

Chapter Two SCAT Performance Review

INTRODUCTION

This chapter presents a history and description of the existing fixed-route bus service in Sarasota County operated by Sarasota County Area Transit (SCAT). A detailed performance assessment is provided for SCAT fixed-route services. Discussion and results from a survey of SCAT bus operators and an on-board survey of SCAT bus users are also provided. In addition, an inventory of transportation services available to the public is provided. The inventory of public transportation providers contains information on public transportation services currently provided in Sarasota County including SCAT, SFC, social service agencies, and taxi companies.

TRANSPORTATION PROVIDERS IN SARASOTA COUNTY

This section provides a description of the various transportation services currently offered in Sarasota County. This inventory includes all providers coordinated under the transportation disadvantaged system, as well as agencies/companies that are not coordinated but either provide transportation services for the general public, their own clients, or specific program clients. This inventory was developed to inform later demand estimates and needs assessments conducted as part of the STEP process.

The inventory consists of information on service providers, types of service, users of the service, service areas, hours and days of service, ridership, vehicle fleet, fare structure, and service agreements/contracts. Appendix _ contains detailed information for each of these providers. Table 2-1 lists each of the transportation providers included in the inventory. In addition, the services provided by Sarasota County Area Transit (SCAT) and those services coordinated by Senior Friendship Centers, Inc. as part of the Sarasota County TD program are highlighted in Chapters 2 and 3 of the STEP.

SARASOTA TRANSPORTATION ENHANCEMENT PLAN

**Table 2-1
Inventory of Transportation Providers
Sarasota County**

Sarasota Transportation Providers	
AA Affordable Car and Limo, Inc.	Lakehouse West
A-Abbey Limousine and Chapel	Lakeside Terrace
Action Alert Cabs	Lil People Express
Affordable Airport Limo Bradenton	Limo, Inc.
Affordable Cab	LongBoat Limousine / Suncoast Sedans
All American Car and Limo	Loveland Center / Southwest Florida Center for the Handicapped
Allstar Limousine Luxury	Madrid Sedan Limousine
Ambu-Van, Inc.	Manatee Association for Retarded Citizens
American Cancer Society	Manatee County Area Transit (MCAT)
Anna Maria Island Community Center	Manatee County School Board Transportation Dept.
ARA Limousines	Manatee Glens Hospital
ARTarget	Mary's Taxi
Ashley's Limousine Inc.	Myakka Community Center
Bahia Oaks Lodge	Our Lady of Lourdes Church
Bethel CME	Park and Fly (Security First)
Black Tie Limousine	Plantation Neighborhood Care & Share
Blue Sky Airport Limo Service	Pointe North Limousine
Bon Secours Venice Hospital	Premier Limousine Service
Boys and Girls Club of Sarasota	Presidential Sedan & Limousine
Boys Club of Manatee, Inc.	Premier Ground Transportation Services
Brighton Gardens	Putting on the Ritz/Sarasota Sunrise Limousine
Bruce's Taxi Service Company	Regal Transportation
Carey of Tampa Bay	Renaissance Manor
Child Development Center	Resurrection House, Inc.
Children's Haven and Adult Center	Robert's Personal Chauffeur Service
City Cab	Roy R D Transport
College Park Club	Royal Carriage Transportation
Colony Beach Resort	Safe Place & Rape Crisis Center
Community Aids Network	Safe Ride Services
Consumer Credit Counseling	Sarasota County Area Transit (SCAT)
Courtesy Cab & Executive Sedans	Sarasota County School Board
Crown Transportation and Limousine, Inc.	Sarasota Day Nursery Head Start
D.A.S.H., Inc.	Sarasota Family YMCA
Danny G's Limousine / J & J of Sarasota	Sarasota Special Athlete Boosters
Dependable Taxi	Senior Friendship Centers, Inc.
Doctor's Transports Services, Inc.	Shannon Hotel Group
Double AA Car Service	South County YMCA
Dove Transport Service	St. Mark s Preschool
Econo Transport	St. Raphael s Church
Englewood Community Hospital	Suncoast Center for Independent Living
Epilepsy Services of Southwest Florida, Inc.	Suncoast Taxi Company, Inc.
Epiphany Catholic Cathedral	Suncoast Therapeutic Educative Program
Exclusive Limousines of Florida	Suncoast Workforce Development Board, Inc.
E-Z Ride Limo and Entertainment	Sunshine Cab
Faith Baptist Church Sarasota, FL 34241	Tammi House

SARASOTA TRANSPORTATION ENHANCEMENT PLAN

Sarasota Transportation Providers	
Faith Baptist Church Sarasota, Fl 34236	The Party Bus
First Christian Church	Tiffany Limousine Company
First Step	Trans-Med
First United Methodist Church	Traveler's Airport Transportation
Fish of Englewood	Trolley Systems of America, Inc.
Fish of Sarasota	United Cerebral Palsy of Sarasota and Manatee
Freedom Transport	Venice Ambulance Service
Girls Incorporated of Sarasota County	Venice Assembly of God Church
Golden Pond Assisted Living	Venice Nokomis United Methodist
Grace Baptist Church	Verandas at Riverfront
Green Cab Company	VIP Limousine Service
Grey Hound Bus lines	We Care Transport, Inc.
Gulfcoast Marine Institute	West Coast Center for Human Development
Helen Payne Day Nursery	West Coast Executive Sedans
Imperial Travel Services	West Coast Southern Medical Transfer Service
Island Taxi	Windsor Parke
J. H. Floyd Sunshine Manor, Inc.	WindWard Transport Inc
Jefferson Center	Woodlands Village
Just for Girls of Manatee County, Inc.	Yellow Cab

HISTORY OF SCAT FIXED ROUTE SERVICE

In 1979, Sarasota County Area Transit (SCAT) took over the role previously occupied by Cities Transit and began operating fixed route bus service in Sarasota County. At that time SCAT provided service to northern Sarasota County with seven buses on 10 routes. Fixed route service to southern portions of Sarasota County consisted of three bus trips per day that traveled through Siesta Key and ended in the Venice area. Since that time, SCAT has consistently expanded service to meet the growing needs in the County.

By the early 1980s, SCAT was also providing fixed route service to North Port and Englewood in southern Sarasota County. In 1982, fixed route service was further expanded to include service on Bee Ridge Road. By that time, SCAT's in-service vehicle fleet had grown to 10 buses operating on 13 fixed routes. However, due to performance issues, headways (frequency of service) were increased from hourly to 80 minutes to improve the systems on-time performance.

In 1983, headways were adjusted again from every 80 minutes back to hourly service in addition to implementing a pulse time transfer system. At this time service levels increased to 15 buses serving 13 routes.

There was a long period of virtual stability in SCAT's route structure from 1983 to 1989. However, some bus service was eliminated from Lido Key and service was increased in the areas of Newtown Estates and northeast Sarasota. In addition, SCAT implemented trolley service in downtown Sarasota in 1987.

In 1989 SCAT, increased all service on all routes operating north of Sarasota Square Mall to hourly headways. In addition, a new dedicated route was established on the South Trail, as well as a new route added to Longboat Key via St. Armands. South county service was rescheduled at 90-minute headways in the Venice area, with three-hour headways on branches to North Port and Englewood.

In January 1993, an additional bus was added to routes 5 and 17 which enabled them to operate independently and extend fixed route service on Waldemere to Sarasota Memorial Hospital and on Potter Park Drive near Sarasota Square Mall. Other 1993 modifications included extension of route 18 north on Longboat Key, extending the downtown Sarasota Trolley into Ringling Shopping Center and rerouting South County buses to serve Senior Friendship Centers in Venice.

In June 1995, SCAT modified route 7 as a large peripheral route extending through 12th Street, Circus Boulevard, the Meadows, Cattlemen Road, Ashton Road, Proctor Road, and Swift Road to

gulf Gate Mall. In March 1997, route 7 was curtailed back to Northeast Shopping Center. The new route 15 was created to replace the eliminated portion of route 7 while also replacing service from downtown to the airport via North Tamiami Trail previously offered by route 10. Later, route 15 was shortened to provide service to the Landings and no longer serve Gulf Gate Mall. The original combination of the route 7 and 8 had been broken so that route 8 could be extended north along U.S. 301 to University Parkway and U.S. 301/Boulevard in Manatee County. In south Sarasota County, service hours were added to increase the span of service and increasing the frequency of route 9 - North Port and route 16 - Englewood. Routes 9, 13, and 16 were designed to have a timed transfer at T.J. Maxx in Venice, providing service between Venice and the Sarasota Central Business District (CBD) along U.S. 41.

In May 1995, SCAT discontinued a service demonstration project to Siesta Beach due to low ridership. The service was provided on Saturdays, Sundays, and summer holidays and began in 1992.

Several expansions were added to the fixed-route system in 1999. On February 1, 1999, SCAT implemented Express service from South Sarasota County to downtown Sarasota. The express provides two morning trips leaving the South County Administration Center and two evening trips leaving Sarasota City Hall. On June 1, 1999 SCAT added the Route 19 to serve the Cities of Venice and North Port. The design of this route to run parallel to route 9 on opposite hours, has also created 60 minute frequencies for these portions of both routes.

Description of SCAT Fixed Route Services

SCAT currently operates 20 fixed routes Monday through Saturday from 6:00 a.m. until 7:00 p.m. Contained in Figure 2-1 are graphical representations of these routes. In addition, Table 2-2 contains a description of the areas and destinations each route serves. The regular adult fare is currently \$.50 per one-way trip and half price fares are offered to persons with disabilities and seniors. Two children under the age of five may ride for free with each paying passenger. (Note: During the time period covered in the performance analysis of SCAT's fixed-route service the base fare for a one-way trip was \$.25)

SARASOTA TRANSPORTATION ENHANCEMENT PLAN

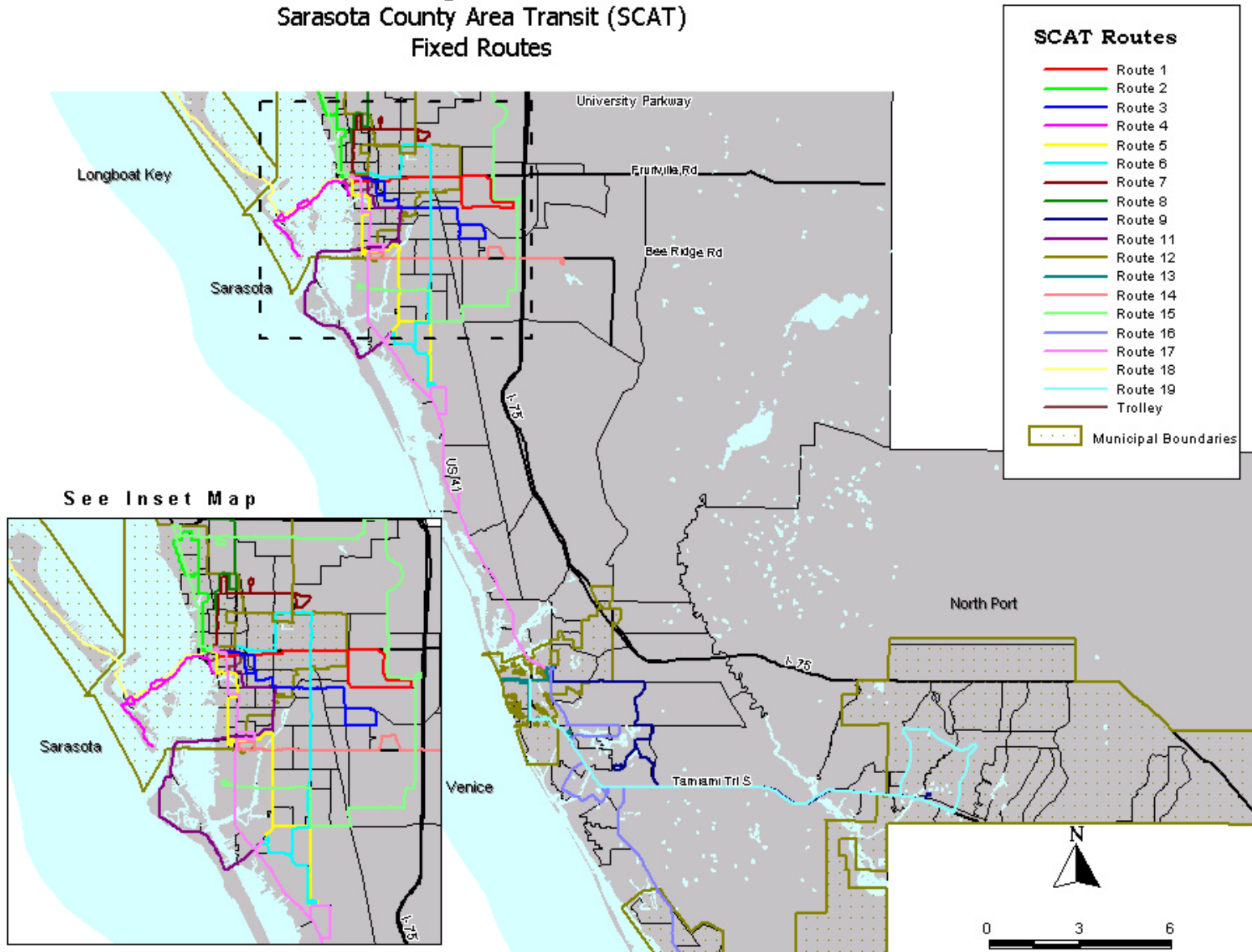
**Table 2-2
Description of Current Fixed Routes**

Route #	Route Name	Description
1	Fruitville Road	Downtown Sarasota, Robarts Arena, Cardinal Mooney High School, Sarasota Crossing, Fruitville Road, Cattleman Road, Bahia Vista Street, McIntosh Road
2	Art School	Downtown Sarasota, Sarasota/Bradenton Airport, Ringling Museum, Coconut Avenue, Old Bradenton Road
3	Pinecraft	Downtown Sarasota, Ringling Shopping Center, Ringling Boulevard, Browning Street, Bahia Vista Street, McIntosh Road, Linwood Street, Webber Street
4	Lido Beach	Downtown Sarasota, Orange Avenue, John Ringling Causeway, St. Armands Circle, Lido Beach
5	Osprey-Swift	Downtown Sarasota, Sarasota Square Mall, Gulf Gate Mall, South Gate Plaza, Sarasota Memorial Hospital, Osprey Avenue, U.S. 41, Swift Road, Clark Road, Beneva Road, Riverview High School, Sarasota High School
6	Beneva	Downtown Sarasota, Sarasota Square Mall, Gulf Gate Mall, Sarasota Sports Complex, Beneva Road, 17 th Street, Tuttle Road, Fruitville Road
7	Newtown-NE Plaza	Downtown Sarasota, Northeast Plaza, Newtown Estates, Booker Middle School, Dr. M.L. King Jr. Way, Orange Avenue
8	Newtown-301	Downtown Sarasota, Goodwill Industries, Orange Avenue, U.S. 301
9	North Port	T.J. Maxx (Venice), Shops of North Port, Warm Mineral Springs, Manatee Community College, South County Administration Center, Venice Avenue, Jacaranda Boulevard, U.S. 41, North Port City Hall & Civic Center
11	Siesta Key	Downtown Sarasota, Gulf Gate Mall, Siesta Village, South Gate Plaza, Siesta Drive, Siesta Key (Siesta Beach), Midnight Pass, Stickney Point
12	North Lockwood	Downtown Sarasota, Human Services Center, Sarasota Sports Complex, Walmart Center at University Parkway, U.S. 301, 12 th Street, 17 th Street, Lockwood Ridge Road
13	Venice	Downtown Venice, T.J. Maxx (Venice), Venice City Hall Jacaranda Plaza, Venice Airport, Venice Community Center, Public Library, Venice Hospital, Venice Village Shops
14	Bee Ridge Road	South Gate Plaza, Bee Ridge Road, Center Gate Plaza, Palm Plaza, Brookside Middle School, Columbia Hospital
15	Sarasota/Bradenton Airport-Cattlemen	Downtown Sarasota, Landings Shopping Center, Sarasota Vo-Tech, Bee Ridge Square, Sarasota/Bradenton Airport, U.S. 41, Desoto Road, Honore Avenue, Palmer Boulevard, Cattleman Road, Gantt Road, Ashton Road, Beneva Road, Proctor Road, Riverview High School, Sarasota Middle School, Ashton Elementary School, Sarasota County Technical Institute, Columbia Hospital, Fruitville Elementary School
16	Englewood	T.J. Maxx (Venice), Englewood Chamber of Commerce, Elsie Quirk Library, Lemon Bay Shopping Center, South County Administration Center, Galleria Mall, Venetian Plaza, YMCA, Jacaranda Plaza, Englewood Recreation Center, U.S. 41 Bypass, Center Road, Shamrock Boulevard, U.S. 41, Englewood Road, Old Englewood Road
17	Tamiami Trail	Downtown Sarasota, T.J. Maxx, Pine View School, Sarasota Square Mall, Gulf Gate Mall, Landings Shopping Center, Sarasota Memorial Hospital, South Gate Plaza, Southbay Shopping Center, Nokomis Village Shopping Center, Osprey Avenue, U.S. 41
18	Longboat Key	Downtown Sarasota, St. Armands Circle, John Ringling Causeway, Mote Marine Aquarium, John Ringling Parkway, Gulf of Mexico Drive, Longboat Key,
19	North Port	Bon Secours Venice Hospital, South County Administrative Center, U.S. 41, South County Resource Center, Warm Mineral Springs, North Port Library, Biscayne Drive, Price Blvd., Sumter Blvd., Bon Secours Health Park, North Port City Hall
Express Bus	South County Commuter Express	Shuttle service from South County (Englewood, North Port) to Downtown Sarasota. Limited stops and only available during morning and afternoon commute.
Trolley	Downtown Sarasota Trolley	Downtown Sarasota, Ringling Shopping Center, County

SARASOTA TRANSPORTATION ENHANCEMENT PLAN

		Courthouse, Senior Friendship Center, County Administration Center, Main Street Plaza (Cinema 20)
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Figure 2-1
 Sarasota County Area Transit (SCAT)
 Fixed Routes



PERFORMANCE EVALUATION OF EXISTING SCAT FIXED-ROUTE TRANSIT SERVICE

This evaluation of SCAT's existing fixed-route service consists of a detailed overview of the operating and financial characteristics of SCAT. This evaluation is divided into a trend analysis and a peer review analysis. The trend analysis represents SCAT's performance over a six-year time period (FY 1992 through FY 1997), while the peer review compares the performance of SCAT's fixed-route service with that of other selected Florida and non-Florida transit systems during FY 1997.

The following sections outline the performance evaluation methodology and describe the results of the trend and peer analyses. All data used in these sections originate from individual National Transit Database reports submitted by transit properties to the Federal Transit Administration (FTA) on an annual basis. These analyses are useful in determining the strengths of SCAT as well as areas that may require additional attention.

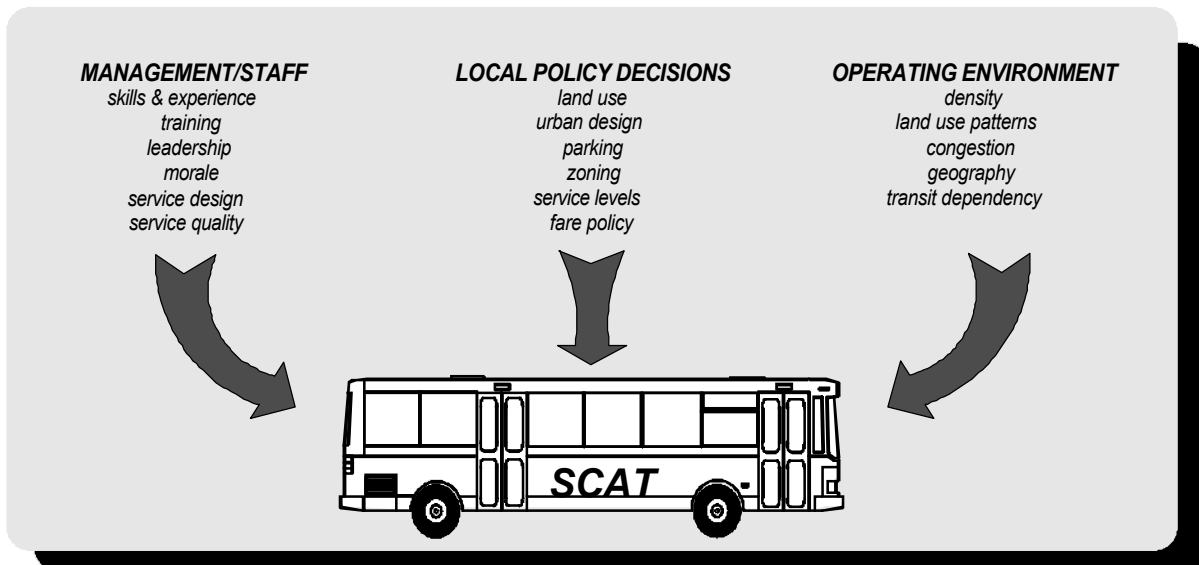
The Purpose of Performance Review

Because a performance evaluation is only one method of analyzing the performance of a given public transportation system and is limited to only those aspects included in the analysis, the reader should exercise considerable caution in interpreting the results. These analyses are particularly strong in reviewing cost effectiveness and efficiency; however, they do not relay the extent to which other objectives of the public transportation system are being achieved. For example, the performance evaluation will not directly measure several relevant considerations such as passenger satisfaction with regard to levels of service, taxpayer and public attitudes toward the agency, employee morale, success in attaining minority hiring or contracting goals, quality of planning, contributions to community economic development, air quality improvements, or other goals that may be important to the public transportation system and the community. In addition, several aspects of quality of service are not measured in a performance evaluation. These include vehicle cleanliness and comfort, operator courtesy, on-time performance, quality of marketing and passenger information support, and level of satisfaction with hours of operations, frequency of service, and geographic coverage of the service. Many of the above-mentioned issues, however, will be addressed in the Sarasota Transportation Enhancement Plan (STEP) through an on-board passenger survey, a survey of bus operators, interviews with local officials and community leaders, and other forms of public involvement.

In addition to understanding the limits of this analysis, the reader should take care in interpreting the meaning of the various performance measures. The evaluation does not necessarily provide information concerning which aspects of performance are within control of the agency and which are not. Figure 2-2 denotes the major factors that ultimately affect a given agency's performance.

Performance reviews are a useful and important tool in monitoring and improving transit system performance. However, it must be recognized that the results of trend and peer analyses are only a starting point for gaining a complete understanding of the performance of transit systems. The issues identified as a result of this evaluation provide the basis for a series of questions that can lead to an enhanced understanding of the "hows" and "whys" of system performance.

