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SAN DIEGO TRANSIT
FIVE YEAR PLAN UPDATE
FY 1982–1986

SAN DIEGO TRANSIT
FIVE YEAR PLAN UPDATE
FY 1982-1986

JULY 1, 1981

San Diego Transit Corporation
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I

SUMMARY

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FY 82-86 Plan and Program

INTRODUCTION

PURPOSE

San Diego Transit's Five Year Plan Update, 1982–1986 is the annual revision to the operating plan and capital program for the next five year planning period. As adopted by the Board of Directors, it represents a statement of guidelines for the management of San Diego Transit Corporation for the period from July 1, 1981 through June 30, 1982 at which point the plan will again be updated. Included in this planning document are an adopted budget and a specific operating plan and capital program for FY1982 as well as less detailed plans and programs for FY83 through FY86.

SDT's Five Year Plan Update, FY1982–1986 also serves as the required support document from which federal grant applications for FY1982 will be made. In this capacity, this plan becomes an input element for both the metropolitan and regional Transportation Improvement Program (TIP) as well as for the San Diego Regional Short Range Transportation Plan (SRTP) and the Regional Transportation Plan (RTP).

CONTENTS

The San Diego Transit Five Year Plan Update, 1982–1986 contains five chapters. Chapter I offers a summary overview of the complete document. Chapter II contains the guidelines which direct SDT policy decisions and planning program for this plan update. SDT's operations for FY81, including service, ridership and budget, are described and evaluated in Chapter III. Chapter IV identifies alternatives for funding and three service levels to be considered for the years 1982 through 1986 as well as several special service plan elements which could be incorporated with any of these alternative service levels. SDT's recommended plan and program is identified in Chapter V along with a constrained plan which acknowledges the potential financial limitations which are likely to be experienced over the next five years.

HISTORY

Since being established in 1967 as a publicly owned transit operation, SDT has experienced an impressive overall record of growth in terms of service levels and ridership. However, this fourteen year trend has not been one of continuous improvement. A ridership slump occurred in the early 1970's but was reversed in FY73 by a reduced fare and improved service levels which were made possible through local transportation fund monies from the state Transit Development Act. System expansion and ridership growth continued until FY78 when state Proposition 13 reduced property taxes and eliminated a local revenue source for SDT. As a result, fares had to be increased, the budget reduced and unproductive service eliminated, all of which have combined to cause reductions in ridership.

Other events will worsen this situation over the next five years. Reduced consumer spending has caused sales tax based state funding support to fall below anticipated levels. Federal Section 3 capital support has not been available to SDT for two years and the new Federal Administration has promoted reductions in capital funding and the elimination of operating support funds for public transit by 1985. Thus, San Diego Transit is caught in a downward spiral with reduced funding support and inflated expenses necessitating fare increases which in turn discourage discretionary passengers so that lower ridership forces the elimination of unproductive service to reduce costs. Then lower ridership and service levels reduce the federal and state funding amounts for which SDT can qualify and the spiral is continued. As identified in this Plan Update FY82–86, only additional funding support, most likely from new sources, can reverse this trend.

GUIDELINES

Overall policy guidelines for the operation of the San Diego Transit Corporation are provided by a nine member Board of Directors through direction given to management staff. Specific guidelines adopted by the Board include goals, objectives and standards which are reviewed annually and updated as necessary. These give direction to the evaluation of the existing system as well as providing a frame-

work for developing the five year plan and program. Goals are the general framework for SDT operations. Objectives further define the goals through qualitative measures. Standards are measurable characteristics which are applied to both service level and route by route evaluations. In addition, external requirements from federal, state and local levels play their part in guiding SDT's operations and planning decisions.

SAN DIEGO TRANSIT SYSTEM, FY81

SERVICE

San Diego Transit provides scheduled, fixed route bus service to an area in excess of 250 square miles containing nearly 1.2 million persons. This metropolitan San Diego area has a varied topography dissected by a radial pattern of freeways and collector streets which sometimes necessitates out-of-direction travel and therefore makes public transit more difficult and more expensive to provide than in many other metro areas. Also, due to the lack of an operating transit district, the eight incorporated cities plus the unincorporated portion of the County of San Diego within the metro area do not always provide a unified commitment for a given level of public transit service and the necessary funding support to provide same.

In FY1981, SDT operated 30 routes over 538 system miles with 13 million total vehicle miles driven for the fiscal year. From a total bus fleet of 365 vehicles, 312 were available at the maintenance facility for service. The peak hour bus requirement was 217 vehicles.

Total passengers carried by SDT in FY81 were 33.1 million with 26.3 revenue passengers. Three basic elements of the fare structure were changed for FY81. First, all fares except the 75¢ express fare were increased, the base fare going from 50¢ to 60¢. Secondly, the elderly and handicapped half priced fares were eliminated during the peak periods to help reduce overcrowding but they were retained during the off peak. Third, through an agreement with the San Diego Unified School District, the student fare reductions were eliminated.

EVALUATION

During FY81, the adopted budget was reduced by nearly $300,000 because of funding shortages. This necessitated service reductions. With the increased fare for FY81 and the elimination of some unproductive service, SDT's ridership was down by four percent from FY80. Total vehicle miles were reduced by 13% for this same period. Even so, 60.5% of the service area population was within one quarter mile of a bus stop as was 89% of the service area employment.

Service and operational standard evaluations were utilized in making the FY81 service reductions. Three routes were eliminated, three had Saturday and/or Sunday service discontinued and another eight routes had their frequency of service reduced.

Second to SDT's funding shortfall for FY81, the most critical elements were related to the capital program. These included the need to replace the large number of old buses in the fleet and the need for a second maintenance division. SDT has 108 buses over twenty years old and 207 over twelve years, which is an industry standard. Average fleet age is 13 years compared against SDT's adopted standard of eight years. The San Diego Transit maintenance facility was designed to handle about 210 buses though in FY81, 312 were maintained there. This overcrowding problem plus the excessive and unproductive deadheading necessary to provide service to the northern section of SDT's service area underline the need for a second bus maintenance facility north of the existing facility.

FY82–86 PLAN AND PROGRAM

ALTERNATIVES

In developing a plan and program for the next five years, three alternative service concepts were defined and evaluated. Alternative I is a continuation and refinement of the FY1981 service level for the five years but included the July, 1981 changes necessary to coordinate with the new San Diego Trolley service. Alternative II is a moderate service expansion with five new routes and an increase in operating mileage of over ten percent. Alternative III is a statement of where San Diego Transit should have been in FY81 and where it should be for the FY82–86 period. Given the premise that transit service should grow at least at the same rate as population, SDT's system was expanded at the two percent annual growth rate experienced by the metro area. This rate was applied beginning in FY78 when the current trend in service reductions began. Thus, the service mileage and ridership levels which should be achieved in FY82 on through to FY86 are identified. All three service concepts are shown in Figure I-1.

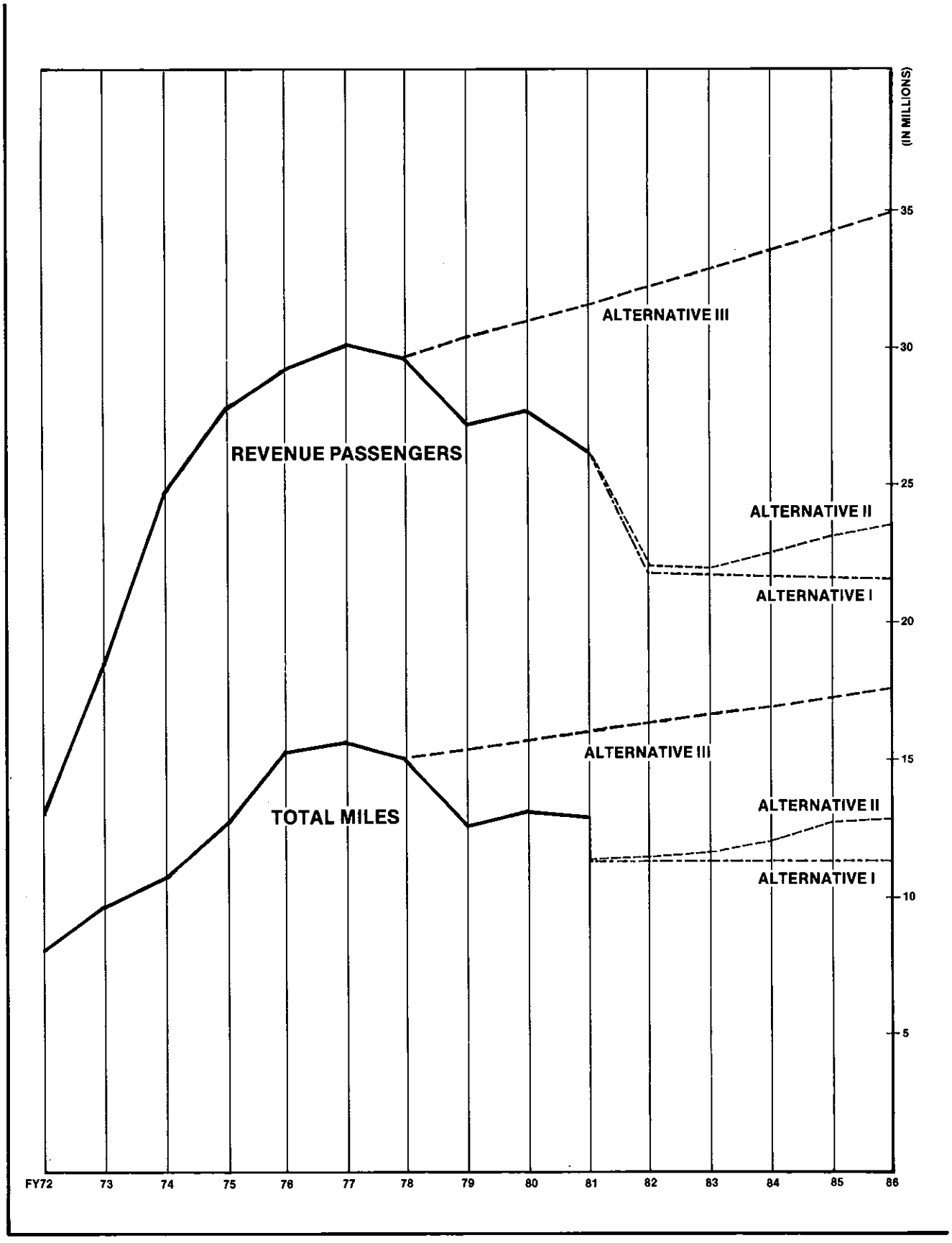
Since funding is the major concern to San Diego Transit for this planning period, even for the financially constrained Alternative I, eleven additional funding alternatives have been identified. These include a local sales tax, a regional assessment district, a payroll tax, a parking surcharge, a hotel/motel tax, general fund/revenue sharing, reinstatement of the City of San Diego special property tax, pooling of TDA funds, creation of an operating transit district, an excise tax and municipal bond financing. A specific recommendation for funding had not been made at the time of publication of this document.

RECOMMENDED FY82–86 PLAN AND PROGRAM

San Diego Transit's recommended plan and program for FY82–86 is Alternative II, also known as the Service Concept Element Plan. As shown in Figure I-1, this plan falls far short of the level of service which should be provided. However, the recommended plan cannot be implemented with existing funding sources. Therefore, a second plan, the Alternative I, Continuation of FY81 Service Level is offered as a financially constrained alternative. Without any additional funding support during this five year period, San Diego Transit will not be able to offer even this constrained level of service. Further service reductions and fare increases will be necessary.

The recommended plan and program also includes a variety of special service plan elements. These include south bay service coordination, lift equipped bus service, an Energy Contingency Plan, a Regional Air Quality Strategy evaluation and the initiative of a Centre City bus plan. Each of these special elements are assumed to be included in both the recommended plan and the financially constrained plan.

FIGURE I-1
SDT ALTERNATIVE PLAN CONCEPTS
FY1981-1986



II

PLAN GUIDELINES

SDT Board of Directors □

Goals, Objectives and Standards □

External Requirements

SDT BOARD OF DIRECTORS

San Diego Transit Corporation is the primary public transit operator for the San Diego metro area, having carried 95% of all revenue passengers in FY1981. Under ownership by the City of San Diego since 1967, SDT provides scheduled, fixed route service throughout the developed areas of the City of San Diego and, under contract, to seven suburban cities as well as to contiguous areas of the County of San Diego.

Overall policy determination for SDT is the responsibility of the Board of Directors. This appointed, nine member Board includes five representatives for the City of San Diego plus four representatives for the seven suburban cities and the County. To provide for more involvement with management decisions, Board members also sit on any of four committees which serve to assist management staff; the Finance and Administration Committee, the Planning and Marketing Committee, the Personnel Committee and the Maintenance Committee. Work covered at committee meetings also helps to reduce the necessity for detailed analysis at the monthly Board meetings and thereby allows more time for discussion and public input.

GOALS, OBJECTIVES AND STANDARDS

With the annual Board adoption of the Five Year Plan Update, comes a yearly update to the Corporation's goals, objectives and service and route evaluation standards. Goals are the broad statements of the achievements SDT seeks to realize with the adopted plan and program. Objectives are the qualitative elements which provide greater detailing to the goals statements. Standards are the quantitative measures which are applied to both the provision for and consumption of transit service. Taken together, they provide a concise statement of Board policy, serve as guidelines for the formulation of the annual plan update and identify benchmarks for evaluation of the system.

GOALS

The San Diego Transit Board of Directors has adopted a series of goals which are directed to the purpose of providing the highest level of public transportation service possible within given budget constraints. The goals are:

1. To pursue the realization of an agency which would maximize all available financial and operational resources related to public transit service for the greater San Diego area, such as a single, transit operations district.
2. To seek adequate funding support to provide for viable transit service while maintaining a reasonable, equitable, and marketable fare structure.
3. To operate as efficiently and economically as possible in order to provide service at the lowest cost to both the user and taxpayer.
4. To develop an effective alternative to the user of the private auto in order to reduce energy consumption levels and relieve air pollution and traffic congestion and to be responsive to dwindling national energy resources.
5. To increase efforts to encourage the general public to use transit by providing the greater San Diego area the highest feasible level of transit service and by communicating the advantages of using public transportation.
6. To have personnel who are dedicated to providing the highest quality of service working for San Diego Transit.
7. To enhance San Diego Transit's reputation as an organization dedicated to providing the best service possible and to display empathy and understanding for the customer.

OBJECTIVES

San Diego Transit has established a series of objectives which further define the goals statements. These objectives relate directly to some of the functional departments and their assigned responsibilities. The objectives are:

1. FUNDING—To identify and evaluate alternative funding sources including, but not limited to, the following statements.
   a. A sales tax increase to fund transit.
   b. A tax on Centre City parking fees.
   c. Municipal bond financing of capital projects.
   d. Local assistance from general funds or revenue sharing.
   e. Reinstatement of the ten cent property tax.
   f. Pooling of TDA funds.
   g. Special Centre City or major activity center assessment district.
2. RIDERSHIP—The system should be developed to a level within which ridership increases at a greater rate than population growth.
3. VEHICLE ACTIVITY
   a. Vehicle miles per road call should increase each year.
   b. Unproductive service miles and hours should be reduced.
   c. The spare fleet should be 10% to conform with UMTA's recommended spare ratio.
   d. A reserve fleet should be established as an energy contingency measure.
4. SCHEDULE RELIABILITY—To review and adjust schedules to insure reliability.
5. TRAVEL TIME
   a. To improve the average speed of service by route realignments, safety improvements or bus stops relocation or removal when warranted.
6. SAFETY
   a. To improve vehicle miles per accident each year.
   b. To improve the training and retraining programs for bus drivers.
   c. To provide a safety orientation program for all employees designed to improve safety on the premises.
7. MARKETING/PUBLIC INFORMATION
   a. In the near term, current ridership should be maintained at the highest level possible given changes in the service levels and fares.
   b. To seek to increase ridership in mid-day, evening and weekday periods.
   c. Increase community awareness and support of San Diego Transit.
   d. To supply support information related to the transit services which SDT provides.
   e. To encourage open dialogue between SDT and its customers, elected officials and general public.
   f. To further develop SDT's "team effort" involving operations, maintenance, clerical and management staffs.
8. PLANNING
   a. Prepare annually a short range transit development plan and program for SDT's service area.
   b. To evaluate the system on a quarterly basis and recommend appropriate action to increase the efficiency, effectiveness and productivity of the system.
   c. To review bus stops and landings for safety and access.
   d. To identify routes and trips which may be underutilized and to work with Marketing/Public Information to promote that service.
   e. To insure the ongoing coordination of transit service between operators in the service area as related to routes, schedules, fares, transfers and information services.
   f. To prepare and maintain a contingency plan which would be responsive to an extreme energy crisis.
   g. To work with the City of San Diego and the service contract jurisdictions to support land use development policies which are positive for public transportation services.

STANDARDS

Service

Service standards, as adopted by the Board, have evolved over a number of plan updates into a comprehensive set of characteristics designed to measure the service provided by SDT. The service standards are:

1. 50% of the population in the service area should be within a quarter mile of a bus stop.
2. A frequency of 30 minutes should be the minimum frequency during peak hours.
3. A frequency of 60 minutes should be the minimum frequency during off peak hours.
4. The bus fleet average age should be 8 years or less with the oldest buses not exceeding 15 years.
5. 100% of the buses in the fleet should be equipped with heaters and air conditioners with at least 90% in working order.
6. A bus stop bench should be provided at those bus stops which serve a major traffic generator and at stops which are used by more than 50 persons per day.

Route Evaluation

Route evaluation standards provide a more objective analysis of the performance of individual routes, though for each evaluation category, system aggregates may also be identified. SDT performs a full route evaluation every three months to continually monitor both substandard routes and those that have overcrowding problems. Four standards have been identified which are identified in Table II-1. A more detailed explanation of this procedure is contained in Chapter III, beginning on page 113.

TABLE II – 1
SAN DIEGO TRANSIT
ROUTE EVALUATION STANDARDS

	FACTOR	STANDARD
1.	Total Passengers Per Trip	30
2.	Operating Ratio	40%
3.	Peak Load Factor	100%
4.	Percent Revenue Hours to Total Hours	70%

EXTERNAL REQUIREMENTS

San Diego Transit has always placed a high priority on route/system evaluative techniques and has been a leader for the industry in this area. However, increased operating costs for public transit have caused an increasing need to determine whether or not public transit utilizes taxpayers' money in an effective, efficient, and productive manner. Out of the need to measure transit's effectiveness, there has grown a myriad of reporting requirements that are demanded by various agencies at the local, state, and federal levels. Figure II-1, page 15, graphically depicts the agencies which place demands on SDT for accurate and timely reports.

FEDERAL

Federal reporting demands are numerous. The newest of these demands is the Financial Accounting and Reporting Element (FARE), otherwise known as the UMTA Section 15 reporting requirements. The preparation of this report is facilitated by computer generated data from SANDAG's "Transportation Surveillance Program." The five year plan update, and the inputs to the regional Transportation System Management Element and Transportation Improvement Program are additional requirements by UMTA.

STATE

The State of California has placed numerous reporting requirements on transit operators. These requirements may take the form of "Performance Audits," maintenance of a specific "farebox recovery ratio" and a myriad of other statistical data necessary to qualify for the receipt of state operating funds.

LOCAL

Finally, local requirements have created a situation whereby SDT is probably one of the most heavily scrutinized transit systems in the United States.

In accordance with state law, the San Diego Metropolitan Transit Development Board (MTDB), has established a Transit Productivity Advisory Committee (TPAC). This committee is designed to identify, analyze, and recommend, to SDT and other metro area transit operators, potential productivity improvements. These recommendations are reviewed each year to evaluate the ongoing efforts made by SDT to implement the recommended improvements. The TPAC recommendations for SDT for FY 1981 are listed below.

Measures of Performance

1. The number of revenue passengers per revenue mile should increase over the FY 1980 level of 2.39. Particular emphasis should be placed on attracting additional patronage in the mid-day and evening periods when excess capacity exists.
2. The operating cost per revenue mile in FY 81 should increase no more than 75% of the 1980 Consumer Price Index (CPI) increase for the San Diego region over the FY 80 figure of 2.66.
3. SDT will report the ratio of scheduled platform hours (total bus hours) to scheduled total expanded driver pay hours; and the ratio of actual platform hours to total actual expanded driver pay hours. SDT will attempt to make the actual ratio as near as practicable to the scheduled ratio. In addition, the ratio of actual platform hours to total actual expanded driver pay hours for FY 81 should be greater than the same ratio for FY 80 of 0.72.
4. The farebox recovery ratio should equal, or surpass, the ratio experienced in FY 80, which was 40.2

Considerations

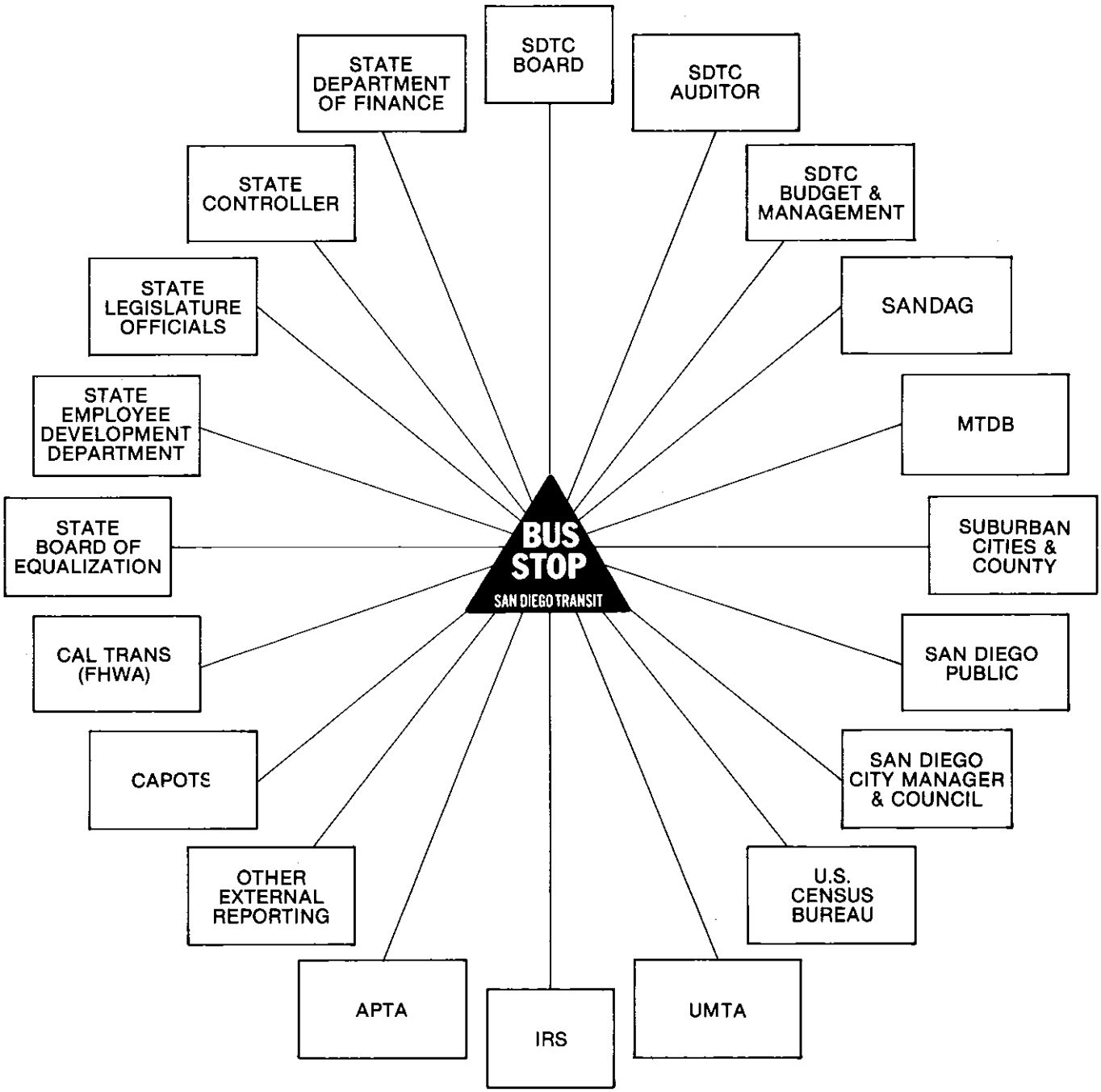
1. In cooperation with MTDB, SDT should implement cost-effective capital facilities oriented to increasing system productivity, such as the construction of transit transfer centers and the construction of the Second Division maintenance and storage facility.
2. In cooperation with other operators, SDT shall implement a coordinated marketing program to coincide with the opening of the South Bay LRT and continue its efforts in establishing a regional telephone information system.
3. SDT shall implement and/or continue agreements to accept transfers from other operators. In addition, SDT shall cooperate in implementing the recommendations of MTDB's fare/transfer policy.
4. SDT should continue its efforts at time coordination between routes and with other operators.
5. SDT shall endeavor to increase the cleanliness of the exterior and the interior of its buses.

