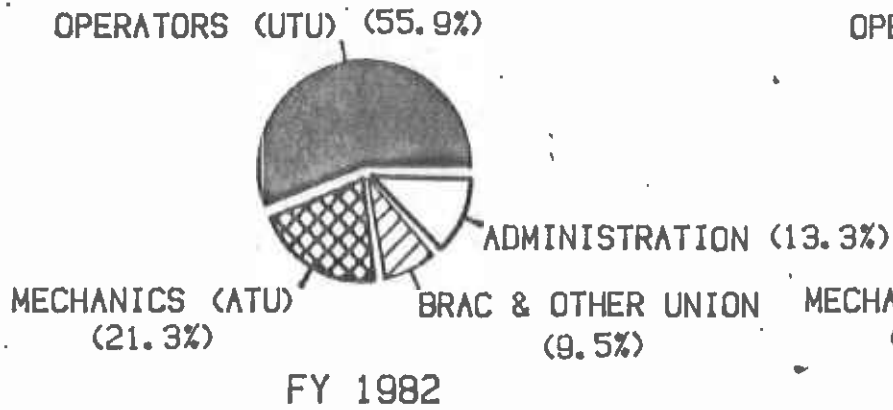
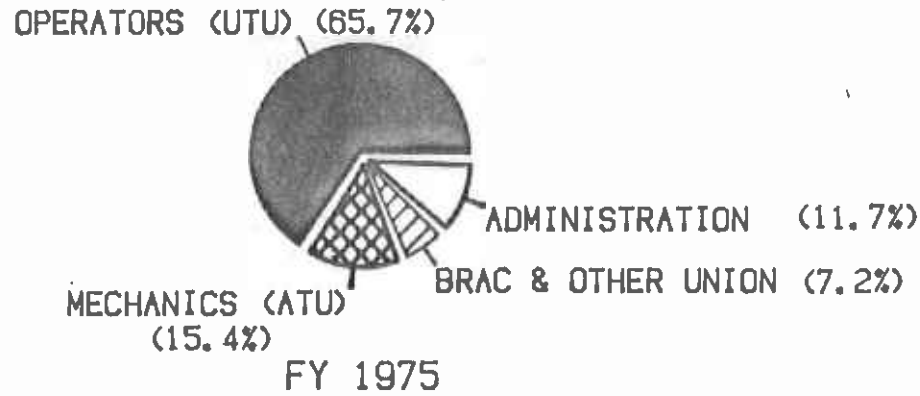
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EMPLOYEE DISTRIBUTION

TABLE III-3

EMPLOYEE DISTRIBUTION



EMPLOYEE DISTRIBUTION

FIGURE III-2

increased 136% and 149%, respectively, between FY 1975 and FY 1984 (see Table III-2). An increase of about 275% in medical plan costs and almost a 1200% increase in workers' compensation costs per employee due to an expansion of eligibility for medical plan recipients and changes in state laws. Costs for other fringe benefits (vacation and sick time) have also risen as contract improvements were negotiated in addition to wage increases. These wage gains have been supported by hard bargaining by strong unions and backed by strike actions.

Since total labor costs (including fringe benefits) comprise approximately 72% of the District's total operational budget, management has made repeated attempts to inhibit the rise in these costs. Labor cost reduction strides successfully negotiated during this past nine-year period include the use of part-time drivers, the reduction of wage scales of new contract personnel, and, under certain circumstances, subcontracting some engine rebuilding activities with the mechanics' union.

.2 Personal Liability and Property Damage (PL&PD) Costs

The District is almost completely self-insured against claims for accidents occurring between the District's transit vehicles and the general public. Cost for PL&PD have escalated over 350% between FY 1975 and FY 1982 (see Table III-1). The primary cost elements driving liability expenses are for medical, legal, and auto repairs which have risen much higher than inflation. Also, state laws currently require the District to assume full financial responsibility for any claims regardless of the degree of responsibility. In addition, the number of liability claims and the severity of accidents have escalated due to increasing traffic congestion within the District's service area. When the rise in PL&PD costs is measured on a cost per passenger mile basis, PL&PD costs increased 100% between FY 1975 and FY 1984 (see Table III-4).

.3 Cost of Materials and Supplies

The materials and supplies cost factor delineates the purchase costs for fuel/lubricants for vehicle operations and for bus parts for vehicle maintenance. Table III-1 shows that the cost increase for materials and supplies partially resulted from over a 400% increase in fuel costs caused primarily by actions of OPEC and by the removal of price controls on domestic petroleum production. The District's total expense for bus parts rose almost 2000% because of the larger inventory required for the variety of more sophisticated coach types within the District's fleet and for the purchase of manufacturers or "dealer parts" which were more expensive than similar parts for older buses available in the competitive market. Also, due to high interest rates, parts suppliers maintain very low inventories. This necessitates stockpiling of bus parts by the District to avoid delays in component procurement, since time lag for some parts acquisition can require up to six months.

	RTD FY 75 Audited	RTD FY 82 Audited	% Change FY 75/82	RTD FY 84 Audited	% Change FY 75/84	% Change FY 82/84
STATISTICAL PROFILE						
RESOURCES						
NUMBER OF BUS LINES	224	225	0.4%	253	12.9%	12.4%
PEAK FLEET	1,906	2,007	5.3%	2,151	13.4%	7.7%
SERVICE AREA (SQ. MILES)	2,280	2,280	0.0%	2,280	0.0%	0.0%
CITIES AND COMMUNITIES SERVED	180	180	0.0%	180	0.0%	0.0%
NUMBER OF EMPLOYEES	6,150	7,776	26.4%	9,085	47.7%	16.8%
SERVICE SUPPLIED						
VEHICLE SERVICE MILES (000'S)	58,650	89,400	52.4%	94,540	61.2%	5.7%
TOTAL ANNUAL MILES OPERATED (000'S)	69,000	109,000	49.3%	107,000	55.1%	3.9%
VEHICLE SERVICE HOURS (000'S)	4,708	6,820	45.0%	7,126	51.5%	4.5%
TOTAL ANNUAL HRS OPERATED (000'S)	5,227	7,276	39.2%	7,643	46.2%	5.0%
% NON-REVENUE SERVICE MILES	15.00%	13.20%	-12.0%	11.64%	-22.4%	-11.8%
SERVICE CONSUMED						
AVERAGE TRIP LENGTH	N/A	N/A		3.95		
UNLINKED PASSENGERS (000'S)-boardings	200,000	352,700	76.4%	466,000	133.0%	32.1%
BOARDINGS PER TOTAL HOUR	38.26	48.47	25.7%	60.97	59.4%	25.6%
BOARDINGS PER TOTAL MILE	2.90	3.42	17.9%	4.36	50.3%	27.5%
BOARDINGS PER REVENUE MILE	3.41	3.95	15.7%	4.93	44.5%	24.9%
PASSENGER MILES (000'S)	770,000	1,586,000	105.0%	1,839,000	138.8%	16.0%
COST INDICATORS						
OPERATIONAL COSTS PER BOARDING	\$0.36	\$0.55	53.6%	\$0.47	31.8%	-14.2%
MAINTENANCE COSTS PER BOARDING	\$0.10	\$0.27	165.4%	\$0.25	148.9%	-6.2%
ADMIN COSTS PER BOARDING	\$0.05	\$0.11	120.3%	\$0.11	122.0%	0.7%
OTHER COSTS PER BOARDING	\$0.08	\$0.10	187.5%	\$0.09	148.8%	-13.4%
TOTAL COST PER BOARDING	\$0.54	\$1.03	89.6%	\$0.92	69.8%	-10.4%
OPERATIONAL COSTS PER HOUR OPERATED	\$13.65	\$25.80	95.4%	\$28.94	112.0%	8.0%
LABOR	\$8.52	\$15.28	79.4%	\$16.60	94.8%	8.6%
MATERIAL/SUPPLIES	\$1.25	\$4.57	265.9%	\$4.24	239.2%	-7.3%
FRINGE BENEFITS	\$3.80	\$6.67	75.6%	\$7.85	106.6%	17.6%
OTHER	\$0.08	\$0.28	243.8%	\$0.25	212.4%	-9.1%
MAINTENANCE COSTS PER HOUR OPERATED	\$3.70	\$12.85	247.7%	\$15.18	310.2%	18.0%
LABOR	\$2.03	\$6.35	212.7%	\$7.57	272.9%	19.3%
MATERIAL/SUPPLIES	\$0.68	\$3.35	392.0%	\$3.69	442.1%	10.2%
FRINGE BENEFITS	\$0.90	\$2.77	208.1%	\$3.58	297.8%	29.1%
OTHER	\$0.09	\$0.40	341.2%	\$0.34	278.7%	-14.2%
ADMIN COSTS PER HOUR OPERATED	\$2.22	\$5.34	140.6%	\$6.77	204.8%	26.7%
LABOR	\$0.97	\$2.55	162.6%	\$3.27	237.5%	28.5%
MATERIAL/SUPPLIES	\$0.19	\$0.36	87.0%	\$0.28	48.1%	-20.8%
FRINGE BENEFITS	\$0.43	\$1.11	158.7%	\$1.55	260.0%	39.2%
OTHER	\$0.62	\$1.33	113.7%	\$1.66	168.4%	25.6%
OTHER COSTS PER HOUR OPERATED	\$1.15	\$4.78	315.3%	\$5.20	352.1%	8.9%
TOTAL COST PER HOUR OPERATED	\$20.72	\$49.78	140.2%	\$56.08	170.6%	12.7%
OPERATIONAL COSTS PER MI TRAVELED	\$1.08	\$2.83	174.4%	\$2.07	100.7%	-26.9%
MAINTENANCE COSTS PER MI TRAVELED	\$0.28	\$0.91	224.5%	\$1.08	287.2%	19.3%
ADMIN COSTS PER MILE TRAVELED	\$0.17	\$0.38	121.9%	\$0.48	184.3%	28.1%
OTHER COSTS PER MILE TRAVELED	\$0.09	\$0.34	274.8%	\$0.37	312.6%	10.1%
TOTAL COST PER MILE TRAVELED	\$1.57	\$3.52	124.0%	\$4.01	155.2%	13.9%



MAJOR COST FACTORS AND TRENDS

FY 1975, FY 1982, FY 1984

TABLE III-4

	RTD FY 75 Audited	RTD FY 82 Audited	% Change FY 75/82	RTD FY 84 Audited	% Change FY 75/84	% Change FY 82/84
REVENUE INDICATORS						
TOTAL OPERATING FUNDS (\$000'S)	\$120,038	\$370,174	208.4%	\$428,083	256.6%	15.6%
PASSENGER REVENUES (\$000'S)	\$34,459	\$163,488	374.4%	\$117,377	240.6%	-28.2%
OTHER REVENUE (\$000'S)	\$3,401	\$21,985	546.4%	\$21,464	531.1%	-2.4%
TOTAL SUBSIDY FUNDS (\$000'S)	\$82,178	\$184,698	124.8%	\$289,241	252.0%	56.6%
REVENUE PER TOTAL MILE	\$0.50	\$1.59	217.8%	\$1.10	119.7%	-30.9%
REVENUE PER TOTAL HOUR	\$5.59	\$22.47	240.8%	\$15.36	133.0%	-31.7%
REVENUE PER BOARDING (FAREBOX)	\$0.17	\$0.46	169.0%	\$0.25	46.2%	-45.7%
OTHER REVENUE PER BOARDING	\$0.02	\$0.06	266.6%	\$0.05	170.9%	-26.1%
SUBSIDY PER TOTAL MILE	\$1.19	\$1.79	50.6%	\$2.70	127.0%	50.7%
SUBSIDY PER TOTAL HOUR	\$15.72	\$25.38	61.5%	\$37.84	140.7%	49.1%
SUBSIDY PER BOARDING	\$0.41	\$0.52	27.4%	\$0.62	51.1%	18.5%
FAREBOX RECOVERY RATIO	32%	46%	45.7%	25%	-20.8%	-45.7%
BASE FARE	\$0.25	\$0.85	240.0%	\$0.50	100.0%	-41.2%



MAJOR COST FACTORS AND TRENDS
FY 1975, FY 1982, FY 1984
(Continued)

TABLE III-4

When compared on a cost per total mile basis, the total cost of materials and supplies rose about 270%. Fuel/lubricants also rose about 270% and bus parts increased by 950% between FY 1975 and FY 1984 (see Table III-5).

3.1.2 MAJOR COST INDICATORS

The cost indicators which reflect on the efficiency and/or the effectiveness of any transit operation are cost per hour, cost per mile and cost per boarding.

It is important to note that the same cost factors have different impacts on different cost indicators. For example, the cost of fuel, materials and supplies, and maintenance are related more to the amount of vehicle miles provided than to vehicle hours or boardings. On the other hand, the labor cost and fringe benefits of bus drivers are related more to the amount of vehicle hours provided. Finally, the cost of support services such as public information service and transit police are related to the number of boardings and impacts the cost per boarding indicator.

The cost indicators should relate to the goals of the operator. If the goal is to carry the largest number of passengers, the cost indicator used for comparison should be different than if the goal is to operate in the most cost-efficient manner. The cost per hour, mile, and boarding indicators and their trends are analyzed below.

.1 Cost Per Mile

The average annual increase of the cost per mile from FY 1975 to FY 1982 was almost three times higher than the average annual increase of the cost per mile from FY 1982 to FY 1984. This large rise in cost per mile between FY 1975 and FY 1982 is due primarily to the tremendous rise in energy costs for this period coupled with a significant increase in traffic congestion and passenger loads causing slower operating speeds and more stops on heavily traveled buses (see Table III-5). From FY 1982 to FY 1984, the percent increase in the number of miles and hours was about the same and, therefore, the increase in the cost per mile and per hour was also very similar. In addition, the stabilization of fuel cost during the last two years contributed to a slower increase in cost per mile compared to the period from FY 1975 to FY 1982.

.2 Cost Per Hour

Table III-6 depicts the District's total cost per total hour for FY 1975, FY 1982 and FY 1984. These costs were approximately \$21, \$50 and \$56, respectively. The average annual cost increase from

TRANSIT COMPARISON STUDY - ANALYSIS OF COST FACTORS

	FY 1975 Cost/Mile	FY 1982 Cost/Mile	% DIFF. FY75/82	FY 1984 Cost/Mile	% DIFF. FY75/84	% DIFF. FY82/84
TOTAL OPERATING EXPENSES	\$1.57	\$3.52	124%	\$4.01	155%	14%
MATERIALS AND SUPPLIES	\$0.16	\$0.58	263%	\$0.59	269%	2%
Fuel and Lubricants	\$0.07	\$0.28	300%	\$0.26	271%	-7%
Bus Parts	\$0.02	\$0.19	850%	\$0.21	950%	11%
Other Materials and Supplies	\$0.07	\$0.11	57%	\$0.12	71%	9%
INSURANCE						
Personal Liability/ Property Damage	\$0.08	\$0.25	213%	\$0.24	200%	-4%

Source: UMTA Section 15 Report

III-11



COST PER MILE

TABLE III - 5

TRANSIT COMPARISON STUDY - ANALYSIS OF COST FACTORS

	FY 1975 Cost/Hour	FY 1982 Cost/Hour	% DIFF. FY75/82	FY 1984 Cost/Hour	% DIFF. FY75/84	% DIFF. FY82/84
TOTAL OPERATING EXPENSES	\$20.72	\$49.78	140%	\$56.08	171%	13%
MATERIALS AND SUPPLIES	\$2.12	\$8.27	290%	\$8.21	287%	-1%
Fuel and Lubricants	\$1.00	\$4.09	309%	\$3.64	264%	-11%
Bus Parts	\$0.20	\$2.66	1230%	\$2.98	1390%	12%
Other Materials and Supplies	\$0.92	\$1.53	66%	\$1.59	73%	4%
INSURANCE						
Personal Liability/ Property Damage	\$1.06	\$3.56	236%	\$3.30	211%	-7%

Source: UMTA Section 15 Report

III-12



COST PER HOUR

TABLE III - 6

FY 1975 to FY 1982 was higher than the same cost increase for the latter two years primarily because of the rapid increase in labor costs and the cost of fuel and material and supplies during that period. After FY 1982, materials and supply costs have stabilized. The cost-per-hour trend over the past nine years indicates that it has been increasing at a decreasing rate.

.3 Cost Per Boarding

The implementation of the Fare Reduction Program in July, 1982, caused the cost per boarding trend to deviate from its historical development. This program reduced the bus fare from \$.85 to \$.50 (for a period of three years). As a result, ridership has increased at a much faster rate than in previous years. The annual average percent increase in the number of boardings was about 10% from FY 1975 to FY 1982. The following two years, however, experienced an average annual increase of 15% in passengers (see Table III-4).

The large increase in passengers as a result of the lower fares actually lowered the cost per boarding in FY 1984 compared to FY 1982. In FY 1975, the cost per boarding was \$.54; by FY 1982, the cost was nearly doubled at \$1.03, while in FY 1984, the cost per boarding was lower by about 10% and stood at \$.92.

With the termination of the Fare Reduction Program in June, 1985, it is projected that the cost per boarding will increase again from \$.92 to \$1.18. Ridership is expected to drop by about 17.5% from the previous year as a result of the higher fares. Service is being reduced less than the projected loss of passengers in order to alleviate overcrowding which has been experienced on the District's buses over the past two years.

3.1.3 MAJOR REVENUE SOURCES AND INDICATORS

The District's major sources of revenue have historically included a combination of passenger fares and some form of subsidy funding from local, state and federal funding agencies.

As depicted in Table III-7 and Figure III-3, passenger fares and auxiliary transportation revenues in FY 1975 were one third of the District's total operating revenues while subsidies made up the remaining two thirds, primarily from SB 325 funds. In FY 1984, about the same ratio of passenger fares and auxiliary transportation revenues to subsidies was maintained primarily because of the Proposition A Fare Reduction Program.

As shown in Table III-8, it will become essential to increase farebox revenues and/or obtain new revenues in the next few years. This is due to the projected decrease in the federal operating assistance.