Figure 2-2
Factors Affecting Transit Performance



Performance Review Database

To receive federal funds, transit properties are required to report a variety of data in a standardized format, resulting in what is known as a National Transit Database, or NTD (formerly known as Section 15), report. These documents provide standardized measures of reporting that enable a more accurate comparison of information among properties. Since 1979, when this reporting requirement was instituted, additional refinements in data collection and reporting have increased the accuracy and comparability of the data. The data are for the fiscal year used by each transit system. For Florida properties, the fiscal year runs from October 1st through September 30th. For other properties, the fiscal year may be different.

Data Reliability - All NTD data submitted to the Federal Transit Administration (FTA) are subject to considerable review and validation through manual and automated methods. Each report is thoroughly examined to identify errors, questions, and inconsistencies. FTA specifies problems and requires each reporting agency to respond to these problems before the final report is accepted.

For this study, data were taken from published summary reports of NTD data and from individual NTD reports provided by the transit agencies. With the exception of the inflation rate, all information was provided by the transit systems. CUTR did not collect any original data or conduct any audits or on-site analyses of the data or data collection procedures.

Data Definitions - To fully understand the data presented in NTD reports, it is important to understand the definitions of the terms used. In many instances, these definitions differ from initial perceptions and may be subject to interpretation. Appendix _ contains a detailed list of definitions for selected terms used by FTA. The data collection procedures further specify exactly what is meant by a given term. For example, a passenger trip refers to an individual boarding a transit vehicle. A person riding a bus from the corner to the office takes one passenger trip to work and a second passenger trip to return home. Likewise, a person transferring from one bus to another is considered to make two passenger trips to get to his or her destination. Despite these definitions and continued refinements in data collection procedures, there remain some discrepancies among systems as to how terms are defined and how information is collected. Accordingly, caution should be used in interpreting findings, especially for those variables that are more likely to be subject to variations in definition. One example includes how employees are categorized among administrative, operating, and maintenance tasks within different agencies. Another example is how revenue service interruptions and incidents are defined by different agencies. Other discrepancies can result from differences in the organizational structure of the agency and the allocation of responsibilities among the various governmental entities within the service area. For example, street sweeping and garbage pick-up at park-and-ride or other transit facilities may be provided at no cost by a given jurisdiction or may be a contract or in-house cost of the transit system.

Legal services, computer services, engineering and design support, administrative support, and other costs are often shared costs that may or may not be accurately allocated between the transit system and a parent government body.

The national inflation rate, as defined by the percentage change in the Consumer Price Index (CPI) for all items (including commodities and services) from year to year, was used to inflate cost indicators from 1992 through 1996 so that they could be presented in real terms (1997 dollars). Over the past several years, service and labor costs tended to increase at a faster rate than did commodity prices. Therefore, transit operating expenses, which are predominantly comprised of service and labor costs, can be expected to increase somewhat faster than inflation even if the amount of service provided does not increase.

Performance Indicators and Measures - The evaluation measures used throughout the performance review are divided into three categories: general performance indicators, effectiveness measures, and efficiency measures. General performance indicators report absolute data in the selected categories that are required by NTD reporting. These tend to be key indicators of overall transit system performance. Effectiveness measures typically refine the data further and indicate the extent to which various service-related goals are being attained. For example, the number of passenger trips per capita is an indicator of the effectiveness of the agency in meeting transportation needs. Efficiency measures involve reviewing the level of resources (labor and other costs) required to achieve a given level of output, or service. It is possible to have very efficient service that is not effective or to have highly effective service that is not efficient.

The substantial amount of data available through NTD reporting provides an opportunity to develop a large number of measures. Sets of general performance indicators, effectiveness measures, and efficiency measures that are believed to provide a good representation of overall transit system performance have been selected for this analysis. Table 2-3 lists the selected indicators and measures provided in this report for fixed-route transit services and also provides subcategories, where appropriate.

**Table 2-3
Selected Performance Review Indicators and Measures
Fixed-Route Transit Services**

Performance Indicators	Effectiveness Measures	Efficiency Measures
Service Area Population	Service Supply Vehicle Miles Per Capita	Cost Efficiency Operating Expense Per Capita Operating Expense Per Passenger Trip Operating Expense Per Passenger Mile Operating Expense Per Revenue Mile
Passenger Trips	Service Consumption Passenger Trips Per Capita Passenger Trips Per Revenue Mile Passenger Trips Per Revenue Hour	Operating Ratios Farebox Recovery
Passenger Miles		
Vehicle Miles	Quality of Service Average Age of Fleet (years) Revenue Miles Between Incidents Revenue Miles Between Revenue Service Interruptions	Vehicle Utilization Revenue Miles Per Vehicle Mile Vehicle Miles Per Peak Vehicle
Revenue Miles		
Vehicle Hours		
Revenue Hours		Labor Productivity Revenue Hours Per Employee Passenger Trips Per Employee
Route Miles		
Total Operating Expense		
Total Operating Expense (1997 \$)		
Total Maintenance Expense		
Total Maintenance Expense (1997 \$)	Energy Utilization Vehicle Miles Per Gallon	
Operating Revenues		Fare Average Fare
Total Employees		
Vehicles Available for Maximum Service		
Vehicles Operated in Maximum Service		
Total Gallons of Fuel Consumed		

Overview of SCAT

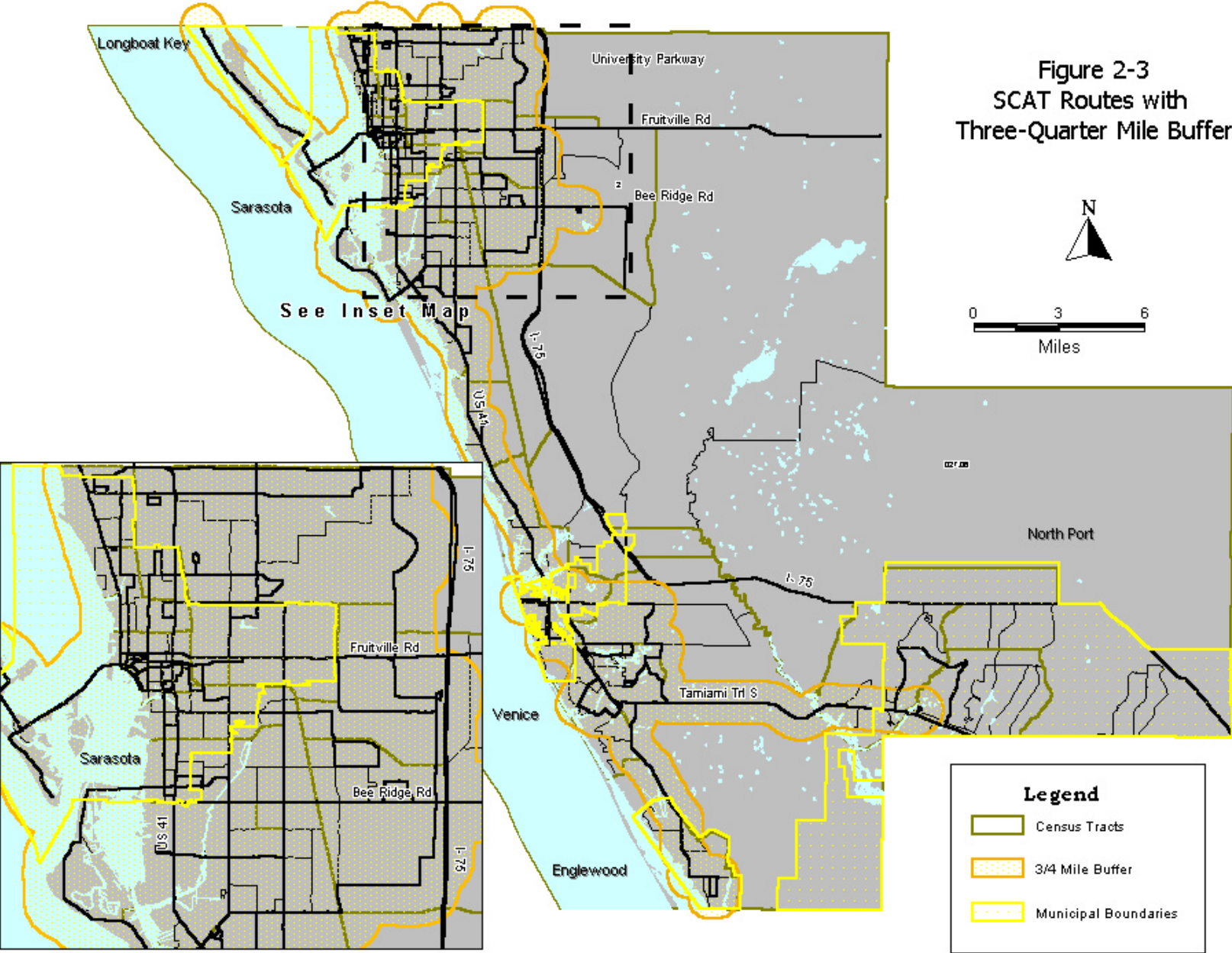
The Sarasota County Transportation Authority functionally operates as the Transit Department of Sarasota County government. The transit system is informally known as the Sarasota County Area Transit (SCAT) bus system. SCAT is governed by the Sarasota County Board of County Commissioners, which is comprised of five members representing districts and elected at large. The bus system serves the urbanized portion of Sarasota County including the cities of Sarasota, Longboat Key, Venice, Englewood, and North Port. SCAT provides fixed-route motorbus services and contracts out for demand-response services. Figure 2-1 shows a map of the system network, while the map in Figure 2-3 includes information about a three-quarter-mile buffer around the current system network.

The performance evaluation in this section focuses exclusively on fixed-route service: therefore, the purchased demand-response service is not included in these particular trend or peer review analyses. The performance of the demand-response system is evaluated separately. To present a general overview of the transit system, selected general performance indicators, effectiveness measures, and efficiency measures are reported in Table 2-4. The source of the data is SCAT's FY 1996 and FY 1997 NTD reports.

**Table 2-4
Summary of Selected Operating Statistics, SCAT**

General Performance Indicators	FY 1996	FY 1997	Percent Change
Service Area Population	242,232	251,019	3.6%
Passenger Trips	1,856,014	1,918,177	3.4%
Passenger Miles	9,274,235	9,971,167	7.5%
Route Miles	352.3	354.2	0.5%
Vehicle Miles	1,535,239	1,535,539	0.02%
Revenue Miles	1,421,465	1,433,993	0.9%
Vehicle Hours	100,150	99,957	-0.2%
Revenue Hours	93,954	94,023	0.1%
Total Operating Expense	\$3,585,945	\$3,953,581	10.3%
Total Maintenance Expense	\$465,525	\$530,036	13.9%
Passenger Fare Revenue	\$365,108	\$395,469	8.3%
Operating Revenue	\$420,168	\$592,137	40.9%
Total Local Revenue	\$3,122,861 ¹	\$3,956,869 ¹	26.7%
Total Employees (FTEs)	76.3	81.1	6.3%
Vehicles Available in Maximum Service	40	37	-7.5%
Vehicles Operated in Maximum Service	25	25	0.0%
Total Gallons of Fuel Consumed	374,400	391,109	4.5%
Effectiveness Measures			
Vehicle Miles Per Capita	6.34	6.12	-3.5%
Passenger Trips Per Capita	7.66	7.64	-0.3%
Passenger Trips Per Revenue Mile	1.31	1.34	2.5%
Passenger Trips Per Revenue Hour	19.75	20.40	3.3%
Average Age of Fleet (years)	12.03	9.97	-17.1%
Revenue Miles Between Incidents	71,073	59,750	-15.9%
Revenue Miles Between Interruptions	2,131	2,169	1.8%
Efficiency Measures			
Operating Expense Per Capita	\$14.80	\$15.75	6.4%
Operating Expense Per Passenger Trip	\$1.93	\$2.06	6.7%
Operating Expense Per Revenue Mile	\$2.52	\$2.76	9.3%
Operating Expense Per Passenger Mile	\$0.39	\$0.40	2.6%
Farebox Recovery Ratio	10.18%	10.00%	-1.8%
Average Fare	\$0.20	\$0.21	4.8%
Revenue Hours Per Employee	1,231	1,159	-5.9%
Passenger Trips Per Employee	24,325	23,652	-2.8%
Revenue Miles Per Vehicle Mile	0.93	0.93	0.9%
Vehicle Miles Per Peak Vehicle	61,410	61,422	0.02%
Vehicle Miles Per Gallon	4.10	3.93	-4.3%
¹ Total Local Revenue includes local government contributions to the fixed-route system and operating revenues (passenger fares and other revenues accrued).			

Figure 2-3
SCAT Routes with
Three-Quarter Mile Buffer



Fixed-Route Trend Analysis

A fixed-route trend analysis for fiscal years 1992 through 1997 was conducted to follow the performance of SCAT's directly-operated motorbus service over a six-year time period. Data used in this analysis are from SCAT's NTD reports as well as CUTR's *Performance Evaluation of Florida's Transit Systems* reports (Part I, Trend Analysis; Part II, Peer Review Analysis) for the years 1992 to 1997 (the 1997 reports are in draft form as of January 1999). Performance indicators and measures are grouped into categories and presented in tabular form (Tables 2-5 through 2-14), along with brief discussions of the data. The percent change over the six-year trend period for each indicator and measure is also shown in the tables. The trends are also illustrated graphically in Figures 2-4 through 2-36. Detailed trend data tables can be found in Appendix _.

General Performance Indicators

Ridership and Route Mileage

Table 2-5 shows that ridership on SCAT's fixed-route motorbus service grew more than 52 percent from 1992 to 1997. The only decline during this time occurred between 1993 and 1994. Beginning in FY 1995, SCAT increased its level of service (December 1994) and dropped its base fare to \$0.25 (October 1994). These changes were behind the ridership growth that occurred from 1995 to the end of the trend period. According to SCAT, ridership growth during this period was the direct result of increasing the amount of service available while also reducing the base fare to \$0.25.

The number of passenger miles increased more significantly (more than 95 percent) than ridership during this period. The comparatively larger increase in passenger miles resulted in a more than 28 percent increase in the average trip length (passenger miles per passenger trip). Over the trend period, the average trip length grew from 4.05 miles in 1992 to 5.20 miles in 1997. SCAT has indicated that possible reasons for the increase in trip length include the maturation of newer circumferential routes and growth in ridership between the north and south county service areas. The trends for passenger trips and passenger miles are depicted in Figures 2-4 and 2-5.

The trend for the number of route miles of service is shown in Table 2-5 as well as Figure 2-6. Route miles increased over the trend period, with the largest increase occurring between 1994 and 1995 when this indicator grew from 292.4 miles to 347.6 miles (an increase of 19 percent). In FY 1995, SCAT expanded service in its fixed-route network, as discussed previously.

**Table 2-5
SCAT - Ridership and Route Miles, Fixed-Route Trend Analysis**

Fiscal Year	Passenger Trips	Passenger Miles	Route Miles
1992	1,258,558	5,102,694	293.8
1993	1,317,854	5,119,979	291.2
1994	1,302,060	5,687,776	292.4
1995	1,618,861	7,071,655	347.6
1996	1,856,014	9,274,235	352.3
1997	1,918,177	9,971,167	354.2
Percent Change 1992-1997	52.4%	95.4%	20.6%
Percent Change 1996-1997	3.4%	7.5%	0.5%

Figure 2-4
Passenger Trips (000)

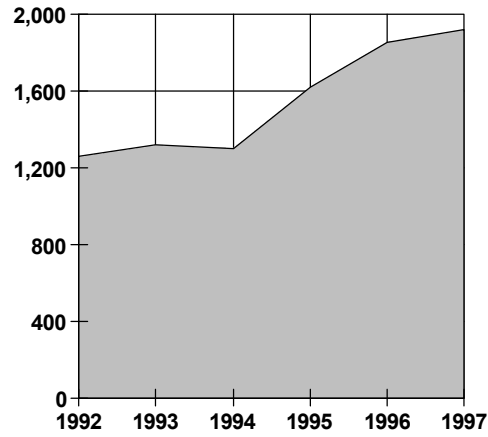


Figure 2-5
Passenger Miles (000)

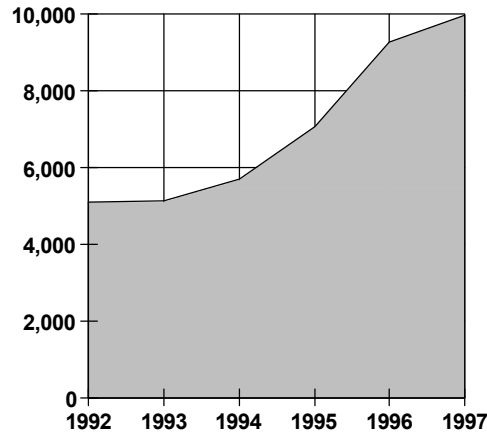
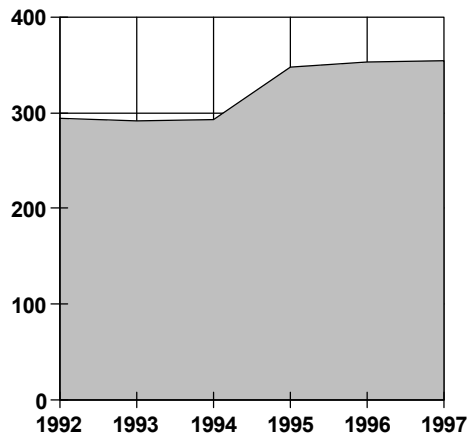


Figure 2-6
Route Miles



Level of Service

The level of service provided, as measured by vehicle miles and revenue miles, increased significantly over the trend period. Table 2-6 shows that vehicle miles grew 38 percent while revenue miles increased 37 percent. These changes are also shown graphically in Figures 2-7 and 2-8. The sharp increases between 1994 and 1995 reflect the expanded service provided by SCAT beginning in December 1994 (FY 1995). SCAT noted that with the service expansion, the revenue miles of service increased by approximately 1,102 per day.

Table 2-6 also indicates that the numbers of vehicle hours and revenue hours grew significantly between 1992 and 1997, with each increasing approximately 32 percent. As with vehicle and revenue miles, vehicle and revenue hours rose quickly during fiscal year 1995, as exhibited in Figures 2-9 and 2-10.

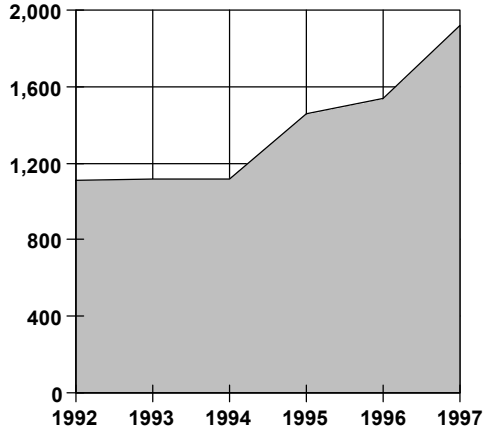
Over the trend period, as discussed above, revenue miles grew 37 percent while revenue hours increased 32 percent. These figures reveal that the average speed (revenue miles per revenue hour) remained relatively stable during the time between 1992 and 1997. Average speed rose only about 4 percent from 14.7 mph in 1992 to 15.3 mph in 1997.

**Table 2-6
SCAT - Level of Service, Fixed-Route Trend Analysis**

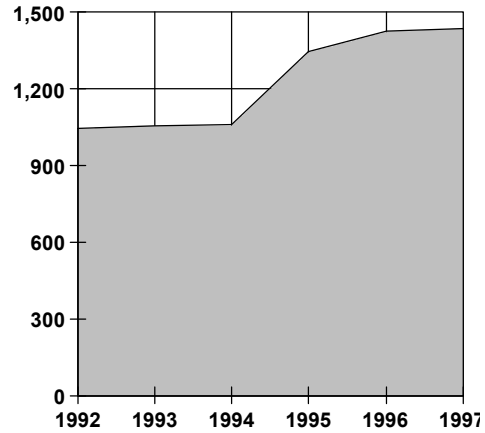
Fiscal Year	Vehicle Miles	Revenue Miles	Vehicle Hours	Revenue Hours
1992	1,109,987	1,044,498	75,285	71,064
1993	1,119,657	1,056,018	76,906	72,997
1994	1,120,267	1,057,978	77,565	73,776
1995	1,455,060	1,342,899	96,572	90,461
1996	1,535,239	1,421,465	100,150	93,954
1997	1,535,539	1,433,993	99,957	94,023
Percent Change 1992-1997	38.3%	37.3%	32.8%	32.3%
Percent Change 1996-1997	0.02%	0.9%	-0.2%	0.1%

TREND GRAPHICS FOR VEHICLE AND REVENUE MILES AND HOURS (FIGURES 2-7 2-10)

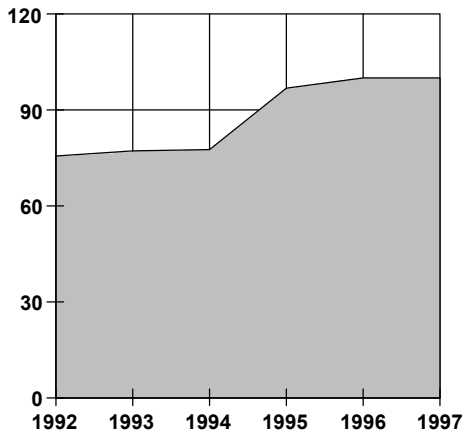
**Figure 2-7
Vehicle Miles (000)**



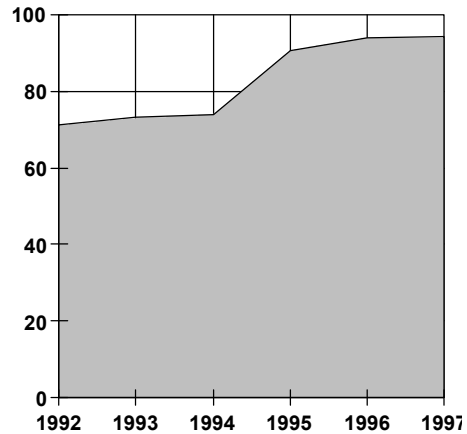
**Figure 2-8
Revenue Miles (000)**



**Figure 2-9
Vehicle Hours (000)**



**Figure 2-10
Revenue Hours (000)**



Operating Expenses

Total operating expense for SCAT's fixed-route service increased more than 44 percent in nominal terms between 1992 and 1997 as evidenced by Table 2-7. However, when these figures are adjusted for inflation, the increase is 25 percent (in 1997 dollars). Total operating expenses increased sharply between 1994 and 1995 when SCAT introduced its expanded service. The change in operating expense is exhibited in Figure 2-11 in both nominal and real values.