Information

SDT shall provide the TPAC as part of its FY 1982 TDA claim the following information:

1. FY 1980 actual statistics for
   - revenue passengers per revenue miles for the system and for each route;
   - revenue miles for the system and each route;
   - passenger miles by route and system total;
   - operating cost per revenue mile for the system broken down by category (i.e., straight time, overtime, pension, etc.);

FIGURE II-1
AGENCIES REQUESTING REPORTS FROM SDT



- total expanded pay hours broken down by category (i.e., straight time, scheduled overtime, vacation, etc.);
- total bus hours; and
- the revenues and expenditures for operation and capital.

2. FY 1981 actual statistics through February, 1981, with estimates made for the balance of the fiscal year for all of the above.
3. SDT shall provide any information developed in FY 81 on on-time performance and corrective actions; and any missed trip information.
4. SDT shall report the statistics of total employees per peak hour vehicle assigned; and the subsidy per passenger for FY 80 and FY 81.
5. SDT will report the following maintenance performance indicators for FY 80 and 81:
   - fleet mileage per gallon of diesel fuel;
   - bus miles between road calls (should increase by 5% over FY 80 level);
   - total annual miles per vehicle;
   - ratio of peak hour buses to maintenance personnel; and
   - passenger miles per gallon of fuel.
6. SDT shall continue to report the breakdown of passenger riders by the following types: basic fare riders, student riders, senior citizen/handicapped riders, total revenue riders, transfer riders and total passengers carried. In addition, SDT shall report the proportion of prepaid fare to revenue passengers for FY 80 and FY 81, and seek to increase this proportion by 2% over the FY 80 level.

Beyond the TPAC recommendations, the MTDB Directors have adopted objectives to guide the development of transit in the San Diego metropolitan area. Those objectives generally emphasize the following:

1. Developing and expanding those services which the public is most willing to use and to pay for.
2. Enhancing the usefulness and efficiency of services through development of transit centers and provision of fare collection equipment, new buses, or other like capital support.
3. Coordinating a system of public transit services to permit areawide use for all residents.

The Performance Audit required by the State conducted by Peat, Marwick, Mitchell and Company in early 1978 commented on the complicated institutional arrangements necessary to deliver public transportation to the residents of San Diego. SDT concurred with the finding that the institutional arrangements created significant problems for SDT and, indeed any transit operator in the region. While regional coordination has been improved significantly with a transfer policy, a uniform fare structure, a regional pass, a regional telephone information system and interagency planning coordination, SDT believes the basic problem still exists. Since the larger view of the problem shows it to be related to both funding allocations and service coordination and planning, SDT's Board of Directors has repeatedly advocated that a review of this situation be initiated and it has taken the position, as a matter of policy, that SDT should be incorporated into a metropolitan-wide transit entity. On March 28, 1979 the following position was adopted as a recommended organization plan for transit in the southern portion of San Diego county:

Recommended principles for any new organization.

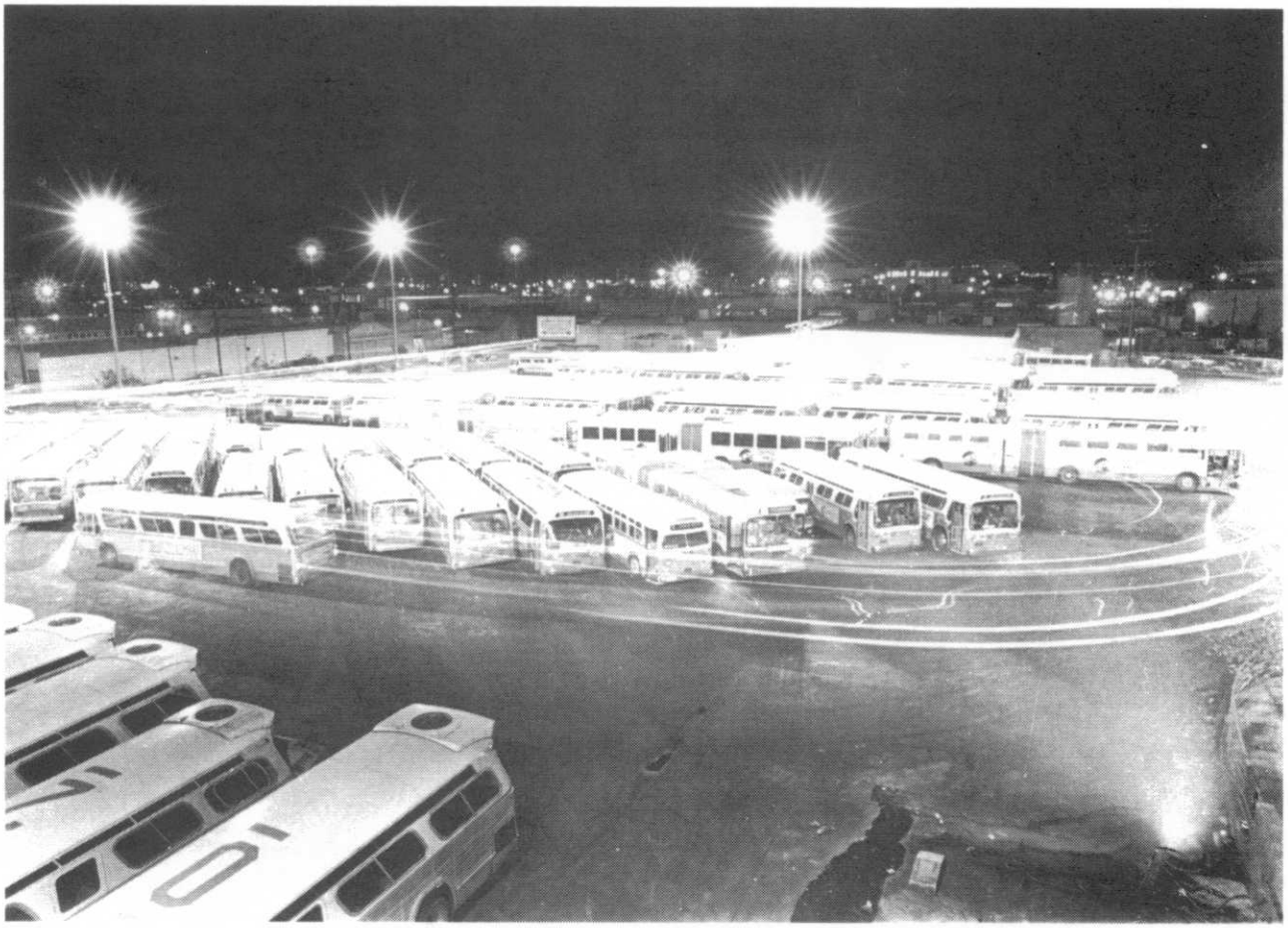
1. Serve to simplify transit policy making, operations and funding.
2. Utilize established transit facilities and personnel to the maximum extent.
3. Consolidate State sales tax funds into one pool for the region.
4. Eliminated administrative duplication by centralizing management functions into one organization.
5. Be responsive to the needs of the community.
6. Be established on well-defined lines of responsibility as it relates to policy and operations.
7. Be guided at the policy level by elected representatives of each of the political jurisdictions in the service area.
8. The main body policy to be assisted by a citizens' council with clearly defined input into the policymaking process.

The above outlined “Plan Guidelines” provide the frame-work within which SDT seeks to provide the highest level of service possible. Unresolved issues, such as complicated funding and service delivery environments, create uncertainty as to whether or not the service provided to the San Diego metro area by SDT is, in fact, that which is adequate to meet the needs of the region.

One fact, however, is abundantly clear. This is that SDT’s system is one of the most evaluated systems in the country.

III

SAN DIEGO TRANSIT SYSTEM – FY 81



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System Description ☐ Ridership ☐ Fare Structure ☐

Operations ☐ Service Elements ☐ Management ☐

Evaluation of FY 81 Plan ☐

Evaluation of FY 81 System ☐

Evaluation of FY 81 Financial Program

INTRODUCTION

San Diego Transit currently finds itself in a period of diminishing financial support which threatens the delicate balance between its ridership, fares and service levels. When financial support is cutback, either fares must be increased, the least productive service must be reduced, or there must be some combination of the two. Any of these alternatives is likely to produce a drop in ridership.

From the early 1970's to the late 1970's, SDT was able to make major improvements in service levels while the base fare increased only from 25¢ to 35¢. Then in 1978, California Proposition 13 eliminated the City of San Diego voter approved, property tax supported, Transportation Fund. The effect was a loss of $2.9 million in 1978 and more in each succeeding year. At this same time, the number of public transit operators in the metro area began increasing, thus carving up the remaining financial support pie into smaller pieces. Currently, state transit funding based upon sales tax revenues has dropped below projected levels due to cutbacks in consumer spending. Projected funds in the FY81-85 Plan Update were therefore too optimistic. As a result of these factors, combined with run-away inflation, SDT's fares have gone up from 35¢ to 60¢, the system has been reduced from 695 route miles to 543 and total passengers have slipped from 36.7 million to 33.1 million; all since FY1978.

Given this perspective, it is easy to understand that FY 1981 has been a year full of challenges for San Diego Transit. Furthermore, the short range planning period from FY 1982 thru FY1986 will most likely prove to be an even greater challenge. It should be helpful to bear this in mind while reviewing the current state of SDT for the period from July, 1980 through June, 1981.

SERVICE AREA

GEOGRAPHY

San Diego County may be considered to have three roughly equal divisions. To the east lies desert, through the center is a mountain range and in the west, coastal hills drop away to the Pacific Ocean. These hills are cut away in certain areas by valleys and canyons. Scattered level areas exist in low-lying coastal planes and on mesas. The metro San Diego area occupies the southern half of this coastal third, an area of roughly 700 square miles.

Urbanization in San Diego occurred primarily on the level areas of the coastal planes and mesas prior to 1950. This development followed a traditional gridiron street pattern though it was frequently broken up by the valleys, canyons and in a few instances, by small mountains. A radial pattern of collector streets developed which connected the scattered level land neighborhoods to the primary downtown area. Since 1950, much of the area between the older neighborhoods has been developed with more amorphous street patterns better suited to the topography. Radial collector streets have given way to freeways which retained the radial form for basic transportation network.

As a result, metro San Diego has developed at a relatively low gross density over a large geographic area. Because of the topography, direct transportation links are not always possible. Therefore, public transit service is often more difficult and more expensive to provide for metro San Diego than for most other major cities.

POLITICAL JURISDICTIONS

The City of San Diego contains about half of the region's 1.7 million population. It is, therefore, the largest jurisdiction in the metro area. Since San Diego Transit is owned by the City of San Diego, service is provided to most of the urbanized area of the city. The remainder of the metro area is comprised of seven other cities; Chula Vista, Coronado, El Cajon, Imperial Beach, La Mesa, Lemon Grove and National City, plus small portions of the unincorporated area of the County of San Diego. These jurisdictions all contract with SDT for metro transit service in addition to the local fixed route or dial-a-ride service which some provide within their own respective areas.

Figure III-1 delineates SDT's service area and also identifies the areas for which contract service is provided. This service area has been redefined for FY81 to represent a more realistic geographic area for SDT's ridership "watershed." It now contains 258 square miles. Previously, the FY80 service area contained 350 square miles and included substantial undeveloped land areas, particularly in the City of San Diego. By redefining the service area, these undeveloped and unserved areas have been taken out. It no longer seemed appropriate to say that simply because the City of San Diego owned San Diego Transit, all of the City was served by transit.

DEMOGRAPHICS

Estimates of the demographics of SDT's service area will be lacking for at least another year when the 1980 Census data should first become available. For FY81, it is necessary to utilize regional forecast which provide base year data for 1978 and projections for 1985. Table III-1 shows population, dwelling units and employment for the FY81 service area. It may be significant to note that while the total population is projected to grow at a rate of nearly two percent per year, persons living in multiple family dwellings (MFD's) may increase at a rate two-and-one-half times greater or 5.3%. Since the types of persons normally associated with MFD's such as singles, younger persons, elderly persons, those with limited incomes, etc., are the same types identified in origin/destination surveys as transit riders, the apparent potential growth in transit ridership is significant.

TABLE III-1
SAN DIEGO TRANSIT SERVICE AREA
DEMOGRAPHIC CHANGES

Element	1978	1985	Total Change	Annual Change
Population	1,083,276	1,230,511	13.6%	1.9%
Single Family Dwellings	243,545	259,137	6.4	.9
Multiple Family Dwellings	160,366	219,587	36.9	5.3
Employment	486,319	573,884	18.0%	2.6%

To estimate the 1981 demographics for the San Diego Transit service area, figures from Table III-1 were utilized to interpolate the data. From this, service area population is estimated to be 1,146,377. Females comprise 50% of the population and males 49.4%. Elderly persons, 65 years and over, represent 11.1% of this total. Single family dwellings (SFD) are estimated to be 250,227 and MFD's to be 185,746 so that total dwellings units equal 435,973. Employed persons are calculated to be 523,847.

HISTORICAL SUMMARY

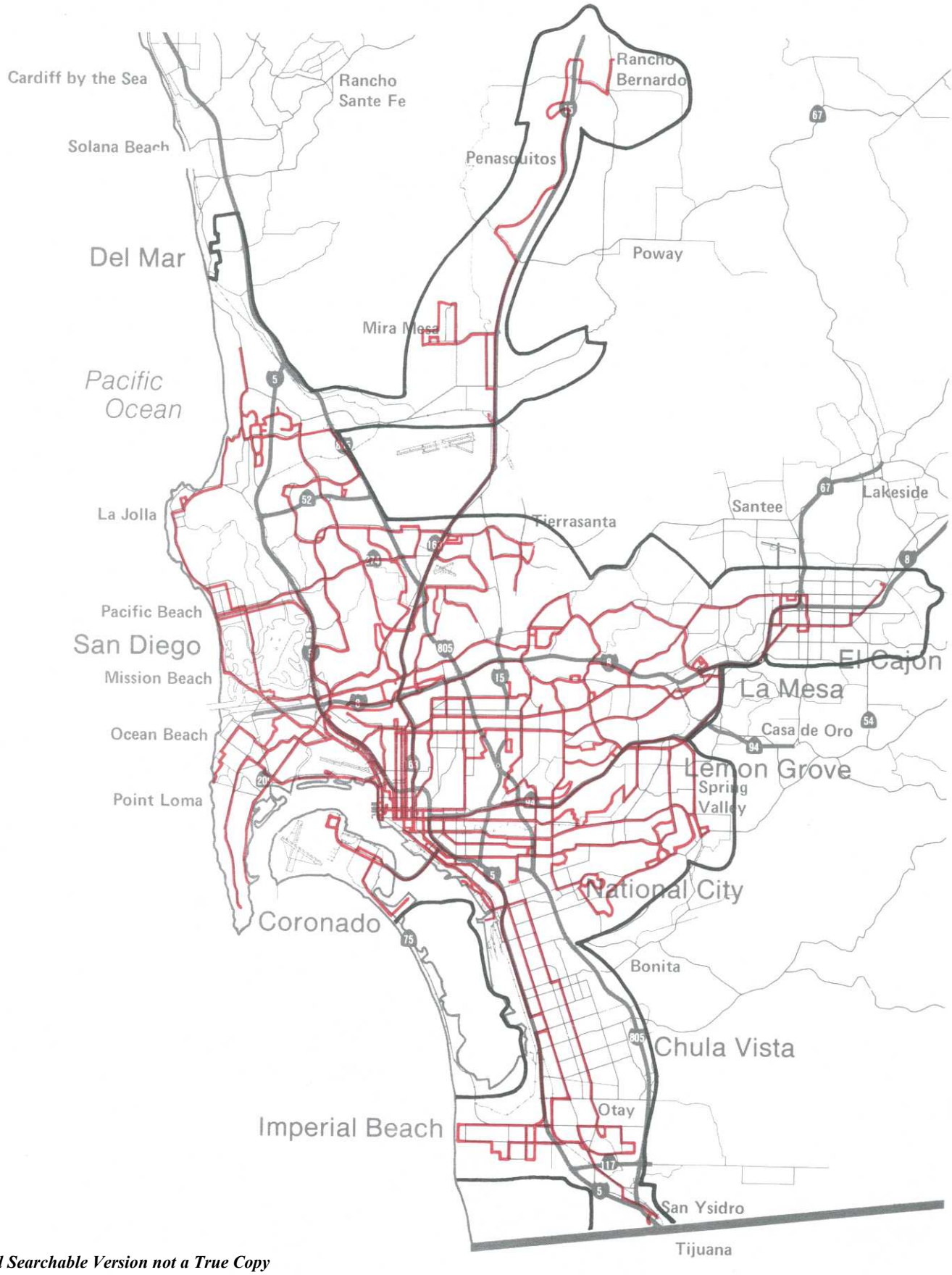
BACKGROUND

San Diego Transit Corporation came into being in July, 1967 when the City of San Diego bought out a declining private transit operation utilizing federal capital dollars. Since that time SDT has gone through cycles of growth and cutbacks. At the same time, San Diego Transit has emerged as an innovative and respected leader within the field of public transit. A list of major innovations includes:

- passenger telephone information system
- radio communications for bus operators
- registering fare box system
- on-going on board passenger counting program

FIGURE III–1

SAN DIEGO TRANSIT
FY81 SERVICE AREA



- participated in development of Run Cutting and Scheduling Program (RUCUS)
- automated driver bidding program
- bike racks on scheduled service buses
- accessible buses
- Title VI certification
- articulated buses
- participation in Financial Accounting Reporting Element Project (FARE)

RIDERSHIP

Ridership on San Diego Transit since its beginning is indicated on Table III-2. A strike in 1970 resulted in a downward trend which continued until fares were reduced in FY73. Then, five years of increasing ridership were ended by reduced funding support and service cutbacks in FY78. Since FY78, conflicting forces of inflated operating costs necessitating fare increases, and consumer fuel costs and availability have caused ridership figures to fluctuate.

TABLE III – 2
SAN DIEGO TRANSIT
OPERATIONS DATA FY 1968– 1981

Fiscal Year	Revenue Passengers	Total Miles	Routes	Buses	Base Fare	E&H Fare
1968	16.0 [1]	7.2 [1]	22	150	.30[2]	.20[2]
1969	17.8	8.2	24	180	.30[2]	.20[2]
1970	15.5	7.4	23	200	.30[2]	.20[2]
1971	13.6	8.5	26	210	.40[2]	.30[2]
1972	13.0	8.0	26	260	.40[2]	.25[2]
1973	18.5	9.7	34	260	.25	.25
1974	24.6	10.7	31	260	.25	.25
1975	27.6	12.7	39	340	.25	.25
1976	29.3	15.3	45	350	.35	.15
1977	30.1	15.7	44	350	.35	.15
1978	29.9	15.2	42	350	.35	.15
1979	27.3	12.7	30	317	.40	.20
1980	27.9	13.2	33	326	.50	.25
1981	26.3	13.0	30	312	.60	.30

1) in millions
2) $.10 zone change with maximum addition of $.50.

MILES

Total miles operated are shown on Table III-2. Mileage more than doubled from FY68 to FY78 when cutbacks were necessitated by Proposition 13. After a reinstatement of a portion of the reduced service in FY80, spiraling costs again forced a reduction in service near the end of FY81 so that FY82 will show reduced mileage.

ROUTES

The number of scheduled service routes, also shown in Table III-2, gradually increased over the years until FY73 when additional ridership demand from the late decrease prompted a 31% increase. After a readjustment for unproductive service in FY74, the number of routes again increased, reaching an all time high of 45 in FY76. Route evaluation and system efficiency measures trimmed this number by three

routes during FY 77 and 78. Then the Proposition 13 funding reduction forced the elimination of twelve more routes. A small increase in FY80 was lost in FY81 due to financial short-falls.

BUSES

Fleet size increased steady until FY79 when economic cutbacks reduced service levels and fleet needs. Though the number of buses has remained relatively the same for the past three years, reduced capital funding has meant that purchases of replacement vehicles has fallen behind schedule and SDT has been forced to "make do" with a fleet above the recommended average age.

FARES

In spite of certain significant events over the past thirteen years, a major strike, reduced funding support and crippling inflation in operating expenses, the maximum STD fare in FY81 ($.75) was lower than the maximum fare ($.80) in FY68. During FY71 and FY72 the maximum fare was $.90 though there was no express service yet available. Base fares have increased 100% from $.30 to $.60. Elderly and handicapped person fares have increased by 50% from $.20 to $.30. The consumer price index, on the other hand, increased by nearly 140% during this same time span. STD's base fare system is shown in Table III-2.

DETAILED DATA FY79-81

To present a more complete picture of San Diego Transit, a detailed fact sheet for the years FY1979 through 1981 is shown in Table III-3. This table includes system, service area, financial and labor statistics with calculations for safety and complaints, service efficiency, service effectiveness and operational indicators.

BUDGET

For FY1981, San Diego Transit has a budget which represents an 11% increase over FY1980. This FY81 budget is summarized in Table III-4. In this budget, capital improvement items have been reduced to the point where they represent 9% of the total. Normally, federal support would cover 80% of the capital expenditures with a 20% local match. However, SDT had local match dollars remaining from 1979 and 1980 earmarked for capital expenditures so, with those added in, the FY81 local share ended up as a higher than normal percentage. For operation expenses, 40% is recovered from fare box revenues. Federal support equals 25% and state Transportation Development Act (TDA) funds amount to 33%. True local support dollars amounted to less than 1% of the total operating budget.

SYSTEM DESCRIPTION

ROUTES

San Diego transit provides fixed route, scheduled service covering a 258 square mile area, the urbanized portion of the metro San Diego area. Service is provided by thirty routes operating over 543 system miles. Three types of routes are operated; express, local and shuttle. The FY81 system map is shown in Figure III-2. A description of this system is given in Table III-5 which identifies the basic origins and destinations for each route. Contract service is indicated by the percent of service which is paid for by suburban communities.

After a recovery period in FY80 from system cutbacks made in FY78 and FY79, cost saving reductions were once again required in FY81. Although the FY81 budget would have enabled SDT to cover expenses by maintaining the January, 1981 level of service, the preliminary FY82 budget was projected in March to be out of balance by over $6 million. This projection assumed no increase in federal operating support and a reduction in state operating support. Those two factors, coupled with current inflationary trends, forced SDT to take action in order to transition into FY82 with a more

TABLE III–3
SAN DIEGO TRANSIT FACT SHEET
FY 1979, FY 1980 and FY 1981

	FY 79	FY 80	FY 81
SYSTEM STATISTICS			
Total (Boarding) Passengers	33,581,655	34,619,632	33,134,943
Revenue Passengers	27,282,980	27,913,111	26,302,301
Total Vehicle Miles	12,722,566	13,247,385	13,072,782
Revenue Miles (Vehicle Service Miles)	11,085,172	11,657,699	11,504,048
Total Vehicle Miles	918,334	948,750	946,737
Revenue Miles (Vehicle Service Hours)	700,429	721,050	719,520
Number of Routes	30	33	30
System Miles (Total One-Way Route Mileage)	487	574	538
Total Vehicles Owned	395	365	365
Number of Vehicles Available for Service	317	326	312
Number of Vehicles Used in Peak Service	260	225	217
Number of Vehicles Used in Off-Peak Service	187	178	169
Average System Speed	13.8	13.9	14.3
Average Trip Length	N/A	4.9	4.8
Average Weekday Passengers	100,000	115,000	109,000
Gallons of Diesel Fuel Consumed	2,972,562	3,153,600	3,275,727
Miles Between Road Calls	3,021	2,706	4,405
Total Vehicle Trips	703,648	731,337	726,956
Total Vehicle Trips - Weekday	491,590	599,158	589,338
Total Vehicle Trips - Weekend	212,058	132,179	127,618
Number of Missed Trips	N/A	2,371	1,331
Passenger Miles	153,535,327	169,636,197	159,047,726

TABLE III–3 (Continued)
SAN DIEGO TRANSIT FACT SHEET
FY 1979, FY 1980 and FY 1981

	FY 79	FY 80	FY 81
SERVICE AREA STATISTICS			
Square Miles	357	350	258[1)]
Total Population	1,216,870	1,238,900	1,146,377[1)]
Total Dwelling Units	462,552	518,291	435,973[1)]
Total Employment	N/A	589,570	523,847[1)]
FINANCIAL STATISTICS			
Operating Cost[2)]	$27,041,337	$ 30,507,491	$ 36,075,244
Fare Revenues[2)]	$ 8,829,394	$ 11,897,970	$ 14,555,962
Total Subsidy[2)]	$18,211,943	$ 18,609,521	$ 21,519,282
Capital Expenditures	0	$ 210,525	$ 3,762,472
Average Fare (per Revenue Passenger)	$ .336	$ .437	$ .553
Average Subsidy (per Revenue Passenger)	$ .704	$ .650	$ .818
Farebox Recovery Ratio	32.3	40.2	40.3
LABOR STATISTICS			
Number of Employees (Full Time Equiv.)	816	873	867
Number of Drivers	551	612	571
Number of Maintenance Personnel	142	146	166
Number of Admin. /Supervisory Personnel	123	115	130
Total Scheduled Driver Pay Costs	$11,247,262	$11,510,622	$11,849,674

1) Revised Definition

2) Final budget figures, not from audited financial statement.