REVENUE SOURCES	FY 75 (\$000)	% OF TOTAL REV.	FY 82 (\$000)	% CHANGE FY82/FY75	% OF TOTAL REV.	FY 84 (\$000)	% CHANGE FY84/FY75	% CHANGE FY84/FY82	% OF TOTAL REV.
Passenger Fares	34,459	28.7%	163,489	374%	44.2%	117,377	241%	-26%	27.4%
Auxiliary Transportation Revenues	2,022	1.7%	1,244	-38%	0.3%	2,426	20%	95%	0.6%
Non Transportation Revenues	1,379	1.1%	20,741	1404%	5.6%	19,039	1281%	-8%	4.4%
SUBTOTAL - PASSENGER FARES & AUXILIARY TRANSP. REV.	37,860	31.5%	185,474	390%	50.1%	138,842	267%	-25%	32.4%
LOCAL CASH GRANTS AND REIMBURSEMENTS									
- Sales Taxes SEB25 TDA	51,919	43.3%	92,512	78%	25.0%	80,151	54%	-13%	18.7%
- Prop A Sales Tax						140,120	N/A	N/A	32.7%
- Others	30,139	25.1%	1,161	-96%	0.3%	1,334	-96%	15%	0.3%
SUBTOTAL - LOCAL CASH GRANTS & REIMBURSEMENTS	82,058	68.4%	93,673	14%	25.3%	221,605	170%	137%	51.8%
STATE CASH GRANTS AND REIMBURSEMENTS									
- Sales Tax SEB20			26,099	N/A	7.1%	15,829	N/A	-39%	3.7%
- Others	120	0.1%	195	63%	0.1%	1,413	1078%	625%	0.3%
SUBTOTAL - STATE CASH GRANTS & REIMBURSEMENTS	120	0.1%	26,294	21812%	7.1%	17,242	N/A	-34%	4.0%
FEDERAL CASH GRANTS AND REIMBURSEMENTS									
- Section 5 and/or Section 9			63,765	N/A	17.2%	49,416	N/A	-23%	11.5%
- Section 6			—	N/A	N/A	216	N/A	N/A	0.1%
- Section 8			—	N/A	N/A	598	N/A	N/A	0.1%
- Section 10			—	N/A	N/A	10	N/A	N/A	< 0.1%
- Sections 6,8 and 10 combined			966	N/A	0.3%	(824)	N/A	(-15%)	(0.2%)
- Others			2	N/A	< 0.1%	154	N/A	N/A	< 0.1%
SUBTOTAL - FEDERAL CASH GRANTS & REIMBURSEMENTS			64,733	N/A	17.5%	50,394	N/A	-22%	11.8%
TOTAL OPERATING REVENUE	120,088		370,174	208%		428,083	257%	16%	

* FY 75 Annual Report
 / FY 82 & 84 Section 15 Report
 @ 1986-1990 SRTP



HISTORIC REVENUE SOURCES

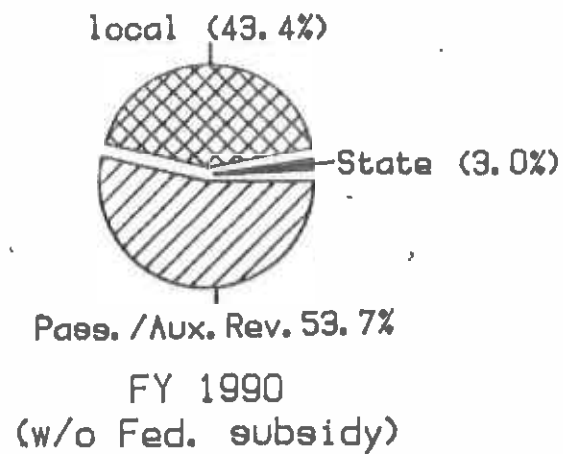
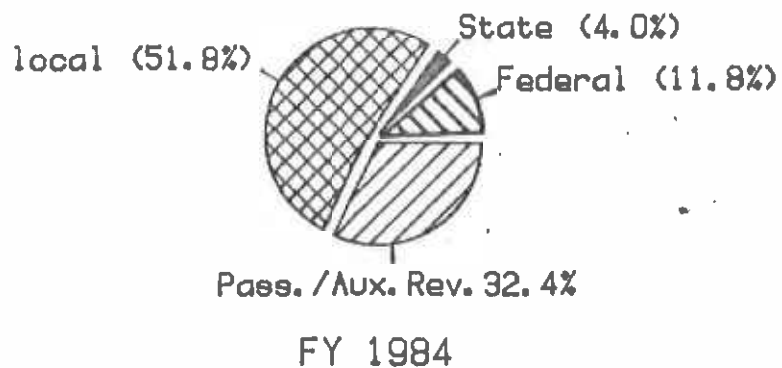
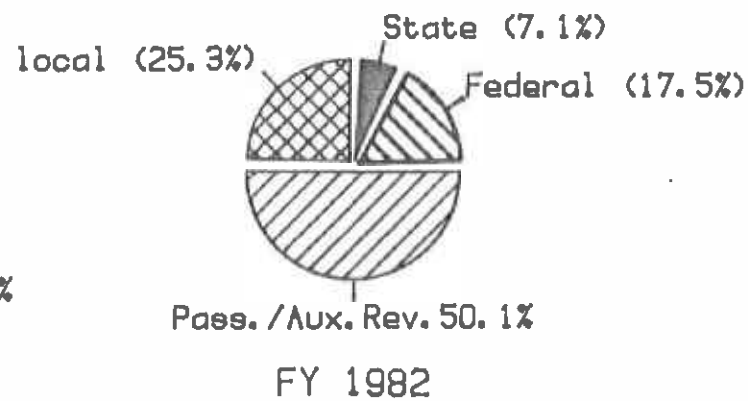
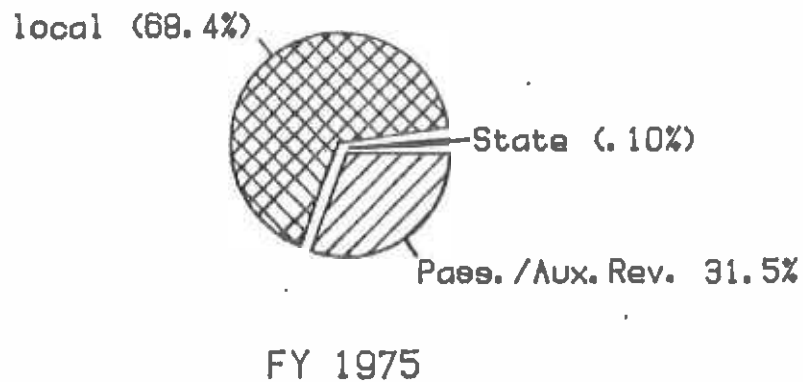
TABLE III-7



SCRTD REVENUES

III-15

FIGURE III-3



3.1.4 SERVICE POLICIES IMPACTING COSTS

As the regional carrier, the District is responsible for the provision of a safe, clean, convenient and efficient service at minimum cost throughout Los Angeles County. To accomplish this, the District's Board of Directors has adopted several formal and informal policies. These policies, which are described below, require the District to retain some unproductive lines at the expense of more highly patronized services. Some of these policies restrict management's ability to reduce operating costs.

The following formal service policies inhibit cost control measures:

- o Minimum line spacing and service frequency (adopted in 1978)

This policy restricts reduction in service spacing beyond 1/4 to 1/2 mile access to transit and reduction in service frequencies to no longer than 30 to 60 minutes depending on population density. Consequently, service reduction efforts are hampered when a low-productive line must be retained to adhere to these policies.

- o Service deployment by geographic sector (1979)

The amount of service operated is determined by the relationship between ridership and population density by sector. While this policy avoids potential arbitrary route spacing and service frequency requirements, line based service reduction recommendations may be in violation on a sector basis.

- o Passenger loading standards (1964)

This policy states that the number of standees cannot exceed 140% of the seated capacity on local service during the peak hours and 100% during off-peak hours. For express service lines, passenger loads should not exceed 100% of seated capacity. This policy serves as a guideline for a number of standards. However, when buses are overcrowded, these standards may be exceeded.

- o Hourly frequency policy (1984)

This policy establishes that maximum weekday frequency should not exceed 60 minutes during daylight hours. Adherence to this policy creates scheduling inefficiencies on demand based services. In extreme cases, this policy could cause the cancellation of low-productive routes in a transit dependent market.

o Maintenance of 95% Accessible Service Reliability (1984)

This policy states that the regularly scheduled accessible service will be available 95% of the time. Providing this level of reliability significantly increases maintenance costs of wheelchair lifts.

The informal policies recommended by staff and supported by the Board are:

o Retention of Low-Productivity Service

In response to community pressures, very few complete line cancellation recommendations have been adopted by the Board of Directors. The impact of this policy results in the retention of low-productive lines with high cost per passenger ratios. Also, this policy necessitates reductions of service levels on more productive lines to compensate for the retention of the inefficient routes.

In addition, the removal of express service, which may be less productive than local service, will reduce the level of equity of the District's service allocation. Residents living in the suburbs claim that since they also pay sales tax, they deserve at least a minimal level of service.

o Maintenance of System Integrity

Maintaining system integrity involves the provision of transit access to all areas of Los Angeles County. The primary intent of the policy is to prevent service voids by maintaining regional connectivity of routes. Policy adherence allows for retention of minimum service levels in low ridership areas to fill potential service voids.

Although the majority of District service is deployed on a productivity/ridership demand basis, the minimum service/spacing policies ensure that system integrity is not compromised to allow service to be withdrawn in outlying portions of the District's service area.

These obviously conflicting service deployment policies must be balanced effectively to comply with the transit objectives of a regional carrier and to control operating costs in the most efficient manner possible within the available revenues.

3.1.5 SUMMARY

Between FY 1975 and FY 1984, the District's total operating costs have increased nearly 300%. A brief reiteration of these cost elements follows:

- o The total operating cost for the District, which rose by about 300% from FY 1975 to FY 1984, was caused by inflation and expansion. While inflation accounted for 94% of this increase, the remainder is primarily attributable to a 50% increase in bus operations and major expansion of the District's maintenance facilities.
- o Total labor costs increased by about 250% during the last nine years. This rapid increase is due to about a 50% increase in District personnel, expanded maintenance for the addition of more buses, more complex dealings with governmental agencies and the addition of a transit police force. However, when measured on a cost per employee basis, labor costs increased 140%. Costs for fringe benefits, which are included in total labor costs, have increased by about 150% per employee between FY 1975 and FY 1984. This increase is partially due to the significant increase in medical plan expenses and workers' compensation cost.
- o Over the same nine-year period, cost per passenger mile for liability insurance has increased by 100%. The major cost elements impacting liability insurance expenses are medical, legal and vehicle repairs, all of which have risen significantly higher than inflation. Also, the number of liability claims and the severity of accidents have proportionately escalated due to increasing traffic congestion within the District's service area.
- o Between FY 1975 and FY 1984, costs of material and supplies rose almost 270% per total mile. This substantial rise in costs is due to a similar 270% per mile increase in fuel costs and a 950% per mile increase for bus parts.
- o Cost per hour over the past nine years has increased at a decreasing rate and appears to have leveled off in the \$50 to \$60 per hour range. The cost per mile had an average annual increase lower than cost per hour during the studied period. This was partially attributable to the stabilization of fuel cost. Finally, the cost per boarding between FY 1975 and FY 1984 increased by 70%; however, between FY 1982 and FY 1984, this cost decreased by 10% due to the Proposition A Fare Reduction Program.

3.2 SCRTD COST COMPARISON WITH MUNICIPAL OPERATORS

The purpose of this section is to compare transit costs for the SCRTD with comparable costs for municipal carriers in the region. Statistics were gathered for the Santa Monica Municipal Bus Lines, Torrance Transit System, Culver City Municipal Bus Lines, Long Beach Transit, and Montebello Municipal Bus Lines for comparison with statistics for the SCRTD. These carriers represent a good geographic cross-section and include the largest municipal carriers in Los Angeles County. So as to provide the most current data, statistics were gathered for FY 1984.

Additional data are needed to understand how each of the reported costs is affected by the characteristics of service, labor agreements, vehicles and facilities, and other operational aspects. Many of these data are not a matter of public record, and the bus operators in Los Angeles County were generally unwilling to provide data that were not in the public record. Therefore, much of the analysis relies on factual information about the SCRTD and speculation about the operations of the municipal carriers. The comparisons are divided into two major groups: (1) costs as a function of ridership and level of operations, and (2) revenues as a function of ridership and level of operations. The appropriate data were compiled and summarized into unit costs and revenues so that a wide range of the carrier's statistics could be compared and analyzed.

At the outset, it should be recognized that there are some dramatic differences in service characteristics between the SCRTD and the other municipal carriers (see Table III-9). For example, the five municipal systems operate a combined peak fleet of 314 vehicles versus an SCRTD peak fleet of 2,070. Additionally, the SCRTD service area includes the very densely populated areas in the region, resulting in differences in ridership per bus mile and per bus hour. Specifically, the SCRTD serves a higher number of passengers per mile of operation (4.4) when compared to the average for the other five carriers (3.4). The SCRTD also serves more passengers per hour (61) when compared to the average of the other carriers (42). Any conclusions drawn from the cost comparisons, therefore, need to take into account these basic service differences.

3.2.1 COST COMPARISON BY FUNCTION

A set of statistics was compiled from the Section 15 reports for each of the subject carriers. The following cost factors were calculated from these statistics for comparison purposes:

- o total cost per total vehicle hours of operation,
- o total cost per total vehicle miles of operation,
- o total cost per total number of passenger boardings.

COMPARATIVE OPERATIONAL CHARACTERISTICS OF SCRTD SERVICE AND FIVE MUNICIPAL CARRIERS

OPERATIONAL CHARACTERISTIC	SCRTD	Santa Monica	Torrance	Culver City	Long Beach	Montebello
Peak Fleet	2,070	106	30	16	130	32
Service Area Size (Sq. Miles)	2,280	36	40	15	60	20
Peak-to-Base Ratio	1.530	1.418	1.042	1.154	1.444	1.160
Total Annual Hours Observed (000's)	7,643	299	119	64	528	121
Total Annual Miles Operated (000's)	107,000	3,814	1,550	811	6,553	1,352
Express Service Hours (000's)	1,291	18	33	0	20	0
Express Service Miles (000's)	25,145	317	516	0	282	0
Non-Revenue Miles	12.37%	7.75%	3.58%	3.65%	7.95%	2.61%
Average Overall Speed (MPH)	13.9	12.7	13.4	12.3	11.6	12.2
Average Revenue Speed (MPH)	13.2	12.5	13.5	12.1	11.9	11.8
Number of Employees	9,121	222	78	53	410	78
Operator Training Hrs.	3.0%	2.2%	1.4%	N/A	1.3%	0.4%
Part-time Ratio (Wkdy.)	15.4%	9.7%	-0-	6.5%	2.3%	15.9%
Passenger Miles (000's)	1,839,000	57,954	18,910	8,985	67,078	14,619
Weekend Vehicle Hrs.	19.4%	15.8%	18.0%	15.0%	18.82%	0.0%



COMPARISON OF OPERATIONAL CHARACTERISTICS

TABLE III-9

Simply stated, these particular statistics were selected because they provide standardized measures of costs to operate a bus and costs to serve a patron. These comparisons and conclusions are provided below. Table III-10 and Figure III-4 show a comparison of the total costs per total hours of operation for the SCRTD and the five municipal carriers. The total costs/hour for the SCRTD (\$56.08) are higher than the average cost per hour for the municipal carriers (\$38.51), while the total cost per boarding comparison shows the District below the municipal carrier average and below three of five selected operators. The District's lower costs are attributable to the high level of service the District provides in the more densely populated regions where the heavy passenger loads require more operational hours.

In the categories of operations and administration, the SCRTD costs are only marginally higher than the five municipal operators. Although the District's maintenance costs are higher on a cost per hour basis, the cost differential is significantly narrowed when compared on a cost per boarding basis. The differences in the level of maintenance costs per hour may be due to hidden maintenance costs which may be absorbed by other functions within the budget of the corresponding municipality.

Figure III-5 shows a comparison of the total cost per mile of operation for each of the operators. The SCRTD has higher average in-service and out-of-service speed than the average of the five municipal operators. These speeds show that the SCRTD delivers more service per hour, when measuring service in miles, than do the municipal carriers.

Figure III-6 shows a comparison of the costs per boarding for each of the carriers. In this case, cost per passenger boarding for SCRTD is lower than the mean of the five municipal carriers. A more detailed comparison of the particular components which contribute to cost is presented below.

.1 Operations

This section aggregates operations' cost by the four subcategories of labor, fringe benefits, materials and supplies, and other costs, the latter including cost for liability insurance, taxes, and miscellaneous expenses. Costs are shown in Table III-11 as cost per vehicle hour, cost per vehicle mile and cost per passenger boarding.

Operations cost per hour differentials are primarily attributable to labor and fringe benefit costs. Labor costs per hour are 22% above the average of the five municipal carriers and 17% above the highest municipal rate of Long Beach. Fringe benefits are 37% higher than the municipal carriers' average and actually 3% lower

BASIC STATISTICAL COMPARISON OF SCRTD COSTS TO MUNICIPAL CARRIERS

COST INDICATOR	SCRTD	Santa Monica	Torrance	Culver City	Long Beach	Monte-bello
COST PER HOUR						
Operations	\$28.94	\$22.73	\$27.29	\$25.02	\$25.97	\$23.32
Maintenance	\$15.18	\$6.76	\$7.00	\$7.70	\$6.55	\$5.00
Administration	\$6.77	\$3.81	\$7.31	\$6.71	\$3.90	\$5.40
OTHER	\$5.20	\$1.14	\$1.23	\$2.41	\$1.30	\$2.00
TOTAL	\$56.08	\$34.43	\$42.83	\$41.83	\$37.72	\$35.72
COST PER MILE						
Operations	\$2.07	\$1.78	\$2.03	\$2.04	\$2.23	\$1.93
Maintenance	\$1.08	\$0.53	\$0.52	\$0.63	\$0.56	\$0.41
Administration	\$0.48	\$0.30	\$0.54	\$0.55	\$0.34	\$0.45
Other	\$0.37	\$0.09	\$0.09	\$0.20	\$0.11	\$0.17
TOTAL	\$4.01	\$2.70	\$3.19	\$3.41	\$3.25	\$2.95
COST PER BOARDING						
Operations	\$0.47	\$0.39	\$0.94	\$0.61	\$0.58	\$0.61
Maintenance	\$0.25	\$0.12	\$0.24	\$0.19	\$0.15	\$0.13
Administration	\$0.11	\$0.07	\$0.25	\$0.16	\$0.09	\$0.14
Other	\$0.09	\$0.02	\$0.04	\$0.06	\$0.03	\$0.05
TOTAL	\$0.92	\$0.60	\$1.47	\$1.02	\$0.84	\$0.94

Note: All figures are based on Audited Fiscal Year 1984 data.