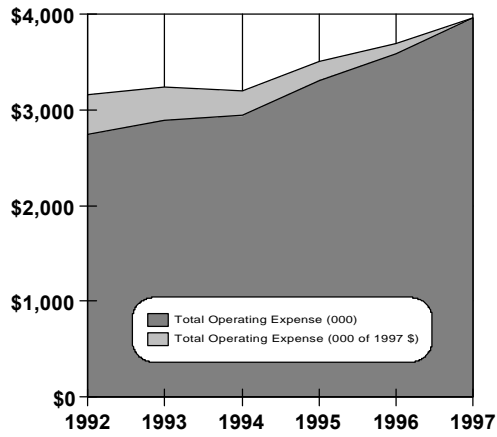
Total maintenance expense is a subset of total operating expense. The table below and Figure 2-12 show that maintenance expense, in nominal terms, grew at a rate higher than 26 percent over the trend period. The largest percentage increase (14 percent) occurred between 1996 and 1997. However, when inflation is considered, maintenance expense in real terms grew only about nine percent during this time. This relatively smaller increase in maintenance expense indicates that the increases in total operating expense were due to growing costs associated with factors other than maintenance (such as the provision of service on the street).

**Table 2-7
SCAT - Operating Expenses, Fixed-Route Trend Analysis**

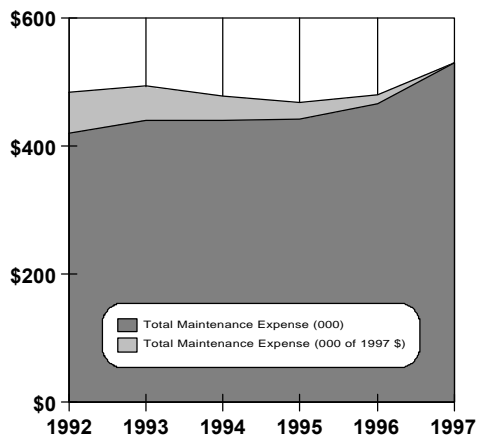
Fiscal Year	Total Operating Expense	Total Operating Expense (97 \$)	Total Maintenance Expense	Total Maintenance Expense (97 \$)
1992	\$2,743,334	\$3,161,774	\$419,625	\$483,630
1993	\$2,896,681	\$3,241,273	\$440,224	\$492,593
1994	\$2,940,284	\$3,194,236	\$439,906	\$477,901
1995	\$3,309,138	\$3,503,848	\$441,292	\$467,258
1996	\$3,585,945	\$3,693,523	\$465,525	\$479,491
1997	\$3,953,581	\$3,953,581	\$530,036	\$530,036
Percent Change 1992-1997	44.1%	25.0%	26.3%	9.6%
Percent Change 1996-1997	10.3%	7.0%	13.9%	10.5%

TREND GRAPHICS FOR OPERATING AND MAINTENANCE EXPENSES (FIGURES 2-11 2-12)

**Figure 2-11
Total Operating Expense**



**Figure 2-12
Total Maintenance Expense**



Operating Revenues

Between 1992 and 1994, SCAT's passenger fare revenue increased four percent, as shown in Table 2-8. In 1995, fare revenue declined significantly (45 percent). This was the result of SCAT reducing its fixed-route base fare from \$1.00 to \$0.25 in October 1994. In addition, the senior citizen/disabled fare was reduced from \$0.50 to \$0.10, and free transfers, as well as the 50-cent student fare, were eliminated. For the remainder of the trend period, fare revenue grew another 8 percent; however, this indicator fell more than 24 percent, overall, over the time period examined in this analysis. Figure 2-13 also illustrates the trend for fare revenue.

Operating revenue includes, in SCAT's case, passenger fares as well as special transit fares, auxiliary transportation funds, and non-transportation revenues (such as investment income) for purposes of the Performance Evaluation Study. The table below and Figure 2-14 show that this indicator decreased only about two percent between 1992 and 1997, indicating that nearly all of the losses in fare revenue were recovered with other revenues directly generated by SCAT.

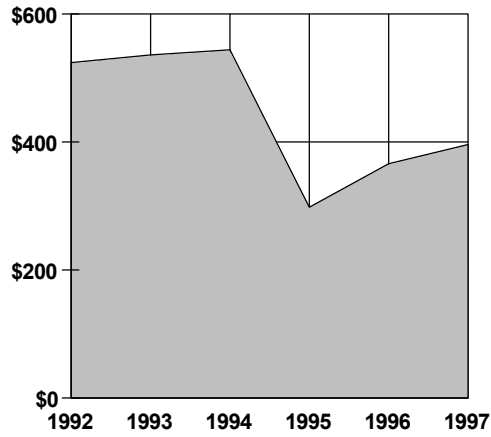
Finally, the trend for total local revenue is depicted in Table 2-8 and Figure 2-15. Total local revenue consists of all revenues originating at the local level, including operating revenue (excluding state and federal assistance). Total local revenue more than doubled over the period from 1992 to 1997 (an increase of 106 percent) to compensate for declining state and federal subsidies during this time period.

**Table 2-8
SCAT - Operating Revenues, Fixed-Route Trend Analysis**

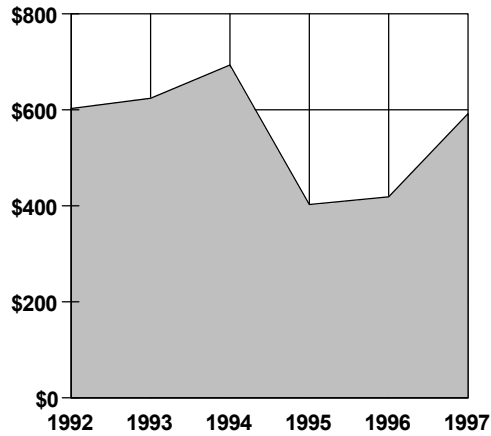
Fiscal Year	Passenger Fare Revenue	Operating Revenue	Total Local Revenue
1992	\$522,827	\$603,813	\$1,923,389
1993	\$535,063	\$625,982	\$1,906,579
1994	\$543,102	\$693,714	\$2,302,121
1995	\$298,390	\$402,769	\$2,514,196
1996	\$365,108	\$420,168	\$3,122,861
1997	\$395,469	\$592,137	\$3,956,869
Percent Change 1992-1997	-24.4%	-1.9%	105.7%
Percent Change 1996-1997	8.3%	40.9%	26.7%

TREND GRAPHICS FOR FARE REVENUE, OPERATING REVENUE, AND TOTAL LOCAL REVENUE (FIGURES 2-13 2-15)

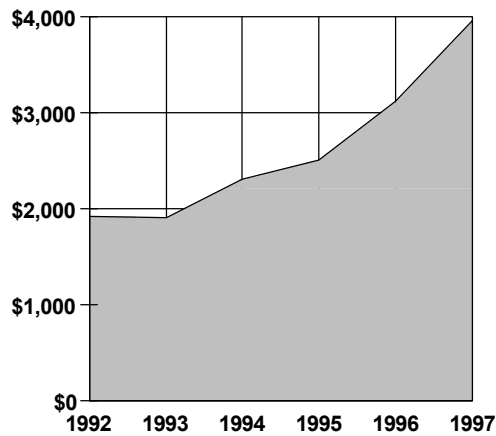
**Figure 2-13
Passenger Fare Revenue (000)**



**Figure 2-14
Operating Revenue (000)**



**Figure 2-15
Total Local Revenue (000)**



Employees, Vehicles, and Fuel Consumption

The total number of employees at SCAT is represented by full-time equivalents (FTEs), which are derived from the labor hours listed in the NTD report. Table 2-9 indicates that the total employee FTEs increased nearly 35 percent from 60.1 in 1992 to 81.1 in 1997. The significant growth seen beginning in 1995 reflects SCAT's expanded service during this time. Figure 2-16 illustrates the trend graphically, and also shows the variations among the three employee categories: administrative employees, maintenance employees, and transportation operating employees. As shown in the figure, the increase in operating employees drove the overall change in total FTEs. This was due to the fact that SCAT hired additional operators for the expanded service.

While the number of vehicles available for maximum service was 37 in both fiscal years 1992 and 1997 (with a peak at 42 vehicles in 1994), the number of vehicles operated in maximum service increased 25 percent from 20 to 25 vehicles during this time. Beginning in FY 1995, SCAT operated five more vehicles in peak service to accommodate the increase in the level of service provided by the system. Figure 2-17 shows this trend, as well.

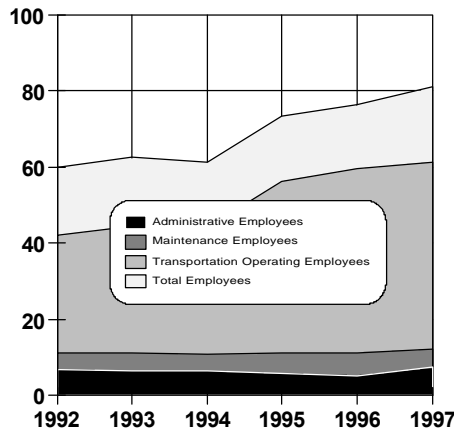
Finally, the total gallons of fuel utilized for each year in the trend period is also presented in the table below. The table and Figure 2-18 indicate that fuel consumption increased nearly 42 percent from 1992 to 1997. While increasing modestly between 1992 and 1994, the number of gallons used by the fleet each year grew significantly beginning in 1995 with the increase in service and number of vehicles operated.

**Table 2-9
SCAT - Employees, Vehicles, and Fuel Consumption, Fixed-Route Trend Analysis**

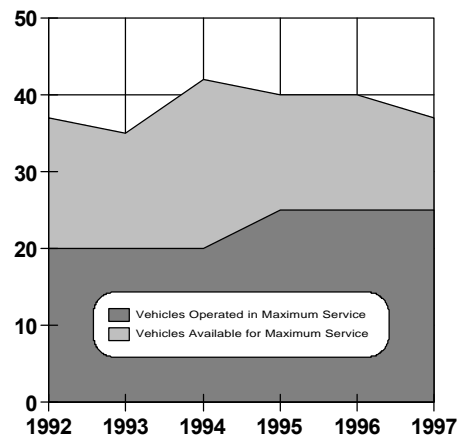
Fiscal Year	Total Employees (FTEs)	Vehicles Available for Max. Service	Vehicles Operated in Max. Service	Total Gallons of Fuel Consumed
1992	60.1	37	20	275,966
1993	62.5	35	20	277,821
1994	61.5	42	20	284,824
1995	73.4	40	25	347,441
1996	76.3	40	25	374,400
1997	81.1	37	25	391,109
Percent Change 1992-1997	34.9%	0.0%	25.0%	41.7%
Percent Change 1996-1997	6.3%	-7.5%	0.0%	4.5%

TREND GRAPHICS FOR EMPLOYEES, VEHICLES, AND FUEL CONSUMPTION (FIGURES 2-16 2-

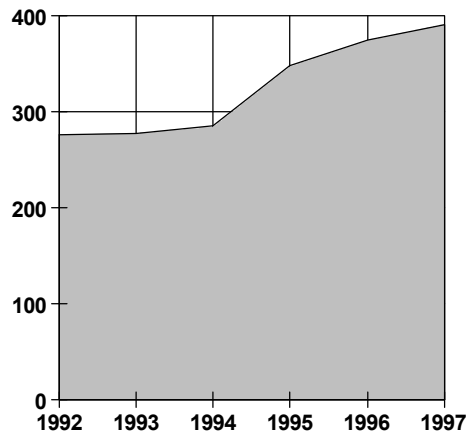
**Figure 2-16
Total Employees**



**Figure 2-17
Vehicles in Maximum Service**



**Figure 2-18
Total Gallons of Fuel (000)**



18)

Effectiveness Measures

Service Supply and Service Consumption

The number of vehicle miles per capita is one method of evaluating the level of service supply. Over the time period from 1992 to 1997, this measure increased approximately 25 percent, as shown in Table 2-10. Figure 2-19 depicts the trend and also indicates that the measure peaked in fiscal year 1996 with 6.34 vehicle miles per capita.

Measures of the level of service consumption are also summarized in Table 2-10 and in Figures 2-20 through 2-22. One such measure is the number of passenger trips per capita. Between 1992 and 1997, this measure grew more than 38 percent. The table and Figure 2-20 illustrate how this measure, like vehicle miles per capita, peaked in 1996 (at 7.66 trips per capita).

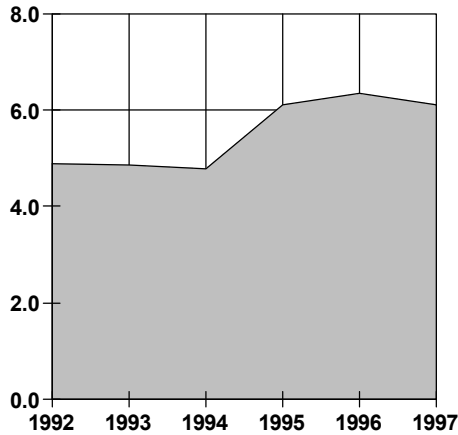
Additional measures of service consumption are the numbers of passenger trips per revenue mile and per revenue hour, which are generally influenced by the supply and demand of transit service. Since 1992, passenger trips per revenue mile increased 11 percent while the number of trips per revenue hour grew 15 percent, as indicated in Table 2-10. For both measures, the highest values were at 1.34 and 20.40, respectively. Overall, these measures demonstrate an increase in the level of service consumption for SCAT.

**Table 2-10
SCAT - Service Supply and Service Consumption, Fixed-Route Trend Analysis**

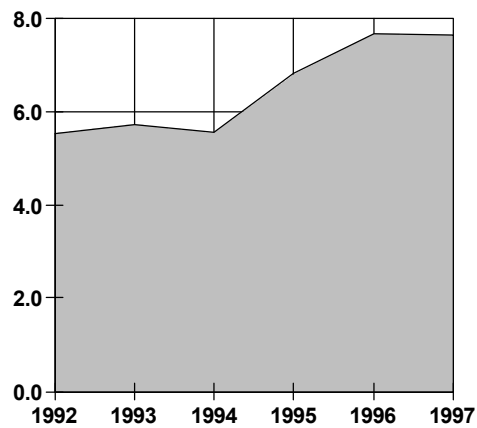
Fiscal Year	Vehicle Miles Per Capita	Passenger Trips Per Capita	Passenger Trips Per Revenue Mile	Passenger Trips Per Revenue Hour
1992	4.88	5.53	1.20	17.71
1993	4.86	5.73	1.25	18.05
1994	4.78	5.55	1.23	17.65
1995	6.11	6.80	1.21	17.90
1996	6.34	7.66	1.31	19.75
1997	6.12	7.64	1.34	20.40
Percent Change 1992-1997	25.4%	38.2%	11.0%	15.2%
Percent Change 1996-1997	-3.5%	-0.3%	2.5%	3.3%

TREND GRAPHICS FOR VEHICLE MILES PER CAPITA AND PASSENGER TRIPS PER CAPITA, REVENUE MILE, AND REVENUE HOUR (FIGURES 2-19 2-22)

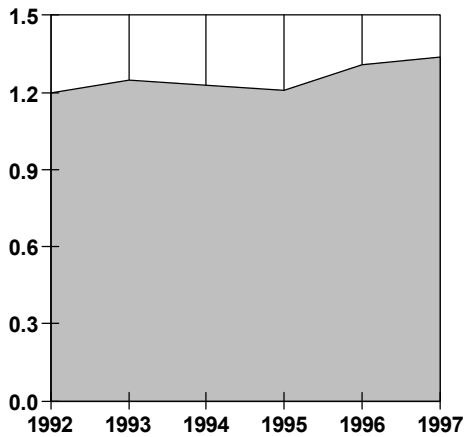
**Figure 2-19
Vehicle Miles Per Capita**



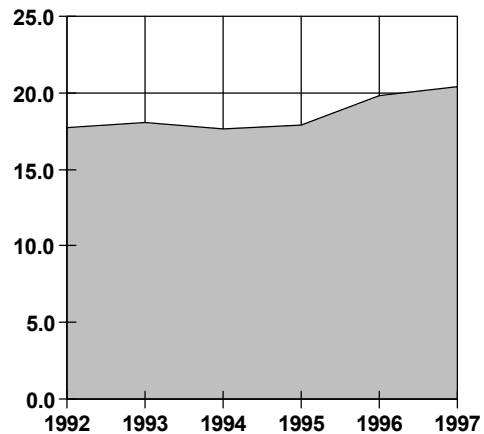
**Figure 2-20
Passenger Trips Per Capita**



**Figure 2-21
Passenger Trips Per Revenue Mile**



**Figure 2-22
Passenger Trips Per Revenue Hour**



Quality of Service

Table 2-11 shows the trend for the average age of SCAT's vehicle fleet. During the trend period, the average age fell from 12.30 years in 1992 (the Federal Transit Administration provides a guideline for the average lifespan for a 35-foot or greater motorbus of 12 years) to 9.97 years in 1997. The average fleet age was at its lowest in 1997. The average age of the fleet is also represented graphically in Figure 2-23.

The numbers of revenue miles between incidents and between revenue service interruptions (also referred to as roadcalls) help determine the levels of safety and reliability, respectively, of SCAT's service. The table below indicates that revenue miles between incidents (accidents) fell more than 48 percent between 1992 and 1997, representing an overall increase in the number of incidents during this time. The number of revenue mile between interruptions (roadcalls) remained relatively stable over the trend period, falling just about two percent. The trend for this measure indicates that the number of revenue service interruptions has not changed significantly from 1992 to 1997. SCAT indicated that the number of revenue service interruptions is influenced by the age of the fleet, which includes several buses originally manufactured prior to 1970. The trends for these two measures are shown in Figures 2-24 and 2-25.

**Table 2-11
SCAT - Quality of Service, Fixed-Route Trend Analysis**

Fiscal Year	Average Age Of Fleet (Years)	Revenue Miles Between Incidents	Revenue Miles Between Interruptions
1992	12.30	116,055	2,213
1993	11.60	70,401	3,017
1994	10.50	40,691	2,867
1995	11.03	70,679	2,741
1996	12.03	71,073	2,131
1997	9.97	59,750	2,169
Percent Change 1992-1997	-18.9%	-48.5%	-2.0%
Percent Change 1996-1997	-17.1%	-22.4%	1.8%

TREND GRAPHICS FOR AVERAGE AGE AND REVENUE MILES BETWEEN INCIDENTS AND INTERRUPTIONS (FIGURES 2-23 2-25)

Figure 2-23
Average Age of Fleet (years)

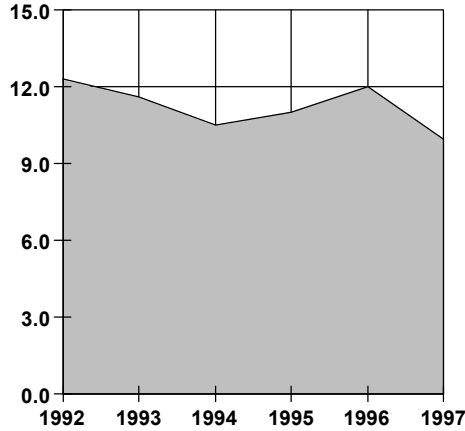


Figure 2-24
Revenue Miles Between Incidents (000)

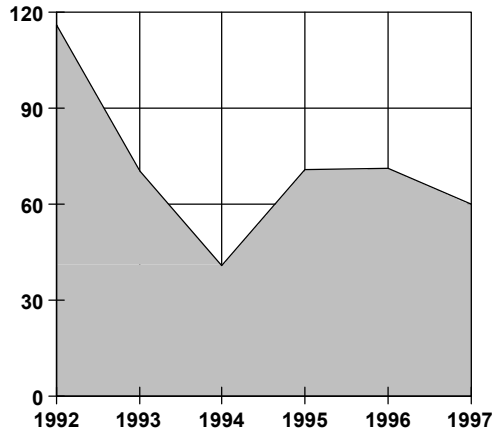
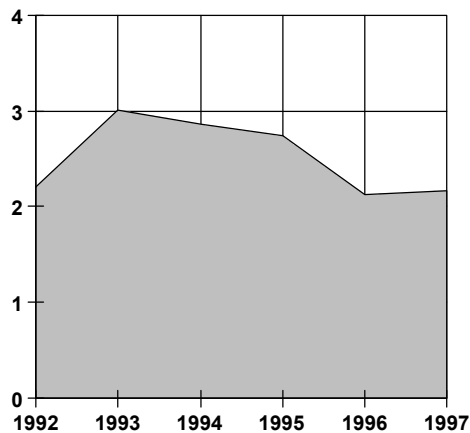


Figure 2-25
Revenue Miles Between Interruptions (000)



Efficiency Measures

Cost Efficiency

Four operating expense ratios, outlined in Table 2-12, are each shown in nominal values and help to measure the SCAT's overall cost efficiency. The table indicates that operating expense per capita increased approximately 31 percent over the trend period. The highest point for this measure was in 1997 when operating expense per capita was \$15.75. The trend for this measure is also depicted in Figure 2-26.

Operating expense per passenger trip and per passenger mile each decreased between 1992 and 1997, as noted in the table below. Operating expense per trip fell approximately 5 percent during the trend period, while operating expense per passenger mile declined more than 26 percent, reflecting the faster increase in the number of passenger miles during this time. Figures 2-27 and 2-28 illustrate these trends graphically.

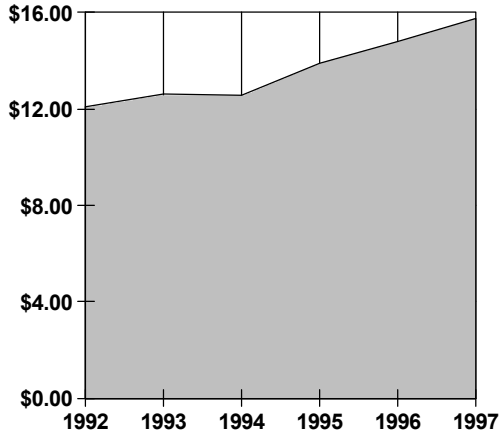
Operating expense per revenue mile is the final expense ratio analyzed for this evaluation. As summarized in Table 2-12, this measure increased a modest five percent, in nominal terms, between 1992 and 1997. This measure fell significantly between 1994 and 1995, and then grew steadily for the remainder of the trend period. As with the other measures, the values for operating expense per revenue mile of service are also presented in graphical form in Figure 2-29.