TABLE III–3 (Continued)
SAN DIEGO TRANSIT FACT SHEET
FY 1979, FY 1980 and FY 1981

	FY 79	FY 80	FY 81
SAFETY AND COMPLAINTS			
Accidents Per 100,000 Miles	11.82	12.18	12.37
Miles Between Vehicle Accidents	13,685	14,184	13,372
Miles Between Passenger Accidents	16,254	19,510	20,460
Lost Weekdays from Industrial Accidents per Employee	N/A	6.70	9.44
Complaints per 1,000 Passengers	.115	.123	.121
Passenger Per Complaint	7,147	8,129	8,238
SERVICE EFFICIENCY			
Operating Cost per Vehicle Service Hour	$37.73	$42.07	$50.14
Operating Cost per Vehicle Service Mile	$ 2.38	$ 2.60	$ 3.17
Operating Cost per Boarding Passenger	$ .79	$ .88	$ 1.09
Operating Cost per Revenue Passenger	$ .97	$ 1.09	$ 1.37
Operating Cost per Revenue Mile	$ .21	$ .18	$ .23
Vehicle Service Hours per Employee	858.4	826.0	812.7
SERVICE EFFECTIVENESS			
Boarding Passengers per Vehicle Service Hour	47.9	48.0	46.1
Revenue Passengers per Vehicle Service Hour	39.0	38.7	36.6
Passenger Miles per Vehicle Service Hour	178.1	235.3	221.0
Boarding Passengers per Vehicle Service Mile	3.03	2.97	2.88
Revenue Passengers per Vehicle Service Mile	2.46	2.39	2.29
Passengers Miles per Vehicle Service Mile	11.25	14.55	13.83
Board Passengers per Service Area Population	27.60	27.94	28.90

TABLE III–3 (Continued)
SAN DIEGO TRANSIT FACT SHEET
FY 1979, FY 1980 and FY 1981

	FY 79	FY 80	FY 81
OPERATIONAL INDICATORS			
Scheduled Driver Pay Costs per Scheduled Vehicle Service Hours [3]	$14.95	$15.96	$16.18
Total Expanded Driver Pay Hours per Vehicle Service Hours	1.23	1.81	1.86
Radio of Administrative/Supervisory to Drivers and Maintenance Personnel	.177	.152	.176
Ratio of Missed Trips to Total Trips	N/A	.0032	.0020
Vehicle Service Miles per Vehicle	32,413	35,760	32,663
Spare Ratio	18.0	31.0	30.4
Percent of Vehicle's Inspected Past 15% of Inspection Interval	6.2	16.8	18.9
Passenger Miles per Gallon	42.0	53.8	48.6
Total Scheduled Vehicle Service Hours	N/A	881,630	942,592
Total Expanded Driver Pay Hours	N/A	1,306,076	1,360,450

3) Includes sick and vacation pay

favorable fiscal posture. Actions were taken in January, 1981 to impose a hiring freeze as well as to reducing other controllable expenses. However, service regulations were still determined to be necessary and a special service “shakeup” was implemented on April 26, 1981.

TABLE III–4
SAN DIEGO TRANSIT
FY 1981 BUDGET SUMMARY

Item	Amount	Total	Category
Total	$39,837,716	100%	
Capital Items	3, 762, 472	9	100 %
Federal Support	2,467,392		66
Local Share	1,295,080		34
Operations	36,075,244	91	100
Federal Support	8,829,005		25
State (TDA)	12,023,430		33
Local	109,000		1
Fare Box	14,555,962		40
Other Operator Revenue	734,559		2

FIGURE III-2
SAN DIEGO TRANSIT
FY81 SYSTEM MAP

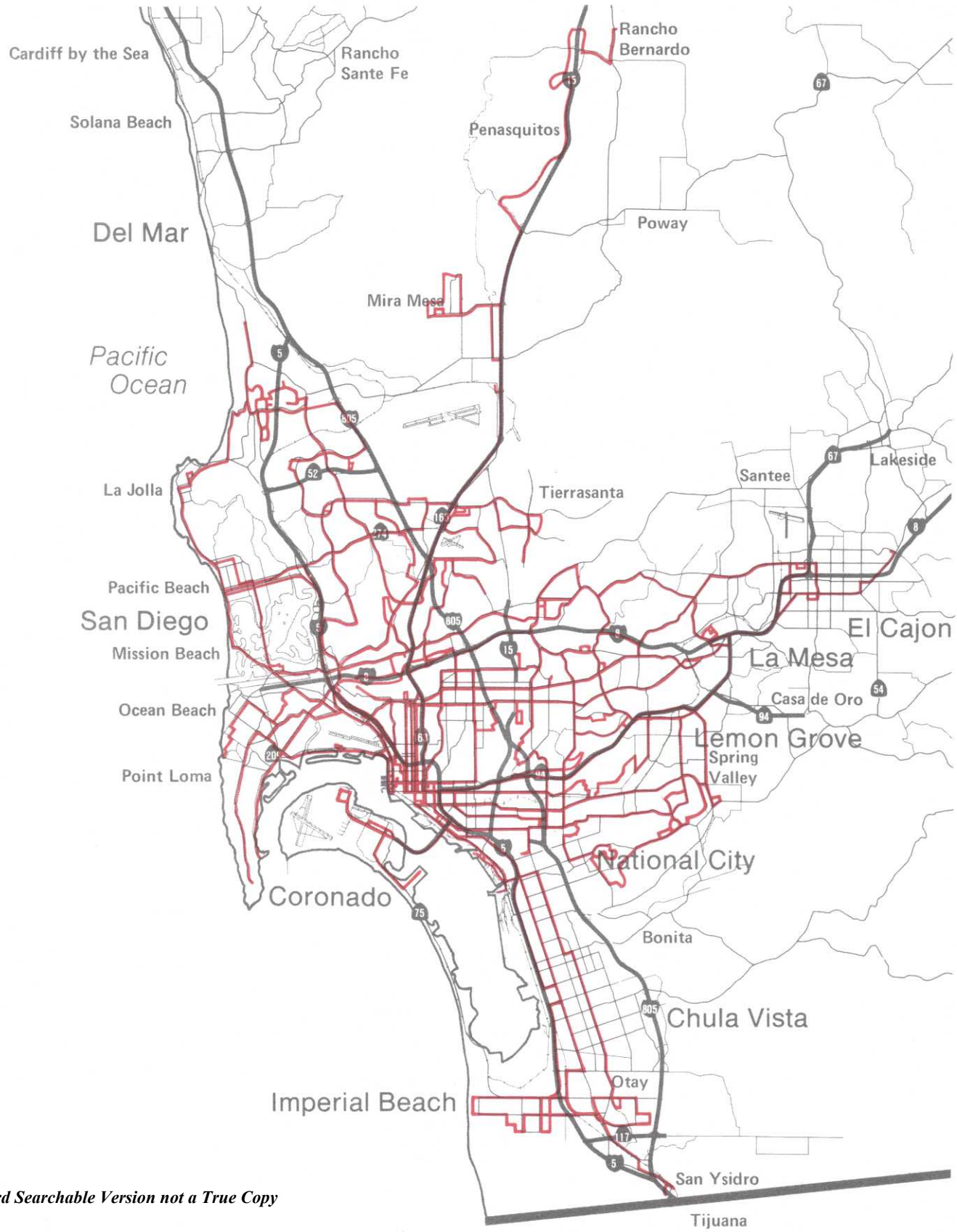


TABLE III-5
SAN DIEGO TRANSIT ROUTE DESCRIPTIONS
FY 1981

ROUTE	ORIGIN - DESTINATION
1	Provides local service between downtown San Diego (CBD) and East San Diego via El Cajon Boulevard.
2	Provides local service between 30th and Adams Avenue and the San Diego International Airport via CBD.
3	Provides local service between Mission Hills and Ocean View Boulevard via CBD.
4	Provides local service between North Clairemont and Lomita Village via CBD.
5	Provides local service between University City and College Grove Shopping Center or San Diego State University via CBD.
6	Provides local service between Cabrillo Monument and Loma Portal and North Park (30th and Redwood or Thorn and Central) via Fashion Valley and Mission Valley Centers.
7	Provides local service between CBD and La Mesa via University Avenue. 18. 8% of this route is contracted for by La Mesa.
9	Provides local service between Pacific Beach and Coronado via Sea World, CBD and USN Amphibious Base. 30.7% of this route is contracted for by Coronado.
11	Provides local service between San Diego State University or Kensington and South Spring Valley or Lomita Village via CBD. 13. 1% of this route is contracted for by San Diego County.
12	Provides local service between southeast San Diego and College Grove Shopping Center via Paradise Hills, Bay View Hills and National City. 13% of this route is contracted for by National City.
13	Provides local service between San Diego State University and southeast San Diego via Allied Gardens and Kaiser Hospital.
15/115	Provides local service between CBD and El Cajon via El Cajon Boulevard, Grossmont Shopping Center and El Cajon Valley Hospital. Route 115 provides local services between CBD and El Cajon via SDSU and Parkway Plaza. 36.6% of this route is contracted for by El Cajon and La Mesa.
16	Provides local service between Mission Village and College Grove Shopping Center via Fashion Valley Center, CBD and Lemon Grove. 11% of this route is contracted for by Lemon Grove.

TABLE III-5 (Continued)
SAN DIEGO TRANSIT ROUTE DESCRIPTIONS
FY 1981

ROUTE	ORIGIN - DESTINATION
20	Provides express service between CBD and Rancho Bernardo via Fashion Valley, Kearny Mesa, Miramar N.A.S., Mira Mesa and Penasquitos.
25	Provides local service between CBD and Kearny Mesa via Fashion Valley Center, Mission Valley Center, Sharp Hospital and Mission Valley.
27	Provides local service between Pacific Beach and Tierrasanta via Balboa Avenue and Clairemont Mesa Boulevard.
29	Provides local service between Point Loma and Otay Mesa via CBD, National City, and Chula Vista. 41.5% of this route is contracted for by Chula Vista, National City, and San Diego County.
30	Provides express service between CBD and Scripps Hospital via Pacific Beach, La Jolla and VA Hospital.
32	Provides local service between CBD and the International Border via National City and Chula Vista. 27% of this route is contracted for by National City, Chula Vista, and San Diego County.
33	Provides shuttle service between Imperial Beach and Otay Mesa via Coronado Avenue and Palm Avenue. 19. 3% of this route is contracted by Imperial Beach.
34	Provides local service between CBD and Scripps Hospital via Mission and Pacific Beach, La Jolla, UCSD and VA Hospital.
35	Provides local service between CBD and Ocean Beach via Pacific Coast Highway.
36	Provides local service between 70th Street and El Cajon Boulevard and La Presa via Jamacha Boulevard, SDSU, Alvarado Medical Complex and College Grove Shopping Center. 61% of this route is contracted for by San Diego County and Lemon Grove.
41	Provides local service between UCSD and Fashion Valley Shopping Center via Scripps Hospital, VA Hospital and Mesa College.
43	Provides local service between CBD and Allied Gardens via Hillcrest and Fashion Valley Shopping Center.

TABLE III-5 (Continued)
SAN DIEGO TRANSIT ROUTE DESCRIPTIONS
FY 1981

ROUTE	ORIGIN - DESTINATION
50	Provides express service between CBD and La Jolla Village Square via Clairemont, University City, University Towne Centre and VA Hospital.
80	Provides express service between Pacific Beach and Grossmont Center via Fashion Valley Shopping Center, Mission Valley Shopping Center and SDSU. 20. 7% of this route is contracted for by La Mesa.
90	Provides express service between Parkway Plaza and CBD via Grossmont Shopping Center or College Grove Shopping Center. 35.4% of this route is contracted for by El Cajon and La Mesa.
100	Provides express service between CBD and Imperial Beach via Chula Vista. 25. 2% of this route is contracted for by Chula Vista.
110	Provides express service between the CBD and Lomita Village via southeast San Diego.

Normal adjustments or major changes to the route structure in SDT's system are subject to a four standard evaluation process. These standards for route evaluation are as follows:

1. Passengers per bus hour— total passengers divided by bus hours, the standard is a minimum of 20.0%.
2. Operating ratio—operating revenue divided by operating cost, the standard is for minimum of 30.0%.
3. Peak loan factor—average maximum load in the busiest peak hour divided by seated capacity, the desired maximum is 100%.
4. Revenue hours—revenue hours divided by total operating hours, this standards is for a minimum of 70%.

The service adjustments implemented in FY81 focused on the elimination of unproductive and costly service. Table III-6 identifies the service adjustments made in April, 1981 shakeup as well as the regular shakeups for FY81. A savings over $175,000 was realized from the April cutbacks. Not only does this provide a carry-over to FY82 but on an annualized basis, it will allow a $1 million savings for FY82. Overall, twenty of SDT's routes were affected; three routes(14, 21 and 51) were totally eliminated; Saturday service on Routes 13 and 27 was curtailed; Sunday service on Routes 27 and 412 was curtailed; frequencies were reduced on Routes 1 (weekdays), 3 (Saturdays), 4 (Saturdays), 6 (Sundays), 7 (weekdays), 25 (Saturdays), 35 (Sundays) and 43 (weekdays); and 15 routes faced early morning and late night trip eliminations.

Table III-7 reflects the impacts of the April, 1981 service adjustments on a route by route basis. In terms of resources, SDT's driver force was reduced by 60 positions, including the 40 part time drivers; and SDT's peak bus requirement was reduced from 225 to 217.

Utilizing financial, route statistic and passenger counting data, SDT examined late evening, early morning, Saturday, Sunday, Holiday and all weekday services. Each of those services, down to trip level, were ranked based on farebox recovery ratio from lowest to highest. Then a standard of 30 passengers per trip was used as a measure of productivity. Once the information was arrayed, the resulting hours, miles, passengers, and revenues lost were computed. After all the data was gathered and

TABLE III-6
FY 81 SDT SERVICE CHANGES

ROUTE	CHANGES
1	Reduced frequency from 20 minutes to 30 minutes - April, 81
2	Added AM Peak Trips - January, 81 Reduced night Service - April, 81
3	Reduced early morning and late night service - April, 81 Reduced Saturday frequency from 20 minutes to 30 minutes - April, 81
4	Increased AM-PM Peak Service - September, 80 Reduced late night service April, 81 Reduced Saturday frequency from 40 minutes to 60 minutes - April, 81 Reduced Sunday hours, of service - April, 81
5	Reduced late night service - April, 81 Reduced Sunday early service - April, 81
6	Reduced early morning and late night service - April, 81 Reduced Saturday night service - April, 81 Reduced Sunday frequency from 30 minutes to 60 minutes - April, 81
7	Reduced weekday Peak service from 5 minutes to 10 minutes - April, 81
9	Extended weeknight service to Airport - April, 81
11	Reduced late night service - April, 81
12	Realigned to cancel service through Lemon Grove but to continue to provide service to College Grove - September, 81
13	Reduced weeknight service - April, 81 Discontinued Saturday service - April, 81
14	Cancelled - April, 81
15	Increased base day frequency from 30 minutes to 15 minutes along El Cajon Boulevard - September, 80
16	Combined with Route 25A to provide direct service between two major shopping centers and to improve running time - January, 81
20	Reduced early morning and late night service - April, 81

TABLE III-6
FY 81 SDT SERVICE CHANGES

ROUTE	CHANGES
21	Reduced service to hourly with Peak trippers - September, 80 Re-written to improve running time and transfer connections - January, 81 Cancelled - April, 81
25	Reduced night service - April, 81 Reduced Saturday frequency from 30 minutes to 60 minutes - April, 81
27	Reduced early morning and late night service weekdays - April, 81 Cancelled Saturday-Sunday service - April, 81
30	Reduced early morning and late night service - April, 81
34	Re-wrote schedule to improve on-time performance - September, 80 Reduced early morning and late night service - April, 81
35	Reduced early morning and late night service - April, 81 Reduced Sunday frequency from 30 minutes to 60 minutes - April, 81
36	Realigned to discountine service to South Spring Valley - September, 80
41	Realigned to discountine service to Del Mar - September, 80 Reduced night service - April, 81 Cancelled Sunday service - April, 81
43	Reduced frequency from 30 minutes to 60 minutes - April, 81
51	Cancelled - April, 81
110	Extended to provide service to County Building - September, 80

ranked, the accumulated cost figures indicated where the service had to be adjusted to reach the desired cost savings figure. The final step was to apply factors such as ridership growth and contractual service requirements to the order of the adjustments. SDT's existing route evaluation procedure was not used in this instance because the level of detail necessary to make the adjustments was not part of SDT's route evaluation procedure. The route evaluation was only as a check and balance to help insure that the relative order and efficiency of the routes was not totally out of phase with the specially devised procedure.

During the public hearing on the changes, the most concern centered on the elimination of Route 21. SDT will be looking for alternative, more cost effective ways to serve the community of Mira Mesa. In fact, this service has a high priority for restitution when financial conditions brighten. Other comments from the public hearing expressed concern over the general future of public transit in San Diego.

Scheduled route data for the FY81 system is summarized in Table III-8. Each route is identified for contracted service, classification of route type, days and hours operated. Headways by AM peak,

TABLE III-7
APRIL, 1981 SERVICE ADJUSTMENT IMPACT
PER DAY

ROUTE	CHANGE	DAYS OF OPERATION	DAILY MILES REDUCED	DAILY HOURS REDUCED	DAILY TRIPS REDUCED	ESTIMATED PASSENGERS LOST-DAILY
1	Frequency 20-30 minutes	MON-FRI	222	16	26	85
2	PM Trips Eliminated	MON-FRI	75	9	9	243
3	AM-PM Trips Eliminated	MON-FRI	211	22	21	200
	Frequency 20-30 minutes	SAT	355	38	34	83
	AM-PM Trips Eliminated	SUN	95	17	8	150
	PM Trips Eliminated	HOL	8	1	1	10
4	PM Trips Eliminated	MON-FRI	142	9	6	117
	Frequency 40-60 minutes	SAT	439	12	18	77
	PM Trips Eliminated	SUN	60	19	7	80
	PM Trips Eliminated	HOL	7	1	1	4
5	PM Trips Eliminated	MON-FRI	248	14	9	189
	AM Trips Eliminated	SUN	100	7	5	118
6	AM-PM Trips Eliminated	MON-FRI	135	12	13	138
	PM Trips Eliminated	SAT	39	3	3	100
	Frequency 30-60 minutes	SUN	460	24	23	450
	Frequency 30-60 minutes	HOL	233	14	14	80
7	Pk. Ser. Freq. 5-10 minutes	MON-FRI	335	20	23	146
11	PM Trips Eliminated	MON-FRI	112	9	7	84
	PM Trips Eliminated	HOL	5	1	1	8
13	PM Trips Eliminated	MON-FRI	171	11	11	80
	Service Eliminated	SAT	955	62	60	495
14	Service Eliminated	MON-FRI	219	15	14	175

TABLE III- 7 (Continued)
APRIL, 1981 SERVICE ADJUSTMENT IMPACT
PER DAY

ROUTE	CHANGE	DAYS OF OPERATION	DAILY MILES REDUCED	DAILY HOURS REDUCED	DAILY TRIPS REDUCED	ESTIMATED PASSENGERS LOST-DAILY
20	AM-PM Trips Eliminated	MON-FRI	256	13	9	88
	AM-PM Trips Eliminated	SAT	156	7	5	99
	AM-PM Trips Eliminated	SUN	273	12	8	27
21	Service Eliminated	MON-FRI	799	40	35	420
25	PM Trips Eliminated	MON-FRI	263	18	11	109
	Frequency 30-60 minutes	SAT	743	46	29	600
	PM Trips Eliminated	SUN	68	6	3	80
	PM Trips Eliminated	HOL	68	6	3	120
27	AM-PM Trips Eliminated	MON-FRI	124	10	8	17
	Service Eliminated	SAT	544	42	27	701
	Service Eliminated	SUN	534	42	27	330
	Service Eliminated	HOL	439	27	24	60
30	AM-PM Trips Eliminated	MON-FRI	180	9	9	157
34	AM-PM Trips Eliminated	MON-FRI	120	10	6	79
	AM Trips Eliminated	SAT	56	4	3	50
	PM Trips Eliminated	SUN	214	31	11	58
	PM Trips Eliminated	HOL	33	2	1	30
35	AM-PM Trips Eliminated	MON-FRI	75	8	8	101
	AM-PM Trips Eliminated	SAT	72	7	8	56
	Frequency 30-60 minutes	SUN	326	30	30	196
	Frequency 30-60 minutes	HOL	326	30	30	200
41	AM-PM trips Eliminated	MON-FRI	222	13	13	156
	PM Trips Eliminated	SAT	55	3	3	63
	Service Eliminated	SUN	420	24	24	426
51	Service Eliminated	MON-FRI	265	15	14	187
	TOTAL		11,747	823	696	7,722

TABLE III-8
SDT SCHEDULED ROUTE DATA
FY 81

Route	Contract Service	Type Of Route	Days Operated	Hours Operated	Headway AM Peak	Headway Midday	Headway PM Peak	Headway Evening	Buses Required Base	Buses Required Peak	Scheduled Total Miles	Line Miles
1		Local	Weekdays Saturdays	5:58 AM 8:02 PM	30	30	30	30	4	4	144,163	7.7
2		Local	ALL	5:30 AM 8:45 PM	15	20	15	35	6	8	279,999	9.1
3		Local	ALL	5:25 AM 8:25 PM	20	20	20	20	7	8	309,187	10.3
4		Local	ALL	5:05 AM 11:26 PM	15	30	25	60	7	11	604,917	25.3
5		Local	ALL	4:49 AM 8:55 PM	30	30	30	30	9	9	539,808	29.0
6		Local Crosstown	ALL	6:10 AM 7:28 PM	30	30	30	30	5	7	297,439	19.6
7	Yes	Local	ALL	4:48 AM 12:49 AM	10	10	10	20	15	15	709,287	12.6
9	Yes	Local	ALL	5:00 AM 3:20 AM	30	30	30	60	7	7	524,889	20.5
11	Yes	Local	ALL	4:17 AM 10:07 PM	10	30	10	60	8	14	538,889	24.1
12	Yes	Shuttle	ALL	6:22 AM 9:12 PM	60	60	60	60	2	2	187,843	15.7
13		Local Crosstown	Weekdays	5:35 AM 6:41 PM	30	30	30	-	4	4	203,031	15.9
15	Yes	Local	ALL	4:34 AM 1:26 PM	10	15	10	60	11	12	690,076	21.8
16	Yes	Local	ALL	5:35 AM 10:37 PM	60	60	60	60	4	4	296,456	25.0
20		Express	ALL	5:15 AM 7:06 PM	15	30	15	-	7	14	809,045	34.8
25		Local	ALL	5:30 AM 7:42 PM	30	30	30	-	7	8	423,965	19.3
27		Local	Weekdays	6:08 AM 6:58 PM	30	30	30	-	5	5	228,684	15.2
29	Yes	Local	ALL	4:27 AM 1:37 AM	15	30	15	60	7	10	706,772	22.4
30		Express	Weekdays	6:31 AM 7:13 PM	20	30	30	-	5	6	294,296	21.0

TABLE III-8 (Continued)
SDT SCHEDULED ROUTE DATA
FY 81

Route	Contract Service	Type of Route	Days Operated	Hours Operated	Headway AM Peak	Headway Midday	Headway PM Peak	Headway Evening	Buses Required Base	Buses Required Peak	Scheduled Total Miles	Line Miles
32	Yes	Local	ALL	4:55 AM 1:53 AM	15	15	15	60	14	16	899,787	18.5
33	Yes	Shuttle	ALL	5:20 AM 11:02 PM	30	30	30	30	2	2	207,238	7.2
34		Local	ALL	5:17 AM 12:30 AM	30	30	30	60	8	11	662,114	23.1
35		Local	ALL	5:15 AM 9:49 PM	30	30	30	30	4	5	220,681	9.9
36		Local Crosstown	Weekdays Saturdays	5:57 AM 10:26 PM	30	30	30	30	3	3	204,953	10.6
41		Local	Weekdays Saturdays	5:45 AM 7:10 PM	30	30	30	-	4	4	241,227	16.3
43		Local	Weekdays	5:50 AM 10:02 PM	60	60	60	60	2	2	125,103	14.5
50		Express	Weekdays	5:37 AM 6:42 PM	25	60	20	-	2	6	200,303	17.6
80	Yes	Express	ALL	6:10 AM 10:31 PM	30	30	30	60	4	4	370,957	21.9
90	Yes	Express	Weekdays	5:55 AM 9:00 PM	12	60	10	60	2	9	370,847	22.4
100	Yes	Express	Weekdays	5:47 AM 8:04 PM	30	60	30	-	2	4	179,571	14.3
110		Express	Weekdays	6:16 AM 6:38 PM	20	60	30	-	2	3	108,758	12.6
SYSTEM TOTAL					27	35	28	46	169*	217*	11,580,435	538.2

*Figures Represent Non-Supplemental Service Period Requirements

midday, PM peak and evening are listed as are the base and peak period requirements. Scheduled total miles and line miles are shown. In addition, this table provides system totals for average headway by time period plus buses and miles. Peak period bus requirements are 217 while for the base, 169. Scheduled total miles add up to 11,580,435 and line miles to 538.2

QUARTER MILE SERVICE STANDARD

In previous years, San Diego Transit estimated the resident population within one quarter mile of a bus route. A standard that this figure should be at least 70% of the service area population was adopted. Since one quarter mile access to a bus route was not necessarily meaningful (give San Diego's topography, express service, routes operating on freeways and parkways, etc.), this standard has been changed to one quarter mile of a bus stop. Figure III-3 displays the area covered by this standard. This new analysis was made possible through the cooperation of SANDAG and the use of their radius search program. With it, the SDT bus stop location file was matched against various demographic data files. Utilizing the most recent geographic data file, currently 1978, estimates of the units served by percent could be determined. For population, this came to 60.5%, for dwelling units, 63% for employment, 89%. Taking the 1981 estimates from the Chapter III section on DEMOGRAPHICS, the estimated population served would be 693,558 persons, reaching 264,663 dwelling units and employment level of 466,224 in metro San Diego area.