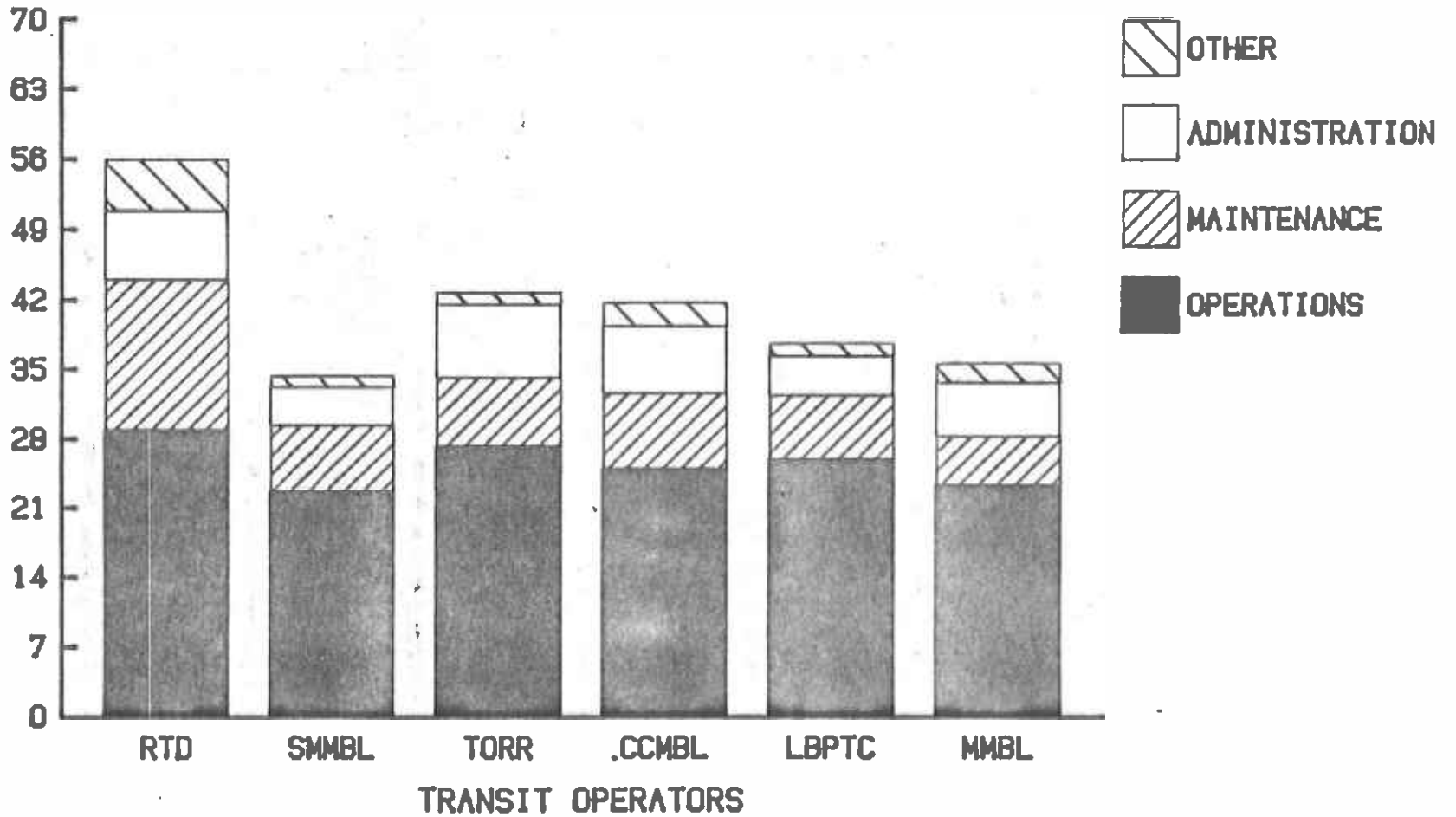


COMPARISON OF
BASIC COSTS

TABLE III-10

COST PER TOTAL HOUR COMPARISON

COST PER TOTAL HOUR (in dollars)



III-24

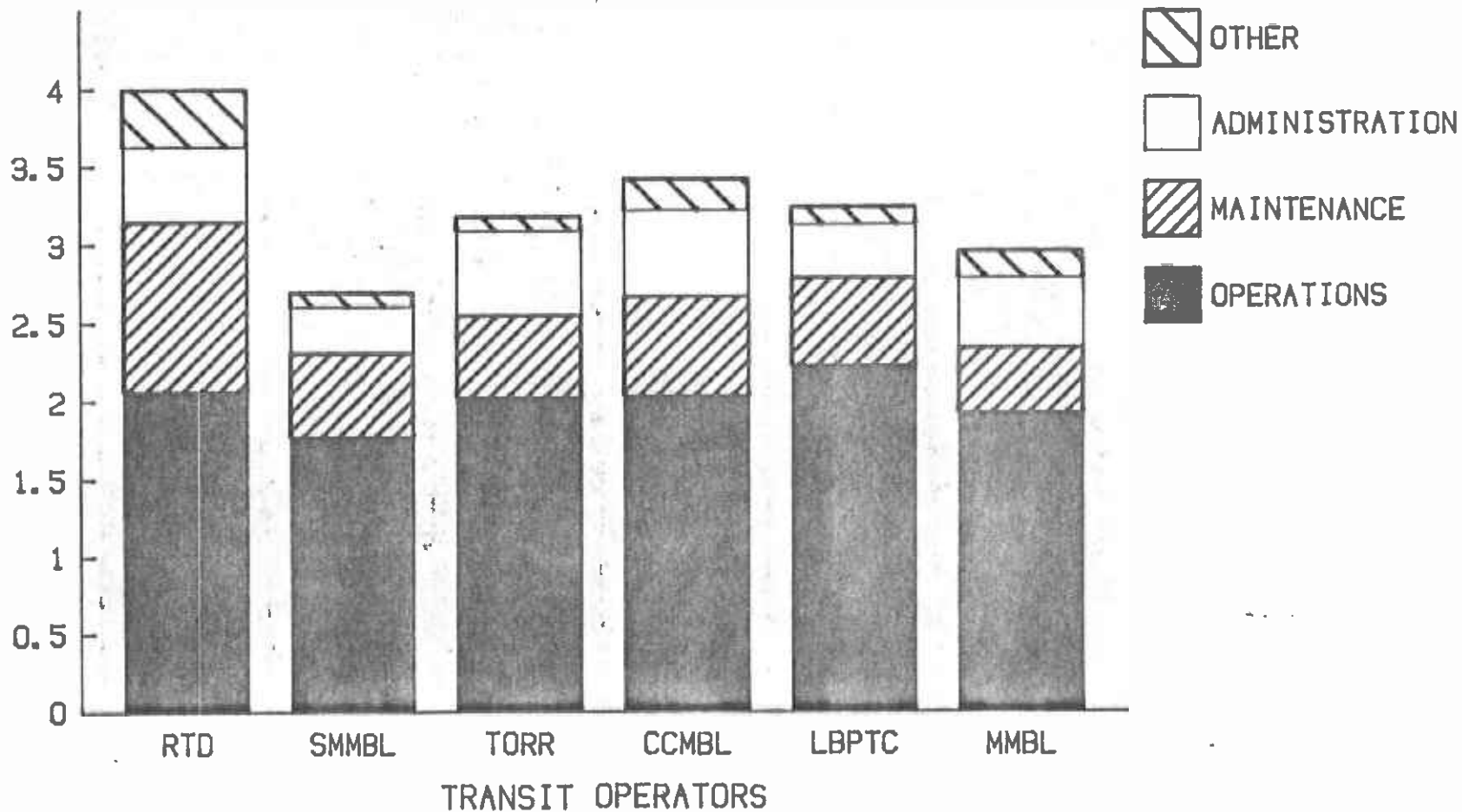


COST PER TOTAL HOUR

FIGURE III-4

COST PER MILE COMPARISON

COST PER MILE (in dollars)



III-25

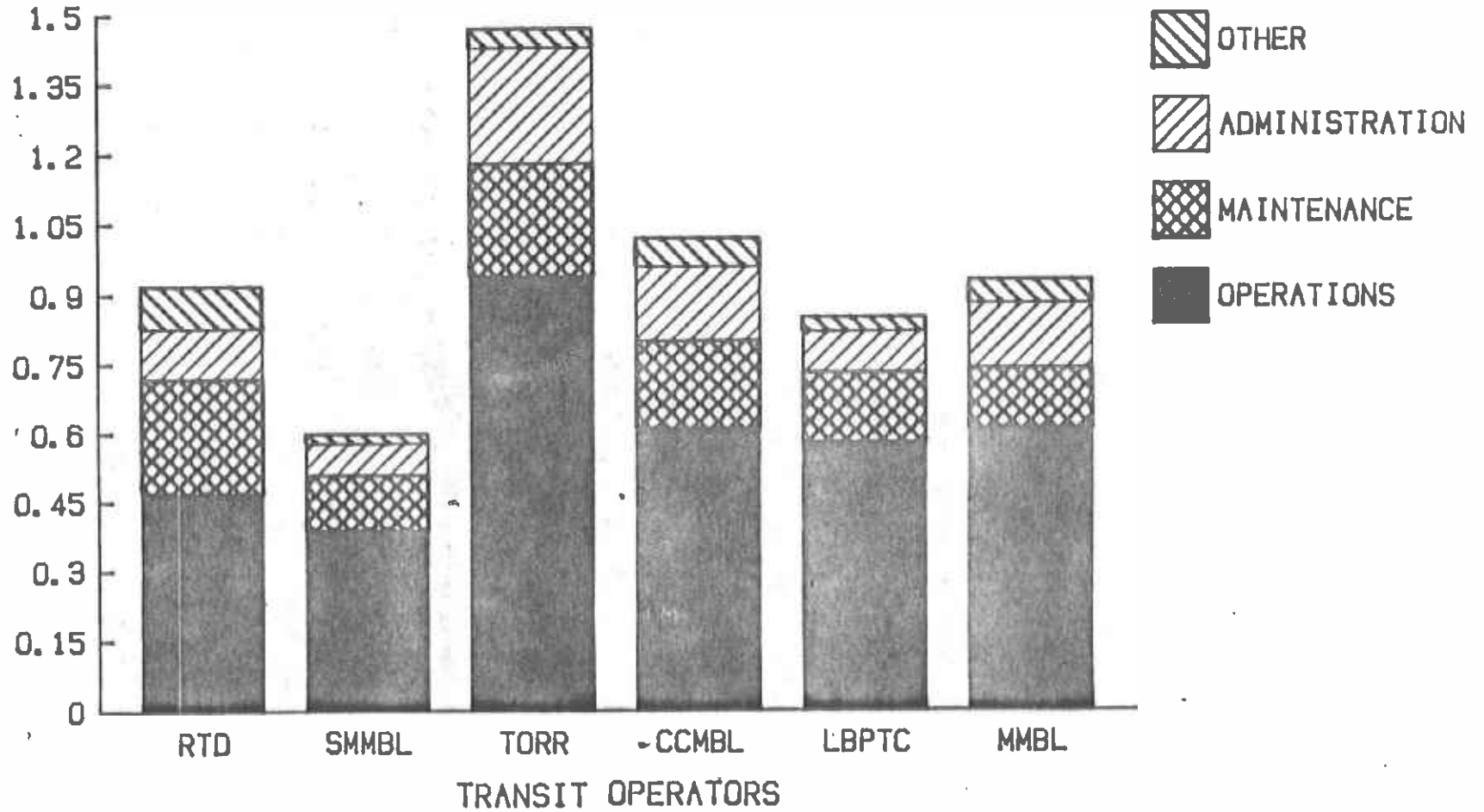


COST PER TOTAL MILE

FIGURE III-5

COST PER BOARDING COMPARISON

COST PER BOARDING (in dollars)



III-26



COST PER BOARDING

FIGURE III-6

COMPARISON OF SCRTD OPERATIONS' COSTS TO MUNICIPAL CARRIERS BY SUBCATEGORY

COST INDICATOR	SCRTD	Santa Monica	Torrance	Culver City	Long Beach	Monte- bello
COST PER HOUR						
Labor	\$16.60	\$13.56	\$13.34	\$12.99	\$14.20	\$13.74
Fringe Benefits	\$7.85	\$4.92	\$8.09	\$5.49	\$5.52	\$4.70
Material/Supplies	\$4.24	\$3.96	\$4.13	\$4.45	\$4.39	\$3.54
Other	\$0.25	\$0.28	\$1.73	\$2.08	\$1.86	\$1.34
TOTAL	\$28.94	\$22.73	\$27.29	\$25.02	\$25.97	\$23.32
COST PER MILE						
Labor	\$1.18	\$1.06	\$0.99	\$1.06	\$1.22	\$1.14
Fringe Benefits	\$0.56	\$0.39	\$0.60	\$0.45	\$0.48	\$0.39
Material/Supplies	\$0.30	\$0.31	\$0.31	\$0.36	\$0.38	\$0.29
Other	\$0.02	\$0.02	\$0.13	\$0.17	\$0.16	\$0.11
TOTAL	\$2.07	\$1.78	\$2.03	\$2.04	\$2.23	\$1.93
COST PER BOARDING						
Labor	\$0.27	\$0.23	\$0.46	\$0.32	\$0.31	\$0.36
Fringe Benefits	\$0.13	\$0.09	\$0.28	\$0.13	\$0.12	\$0.12
Material/Supplies	\$0.07	\$0.07	\$0.14	\$0.11	\$0.10	\$0.09
Other	\$0.00	\$0.00	\$0.06	\$0.05	\$0.04	\$0.04
TOTAL	\$0.47	\$0.39	\$0.94	\$0.61	\$0.58	\$0.61

Note: All figures are based on Audited Fiscal Year 1984 data.



COMPARISON OF
OPERATIONS' COSTS

TABLE III-11

than the cost per hour for Torrance's fringes. As a percent of labor costs, the District's fringe benefit rate is 12% higher than the average for the municipal carriers. District costs for materials and supplies per hour and per mile are generally consistent with those for the five municipal carriers. However, on a total cost per boarding basis, SCRTD is actually 34% lower than four of the five municipal operators.

Table III-9 shows several comparative measures of operations for SCRTD and the five municipal carriers, indicating the marked contrast of the District's operational characteristics. SCRTD's peak-to-base ratio (1.53) is 23% higher than the municipal carriers' average (1.24). This is due to the high demand for peak-period service on District buses. As a result, the District's operations require 50% more operators during the peak period than is required to operate base service levels.

Another factor affecting SCRTD's operational costs is the substantially higher levels of non-revenue miles required to provide transit service over a 2,280 square mile area. Since the majority of the District's service is oriented to the downtown CBD core, buses operating from outlying terminals must operate non-revenue service in at least one direction. This is especially true for express service. As indicated in Table III-9, SCRTD operates the highest proportion of express miles of any of the operators except Torrance. This aspect of express service is confirmed by the high percentage of non-revenue miles operated by the SCRTD which, at 12.37% of total miles, is over double that of the average for the five municipal carriers.

Another factor contributing to the proportion of non-revenue miles is service area size. Larger service areas increase non-revenue mileage by lengthening the mileage to the outlying portions of the service region. As indicated in Table III-9, SCRTD's service area size (2,280 square miles) is over 13 times larger than the service area for the five municipal carriers combined.

The provision of substantially higher levels of weekend service by the District also contributes to higher operational costs. SCRTD provides over 600% more weekend service than the municipal operators combined. The provision of this significant level of service increases the cost of operation because a large number of operators which must fill assignments over a seven-day period.

The costs for training operators is another contributing factor to SCRTD's higher operational costs. The percentage of operator pay hours spent in training for the District is double the average for the five municipal operators. Contributing elements to this factor

include the large number of routes and the wide variety of new transit vehicles operating out of each bus terminal. As Table III-12 indicates, SCRTD operates more than three times the variety of equipment than do the five municipal operators. Also, line training hours are twice those of the other carriers because the average division of SCRTD has five times as many lines as the operation of the five municipal carriers combined.

Another element in SCRTD's operational costs involves the provision of operational schedule documentation. Currently, the District operates over 250 bus routes, as opposed to an average of 10 routes operated by the five municipal carriers and a high of 18 lines by Long Beach. Due to the complex nature of scheduling this significant number of bus routes, SCRTD has a large professional and technical scheduling staff complemented by a computer system to provide the wide array of bus route and schedule documentation required to coordinate a transit system for the largest all-bus operator in the country. Conversely, the small number of lines operated by the municipal operators require only a minimal scheduling effort which is probably performed by one or two staff members. The new labor contract recently negotiated with the drivers' union has some new cost-saving provisions such as using part-time operators on weekends and increasing the maximum hours they work per week from 25 to 30.

In summary, the District's operational labor costs are higher than the five municipal carriers for the following reasons:

- o Peak-to-base ratio,
- o Level of weekend service,
- o Operator training costs for the variety of equipment types and the number of lines per division,
- o Complex scheduling function for over 250 lines,
- o Fringe benefit rate, and
- o Percent of non-revenue miles due to the size of the District's service area.

.2 Maintenance

This section involves a comprehensive analysis of the costs for the maintenance of revenue vehicles. The SCRTD exhibits a higher maintenance cost per hour than the average cost per hour for the other carriers. The SCRTD maintenance cost as a percentage of total cost is also higher than the average for the other five

COMPARATIVE FLEET STATISTICS OF SCRTD SERVICE AND FIVE MUNICIPAL CARRIERS

FLEET STATISTIC	SCRTD	Santa Monica	Torrance	Culver City	Long Beach	Montebello
Average Age of Fleet	6.8	6.5	7.0	2.9	8.1	7.9
Number of Make, Model Year Combinations	30	12	16	4	14	6
Number of Primary Make, Model Combinations	11	4	5	2	3	1
Number of Routes Oper.	253	12	8	6	18	7
Number of Divisions	14	1	1	1	1	1
Active Buses/Division	197	141	37	19	165	40
Routes per Division	18	12	8	6	18	7
Service Area per Div. (Square Miles)	163	36	40	15	60	20



COMPARISON OF
FLEET STATISTICS

TABLE III-12

carriers. However, since the District's maintenance function defined previously includes both vehicle and non-vehicle maintenance, these cost comparisons may not be accurate because the five municipal carriers have relatively little or no facility maintenance costs.