**Table 2-12
SCAT - Cost Efficiency, Fixed-Route Trend Analysis**

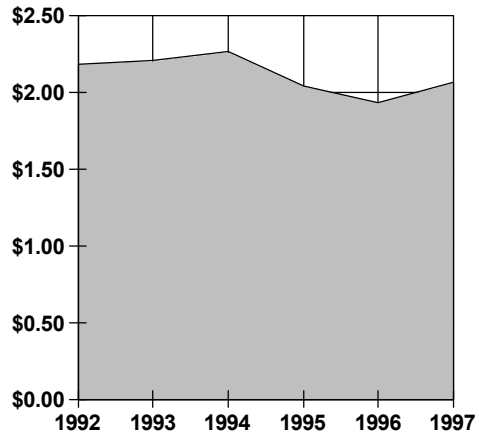
Fiscal Year	Operating Expense Per Capita	Operating Expense Per Passenger Trip	Operating Expense Per Passenger Mile	Operating Expense Per Revenue Mile
1992	\$12.06	\$2.18	\$0.54	\$2.63
1993	\$12.59	\$2.20	\$0.57	\$2.74
1994	\$12.54	\$2.26	\$0.52	\$2.78
1995	\$13.89	\$2.04	\$0.47	\$2.46
1996	\$14.80	\$1.93	\$0.39	\$2.52
1997	\$15.75	\$2.06	\$0.40	\$2.76
Percent Change 1992-1997	30.6%	-5.4%	-26.3%	5.0%
Percent Change 1996-1997	6.4%	6.7%	2.6%	9.3%

TREND GRAPHICS FOR FOUR OPERATING EXPENSE RATIOS (FIGURE 2-26 2-29)

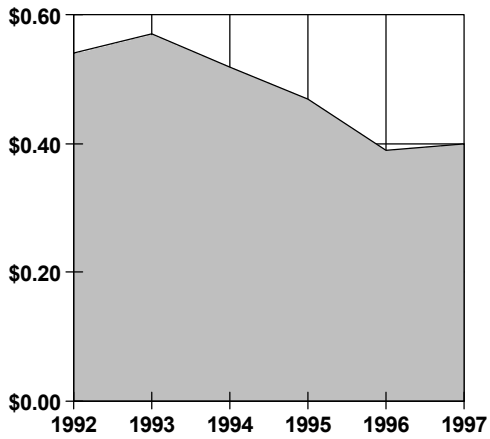
**Figure 2-26
Operating Expense Per Capita**



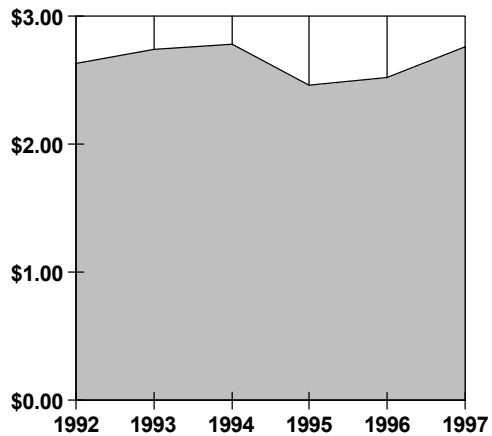
**Figure 2-27
Operating Expense Per Passenger Trip**



**Figure 2-28
Operating Expense Per Passenger Mile**



**Figure 2-29
Operating Expense Per Revenue Mile**



Farebox Recovery, Average Fare, and Labor Productivity

The farebox recovery ratio, which represents the amount of operating expenses covered by fare revenue, declined from a high of 19 percent in 1992 to exactly 10 percent in 1997, as noted in Table 2-13. Figure 2-30 also shows this trend, which resulted directly from SCAT's base fare change (from \$1.00 to \$0.25) that occurred at the beginning of fiscal year 1995.

Similarly, the average fare per passenger trip also fell over the trend period as a result of the fare decrease. The average fare decreased from \$0.42 in 1992 to \$0.21 in 1997, a decline of more than 50 percent. The trend for SCAT's average fare is exhibited in Figure 2-31.

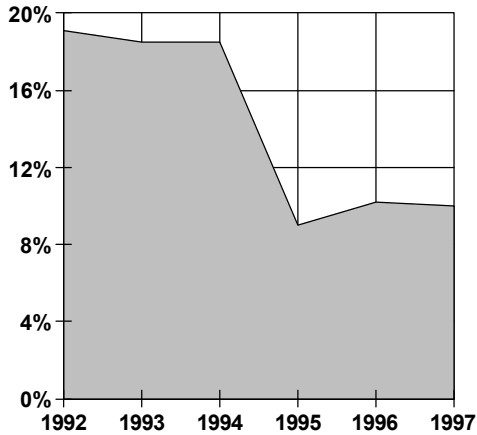
The trends for SCAT's labor productivity, as measured by the numbers of revenue hours per employee and passenger trips per employee, are exhibited in the table below and in Figures 2-32 and 2-33. The measure of revenue hours per employee remained relatively stable from 1992 to 1997, decreasing just two percent during this time. The number of passenger trips per employee increased 13 percent over the trend period.

**Table 2-13
SCAT - Farebox Recovery, Average Fare, and Labor Productivity, Fixed-Route Trend Analysis**

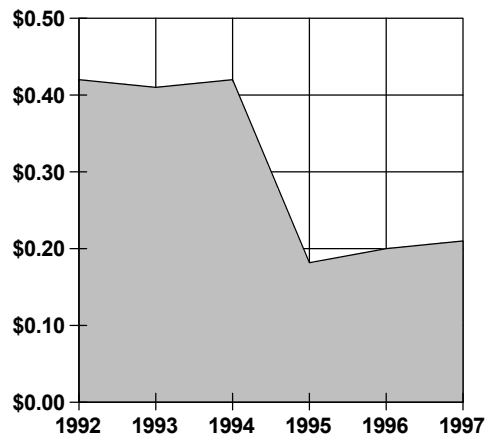
Fiscal Year	Farebox Recovery	Average Fare	Revenue Hours Per Employee	Passenger Trips Per Employee
1992	19.1%	\$0.42	1,182	20,941
1993	18.5%	\$0.41	1,168	21,086
1994	18.5%	\$0.42	1,200	21,172
1995	9.0%	\$0.18	1,232	22,055
1996	10.2%	\$0.20	1,231	24,325
1997	10.0%	\$0.21	1,159	23,652
Percent Change 1992-1997	-47.5%	-50.4%	-2.0%	13.0%
Percent Change 1996-1997	-1.8%	4.8%	-5.9%	-2.8%

TREND GRAPHICS FOR FAREBOX RECOVERY, AVERAGE FARE, AND TWO LABOR PRODUCTIVITY MEASURES (FIGURES 2-30 2-33)

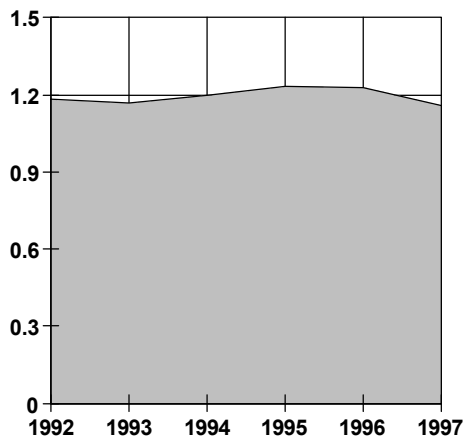
**Figure 2-30
Farebox Recovery**



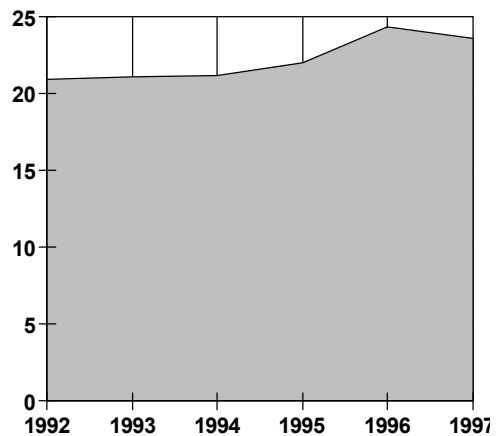
**Figure 2-31
Average Fare**



**Figure 2-32
Revenue Hours Per Employee (000)**



**Figure 2-33
Passenger Trips Per Employee (000)**



Vehicle Utilization and Energy Utilization

Two measures of vehicle utilization are the number of revenue miles per vehicle mile and the number of vehicle miles per peak vehicle. Table 2-14 shows that the number of revenue miles per vehicle mile remained nearly constant throughout the trend period, as would be expected. In both 1996 and 1997, this measure was equal to 0.93 revenue miles per vehicle mile. The number of vehicle miles per peak vehicle, however, increased more than 10 percent over the six-year time period, reaching a maximum of 61,422 in 1997. Figures 2-34 and 2-35 presents these two measures in a graphical format.

Finally, the fuel efficiency of SCAT s fixed-route fleet can be measured by the number of vehicle miles per gallon. As can be seen from Table 2-14, this measure declined a slight two percent between 1992 and 1997, equaling 3.93 miles per gallon for 1997. This trend is also represented in Figure 2-36.

**Table 2-14
SCAT - Vehicle Utilization and Energy Utilization, Fixed-Route Trend Analysis**

Fiscal Year	Revenue Miles Per Vehicle Mile	Vehicle Miles Per Peak Vehicle	Vehicle Miles Per Gallon
1992	0.94	55,499	4.02
1993	0.94	55,983	4.03
1994	0.94	56,013	3.93
1995	0.92	58,202	4.19
1996	0.93	61,410	4.10
1997	0.93	61,422	3.93
Percent Change 1992-1997	-0.8%	10.7%	-2.4%
Percent Change 1996-1997	0.9%	0.02%	-4.3%

TREND GRAPHICS FOR TWO VEHICLE UTILIZATION MEASURES AND MILES PER

Figure 2-34
Revenue Miles Per Vehicle Mile

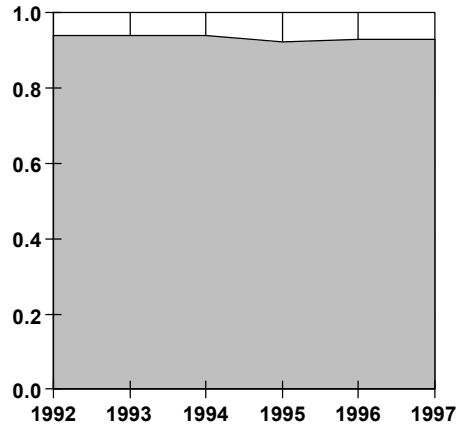


Figure 2-35
Vehicle Miles Per Peak Vehicle (000)

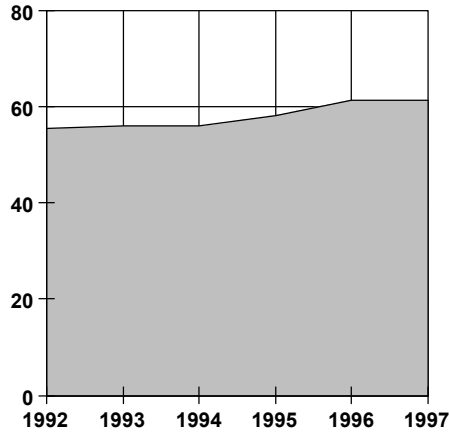
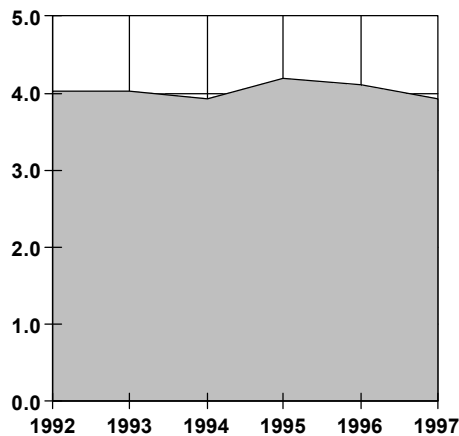


Figure 2-36
Vehicle Miles Per Gallon



Fixed-Route Peer Review Analysis

A fixed-route peer review analysis was conducted to compare the performance of SCAT with similar systems in Florida and throughout the southeastern United States. The methodology for choosing peer systems was based on both operating characteristics (number of vehicles operated in maximum service, amount of service supplied, average speed, ridership, and operating expenses) and other exogenous factors (geographic location, service area population, and service area population density). The two primary decision variables for selecting potential peers, however, were geographic location and the number of vehicles operated in maximum service.

The specified geographic region for this study included the southeastern part of the United States since transit systems that operate in a similar geographic area are typically subjected to many of the same exogenous factors. These factors include climate, labor costs, historical transit ridership trends, and density.

CUTR conducts an annual Performance Evaluation Study for the Florida Department of Transportation (FDOT) which includes a trend analysis and a peer review analysis. CUTR's peer analysis groups Florida's fixed-route transit systems (those receiving State Block Grant funds) into four groups based on motorbus fleet size: 1 to 9 vehicles, 10 to 49 vehicles, 50 to 200 vehicles, and greater than 200 vehicles. Peers from outside Florida are carefully selected and also placed into these categories. The analysis allows Florida properties to be compared with each other as well as among their out-of-state peers.

The methodology for the selection of out-of-state peer systems for the statewide peer review is relatively simple in nature. The selection is based foremost on geographic location. The specified geographic area consists of Florida and 11 other states in the southeastern United States, including Texas, Arkansas, Louisiana, Mississippi, Alabama, Kentucky, Tennessee, Virginia, North Carolina, South Carolina, and Georgia.

Fixed-route systems operating in these states and falling into the specified peer groups for the number of vehicles operated in maximum service (1 to 9, 10 to 49, and 50 to 200) are analyzed based on eight indicators including six operating characteristics (vehicles operated in maximum service, passenger trips, revenue miles, revenue hours, average speed, and total operating expense) and two exogenous variables (service area population and service area population density). Service area population density, revenue miles, and average speed are considered to be the primary measures of comparison.

Only transit systems that operate between 10 and 49 vehicles in maximum service were considered for this peer analysis; although Manatee County Area Transit (MCAT), which operates 9 vehicles in maximum service, has been included in the peer group for this analysis

due to its proximity to SCAT's service area. The out-of-state peers have been examined closely and accepted by CUTR, as well as FDOT, to be appropriate peers for the SCAT system. Data from the systems chosen for the peer group were reviewed for reasonableness and extraordinary conditions. In some cases, it was necessary to contact the transit systems to clarify inconsistencies in the data and to collect missing data. All data are from the systems' individual NTD reports for fiscal year 1997. The FY 1997 data represent the most recent validated fixed-route information available. Peer systems contained within the 10-to-49 peer group (including MCAT) are listed in Table 2-15.

The final peer group contained 15 systems, including SCAT. Eight of SCAT's peers were Florida systems, while the remaining six were from other states. Tables 2-16 through 2-24 present SCAT's value and the peer group minimum, maximum, and mean for each indicator and measure. In addition, SCAT's deviation from the mean is also reported as a percent of the mean value. Complete data tables including each peer system are found in Appendix __. Graphics throughout this section (Figures 2-37 through 2-71) illustrate the selected performance indicators and measures from this analysis. These figures indicate the rank of the systems as well as the peer group mean (denoted by the vertical line) for each measure.

**Table 2-15
Peer Systems
(operating between 10 and 49 vehicles in maximum service, including MCAT)**

Florida Peers	Non-Florida Peers
Tallahassee Transit	Chapel Hill Transit (NC)
County of Volusia dba VOTRAN	Columbia - South Carolina Electric & Gas Co.
Regional Transit System (Gainesville)	City Transit Management Co. Inc., dba Citibus (Lubbock, TX)
Lee County Transit	Mobile Transit Authority (AL)
Escambia County Area Transit	New Orleans - Westside Transit Lines (LA)
Sarasota County Area Transit	Columbus Transit System (GA)
Lakeland Area Mass Transit District	
Space Coast Area Transit (Brevard County)	
Manatee County Area Transit	

General Performance Indicators

Population, Ridership, and Route Mileage

SCAT, serving the developed areas of Sarasota County, reported a service area population of 251,019 in FY 1997. The service area populations for Florida and non-Florida systems were obtained directly from the systems 1997 NTD reports. As shown in Table 2-16 and Figure 2-37, SCAT's service area population is above the average of the peer systems. It should be noted, however, that SCAT, as well as several other Florida systems, use county population as a proxy for the service area population, even if the transit system does not serve the entire county. This is supported by Figure 2-37, which shows most of the Florida systems listed at the top of the graphic (Gainesville, Tallahassee, and Lakeland, with smaller populations, only serve their respective cities/urbanized areas). Most systems outside Florida utilize the actual service area population, which is formally defined as a three-quarter-mile buffer around the route network.

As part of the STEP process, SCAT's actual service area population was calculated utilizing Geographic Information System (GIS) technology. The buffer is shown graphically in Figure 2-3 at the beginning of this evaluation. The three-quarter mile population figure was then increased by five percent to account for the part-time seasonal population in Sarasota County.

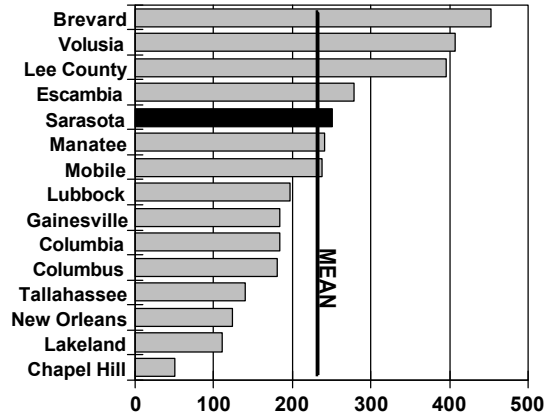
Table 2-16 below also indicates that SCAT's ridership is just (approximately three percent) below the average of 1,971,168 trips. Interestingly, however, SCAT's number of passenger miles is more than 27 percent above the peer average. This would indicate that SCAT has a relatively longer average passenger trip length (passenger miles per passenger trips) when compared to its peers. Figures 2-38 and 2-39 graphically illustrate the peer group's values for these two indicators. Finally, the table below shows that SCAT's number of route miles is more than 43 percent greater than the peer average. Route miles are also depicted in Figure 2-40.

Table 2-16
FY 1997 Population, Ridership and Route Miles, Fixed-Route Peer Analysis

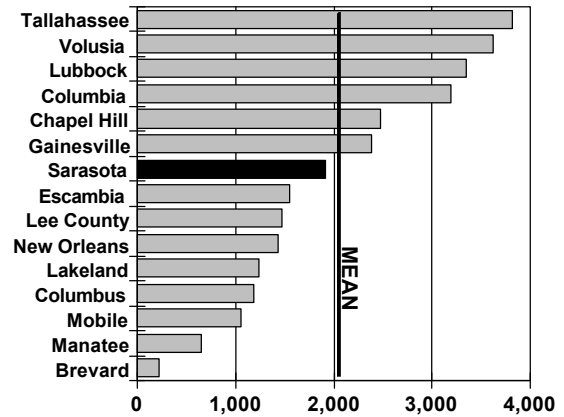
Performance Indicator	SCAT	Peer Minimum	Peer Maximum	Peer Mean	SCAT: % from Mean
Service Area Population	251,019	49,829	453,117	228,855	9.7%
Passenger Trips	1,918,177	215,692	3,822,281	1,971,168	-2.7%
Passenger Miles	9,971,167	1,682,398	14,721,879	7,833,096	27.3%
Route Miles	354.2	128.0	465.0	247.1	43.4%

PEER GRAPHICS FOR POPULATION, TRIPS, PASSENGER MILES, AND ROUTE MILES (FIGURES 2-37 2-40)

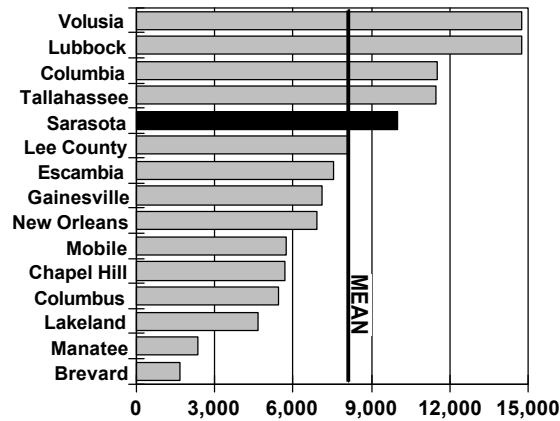
**Figure 2-37
Service Area Population (000)**



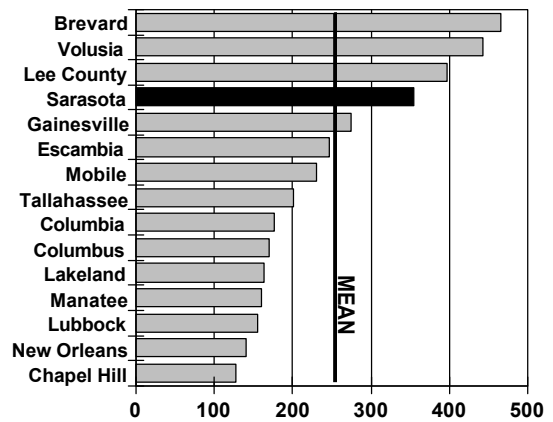
**Figure 2-38
Passenger Trips (000)**



**Figure 2-39
Passenger Miles (000)**



**Figure 2-40
Route Miles**



Level of Service

As evident from Table 2-17 and Figures 2-41 and 2-42, SCAT provides a level of service that is about average when compared to the peer group. The table indicates that SCAT's values for vehicle miles and revenue miles are approximately 16 and 13 percent greater than the averages, respectively. The figures also show that three Florida systems (Volusia, Lee County, and Tallahassee) and one out-of-state peer (Columbia, South Carolina) provide more miles of service than SCAT. Manatee, the system to SCAT's north is, as the smallest system in the group, at the bottom of both Figures 2-41 and 2-42.

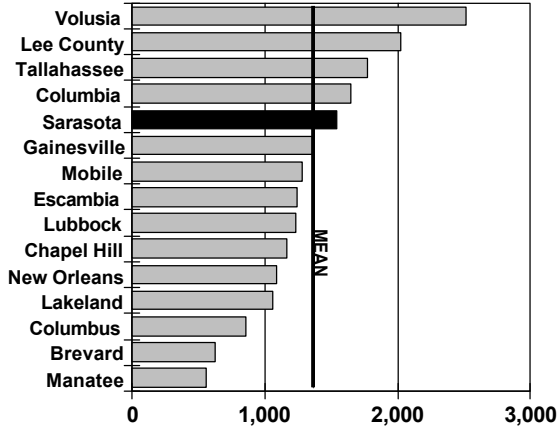
Also, SCAT's number of vehicle hours and revenue hours are approximately six percent and five percent, respectively, above the peer group mean for these indicators. In addition to the three Florida systems mentioned above, Gainesville also provides a greater number of hours of service than SCAT, as shown in Figures 2-43 and 2-44. Once again, Manatee and Brevard (Space Coast) fall at the bottom of the graphics, due to their smaller size.