MAJOR ACTIVITY CENTERS

SDT has identified major activity centers within the service area to help locate concentrations to trip origins and destinations. Service is provided to 12 major shopping centers, 14 hospitals, 8 colleges and universities, most secondary schools in the City of San Diego, social service centers, industrial parks and other major employment centers as well as points of interest such as the airport, beaches, parks and the San Diego Zoo. Figure III-4, 1981 Activity Centers, shows the location of these facilities relative to SDT's routes.

ELDERLY POPULATION

Elderly population in metro San Diego is a significant segment of the system's ridership. In SANDAG's 1980 Transit Ridership Survey, 13.5% of the transit patrons were age 60 and over which is the age definition utilized by SDT for elderly person. This compares to 10.6% in 1977, the date of the last survey. An estimate of the 1980 population by SANDAG for the service area indicates 10.9% of the population is 65 or over. An estimate for persons 60 and over is not available. The SANDAG data produces an elderly population estimate of 135,000. Applying the 60 and over definition, the service area elderly population would be roughly 185,000. It is significant to note that the elderly population has been increasing for the past decade and SANDAG's forecasts for the next twenty years show a steady increase in both the percentage and total number of elderly in the population. Figure III-5 displays areas with concentrations of elderly persons as a percentage of total population. As the overlaid route map indicates, SDT offers good accessibility to all of these areas except sections of La Mesa and El Cajon which are served by paratransit operators. SDT has transfer agreements with La Mesa Dial-A-Ride and County Transit System to assure regional access to these areas.

FIGURE III-3
SDT QUARTER MILE SERVICE ACCESS
FY81

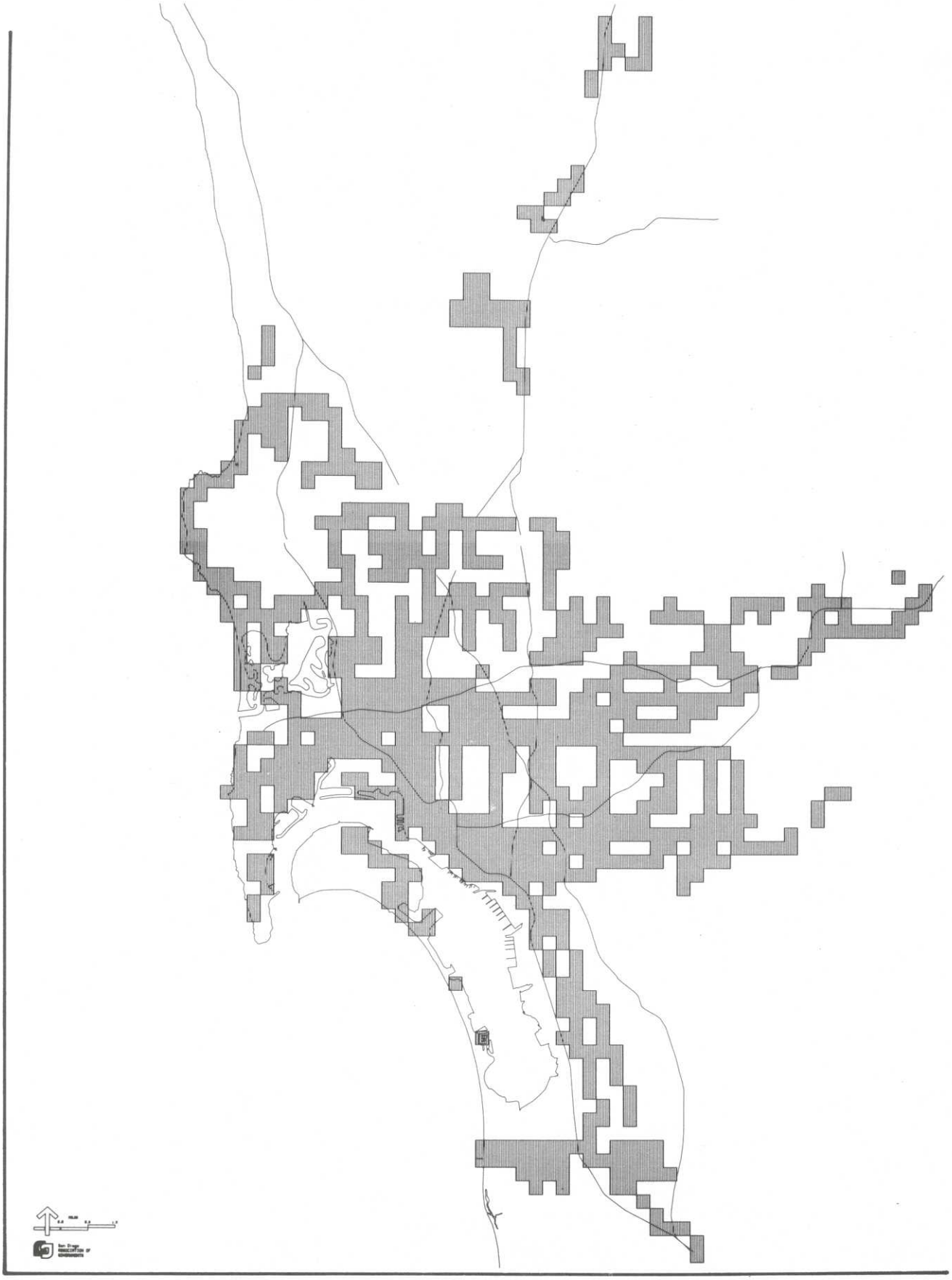


FIGURE III-4
1981 ACTIVITY CENTERS

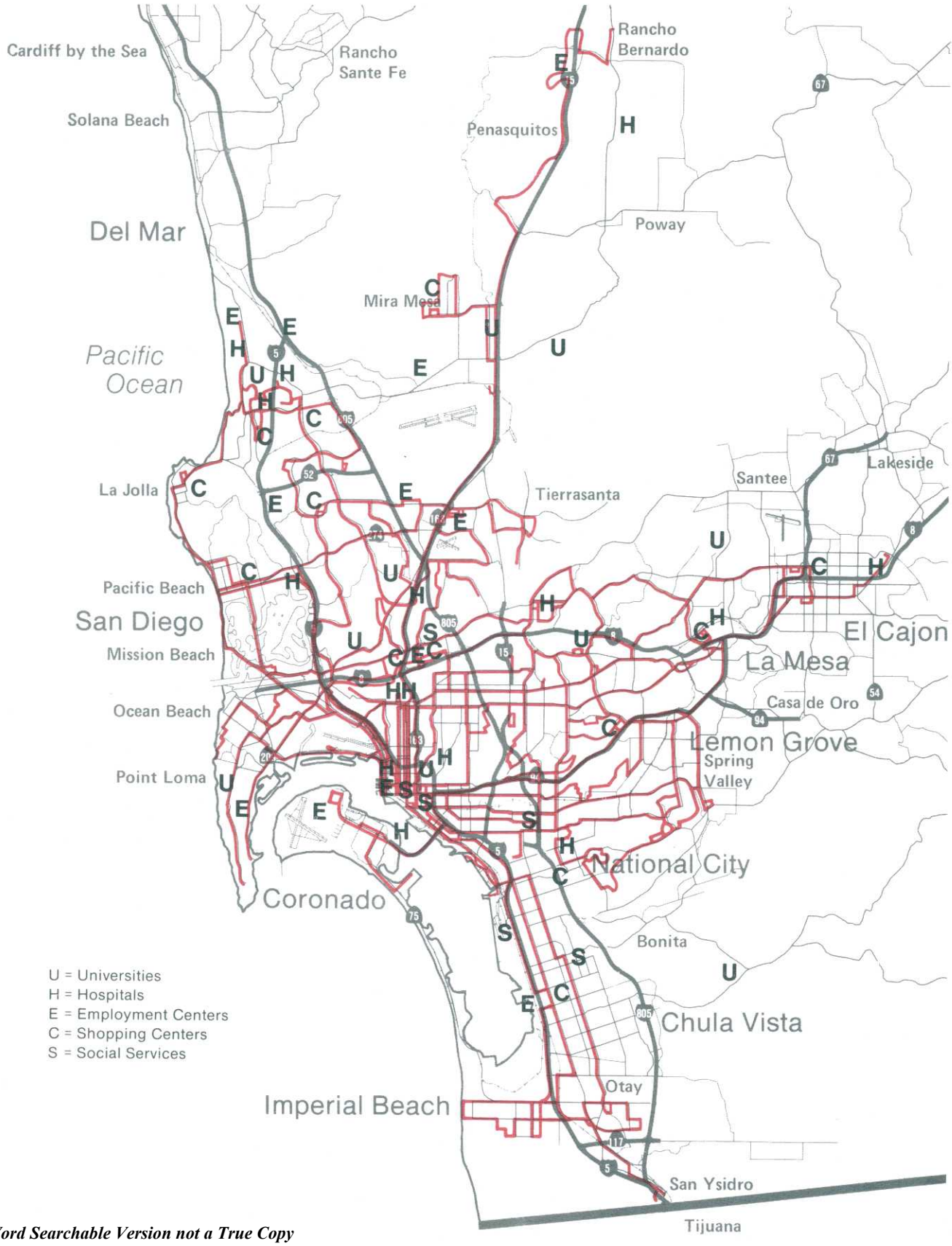
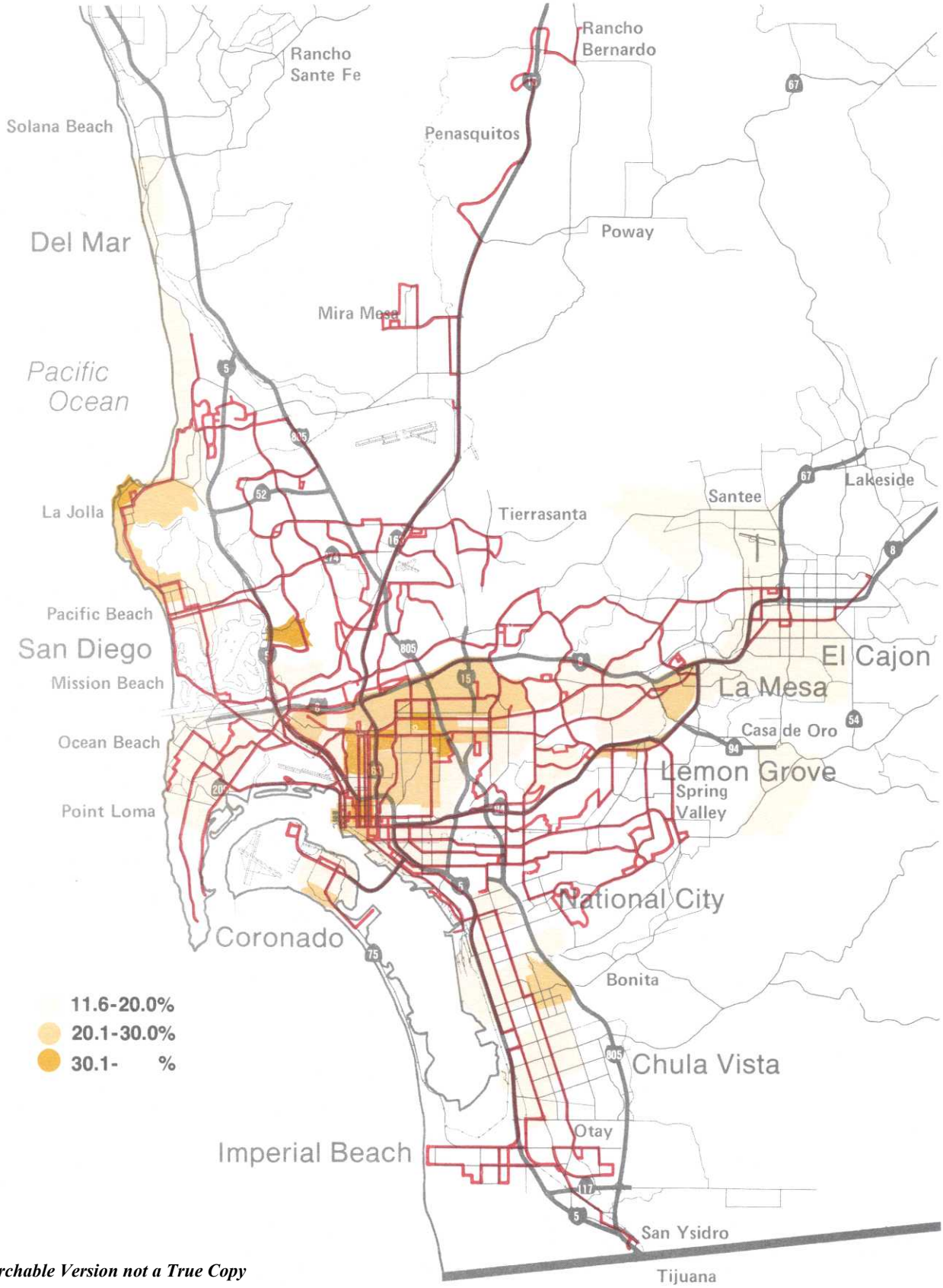


FIGURE III-5
CONCENTRATIONS OF ELDERLY PERSONS



HANDICAPPED PERSON CONCENTRATIONS

As one of the pioneering operators in providing scheduled service with lift equipped, full size buses, SDT has demonstrated concern for the handicapped population in the service area. But to provide adequate service, the number and location of handicapped persons must be known. San Diego Transit has cooperated with SANDAG in its efforts as the regional planning agency to identify the needs and solutions for handicapped persons' transportation. The estimated 1980 population of handicapped persons aged 16 through 64 is 55,750, based upon data provided by SANDAG. Figure III-6 indicates areas of concentration of disabled person.

SDT has relied upon SANDAG studies to provide the demographic data on the metro area handicapped population. As defined by SANDAG, elderly and handicapped persons are –

> those individuals who, by reason of illness, injury, age, congenital malfunction, or other permanent or temporary incapacity or disability, including those who are non-ambulatory wheelchair-bound and those with semi-ambulatory capacities, are unable without special facility or special planning or design to utilize mass transportation facilities and services as persons who are not so affected.

It should be mentioned too that SDT has utilized SANDAG's Subcommittee for Elderly and Handicapped Transportation to insure community input into the transit planning process.

In February, 1977 SDT initiated lift equipped service on Routes 3 and 7 on a demonstration basis. Five buses had been retrofitted with lifts and tie downs for use in providing this service. Reliability of this equipment became enough of a problem that the service was temporarily discontinued July, 1980. A capital grant for sixty-five new buses, to be received by the end of FY81, included the provision for all to be lift equipped. As discussed under the FY82 plan and program, this new fleet will allow a viable public transit service to the handicapped community.

In addition, handicapped persons have a demand responsive service provided throughout most of San Diego by the San Diego Dial-A-Ride system which is supplemented by several social service agencies.

MINORITY POPULATION CONCENTRATIONS

Figure III-7 displays the area of concentration for minority populations. Minority population includes Mexican-American (Latino), Black, American Indian, Oriental and others. This data was derived from the 1975 Special Census and will be updated in the future plan once the 1980 U.S. Census data becomes available. SDT's vehicle assignment record is shown in Table III-17. This includes assignments by average vehicle age to minority areas. Tables III-22 lists peak load factor for all routes including minority service.

RIDERSHIP

SYSTEM AND ROUTE DATA

System ridership for San Diego Transit has increased by over sixty percent since its 1968 beginning. As shown on Table III-2, page 25, the height of this upward trend was reached in FY1977, just prior to the Proposition 13 cutbacks. The short term trend since then has seen only one increase. While FY81 ridership is down from the FY80 level, it remains above the level passed back in FY75. Reasons for the current decline include increased fares, decreased service and an easing of the gasoline crisis. The estimated total and revenue passengers for FY81 are 33.135 million and 26.302 million compared to 34.620 million and 27.913 million respectively for FY80.

Looking at the monthly ridership trends on Table III-9 two conditions stand out. First is the significant month to month variation in the percent change. Service cutbacks in April had a significant negative impact on ridership then and in May, producing the greatest losses of the year. The next worst loss occurred in February when the FY80 passenger data had the advantage of one extra weekday due to leap year. December and January's smaller change could have resulted from nasty weather in FY80 holding the number of passengers down. The second condition is the diminished loss of total passengers as compared to revenue passengers. This can only mean that there is a greater percentage of transfer riders on a month to month basis in FY81 versus FY80.

TABLE III-9
SDT MONTHLY RIDERSHIP TRENDS
FY 1980 - FY 1981
(In Millions)

	Revenue Passengers			Total Passengers		
Month	FY 80	FY 81	% Change	FY 80	FY 81	% Change
July	2.212	2.198	-0.6	2.753	2.793	1.5
August	2.226	2.169	-2.6	2.786	2.754	-1.1
Sept.	2.240	2.137	-4.6	2.783	2.707	-2.7
Oct.	2.446	2.336	-4.5	3.022	2.921	-3.3
Nov.	2.282	2.131	-6.6	2.810	2.672	-4.9
Dec.	2.244	2.182	-2.8	2.779	2.745	-1.2
Jan.	2.244	2.204	-1.8	2.781	2.782	0.0
Feb.	2.335	2.124	-9.0	2.888	2.675	-7.4
March	2.530	2.327	-8.0	3.126	2.928	-6.3
April	2.419	2.184	-9.7	3.002	2.757	-8.2
May	2.446	2.196	-10.2	3.026	2.735	-9.6
June	2.288	2.115	-7.6	2.864	2.666	-6.9
TOTAL	27.913	26.302	-5.8	34.620	33.135	-4.3

A more detailed profile of the ridership of each route may be observed from Table III-10. Transfer riders constitute 21% of total annual passengers for the system, up from 19% one year ago. Individual shuttle route and others designed to serve as collectors have higher transfer rates. Routes 33 is the best example of this function since 38% of the total passengers are transfers.

The difference between total passengers and revenue passengers is transfers. Revenue passengers consist of regular cash riders, Saverpass (SDT's monthly pass) riders, Goldpass (for defined handicapped and persons 60 years as of age and over) riders and E&H off peak cash riders (see FARE STRUCTURE). Comparisons with FY80 are not valid because of changes in fare categories as well as fare amounts.

TRANSFERS

Route by route transfer data is available in Table III-10. While it may be an ideal in public transit to satisfy a high percentage of trip demands with direct service for speed and ease of travel, financial limitations limit the number of buses and drivers which SDT can put on the street. Since implementation of the "Action Plan" in FY74, time transfers have been part of SDT's service concept. This allows for convenient and timely transfers at many points throughout the system to allow transit patrons to satisfy their trip demands. Timed transfers in a coordinated system can allow efficiencies in the amount of manpower and equipment necessary to accommodate travel patterns. It must be realized, however, that a timed transfer system has definite limits for the patron in the number of transfers in one trip as related to time and convenience.

For many years, SDT acknowledged its responsibility to public transit rider in the metro San Diego area to provide coordinated transit service. Since trip purpose knows no jurisdictional bounds, in the absence of a single operating authority for the metro area, transfers between systems are a necessity. In 1973, SDT initiated a transfer agreement and schedule coordination with Chula Vista Transit. Similar