Table III-13 provides a breakdown of maintenance costs by the subcategories of labor, fringe benefits, materials and supplies, and other costs. It is clear that a comparison of costs within the subcategories is misleading due to differences in accounting procedures which were used by each operator. Some of the municipal carriers use contract service for part or all of their maintenance, while others use their own labor. As a result, there is a wide variation in the individual costs within the subcategories. This dichotomy becomes readily apparent when examining Culver City, where there are no reported costs associated with labor or fringe benefits for maintenance. Similarly, some carriers include materials and supplies in their service contracts, while others do not. SCRTD's higher non-vehicle maintenance costs are due to differences in the accounting for bus garages and other buildings and to the provision by the municipalities of some parts of the facilities and services which SCRTD must provide and account for fully. For example, Culver City reports no cost for non-vehicle maintenance, and only Santa Monica reports any related labor costs. Table III-14 shows vehicle maintenance costs, and Table III-15 shows non-vehicle maintenance costs in the same categories as Table III-13 for total maintenance costs.

The following reasons contribute to a higher maintenance cost for SCRTD than for the average maintenance cost for the five municipal operators:

- o Number of advanced design buses (ADB) in the fleet,
- o Number of buses with air-conditioning,
- o Number of buses equipped with wheelchair lifts,
- o Number of kneeling buses,
- o Number of buses with significant manufacturing defects,
- o Number of passengers carried.

In all these categories, it appears likely that the SCRTD has a larger potential for increased maintenance costs than any of the municipal bus operators. Data on all these categories are not available from Section 15 reports. However, Table III-16 shows a

COMPARISON OF SCRTD MAINTENANCE COSTS TO MUNICIPAL CARRIERS BY SUBCATEGORY

COST INDICATOR	SCRTD	Santa Monica	Torrance	Culver City	Long Beach	Monte- bello
COST PER HOUR						
Labor	\$7.57	\$2.13	\$1.04	\$0.00**	\$3.10	\$0.34
Fringe Benefits	\$3.58	\$0.77	\$0.67	\$0.00**	\$1.21	\$0.12
Material/Supplies	\$3.69	\$2.57	\$0.36	\$1.07	\$1.94	\$1.70
Other	\$0.34	\$1.30	\$4.92	\$6.63	\$0.30	\$2.84
TOTAL	\$15.18	\$6.76	\$7.00	\$7.70	\$6.55	\$5.00
COST PER MILE						
Labor	\$0.54	\$0.17	\$0.08	\$0.00	\$0.27	\$0.03
Fringe Benefits	\$0.26	\$0.06	\$0.05	\$0.00	\$0.10	\$0.01
Material/Supplies	\$0.26	\$0.20	\$0.03	\$0.09	\$0.17	\$0.14
Other	\$0.02	\$0.10	\$0.37	\$0.54	\$0.03	\$0.23
TOTAL	\$1.08	\$0.53	\$0.52	\$0.63	\$0.56	\$0.41
COST PER BOARDING						
Labor	\$0.12	\$0.04	\$0.04	\$0.00	\$0.07	\$0.01
Fringe Benefits	\$0.06	\$0.01	\$0.02	\$0.00	\$0.03	\$0.00
Material/Supplies	\$0.06	\$0.04	\$0.01	\$0.03	\$0.04	\$0.04
Other	\$0.01	\$0.02	\$0.17	\$0.16	\$0.01	\$0.07
TOTAL	\$0.25	\$0.12	\$0.24	\$0.19	\$0.15	\$0.13

Note: All figures are based on Audited Fiscal Year 1984 data.

** Culver City reports no direct labor or fringes for maintenance.



COMPARISON OF
MAINTENANCE COSTS

TABLE III-13

COMPARISON OF SCRTD VEHICLE MAINTENANCE COSTS TO MUNICIPAL CARRIERS BY
SUBCATEGORY

COST INDICATOR	SCRTD	Santa Monica	Torrance	Culver City	Long Beach	Monte- bello
COST PER HOUR						
Labor	\$7.31	\$2.20	\$1.04	\$0.00	\$3.10	\$0.34
Fringe Benefits	\$3.46	\$0.73	\$0.67	\$0.00	\$1.21	\$0.12
Material/Supplies	\$3.26	\$2.48	\$0.13	\$1.07	\$1.85	\$1.70
Other	\$0.31	\$1.28	\$4.86	\$6.63	\$0.18	\$2.24
TOTAL	\$14.34	\$6.52	\$6.71	\$7.70	\$6.34	\$4.39
COST PER MILE						
Labor	\$0.52	\$0.16	\$0.08	\$0.00	\$0.27	\$0.03
Fringe Benefits	\$0.25	\$0.06	\$0.05	\$0.00	\$0.10	\$0.01
Material/Supplies	\$0.23	\$0.19	\$0.01	\$0.09	\$0.16	\$0.14
Other	\$0.02	\$0.10	\$0.36	\$0.54	\$0.02	\$0.19
TOTAL	\$1.02	\$0.51	\$0.50	\$0.63	\$0.55	\$0.36
COST PER BOARDING						
Labor	\$0.12	\$0.03	\$0.04	\$0.00	\$0.07	\$0.01
Fringe Benefits	\$0.06	\$0.01	\$0.02	\$0.00	\$0.03	\$0.00
Material/Supplies	\$0.05	\$0.04	\$0.00	\$0.03	\$0.04	\$0.04
Other	\$0.01	\$0.02	\$0.17	\$0.16	\$0.00	\$0.06
TOTAL	\$0.24	\$0.11	\$0.23	\$0.19	\$0.14	\$0.12

Note: All figures are based on Audited Fiscal Year 1984 data.



COMPARISON OF
VEHICLE MAINTENANCE COSTS

TABLE III-14

COMPARISON OF SCRTD NONVEHICLE MAINTENANCE COSTS TO MUNICIPAL CARRIERS BY
SUBCATEGORY

COST INDICATOR	SCRTD	Santa Monica	Torrance	Culver City	Long Beach	Monte- bello
COST PER HOUR						
Labor	\$0.26	\$0.10	\$0.00	\$0.00**	\$0.00	\$0.00
Fringe Benefits	\$0.12	\$0.04	\$0.00	\$0.00**	\$0.00	\$0.00
Material/Supplies	\$0.42	\$0.09	\$0.23	\$0.00	\$0.09	\$0.00
Other	\$0.03	\$0.02	\$0.06	\$0.00	\$0.11	\$0.60
TOTAL	\$0.83	\$0.24	\$0.29	\$0.00	\$0.20	\$0.60
COST PER MILE						
Labor	\$0.02	\$0.01	\$0.00	\$0.00	\$0.00	\$0.00
Fringe Benefits	\$0.01	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
Material/Supplies	\$0.03	\$0.01	\$0.02	\$0.00	\$0.01	\$0.00
Other	\$0.00	\$0.00	\$0.00	\$0.00	\$0.01	\$0.05
TOTAL	\$0.06	\$0.02	\$0.02	\$0.00	\$0.02	\$0.05
COST PER BOARDING						
Labor	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
Fringe Benefits	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
Material/Supplies	\$0.01	\$0.00	\$0.01	\$0.00	\$0.00	\$0.00
Other	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.02
TOTAL	\$0.01	\$0.00	\$0.01	\$0.00	\$0.00	\$0.02

Note: All figures are based on Audited Fiscal Year 1984 data.

** Culver City reports no direct labor or fringe benefits for maintenance.



**COMPARISON OF NON-VEHICLE
MAINTENANCE COSTS**

TABLE III-15

COMPARISON OF MAINTENANCE-RELATED STATISTICS BETWEEN SCRTD AND THE MUNICIPAL CARRIERS

MAINTENANCE STATISTIC	SCRTD	Santa Monica	Torrance	Culver City	Long Beach	Montebello
Mechanical Roadcalls/ Active Bus	14.4	4.6	15.1	7.3	14.9	4.1
Vehicle Miles per Active Bus	38,740	29,400	38,800	41,200	35,500	33,100
Maintenance Staff per Active Bus	0.688	0.214	0.121*	0.421	0.347	0.312
Insp. & Maint. Labor Hrs. per Active Veh.	919.7	296.1	224.9	665.9	467.1	277.3
Insp. & Maint. Labor Hrs. per Veh. Mile	0.024	0.01	0.006	0.016	0.013	0.0083
Collison Accidents per Active Bus	2.93	1.89	1.26	1.79	1.63	1.31
Property Damage Accidents per Active Bus	3.01	2.11	1.40	1.68	1.45	1.23
Advance Design Buses as % of Active Fleet	67.3	59.6	60.5	100.0	58.7	67.5
Advance Design Buses as % of Peak Vehicles	89.8	79.2	83.9	100.0	72.1	87.1
Number of ADBs per Division/Garage (Avg.)	132	84	26	19	98	27
Number of Wheelchair-Lift-equipped buses	1,891	84	27	19	115	20
Number of AOBs with more than 250,000 miles	396	0	0	0	0	27

* Torrance reports 4 mechanics from the City used to maintain buses, but not included in the Section 15 report. Inclusion of these would raise this value to 0.214.



COMPARISON OF MAINTENANCE-RELATED STATISTICS

TABLE III-16

number of statistics of fleet performance that can assist in analyzing differences in maintenance costs. For instance, the SCRTD has a higher proportion of ADB's in their active fleet than most of the municipal carriers. Consequently, the District averages over twice as many ADB's per division. The SCRTD also has over seven times more wheelchair-lift equipped buses than all of the municipal carriers combined. Also, the District carries a significant number of additional passengers with many trips being severely overcrowded. This contributes to greater maintenance requirements and costs.

In addition, virtually the entire active fleet of SCRTD is air-conditioned, and most ADBs are kneeling buses. The District's Neoplan buses had significant problems with their cooling systems in FY 1984. Among the operators in the region, only the SCRTD has Neoplan buses, of which there are a total of 415 buses. Apart from the electronic and other equipment in the ADBs, which generate more frequent service requirements and result in more roadcalls for malfunctions, the ADBs generally have smaller (6 cylinder) turbo-charged engines that are wearing out in 170,000 miles compared to 250,000 miles on the older buses. As shown in Table III-16, only Montebello has any ADBs that have exceeded 250,000 miles, while 396 of the SCRTD's ADBs have done so, with a substantial number of engine replacements. It is reasonable to assume that as the municipal carriers continue to accumulate additional miles on their ADB's, these carriers will experience higher maintenance costs for major component replacement. The SCRTD is also the only operator that has both articulated buses and double-deck buses, both of which present additional maintenance requirements beyond those of standard buses. These buses are also more susceptible to accidents and damage than standard buses because of their size.

It has been shown that the primary difference between SCRTD's fleet and those of the municipal operators is in the number of vehicle types in operation. This difference in fleet mix helps explain why the SCRTD provides far more maintenance and service per vehicle than any other carrier.

As is the case for operations costs, the fleet mix of SCRTD appears to contribute to higher costs for maintenance personnel because the fleet mix requires more training for mechanics. The dispersal of each vehicle type to as many divisions as possible also requires a larger proportion of mechanics to be trained in each vehicle type and increases the complexity and extent of the parts inventory that must be maintained by the SCRTD. It should also be noted again that the SCRTD has 14 maintenance facilities, while each of the other carriers has only one facility. Additional service contracted by these other carriers may eventually require additional maintenance facilities, thus contributing to significant expenditures for the construction and maintenance of these new facilities.

.3 Administration

The administrative category includes costs of the overall organization of SCRTD which involves management, service planning, telephone information, customer and community relations, marketing, and other general administrative functions. To ensure the safety of the District's passengers and due to the general rise in crime, the District established a transit police department equal in strength to those of most municipalities within Los Angeles County.

Table III-17 illustrates the comparison of administrative costs between the District and the five municipal carriers. This Table shows that the District has higher administrative costs on a cost per hour basis than the average of the five municipal carriers, although the District's costs are lower than those for Torrance. However, when compared on a cost per mile and a cost per boarding basis, SCRTD's costs are much more competitive. In terms of cost per mile, SCRTD's administrative costs are lower than both Torrance and Culver City and only slightly (10%) above the municipal carriers' average. In terms of cost per boarding, the District's administrative costs are actually lower (29%) than the municipal carrier average.

Within the general administrative category, the vast differences between the District as a regional carrier and the relatively small municipal operator become more evident. As a separate entity, the SCRTD must assume the full cost of each function required to operate the largest all-bus system in the country. In contrast, the municipal operators have a local governmental agency to partially absorb costs for some of the basic organizational functions of service planning, grants administration, and scheduling. The District, on the other hand, provides these same functions on a much larger scale while performing other activities which the municipal carriers do not conduct within the transit administrative activities. The prime examples of this are the SCRTD's public information and transit police force.

Based on these administrative functions that are related both to the organizational responsibilities of the District as a separate agency and the size of SCRTD, it is evident that the District's administrative costs would be much higher than those of the five municipal carriers. It is also clear that the financial burden of these administrative functions would be incurred by other regional agencies if the District were not bearing them.

.4 Other Costs

These costs are usually comprised of reconciling expenses for leases and rentals and interest to bring the budget into balance. However, in this study PL&PD expenses were incorporated in the "other" costs category because these costs were not reported

COMPARISON OF SCRTD ADMINISTRATIVE COSTS TO MUNICIPAL CARRIERS BY SUBCATEGORY

COST INDICATOR	SCRTD	Santa Monica	Torrance	Culver City	Long Beach	Montebello
COST PER HOUR						
Labor	\$3.27	\$1.38	\$1.14	\$1.77	\$1.48	\$1.21
Fringe Benefits	\$1.55	\$0.50	\$0.68	\$0.63	\$0.42	\$1.00
Material/Supplies	\$0.28	\$0.12	\$0.27	\$0.00	\$0.15	\$0.05
Other	\$1.66	\$1.80	\$5.21	\$4.31	\$1.85	\$3.13
TOTAL	\$6.77	\$3.81	\$7.31	\$6.71	\$3.90	\$5.40
COST PER MILE						
Labor	\$0.23	\$0.11	\$0.08	\$0.14	\$0.13	\$0.10
Fringe Benefits	\$0.11	\$0.04	\$0.05	\$0.05	\$0.04	\$0.08
Material/Supplies	\$0.02	\$0.01	\$0.02	\$0.00	\$0.01	\$0.00
Other	\$0.12	\$0.14	\$0.39	\$0.35	\$0.16	\$0.26
TOTAL	\$0.48	\$0.30	\$0.54	\$0.55	\$0.34	\$0.45
COST PER BOARDING						
Labor	\$0.05	\$0.02	\$0.04	\$0.04	\$0.03	\$0.03
Fringe Benefits	\$0.03	\$0.01	\$0.02	\$0.02	\$0.01	\$0.03
Material/Supplies	\$0.00	\$0.00	\$0.01	\$0.00	\$0.00	\$0.00
Other	\$0.03	\$0.03	\$0.18	\$0.11	\$0.04	\$0.08
TOTAL	\$0.11	\$0.07	\$0.25	\$0.16	\$0.09	\$0.14

Note: All figures are based on Audited Fiscal Year 1984 data.



COMPARISON OF ADMINISTRATIVE COSTS

TABLE III-17

consistently within the functional breakdown of the Section 15 reports. For example, one carrier would include PL&PD expenses under vehicle operations, while another would include these expenses under general administration. Isolating these costs in this fashion provided more clarity in functional cost comparisons as well as for the liability insurance cost analysis.

As indicated in Table III-18, the average PL&PD cost per hour for the five municipal carriers is \$1.52, compared to \$3.30 for the District. The average cost per mile for the surveyed operators is only 50% of that for SCRTD. However, when compared on a cost per passenger mile basis, the District's insurance costs of 1.4 cents are only 27% more than the 1.1 cent average of the five municipal carriers. Since cost per passenger mile is a more accurate measure of liability exposure, the District's PL&PD expenses are relatively consistent with other carriers in the Southern California region. From the amount paid for liability insurance premiums, the insured coverage appears to be fairly similar between the District and the municipal operators. However, the amount paid out for the uninsured portion of coverage is higher for SCRTD than for the other carriers. Since the District's cost per mile is twice the average of the five municipal operators, it appears SCRTD's exposure to such claims is far higher.

In the absence of any obvious reasons for the higher exposure, the only plausible explanation is that the municipalities may hold blanket liability insurance coverage which pays a significant proportion of the uninsured claims. For example, Montebello Municipal Bus Lines indicates that liability insurance coverage is included within the city's policies and that no attempt is made to prorate any portion of those expenses to bus costs. Consequently, given that Montebello's situation is not unique among municipal carriers, it can be safely assumed that a significant portion of the excess claims is not reflected in the budgets of any of the five municipal operators.

Exacerbating this situation is the current California state law which requires that the District assume full financial responsibility for any claims, regardless of the degree of responsibility. For example, if the District is involved in an accident where the claim for damages is divided 50-50 and the other party is not financially solvent, SCRTD must pay the cost of the whole claim.

3.2.2 COMPARISON OF REVENUES

Table III-19 shows a comparison of revenue sources per hour, per mile, and per boarding for SCRTD and the five municipal carriers. Figure III-7 illustrates the revenues per boarding, specifically. From these data, it can be seen that SCRTD obtains more passenger revenue per

COMPARISON OF SCRTD OTHER COSTS TO MUNICIPAL CARRIERS BY SUBCATEGORY

COST INDICATOR	SCRTD	Santa Monica	Torrance	Culver City	Long Beach	Montebello
COST PER HOUR						
Insurance	\$3.30	\$1.09	\$1.23	\$2.38	\$0.96	\$1.95
Reconciling	\$1.90	\$0.05	\$0.00	\$0.03	\$0.34	\$0.05
TOTAL	\$5.19	\$1.14	\$1.23	\$2.41	\$1.30	\$2.00
COST PER MILE						
Insurance	\$0.24	\$0.09	\$0.09	\$0.19	\$0.08	\$0.16
Reconciling	\$0.14	\$0.00	\$0.00	\$0.01	\$0.03	\$0.01
TOTAL	\$0.37	\$0.09	\$0.09	\$0.20	\$0.11	\$0.17
COST PER PASSENGER MILE						
Insurance	\$0.014	\$0.006	\$0.007	\$0.017	\$0.007	\$0.018
Insurance Premiums (000s)	\$170.3	\$47.6	\$37.2	N/A	\$79.6	\$49.9
Provisions and Payouts for Uninsured Claims (000s)	\$25,175	\$296	\$116	N/A	\$419	\$164

Note: All figures are based on Audited Fiscal Year 1984 data.