**Table 2-17
FY 1997 Level of Service, Fixed-Route Peer Analysis**

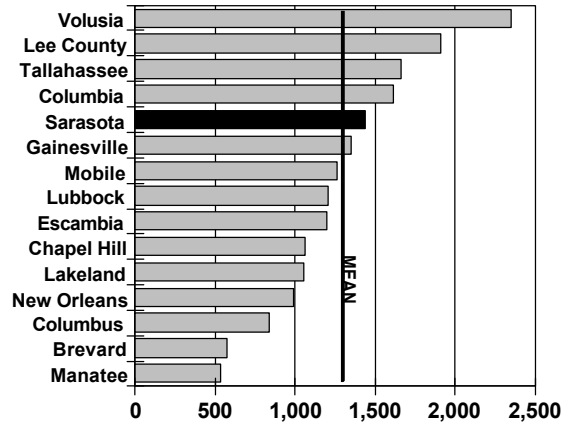
Performance Indicator	SCAT	Peer Minimum	Peer Maximum	Peer Mean	SCAT: % from Mean
Vehicle Miles	1,535,539	557,696	2,515,512	1,329,857	15.5%
Revenue Miles	1,433,993	534,053	2,354,070	1,268,505	13.1%
Vehicle Hours	99,957	31,261	168,936	94,316	6.0%
Revenue Hours	94,023	28,744	156,651	89,997	4.5%

PEER GRAPHICS FOR VEHICLE AND REVENUE MILES AND HOURS (FIGURES 2-41 2-44)

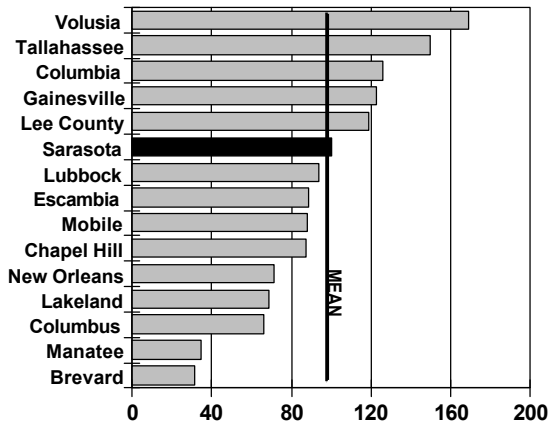
**Figure 2-41
Vehicle Miles (000)**



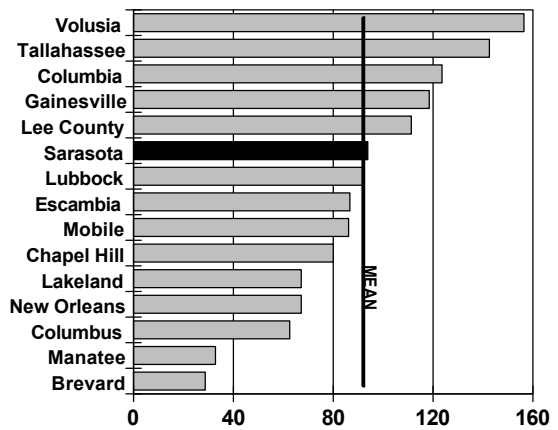
**Figure 2-42
Revenue Miles (000)**



**Figure 2-43
Vehicle Hours (000)**



**Figure 2-44
Revenue Hours (000)**



Operating Expenses and Revenues

Table 2-18 summarizes peer group data for operating expenses and revenues. The table shows that SCAT's total operating expenses are just six percent above the average of the peers, indicating a reasonable level of spending for a system of its size. SCAT's maintenance expense, however, is more than 34 percent below the peer group mean. This is interesting considering that, in the trend analysis, maintenance expense grew more than 26 percent. Clearly, SCAT's spending on vehicle and non-vehicle maintenance is far below that of its peers. Only Brevard and Manatee (much smaller systems) spend less on maintenance, as represented in Figures 2-45 and 2-46.

Revenues are also outlined in Table 2-18, as well as Figures 2-47 through 2-49. As discussed previously in the trend analysis, SCAT dropped its base fare from \$1.00 to \$0.25 in FY 1995; therefore, as expected, the system's fare revenue is much lower than the peer systems. Only Manatee, which operates 9 buses in peak service compared to SCAT's 25, collected less fare revenue in 1997. SCAT's operating revenue, of which passenger fares are a subset, is also, as expected, significantly below the peer group mean. Lastly, SCAT's total local revenue, which represents all system funds acquired at the local level (including passenger fares and operating revenue, but excluding all state and federal funds), is 16 percent *above* the peer group average. SCAT's total local revenue has grown in the last few years to compensate for the decline in state and federal assistance.

Overall, SCAT's costs are at or below the average of its peers while, with the exception of fare revenue and operating revenue (which are impacted by the low fare of \$0.25), the system's revenues appear to be above average when compared to the peers.

**Table 2-18
FY 1997 Operating Expenses and Revenues, Fixed-Route Peer Analysis**

Performance Indicator	SCAT	Peer Minimum	Peer Maximum	Peer Mean	SCAT: % from Mean
Total Operating Expense	\$3,953,581	\$1,373,881	\$6,920,096	\$3,728,323	6.0%
Total Maintenance Expense	\$530,036	\$311,110	\$1,692,252	\$808,454	-34.4%
Passenger Fare Revenue	\$395,469	\$260,178	\$2,452,215	\$1,121,816	-64.8%
Operating Revenue	\$592,137	\$350,963	\$4,640,337	\$1,642,126 ¹	-63.9%
Total Local Revenue	\$3,956,869	\$1,537,481	\$6,689,517	\$3,407,406 ¹	16.1%

¹The peer group means for these indicators do not include data for Space Coast Area Transit.

SARASOTA TRANSPORTATION ENHANCEMENT PLAN

PEER GRAPHICS FOR EXPENSES AND REVENUES (FIGURES 2-45 2-49)

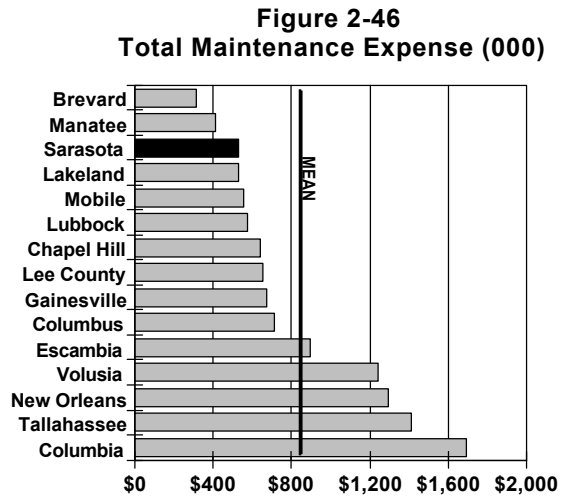
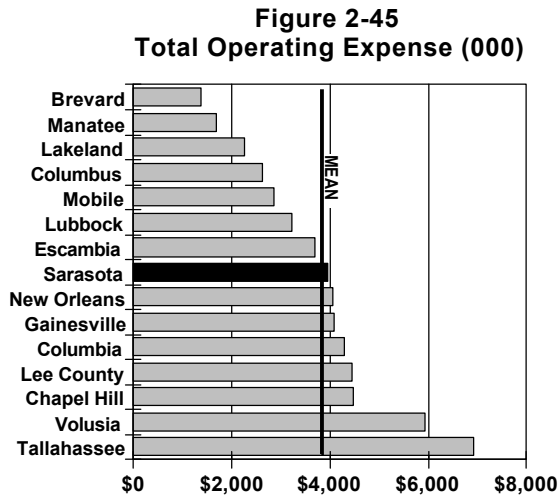


Figure 2-47
Passenger Fare Revenue (000)

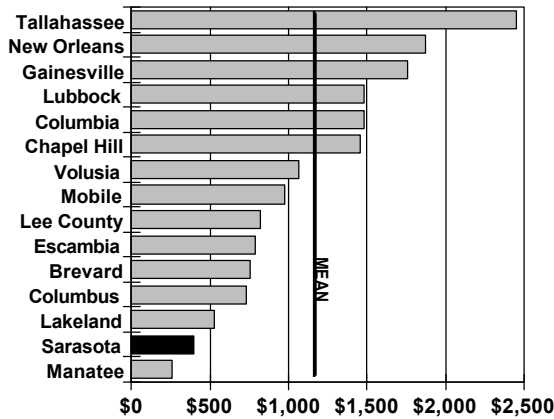


Figure 2-48
Operating Revenue (000)

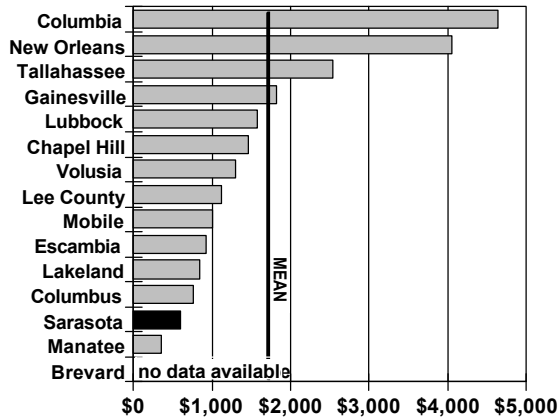
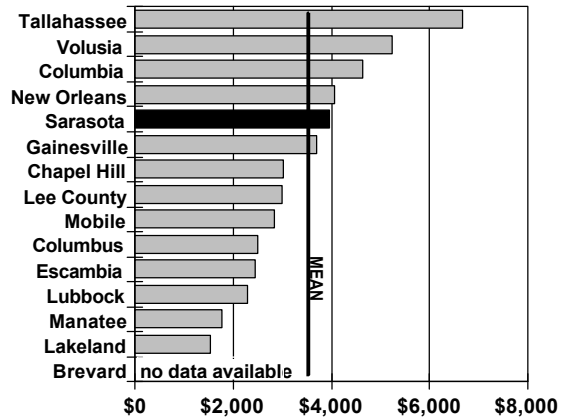


Figure 2-49
Total Local Revenue (000)



Employees, Vehicles, and Fuel Consumption

SCAT is just above the mean of the peer group for the total number of employee full-time equivalents (FTEs), which are derived by obtaining the number of labor hours listed in the NTD report (Form 404) and dividing by 2,080. In FY 1997, the system utilized 81.1 FTEs, as compared to the average of 75.3 FTEs, as shown in Table 2-19. The total number of employee FTEs for each peer system is delineated in Figure 2-50.

Also in FY 1997, SCAT had 37 vehicles available for maximum service, which is 5 vehicles fewer than the peer average. In the same fiscal year, the system operated 25 vehicles in peak service, which is 4 fewer than the peer group mean. The peer systems numbers of vehicles available for and operated in maximum service are shown graphically in Figures 2-51 and 2-52.

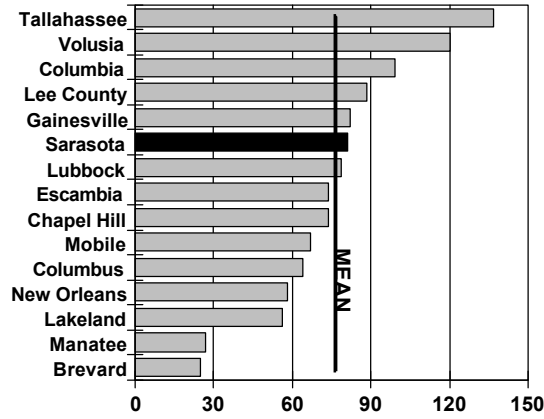
In addition, SCAT's vehicles used 391,109 gallons of fuel in FY 1997, which is more than 17 percent greater than the average of the peer systems, as rendered in the table below and in Figure 2-53. SCAT's fuel consumption grew only about 5 percent between 1996 and 1997 while vehicle miles increased 25 percent during this time. Therefore, it is likely that the growth in fuel consumption by SCAT is a function of both an increase in total vehicle miles traveled and average vehicle size (larger fixed-route buses).

**Table 2-19
FY 1997 Employees, Vehicles, and Fuel Consumption, Fixed-Route Peer Analysis**

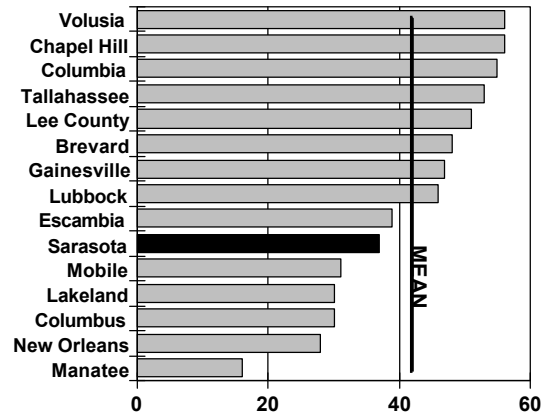
Performance Indicator	SCAT	Peer Minimum	Peer Maximum	Peer Mean	SCAT: % from Mean
Total Employees (FTEs)	81.1	24.6	136.9	75.3	7.7%
Vehicles Available for Maximum Service	37	16	56	42	-10.9%
Vehicles Operated in Maximum Service	25	9	42	29	-12.6%
Total Gallons of Fuel Consumed	391,109	112,928	602,759	333,022	17.4%

PEER GRAPHICS FOR EMPLOYEES, VEHICLES, AND FUEL CONSUMPTION (FIGURES 2-50 2-53)

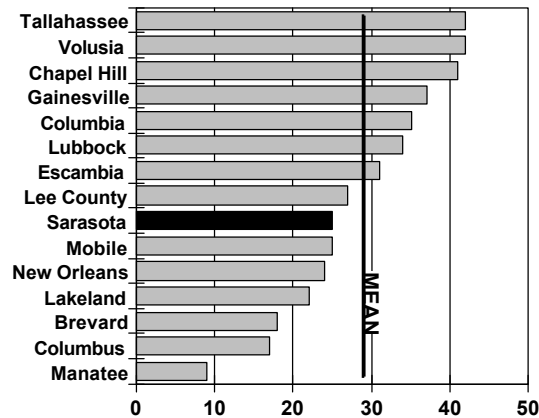
**Figure 2-50
Total Employees**



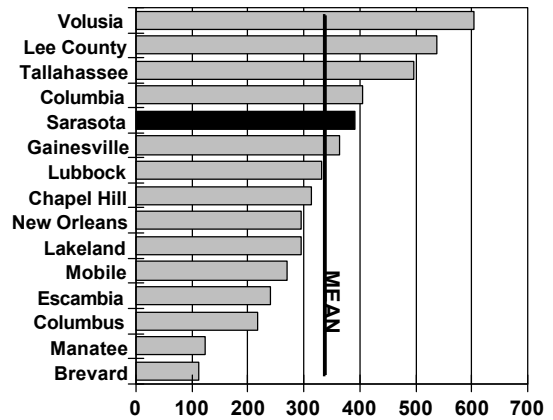
**Figure 2-51
Vehicles Available for Maximum Service**



**Figure 2-52
Vehicles Operated in Maximum Service**



**Figure 2-53
Total Gallons of Fuel Consumed (000)**



Effectiveness Measures

Service Supply and Service Consumption

SCAT's service supply, as measured by the number of vehicle miles per capita (6.12), is somewhat below the peer group mean of 7.51, as indicated in Table 2-20 and Figure 2-54. However, it is important to note that the system does have an above-average service area population when compared to the peer group, and this may deflate the measure somewhat. Another possible explanation for SCAT's low figure for vehicle miles per capita is the system's service span: in FY 1997, most buses stopped service in Sarasota County between 6:00 p.m. and 7:00 p.m. and there was no Sunday service. Eight of the peer systems (five of which are Florida systems) operated Sunday service in FY 1997: Tallahassee, Volusia, Lee County, Escambia, Space Coast, Chapel Hill, Columbia, and New Orleans.

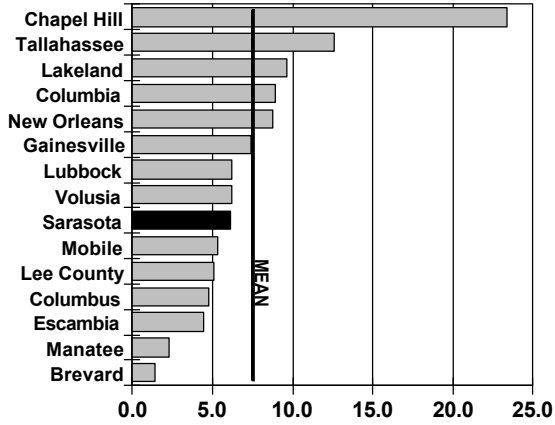
Passenger trips per capita, per revenue mile, and per revenue hour can all be used as measures of service consumption. The table below and Figures 2-55 through 2-57 all indicate that SCAT's service consumption is also below average when compared to its peers. While the measure of passenger trips per capita is more than 38 percent below the peer group mean, passenger trips per revenue mile and per revenue hour are closer to the averages at only 11 percent and 2 percent below the means, respectively. A larger service area, the comparatively low density of the county, and the relatively short service span may be factors in these low figures.

**Table 2-20
FY 1997 Service Supply and Service Consumption, Fixed-Route Peer Analysis**

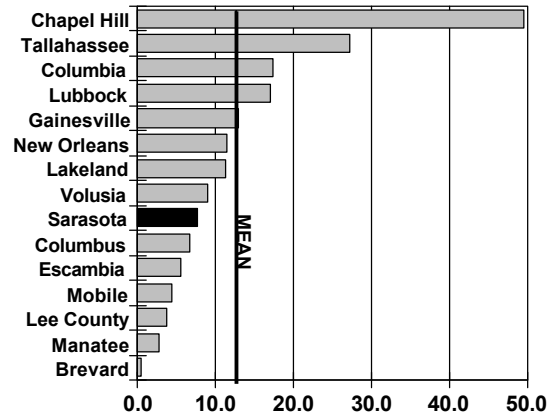
Effectiveness Measure	SCAT	Peer Minimum	Peer Maximum	Peer Mean	SCAT: % from Mean
Vehicle Miles Per Capita	6.12	1.39	23.38	7.51	-18.5%
Passenger Trips Per Capita	7.64	0.48	49.58	12.47	-38.7%
Passenger Trips Per Revenue Mile	1.34	0.38	2.78	1.51	-11.1%
Passenger Trips Per Revenue Hour	20.40	7.50	36.48	20.87	-2.3%

PEER GRAPHICS FOR VEHICLE MILES PER CAPITA AND PASSENGER TRIPS PER CAPITA, REVENUE MILE, AND REVENUE HOUR (FIGURES 2-54 2-57)

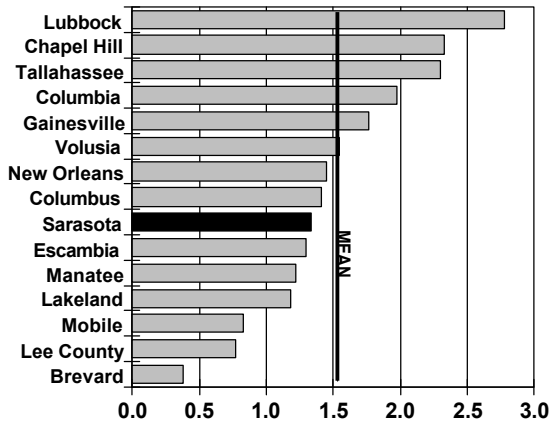
**Figure 2-54
Vehicle Miles Per Capita**



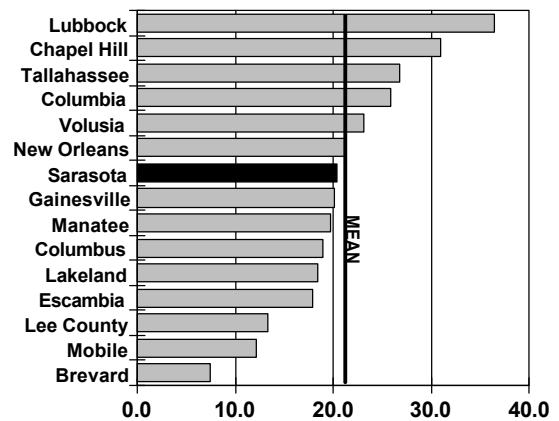
**Figure 2-55
Passenger Trips Per Capita**



**Figure 2-56
Passenger Trips Per Revenue Mile**



**Figure 2-57
Passenger Trips Per Revenue Hour**



Quality of Service

One way in which the service quality can be assessed is through the examination of the average age of a system's vehicle fleet. Table 2-21 indicates that the average age of SCAT's vehicle fleet is 9.97 years, which is more than 32 percent above the peer group mean. According to Figure 2-58, Sarasota has the oldest fleet of the its Florida peers, and nearly the oldest of the entire group (except for Columbia, which has an average fleet age of nearly 20 years). However, it is important to note that SCAT received several new buses in fiscal year 1998, which will significantly reduce the average fleet age.

Other means of defining the quality of service focus on issues of safety, such as the amount of incidents (accidents) and revenue service interruptions (roadcalls). Specifically, in this analysis, the numbers of revenue miles between incidents and between interruptions were investigated.

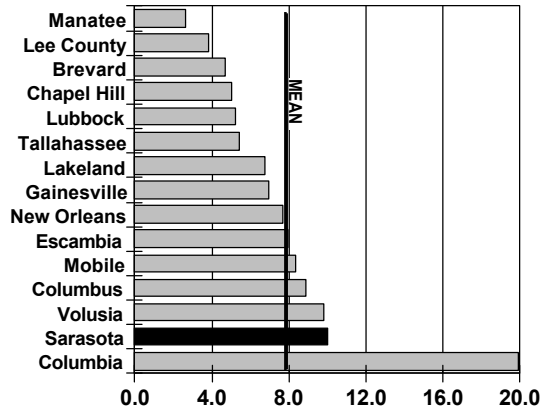
Table 2-21 and Figure 2-59 illustrate that SCAT has nearly 50 percent fewer revenue miles between incidents when compared to its peers. This translates to a higher number of incidents for SCAT overall. Regarding revenue miles between interruptions, the table below and Figure 2-60 show that SCAT has the smallest value for this measure in the peer group, meaning that the system had the highest number of revenue service interruptions of the group in FY 1997. However, the number of incidents and interruptions experienced during the reporting period is the result of the use of retired vehicles leased from another transit agency while awaiting delivery of 12 new fixed-route buses in FY 1997.