FIGURE III-6
CONCENTRATIONS OF HANDICAPPED PERSONS

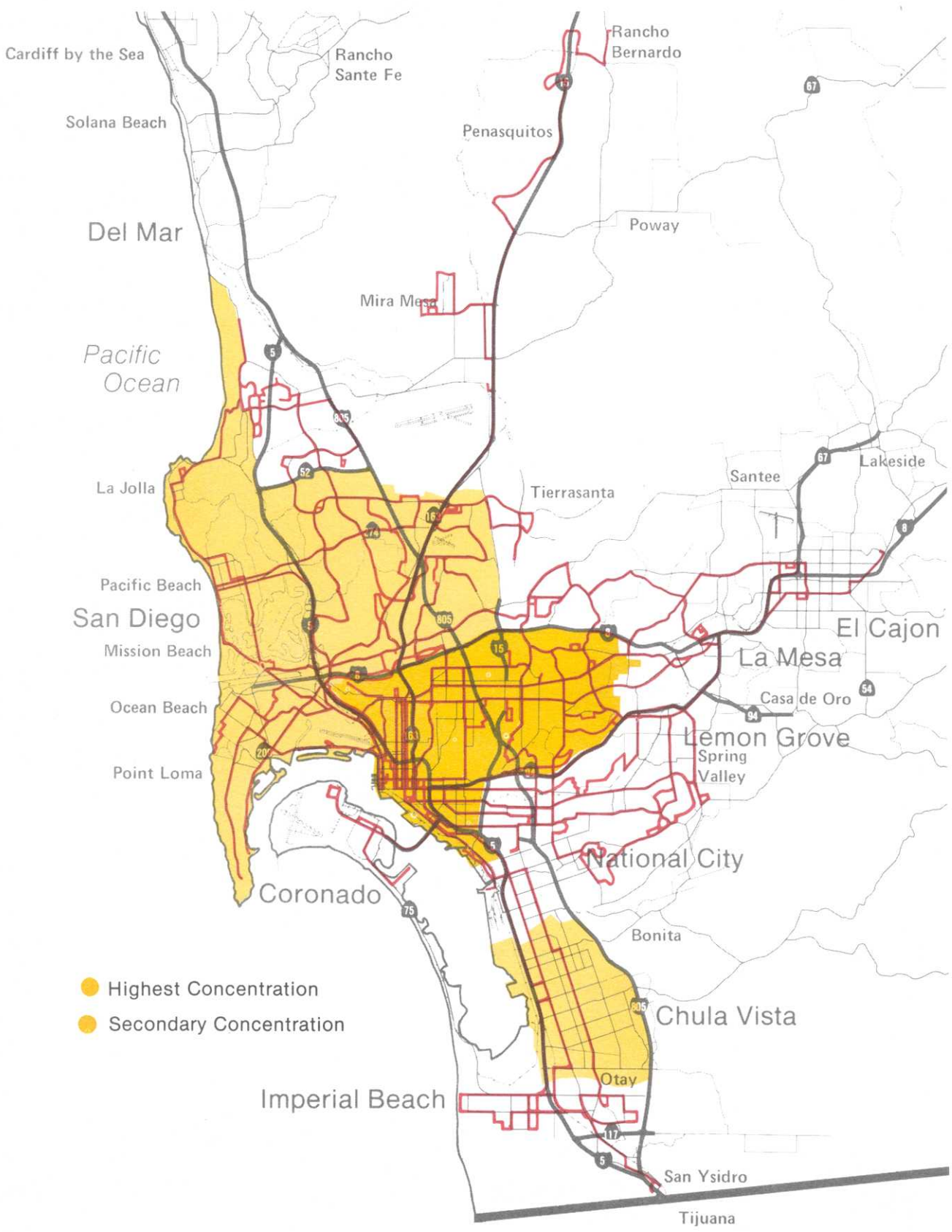


FIGURE III-7
CONCENTRATIONS OF MINORITY PERSONS

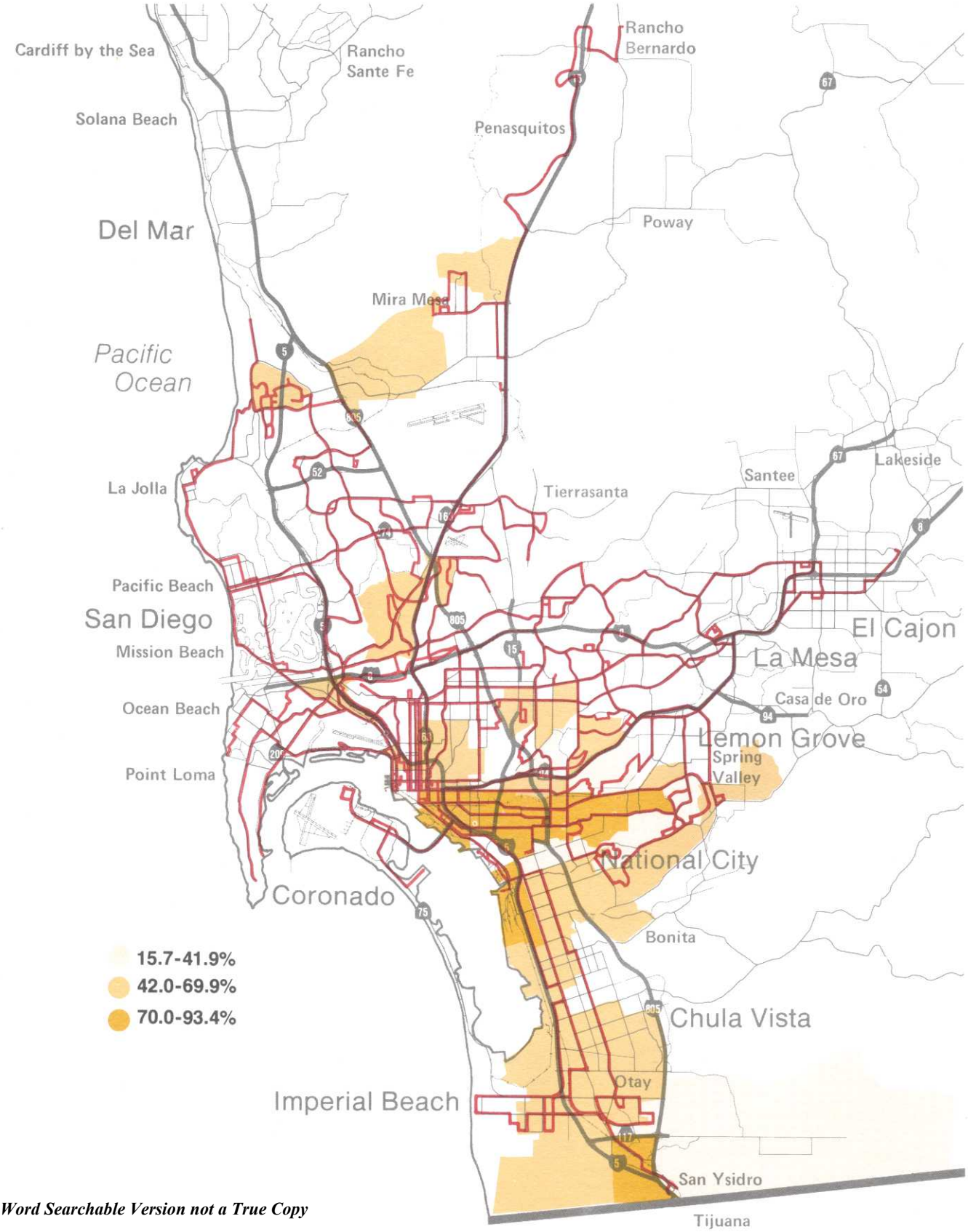


TABLE III-10
SDT PASSENGER DATA BY ROUTE
FY 81 ESTIMATE

Route	Total Annual Passengers	Transfer Riders	%	Total Revenue Passengers	Regular Cash Riders	%	Saverpass Riders	%	Goldpass Riders	%	E & H Off-Peak Cash	%	Passengers Per Mile
1	993,336	192,084	19	801,252	375,024	47	128,280	16	198,516	25	99,432	12	4.72
2	1,521,708	327,288	22	1,194,420	693,492	59	219,576	18	182,304	15	99,048	8	4.17
3	1,753,968	373,848	21	1,380,120	739,644	54	350,820	25	176,952	13	112,704	8	4.07
4	1,565,724	285,343	18	1,280,376	938,268	73	241,080	19	51,444	4	49,584	4	2.30
5	1,467,876	285,960	19	1,181,916	833,364	70	183,996	16	85,860	7	78,696	7	1.85
6	898,776	241,140	27	657,636	363,180	56	114,372	17	105,648	16	74,436	11	2.12
7	4,039,536	842,292	21	3,197,244	1,863,516	59	711,840	22	388,080	12	233,808	7	4.82
9	1,771,848	351,492	20	1,420,356	1,103,424	77	164,136	12	82,368	6	70,428	5	2.87
11	1,737,396	330,000	19	1,407,396	934,968	66	236,040	17	141,072	10	95,316	7	2.76
12	118,044	31,596	27	86,448	67,668	78	12,192	14	2,688	3	3,900	5	0.79
13	448,452	121,176	27	326,736	232,212	71	62,412	19	16,176	5	15,936	5	1.07
14*	43,220	9,840	23	33,380	27,590	83	3,740	11	590	2	1,460	4	0.82
15	1,878,540	333,000	18	1,545,540	999,780	65	235,716	15	164,424	11	145,620	9	2.78
16	320,748	73,692	23	247,056	172,680	70	38,952	16	22,404	9	12,840	5	1.80
20	830,028	200,496	25	602,532	458,760	76	89,052	15	21,684	4	33,036	5	0.83
21*	132,900	36,130	27	96,770	80.460	83	10,620	11	2,110	2	3,580	4	0.42
25	1,195,212	269,280	23	925,932	566,400	60	162,732	18	117,228	13	79,572	9	1.92
27	516,972	129,876	25	387,096	293,194	76	46,944	12	23,712	6	23,196	6	1.61
29	2,277,876	443,628	19	1,834,248	1,564,260	86	137,472	7	57,960	3	74,556	4	3.00
30	556,224	106,884	19	449,340	301,440	67	82,248	18	36,132	8	29,520	7	1.37
32	3,752,688	708,480	19	3,044,208	2,594,351	86	166,368	5	106,368	4	142,584	5	4.04
33	273,772	103,704	38	172,068	143,292	83	13,092	8	7,716	4	7,968	5	1.27
34	1,797,948	343,692	19	1,454,256	1,087,956	75	164,052	11	105,528	7	96,720	7	2.27

35	803,976	161,508	20	642,468	481,236	75	78,180	12	43,632	7	39,420	6	2.56
36	347,724	102,264	29	245,260	160,440	65	38,700	16	24,024	10	22,296	9	1.07
41	506,652	131,328	26	375,324	274,272	73	63,480	17	20,796	6	16,776	4	1.07
43	208,788	56,712	20	224,076	132,492	59	42,372	19	27,180	12	22,032	10	1.06
50	183,684	28,296	15	155,388	103,392	66	35,184	23	9,276	6	7,536	5	0.80
51*	45,000	8,110	18	36,890	29,820	81	1,580	4	2,170	6	3,320	9	0.78
80	413,364	86,148	21	327,216	232,956	72	43,956	13	20,232	6	30,072	9	0.92
90	449,652	91,596	20	358,056	257,484	72	65,292	18	21,216	6	14,064	4	1.27
100	253,164	55,008	22	198,156	151,980	77	33,504	17	6,588	3	6,084	3	1.33
110	106,320	18,768	18	87,552	64,644	73	16,428	19	3,168	4	3,312	4	0.90
	33,258,116	6,847,791	21	26,410,325	18,357,282	69	3,994,408	15	2,275,774	9	1,748,852	7	2.31

*Discontinued Service April 25, 1981

agreements were reached with other operators in subsequent years. A monthly average for transfers with operators in the metro area and SDT is shown in Table III-11. Each operator's transfers increased from FY80 to FY81 except for the City of San Diego Dial-A-Ride. This decrease is attributable to San Diego DAR's overall loss in ridership from a fare increase, their institution of a zone limited system and a tie-in with Yellow Cab to cover missed trips. The total change for all systems was a healthy one-third increase, testimony to SDT's efforts for intersystem coordination.

TABLE III-11
SDT TRANSFERS FROM OTHER SYSTEMS
AVERAGE MONTHLY RATE
FY 80 - FY 81

FROM	FY 80	FY 81	% CHANGE
North County Transit	4004	4450	+11.1%
Chula Vista Transit	5907	6746	+14.2%
National City Transit	5276	8282	+57.0%
La Mesa Dial-A-Ride	642	978	+52.3%
San Diego Dial-A-Ride	53	5	–90.6%
County Transit Service	4936	6781	+37.4%
Strand Service	----	715	--
County Rural Project	93	----	--
TOTAL	20911	27957	+33.7%

RIDER DEMOGRAPHICS

As part of the coordinated planning effort in the San Diego Region, SANDAG conducts a periodic on-board transit ridership survey for public operators. During the fall of 1980 the most recent update to this survey was conducted. Every route in the system was surveyed by statistically sampling trips for both peak and off peak periods. Data which SDT receives from this survey is essential to its evaluation and planning process. This is the primary source of rider demographic information for SDT.

Table III-12 is a comparative summary of the 1980 and 1977 surveys. This table clearly shows the impact of the elimination of discount student fares on student ridership in July, 1980. At this same time

TABLE III - 12
SDT RIDERSHIP SURVEY SUMMARY
OCTOBER, 1980 (1977)

Language of Response	Sex of Respondent
91.2% (93.9%) - English	47.1% (43.7%) - Male
8.8% (6.1%) - Spanish	52.9% (56.3%) - Female
Type of Rider	**Age of Rider**
27.9% (34.0%) - Student	3.7% (7.8%) - 12-15 years
51.0% (36.2%) - Employed	37.2% (40.7%) - 16-24 years
10.4% (10.0%) - Senior Citizen	33.6% (29.1%) - 25-44 years
4.3% (2.3%) - Visitor/Tourist	12.1% (11.8%) - 45-59 years
9.0% (6.7%) - Armed Forces	13.5% (10.6%) - 60+ years
Number of Persons Living at Home	**Yearly Income**
20.1% (18.6%) - One	23.7% (27.4%) - - $5,000
26.4% (26.9%) - Two	26.8% (18.3%) - $5,000 - $7,000
18.1% (18.5%) - Three	26.8% (16.5%) - $7,000 - $10,000
14.0% (13.8%) - Four	16.7% (16.7%) - $10,000 - $15,000
9.5% (9.6%) - Five	21.1% (12.7%) - $15,000 - $25,000
11.9% (12.6%) - Six+	11.7% (8.4%) - $25,000+
Vehicles in Running Condition	**How Arrived at Bus Stop**
46.6% (42.4%) - Zero	67.2% (70.4%) - Walked
32.9% (34.5%) - One	1.5% (1.3%) - Drove
15.1% (15.9%) - Two	2.1% (3.2%) - Driven
5.4% (7.2%) - Three+	0.2% (0.2%) - Bike
	28.9% (24.9%) - Transfer
Trip Origin	**Trip Destination**
55.7% (53.2%) - Home	36.1% (38.8%) - Home
19.5% (19.7%) - Work	28.3% (22.6%) - Work
9.3% (12.9%) - School	9.7% (14.5%) - School
3.8% (4.8%) - Shopping	6.3% (7.7%) - Shopping
7.7% (6.1%) - Personal Business	13.2% (10.3%) - Personal Business
3.8% (2.8%) - Recreational/Social	6.1% (5.8%) - Recreational/Social
0.1% (0.5%) - Other	0.4% 0.3%) - Other

Type of Trip

22.1% (19.5%) - Home, Other
5.3% (4.7%) - Other, Other
42.8% (36.5%) - Home, Work
7.8% (9.9%) - Home, Shop
16.6% (23.9%) - Home, Education
5.4% (5.5%) - Other, Work

Source: SANDAG Transit Ridership Survey, 1980
CPO Transit Ridership Survey, 1977

however, the number of supplemental service trippers, which were utilized by student riders, was reduced because San Diego City Schools instituted more school bus service. The result to SDT was a reduction in school trips from 23.9% to 16.6%. The percentage of riders between the age of 12-24 decreased from 48.5% to 40.9% and student riders went from 34% down to 27.9%.

San Diego Transit has increased efforts to better serve the growing demand for transit service to and from employment centers. Table III-12 indicates that progress is being made in that direction. The percentage of SDT riders who are employed has increased 14.8% between 1977 and 1980 and the percentage of riders making work related trips has increased over 6% during that same period.

The household incomes of transit riders has also increased over the three year period. Currently, 49.5% of transit riders live in households earning over $10,000 per year, whereas in 1977 the figure was only 37.8%.

Figure III-8 is a computer map based on data gathered during this survey. The map illustrates the volume of transit trip ends (either origin or destination) by traffic assignment zone (TAZ) within the SDT service area. The area with the largest number of tripends is the CBD. Because of the intensity of land use in that area the TAZ's are smaller, resulting in less contrast with the surrounding TAZ's than if they were of equal size. The map does clearly show other major trip generators such as San Diego State University and the Fashion Valley and Mission Valley Shopping Centers.

A number of other significant findings may be taken from the survey. These include:

1. Most transit riders use the service often, 72.3% ride at least four days a week.
2. A large number, 42.5%, of transit riders do not possess a drivers license.
3. Most riders have a short walk to access transit, 91% walk less than five blocks to the bus stop.
4. More than half of SDT riders, or 51%, have been using the service for less than 2 years.
5. School and work trips combine for 63.3% of SDT's riders.
6. Express service trips are primarily work related, comprising 59.7% for this trip type.

FARE STRUCTURE

San Diego Transit maintains a basic flat fare system with no zone or transfer charges. An exact fare policy has been in effect since 1969 for speed and security in operations.

On July 1, 1980 SDT inauguarated a new fare program. The changes in the cash fare program are reflected in Table III-13.

Three types of passes were also available. Figure III-9 provides further information relative to the cost of monthly passes as well as transfer information for passengers changing from one type of service to

TABLE III - 13
SDT FARE COMPARISON
FY 80 and FY 81

	FY 80		FY 81	
Basic Cash Fare - Local	50¢		60¢	
Basic Cash Fare - Express	75¢		75¢	
E-H Fare - Local	25¢	(All Times)	30¢	(Off Peak)
E-H Fare - Express	35¢	(All Times)	30¢	(Off Peak)
Student - Local	40¢	(School Days Only)	60¢	
Student - Express	60¢	(School Days Only)	75¢	

another. Table III-14 shows SDT saverpass sales for FY81 by month by type. Since these categories were new this year, a comparison against previous years' sales would not be relevant.

FIGURE III-8

SDT TRIP ENDS
OCTOBER, 1981

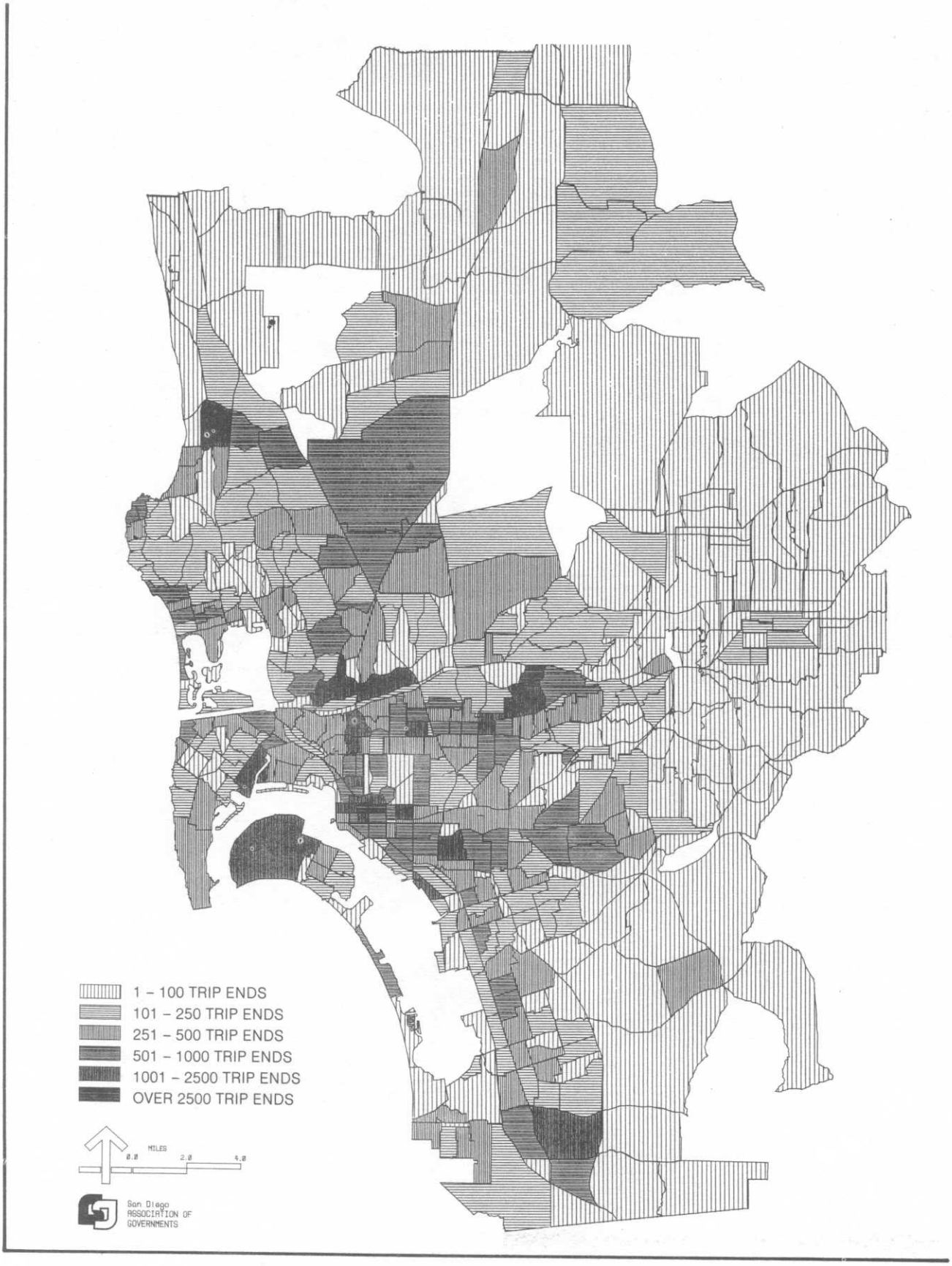
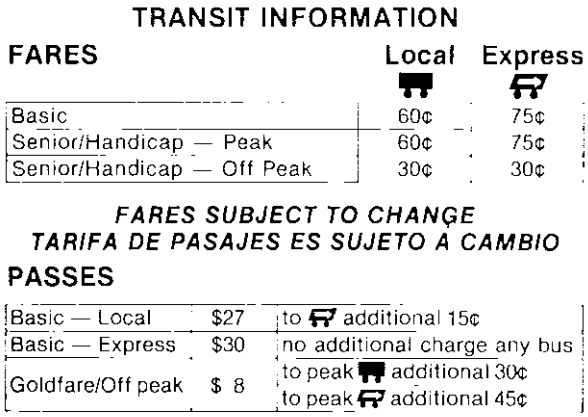


FIGURE III-9
SDT FARE AND PASS INFORMATION
FY81



TRANSIT INFORMATION

FARES

	Local	Express
Basic	60¢	75¢
Senior/Handicap — Peak	60¢	75¢
Senior/Handicap — Off Peak	30¢	30¢

FARES SUBJECT TO CHANGE
TARIFA DE PASAJES ES SUJETO A CAMBIO

PASSES

Basic — Local	$27	to express additional 15¢
Basic — Express	$30	no additional charge any bus
Goldfare/Off peak	$ 8	to peak local additional 30¢ to peak express additional 45¢

TABLE III-14
SDT SAVERPASS SALES
FY 81

Month	Total	Regular Saverpass	Express Saverpass	Regular Goldpass	Super Goldpass
July	7,362	3,157	693	3,512	N/A
August	7,466	2,790	726	3,950	N/A
September	7,920	3,110	804	4,006	N/A
October	8,873	4,279	916	3,678	N/A
November	9,127	3,030	975	5,122	N/A
December	9,393	4,707	796	3,656	234
January	9,562	4,123	928	4,088	423
February	10,093	4,340	1,005	4,241	507
March	9,638	4,308	1,009	3,827	494
April	9,300	4,048	1,032	3,730	490
May	9,336	4,251	965	3,663	457
June	8,668	3,668	893	3,656	451
TOTAL	106,738	45,811	10,742	47,129	3,056

The two most important fare changes in FY81 were the elimination of student discount fares, and the restriction of E-H reduced fares to off peak and weekend periods. A tight financial climate forced SDT into making these two critical fare decisions.

As was expected, the E-H fare policy was implemented with a significant amount of reaction from elderly and handicapped groups. While most individuals accepted and understood the necessity for the change, the primary resistance came from a few persons. The implementation process, overall, was smooth.

To make the transaction as smooth and understanding as possible, SDT:

1. Provided the public with extensive information regarding the peak-off peak fare program for E-H persons;
2. Made presentations to a large number of senior and handicapped groups explaining the rationale and operation of the program;
3. Developed clearly annotated public timetables denoting when peak fares would be in effect (Figure III-10);
4. Affixed cards to the farebox and on the inside of the first window to the left of the front door of the bus indicating whether or not the bus was operating a peak trip;
5. Changed drivers' schedules to indicate peak trips in order to insure that all operators would have a clear understanding on which trips were, and which were not, defined to be peak period. The sample shown in Figure III-11 also was a reminder to utilize the appropriate peak/off peak card from item 4 above.

These five steps were undertaken in July, 1980 when the fare structure changes went into effect. Since the $8 E-H Goldpass was valid for full fare only during the off peak, an additional fare was required during peak hours (see Figure III-9). Many seniors and handicapped persons still needed to travel during peak periods for medical appointments or volunteer work, trips which could not be scheduled for other, off peak times. In an attempt to help the E&H riders with the need for occasional peak trips, SDT, in December, 1980, inaugurated a super Goldpass with 14 peak trips, and an unlimited number of non-peak trips per month. When used on a peak trip, the bus driver punched one of the boxes marked with a "P." If it was necessary to transfer to another peak trip to complete the journey, the holder requested a transfer and used the transfer on the connecting bus. The peak trips on the pass were good on all SDT services. When all the "P's" were punched, the pass could still be used on non-peak trips, but it was necessary to pay the extra cash fare on peak trips. An example of this pass is shown in Figure III-12.

FIGURE III-10
SDT TIMETABLE IDENTIFYING PEAK HOUR TRIPS

ROUTE 33

MONDAY THROUGH FRIDAY

Coronado Ave. & 25th St.	1st St. & Palm Ave.	1st & Imperial Beach Blvd.	Coronado Ave. & 25th St.	Piccard Ave. & Kimsue Way	Palm Ave. & Beyer Blvd.	Coronado Ave. & 25th St.
5:42	5:50	5:52	6:00	6:10	6:14	6:20
6:12	6:23	6:25	6:39	6:47	...	...
6:25	6:36	6:38	6:52	7:00	7:04	7:09
7:25	7:36	7:38	7:47	7:55	7:59	8:04
8:18	8:29	8:31	8:45	8:53	8:57	9:02
9:18	9:29	9:31	9:45	9:53	9:57	10:02
10:18	10:29	10:31	10:45	10:53	10:57	11:02
11:18	11:29	11:31	11:45	11:53	11:57	12:02
12:18	12:29	12:31	12:45	12:53	12:57	1:02
1:18	1:29	1:31	1:45	1:53	1:57	2:02
2:18	2:29	2:31	2:45	2:53	2:57	3:02
3:23	3:34	3:36	3:50	3:58	4:02	4:07
4:23	4:34	4:36	4:50	4:58	5:02	5:07
5:23	5:34	5:36	5:50	5:58	6:02	6:07
...	6:04	6:07	6:14	...	...	...
6:23	6:34	6:36	6:50	6:58	7:02	7:07
7:15	7:26	7:28	7:42	7:50	7:54	7:59
8:25	8:36	8:38	8:52	9:00	9:04	9:09
9:16	9:26	9:28	9:42	...	...	...
10:15	10:26	10:28	10:42	...	...	...

SATURDAY SCHEDULE

Coronado Ave. & 25th St.	1st St. & Palm Ave.	1st & Imperial Beach Blvd.	Coronado Ave. & 25th St.	Piccard Ave. & Kimsue Way	Palm Ave. & Beyer Blvd.	Coronado Ave. & 25th St.
6:39	6:50	6:53	7:04	7:12	7:16	7:21
7:38	7:49	7:52	8:04	8:12	8:16	8:21
8:45	8:54	8:57	9:10	9:18	9:22	9:27
9:45	9:54	9:57	10:10	10:18	10:22	10:27

ROUTE 33A

SERVICE BETWEEN IMPERIAL BEACH AND OTAY MESA

Shaded areas denote Peak Service hours requiring **full fare** Monday thru Friday only.

Coronado Ave. & 25th St.	1st & Imperial Beach Blvd.	1st St. & Palm Ave.	Coronado Ave. & 25th St.	Palm Ave. & Beyer Blvd.	Piccard Ave. & Kimsue Way	Coronado Ave. & 25th St.
5:20	5:34	5:36	5:45	...	...	...
5:50	6:01	6:03	6:16	6:21	6:25	6:34
6:44	6:55	6:57	7:06	7:11	7:15	7:24
7:43	7:54	7:56	8:05	8:10	8:14	8:23
8:48	8:59	9:01	9:15	9:20	9:24	9:33
9:49	9:59	10:01	10:15	10:20	10:24	10:33
10:49	11:00	11:02	11:15	11:20	11:24	11:33
11:48	11:59	12:01	12:15	12:20	12:24	12:33
12:48	12:59	1:01	1:15	1:20	1:24	1:33
1:48	1:59	2:01	2:15	2:20	2:24	2:33
2:44	2:55	2:57	3:06	3:11	3:15	3:24
3:47	3:59	4:01	4:10	4:15	4:19	4:28
4:50	5:01	5:03	5:12	5:17	5:20	5:30
5:48	5:59	6:01	6:10	6:15	6:19	6:28
6:40	6:51	6:53	7:02	7:07	7:11	7:20
7:45	7:56	7:58	8:06	8:11	8:15	8:24
8:44	8:55	8:57	9:05	...	...	...
9:39	9:50	9:52	10:00	...	...	...
10:41	10:52	10:54	11:02	...	...	...