COMPARISON OF
'OTHER' COSTS

TABLE III-18

COMPARISON OF SCRTD REVENUE SOURCES TO MUNICIPAL CARRIERS BY SUBCATEGORY

REVENUE INDICATOR	SCRTD	Santa Monica	Torrance	Culver City	Long Beach	Monte- bello
REVENUE PER HOUR						
Passenger	\$15.35	\$18.90	\$8.24	\$11.79	\$9.26	\$10.28
Other	\$2.81	\$4.25	\$0.39	\$0.09	\$1.32	\$0.26
Subsidy	\$37.84	\$11.28	\$33.79	\$29.95	\$29.98	\$27.34
TOTAL	\$56.00	\$34.43	\$42.42	\$41.83	\$40.56	\$37.88
REVENUE PER MILE						
Passenger	\$1.10	\$1.48	\$0.61	\$0.96	\$0.80	\$0.85
Other	\$0.20	\$0.33	\$0.03	\$0.01	\$0.11	\$0.02
Subsidy	\$2.70	\$0.89	\$2.51	\$2.44	\$2.58	\$2.26
TOTAL	\$4.00	\$2.70	\$3.15	\$3.41	\$3.49	\$3.13
REVENUE PER BOARDING						
Passenger	\$0.25	\$0.33	\$0.28	\$0.29	\$0.21	\$0.27
Other	\$0.05	\$0.07	\$0.01	\$0.00	\$0.03	\$0.01
Subsidy	\$0.62	\$0.20	\$1.16	\$0.73	\$0.66	\$0.72
TOTAL	\$0.92	\$0.60	\$1.45	\$1.02	\$0.90	\$1.00

Note: All figures are based on Audited Fiscal Year 1984 data.

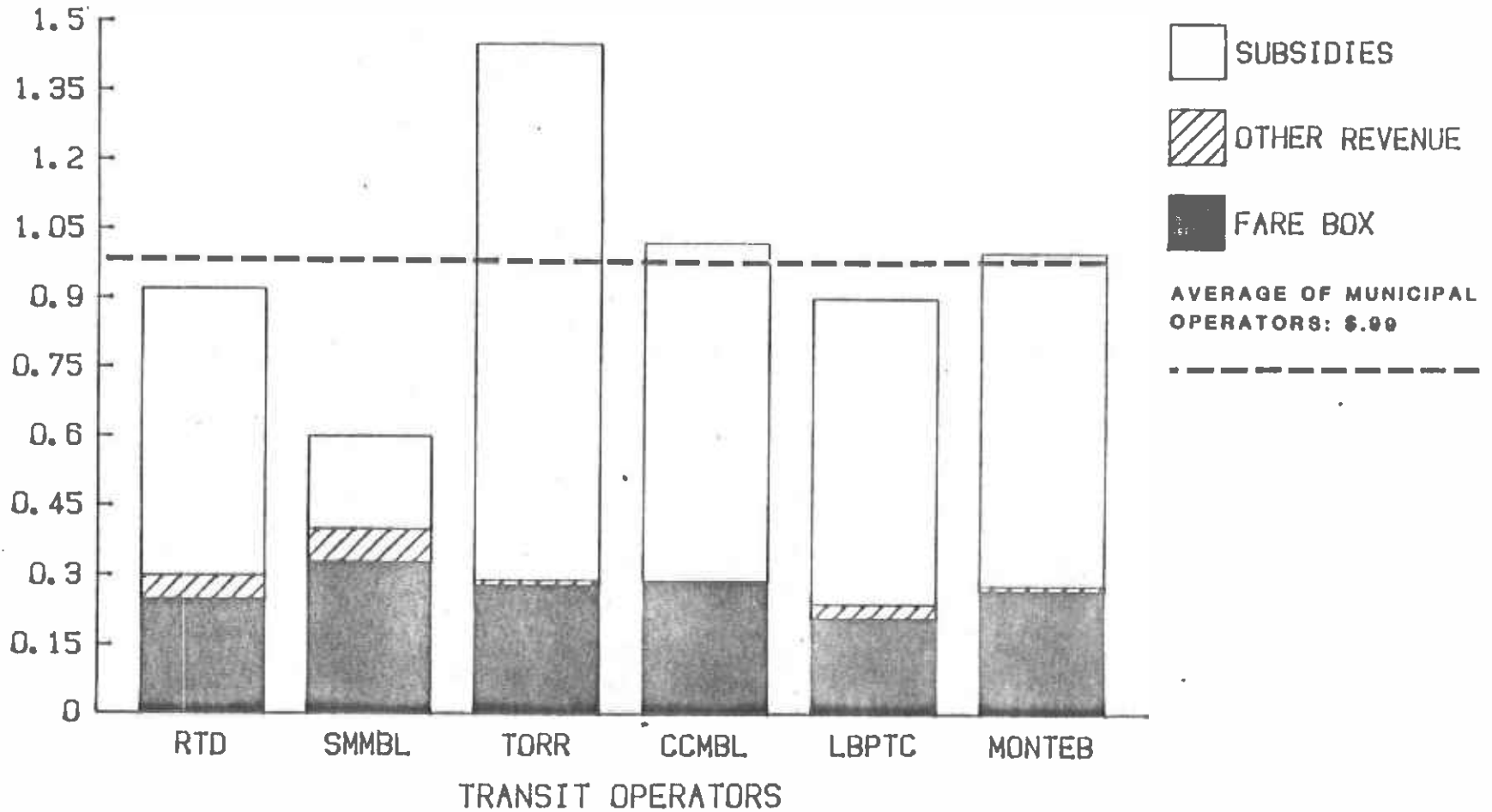


COMPARISON OF
REVENUE SOURCES

TABLE III-19

REVENUE SOURCE PER BOARDING BY MAJOR L A COUNTY OPERATOR

REVENUE PER BOARDING (in dollars)



III-42



REVENUE SOURCE PER BOARDING

FIGURE III - 7

vehicle hour and per vehicle mile than the municipal operators' average, and that it is second only to Santa Monica on a revenue per vehicle hour and per vehicle mile basis. A similar picture emerges with respect to other revenues.

With respect to subsidies (local, state, and federal), the SCRTD receives the largest subsidy per vehicle hour (\$37.89) and per vehicle mile (\$2.72), each being well above the municipal carriers' average of \$26.47 and \$2.14, respectively.

While these revenue statistics are interesting as a matter of comparison, the one that has the most policy import is the revenue per passenger boarding. The District, with a base local fare of 50 cents, receives an average of 25 cents per boarding. The local base fare for the other carriers is also 50 cents, except for Torrance, which is 35 cents. However, the other carriers, with the exception of Long Beach Transit, average more revenue per passenger boarding. Given also that the SCRTD runs more express service than the municipal carriers and charges zone-based express fares, which should average more than most of the municipal carriers, this low figure per boarding is particularly significant. Section 15 reports do not show the full fare structure of each carrier; so a certain amount of speculation is needed. There would appear to be two possible reasons for SCRTD's comparatively low revenue per boarding from the same local base fare and higher express fares:

- (1) The SCRTD experiences more transfers from its own buses and from buses of other operators than is the case for the other municipal carriers.
- (2) The proportion of discount fare users on SCRTD services is considerably larger than on the other carriers due to an extensive discount fare policy.

Clearly, these assessments deserve further study to determine if SCRTD should be looking for a greater recovery of costs from the farebox. Because the subsidy represents the amount needed to meet total costs incurred, any increase in farebox recovery would obviously reduce the subsidy requirements of the SCRTD.

The new SCRTD fare structure, to be implemented on July 1, 1985, will result in a greater farebox recovery ratio since the base fare will increase from \$.50 to \$.85. It remains to be seen if, under the new fare structure, SCRTD revenue per passenger boarding will also be lower than the average revenues of the municipal operators.

3.2.3 SUMMARY AND CONCLUSIONS

In summary, the results of the cost comparisons for Fiscal Year 1983-84 yield the following significant findings, based on Section 15 reports and other miscellaneous public information:

- o Total costs per passenger boarding for SCRTD (\$0.92) are below the average cost for the municipal carriers (\$0.97), but total costs per vehicle mile and per vehicle hour for the SCRTD (\$4.01 and \$56.08, respectively) are significantly higher than the average for the other carriers (\$3.10 and \$38.56, respectively).
- o For operation costs, the primary reasons for SCRTD's higher costs are higher wage rates, a larger peak-to-base ratio, more non-revenue miles, and more weekend service than the five municipal operators provide. Also, the District's scheduling and training functions are much more complex and time-consuming than the other carriers due to the number of lines operated by SCRTD. All of these factors cause significantly higher labor and fringe benefits costs for the District than for the five municipal operators.
- o For maintenance costs, the primary reasons for higher SCRTD costs appear to be due to the mix of vehicle types and models in the fleet, including a high proportion of Advanced Design Buses and expansion of maintenance facilities.
- o For administration costs, the primary reason for the District's higher cost levels is more complex dealings with federal, state and local agencies. In addition, the District provides a large transit police force as well as public information, which includes a vast telecommunications information system and the provision of public timetables and other public assistance activities involved in a large, regional transit operation.
- o It is apparent that, while the SCRTD also pays full cost of casualty and liability coverage, it is probable that the municipal carriers receive partial coverage under blanket insurance policies held by the municipalities so that the financial statements of these carriers understate the costs of casualty and liability losses.
- o The SCRTD subsidy (i.e., revenues received from non-SCRTD sources) per transit passenger (\$0.62) is slightly lower than the average for the other five carriers (\$0.69).

Any conclusion that the private or municipal operators can assume additional transit service as a cost-saving measure needs to be evaluated with great care. Over and above considerations of the advantages and disadvantages of a large, integrated transit system versus a number of smaller, independent systems, the analysis reported in this section has neither proved nor disproved that significant cost savings are obtainable by contracting service out, or by allocating portions of the service to other operators. Their costs, which are marginal costs in economic terms, may be greater than their existing base costs. Moreover, SCRTD's costs may not drop on a one-for-one unit of transit service reduction. In short, pursuit of this issue should be preceded by a much more detailed study of the specific costs, services, and responsibilities involved to assure that cost comparisons are being made on an equivalent basis, prior to a decision to change transit services within the region.

3.3 SCRTD COST COMPARISON WITH PRIVATE OPERATORS

An attempt was made to collect data from various private carriers in the region, but with little success. The carriers contacted for data collection would not provide information, stating that they may be bidding on several lines if competitive bidding occurs. They felt that it was counterproductive to their operation to provide specific cost information.

It has been generally assumed and quoted that private operators can provide service at an overall cost in the region of \$25 to \$35 per vehicle hour. No clear source of data exists that substantiates that such a cost range is real. Also, no audits exist to show that such costs have been offered by private carriers for contracted services in the Los Angeles region and maintained for significant periods.

Indeed, there is experience in Houston, Texas, which indicates that, after about a year of operation, private contractors' costs were at or exceeding the levels of the public operators' costs (in the vicinity of \$50 to \$55 per vehicle hour). The Metropolitan Transit Authority in Houston, Texas, still contracts only express service to private operators. However, the level of contracting has been reduced due to the escalation of cost for services by the private carriers. Similarly, the cost comparison of SCRTD with private carriers for the operation of the downtown minibus, as described in Section 3.4.4, also indicates that the potential for total cost savings of a private operator for the operation of this service will be minimal compared to the current SCRTD total cost.

Even without data being provided by private operator in the Los Angeles region, several points can still be discussed. These points are presented below.

SCRTD is committed to system integrity by maintaining the regional connectivity of routes. Minimum service/spacing policies established by the SCRTD ensure that system integrity is not compromised by allowing service to be withdrawn in the outlying portions of its service area. The SCRTD's costs in the more heavily patronized portions of its service area are considerably less than the overall system cost. For example, SCRTD operating Division 7 lines, which carry significantly more boardings per hour than the system average, have costs which are approximately 15% less than the system average on a cost per hour basis and as much as 30% less than the system average on a cost per boarding basis. If a private carrier assumes some of the more cost-effective routes of a regional public carrier such as SCRTD, this clearly would decrease the public carrier's ability to service the needs of the region as a whole.

3.4 SCRTD SPECIAL SERVICE CONTRACTS

The District has contracts and agreements with several local agencies and organizations in the region which provide payments or subsidies for specific District services and for reduced fares. These agencies include adjacent counties, Los Angeles City and County, and private companies.

This section describes some of the special services provided by the District and focuses on the costing methodologies employed for these services. A cost comparison between private carriers and the District for the operation of the Glendale Shuttle concludes this section.

3.4.1 SPECIAL SERVICE AND SUBSIDIES

The following service and subsidy agreements are currently in effect between the District and other organizations:

- o The counties of Orange, Riverside and San Bernardino (through their respective transit operating agencies) provide subsidies for District services in these counties. The amount of the subsidy is based upon the difference between the cost of providing a specific service in the adjacent county and the revenues attributable to such service, on a system revenue per mile basis.
- o The operation of one special circulation bus route in downtown Los Angeles is subsidized by an agreement between the District, the City of Los Angeles, and the Community Redevelopment Agency of the City of Los Angeles (CRA). That agreement provides for a \$.25 fare on the minibus and no transfer privileges to or from the District's other services.

The net cost or subsidy is paid 60% by the City, 20% by the CRA, and 20% by the District. In FY 1984-85, fares are expected to support 19% of the total operating cost of this route (SCRTD Route 602). The City's share of the funding is obtained from the City's Proposition A Local Return Funds. The CRA's share of the funding is provided from tax increment financing.

Los Angeles City is in the process of contracting this service to a private operator. The initial date for the transition of service provision was targeted for the first quarter of FY 1985-86. It is unlikely, however, that the City will complete its review and selection process of a private operator by this time. Consequently, the District may operate this service several more months.

- o The operation of a special circulation bus route on Fridays and Saturdays in Westwood is subsidized by an agreement between the District and the City of Los Angeles, with funding by the City of Los Angeles from Proposition A Local Return Funds. The agreement provides for a \$.25 fare, with no transfer privilege to or from other District services. Using minibuses, SCRTD Line 605 recovers 8% of its operating costs from the farebox.

This service will also be contracted to a private operator by the City of Los Angeles. The subcontracting is projected to occur in September, 1985.

- o Under a service contract with Los Angeles County and the Los Angeles Philharmonic Association, the District also operates Park-Ride service to the Hollywood Bowl during the summer season. For the 1984 season, Los Angeles County funded 42% of the cost, with the District funding 22% of the cost, and the remaining 36% of the total operating costs covered by fares.

As part of a separate agreement with the Los Angeles Philharmonic Association, SCRTD also provides service from the Fullerton Park-Ride lot to the Hollywood Bowl.

- o In FY 1984-85, the City of El Segundo authorized an agreement to help fund the operating cost of the two remaining routes in the Bus Express Employee Program (BEEP). Using Proposition A revenues, El Segundo City Council voted to fund \$5,000 of the requested \$7,400 in operating subsidy for continued BEEP service. The remaining \$2,400 is being sought from other cities and companies being served by BEEP.
- o In November, 1984, the City of Pasadena signed an agreement with the SCRTD to provide shuttle service in downtown Pasadena. Using its Proposition A revenues, Pasadena is subsidizing the majority of the operating costs. The \$.25 fare is providing the remaining revenues.

- o When UCLA moved its home games to the Rose Bowl, the City of Pasadena authorized an agreement for SCRTD to provide shuttle bus service to the Rose Bowl from the Ralph M. Parsons Company parking lot in Pasadena. SCRTD is reimbursed by the City for each bus, supervisor and traffic loader provided, minus the passenger revenue generated.
- o Separate service agreements with Hollywood Park Racetrack and the two horse racing organizations operating at Santa Anita Racetrack (Los Angeles Turf Club and Oak Tree Racing Association) call for SCRTD to provide shuttle service between the parking lots and the entrance gates. These organizations set the fares and pay SCRTD a daily rate per bus used to provide the service.
- o There are currently six annual and seasonal events for which the District provides special service which, in some cases, supplements regular service. The events served are the Rose Parade and Bowl game held in Pasadena on New Year's Day, the Los Angeles County Fair in Pomona, Dodger baseball games, and the racing seasons at Santa Anita, Hollywood Park, and Los Alamitos racetracks. These services are provided because of historical reasons and to protect regular riders from surges in ridership demand resulting from these events. The District does not receive direct subsidies for these services. However, the premium fares charged on these services achieve a higher than average operating cost recovery through farebox revenues. The fares for these services range from \$1.25 to \$3.05.

3.4.2 COSTING OF SPECIAL SERVICES

As can be seen in the description above, the method of cost reimbursement for District services varies from one agency to another. In one agreement the entire cost is based on miles, while in other agreements the cost reimbursement is based on hours, number of buses or on a fixed amount. Although the District may recover part or all of its cost per each agreement, the lack of one universal cost formula to serve as a basis for cost calculations and reimbursements is noticeable. Several reasons led to the existing variations in the costing methodologies. These reasons are listed below:

- o Each service is unique and may have different cost factors upon which the District's cost is based. Time of day, distance traveled, types of buses, and service levels are a few examples of factors which determine cost.
- o Some service agreements such as with adjacent counties and for special events are based on historical factors and have evolved independently of other agreements and services. The contrasting process for providing the service was simplified by not changing it annually when costs were adjusted.

- o Often, in providing a specific special service, full recovery of cost was not the only consideration for its implementation. The District's goal of bringing about the most efficient and equitable transit system for the residents of the area may require deviation from a cost formula which is based purely on economic factors.
- o Historically, staff and management found no need to use one cost formula. It was felt that the use of one formula would limit the flexibility of adjusting the cost to reflect the policies and consideration for the desired public transit services provided by the District.

3.4.3 EXISTING COST FORMULAS

District staff is currently in the process of searching for a standard cost formula which may be used for estimating the difference in cost associated with changes in service. The changes in cost and service could be marginal, incremental or systemwide. Small changes on a line-by-line basis are marginal; major changes such as the Sector Improvement Program and the fare changes are incremental; and changes which affect the entire system are systemwide changes.

At present, different cost formulas are used for different services. Given this situation, each request for a new service to be provided by the District may be different for similar services depending on such factors as time of day, division assignments, manner of scheduling, and type of vehicles required.

3.4.4 COST COMPARISON FOR SPECIAL SERVICES

Two cost comparisons between the District and private operators are analyzed in this section. The first comparison is for the operation of the Glendale local circulation system. The second comparison is for the operation of the Los Angeles Central City Shuttle Bus. Table III-20 compares cost factors of the selected private carrier for the operation of the Glendale Shuttle with comparable cost factors of the District had the District operated this service. Overall, the District's total cost per hour is about 62% higher than for the selected private carrier. Table III-20 reveals that the District's higher total cost per hour is due primarily to differences in labor costs. The District's cost per hour for labor and fringe benefits is over three times that for the selected private carrier. In addition, the selected private carrier also maintains a distinct cost advantage over the District with respect to fuel costs through the use of propane-powered vans (the District uses diesel-powered buses).

The City of Los Angeles recently received six bids submitted by private carriers for the operation of the Central City Shuttle Line. These bids were solicited by the City in an attempt to provide the downtown minibus service at a lower cost than the District currently operates.

GLENDALE CIRCULATION SYSTEM COSTS

VS.