**Table 2-21
FY 1997 Quality of Service, Fixed-Route Peer Analysis**

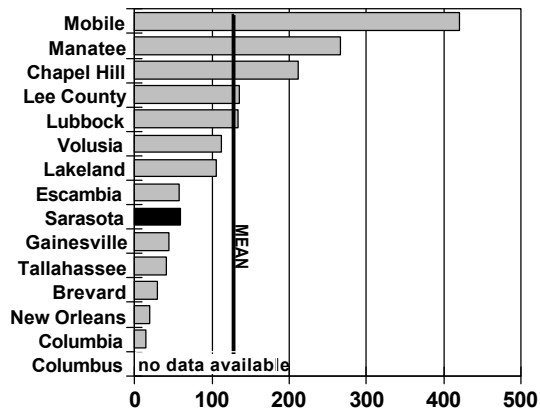
Effectiveness Measure	SCAT	Peer Minimum	Peer Maximum	Peer Mean	SCAT: % from Mean
Average Age of Fleet (years)	9.97	2.62	19.89	7.54	32.2%
Revenue Miles Between Incidents	59,750	14,543	420,958	118,222	-49.5%
Revenue Miles Between Interruptions	2,169	2,169	29,228	8,139	-73.3%

PEER GRAPHICS FOR AVERAGE AGE AND REVENUE MILES BETWEEN INCIDENTS AND INTERRUPTIONS (FIGURES 2-58 2-60)

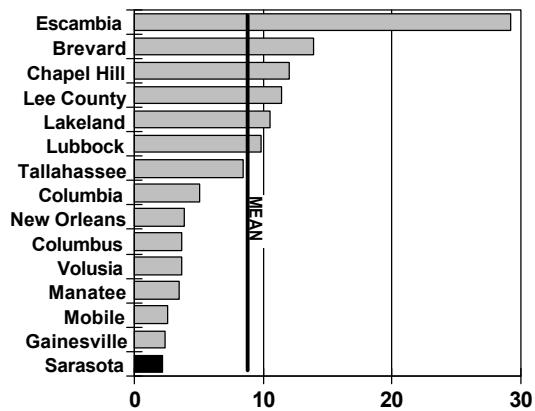
**Figure 2-58
Average Age of Fleet (years)**



**Figure 2-59
Revenue Miles Between Incidents (000)**



**Figure 2-60
Revenue Miles Between Interruptions (000)**



Efficiency Measures

Cost Efficiency

According to Table 2-22 and Figures 2-61 through 2-64, SCAT is quite cost efficient when compared to the peer systems: the system is below the mean of the peer group for each of the four operating expense ratios. For the measure of operating expense per passenger mile, SCAT has the lowest value of all its Florida peers (although SCAT has a relatively high number of passenger miles).

The measure of operating expense per capita shows the greatest variation among the peer systems, as evidenced by the table and Figure 2-61: the values range from \$3.03 (Brevard) to \$89.85 (Chapel Hill). Clearly, much of this variation is due to different methodologies for measuring a system's service area population.

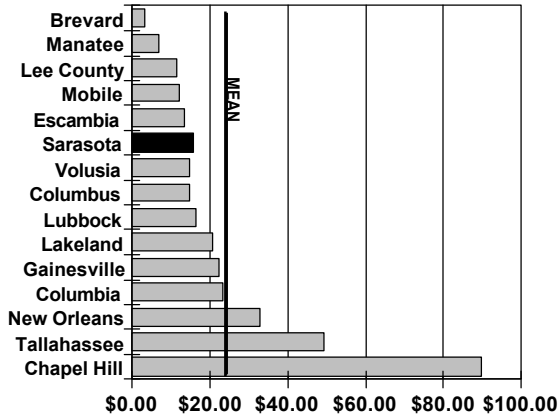
For the measures of operating expense per passenger trip and operating expense per revenue mile, Figures 2-62 and 2-64 indicate that SCAT is exactly at the median of the peer group. SCAT's values for these two efficiency measures are nearly 13 and 7 percent below average, respectively.

**Table 2-22
FY 1997 Cost Efficiency, Fixed-Route Peer Analysis**

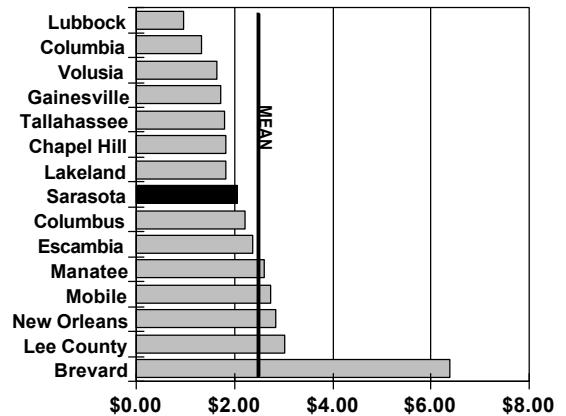
Efficiency Measure	SCAT	Peer Minimum	Peer Maximum	Peer Mean	SCAT: % from Mean
Operating Expense Per Capita	\$15.75	\$3.03	\$89.85	\$23.06	-31.7%
Operating Expense Per Passenger Trip	\$2.06	\$0.97	\$6.37	\$2.35	-12.5%
Operating Expense Per Passenger Mile	\$0.40	\$0.22	\$0.82	\$0.53	-25.6%
Operating Expense Per Revenue Mile	\$2.76	\$2.15	\$4.23	\$2.98	-7.5%

PEER GRAPHICS FOR FOUR OPERATING EXPENSE RATIOS (FIGURES 2-61 2-64)

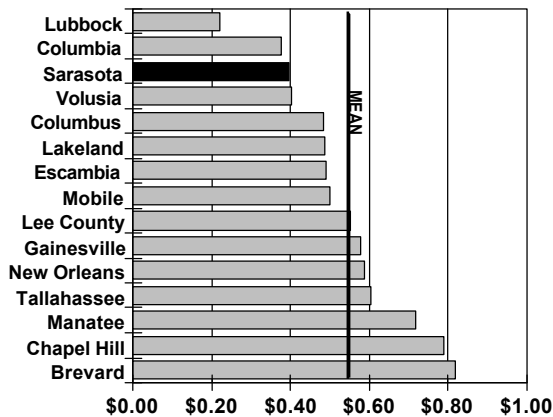
**Figure 2-61
Operating Expense Per Capita**



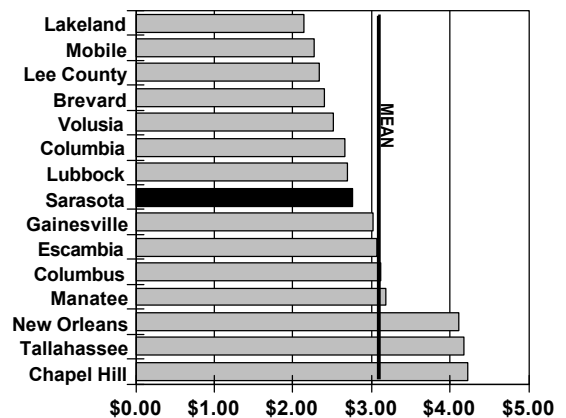
**Figure 2-62
Operating Expense Per Passenger Trip**



**Figure 2-63
Operating Expense Per Passenger Mile**



**Figure 2-64
Operating Expense Per Revenue Mile**



Farebox Recovery, Average Fare, and Labor Productivity

As expected, SCAT's reported farebox recovery ratio (10 percent) is approximately 67 percent below the peer group average of 30.7 percent, as noted in Table 2-23. This is due to its low base fare of \$0.25 which, as noted earlier, was implemented in FY 1995. Figure 2-65 indicates that, while SCAT falls below the mean line for farebox recovery, three Florida peer systems are above the average (Brevard, Gainesville, and Tallahassee).

It is important to note the impact of Brevard's high average fare (\$3.49) on the average of the peer group. In Brevard County, Space Coast Area Transit has a large proportion of subsidized trips on its fixed-route service, which means that the full cost of bus trips is paid by agencies that contract with Space Coast Area Transit for client transportation. This situation results in the high average fare per passenger trip for the peer group.

Table 2-23 also indicates that SCAT's average fare of \$0.21 is more than 73 percent lower than the peer group mean of \$0.77. Again, such a result is expected. According to Figure 2-66, due to Brevard's high fare, all of the remaining Florida systems in the peer group are below the mean for this measure. The two Florida systems with the highest farebox recovery ratios are also the two with the highest average fares among the in-state peers (Gainesville and Tallahassee).

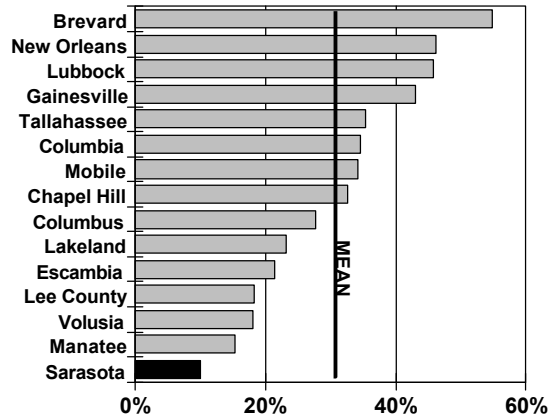
SCAT's labor productivity, as measured by the numbers of revenue hours per employee and passenger trips per employee, is about average when compared with the peers. The number of revenue hours per employee is approximately three percent above the average and the number of trips per employee is approximately four percent below the average, according to Table 2-23. SCAT seems to be reasonably labor efficient in terms of service supply and service consumption. Figures 2-67 and 2-68 exhibit the values of these measures for each member of the peer group.

**Table 2-23
FY 1997 Farebox Recovery, Average Fare, and Labor Productivity, Fixed-Route Peer Analysis**

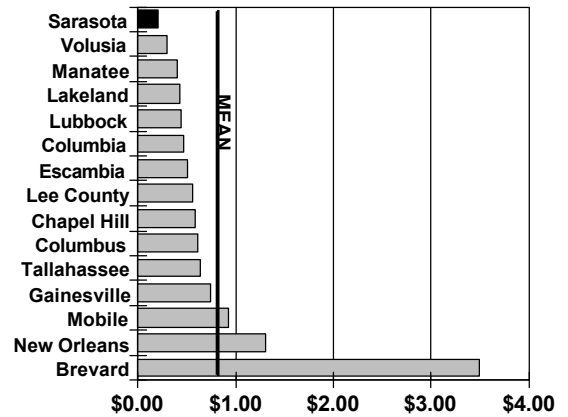
Efficiency Measure	SCAT	Peer Minimum	Peer Maximum	Peer Mean	SCAT: % from Mean
Farebox Recovery Ratio	10.0%	10.0%	54.8%	30.7%	-67.4%
Average Fare	\$0.21	\$0.21	\$3.49	\$0.77	-73.4%
Revenue Hours Per Employee	1,159	979	1,445	1,194	-2.9%
Passenger Trips Per Employee	23,652	8,768	42,497	24,746	-4.4%

PEER GRAPHICS FOR FAREBOX RECOVERY, AVERAGE FARE, AND TWO LABOR PRODUCTIVITY MEASURES (FIGURES 2-65 2-68)

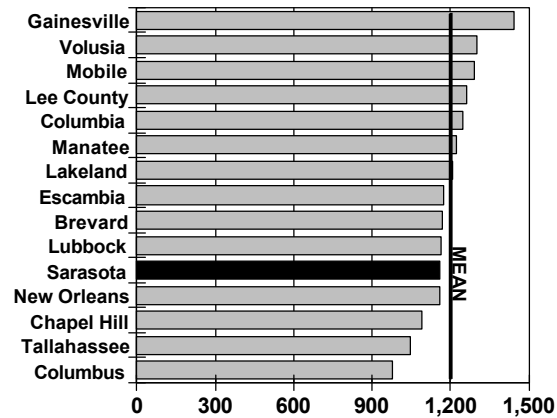
**Figure 2-65
Farebox Recovery**



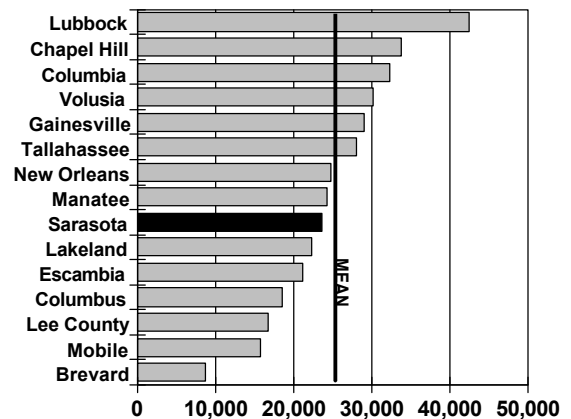
**Figure 2-66
Average Fare**



**Figure 2-67
Revenue Hours Per Employee**



**Figure 2-68
Passenger Trips Per Employee**



Vehicle Utilization and Energy Utilization

The number of revenue miles per vehicle mile reflects how much of the total vehicle operation is in passenger service. As seen from Table 2-24 and Figure 2-69, SCAT's value for this measure is just below the peer group mean. As found in the trend analysis, SCAT's vehicle miles increased at a much faster rate than revenue miles between 1996 and 1997, likely contributing to SCAT's comparatively low value for this measure.

The number of vehicle miles per peak vehicle is a measure of how intensively the equipment is used and is influenced by bus travel speeds as well as the levels of service in the off-peak period (the more uniform the demand for service over the day, the higher the value for this measure). The table below, as well as Figure 2-70, indicate that SCAT has the third-highest value for this measure within the group of peer systems (behind Manatee and Lee County). This may be expected, however, as SCAT headways remain constant throughout the service day.

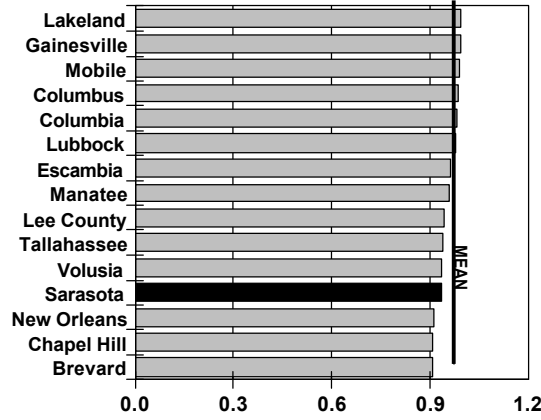
Finally, Table 2-24 shows that SCAT has a level of fuel efficiency that is only about five percent below average (3.93 miles per gallon versus 4.12 miles per gallon). According to Figure 2-71, the system's level of vehicle miles per gallon is nearly at the median of the peer group.

**Table 2-24
FY 1997 Vehicle Utilization and Energy Utilization, Fixed-Route Peer Analysis**

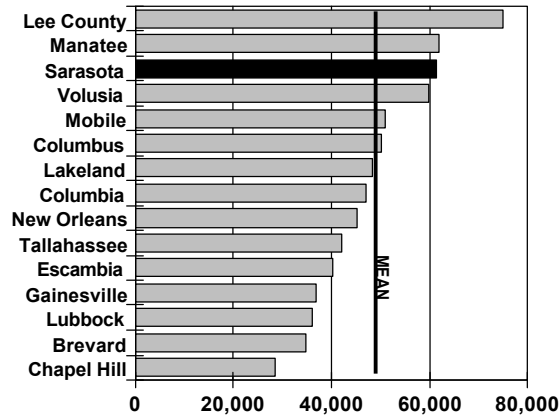
Efficiency Measure	SCAT	Peer Minimum	Peer Maximum	Peer Mean	SCAT: % from Mean
Revenue Miles Per Vehicle Mile	0.93	0.91	0.99	0.95	-2.2%
Vehicle Miles Per Peak Vehicle	61,422	28,420	74,983	47,891	28.3%
Vehicle Miles Per Gallon	3.93	3.56	5.56	4.12	-4.8%

PEER GRAPHICS FOR TWO VEHICLE UTILIZATION MEASURES AND MILES PER GALLON

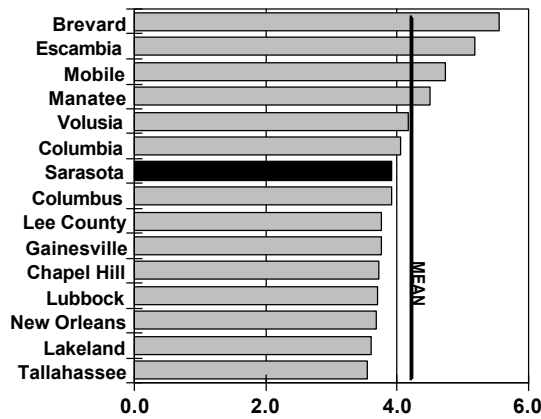
**Figure 2-69
Revenue Miles Per Vehicle Mile**



**Figure 2-70
Vehicle Miles Per Peak Vehicle**



**Figure 2-71
Vehicle Miles Per Gallon**



Conclusions

A general summary of SCAT's performance strengths and weaknesses based on the trend and peer review analyses conducted in this section is presented below. The intention is not to suggest the extent of strength or weakness but to identify those performance areas wherein SCAT has improved or declined in recent years and wherein SCAT appears to perform, on average, better or worse than the peer systems defined for this study. The measures of effectiveness and efficiency that were employed in this analysis are used rather than the general performance indicators.

Table 2-25 below outlines SCAT's apparent strengths and weaknesses based on the fixed-route trend analysis. For this study, a performance strength is defined as any performance area that improved or was maintained over the trend analysis time period. A performance weakness is defined as a trend that declined over the examined timeframe.

**Table 2-25
SCAT Performance Strengths and Weaknesses, Fixed-Route Trend Analysis**

Performance Strengths	Performance Weaknesses
Service Supply	Quality of Service
Service Consumption	(revenue miles between incidents and interruptions)
Quality of Service (average age of fleet)	Cost Efficiency
Cost Efficiency (operating expense per passenger trip and per passenger mile)	(operating expense per capita and per revenue mile)
Labor Productivity (passenger trips per employee)	Labor Productivity (revenue hours per employee)
Vehicle Utilization (vehicle miles per peak vehicle)	Vehicle Miles Per Gallon

The performance strengths and weaknesses based on the fixed-route peer review analysis are exhibited in Table 2-26. For the results of this analysis, an area where SCAT is more than 10 percent better than the peer average is considered to be a performance strength, while an area that is more than 10 percent worse than the peer group average is defined as a performance weakness. Performance areas that are within 10 percent of the peer mean are considered neither strengths nor weaknesses.

**Table 2-26
SCAT Performance Strengths and Weaknesses, Fixed-Route Peer Review Analysis**

SARASOTA TRANSPORTATION ENHANCEMENT PLAN

Performance Strengths	Performance Weaknesses
Cost Efficiency Vehicle Utilization	Service Supply Service Consumption Quality of Service

Overall, based on the information shown in the tables above, the results of this analysis are generally positive. Table 2-25 shows that, for the trend analysis from 1992 to 1997, SCAT had more performance strengths than weaknesses, while results from the peer analysis, summarized in Table 2-26, show more weaknesses than strengths. However, it is important to note that all three of the performance areas listed as weaknesses in Table 2-26 can be shown to result from SCAT's operating and financial environment (including its low base fare).

First, looking more closely at the trend analysis, it is clear that SCAT has improved its service supply and consumption over the trend period. All four of the effectiveness measures examined for these two performance areas have increased significantly between 1992 and 1997 (these include vehicle miles per capita, and passenger trips per capita, per revenue mile, and per revenue hour).

SCAT's quality of service, in terms of its average age of fleet, which has declined from 12.30 years in 1992 to 9.97 years in 1997, is also considered a strength. However, the other two measures of quality of service, revenue miles between incidents and interruptions, have fallen over the trend period, indicating fewer miles between these occurrences and thus an increased number of incidents and revenue service interruptions overall.

In terms of cost efficiency, two ratios, operating expense per capita and operating expense per revenue mile, increased over the trend period (a performance weakness), while two ratios, operating expense per passenger trip and operating expense per passenger mile, declined during the trend period (a performance strength). These results indicate that SCAT is more cost efficient in terms of service consumption than service supply. Typically, the farebox recovery ratio would be considered to be a performance weakness since it declined nearly 48 percent over the trend period. However, because this was a direct result of SCAT lowering its base fare to \$0.25 in fiscal year 1995 in order to increase public awareness of the system and overall system ridership, the farebox recovery ratio is not considered to be performance weakness during the period covered in this trend analysis. Rather, this measure reflects the result of policy decisions made in accordance with community goals.

In the performance area of labor productivity, the trend analysis indicated that the measure of passenger trips per employee was a strength, while revenue hours per employee was a weakness. This result shows that SCAT's labor productivity tends to be higher in terms of

service consumption than in terms of service supply (a conclusion consistent with the analysis of cost efficiency above).

In terms of vehicle utilization, the number of vehicle miles per peak vehicle, which increased nearly 11 percent between 1992 and 1997, is considered a performance strength. Finally, while energy utilization, as measured by the number of vehicle miles per gallon, is considered a performance weakness, this measure declined only about two percent over the examined time period.

The peer review analysis resulted in two performance strengths (cost efficiency and vehicle utilization) and three performance weaknesses (service supply, service consumption, and quality of service), as listed previously in Table 2-26. These are explained below.

Among the peer transit systems defined for this study (a group of Florida and non-Florida systems operating between 10 and 49 fixed-route motorbus vehicles in maximum service, as well as Manatee County Area Transit, which operates 9 vehicles in maximum service), SCAT was found to be quite cost-efficient, which is an important strength in these days of shrinking operating budgets. Three of the four examined operating expense ratios (operating expense per capita, per passenger trip, and per passenger mile) are significantly below the averages of the peer group. The remaining measure, operating expense per revenue mile, while nearly 8 percent below the peer mean, is not considered a strength or weakness since it fell within 10 percent of the average.

Vehicle utilization, in terms of vehicle miles per peak vehicle, is also a major strength at more than 28 percent above the peer group mean. This measure was also found to be a strength in the trend analysis.

SCAT's vehicle miles per capita, a measure of service supply, was found to be a performance weakness in comparison to its peers. However, it is important to note that SCAT's above-average service area population deflated the vehicle miles per capita measure. In addition, nearly all of the out-of-state peer systems and three of the Florida peers serve only individual cities or comparatively small urbanized areas, rather than entire counties. As a result, in these terms, service supply may not be a true area of performance weakness for SCAT.