Coronado Ave. & 25th St.	1st & Imperial Beach Blvd.	1st St. & Palm Ave.	Coronado Ave. & 25th St.	Palm Ave. & Beyer Blvd.	Piccard Ave. & Kimsue Way	Coronado Ave. & 25th St.
6:07	6:18	6:20	6:32	6:37	6:41	6:50
7:05	7:16	7:18	7:30	7:35	7:39	7:48
8:09	8:20	8:22	8:34	8:39	8:43	8:52
9:09	9:20	9:22	9:34	9:39	9:43	9:52

10:45	10:54	10:57	11:10	11:18	11:22	11:27
11:45	11:54	11:57	12:10	12:18	12:22	12:27
12:45	12:54	12:57	1:10	1:18	1:22	1:27
1:45	1:54	1:57	2:10	2:18	2:22	2:27
2:45	2:54	2:57	3:10	3:18	3:22	3:27
3:45	3:54	3:57	4:10	4:18	4:22	4:27
4:45	4:54	4:57	5:10	5:18	5:22	5:27
5:50	5:59	6:02	6:15	6:23	6:27	6:32
6:45	6:54	6:57	7:10	7:18	7:22	7:27
7:50	7:59	8:02	8:15	8:23	8:27	8:32

10:09	10:20	10:22	10:34	10:39	10:43	10:52
11:09	11:20	11:22	11:34	11:39	11:43	11:52
12:09	12:20	12:22	12:34	12:39	12:43	12:52
1:09	1:20	1:22	1:34	1:39	1:43	1:52
2:09	2:20	2:22	2:34	2:39	2:43	2:52
3:10	3:21	3:23	3:35	3:40	3:44	3:53
4:09	4:20	4:22	4:34	4:39	4:43	4:52
5:20	5:31	5:33	5:45	5:50	5:54	6:03
6:10	6:21	6:23	6:35	6:40	6:44	6:53
7:25	7:36	7:38	7:50	7:55	7:59	8:08

SUNDAY SCHEDULE

Coronado Ave. & 25th St.	1st St. & Palm Ave.	1st & Imperial Beach Blvd.	Coronado Ave. & 25th St.	Piccard Ave. & Kimsue Way	Palm Ave. & Beyer Blvd.	Coronado Ave. & 25th St.
8:10	8:19	8:22	8:34	8:42	8:46	8:51
9:12	9:21	9:24	9:36	9:44	9:48	9:53
10:12	10:21	10:24	10:36	10:44	10:48	10:53
11:12	11:21	11:24	11:36	11:44	11:48	11:53
12:12	12:21	12:24	12:36	12:44	12:48	12:53
1:12	1:21	1:24	1:36	1:44	1:48	1:53
2:12	2:21	2:24	2:36	2:44	2:48	2:53
3:12	3:21	3:24	3:36	3:44	3:48	3:53
4:10	4:19	4:22	4:34	4:42	4:46	4:51
5:15	5:24	5:27	5:39	5:47	5:51	5:56
6:10	6:19	6:22	6:34	6:42	6:46	6:51
7:10	7:19	7:22	7:34	7:42	7:46	7:51

FOR HOLIDAY SERVICE, SEE SPECIAL HOLIDAY SCHEDULE

Coronado Ave. & 25th St.	1st & Imperial Beach Blvd.	1st St. & Palm Ave.	Coronado Ave. & 25th St.	Palm Ave. & Beyer Blvd.	Piccard Ave. & Kimsue Way	Coronado Ave. & 25th St.
8:35	8:46	8:48	8:59	9:04	9:08	9:17
9:35	9:46	9:48	9:59	10:04	10:08	10:17
10:35	10:46	10:48	10:59	11:04	11:08	11:17
11:35	11:46	11:48	11:59	12:04	12:08	12:17
12:35	12:46	12:48	12:59	1:04	1:08	1:17
1:35	1:46	1:48	1:59	2:04	2:08	2:17
2:35	2:46	2:48	2:59	3:04	3:08	3:17
3:35	3:46	3:48	3:59	4:04	4:08	4:17
4:35	4:46	4:48	4:59	5:04	5:08	5:17
5:36	5:47	5:49	6:00	6:05	6:09	6:18
6:35	6:46	6:48	6:59	7:04	7:08	7:17
7:45	7:56	7:58	8:09	8:14	8:18	8:27

Figure III-11
DRIVER SCHEDULE INDICATING PEAK TRIPS

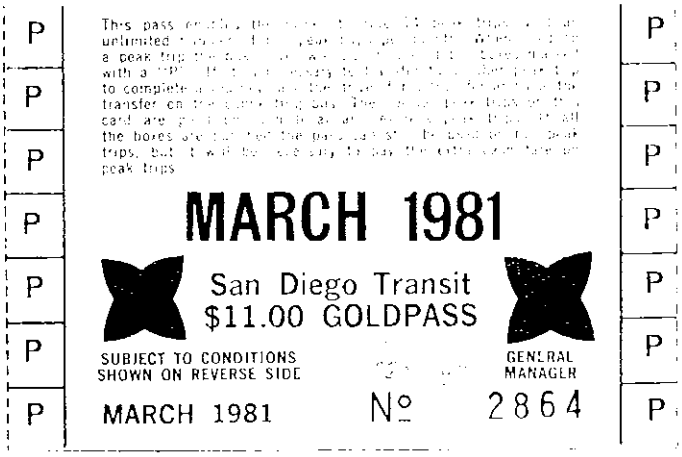
SAN DIEGO WEEKDAY SCHEDULES

@ ROUTE 33	WEEKDAY	SCHEDULE #3302			PULLOUT	535A	PULLIN	1129PM		
IRISSTAT	605	705	805	905	1005	1105	1205	105		
PIC&KIMS	613	713	813	913	1013	1113	1213	113		
PALMHOLL	621	721	821	921	1021	1121	1221	121		
SECOPALM	629	729	829	929	1029	1129	1229	129		
SECOIMPB	631	731	831	931	1031	1131	1231	131		
17THIBBD	640	740	840	940	1040	1140	1240	140		
19THCORO	644	744	844	944*	1044	1144	1244	144		
IRISSTAT	205	305	405	505	605	705	815	915	1015	1059/
PIC&KIMS	213	313	413	513	613	713	823	923	1023	
PALMHOLL	221	321	421	521	621	721	831	931	1031	
SECOPALM	229	329	429	529	629	729	839	939	1039	
SECOIMPB	231	331	431	531	631	731	841	941	1041	
17THIBBD	240	340	440	540	640	740	850	950	1050	
19THCORO	244	344	444	544	644*	744	854	954	1054	

@ – OPERATE AS ROUTE 33.
* – Take 15 minute lunch break at terminal.

– LIFT EQUIPPED BUS. CALL DISPATCHER WHEN PICKING UP OR UNLOADING WHEELCHAIR PASSENGERS.

FIGURE III-12
EXTRA PEAK TRIP GOLDPASS



OPERATIONS

FLEET

Description

SDT's bus fleet for FY81 remained at a total of 365 vehicles. A detail of this fleet is available in Table III-15. Included in the fleet are 45 sixty-nine seat articulated, 25 forty-nine seat single door express, and 23 twenty seat mini-buses in addition to the 272 standard coaches with seating for forty-five to fifty-one passengers.

Of the 365 vehicle fleet, 53 are being held in storage away from the maintenance facility as an energy contingency fleet. This leaves a total of 312 buses at SDT's bus yard. With an average of 47 vehicles undergoing maintenance at any given point in time, 265 buses are available for sign out. The peak vehicle requirement of 217, subtracted from the 265 buses available, then divided by the peak requirement determines SDT's spare fleet ratio of 22%. The adopted objective is 10%. This short-coming is addressed in Chapters IV and V.

Over the past few years, SDT has not met this 10% objective and the main reason why is indicated on Table III-15. Average bus age is 13 years as compared to the industry standard not to exceed 8 years. For FY81, the oldest buses are 24 years old, nearly double the recommended maximum of thirteen years. SDT's financial limitations since 1978 have caused readjustments to the annual budgets in that capital local match funds were needed for operations so the capital equipment replacement program has fallen behind. Steps to rectify this situation will begin with SDT's FY82 operations program as defined in Chapter V.

Articulated Buses

Because they are still relatively new to San Diego Transit, and, in fact, to the country, the 45 articulated buses continue to operate under close scrutiny. Initial problems such as specialized driver training, adequate curb length for safe passenger boarding and spare parts supplies have been resolved. Electric lifts were put into service by the maintenance department in May which allowed raising these three axle vehicles entirely off the ground for proper servicing. Transmission related problems were traced to faulty parts which a retrofit program has all but eliminated. The problematical air conditioning system was modified in September, 1980 by SDT staff under approval by the manufacturer. This system appears to be operating relatively well to date though some problems remain with the overly long flexible tubing

TABLE III-15
SDT EQUIPMENT PROFILE
FY 81

Series	Manufacturer	Number In Series	Year Purchased	Years Old	Seated Capacity	Number Air Cond.	Avg. Miles per Gallon Of Diesel Fuel
100	Mercedes-Benz	23	1974	7	20	23	11.5
200	GMC	29	1959	22	51	0	4.1
200	GMC	30	1960	21	51	0	4.1
300	GMC	49	1968	13	51	49	4.0
400	GMC	40	1972	9	51	40	3.9
500	GMC	49	1957	24	48	0	4.2
600	GMC	50	1967	14	45	50	4.5
700	Flxible	25	1974	7	49	25	4.7
800	GMC	25	1975	6	51	25	4.1
1000	M.A.N.	45	1978	3	69	45	2.4
TOTAL		365				257	
AVERAGE				13	49.9		4.0

Annual Fuel Consumption - 3,275,727
Oil Consumption - 202 miles per quart
Percent Air Conditioned - 70%
Total Mileage - 13,072,782
Average Annual Miles/Vehicle - 37,117

running between the tractor and the trailer of the bus. Initially, only two mechanics were trained to service the artics, now six additions provide a total of eight trained mechanics. Given that these vehicles may be considered as a bus and a half, this remains a very efficient ratio.

Two major problems remain. One is the lack of adequate work space. In addition to the planned SDT Second Division, a new three-bay building designed solely for maintenance and inspection of the "artics" is being programmed. Secondly, the artics are assigned to routes which require up to twenty-two hours of continuous service. Refueling and maintenance schedules do not permit this so that bus changes are required throughout the day. Scheduling is working on a revised program to alleviate this problem.

Lift Equipped Buses

At the beginning of FY81, SDT service included, scheduled, hourly, lift equipped service on two routes, 3 and 7. Five coaches had been retrofitted with lifts and placed into service in February, 1977. Through two and one half years of use, many mechanical/operational problems occurred. As a result, SDT determined in September, 1980 that the lift equipped service schedule could not be maintained so that this service was suspended indefinitely. Sixty-five new lift equipped coaches were received at the end of FY81 for September, 1981 service implementation. Since they utilize a different type of lift, it was decided to retrofit the five old buses with the same type lift as on the new buses to benefit from their advanced design and to simplify maintenance with a single type of lift mechanism. The new lift equipped bus service is discussed in Chapters IV and V.

Bike Racks

On July 1, 1976, San Diego Transit began operation of a bus-bike rack carrier system which handles up to five bicycles per vehicle. This service was initated on Route 9 which operated between the San Diego CBD and the City of Coronado via the Coronado Bridge which has no provisions for bicycle traffic.

In September, 1977, SDT added this service on two more routes; Route 41 from Fashion Valley Shopping Center to the City of Del Mar via the University of California at San Diego (UCSD), and Route 80 from Grossmont Shopping Center to Pacific Beach via the San Diego State University (SDSU). In January, 1978, Route 9 was combined with Route 37 which extended the bike rack service to

Pacific Beach via Crown Point. In September, 1980, Route 41 was cutback at UCSD and the North San Diego County Transit District (NCTD) began bus-bike rack service from Oceanside south to UCSD.

As can be seen in Figure III-13, bike rack service is available to a substantial portion of San Diego's recreational beach areas and to the two major universities. Also, free transfers are available to NCTD service to access many points in North San Diego County.

SDT now operates 16 bike racks in daily service. With two additional spare racks added in January, 1980, three spares are now available. All regularly scheduled runs on Routes 9, 41 and 80 are assigned buses with bike racks. Service is available on Routes 0 and 80 seven days a week and Monday thru Saturday on 41 since Sunday service was discontinued in April.

Ridership fluctuates by time of year, day of the week and time of day. Approximately 31,700 bicycles were carried in FY81 as compared to 13,000 in FY80. Applying SDT's average fare to these 31,700 riders yields approximately $6,000 per year from SANDAG to maintain, promote and distribute promotional materials for this service. Thus, the bike rack service should generate approximately $30,170 additional revenue in FY81. A breakdown of average daily ridership by route is shown in Table III-16. Note that average ridership is improved by at least 50% for all routes for all days over the past year. This may be attributed to both improved service and increased public awareness of the bike rack program.

TABLE III -16
AVERAGE DAILY BIKE RACK USEAGE
FY 80 - FY 81

	Weekday		Saturday		Sunday	
Route	FY80	FY81	FY80	FY81	FY80	FY81
9	14	34	13	38	18	31
41	6	24	9	14	6	9
80	5	13	13	32	3	15

With the exception of some minor administrative costs, the major costs incurred by SDT for the bike service occurred in the area of maintenance. The four major maintenance cost generators are: (1) Removing the racks each night to service the bus; (2) cleaning the racks; (3) road calls; and (4) repairs caused by accidents. It is estimated that the cost to maintain the system is approximately $110 per month for each of the 19 owned by SDT. In summary, this service brings in about $30,000 while costing $25,000 per year, and provides an increasingly popular extra dimension to public transit in metro San Diego.

As an aside but related bicycle user point of interest, SDT installed eight bicycle storage lockers for employees in February, 1981. All eight were immediately reserved by bike riding employees and a waiting list formed. This facility is in addition to a five bike security rack. CALTRANS furnished the new storage lockers.

Vehicle Assignments

Table III-17 provides a record of San Diego Transit's vehicle assignments by route. This shows the number of vehicles and their average age by peak period and off peak. Service to minority community areas is identified and any route exceeding the system average age of 13 years by more than two years by service period is noted. With eleven routes serving minority communities and two time periods (peak and off peak) each, four out of twenty-two exceeded the established guideline which can be considered reasonable.

FIGURE III-13
BIKE RACK EQUIPPED ROUTES

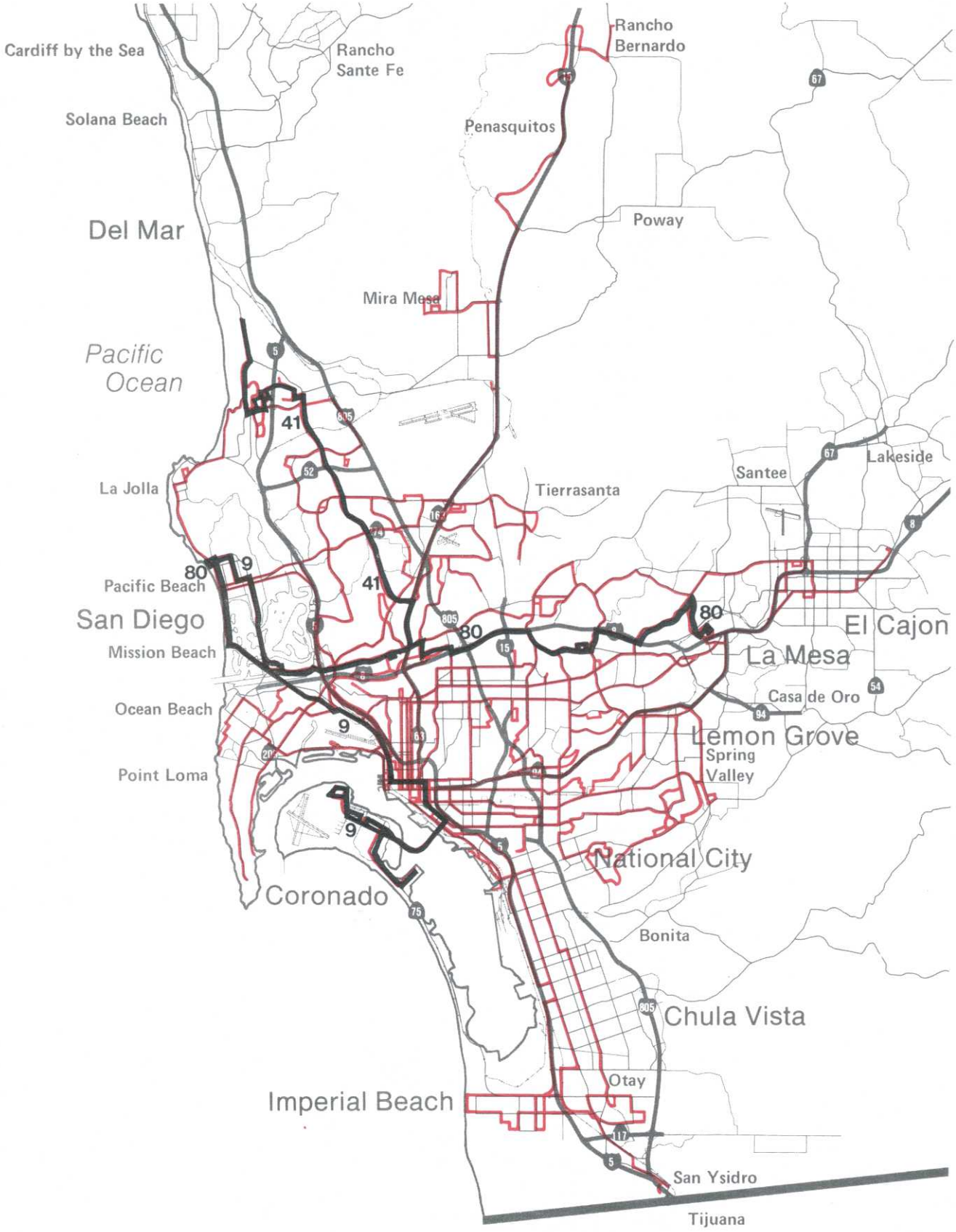


TABLE III–17
SDT VEHICLE ASSIGNMENT RECORD
FEBRUARY, 1981

Route	Minority Service	Time	Number Vehicles	Average Age
1		PEAK	6	19.8
		Midday	6	19.8
2		PEAK	10	15.3
		Midday	6	16.8
3	YES	PEAK	7	6.7
		Midday	7	6.7
4	YES	*PEAK	17	16.2
		Midday	7	15.0
5	YES	PEAK	18	12.7
		Midday	8	7.0
6		PEAK	7	10.6
		Midday	5	9.2
7		PEAK	24	12.2
		Midday	15	9.5
9		PEAK	12	8.8
		Midday	7	8.6
11	YES	*PEAK	14	16.9
		*Midday	8	15.9
12	YES	PEAK	2	14.0
		Midday	2	14.0
13	YES	PEAK	6	14.7
		Midday	4	14.3
14		PEAK	1	14.0
		Midday	1	14.0
15		PEAK	12	16.3
		Midday	10	15.6
16	YES	*PEAK	5	15.6
		Midday	4	14.0
20		PEAK	17	9.1
		Midday	7	7.0
21		PEAK	3	14.0
		Midday	2	14.0
25	YES	PEAK	8	14.0
		Midday	7	14.0
27		PEAK	5	14.0
		Midday	5	14.0
29		PEAK	12	15.3
		Midday	7	12.4
30		PEAK	5	10.6
		Midday	5	10.6
32	YES	PEAK	15	3.0
		Midday	15	3.0
33		PEAK	2	14.0
		Midday	2	14.0
34		PEAK	11	12.6
		Midday	8	11.6

TABLE III–17 (Continued)
SDT VEHICLE ASSIGNMENT RECORD
FEBRUARY, 1981

Route	Minority Service	Time	Number Vehicles	Average Age
35		PEAK	5	11.6
		Midday	4	11.0
36		PEAK	3	14.0
		Midday	3	14.0
41		PEAK	4	6.0
		Midday	4	6.0
43		PEAK	4	14.0
		Midday	4	14.0
50		PEAK	5	11.4
		Midday	2	7.0
51	YES	PEAK	1	14.0
		Midday	1	14.0
80		PEAK	4	9.0
		Midday	4	9.0
90		PEAK	10	8.7
		Midday	2	7.0
100		PEAK	4	10.0
		Midday	2	7.0
110	YES	PEAK	3	14.0
		Midday	2	10.0
System Average				13.0

* Indicates minority service by vehicles more than two years older than the system average.

DRIVERS AND SUPERVISORS

SDT employs 597 drivers and 24 supervisors. Current labor contracts allow for up to ten percent of the number of full time drivers to be hired for part time work. Part time drivers are limited to five hours per day. SDT could employ up to sixty part timers by contract but financially induced service cutbacks forced a layoff of the forty part time drivers employed by SDT for most of FY81. The part time drivers, when employed by SDT, provided a cost savings of approximately one-half million dollars per year.

An innovative concept implemented by SDT in FY81 was the Group Supervisors Program. Each of the 24 supervisors were assigned about twenty-five drivers each and given the responsibility for their conduct, development and growth. The supervisors devised a rating system based upon:

Driving Record	20.67%
Attendance	28.17%
Attitude	27.16%
Appearance	14.00%

This system was “matched in” with computer records on attendance, complaints and suspected abuses of sick leave. Since implementing this program, sick leave abuse and customer complaints are both down. Greater feedback has been noted from drivers on both questions and problems areas. Indications are that morale has increased for supervisors and drivers alike since implementing this program.

MAINTENANCE

This department employs 173 persons including 106 mechanics and foremen, and 67 cleaners, hostlers and janitors. It is the goal of this department to maintain a high standard of mechanical fitness while providing clean, reliable, and safe vehicles. To this end. three general objeclives have been identified:

1. To provide and consistently apply a reliable system for identifying Bad Order (B.O.) buses, seeing that any B.O. component of a bus is corrected and the bus is back into service in the shortest possible time.
2. To provide and consistently apply a comprehensive program of preventive maintenance so that the equipment will provide reliable on-the-road service.
3. To establish and consistently apply procedures to insure the proper daily servicing of each vehicle in the fleet.

During FY81 all management personnel received training in maintenance principals and approximately fifty mechanics received specialized, off property training.

PURCHASING

SDT's Purchasing Department has the responsibility for procurement of all materials and services as required. Included in this process are the ordering, buying, storing and inventory record keeping elements. For example, SDT operates buses supplied by four separate manufacturers and the resulting parts ordering, storage and delivery problems are complex. A major step to resolve this and other purchasing problems relates to the implementation of SDT's computer based purchasing and inventory control system, part of the MIS discussed later on under its own heading.

To assure compliance with UMTA third party contract guidelines, a San Diego Transit Corporation, Purchasing Manual was developed and adopted in FY81.

FUEL

Fuel requirements for SDT's operation are a function of the fleet miles operated and the miles per gallon obtained by the buses. Monthly consumption of diesel fuel averaged 272,977 for FY81 as shown on Table III-18, up from the 262,800 average in FY80. Since vehicle mileage decreased slightly in FY81, this shows that SDT buses were obtaining fewer miles per gallon. While it might be hoped that new replacement buses could achieve better mileage figures than the older, worn out buses, the miles per gallon for the oldest buses are not the worst in the fleet. This dubious honor goes to the articulated buses for which vehicle mileage increased in FY81, therefore increasing total consumption.

On-site fuel storage was more than doubled in FY81 and now totals 70,000 gallons which provides a one week supply. In an effort to assist in cost cutting, SDT changed from #1 diesel fuel to #2 in March, 1981. While the #2 fuel does not burn as cleanly as the #1, initial reports on performance indicate that it is not detrimental.

TABLE III–18
DIESEL FUEL CONSUMPTION
FY 81

Month	Gallons
July	279,649
August	284,056
September	280,144
October	303,076
November	265,915
December	275,205
January	284,818
February	262,421
March	286,932
April	270,880
May	242,077
June	258,353
TOTAL	3,275,727
Monthly Average	272,977

SERVICE ELEMENTS

One of the reporting requirements referred to in Chapter II is the Transportation System Management Element (TSME), which is submitted annually to UMTA by the regional transportation planning agency, SANDAG. The purpose of the TSME is to identify short-range strategies and projects designed to increase the efficiency of the existing transportation system. Since this includes public transit and San Diego Transit is the primary transit operator in the San Diego region, SDT is a major contributor to this report. Items identified as service elements will all be included in the transit chapter of the TSME. They follow in this section.