COMPARABLE SCRTO COSTS

PER HOUR

	<u>Selected Carrier</u>	<u>SCRTO</u>
Drivers' labor	\$ 5.83	\$12.01
Other labor ¹	5.02	15.05
Fringe benefits	2.09	13.70
Vehicle lease ²	9.74	2.11
Fuel	1.33	3.67
Other costs ³	10.03	9.74
Profit	<u>0.68</u>	<u>-----</u>
TOTAL	<u>\$34.72</u>	<u>\$56.28</u>

NOTES

1. Includes (estimated) administrative costs incurred by City of Glendale.
2. The District's "vehicle lease" cost is the local match for capital items plus debt service.
3. Includes marketing cost and revised insurance cost.



**SPECIAL SERVICE
COMPARISON**

TABLE III-20

Although a direct comparison of the cost components between the District and an average of the bids for the private operator is difficult due to variation in the accounting procedures employed by the private operators, the District's costs, nonetheless, appear to be higher in most facets of its operation, particularly for labor and maintenance costs. The variation in accounting procedures and type of vehicles may account for differences in maintenance costs. The District does maintain a cost advantage over the private operators with respect to equipment cost. The District amortizes its equipment cost over a 12-year period, while the private operators have generally elected to amortize their cost over the length of the contract with the City (three years) in order to recoup more of their initial investment. The LACTC has indicated that they will fund 50% of the vehicle capital cost each year. As a result, the District's yearly equipment cost is about three to four times lower than the average of the private operators, significantly reducing the cost saving achievability for the private operators.

Overall, the SCRTD's total annual cost for the operation of the Central City Shuttle Line is only about 6% higher than the average of the bids submitted by the private operators. These bids, however, are not an accurate reflection of the total cost of the operation. A true comparison needs to take into account the additional managerial, administrative, and marketing expenses that will be directly borne by the City of Los Angeles. Integrating these additional costs into the private operators bids reduces the gap to the point where the District's cost becomes extremely competitive. The total annual cost for the private operator selected by the City to operate the Central City Shuttle Line is only about 5% lower than the total annual cost for the District after accounting for an assumed additional administrative overhead of 15%.

Quality of service is another factor which is not apparent when examining a cost comparison between the District and private operators. The District has an extensive support system network which provides a high level of service quality to the entire region. This is evident by the District's provision of a transit police force, as well as other public assistance activities such as customer relations, marketing, and a vast telephone information system. Further, the District, as a stand-alone agency, employs its own legal staff and has personnel and purchasing departments. Use of existing Los Angeles City support departments for any of these activities will severely inflate the total cost of this downtown minibus operation, and this should be considered in the cost comparison for this service.

The Los Angeles City Department of Transportation (LADOT) requested the LACTC to fund a substantial portion of the Central City Shuttle Bus capital and operating costs. If this request is approved, the net cost to the City will be lower than its current cost (see Section 3.4.1).

If the LACTC funding criteria of substitution projects are enforced, it will be difficult to justify funding the operation of the Central City Shuttle by a private carrier. This criteria states that substantial cost savings must be demonstrated when substituting a new service for an existing service.

It should be kept in mind that the SCRTD cost figure is based on actual experience of operation over many years. On the other hand, the cost figures of the bids by private operators are more of a projection and may not be the actual costs. The projected costs in the bids are for one year of operation and are likely to rise in following years as a result of unexpected expenses that may occur during actual operation and the tendency of the private operator to increase its profit.

3.5 TRANSIT SERVICE EFFICIENCY, EFFECTIVENESS, AND EQUITY

The cost of delivering transit services is an important element in evaluating a successful operation, particularly during an era of shrinking and unstable funding sources for transit. Cost, however, should not be the only criterion considered in the evaluation of a transit operation. Cost should be related to the goals and objectives of the operating agency and to the level of usage, quality, and equity of the service provided.

The SCRTD was created by the State Legislature to provide an adequate, efficient, and equitable transit system for Los Angeles County residents. Furthermore, one of the District's major goals is to operate a safe, clean, convenient, and efficient mass transit system for the general public (see Figure III-8). Given the mission and goals of the District, a balance should be found between the efficiency (cost per unit of service) of the District's operation and the effectiveness of achieving its goal (i.e., carrying passengers). The success of the District's operation should be evaluated on the basis of this balance rather than on the basis of a sole criterion of efficiency or effectiveness.

Another issue raised in discussing the District's operation is the equity of service deployment. This issue relates to the question of how much service should be deployed in each of the District's planning sectors. Should service be deployed where it is used most, or should it be available for use throughout the service area? There is no simple answer to this question, but one fact is obvious: Funding limitations preclude the possibility of a uniformly high level of service everywhere.

To a certain extent, all transit operators need to deal with efficiency, effectiveness, and equity issues. However, the District, because of its mission and overall size, is generally forced to emphasize effectiveness and equity at the expense of efficiency more than smaller municipal operators. A more specific comparison of SCRTD with municipal and private operators in relation to efficiency, effectiveness, and equity is presented below.

DISTRICT-WIDE GOALS
FY 1986-90

- Goal 1: To operate a safe, clean, convenient and efficient mass transit system for the general public.
- Goal 2: To develop and operate an integrated bus and rail transit system for the general public within the urbanized area while enhancing the quality of life and the development of the urbanized areas.
- Goal 3: To improve the productivity of the transportation, maintenance, and management sectors of the District.
- Goal 4: To use the SCRTD leadership position to serve as a catalyst for the physical, land use, and economic development of the metropolitan area in relation to transportation and access.
- Goal 5: To support and reinforce the Centers Concept of land use development in the Los Angeles region.
- Goal 6: To maximize the availability of accessible transit service within the District's service area.
- Goal 7: To protect the public's investment in public transit.

III-54



DISTRICT-WIDE GOALS
FY 1986-90

FIGURE III-8

3.5.1 GENERAL COMPARISON WITH MUNICIPAL OPERATORS

Comparison of the District with municipal bus operators within Los Angeles County is a useful frame of reference. However, as outlined in Section 3.2, there are some dramatic differences in the service characteristics between the SCRTD and the other operations in Los Angeles County. Size of fleet, service area, and population density within the service area are major factors contributing to the differences. Therefore, the same standards of performance should not be the basis for a comparative evaluation between the District and other operators in the County. A more reasonable set of standards should include a comparison of SCRTD with similar agencies in other major U.S. cities. Such a comparison is presented in Section 3.6.3.

Compared to smaller municipal bus operators, regional transit operators, such as the SCRTD, have a number of important characteristics which distinguish them in terms of their mission and working environment. For example, the central-city oriented regional operator carries more passengers per unit of service, and it does so in a more harsh operating environment, primarily in terms of traffic congestion and vandalism. Partly because of this more demanding work environment, the regional carrier relies on a largely unionized work force. There are also much higher expectations, both on the part of the riding and nonriding public, in regard to the performance of the regional carrier. Full support services, responsiveness in terms of route and bus schedule changes and responsiveness in terms of government and community liaison and of communicating service information are areas in which the public expects/demands more from regional carriers in the major metropolitan areas than from small, local operators.

3.5.2 EFFICIENCY VERSUS EFFECTIVENESS

Frequently used within the transit industry for evaluating system performance, efficiency of transit operations indicates how well resource inputs such as labor and capital are utilized to produce varying levels of service output. Efficiency is typically measured in terms of revenue hours and miles per employee. Effectiveness, on the other hand, indicates how well a system achieves output goals which have been set for it, and is usually expressed by service utilization measures such as number of passengers. An increase in system efficiency, however, does not necessarily indicate that an increase in system effectiveness will follow. For example, an operator may appear to be very efficient by reducing the number of its revenue hours, miles and employees while being ineffective by carrying very few passengers. Therefore, it is very important to evaluate the ridership, as well as the level of service of any system, in addition to its cost.

Attempts to attain optimal levels of system effectiveness are, in many cases, at the expense of system efficiency. Effectiveness involves careful deployment of service to meet present and potential ridership demand. It also involves a full range of support services intended to make the service more attractive both on a short- and long-term basis. In addition, it involves the support of a host of objectives, some of which are outside the direct responsibility of the operating agency, such as support for land use and environmental goals. In many instances, despite sustaining and increasing ridership levels, cost per unit of service is also increased and, thus, degrades efficiency in the technical sense of the term. Expenses which are typically intended to promote effectiveness, but which reduce efficiency, include the following:

- o Marketing
- o Planning
- o Transit Police
- o Passenger Information Operators
- o Data Collection and Analysis
- o Fare Collection
- o Public Timetables
- o Bus Stop Information Signs
- o Bus Cleaning
- o Air-conditioning of Buses

The SCRTO maintains a high level of the support services listed above. On the other hand, the Los Angeles County municipal operators devote minimal staff time to some of the support services or rely on assistance by their municipalities for the provision of some support services and, thus, reduce their report total costs.

3.5.3 EQUITY

One of the District's goals is to provide, to the greatest extent, an equitable transit system for the area. Equitable distribution means the fairest possible distribution of service. It need not be construed to mean equal distribution. However, there are different points of view as to the types and quantity of public transportation that should be provided within the region and among the different sub-areas or sectors. Need, use of service, and area coverage are factors the District currently uses to determine where service, by type, is allocated. Public transportation is inherently more efficient and productive in central areas of urbanized regions. For that reason, there is a greater concentration of service and ridership in central-city areas as compared to outlying areas. On the other hand, despite lower existing and potential ridership levels, adequate service coverage is warranted in the suburban service areas in order to meet both the overall purpose of the public transportation system and to meet the existing guidelines (see Figure III-9) for service deployment among the District's Planning Sectors. One additional important factor to consider in service allocation decisions is the level of tax support contributed by the suburban areas compared to the central-city areas.

SERVICE DEPLOYMENT GUIDELINES

The District's level-of-service policy guidelines were adopted by the Board of Directors on May 5, 1976. Assuming availability of funds and equipment, it is the District's policy to maximize transit accessibility and mobility within its service area, consistent with the following accessibility and service effectiveness objectives.

ACCESSIBILITY

Population Coverage. These objectives apply to local service only, which for this purpose is defined as service with four or more stops per mile and with no restrictions on passengers boarding or alighting.

- o In areas where population density is greater than 8,000 per mile, service with a weekday base headway of 30 minutes or less will be provided to within one-quarter mile of 90% of the population.
- o In areas where population density is 4,000 to 8,000 per square mile, service with a weekday based headway of 30 minutes or less will be provided to within one-half mile of 90% of the population.
- o In areas where population density is 4,000 or fewer persons per square mile, service with a weekday based headway of 60 minutes or less will be provided to within one-half mile of 90% of population. This statement will represent the minimum service standard throughout the service area.

Line Spacing. The population coverage objectives imply spacing objectives (e.g. spacing for one-half mile or less in at least one direction for areas with population density greater than 8,000 per square mile). Appropriate spacing will vary according to the terrain of the street.

Loading. In order to provide an accessible and dependable transit system, headways on local services should not exceed the policy headways described under the population coverage objectives. All parts of the transit system should have adequate capacity for safety and be able to attract and keep riders.

- o Loading ratios for individual lines should not exceed 140% measured for the peak 20 minutes at the maximum load point.
- o Loading ratios should not exceed 100% for base periods and evenings.
- o Loading ratios for long distance freeway and busway services should not exceed 100% measured for the peak half-hours.

SERVICE EFFECTIVENESS

New services should be designed to meet the objectives specified below. New or existing services not meeting these objectives will be evaluated for remedial action or deletion in accordance with the procedure for treatment of low performance lines outlined in the District's Service Evaluation Program.

For Local Services

- o At least 20 passengers per bus hour (all day).
- o At least 2.5 passengers per bus mile in the peak period.
- o At least 1.5 passengers per bus mile (all day).

For Express Service

- o At least 250 passenger-miles per bus hour.



SERVICE DEPLOYMENT GUIDELINES

FIGURE III-9

Limited resources for transit and the need to continue to achieve additional productivity and efficiency gains is closely related to service deployment issues. Measures to reduce cost and increase efficiency involve decreasing deadhead bus hours and miles and layover time, reducing frequency of service, and eliminating routes or portions of routes. If these service reductions are based strictly on efficiency measures, it could result in a significant amount of service being withdrawn from outlying areas in favor of adding service in central areas where present and potential efficiency is the highest.

To achieve a balance among efficiency, effectiveness, and equity, the District Board of Directors has adopted several formal and informal policies. These policies, which are described in Section 3.1.4 of this study, require the District to retain some unproductive lines at the expense of high ridership lines. Small, local operators do not serve as wide a diversity of population and transit needs as a regional operator and, therefore, do not incur the same expenses for policy lines.

3.6 EXPERIENCE OF LARGE TRANSIT PROPERTIES IN THE U.S.

This section examines cost reduction and innovation techniques by other large transit agencies in the United States. Also, a cost-comparison analysis is conducted with five large national all-bus operators. The Chicago, Illinois Regional Transportation Authority's (RTA) experience as a regional funding agency which also subcontracts service is discussed next in terms of applicability to the LACTC. This is followed by a review of subcontracted services in the metropolitan areas of Dallas and Houston, Texas and Chicago, Illinois. Next, a cost comparison analysis is conducted between the District and bus operators in the cities of Philadelphia, Chicago, New York, New Jersey, and Washington, D.C. This section is concluded with a presentation of innovative concepts that are used by Chicago; Cleveland, Ohio; Houston; and San Diego, California.

3.6.1 RELATIONSHIPS BETWEEN REGIONAL FUNDING AGENCIES AND OPERATORS

The relationship in Chicago between the regional transit agency and the operators is analyzed in this section. The intent of this analysis is to determine if any benefits could be derived from a similar relationship between the LACTC and the operators in Los Angeles County.

.1 The Regional Transportation Authority (RTA)

Prior to 1984, the RTA was responsible for all aspects of public transportation in the six-county Chicago metropolitan area. It funded the Chicago Transit Authority (CTA), as well as operated suburban bus service and subcontracted private carriers. This structure of the RTA was found to be inefficient and did not

provide the desired quality of transportation services. As a result, legislation in 1983 restructured the RTA. The RTA became a financial review agency, overseeing three operating agencies: the Chicago Transit Authority, the Commuter Rail Division, and the Suburban Bus Division (SBD). The SBD is the new agency which took over the operating and subcontracting from the RTA.

The SBD does not directly operate any suburban service; it just administers and provides support to municipal and privately subcontracted suburban services. The five major components of the SBD operating program are fully funded public carriers, contracts with private carriers, paratransit services, administration, and a centralized acquisition program for fuel and insurance.

The SBD operating budget for Fiscal Year 1985 is \$48.2 million. Of the three divisions of RTA, the SBD is by far the smallest, having the fewest employees and the least funding. For FY 1985 RTA's budget is \$478,077,000 of which CAT will receive 64.7%, the Commuter Rail will receive 25.1% and the SBD 10.2%.

.2 Los Angeles County Transportation Commission (LACTC)

The LACTC was created pursuant to the Public Utilities Code (PUC) Section 130050 for the purpose of administering the transportation needs of Los Angeles County. The functions of the LACTC are similar to the current functions of the RTA in Chicago. PUC Section 130262 states that the Commission shall make sure that local and regional transportation operators do not compete or unnecessarily duplicate service, but assist each other to ensure that the maximum level of transit service is provided to the general public at the lowest possible cost. In Sections 130220 and 130301, there is further language which could give the LACTC the authority to contract service if deemed necessary. Thus, the Commission could function in the same capacity as the RTA did previously, i.e. being a funding agency as well as a vehicle for the contracting of service.

The LACTC currently does not function as a provider or a contractor of service because of a policy approved by the LACTC not to perform in such a capacity at this time. Instead of contracting service, the Commission is committed to working with the existing transportation agencies such as the SCRTD and the municipal operators. If the Commission decides to amend that policy, it could contract service and be in direct competition with the existing operators.

3.6.2 SUBCONTRACTED SERVICE

Contracting experience of three transportation agencies -- Chicago, Dallas and Houston -- are presented below:

.1 Chicago - As discussed above, the SBD is an administrative agency which contracts three different types of bus operations. The SBD contracts with a total of 25 public and private carriers and with 34 paratransit providers. A total of 231 routes are covered daily with over 450 vehicles in operation.

The SBD currently has 25 separate contracts. The following is a summary of eight of these contracts. The contracts' expiration dates span more than two years. Wages range from a low of \$6.40 per hour to a high of \$13.02 per hour with an average hourly salary of \$10.90. The salary progression steps vary from reaching the top in six months to a maximum of four years; the average progression is 2.3 years. A variation also exists in the areas of fringe benefits, work rules and employment of part-time operators.

.2 Dallas - DART is the funding agency in Dallas as the LACTC is in Los Angeles. However, a major component of the immediate action program is the subcontracting of suburban local bus service. DART also funds the major transit operator in Dallas, the Dallas Transit System (DTS). DART recently contracted their suburban routes to Trailways on September 17, 1984. Trailways heads the operations but subcontracts the maintenance of the equipment to Ryder Truck Systems and the management to ATE Management.

The contract between DART and Trailways is for three years with two one-year options at a cost of \$15.5 million for the three years. The contract is not calculated on a per mile or per hour rate but for a total amount of service provided per month. If Trailway's expenses exceed \$600,000 per month because of additional service, the additional amount will be paid to the company at either \$22.90 per hour or \$1.10 per mile, whichever is less. DART chose Trailways to operate its suburban express routes because Trailways could provide the service for about 10%-15% less cost than DART could do it in-house.

.3 Houston - In August, 1979, METRO inaugurated its Commuter Service with 20 contracted buses which increased to 31 by year's end. The number of contracted buses increased to 94 by the end of 1981 and up to 122 by March, 1983, when 122 buses operated 434 trips on 12 routes daily. METRO has subsequently taken over much of the service it had previously contracted out. The current number of companies METRO contracts with is down from four to two. As wages and other costs for the contracted operators escalate, METRO is finding that it can provide the service for the same cost. Currently METRO contracts out seven routes, with 75 buses ranging in cost from a high of \$88.00 to a low of \$61.00 per service hour.

3.6.3 SCRTD COST COMPARISON WITH OTHER LARGE ALL-BUS OPERATORS IN THE NATION

This section compares the transit costs of the SCRTD and five transit operators within the continental United States. Only large operators providing more than 1,000 buses in the peak period were selected for this comparison in order to better duplicate the scale of the District's operation. Statistics were gathered for Washington (WMATA), Philadelphia (SEPTA), Chicago (CTA), New York (CTA), and New Jersey Transit.