Similarly, in the area of service consumption, SCAT was found to not perform as well as its peers. One of the measures in this category, passenger trips per capita, is more than 43 percent below the peer group average. However, this measure is likely deflated due to the high service area population (and comparatively lower density) as discussed previously. Passenger trips per revenue mile is 11 percent below the peer mean, which is enough to be considered a performance weakness in this analysis, but still rather close to being within 10 percent of the

mean, where it would be considered neither a weakness nor a strength (passenger trips per revenue hour, at two percent below average, falls into this category).

SCAT's average fleet age was found to be 32 percent above the average of the peer group. However, it should be mentioned that, while this analysis focused on fiscal years 1992 through 1997, SCAT did receive several new buses in fiscal year 1998, which will lower the average age. In terms of safety and reliability, however, SCAT is well below the average of its peer systems. For the number of revenue miles between incidents and service interruptions, SCAT is 50 percent and 73 percent below average, respectively. For revenue miles between interruptions, SCAT has the fewest of the peer group, indicating it had the highest number of revenue service interruptions of the peer group in FY 1997. This is likely partially the result of SCAT leasing older vehicles in 1997 while awaiting delivery of new replacement vehicles. This situation resulted in a higher number of service interruptions due to maintenance needs.

Finally, SCAT's farebox recovery ratio, at 10 percent for FY 1997 (67 percent below average), would typically be considered a performance weakness. However, this measure does not indicate a true weakness in this area since it was the result of a policy decision to lower SCAT's base fare from \$1.00 to \$0.25 beginning in FY 1995 to attract additional ridership to the system (local revenues covered the losses in fare revenue). This decision was also in line with community goals for the system.

Areas in which SCAT is within 10 percent of the peer group average (not necessarily strengths or weaknesses) include labor productivity, one measure of vehicle utilization (revenue miles per vehicle mile), and energy utilization (vehicle miles per gallon).

Trend and peer review analyses can be very valuable tools for developing a better understanding of SCAT performance and for identifying target areas for additional attention and improvement. However, it is important to remember that performance evaluation measures do not comprehensively cover all of the objectives of a transit system, nor do they necessarily consider the unique geographic, political, operating, and financial characteristics of a transit system. Many system goals and objectives cannot be measured with this mechanism and require additional information or a more subjective evaluation. Nonetheless, the results of the trend and peer review analyses provide a useful introduction to a full understanding of the performance of SCAT and complement the other components of this study.

SCAT OPERATOR SURVEY

This section of the Technical Memorandum summarizes the results of a survey of SCAT bus operators. Since bus operators are in direct contact with passengers on a daily basis, they are a valuable resource concerning SCAT operations, particularly from the rider's perspective. The surveys were distributed to all 59 bus operators on September 28, 1998, by SCAT staff. The operators were given approximately 5 days to complete the surveys and return them to the SCAT dispatch office. A total of 17 surveys were completed and returned by the bus operators. For reference, a copy of the actual operator survey is contained in Appendix ___.

The first question on the survey asked bus operators to read over a list of common complaints that riders often voice and rank the complaints that they hear most frequently from SCAT riders from 1 to 5, with 1 being the most frequent complaint and 5 being the least. A total of 17 possible complaints were listed on the survey for bus operators to read over and select from including an other category. This particular category required bus operators to write-out their response if it was not represented among the list of common complaints.

The most frequent rider complaints expressed to the bus operators by passengers from the survey are presented in Table 2-27. According to the results from the survey, the complaint most frequently expressed by riders is a need for night and evening service. In addition to the need for night and evening service, riders also complained about the need for Sunday service, infrequent service and the lack of bus shelters and bus benches. For the most part, the results from the survey indicate that bus operators felt that all or some of the passengers' complaints were valid, as shown in Figure 2-72.

**Table 2-27
Most Frequent Passenger Complaints About SCAT
Identified by Bus Operators**

Most Frequently Heard Complaints	Composite¹ Score	Responses
Need Night/Evening Service	58	15
Need Sunday Service	54	15
Infrequent Service	36	11
No Bus Shelters/Benches	34	11
Bus Doesn't Go Where I Want	30	9
Bus Schedule Too Hard to Understand	26	10
Other	19	6
Passengers Cannot Get Information	17	4
Security	13	3
Fare Too High	10	4
Route or Destination Not Clear	7	4
Bus is Late	7	3
Eating or Drinking on the Bus	5	2
Bus is Not Comfortable	4	3
Bus is Not Clean	2	2
Smoking on Bus	2	2
Bus Leaves Stop Too Early	2	1

¹ The composite score was calculated by assigning eleven points for each first priority ranking and one point for each eleventh priority ranking.

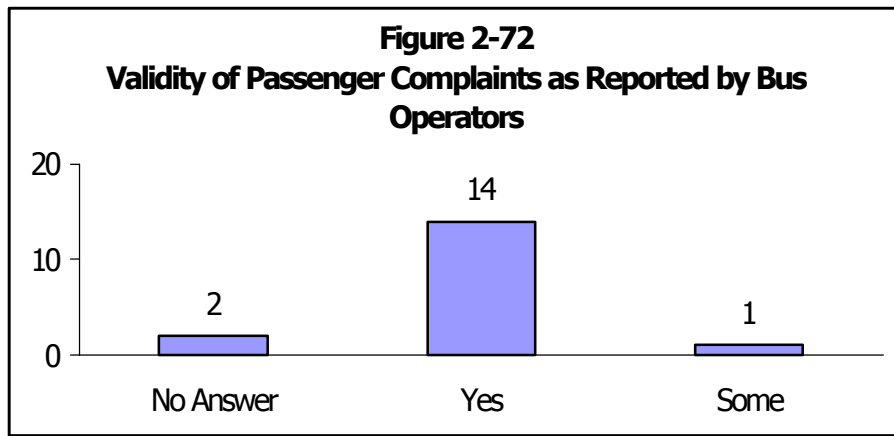


Table 2-28 shows the results from survey question 3. This question asked bus operators to read over a list of possible improvements and to select and rank those improvements that would be most helpful to SCAT. Almost all of the bus operators that responded to the survey expressed a need to operate night/evening service, and expressed a need to install bus shelters. Finally, the results from the survey indicated that the frequency of service (ranked 2nd), time given to existing schedules (ranked 4th), and the need for Sunday service were other major concerns expressed by bus operators.

**Table 2-28
Improvement Areas for SCAT
Identified by Bus Operators**

Areas of Improvement	Composite ¹ Score	Responses
Operate Night/Evening Service	147	16
Increase Bus Frequency	146	16
Install Bus Shelters at Bus Stops	131	17
Give More Time to Schedules	130	15
Operate Sunday Service	125	16
Provide Better Route and Schedule Information	97	14
Maintain Buses More Frequently	95	13
Operate New, Smaller Vehicles	83	13
Operate New, Larger Vehicles	78	12
Other	43	6
Lower the Fares	21	12

¹ The composite score was calculated by assigning eleven points for each first priority ranking and one point for each eleventh priority ranking.

The survey asked operators to comment about potential safety problems on SCAT's 18 routes. The potential safety problems/hazards noted by bus operators are shown in Table 2-29. The safety problem of greatest concern appears to be buses that pick-up and drop-off passengers in turn lanes. Another safety problem of great concern that was expressed by bus operators was the limited visibility experienced at the Sarasota Square Mall.

**Table 2-29
SCAT Safety Problems
Identified by Bus Operators**

Safety Problems	Responses
Buses in turn lanes boarding and deboarding passengers	4
Route 17 visibility problems at Sarasota Square Mall	3
Route 17 has blind spot at curve, should enter on Beneva	1
Trees are too low on routes 7 and 8	1
Stops are located in unsafe areas	1
Stops need to be more noticeable	1
Northbound on Potter unable to see through trees	1
Not enough time on route 12	1
Educate students to cross street at rear of bus	1
Time compressed on first a.m. trip and last p.m. trip	1
Route 1 lane change difficult at Roberts Arena	1

Question 5 on the bus operator survey asked bus operators to indicate which routes or route segments are difficult to maintain on schedule. The results from the survey indicate that 16 of 19 responding bus operators felt that on-time performance was especially difficult to maintain on SCAT routes 8 and 1, as shown in Table 2-30. In addition, eight operators mentioned that on-time performance was also difficult to maintain on routes 12 and 18.

**Table 2-30
Routes With Schedule Problems
Identified by Bus Operators**









Route	Responses
8	10
1	9
12	8
18	8
13	7
2	5
6	5
16	4
17	4
Trolley	4
3	3
5	3
7	3
4	2
9	2
11	2
14	2
15	2

SCAT bus operators were asked what routes should be modified and how; their responses are indicated in Table 2-31. Not surprisingly, the common change mentioned by bus operators was the need for more running time in their schedules. Five operators stated that more time was needed on all 18 of SCAT's routes. Three operators stated that the Northgate stop on route 8 should be either eliminated or modified by serving this stop in only one direction. One operator stated that the distance on the route 1 exceeded the time given to make the trip. One operator suggested modifying the first inbound trip on the route 5. No other details were given concerning the route 5 suggested modification. One operator recommended eliminating the segment of Palmetto and Pompano on the route 16, and remaining on Venice Boulevard. Finally, one operator suggested that the route 17 access Sarasota Square Mall from Beneva Road.

**Table 2-31
SCAT Routes to Modify
Identified by Bus Operators**

Route	Suggested Modification	Responses
All	Need more time on all routes	5
8	Eliminate or modify service to Northgate	3
1	Distance to cover with time allotted is too long	1
5	Modify first trip inbound	1
16	Eliminate segment of Palmetto and Pompano, remain on Venice Blvd.	1
17	Access Sarasota Square Mall from Beneva Road.	1

Finally, question 7 on the bus operator survey asked bus operators to indicate any other comments that would be helpful to improve SCAT service. The question required bus operators to write-out their comments. The results from the bus operator survey indicated that 13 of the 17 bus operators responding to the survey took the time to write-out their comments. The following is a complete list of comments made by bus operators.

-  Improve driver morale
-  Increase number of buses on routes with 2 to 3 hour round trip
-  Pay attention to driver's comments
-  Treat employees like people not robots
-  Create 8 and 9 hour runs
-  Drivers are unhappy with management about their pay
-  If workforce is happy system will run better
-  Have personnel at transfer point to provide passes and information

- ✎ Move bus stops back from major intersections
- ✎ Eliminate 12 hour runs
- ✎ It is dangerous for passengers to catch bus at transfer point
- ✎ Too many one hour trips with insufficient running time
- ✎ Drivers work too many hours per day in a row
- ✎ Clean windshields
- ✎ Publish rules and regulations to eliminate vague compliance
- ✎ Responsibility to enforce rules and regulations should be removed from operator
- ✎ Driver input is important, I applaud this effort, would like to see focus groups made up of primary drivers
- ✎ Promote park-n-rides for large employers
- ✎ Increase service to downtown
- ✎ Increase transit service visibility to tourists
- ✎ Sell advertising on buses to increase revenue
- ✎ Increase customer service
- ✎ Implement county programs in which drivers can participate
- ✎ Driver recognition programs need to be more personal, not just words
- ✎ Improve timeliness of information received from county
- ✎ Afford drivers the same availability to county programs as other county employees
- ✎ Increase driver morale through incentives and recognition

SCAT ON-BOARD PASSENGER SURVEY

This section summarizes the results of an on-board survey of SCAT fixed-route bus riders conducted in November 1998. The purpose of this survey was to obtain data about rider demographics, travel behavior, and satisfaction with specific aspects of SCAT fixed-route bus service.

Comparisons with Earlier Surveys

Several on-board surveys of SCAT riders have been conducted in the past, with the most recent in March 1997. With appropriate qualifications, it was possible to compare some of the data for certain questions from the 1998 on-board survey to that of the 1997 on-board survey. When possible, the comparisons are included in the appropriate sections.

Survey Methodology

The 1998 on-board survey was designed to elicit descriptive information regarding the demographic traits and travel behavior of SCAT riders as well as their satisfaction with specific aspects of SCAT fixed-route bus service. In addition, questions rating the quality of SCAT's bus service in a number of important areas were included on the survey. This information will enable SCAT to focus on relevant transit needs and issues such as modifying bus schedules, locating bus stops, modifying fare structure, planning focused marketing campaigns, and identifying historical ridership trends.

The 1998 on-board survey was conducted on Tuesday, November 10; Thursday, November 12; and Tuesday, November 17. Surveying started at the beginning of service and lasted until the end of service on Tuesday, November 10 and Thursday, November 12 for each of SCAT's 18 fixed routes. The surveying was completed the following week on Tuesday, November 17. Survey distribution was carried out by temporary staffing under the direct supervision of CUTR project staff. For reference, a copy of the survey instrument is included in Appendix ___.

Each surveyor was assigned to a particular bus that potentially covered more than one route during a particular survey day. Surveys were personally handed to riders as they boarded the bus or as they assumed their seats. Riders were encouraged to return completed surveys to the surveyor as they exited the bus. However, due to time constraints (some passengers traveled a short distance), some passengers took the surveys with them to fill out and return at a later time. As time permitted, surveyors also walked through the bus asking for completed surveys. In some instances, surveyors assisted some riders in completing the surveys. Riders were asked

to complete only one survey regardless of whether they used the system multiple times during the survey period.

SCAT On-Board Survey Analysis

The 1998 on-board survey analysis is composed of three sections: demographics, travel behavior, and rider satisfaction with specific aspects of SCAT bus service. Each section provides information that will be useful in improving the performance and service offered by SCAT.

Demographic data consists of such information as rider age, gender, annual household income, ethnicity, and the number of working vehicles in the rider's household. These demographic data will facilitate the identification of SCAT rider market characteristics and may also be used to determine how specific market segments have changed over time. In addition, this information can also assist in determining the need for rider facilities such as the improved design and favorable location of bus stops and facilities for persons with disabilities.

Travel behavior included data such as trip purpose, length and frequency of use, fare category and fare type, alternative transportation, reason for riding SCAT, and mode of access/egress. This information can assist SCAT in effective scheduling and general policy-decisions regarding overall SCAT service.

User satisfaction is determined in survey Question 23. This question asked riders to rate their perception of SCAT service via 13 performance characteristics as well as the overall quality of SCAT service. Strengths and weaknesses of the system as perceived by riders are identified from a list of five discrete responses. Riders were asked to rate SCAT service from "very good" to "very poor." The identified weaknesses can potentially be addressed through changes in the system. By distinguishing rider sensitivities regarding specific characteristics of the system, SCAT is better able to prioritize improvements to the service.

A total of 1,250 surveys were returned by riders. Table 2-32 shows the number of returned surveys by route and the corresponding response rates. Overall, the total response rate for all routes (system wide) was 20 percent. The response rates for individual routes ranged from a low of 5 percent for Route 7 to a high of 35 percent for Route 6.

**Table 2-32
Response Rates by Route**

Route	Number of Boarders	Number of Returned Surveys	Response Rate
1	424	45	11%
2	417	84	20%
3	201	29	14%
4	221	13	6%
5	473	103	22%
6	531	186	35%
7	359	17	5%
8	366	93	25%
9	147	27	18%
11	464	107	23%
12	344	42	12%
13	178	44	25%
14	230	75	33%
15	465	138	30%
16	102	34	33%
17	858	147	17%
18	231	50	22%
Trolley	119	16	13%
Total	6,130	1,250	20%

Note: When calculating the on-board survey response rates, it was assumed that every SCAT rider was offered a survey.

Given the large sample size of respondents (1,250), the potential for sampling error is very minimal. A sample of this size yields an accuracy level of better than ± 3 percent at the 95 percent confidence level. This means that with the same sampling procedures, 95 times out of 100 the results will be within approximately ± 3 percent of the true value. However, all statistical studies are subject to some degree of error and the sources of error cannot always be accounted for and, subsequently, corrected.

Each survey question was analyzed independently and the results for each question are provided in a number of tables. In most instances, the tables are accompanied by brief narratives that explain the relevance of the findings being reported. All questions were included in the analysis regardless of whether or not the survey was completed entirely.

The following are the major findings from the 1998 on-board survey of SCAT riders. As mentioned, comparisons between the November 1998 and March 1997 on-board surveys are included when possible and/or relevant.

SCAT Rider Demographic Information

A number of questions were asked in order to establish a demographic profile of the typical SCAT rider. Demographic-related questions included gender, auto ownership, annual household income, ethnicity, and age. Table 2-33 shows the results from the 1998 on-board survey as well as comparisons of demographic data, when possible, obtained from SCAT riders on the 1997 on-board survey.

Gender - Results from the 1998 on-board survey show that more women currently use SCAT service than men. The results from the 1997 survey also indicate that more women used the system than men. As Table 2-33 indicates, 54 percent of 1998 riders are female and 46 percent are male. This finding related to gender is typical of overall public transit ridership.

Vehicle Ownership - The 1998 on-board survey results indicate that 44 percent of riders do not own a vehicle. This finding suggests that almost half of all current SCAT riders are "transit captives," a typical finding among the ridership of conventional fixed-route bus systems. However, the 1998 on-board survey results also indicate that 56 percent of riders reported owning one or more vehicles, with 22 percent of these riders owning two or more vehicles. The findings for vehicle ownership from the 1998 on-board survey are nearly identical to that of the 1997 on-board survey, as shown in Table 2-33.

Annual Household Income - The 1998 on-board survey results indicate that 43 percent of riders have an annual household income that is less than \$15,000 and 31 percent have an annual household income between \$15,000 and \$24,999, as shown in Table 2-33. Of all the riders surveyed, only 8 percent have an annual household income of \$50,000 or greater. Comparison of results from the 1998 and 1997 on-board surveys show that 12 percent more of SCAT's current riders (1998) have annual household incomes less than \$15,000.

Ethnicity - For the entire system, according to the results from the 1998 on-board survey, 74 percent of riders are white, while 16 percent are black. In addition, 6 percent of riders indicated their ethnicity to be Hispanic, while a total of 4 percent indicated Other, Asian, and Native American. Comparison between the 1997 and 1998 on-board surveys indicates that a greater percentage (8 percent) of SCAT's 1997 ridership was composed of riders who indicated their ethnicity to be white. Table 2-33 shows the results for the question related to rider ethnicity.

Age - The 1998 on-board survey results indicate that 45 percent of SCAT riders are between the ages of 19 and 44, while 19 percent are 18 years of age or younger, as presented in Table 2-33. In addition, 18 percent of SCAT's current riders are age 60 years or older. Comparison of

results from the 1997 and 1998 on-board surveys show that a greater percentage of SCAT's 1997 ridership was composed of riders age 65 and older (24 percent versus 13 percent, respectively) and a smaller percentage was composed of riders 18 years of age and younger.

Licensed Driver - Results from the 1998 on-board survey indicate that 45 percent of riders possess a valid driver's license and 55 percent do not, as shown in Table 2-33. The findings for this same question from the 1997 on-board survey are nearly identical to that of the 1998 on-board survey.

Number of Licensed Drivers in Rider's Household - The 1998 on-board survey results indicate that 25 percent of current SCAT riders do not have any licensed drivers in their household, suggesting that these riders may rely heavily on SCAT for their mobility needs. However, comparison of the results from the 1997 and 1998 on-board surveys show 11 percent less of current riders (1998) have zero persons in their household that has a valid driver's license, as shown in Table 2-33.

**Table 2-33
Rider Demographic Comparisons of the 1997
and 1998 SCAT On-Board Surveys**

Category	Year of On-Board Survey	
	1997	1998
Gender		
Male	44%	46%
Female	56%	54%
Auto Ownership		
None	44%	44%
One	35%	34%
Two	14%	16%
Three or more	7%	6%
Annual Household Income		
Less than \$15,000	31%	43%
\$15,000 to \$24,999	31%	31%
\$25,000 to \$49,999	28%	18%
\$50,000 or more	10%	8%
Ethnic Origin		
White	82%	74%
Black	15%	16%
Hispanic	2%	6%
Asian	NA	1%
Native American	NA	1%
Other	1%	2%
Age		
18 years or under	11%	19%
19 to 24	12%	13%
25 to 44	28%	32%
45 to 59	18%	19%
60 to 64	7%	5%
65 to 74	13%	8%
75 or older	11%	5%
Rider Has Valid Driver's License		
Yes	46%	45%
No	54%	55%
Number of Licensed Drivers in Rider's Household		
None	36%	25%
One	34%	35%
Two	20%	27%
Three or more	10%	14%

Note: Percents may be slightly greater or less than 100 due to rounding.

SCAT Rider Travel Behavior Information

A number of questions were included on the 1998 on-board survey to obtain information about the travel behavior of SCAT riders. This information includes trip purpose, length and frequency of use, fare category and fare type, alternative transportation, reason for riding SCAT, and mode of access/egress. Table 2-34 shows the results from the 1998 on-board survey as well as comparisons of travel behavior data, when possible, obtained from the on-board survey conducted in March 1997.

Length of Use - As revealed by the 1998 on-board survey results shown in Table 2-34, 56 percent of riders have been using SCAT for 2 years or more with 31 percent of these riders using SCAT for 5 years or more. These riders may be characterized as the long time users of the system. Conversely, 21 percent of riders have been using the system less than 6 months, representing new riders. The 1998 on-board survey results also show that 23 percent of riders have been using the system for between 6 months and 2 years. Comparison of results from the 1997 and 1998 on-board surveys for the question pertaining to length of use indicates that about 9 percent fewer of overall 1998 ridership has been using SCAT for 5 years or more, suggesting that some of the longer-term system users have stopped riding.

Frequency of Use - Table 2-34 indicates that approximately 61 percent of current riders use the system 5 or more days per week compared to 55 percent of riders from the 1997 on-board survey who indicated similar system usage. Twenty-two percent of current riders use the system 3 and 4 days per week compared to 28 percent of 1997 on-board survey respondents.

Fare Category - The results from the 1998 on-board survey show that 90 percent of the riders indicated their fare category to be "regular adult," "senior," and disabled compared to 82 percent of the 1997 on-board survey respondents who indicated similar fare categories. Of the 82 percent of respondents to the 1998 on-board survey who indicated being in one of the three fare categories listed prior, the vast majority (74 percent) indicated regular adult as their fare category. Table 2-34 shows the results for fare category.

Alternative Transportation - SCAT riders were asked to indicate from six discrete choices how they would make their trip if SCAT services were not available; the results are presented in Table 2-34. If SCAT services were not available, 33 percent of riders would ride with someone, 12 percent would drive themselves, 17 percent would not make the trip, 15 percent would walk, 8 percent would use a taxi, and 1 percent would use the services offered by the Senior Friendship Center. This question was not included on the 1997 on-board survey.