SYSTEM AND ROUTE EVALUATION

SDT has been a pioneer in the transit industry in developing quantitative and qualitative methodologies for system and route evaluations, procedures which have been refined since their inception in 1975.

At the system level, SDT utilizes two evaluation processes. One is a two-factor computation to assign departmental costs to a mileage and hour basis to determine a system average for each.

Table III-19 presents the percentage spread of departmental costs for operating hours and miles. This percentage of costs chargeable to hours and miles was determined on the basis of which factor is best utilized by the department.

After the costs are "spread" based on the percentage of hours and miles assigned to each department, the total mileage cost is divided by the total mileage traveled during the evaluation period. In this case, $4,630,476 is divided by 6,707,925 to arrive at a total cost of 69¢ per mile. The total hourly cost of $12,157,719 is divided by total hours of operation of 486,624 to arrive at a figure of $24.98 per hour.

The second evaluation process calculates the system efficiency measures. These measures include:

1. Total passengers per mile
2. Total cost per revenue passenger

3. Net cost per revenue passenger
4. Net cost per mile

Figure III-14 shows total passengers per mile. This is derived by dividing total passengers by total miles operated. All routes in the system are shown in this figure in comparison with the system average.

System average costs per hour and per mile are then multiplied by the respective hours and miles per route and the sum of these two figures equals the estimated total cost per route. This total cost per route is divided by the revenue passengers per route to find the total cost per revenue passenger. This is shown in figure III-15.

TABLE III–19
TWO–FACTOR COMPUTATION, FY 81
(JULY–DECEMBER, 80)

Department	Total Costs	Percent Hours Assigned	Hour Costs Assigned	Percent Mileage Assigned	Mileage Costs Assigned
General Manager	109,917	50%	$ 54,958	50%	$ 54,959
Transportation	$11,276,741	100%	11,276,741	- -	- - - - -
Maintenance	3,879,201	- - -	- - -	100%	3,879,201
Planning/Scheduling	193,675	50%	96,838	50%	96,837
Customer Services/ Marketing	278,936	50%	139,468	50%	139,468
Administrative Service	607,898	50%	303,949	50%	303,949
Personnel	129,704	100%	129,704	- -	- - -
General Expense	312,123	50%	156,061	50%	156,062
TOTALS	$16,788,195		$ 12,157,719		$ 4,630,476
	Hours 486,624			Cost per Hour $24.98	
	Miles 6,707,925			Cost per Mile ..... $.69	

Net cost per revenue passenger, shown by route in Figure III-16, is determined by subtracting the passenger revenue from the total cost and dividing the result by revenue passengers.

Similarly, net cost per mile is calculated by dividing the same net cost figure by miles of operation. Figure III-17 displays this measure route by route.

Table III-20 offers a summary for SDT with the system averages for FY80 and FY81. Total passengers per mile declined, as mentioned, primarily due to a loss in student ridership. All three cost measures had significant increases. This may be attributed to the omnipresent inflation factor plus SDT's maintenance costs which are running over budget at the time of this writing.

At the route level, San Diego Transit conducts a detailed evaluation of every route in the system on a quarterly basis. This assists the planning process in several ways. It allows analysis of any given route over time or allows analysis of any route against any similar route within the system or against the system average. This process is utilized extensively before making any changes to the system, be they increased frequency of service, route extensions, new service, or service reductions.

Currently, SDT utilizes four standards for route evaluation:

1. Passengers Per Bus Hour
2. Operating Ratio

3. Peak Load Factor
4. Revenue Hours

A composite score for the complete system is also derived. As an example of the evaluation process, the January-March 1981 quarterly evaluation is included in the evaluation of the FY81 SDT system further on in this chapter.

TABLE III–20
SDT SYSTEM EFFICIENCY MEASURES
FY 80 AND FY 81

MEASURE	FY 80	FY 81	% Change
Total Passenger Per Mile	2.6	2.5	– 4%
Total Cost Per Revenue Passenger	$1.05	$1.28	22%
Net Cost Per Revenue Passenger	$ .61	$ .76	25%
Net Cost Per Mile	$1.28	$1.48	16%

PERFORMANCE INDICATORS

Throughout the U.S., the transit industry has sought to establish performance indicators which would allow evaluation of a given transit property either by itself or in comparison to other properties. In most cases, this results in an apples vs. oranges situation since different definitions and methodologies are often used. SDT acknowledges the benefits of a common performance data set but has felt that many proposed indicators do not allow for adequate in-depth analysis. Therefore, a detailed data set is maintained and a monthly report on performance indicators is produced by data processing. This report utilizes eight general categories or areas for analysis:

1. Budget
2. Revenue
3. Cost
4. Passenger Utilization
5. Labor Productivity
6. Vehicle Utilization and Maintenance
7. Customer Complaints
8. Safety

HEADWAY

Headway is the scheduled time interval between buses for a given route. This is thought of by the riding public as frequency of service and is, therefore, a very important element. Very minor changes are noted between the past two years of operation. Headways are longer by one minute or two except for the evening period when the average was extended by eight minutes. All of these changes are due to the April, 1981 service cut backs of unproductive service.

TABLE III–21
SYSTEM HEADWAYS

Fiscal Year	AM Peak	Midday	PM Peak	Evening
1980	26	34	26	38
1981	27	35	28	46

FIGURE III-14
TOTAL PASSENGERS PER MILE
FY81

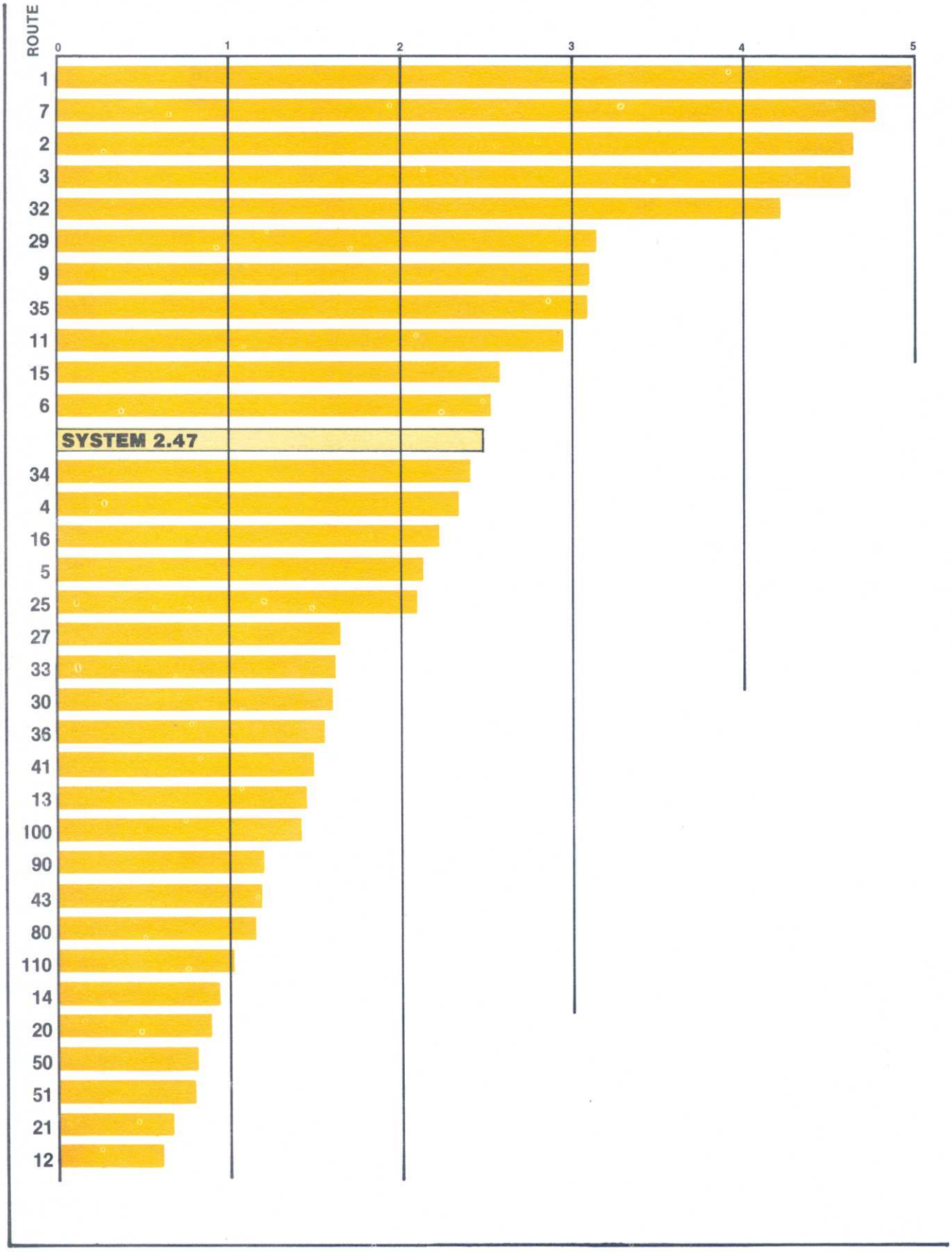


FIGURE III-15
TOTAL COST PER REVENUE PASSENGER
FY81

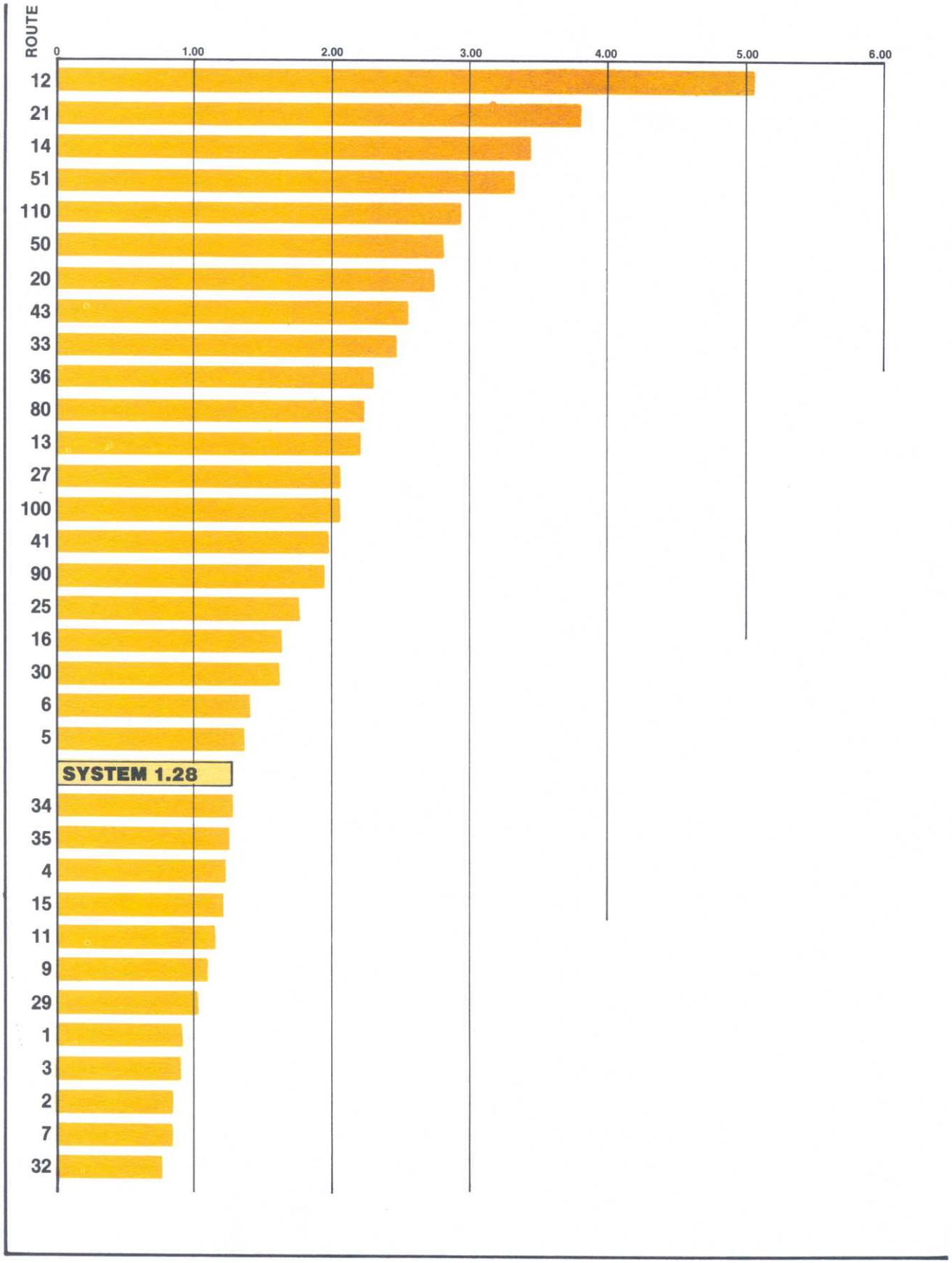


FIGURE III-16
NET COST PER REVENUE PASSENGER
FY81

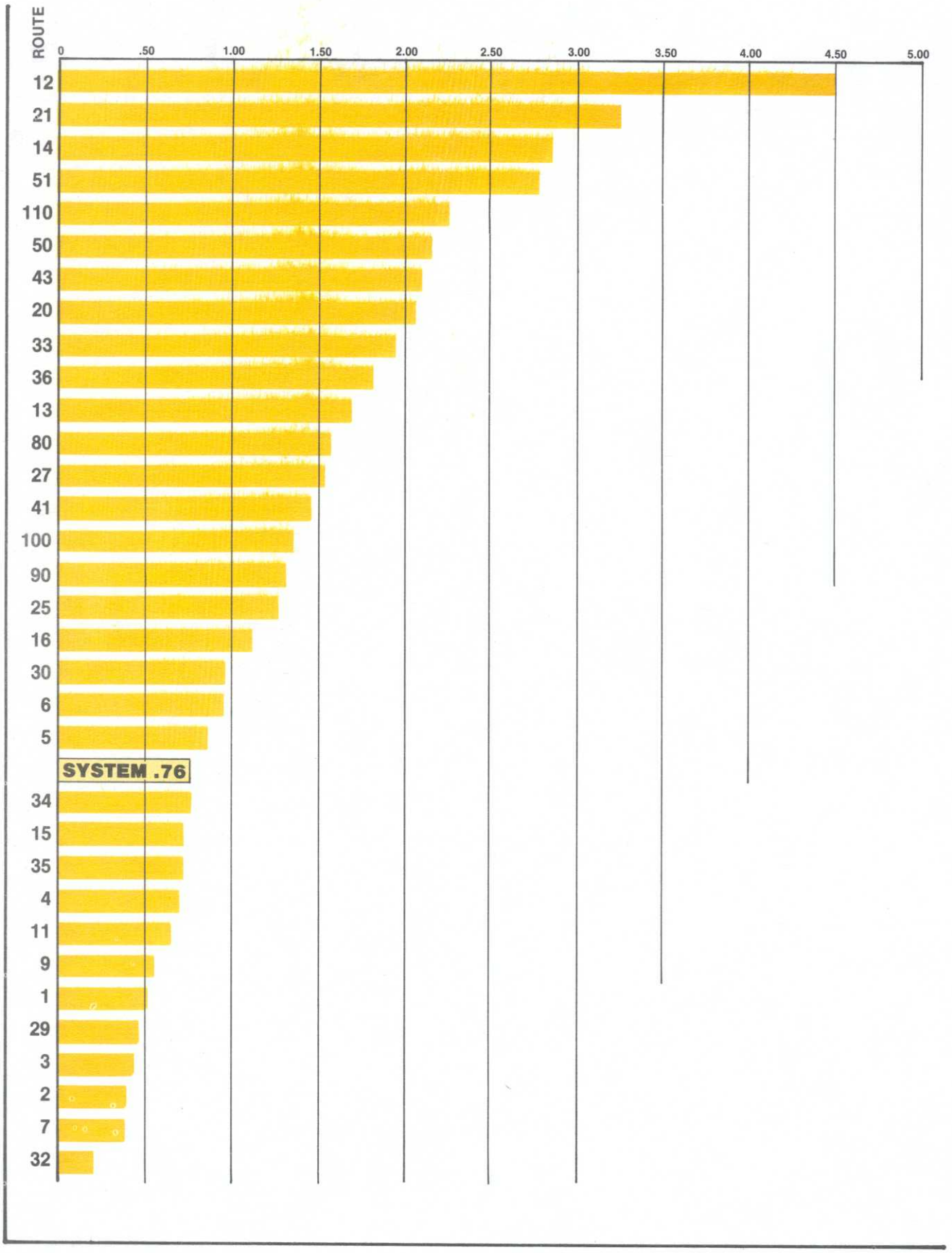
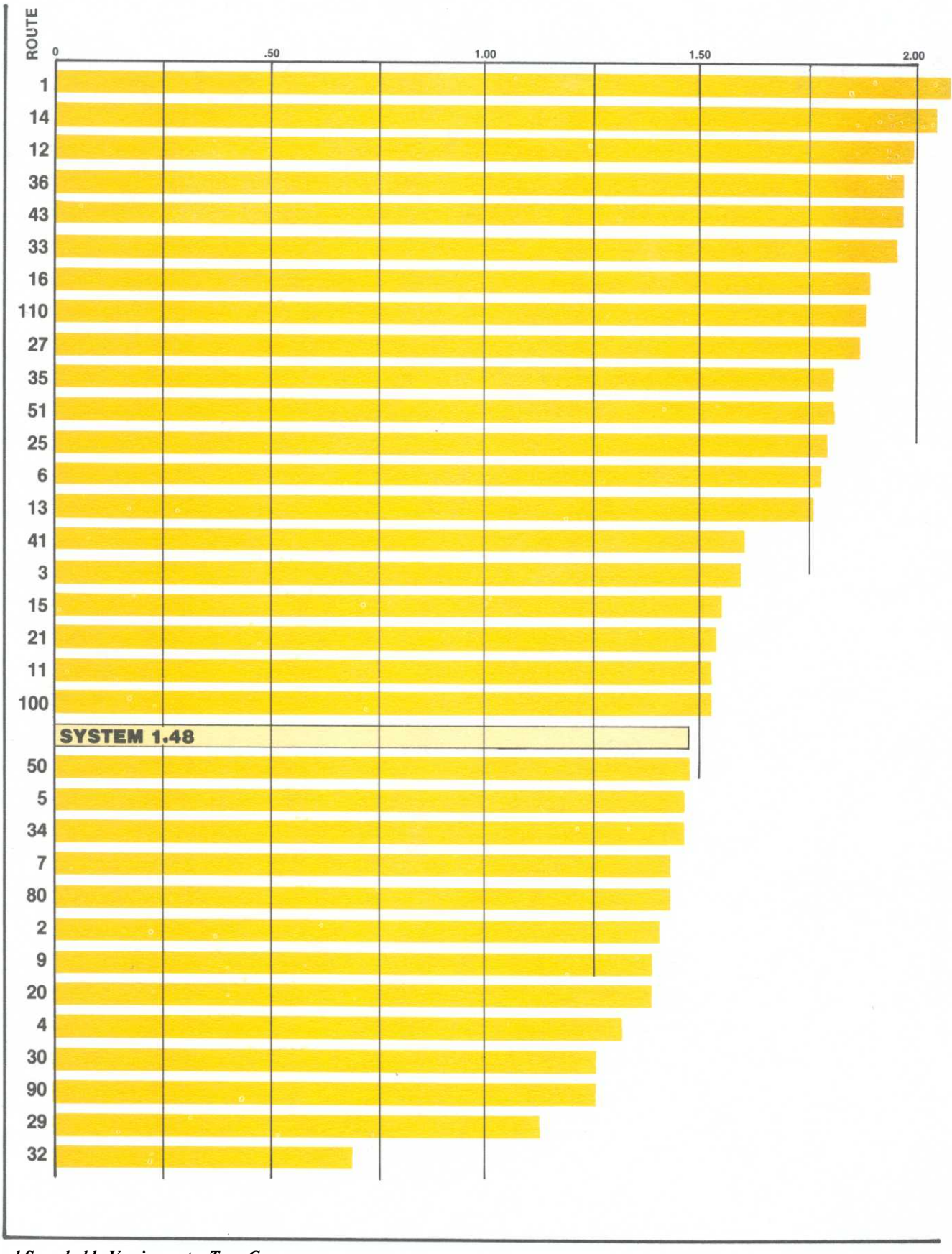


FIGURE III-17
NET COST PER MILE
FY81



PEAK HOUR LOAD FACTOR

Load factor is a measure of the seating capacity of a system in comparison with the passenger load carried. SDt performs this evaluation for the peak hour as a measure of the capacity of the system in compliance with Title VI requirements by UMTA. For each route, the number of vehicles operating in the peak hour is multiplied by the number of seats per vehicle to determine the peak hour seating capacity. This figure is then divided by the number of passengers on board as the vehicles pass a peak load point to yield the peak hour load factor. The SDT FY81 system load factor is shown in Table III-22. One hundred seats and one hundred passengers would calculate to a factor of 1.00. Any number over 1.00 indicates a standing load and less than 1.00 means that seats are available. The standing load factor for FY81 of 1.05 is an increase over the previous year peak load factor of 1.01.

BUS ST0PS AND BENCHES

In the 538 line miles of service in the SDT system there are approximately 3,700 nonduplicating bus stops. Policy calls for a bus stop every two blocks where population density warrants. The condition of these stops is continually monitored by operators, supervisors and through comments from riders. Maintenance of bus stops is a full time service with SDT.

In FY81, SDT began a review of all bus stops to determine the accessibility to the handicapped, as well as an attempt to remove some of the unproductive stops to help improve system speed. Stops designated as accessible will be marked with the international accessibility logo. Only those identified with this symbol will be served by SDT's lift buses.

Because of the mild climate in the San Diego area, very little need exists for passenger shelters. Seating at bus stops, however, is considered to be important. SDT's Board has established a policy calling for benches at all major traffic generators and at all stops serving more than 50 boarding passengers per day. About 1,450 benches have been installed for the SDT system by a private bench advertising company. Since some stops have more than one bench, the exact number of stops with benches is not known but is estimated at about 1,100 or 30% of all stops in the system.

TRANSIT CENTERS

The highlight of San Diego Transit's operational year for FY81 was the opening of the Fashion Valley Station in November, 1980. This transit center resulted front a unique cooperative effort between SDT and Fashion Valley Associates, property managers, plus the Hahn Property Management Corporation, developers for the Fashion Valley Shopping Center, a getting together of public and private entities for the mutual benefit to each.

The Fashion Valley terminal has been the second largest focal point in the system, after the San Diego CBD, with over 4,000 persons per day boarding or deboarding SDT buses. Realizing the importance of public transit to deliver shoppers and employees alike to the shopping center, the management and development team for Fashion Valley cooperated fully in the design and construction of the new transit station facility. Development took place during initial construction for expansion of the shopping center. The transit center is located on Fashion Valley property, immediately adjacent to the shopping

TABLE III–22
SDT PEAK HOUR LOAD FACTOR
FY 81

Route	Number Vehicles In Peak Hour	Number Seats/Hour Passing Peak Load Point During Peak	Number of Passengers Passing Peak Load Point During Peak	Peak Load Factor
1	3	153	153	1.00
2	3	153	206	1.35
3*	3	191	237	1.24
4*	4	204	219	1.07
5*	2	102	136	1.33
6	2	102	85	.83
7	7	376	417	1.11
9	2	102	127	1.25
11*	2	102	124	1.22
12*	1	20	16	.80
13*	2	102	86	.84
14	1	45	33	.73
15	4	204	249	1.22
16*	1	51	50	.98
20	6	351	251	.72
21	2	90	51	.57
25*	2	90	143	1.59
27	2	90	75	.83
29	3	153	227	1.48
30	3	153	164	1.07
32*	4	261	476	1.82
33	1	45	30	.67
34	2	102	119	1.17
35	2	102	142	1.39
36	2	90	61	.68
41	2	102	87	.85
43	2	90	57	.63
50	4	194	98	.51
51*	1	20	17	.85
80	2	102	72	.71

TABLE III–22 (Continued)
SDT PEAK HOUR LOAD FACTOR
FY 81

Route	Number Vehicles In Peak Hour	Number Seats/Hour Passing Peak Load Point During Peak	Number of Passengers Passing Peak Load Point During Peak	Peak Load Factor
90	5	251	248	.99
100	2	98	107	1.09
110*	2	100	59	.59
System Peak Load Factor				1.05

*Service to Minority Areas

facility. Since no land costs were involved and construction costs were minimized by coordination with the shopping center expansion, expenses came in at about 10% of the $3 million originally programmed for acquisition and construction as a totally public sector development. In addition to serving the obvious customer and employee demand for public transit, the shopping center was able to mitigate their auto parking requirements, as normally associated with major square footage developments, by including the transit station in their expansion.

The Fashion Valley Station is a seven bus facility with signal preemption controlled access and egress. Parking space is also available for supervisor/driver relief cars. Passengers are served by a sheltered seating area and markers (including Braille) for stops for each of the seven routes serving the station. Timed transfers between routes are part of the overall design. Graphic aids and telephone information facilities will be added soon to further assist the transit riders. Station design included features for full accessibility by elderly and by handicapped patrons. The station is maintained by the shopping center along with their other facilities.