Data for each of the operators in this comparison was compiled from UMTA's Section 15 reports. Total operating cost for the bus mode only was disaggregated by function, with cost indices calculated based on the total vehicle miles and hours operated and total passengers carried. These cost indices are compared and analyzed below.

.1 Cost Per Mile

As shown in Table III-21, the SCRTD's total cost per vehicle mile (\$4.01) is lower than all of the national carriers except New Jersey Transit and is over 45 percent lower than the comparable cost figure for New York (\$7.31). The SCRTD's total cost per mile is about 25 percent less than the average of the five national carriers. Also, each of the SCRTD's functions are at least 10 percent less than the national average. Table III-22 shows that the SCRTD has a higher average revenue service speed than the national average. As discussed earlier, this higher speed means that the SCRTD delivers more service miles per hour than do the national carriers. The SCRTD also operates with the lowest peak-to-base bus ratio of any national carrier compared. This lower peak-to-base ratio indicates that the SCRTD's ridership demand is more evenly spread throughout the day. The less uniform (peaked) ridership demand for the national carriers translates into higher operating costs because a larger than necessary labor force must be maintained throughout most of the day in order to adequately service the peak periods. Union contracts which limit the number of part-time drivers and split shifts exacerbate this excess in wage expenditures.

.2 Cost Per Hour

Table III-21 shows that the SCRTD's total cost per vehicle hour (\$56.08) is only marginally higher (about 2 percent) than the average of the national carriers and is lower than both Washington (\$69.37) and New York (\$58.88). Operations is the only function where the SCRTD holds a cost advantage over the national average,

COST COMPARISON OF SCRTD WITH OTHER NATIONAL CARRIERS

<u>COST AVERAGE</u>	<u>SCRTD</u>	<u>WASHINGTON</u>	<u>PHILADELPHIA</u>	<u>CHICAGO</u>	<u>NEW YORK</u>	<u>NEW JERSEY</u>	<u>NATIONAL AVERAGE*</u>
<u>COST PER MILE</u>							
Operations	\$2.07	\$2.53	\$2.32	\$3.02	\$4.24	\$4.43	\$2.90
Maintenance	\$1.08	\$1.19	\$1.05	\$1.30	\$2.04	\$0.54	\$1.32
Administration	\$0.48	\$0.54	\$0.45	\$0.35	\$0.62	\$0.73	\$0.56
Other	\$0.37	\$1.26	\$0.81	\$0.19	\$0.41	\$0.12	\$0.47
TOTAL	\$4.00	\$5.53	\$4.63	\$4.87	\$7.31	\$2.83	\$5.25
<u>COST PER HOUR</u>							
Operations	\$28.94	\$31.79	\$23.46	\$30.37	\$34.19	\$23.52	\$30.33
Maintenance	\$15.18	\$14.95	\$10.63	\$13.07	\$16.40	\$8.93	\$13.78
Administration	\$6.77	\$6.79	\$4.54	\$3.50	\$4.99	\$12.02	\$5.80
Other	\$5.20	\$15.84	\$8.18	\$1.94	\$3.30	\$2.02	\$4.88
TOTAL	\$56.08	\$69.37	\$46.80	\$48.89	\$58.88	\$46.49	\$54.79
<u>COST PER BOARDING</u>							
Operations	\$0.47	\$0.66	\$0.42	\$0.46	\$0.32	\$0.82	\$0.41
Maintenance	\$0.25	\$0.31	\$0.19	\$0.20	\$0.15	\$0.31	\$0.19
Administration	\$0.11	\$0.14	\$0.08	\$0.05	\$0.05	\$0.42	\$0.08
Other	\$0.09	\$0.33	\$0.15	\$0.03	\$0.03	\$0.07	\$0.07
TOTAL	\$0.92	\$1.43	\$0.84	\$0.74	\$0.55	\$1.62	\$0.74

NOTE: All figures are based on audited Fiscal Year 1984 data, except New Jersey - Fiscal Year 1983.

* Weighted average used.



**COMPARISON OF COSTS
AMONG LARGE OPERATORS**

TABLE III-21

COMPARISON OF SCRTD OPERATIONAL CHARACTERISTICS WITH OTHER NATIONAL CARRIERS

<u>OPERATIONAL CHARACTERISTIC</u>	<u>SCRTD</u>	<u>WASHINGTON</u>	<u>PHILA-DELPHIA</u>	<u>CHICAGO</u>	<u>NEW YORK</u>	<u>NEW JERSEY</u>	<u>NATIONAL AVERAGE</u>
Peak Fleet	2,161	1,422	1,076	1,868	3,197	1,537	1,820
Peak-to-Base Ratio	1.53	2.97	1.92	1.89	1.53	2.11	2.08
Advanced Design Buses (ADB's)	1,848	191	596	0	1,887	910	717
Total Revenue Hours Operated (000's)	7,126	2,836	3,332	7,196	11,998	4,118	5,898
Total Revenue Miles Operated (000's)	94,540	39,943	33,582	72,277	96,210	65,371	61,477
Total Vehicle Hours Operated (000's)	7,643	3,933	3,740	7,343	13,103	4,550	6,534
Total Vehicle Miles Operated (000's)	107,000	49,331	37,833	73,756	105,601	74,638	68,232
Unlinked Boardings (000's)	466,000	190,221	207,510	483,288	1,409,305	130,499	484,165
Passenger Miles (000's)	1,839,000	641,857	544,271	1,103,833	2,992,062	1,096,550	1,275,715
Average Trip Length (mi)	3.95	3.37	2.62	2.28	2.12	8.40	2.63
Average Revenue Speed (mph)	13.2	14.1	10.1	10.0	8.0	15.9	10.4

NOTE: All figures are based on audited Fiscal Year 1984 data, except New Jersey - Fiscal Year 1983.



**STATISTICAL PROFILE
OF LARGE OPERATORS**

TABLE III-22

while the SCRTD's "other" function, primarily due to expensive PL&PD insurance cost per hour is larger than any of the national carriers, with the exception of Philadelphia, and is over one third higher than the national average. The SCRTD's maintenance cost per hour, which is higher than any of the national carriers except New York, can be attributed to a fleet mix which includes twice as many Advanced Design Buses (ADB's) as any of the national carriers. As discussed earlier, the use of ADB's contributes to greater maintenance requirements and costs.

.3 Cost Per Boarding

Table III-21 shows that the SCRTD's total cost per boarding (\$0.92) is significantly higher (about 25 percent) than the average of the five national carriers (\$0.74). However, most of this cost difference is attributable directly to New York (\$0.55), which is by far the largest national carrier in this comparison. The SCRTD's cost per boarding is lower than both New Jersey (\$1.62) and Washington (\$1.43) and is actually lower than the national average (\$1.00) when New York is excluded. The SCRTD's cost per boarding is higher than the average of the five national carriers within each function as well, although the SCRTD's maintenance cost per boarding is lower than, or equal to, every national carrier compared, with the exception of New York. One factor which contributes to the SCRTD's higher cost per boarding is a larger average trip length. Table III-22 shows that the SCRTD's average trip length (in miles) is about 50 percent larger than the national average; only New Jersey, which has the highest cost per boarding of any national carrier in this comparison, has a larger average trip length than the SCRTD.

3.6.4 INNOVATIVE COST REDUCTION METHODS OF OTHER LARGE TRANSIT OPERATORS

Innovative techniques for cost reduction practices by large transit operators in the country are summarized below.

.1 Chicago - Chicago Transit Authority (CTA)

- o Part-time drivers are not allowed to exceed 12.5% of full-time operators.
- o Other innovative cost-reduction programs CTA implemented are vacation buy-back programs, reduced number of bids per year, increased yearly deductible on health insurance, and elimination of cost-of-living adjustments.

.2 Cleveland - Cleveland Regional Transit Authority (RTA)

- o Part-time drivers are not allowed to exceed 10% of the full-time operators.

- o Another innovative cost-reduction program practiced by RTA is community responsive transit (CRT). The CRT is a demand responsive system which has been in operation for almost ten years. CRT drivers' salaries start at a lower level than regular full-time operators and only reach 85% of the top rate which a full-time regular RTA coach operator can receive. Since its start, the CRT system has grown considerably. RTA reports that they have had no problems or conflicts with any of the unions with the current set up of the CRT system.

.3 Houston - Metropolitan Transit Authority of Harris County (METRO)

- o Part-time drivers are not allowed to exceed 7% of the full-time operators.
- o Other innovative cost-cutting programs METRO has are contracting out work and non-paid personal business days.

.4 San Diego - San Diego Transit (SDT)

- o Part-time drivers are not allowed to exceed 10% of the full-time operators.
- o Other innovative cost-cutting programs SDT has are reduced workers' compensation and Community Based Drivers (CBD). A CBD is an operator who works exclusively on regularly scheduled routes which SDT is operating under contract. No CBDs can be assigned to any route operated by SDT as of 1/1/82 or within the city limits of San Diego except as specifically agreed upon in the contract.

CBDs are paid a rate of \$4.52 per hour until completion of their training whereupon the wage schedule starts at \$5.77 to a top salary of \$6.50 per hour. The top rate for a CBD is 49% of a full-time operator's top salary.

SDT has had the provision of hiring CBDs in their contract since January, 1982. Since then, SDT has hired only three CBDs and currently none are employed.

3.7 POTENTIAL FOR LARGE-CAPACITY BUSES TO REDUCE DISTRICT OPERATING COSTS

The District currently operates two types of high-capacity buses, the articulated (AB) and double-deck. The double-deck buses are operated solely in express, point-to-point service, primarily due to their height that prohibits use on many streets. Additional reasons for limiting the double-deck buses to specific express deployments are that they don't allow as free a flow of passengers, due to narrow aisle width, as conventional buses or ABs and they offer a greater potential for crime with the visually separated top deck.

The articulated bus, on the other hand, can be more readily deployed on a variety of routes. However, the District has never operated them on other than two local lines and some Hollywood Bowl services, due to the limited number of ABs available and the difficulty of obtaining longer bus stops and layover zones.

The popularity of double-deck and AB buses throughout the United States mirrors the District's experience. There are very few U.S. properties deploying double-deck buses today, but 29 properties have purchased some articulated buses since the first AB purchase in 1976. Since the AB shows the most promise of offering a flexibly deployed, high-capacity vehicle, and the U.S. has had more operating experience with it, the following discussion will refer solely to articulated buses.

3.7.1 DISTRICT EXPERIENCE

The District purchased 30 ABs in 1976 in conjunction with a consortium of other U.S. transit operators. The predominant reason behind the purchase of the articulated bus was to explore its potential to lower operating costs. The larger size of the AB was expected to help lower operating cost by reducing the number of operators required. However, due to the buses' larger size, other costs of operation actually increased on a per-bus basis. Therefore, a cost savings was never certain.

The District began a serious study of the cost-effectiveness of the articulated bus in 1984. By deploying the ABs solely on Line 1, Hollywood Boulevard, a new schedule could be written that would allow the necessary savings in buses and operators. The preliminary results of the study showed that the savings in bus operator wages did not equal the additional costs incurred for mechanic labor hours and public liability, and, to a lesser extent, fuel, tires, and replacement parts. In addition, the occurrence of road calls has increased significantly, which can't be accurately evaluated as an item of operating cost, but does disrupt the reliability of service. To date, some follow-up analyses of these operating cost factors have been performed and they have not shown any significant changes that would affect these overall results.

There are two factors that could improve the study's negative findings: the deployment of a newer model AB and/or deployment of the ABs in express-type services. The newer model ABs have received engineering refinements that can reduce maintenance labor hours at least to some extent (see section on Other Properties' Experiences, below). Deployment of ABs in express service might reduce their public liability and relatively high maintenance labor cost. However, for a bus operator to deploy ABs on the basis of cost savings alone, the overall savings would have to be sufficient to warrant the additional overhead incurred for training mechanics and operators, rescheduling service, and obtaining longer bus stops and layovers.

3.7.2 OTHER PROPERTIES' EXPERIENCE

Although quite a few other transit properties operate articulated buses, few have any documentation on their relative cost to operate. At some properties the data that does exist is almost meaningless because their buses are still under warranty. Due to a desire to make further sales, the AB manufacturers are usually very helpful to a transit property during, and even after, warranty. It is difficult to measure true maintenance cost under these circumstances.

Among properties who have operated the ABs as long as the District, two, Seattle Metro and Chicago Transit Authority (CTA), have some information. Seattle describes their experience positively and feels that the 253 articulated buses they operate (33% of their fleet) are no more costly to operate than a conventional bus. However, they measure the relative cost of each type of equipment on a per mile basis. Since most of Seattle's ABs operate in express and suburban service, the per mile cost comparison is quite favorable to their ABs. In addition, a comparison of AB maintenance cost data collected by Cambridge Systematics for UMTA found that Seattle was the only U.S. property to report that their AB maintenance costs per mile were equal to conventional buses. All other properties reported at least a 30 to 50 percent higher per mile cost. Seattle had not evaluated the relative cost of articulated buses' public liability expense; however, they do experience relatively more AB accidents.

Chicago's experience with ABs, on the other hand, was more similar to the District's. Since Chicago has a Vehicle Maintenance System (VMS) like the District, they can more accurately track maintenance costs than most properties. They have found that their original 20 ABs, the same age as SCRTD's, required over two times as much maintenance as their standard buses. Chicago's 125, 1983 ABs, still under partial warranty, currently cost slightly more to maintain than their 12-year-old, 1973 GMC new-look buses and two times as much as their 1983 standard-size buses which have had extensive mechanical problems. Chicago has not evaluated public liability costs for articulated buses either, though they are aware that ABs have more accidents. Currently, Chicago operates their ABs on overcrowded local routes like the District, and more extensively for special events requiring the capacity. Since Chicago is required to maintain a 50% fare box recovery ratio by their funding agency, they are not planning to purchase more articulated buses at this time for fear of raising operating costs.

3.7.3 OUTLOOK FOR FURTHER AB DEPLOYMENT AT THE DISTRICT

Although specific cost estimates vary, there is almost unanimous agreement by U.S. transit operators that ABs cost more to operate than conventional buses. Therefore, to justify the operation of the articulated bus, it must be deployed on heavily patronized services where equipment can be saved without severely lengthening headways. An

analysis of present District service shows that only some of the heavily patronized local lines (primarily LACBD) can justify the larger bus. Unfortunately, based on the District's ongoing AB cost study, even with efficient scheduling and an optimistic estimate of newer model AB operating costs, AB deployment in local service is not cost-effective.

However, it must be recognized that cost is not the only factor to be considered in deploying a large-capacity bus. A few District services carry patronage that currently equals that of many successful U.S. light rail or heavy rail lines. When a bus line carries such heavy patronage, it may no longer be possible to produce a reliable schedule for the line or provide a good quality of service with standard size buses. This is exacerbated by the fact that the District must now buy 43-seat buses versus the previous 51-seat style because of seating configuration to accommodate wheelchairs. Using an articulated bus in circumstances where light or heavy rail may actually be appropriate would raise operating costs for those lines, but provide a more acceptable quality of service. In this case, the choice to operate ABs on a line could be viewed as a policy decision in which cost and benefits are weighed.

It can be seen from the other AB operators' experiences that they feel articulated buses are more successfully operated in express or park/ride services. As mentioned above, express service may reduce both maintenance and public liability costs sufficiently to allow an operating savings to be realized. However, most District express lines would not benefit from larger capacity buses and less frequent service at this time. If current plans to implement trunk line bus service on the El Monte Busway or on the proposed Harbor Busway develop, it is extremely likely that articulated buses could provide significant savings in operating the service.

In summary, the articulated bus has not provided the hoped-for operating cost savings to U.S. transit properties. Satisfactory articulated bus operation, at SCRTD and throughout the U.S., depends on minimizing their maintenance labor hours and public liability costs and selecting ABs to operate only on appropriate routes where demand warrants the capacity. Even when they are most appropriately deployed, ABs may not always provide a dollar saving to an operator, but to justify their use, the benefits should outweigh any additional costs.

4.0 ALTERNATIVES FOR DELIVERING TRANSIT SERVICES

This study is part of the District's evaluation of the alternatives for provision of District transit services with a view towards getting local governments to contribute a portion of Local Return Funds to provide local transit. It is projected that the total Proposition A funds available in FY 1986 will reach \$290 million. Twenty-five percent of this amount (about \$72 million) will be shared among 82 cities and Los Angeles County's unincorporated areas with the City of Los Angeles receiving about one-half of this local return.

These revenues, which can be used only for transit purposes, provide an opportunity for the District to improve service within the local communities while receiving a portion of the Local Return Funds. The Board of Directors could initiate and actively pursue the following three strategies which will benefit the District:

- (1) Develop and actively support policies which will keep the regional transit system intact and avoid fragmentation and duplication of service.
- (2) Initiate the provision of alternative services and compete with municipal and private operators for providing transit service alternatives.
- (3) A combination of the two.

This chapter analyzes and evaluates the different service alternatives available for District participation. Each alternative subsection contains a description, implications for the District and the community, and recommended policy and action strategies to be taken by the Board. General policy strategies and conditions for a successful implementation precede the discussion of the specific available alternatives.

4.1 POLICY DIRECTION

The District's Board should make policy recommendations for LACTC consideration on the Local Return Program which has been developed to maximize local discretion in choosing transit improvements. The current guidelines governing the program are broad with relatively few restrictions on uses of the Funds by the cities and the County.

District staff recognizes the sensitivity involved in establishing guidelines and requirements and/or restrictions in the use by the cities of the Local Return Funds allocated to them. At the same time, staff believes that the improvements of local transportation systems should also strengthen and enhance the regional transportation system and thus better meet the transportation, land use and environmental goals adopted by many jurisdictions within the County.

To date, most cities have undertaken local paratransit services, shuttle services and capital improvement projects with their Local Return Funds. For the most part, these projects have been developed largely without serious consideration for the existing transit system. In particular, the cities are often not evaluating how the impacts of their transit improvements fit into the County-wide transit system. This may result in the proliferation of numerous small transit and paratransit operators and may lead to problems of service coordination, operator jurisdiction and efficiency of service delivery.

The LACTC was charged with the responsibility of administering the Local Return Funds program. At this time, the Commission does not have a policy regarding the reallocation of the Local Return Funds which were not obligated by the cities within the time period established by the LACTC guidelines (three years).

The District's Board should recommend to the LACTC that consideration be given to the following:

- (1) Ensuring that cities will be required to coordinate their newly established services with the existing operators in the region in order to avoid duplication of service and facilitate mobility of the transit user. Under the State legislation, which created the LACTC, the Commission is already responsible for coordinating all public transportation services in the County. Service coordination should be considered a major guideline and objective of the Local Return Funds.
- (2) Evaluate the allocation of the lapsing funds to regional transit projects. This evaluation should consider the benefits occurring to the region as a whole, in addition to the benefits occurring to the individual cities.
- (3) Set evaluation standards so that necessary projects meet the same efficiency criteria that apply to other operators to ensure the best use of available public dollars.