Reason for Riding SCAT - As indicated in Table 2-34, the reasons indicated most often by current riders for using SCAT are: I don't drive (38 percent), car is not available (34 percent), bus is more economical (6 percent), bus is more convenient (8 percent), and do not have a drivers license (10 percent). Given the high percentage of riders who indicated I don't drive, car is not available, and do not have a valid drivers license it is evident that current riders are not riding solely by choice, but rely on SCAT service for many of their basic mobility requirements. This question was not included as part of the 1997 on-board survey. These results suggest that the majority of SCAT users may be considered dependent on public transit to meet their individual mobility needs.

Mode of Access/Egress - Table 2-34 indicates that the majority of riders walk to access/egress SCAT buses. In addition, 11 percent of riders transfer to access their bus, while 28 percent of riders transfer to egress SCAT buses. About 2 percent of riders access and egress the system by driving, respectively. Again, this finding provides further confirmation that riders are reliant on SCAT for much of their mobility needs. A question pertaining to access/egress was not included as part of the 1997 on-board survey.

Zipcodes - The results from the 1998 on-board survey show that the majority (76.3 percent) of current SCAT riders live within existing zipcodes that range from 34205 to 34293. The ten zipcodes that account for the most SCAT rider residences, listed in descending order, are: 34234 - Sarasota (20 percent), 34236 - Sarasota (12.5 percent), 34231 - Sarasota (11.6 percent), 34232 - Sarasota (11.0 percent), 34237 - Sarasota (7.4 percent), 34239 - Sarasota (5.1 percent), 34292 - Venice (2.3 percent), 34233 - Sarasota (2.2 percent), 34275 - Nokomis (2.1 percent), and 34285 - Venice (2.1 percent). Figure 2-73 shows the results related to the residential zipcodes of SCAT riders. This question was not included as part of the 1997 on-board survey.

Trip Purpose - The results from the 1998 on-board survey show that rider travel is dominated by the home-to-work trip pairing. This trip pairing accounts for just over 30 percent of all travel on SCAT. Other common trip pairings include home-to-shopping/errands (9.0 percent), home-to-visiting/recreation (3.6 percent), and school (K-12)-to-home (6.1 percent). Findings from the 1997 on-board survey also show that the home-to-work trip pairing dominated travel on SCAT in 1997. Table 2-35 shows the origin and destination trip pairings from the 1998 on-board survey.

In the case of the home-to-home trip pairing where 5.6 percent of all respondents indicated their origin to be the same as their destination, there apparently was some misunderstanding regarding the question's intent. Some riders who indicated an identical trip origin and destination must have interpreted the question to mean the destination at the end of the day

(their round trip) as opposed to the end of the trip. Despite the misunderstandings, the sample size is sufficient to maintain a high degree of confidence with the results being reported.

Fare Type - The results from the 1998 on-board survey indicate that 86 percent of SCAT riders use "cash" as their fare type. The results also indicate that very few of SCAT's current riders use discounted multi-ride fare tickets with only 1 percent of seniors using the Discount 20-Ride Senior Punch Pass, 5 percent using the Discount Monthly Pass, and 4 percent using the Adult Monthly Pass.

A cross-tabulation of 1998 on-board survey data for the entire system shows about 61 percent of the most frequent (4 or more days per week) riders use "cash" as their method of payment, as shown in Table 2-36. In comparison, only about 12 percent of the most frequent (4 or more days per week) riders use multi-ride tickets as their method of payment. On the surface, this may not appear to be a logical finding since the system's most frequent riders can realize the greatest cost savings by using the various types of multi-ride fare offerings. However, an additional cross-tabulation of the variables annual household income, frequency of use, and fare type revealed that riders with the lowest annual household incomes (\$15,000 or less) who use the system 4 or more days per week primarily use cash as their payment method. This is an expected finding since riders with the lowest annual household incomes are less likely to be able to purchase/afford the cost of multi-ride tickets even though they know that a significant cost savings can be realized by using them. Finally, this finding may suggest the need for SCAT to better market the current discounted fare offerings and/or to explore additional fare offerings such as a low cost Daily Pass or some other low cost multi-ride fare type.

**Table 2-34
Rider Travel Behavior Comparisons of the 1997
and 1998 SCAT On-Board Surveys**

Category	Year of On-Board Survey	
	1997	1998
Trip Purpose Destination		
Home	NA	28%
Work	39%	35%
Training/Tech	9%	1%
School (K-12)		6%
College		2%
Doctor/Dentist	6%	4%
Shopping/Errands	15%	12%
Government	NA	1%
Visiting/Recreation	29%	6%
Other	2%	6%
Length of Use		
This is the first day	3%	3%
Less than 6 months	16%	18%
6 months to 2 years	24%	23%
2 to 5 years	17%	25%
More than 5 years	40%	31%
Frequency of Use		
6 days per week	55%	28%
5 days per week		33%
4 days per week	28%	12%
3 days per week		10%
1 or 2 days per week	13%	12%
Once a month or less	2%	4%
Once every 2-60 weeks	NA	2%
Fare Category		
Regular Adult	82%	74%
Senior		11%
Disabled		5%
Monthly Pass	8%	7%
20-Ride Card	10%	4%

Note: Percents may be slightly greater or less than 100 due to rounding.

**Table 2-34 (continued)
Rider Travel Behavior Comparisons of the 1997
and 1998 SCAT On-Board Surveys**

Category	Year of On-Board Survey	
	1997	1998
Alternative Transportation		
Drive	NA	12%
Ride with someone	NA	33%
Bicycle	NA	9%
Senior Friendship Center	NA	1%
Walk	NA	15%
Taxi	NA	8%
Wouldn't make trip	NA	17%
Other	NA	4%
Reason for Riding		
I don't drive	NA	38%
Car is not available	NA	34%
Bus is more economical	NA	6%
Traffic is too bad	NA	1%
Parking is difficult/costly	NA	1%
Bus is more convenient	NA	8%
Do not have a valid drivers license	NA	10%
Other	NA	4%
Mode of Access		
Walked 0-3 blocks	NA	63%
Walked more than 3 blocks	NA	18%
Drove	NA	1%
Was dropped off	NA	4%
Bicycle	NA	2%
MCAT Transfer	NA	3%
SCAT Transfer	NA	8%
Greyhound/Amtrak Bus	NA	0%
Taxi	NA	0%
Other	NA	1%

Note: Percents may be slightly greater or less than 100 due to rounding.

**Table 2-34 (continued)
Rider Travel Behavior Comparisons of the 1997
and 1998 SCAT On-Board Surveys**

Category	Year of On-Board Survey	
	1997	1998
Mode of Egress		
Walk 0-3 blocks	NA	54%
Walk more than 3 blocks	NA	14%
Drive	NA	1%
Be picked up	NA	3%
Bicycle	NA	0%
MCAT Transfer	NA	6%
SCAT Transfer	NA	21%
Greyhound/Amtrak Bus	NA	0%
Taxi	NA	0%
Other	NA	2%
Fare Payment Type		
Basic Fare (\$0.50)	NA	72%
Senior Citizen and Disabled (\$0.25)	NA	14%
Transfer from MCAT Bus	NA	1%
20-Ride Senior Punch Pass	NA	1%
Monthly Pass (Discount)	NA	5%
20-Ride Punch Pass (Adult)	NA	3%
Monthly Pass (Adult)	NA	4%
Trip Origin		
Home	NA	63%
Work	NA	13%
Training/Tech	NA	1%
School (K-12)	NA	9%
College	NA	1%
Doctor/Dentist	NA	2%
Shopping/Errands	NA	4%
Government	NA	1%
Visiting/Recreation	NA	2%
Other	NA	3%

Note: Percents may be slightly greater or less than 100 due to rounding.

**Table 2-35
Trip Purpose Matrix Showing SCAT Rider Origins and Destinations**

Trip Origin	Trip Destination									
	Home	Work	Training/ Tech	School (k-12)	College	Doctor /Dentist	Shop/Errands	Government	Visit/Rec.	Other
Home	5.6%	30.4%	1.3%	4.8%	1.3%	2.6%	9.0%	1.2%	3.6%	4.0%
Work	9.2%	1.8%	--	0.2%	--	0.2%	0.7%	--	0.4%	0.3%
Training/Tech	0.5%	0.3%	--	--	--	0.1%	--	--	0.2%	0.1%
School (k-12)	6.1%	1.0%	--	--	--	0.1%	0.2%	--	0.8%	0.2%
College	0.7%	0.2%	--	--	--	--	0.1%	--	--	--
Doctor/Dentist	1.2%	0.1%	--	--	--	--	0.4%	--	--	--
Shop/Errands	2.2%	0.2%	--	0.1%	0.2%	0.2%	--	--	0.2%	--
Govt.	0.5%	0.2%	--	0.1%	--	0.1%	0.1%	--	--	--
Visit/Rec.	1.0%	0.1%	--	--	0.1%	--	0.4%	--	--	0.1%
Other	1.7%	0.3%	--	0.2%	--	0.1%	0.1%	--	--	

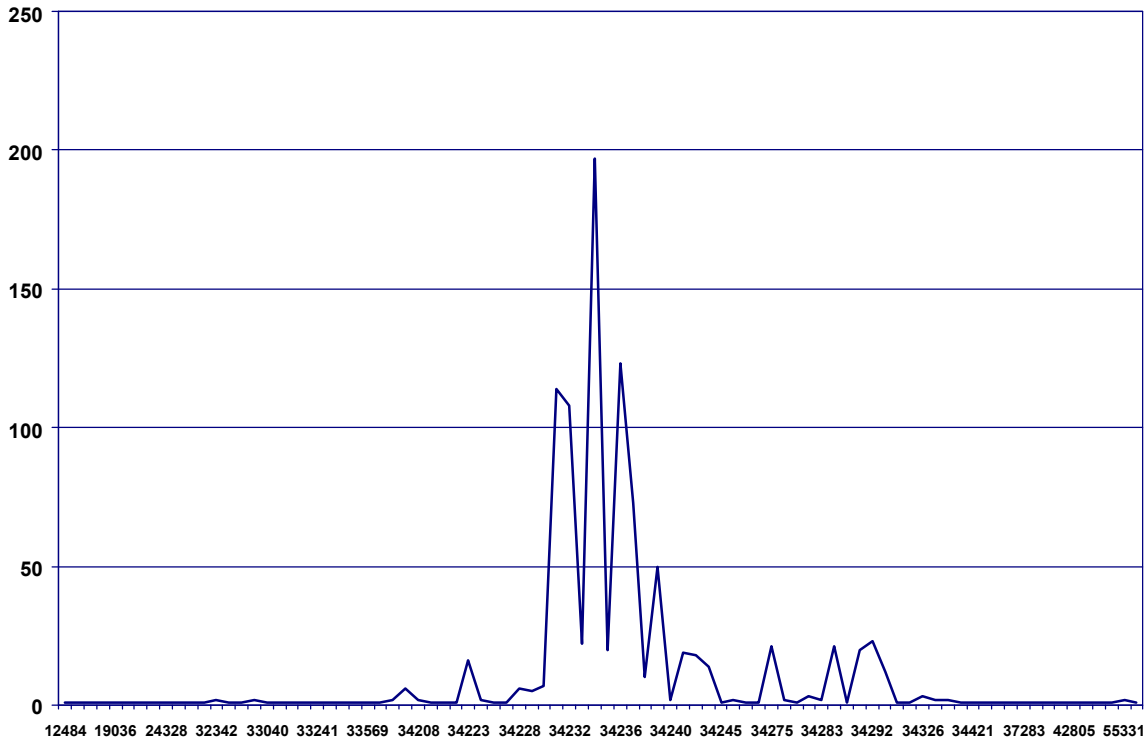
Note: Percents may be slightly greater or less than 100 due to rounding.

**Table 2-36
Type of Fare Paid and Rider Frequency of System Use**

Fare Paid	Frequency of Use							Total
	6 days/ week	5 days/ week	4 days/ week	3 days/ week	1 or 2 days/ week	Once/ month or less	Once every 2-60 weeks	
Basic - \$0.50	19.2%	25.4%	8.6%	6.6%	7.8%	3.5%	1.2%	72.2%
Senior/Disabled - \$0.25	2.6%	2.6%	2.6%	2.1%	3.3%	0.6%	--	13.7%
MCAT Transfer	0.5%	0.3%	0.1%	0.2%	0.2%	--	--	1.2%
20-Ride Senior - Discount	0.5%	0.3%	0.1%	0.1%	--	--	--	1.0%
Monthly Pass - Discount	2.6%	1.7%	0.3%	0.2%	--	0.1%	0.1%	5.0%
20-Ride Adult	1.3%	0.8%	0.1%	0.2%	0.2%	0.1%	0.1%	2.9%
Monthly Pass - Adult	2.0%	1.3%	0.3%	0.1%	--	0.1%	0.1%	3.9%
Total	28.7%	32.5%	12.1%	9.4%	11.6%	4.3%	1.5%	100.0%

Note: Percents may be slightly greater or less than 100 due to rounding.

Figure 2-73
Residential Zipcodes of SCAT Riders



SCAT Rider Satisfaction Information

The quality of SCAT service was determined through a variety of questions that required riders to rate their perception of specific aspects of SCAT service as well as overall service quality. The strengths and weaknesses of the system, as perceived by riders, were identified from a list of discrete responses that ranged from "very good" to "very poor." In addition, an average (mean) score was calculated for each service aspect using the numerical values assigned to the rating system. Utilizing the numerical value assignments, an average or mean score of five (5.00) or "very good" indicates a higher degree of rider satisfaction than a mean score of one (1.00) or "very poor". The numerical value assignments for determining the averages are shown in Table 2-37. Table 2-38 shows the results for user satisfaction questions from the November 1998 on-board survey.

**Table 2-37
Rating System Numerical Values**

Satisfaction Category	Numerical Value
Very Good	5.00
Good	4.00
Fair	3.00
Poor	2.00
Very Poor	1.00

The 1997 on-board survey contained only two questions related to the satisfaction of riders with specific aspects of SCAT service. The two service-related aspects were bus operator performance and the quality of overall SCAT service. In addition to inquiring about fewer aspects of SCAT service, the 1997 on-board survey also used a different rating scale (4-point scale) from the one used in the 1998 on-board survey (5-point scale). Due to these incompatibilities, comparison between the two surveys for the questions related to the satisfaction of riders with certain aspects of SCAT service was not possible. Therefore, Table 2-38 only shows data from the 1998 on-board survey.

SCAT Rider Satisfaction Summary

SCAT's service received very favorable ratings, with nearly 84 percent of riders surveyed rating service a combined "very good" and "good." In addition to the favorable overall rating of SCAT service, riders also rated operator courtesy (84.8 percent), personal safety on the bus and at bus stops (88.1 percent), and vehicle cleanliness and comfort (86.3 percent) a combined "very good" and "good." These favorable ratings indicate that the vast majority of SCAT riders feel very positive about the overall quality of SCAT service. However, the performance aspects hours of service and frequency of service received the highest combined percent of very poor and poor ratings from respondents with unfavorable ratings of 20 and 13 percent, respectively.

Summary of Performance Aspects

User satisfaction ratings were calculated for each of the 13 listed system performance characteristics and overall SCAT service by applying a numerical value to each possible patron response. An average or mean score was calculated utilizing the numerical values assigned to the performance characteristics. The numerical values used in calculating the means are shown prior in Table 2-37.

Overall, SCAT riders are satisfied with the 18 routes surveyed since the mean scores range from a low of 3.55 for the performance aspect hours of service to a high of 4.47 for the performance aspect availability of bus route information. Given the very high overall average mean score of 4.24 for all performance aspects, this is an indication that current riders are highly satisfied with the overall quality of SCAT service. The mean scores for the performance aspects are shown in descending order in Table 2-39.

Rider Comments and Suggestions

At the conclusion of the on-board survey, riders were given the opportunity to provide comments and/or suggestions regarding SCAT service. Numerous riders took the time to provide comments in the space provided on the survey. The majority of comments from the 1998 on-board survey were directed towards service improvements such as hours, days, frequency of service, and friendliness of bus operators. Similar comments pertaining to areas where riders feel SCAT could be improved were obtained from the 1997 on-board survey. Most of the comments/suggestions from the 1998 on-board survey were positive in nature. However, a few comments were less positive in nature than others. Most of these comments pertained to the negative attitude of some bus operators, wait time at bus stops, travel time, and missed transfers. Overall, the comments from the 1998 on-board survey make it clear that riders are pleased with the service provided by SCAT, but feel that some improvements can be made in service provision.

The following selected comments were taken from the complete list of comments contained in Appendix___ that were provided by riders at the end of the 1998 on-board survey. Some of the comments have been edited for length, content, and clarity.

Need Sunday bus service.

Drop the fares back down to \$0.25.

Service overall is good but drivers are rarely on time, especially Route 6! It is usually 5-10 minutes late. This is a major problem for those of us who have to be at work at a certain time. It would be great if the time between buses would be at least ½ hour instead of one hour.

Run later evening hours.

Service later in the evenings and on Sundays.

Drivers are polite and courteous.

Overall I'm happy with SCAT.

Service is great except there are no bike racks. I would use SCAT more often if buses had bike racks.

Longer hours of service.

Somehow discourage drunks from hanging out at transfer station and keep it cleaner.
Drivers could be a little more courteous and helpful to passengers.

**Table 2-38
Rider Satisfaction Results**

Characteristic	Percent	Characteristic	Percent
Days of Service		Dependability of Buses	
Very Good	41%	Very Good	39%
Good	37%	Good	38%
Fair	15%	Fair	18%
Poor	4%	Poor	4%
Very Poor	3%	Very Poor	2%
Hours of Service		Travel Time on Bus	
Very Good	28%	Very Good	34%
Good	25%	Good	40%
Fair	27%	Fair	21%
Poor	14%	Poor	4%
Very Poor	6%	Very Poor	2%
Frequency of Service		Cost of Riding Bus	
Very Good	31%	Very Good	50%
Good	31%	Good	29%
Fair	25%	Fair	14%
Poor	9%	Poor	4%
Very Poor	4%	Very Poor	3%
Convenience of Routes		Availability of Route Information/Maps	
Very Good	39%	Very Good	62%
Good	38%	Good	27%
Fair	17%	Fair	8%
Poor	5%	Poor	2%
Very Poor	1%	Very Poor	1%

Note: Percents may be slightly greater or less than 100 due to rounding.

**Table 2-38 (continued)
Rider Satisfaction Results**

Characteristic	Percent	Characteristic	Percent
Vehicle Cleanliness and Comfort		Convenience of Transferring Between Buses	
Very Good	50%	Very Good	37%
Good	36%	Good	38%
Fair	11%	Fair	19%
Poor	2%	Poor	4%
Very Poor	1%	Very Poor	2%
Operator Courtesy		Usefulness of Bus Route Information/Maps	
Very Good	53%	Very Good	52%
Good	32%	Good	35%
Fair	12%	Fair	10%
Poor	2%	Poor	2%
Very Poor	2%	Very Poor	1%
Safety on Bus and at Bus Stops		Overall Quality of Bus Service	
Very Good	52%	Very Good	44%
Good	36%	Good	40%
Fair	9%	Fair	13%
Poor	2%	Poor	2%
Very Poor	1%	Very Poor	1%

Note: Percents may be slightly greater or less than 100 due to rounding.

**Table 2-39
Rider Satisfaction Ratings (in descending order)**

Performance Aspect	Mean Scores
Availability of Bus Route Information/Maps	4.47
Safety on Bus and at Bus Stops	4.37
Usefulness of Bus Route Information	4.35
Vehicle Cleanliness and Comfort	4.33
Operator Courtesy	4.33
Overall Satisfaction with SCAT	4.24
Cost of Riding Bus	4.19
Days of Service	4.1
Convenience of Routes	4.08
Dependability of Buses	4.07
Convenience of Transferring	4.05
Travel Time on Buses	4.00
Frequency of Service	3.76
Hours of Service	3.55

Conclusions

The objective of the 1998 on-board survey was to collect SCAT rider demographic information, travel behavior, and satisfaction with specific aspects of SCAT fixed-route bus service. In addition, this information was compared, with appropriate qualifications, to the results obtained from the on-board survey of SCAT riders conducted in March 1997. A typical 1998 SCAT rider profile was developed through the compilation of responses to demographic and travel behavior-related questions, as shown in Table 2-40. A comparison of the typical SCAT rider developed using information gathered from the two on-board surveys shows that the composition of the typical rider has remained static since March 1997.

**Table 2-40
SCAT Typical Rider Profile**

Characteristic	Typical Rider Profile	
	1997	1998
Age	25 to 44	25 to 44
Gender	Female	Female
Ethnic Origin	White	White
Annual Household Income	Less than \$15,000	Less than \$15,000
Length of Use	5 years or longer	5 years or longer
Frequency of Use	4 or more days per week	4 or more days per week
Auto Ownership	No autos	No autos
Fare Type	Cash	Cash
Alternative Transportation	NA	Ride with someone
Reason for Riding	NA	I don't drive
Access/Egress	NA	Walk

SCAT PERFORMANCE REVIEW: SUMMARY

This chapter has presented a performance review of fixed-route bus services operated in Sarasota County by SCAT. The fixed-route performance evaluation was based upon National Transit Database (NTD) information submitted to the Federal Transit Administration (FTA) on an annual basis, as well data collected from a survey of SCAT bus operators and an on-board passenger survey of SCAT fixed-route bus users.

Trend and peer analyses of SCAT fixed-route services indicate that the transit agency is performing quite well, both over time and when compared to its peer transit properties. SCAT has consistently improved its service supply and consumption during the past six fiscal years. Also positive is evidence that SCAT has been successful in efforts to acquire new fixed-route buses and, thus, reducing the age of its vehicle fleet. In addition, SCAT has continued to provide service in a relatively cost-efficient manner.

The fixed-route peer review also illustrates that SCAT's performance is satisfactory when compared to similar transit properties in Florida and the Southeast. Specifically, SCAT was found to be extremely cost-efficient when compared to peer transit systems. Weaknesses related to service supply and service consumption likely result from the fact that SCAT's reported service area population is quite a bit larger than most of the peer transit systems and densities within this operating environment are much lower than those found in peer systems.

The results from the surveys of SCAT bus operators and SCAT bus passengers reveal a relatively high level of satisfaction with the current fixed-route system. However, both groups of respondents made some recommendations regarding how to improve SCAT bus service in the future. Operators and passengers indicate that a need exists for additional evening bus service in Sarasota County. Currently, all routes are completed by 7:00 p.m. In addition, operators and passengers reported that Sunday service is both requested and needed by passengers. Finally, bus operators reported that there is a need among passengers for bus shelters and other bus stop amenities that make bus travel more comfortable and accessible. Each of these areas will receive additional consideration in later chapters the STEP as demands and needs are evaluated in greater depth.