4.2 IMPLEMENTATION OF ALTERNATIVE SERVICE CONCEPTS

Since labor cost is the largest item in the District's operating budget, any successful implementation of alternative service concepts such as subcontracting or paratransit substitutions will require union concurrence on contract changes. Considerable progress towards implementation of subcontracting has been achieved in the recently concluded labor negotiations with the United Transportation Union (UTU), the Amalgamated Transit Union (ATU), and the Brotherhood of Railway and Airline Clerks (BRAC).

Under the terms of the new contracts, the District will have the right to create one or more Business Development Divisions (BDD's) in the event of a 20% loss of federal operating funds. These facilities will

be for the purpose of contracting directly with the cities or with Los Angeles County in exchange for Local Return Funds. As stated in the agreement, this service will be performed exclusively by part-time operators.

4.3 SERVICE ALTERNATIVES OPPORTUNITIES AND IMPLICATIONS

This section describes how the District can improve services for the local communities which are benefiting from a share of the Local Return Funds. Both direct and indirect District involvement in service alternatives is presented below.

At present, 32 transit agencies have transfer agreements with the SCRTD. Of these agencies, seven have formed dial-a-ride systems or a shuttle service since the passage of Proposition A and supported the service with Local Return Funds. It is likely that other communities will also desire to enhance their local circulation system or to improve their residents' accessibility to the regional transit system. Communities without municipal transit systems generally subcontract for transit improvements.

4.3.1 SERVICE SUBCONTRACTING

Service subcontracting is a broad term and is the procedure involved in the implementation of several service alternatives such as paratransit substitution and transportation zones discussed below. The District can provide services for cities on a contract basis in exchange for a share of the Local Return Funds or subcontract these transit services to other operators and provide the administration and management for these services. In the latter alternative, the District will act in the capacity of a service brokerage. The District could also subcontract its own low-productivity lines to private carriers. Each of the following approaches could improve the District's financial outlook.

.1 Direct District Contracting

Under this scenario, the District will evaluate the specific needs of target communities and attempt to negotiate an agreement to enhance the community's transit services. These services includes intra-community shuttle service or commuter service.

Implications: Direct District contracting will necessitate District initiative in identifying and evaluating existing and potential transit needs of the local communities. This evaluation will require additional staff time and increased costs. Unless the negotiation for contracting is successful, the evaluation expenditure will not be reimbursed by the target cities.

District contracting of services will reduce fragmentation of the service area and increase schedule and fare coordination with the

regional transit system. The advantages of District operations, as well as the quality of support services provided by the District, should be emphasized in agreement negotiations with potential contracting communities.

Recommended Action: The following actions should be taken for the implementation of direct District contracting. These actions should be carried out on all levels of the District staff.

- o Identify potential communities for service contracting.
- o Communicate to the LACTC, Los Angeles City and other communities of the District's desire and capabilities for contracting transit services.

.2 District Participation in the Bidding Process

The majority of cities and communities receiving Proposition A Funds are likely to issue Request for Proposals (RFPs) for the performance of a variety of transit services. The District could respond to the RFPs by submitting a bid for the performance of the required service.

Implications: Assuming the same rate of pay to District employees as to the small private and municipal operators, it would still be difficult for the District to compete and charge the same cost as the small transit carrier. The following factors contribute to the District's higher cost:

- o The requirement to provide service to the entire region including the operation of many unproductive lines;
- o Higher overhead than a small operator due to the size and scope of services the District provides; this requires support services, such as telephone information, Community Relations, Customer Relations and Transit Police, which are not provided by many small operators;
- o Higher insurance levels and costs than small operators due to operating in a more complex environment;
- o More constraints and regulations than required of the small operators;
- o Municipal operators may have a portion of their true cost assigned to other city departments, i.e. legal, engineering, personnel, non-vehicle operation, and supplies.
- o Private operators' initial bids may be below their cost in order to gain access into the transit market. In the long run, these costs may escalate to cover true cost which may be

higher. On the other hand, the District will charge full costs from the beginning. Higher costs incurred by the District could be justified in the bidding process by pointing to the support services which are not likely to be provided by smaller operators.

.3 District Provision of Transit Brokerage Service

Under this option the District will assume the responsibilities of subcontracting transit services from requesting cities. In essence, the District will use its expertise of running a transit agency and will administer and manage a local transit system operated by another carrier. The subcontracting may range from a minimum District involvement to a major involvement in the provision of support services. The minimum District involvement option will leave the operation and all support services to the contracting operator.

Major involvement will engage the District in full route planning, bus scheduling, public information and marketing services, and other support services.

District subcontracting of city services to others would put the District in a position of a broker, which acts as an intermediary between the carrier and the city. Again, responsibilities of the District will be administration and management of transit service.

Implications: This type of subcontracting will maintain services operated by others, under the control of the District, and will lead to much better coordination with the regional transit system. Additionally, this option will eliminate the need for the District to invest in new equipment and facilities. The District will also receive revenues from providing this type of service.

In most cases, the transit needs to be fulfilled by the District brokerage services will be supplemental to the District's existing service. Therefore, it is not likely that these services will worsen any employee's condition or that they will engender union opposition.

Recommended Action: The following actions could be taken to implement this option.

- o Solicit potential communities to negotiate an agreement with the District for the provision of administration and management services.
- o Plan for the expansion of District's existing support services which may be needed to handle additional subcontracted operations without adding additional overhead cost.

.4 Subcontracting of District's Low-Productivity Service

This option evaluates subcontracting of District's low-productivity service to other operators. However, the goal of subcontracting existing District low-productivity lines is to reduce costs while maintaining control over the line's operation. Under this option, the District could regulate the fare and the level and quality of service to be consistent with the rest of the District's service goals and standards.

The level of District support to the contracting operators may range from minor to major involvement as described in the previous option.

Implications: Subcontracting of transit services may impact the conditions of existing labor agreements and is likely to generate objections by the unions. Union concurrence to this service alternative is essential.

Subcontracting of low-productivity service to private operators will likely require incentives through subsidies at a level which would make it profitable for the private carriers to provide the service. The economic feasibility of subcontracting under these conditions will depend on the private carrier's labor rates as well as operational overhead.

Recommended Action: The following actions could be taken for this option:

- o Identify low-productivity services as candidates for subcontracting.
- o Work with the cities, the County, and LACTC to issue RFPs to potential bidders.
- o Provide for the commencement of service.
- o Evaluate service.

4.3.2 PARATRANSIT SUBCONTRACTING AND SUBSTITUTION

A paratransit system (dial-a-ride, jitney, fixed-route shuttle, etc.) could be operated as a supplement to an existing fixed-route system or as a replacement of a fixed-route system when ridership levels are low. The LACTC advocates paratransit substitution for fixed-route service as a means of reducing cost. District staff, however, believes that to insure the regional transit system's continuity and accessibility, it is important that paratransit substitution be considered primarily on a community level basis while maintaining a network of regional bus lines throughout the County.

To a considerable extent, paratransit is geared to serve a different transit user market than fixed-route service. In particular, paratransit service cannot substitute for fixed-route service in central areas where ridership demand is high and system continuity and cohesiveness is essential. Paratransit may be appropriate for fringe areas. However, even in fringe areas, ridership loads during peak hours may exceed paratransit service capacity.

The District is currently studying the feasibility of substituting paratransit service in the West San Fernando Valley for fixed-route service. Results of this study will be available by the end of 1985 and will allow more insight into paratransit substitution issues.

Operation of a paratransit system by the District or by individual communities is most likely to be subcontracted to private or public operators. Consequently, all of the subcontracting issues discussed above, including labor contract constraints, also apply to paratransit operations.

District involvement with paratransit subcontracting will benefit the District through additional revenues. The District could receive Local Return Funds under the two following options: (1) subcontract paratransit service for other communities (act as a broker) and (2) subcontract paratransit service which will substitute the District's low-productivity lines. Both options were discussed in the Service Subcontracting Section.

The District could plan, design and subcontract paratransit systems to private carriers in local communities. The District would administer the system and provide support services as needed. The paratransit system would be planned in a manner which would supplement the District's existing fixed-route system and interface with it. This would require the modification of the fixed-route system through route and schedule adjustments and the coordination of both systems' operations.

Paratransit substitution operations of District lines could be subcontracted by the District in the same manner as subcontracting for supplemental service. Substitution may reduce District's cost through modification of unproductive line segments while providing the District with additional funds for administering the paratransit system.

Implications: The following implications of paratransit systems should be considered:

- o The use of Local Return Funds by the cities to implement paratransit systems, which will enhance local circulation and supplement the regional transit system, could benefit the entire regional transit structure. Ridership on District lines may increase and accessibility to inter-community travel may improve.

- o Use of Local Return Funds for paratransit substitution of fixed-route service may disturb the cohesiveness and integrity of the regional transit system. Gaps in the regional system resulting from paratransit substitution will cause hardship to residents due to their trip requirements.
- o The choice of the appropriate transit mode should not rely entirely on total cost but should relate to the goals set for the specific mode and for the transit system as a whole. A paratransit system may have a lower total cost than a fixed-route system, but the latter can carry a larger number of people at a lower cost per passenger than the former. Therefore, total cost should not be the sole criterion for mode selection or exclusion.
- o Active participation in the establishment and administration of paratransit systems in the region will benefit the District financially. In addition it will allow the District to maintain control over transit systems to avoid fragmentation.

Recommended Action: The following actions are recommended:

- o Identify cities and communities planning to implement paratransit systems and/or are in need of improved local circulation.
- o Communicate to the LACTC and the targeted cities the advantages of having the District plan and manage paratransit systems.

4.3.3 TRANSPORTATION ZONES

A transportation zone means the creation of a zone within a specified geographic area to meet specific transit needs in a cost-effective manner. The local decision-making authority in the zone would have the power to provide all transit services within the zone or to provide selected service within the zone (demand-responsive). The local community can also contract the services to a public or private transit provide through competitive bidding.

The Public Utilities Code authorized the LACTC to form transportation zones. LACTC is also authorized to fund the transit service provided within a designated zone with federal, state and local funds. These authorizations, however, conflict with the objective which led to State legislation to establish the LACTC. The Commission was charged with the responsibility of coordinating the operation of all public transportation services within the County to achieve an efficient operation. By creating transportation zones and fragmenting the service area, coordination of services becomes more difficult and operational efficiency may decrease.

A major objective of the proposed establishment of local transportation zones, as stated by the Commission, is "the potential for cost savings." The selection of private carriers on a competitive bidding process by transportation zone boards is thought to be an effective incentive for holding down operating cost. However, the overall cost savings may not be as substantial as anticipated.

Any potential cost differential between private carriers and the regional transit authority is primarily attributable to: (1) relative labor cost, and (2) operating requirements. Public operators are obligated to comply with State and Federal requirements governing equipment and operating procedures. Private operators are generally not subject to the same requirements, thereby permitting cost containment. Examples of such public operator requirements include the accessibility of buses through the use of wheelchair lifts, public hearings, and purchasing procedures. If similar standards are expected of private, subcontracted operators, private operators' cost of service would increase and cost savings would decrease commensurately.

At present, at least three transportation zones are being considered within the District's service area. These zones are the following:

- o Pomona Valley Area
- o San Gabriel Valley - Proposed by several Los Angeles County Supervisors
- o Los Angeles Harbor Area - Considered in an intra-community transit study conducted by SCAG.

Of all the transit alternatives considered in this chapter, transportation zones have the greatest potential for either new opportunities or to be detrimental to the District's regional transit system as stated by the implications below. The zone concept could disturb the continuity of regional lines, cause fragmentation of the system, increase costs and reduce ridership. On the other hand, if transportation zones are established in a supportive context, emphasizing intra-community service, the use of Local Return Funds for this purpose can supplement and benefit the District's regional system. Under this option, the District could, through coordination with the improved local circulation systems, eliminate unproductive lines or line segments and thus reduce the total costs of transit service. An improved local transit system within the zone could also increase ridership and revenues on the District's regional system. Furthermore, District participation in the enhancement of local service in the transportation zone, as discussed in the subcontracting and paratransit service alternatives, could further benefit the District.

Implications: Transportation zones within the District's service area can have enormous short- and long-term consequences on the regional transit system. The implications include the following:

- o The zones have a potential to fragment a cohesive regional system into many small local systems and add duplicative

administration cost. The transportation zone concept could, if implemented, set in motion some impetus for cities to break away from the present largely unified public transportation system within the county. The zone could impair the present system and may limit accessibility of the regional system to transportation zone residents.

- o Decisions emanating from the local transportation zone boards may or may not emphasize responsiveness to local circulation trips needs and de-emphasize, or perhaps neglect altogether, longer-distance, intercommunity and intercity transportation needs.
- o If transportation zones are established in the middle of the District's service area, and the District will have to provide service beyond these zones, the District's operation may become less efficient and savings would be minimal because service vehicle hours could not be decreased and revenue from the zones' ridership would likely decline. Logistical problems may also rise since District buses may still need to travel through the zone, but will not be allowed to have passengers board and alight within the zone.
- o The use of other carriers may, in the long-term, result in higher cost because of duplication of administrative staff and the tendency by employer groups to be represented by strong unions.

Recommended Action: The following actions could be taken to ensure accomplishment of cost-reduction goals while providing minimum disruption to the regional transit system resulting from the implementation of transportation zones.

- o Support criteria for the establishment of transportation zones which will minimize fragmentation of the District's service area and which will require substantial cost savings over existing service to be replaced.
- o Communicate to the LACTC, SCAG and political entities in the region the potential adverse implications of multiple transportation zones to the local residents and to the regional transit system.
- o Express concern about the Commission's recommendation to transfer total subsidies from the regional operator to the transportation zone. Recommend that subsidy transfer should cover only the operating expenses incurred by the transportation zone which are supposed to be lower than existing expenses. The difference between the existing cost and the proposed lower cost should be returned to the regional operator. This would provide sufficient funds to operate the existing level of service in the zone at a lower cost while providing funds for the higher cost regional service to serve the entire population of the region.

4.3.4 USER-SIDE SUBSIDY

Although the user-side subsidy concept is not a service alternative as those discussed above, it is an important technique to increase equity and it could be an appropriate use of the Local Return Funds. In addition, transit operators may benefit from user-side subsidies by sharing the cost of transit subsidies with local governments and by receiving more revenues.

User-side subsidies are generally employed to provide lower fare transportation for targeted user groups. For example, the current cost of an SCRTD one-zone regular monthly pass is now \$20, but elderly persons, who meet the eligibility criteria, can purchase this pass for \$4. In essence, public funding is providing a subsidy of \$16 per month, per senior citizen user.

Besides the elderly, reduced fare passes are also available to handicapped persons, elementary through high school students, and college and vocational students. Under the current fare structure, the total subsidy for all targeted groups of users amount to over \$42 million. Under the proposed new fare structure with a base fare of \$.85 to be implemented in July, 1985, total District subsidies to targeted user groups will exceed \$53 million.

The major goal of user-side subsidy is to increase the mobility to population segments unable to use the existing transportation system. The specific goals, objectives and target groups eligible for user-side subsidy should be determined by the sponsoring local government. Local communities could purchase transit passes from the District at full cost and resell them to the selected target group at a lower cost. The local community would thus retain full control as to the eligibility for transit subsidies.

Although user-side subsidy programs have the advantages discussed above, they may also have shortcomings which would require careful consideration before implementation. The implementation of user-side subsidy programs may be complicated and its administration may be difficult. The implications below elaborate on the advantages and disadvantages of such programs.

Implications: The implications of a user-side subsidy program will depend on the manner in which they will be implemented as discussed below.

- o A user-side subsidy should help to maintain or increase productivity because of additional revenue achieved by keeping riders on board and because of a reduction in subsidies by the operator. It may also require additional service to meet demand which could increase costs.
- o Subsidizing target groups only on weekend and off-peak hours can improve productivity and not increase cost. However, if subsidies are provided for the entire day, some high demand lines may require additional buses during the peak period. As a result, the net operating cost to the operator could be higher than without the user-side subsidy program.

- o The target group selected may also have greater impacts on the cost of administering the program. Administration of a subsidy program for a low-income group may be difficult to monitor and the cost may be high.

Recommended Actions: The following actions should be taken to implement a feasible user-side subsidy program:

- o Insist in negotiations with the funding agencies and the cities on their participation in the existing subsidy programs for elderly and disabled persons and students.
- o Communicate to the funding agencies and the cities the need for simple, low-cost administration and implementation mechanisms of user-side subsidy programs in order to keep operations cost low.
- o Participate in the coordination and logistics of the implementation of user-side subsidy programs.

4.4 SUMMARY

Four service alternative concepts were presented and analyzed in this chapter. The basic technique used in most of these concepts is service subcontracting in different forms. The user-side subsidies concept is the only alternative not involving subcontracting. The alternatives discussed are not mutually exclusive and may be employed in a variety of combinations.

A major goal or direction of providing service alternatives is to obtain participation by cities and the County with the Local Return Funds. The following activities should be pursued by the Board of Directors:

- (1) Develop policies of the District to guide staff activities.
- (2) Allocate resources for District staff to identify and analyze transit needs of communities receiving Local Return Funds.
- (3) Communicate the District's desire and capabilities for subcontracting service to the funding agencies and the potential contracting cities.
- (4) Identify District's low-productivity lines and consider subcontracting them to private operators.
- (5) Encourage paratransit systems to supplement fixed-route service rather than substitute for it.
- (6) Urge the LACTC to ensure coordination of the newly established services with existing transit services.

- (7) Recommend to the LACTC that they reallocate lapsing Local Return Funds to the regional operator.
- (8) Request that transportation zones be established in logical corridors or on the fringes of the District's service area and that transportation zones have authority only over local circulation systems and not over the regional system.
- (9) Request cities' participation in transit subsidy programs through user-side subsidies for elderly, handicapped, students, and other target groups.

It should be emphasized that in order to implement these recommended activities, all must come from a common set of policies and procedures to be developed by staff and others and approved by the SCRFD Board. If this is accomplished, the results could work to the mutual benefit of everyone. The District could increase revenues and reduce operating costs, and the regional transit system will be well-coordinated. Moreover, the potential adversities of system fragmentation, fare complication, regional transfer misunderstanding, duplication of administrative positions and confusion to passengers would be avoided if the District develops positive policies and proceeds to deal with the issue of service delivery and the and coordination of transit services in the region.