Fresh from the success of the Fashion Valley Station, San Diego Transit has embarked upon development of the next facility on the priority list, the Midway Transit Center. This is being done as a cooperative effort with the San Diego Metropolitan Transit Development Board. A feasibility study and site selection were completed during FY81. It appears that a repeat of the Fashion Valley Station cooperative effort, this time with Convair, a major manufacturing employer, may again speed the implementation process and save the region's taxpayers another $2 million or so. Completion is currently scheduled for January, 1982.

PARK-AND-RIDE FACILITIES

The development of park-and-ride facilities is an important element of the transit plan. National experience has shown that park-and-ride facilities can successfully expand bus stop service areas and attract new patrons to transit services. Park-and-ride facilities may serve four types of trip connection:

1. Park-and-ride, in which patrons drive from their home (or other trip origin) to a designated facility, park their cars and ride transit for the next segment of their trip.
2. Kiss-and-ride, in which the patron is driven to the parking facility and dropped off to change to transit for the next segment of their trip. For the return trip the patron is picked up by private auto after riding back by transit, usually to the same parking facility.
3. Car pools, wherein the parking facility serves as an assembly area for groups of persons to store their own vehicles and ride to a common destination area with another driver of a private vehicle.
4. Bike-and-ride, in which persons bicycle to the parking facility, secure their bikes in provided areas, and change to transit for the completion of their trip.

SDT currently operates in the concept of park-and-ride through agreements with several shopping center owners by having established designated parking areas and bus stops in their parking lots. These

shared parking facilities may be considered semi-formal park-and-ride facilities. A more informal set of park-and-ride facilities exists where an observable number of bus patrons park on street or in vacant lots adjacent to existing bus stops. Table III-23 identifies these major existing semi-formal and informal park-and-ride activity sites in the region. These sites have attracted new transit patrons, thus adding emphasis to the need for a program of formal parking serving specific transit routes.

Only one formal park-and-ride lot exists at present in the metro area. The Mira Mesa park-and-ride lot, served by routes 20 and 21, opened in November, 1978. The site is fenced, lighted and landscaped with parking for 132 cars and 40 bicycles. Twenty bike lockers are available for cyclists to conveniently secure their equipment. Both motorists and cyclists have excellent access to the lot. The facility was developed on state and city property and financed by the Federal Government, the City of San Diego and San Diego Transit. It is maintained by the City of San Diego.

Currently, the lot is utilized to capacity for auto parking to access the bus or carpool. About 6 people each day ride their bikes to the lot and ride the bus.

BUS LANES

San Diego Transit currently utilizes bus lanes for loading/unloading in the 400 block of Broadway, San Diego's primary CBD street, and for priority access to Highway 163 at two on-ramps north of the CBD.

The Broadway bus lane allows one side of one entire block to be utilized as a transit stop. Being in the center of the downtown area, this is the primary stop/transfer station in the entire system. A few years ago, SDT participated in a test conversion of eight blocks on Broadway to through lanes for buses and taxis. Turns were prohibited to all other vehicles in this area. This proved to be greatly beneficial for SDT since up to six minutes running time was saved by buses operating the full length of the eight block demonstration area. Particularly as an element of Centre City redevelopment and the Enegry Contingency Plan, SDT staff will be working with City of San Diego, CALTRANS, San Diegans, Incorporated and any other appropriate agency staffs during the 1980s to further implement time and fuel saving bus lanes.

SPECIAL SERVICE

San Diego Transit operates a variety of special services through contracts with major employers or community groups. National Steel and Shipbuilding contracts for buses to carry employees from Mira Mesa, Clairemont and El Cajon to and from their National City shipyard. Similarly, special transit service is provided for employees at North Island Naval Air Station and, beginning in FY79, for the residential neighborhood of Tierrasanta, express service to Centre City San Diego.

Another type of special transit service is for special events such as large conventions and professional baseball and football games. Since the parking lot at San Diego Stadium cannot accommodate capacity crowds, this type of bus service is essential.

PASSENGER INFORMATION SERVICE

Passenger information is considered a vital service to existing and potential patrons of San Diego Transit. Seven techniques are utilized to convey "how, where and when" information to riders. First, schedules for each individual route are printed which contain timetables for major stops, route maps, transfer points, and transfer route numbers. Second, system maps displaying all routes for SDT are made available which identify major points of interest throughout the service area. Third, specific route schedule information is posted at approximately 180 bus stops. Fourth, the route schedules are available to passengers on board all buses for the respective routes being operated. Fifth, schedule racks containing route schedules, system maps and special brochures such as pamphlets on use of bike racks and special interest points accessible by bus are located at various banks, savings and loans, department stores, shopping centers, school and governmental buildings. There are over 230 of these racks throughout the service area. In addition, SDT operates a telephone information center which handles calls from 5:30 AM to 11:00 PM seven days a week.

TABLE III–23
EXISTING INFORMAL PARK–AND–RIDE ACTIVITY SITES

		Transit Service		Estimated Transit Stop Activity (6:30 – 8:30 am)		
Location	Type of Parking	Express	Local	Park & Ride	Kiss & Ride	Total
Fashion Valley Center	Surplus Parking Center Parking	20 & 80	6, 25, 25A, 41, 43	40	30	70
Mission Valley Center	Surplus Parking Center Parking	80	6, 25, 43	20	5	25
Parkway Plaza	Surplus Parking Center Parking	90	115	65	40	105
Lomita Village	Surplus Parking Center and On–Street Parking	110	4, 36	15	25	40
College Grove Center	Surplus Parking Center Parking	90	5, 12, 16 36	35	25	60
Grossmont Center	Surplus Parking Center Parking	80 & 90	15	40	15	55
Chula Vista Center	Surplus Parking Center Parking	100	32	30	40	70
Mira Mesa Blvd. @ Black Mtn. Rd.	Vacant Lot & On–Street Parking	20		95	60	155
Rancho Bernardo Rd. & I–15	On–Street Parking	20		20	10	30
Clairemont Square	Surplus Parking Center & On–Street	50	4, 5, 25	30	55	85
Fed Mart & Grossmont Blvd.	Surplus Parking Center & On–Street	90	15	30	15	45

Mini-information centers have also been established. The centers are either staffed by volunteer senior citizens or have direct line phones to the telephone information center at SDT.

A program for improving schedule information at major bus stops is underway. This includes displays with varying degrees of information from individual route departure times at bus stops to full service information systems with multiple route or system data at major transfer or loading stops.

PASSENGER SECURITY

The primary element of passenger security is the operating condition of the buses. SDT's Maintenance and Safety Departments work together to maintain a high standard for safe operations.

Another factor which contributes to passenger security is the two-way radio communications system which includes an operator activated emergency alarm. This system assures that all operators have ready communication to summon emergency health care of safety assistance at any time.

During FY77, SDT inaugurated a test program of placing telecameras on three buses. This program was started with two goals; (1) to reduce SDT's $54,000 annual cost for seat vandalism repair, and (2) more importantly, to increase passenger security.

During this period of the test, there were virtually no seat vandalism, no harassment of drivers, and excellent passenger acceptance of the camera equipped buses. In fact, many passengers have expressed the hope for more cameras. SDT intends to obtain 205 of these cameras as soon as funding permits.

SPREAD PEAK DEMAND

In the fall of 1974, SDT convinced the San Diego Unified School District that much better bus utilization could be accomplished is various schools staggered their start up and let out times. In response to this, most of the secondary schools have staggered their hours to take advantage of the better service. By staggering the demand, SDT has been able to carry more children with fewer vehicles. Before this arrangement a bus could make only one round trip, now some buses make as many as three trips.

Planning is currently underway with some of the region's major employers to develop staggered and/or flexible work hours to spread peak travel demand out over a longer time span to relieve peak

load capacities on transit. This concept is emphasized in the Energy Contingency Plan and is discussed in more detail on page 157.

INTRA-REGIONAL COORDINATION

San Diego Transit has long supported the concept of an ongoing transit district for metropolitan San Diego. A single operator can deal more efficiently with the issues of funding, system planning, fare policies, schedule coordination and transfers, public information and marketing. These issues call still be dealt with given a number of operators, but coordination efforts become all important. Under the existing condition in San Diego with one agency about to implement a fixed guideway system, five public operators providing scheduled, fixed route service and four others offering demand activated service, coordination is essential.

MTDB's guideway system to serve the southbay communities is scheduled to begin operation in July, 1981. During the current fiscal year, SDT and MTDB planning staffs have worked closely together on transit station design, route re-alignments, scheduled coordination and fare policy recommendations. A map of the proposed southbay service is shown in Figure IV-1. This joint planning effort will continue on through the time of implementation. Current coordination efforts with other operators within SDT's service area include schedule transfer point planning and transfer acceptance policies.

Even with eight public operators in addition to MTDB in the San Diego metro area, not every city or community can afford, or chooses, to be a transit operator. They find that contracting for service with an existing operator is a better solution to providing transit to their residents. Currently SDT provides contract service to seven cities plus unincorporated communities with the County of San Diego. Some of these jurisdictions are operators within their respective areas but also contract with SDT for intra-regional service. Table III-24 offers a summary of the contract service provided to suburban entities.

MANAGEMENT

MANAGEMENT INFORMATION SYSTEM

Information systems at San Diego Transit are managed in house by a team of data processing specialists, working to provide management with the facts and figures needed to operate a complex transit system. The computer, and IBM 3 Model 15D, installed in 1978 and upgraded to larger capacity in 1979, provides large scale effectiveness at small cost. This makes possible a high degree of performance and efficiency without the overhead and personnel demanded by a large scale computer. All data processing is done in house with the exception of the "RUCUS" (Run Cutting and Scheduling) program. This provides for information specifically designed to meet the needs of San Diego Transit in a cost effective and timely manner with a maximum efficiency.

A fully integrated Management Information System (MIS) has been designed and is in the process of being implemented to gather financial and statistical data from all functional departments. Subsystems which feed the MIS reporting system are now being automated and integrated into the central MIS. Subsystem relationships are shown in Figure III-18. Many heretofore manual systems are beginning to reflect the benefits of automation in terms of reduced clerical effort and fewer errors. A significant number of reports have been converted to micro-fiche thereby effecting cost savings in paper and storage space, while providing easier access to information. More use of micro-fiche is planned.

General Ledger processing provides detailed financial reporting and functional cost analysis as well as the data necessary to meet the UMTA reporting requirements. SDT has elected to report at level "A," the most detailed, for UMTA Section 15 statistical reporting. The first of these reports was made in June, 1979, on schedule.

This financial reporting system has been developed with expansion in mind so that MIS system will be able to process the larger volumes of data which would be required by a larger transportation network or a more complex management structure.

An automated data collection system has been implemented for gathering labor job/cost information. These data stations are also being used for gathering payroll information. The combined payroll/fare-

TABLE III–24
SDT SUBURBAN SERVICE
FY - 81

Suburban Entity	Route	Type Of Route	Days Operated	Hours Operated	Frequency	Passengers	Miles	Passengers Per Mile
Chula Vista	29	Local	All	4:30 am 1:33 am	30 minutes	182,734	71,987	2.5
	32	Local	All	5:00 am 1:53 am	15 minutes	565,130	111,825	5.1
	100	Express	Weekdays	5:47 am 8:04 pm	60 minutes	25,654	40,538	0.6
Subtotal						773,518	224,350	3.4
Coronado	9	Local	All	5:00 am 3:14 am	30 minutes	453,253	175,170	2.6
El Cajon	15	Local	All	6:06 am 7:35 pm	60 minutes	191,891	56,445	3.4
	90	Express	Weekdays	5:53 am 9:00 pm	60 minutes	61,214	38,862	1.6
	115	Local	Mon-Sat.	6:27 am 7:53 pm	60 minutes	67,940	37,689	1.8
						321,095	132,996	2.4
Imperial Beach	33	Shuttle	All	5:20 am 11:02 pm	60 minutes	62,270	62,457	1.0
La Mesa	7	Local	All	5:19 am 9:16 pm	60 minutes	45,674	23,873	1.9
	15	Local	All	5:40 am 8:56 pm	60 minutes	140,136	40,839	3.4
	80	Express	All	6:20 am 8:47 pm	60 minutes	37,991	43,800	0.9
	90	Express	Weekdays	5:53 am 9:00 pm	60 minutes	60,960	56,794	1.1
Subtotal						284,761	165,306	1.7

TABLE III–24 (Continued)
SDT SUBURBAN SERVICE
FY – 81

Suburban Entity	Route	Type Of Route	Days Operated	Hours Operated	Frequency	Passengers	Miles	Passengers Per Mile
Lemon Grove	16	Local	All	5:40 am 9:23 pm	60 minutes	11,585	28,313	.4
	36	Local	Mon–Sat	5:57 am 10:05 pm	60 minutes	61,136	48,808	1.3
Subtotal						72,721	77,121	0.9
National City	12	Local	All	6:22 am 9:12 pm	60 minutes	26,328	23,091	1.1
	29	Local	All	4:52 am 1:47 am	30 minutes	330,561	81,356	4.1
	32	Local	All	5:13 am 1:34 pm	15 minutes	362,118	113,977	3.2
Subtotal						719,007	218,424	3.3
San Diego County	11	Local	All	5:00 am 8:38 pm	60 minutes	29,276	28,780	1.0
	19	Peak Service	Weekdays	5:50 am 4:56 pm	3 minutes	52,832	11,379	4.6
	29	Local	All	4:31 am 1:38 pm	30 minutes	127,093	52,602	2.4
	32	Local	All	4:55 am 1:53 am	15 minutes	210,543	82,778	2.5
	36	Local	Mon–Sat	5:57 am 10:05 pm	30 minutes	22,711	44,231	.5
Subtotal						442,455	219,770	2.0
SUBURBAN TOTAL						3,129,030	1,275,594	2.5

box system is complete with on-line update capacity.

Until recently, San Diego Transit's Maintenance Department has been able to maintain adequate control over its parts inventory using a manual cardex system. In recent years, this system has become cumbersome due to the acquisition of diverse bus types from a variety of manufacturers, causing a disproportional increase in the number and variety of parts in inventory. Also, the energy crisis has created a greater demand for additional parts to maintain old buses. This demand has put pressure on parts suppliers and has extended delivery dates. The problem is reflected in the need for tighter inventory controls and better forecasting of needs. SDT staff is presently involved in developing a computerized system to cope with these problems.

The initial step of building a computerized parts master file has been completed, and this will greatly improve physical inventory procedures. The second phase will concern itself with developing an on-line system for inventory status. This will be integrated into the existing accounting system for Section 15 and General Ledger reporting and its targeted for 1981 implementation. The third phase will be an on-line purchase order generation system, which will be fully integrated into not only the inventory control system and the Section 15 reporting, but also will interface with the existing accounts payable and vendor history system.

The basic personnel subsystem has been completed during this year with performance and attendance information available on all employees. Trends for an individual's attendance can be monitored, thus allowing review of potential problems.

Future plans for MIS implementation include fuel monitoring, passenger counting, driver training, telephone information, automatic type-setting, schedule insert printing, stockroom security system, and budget forecasting.

MARKETING AND PUBLIC INFORMATION

For San Diego Transit, 1980 was a year for self examination to isolate areas that needed improvement, and to design programs to effect the necessary changes. This was true in the Marketing and Public Information Department as well as in the operational areas. The emphasis of the Marketing Plan for FY81 was to refine and expand programs started the year before rather than start new programs. Often it takes a year or more to lay the ground work for a program and get it started. If the program is discontinued at the end of the year, many of the possible benefits are lost. Therefore, the most effective use of staff time and budget was to build on the base already established but with emphasis on areas that were in the early stages of development. The Marketing Plan was aimed at:

1. Increasing the number of people in San Diego who are using the buses for some of their trips,
2. Encouraging present riders to use transit for types of trips that they do not currently use it for, and
3. Promoting the awareness of San Diego Transit as being part of the San Diego community; active, involved, concerned.

To achieve these goals, five programs were used including public information, employee relations, community relations and senior citizen programs, and a general advertising campaign encouraging off-peak ridership.

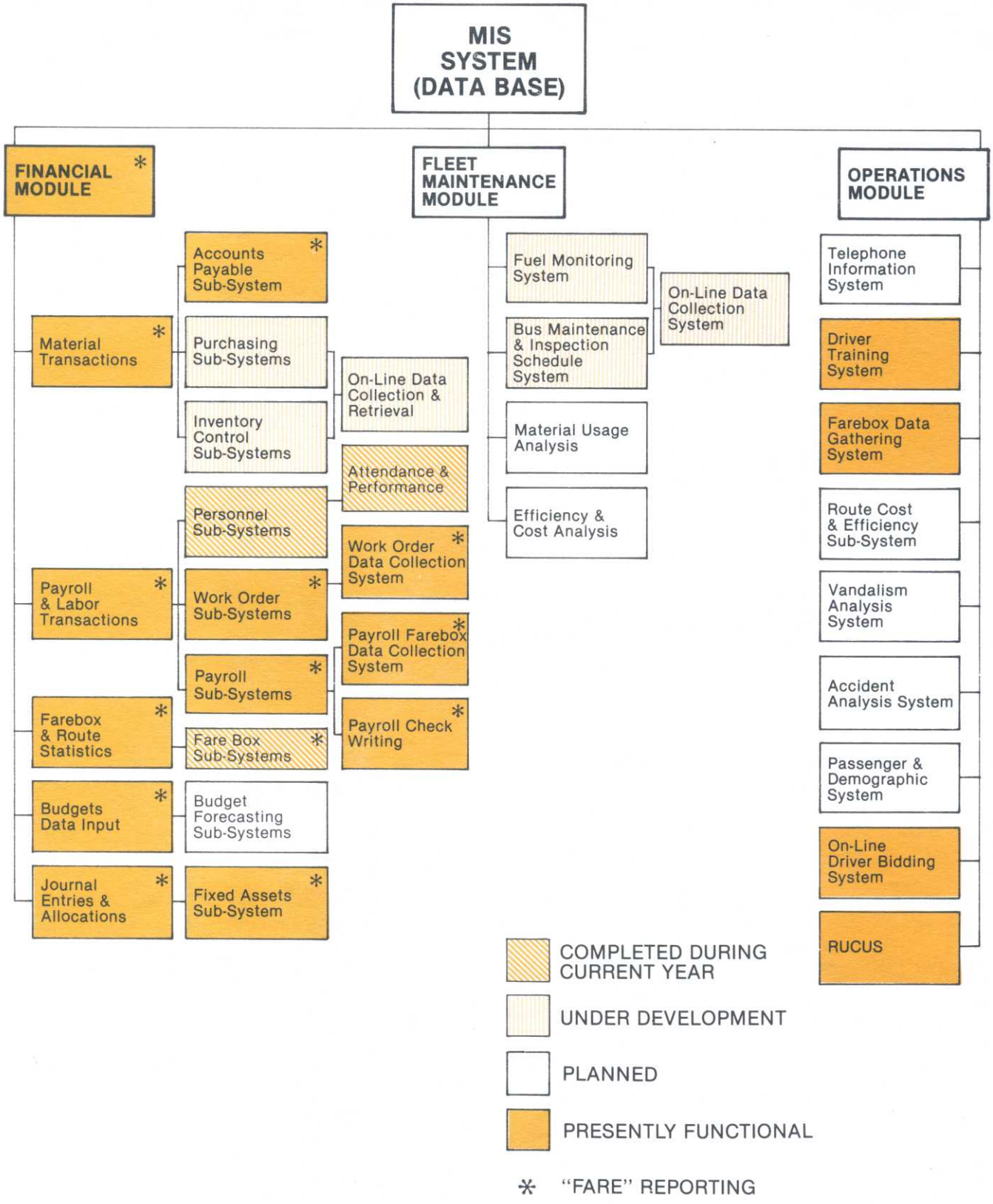
Public Information Program

Information to and from customers was the basis for all the marketing activities in FY81. People cannot use SDT's services if they do not know how. Information provided to them must be consistent, clear, simple, concise, and timely. An important part of this process is giving the customer a chance to let SDT know where passenger expectations and needs are not met.

The "How to Ride" public information program has 3 objectives:

1. To provide consistent, clear, concise, timely information to our customers and potential customers on the San Diego Transit System and how to use it.
2. To listen to customers' suggestions and concerns, work with other departments to solve problems, and then relate the results back to the customer in a clear and timely fashion.

FIGURE III-18
MANAGEMENT INFORMATION SYSTEM
FY81

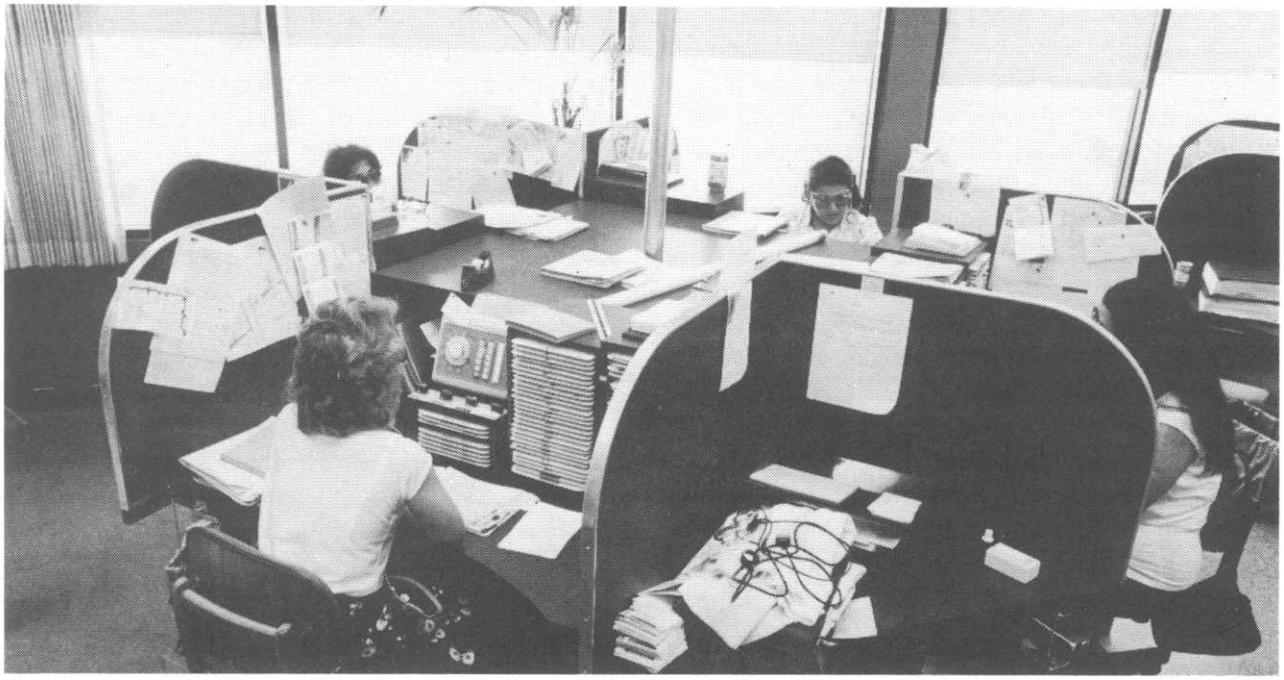


3. To evaluate each section of the How to Ride program to determine if it is functioning in the best manner possible and refine it as necessary so that it will contribute to the overall information exchange.

The program was made up of seven elements designed to achieve these objectives.

Regional telephone information system. The purpose of the telephone information service is to make transit information easily accessible within the home where most trip decisions are made. The system was made regional in FY80 so that public transit information for all of San Diego County would be accessible with only one phone call.

The SDT Telephone Information Office, staffed by 16 clerks (some of whom are bilingual) and two supervisors, is open from 5:30 a.m. to 11:00 p.m., 365 days a year. It is a regional system which answers calls for San Diego Transit, plus those for North County Transit District, Chula Vista Transit, National City Transit, and County Transportation Service. As of July, 1981 it will also include information for the new San Diego Trolley.



The equipment includes 10 telephone stations and 20 incoming trunk lines, four of which are from north San Diego County. As the calls come in they are assigned a number by an Automatic Call Distributor System (ACDS). The calls are then fed to the next available operator. While on hold, the customer hears a recorded message and then music. The Telephone Information Office also has the capability of giving information to deaf people by means of a TTY (teletype) hooked into the phone system.

From July, 1980 through March, 1981, the telephone information office received 757,946 calls and answered 673,920. Thus the lost call rate for the period was 11%. The average cost per call answered was 41¢ and the operators each averaged 34 calls per hour.

While the office is very productive and well managed, especially in light of the pressures put on them to learn the information for all the other transit systems in a very short time, there are several problems that need to be dealt with that are inherent in this type of information operation:

1. The more effective the system is in giving transit information, the more calls received requesting information.
2. To handle increased calls, additional operators must be hired which, in addition to increasing short term costs to the office (training time), increases the long term costs of salaries and benefits.
3. Although the operators may be very efficient, they cannot answer enough calls to generate enough additional rides and revenue to pay off their salaries.
4. SDT does not have the capability with this service to deal with extraordinary events such as flooding, accidents, major detours, and strikes; all of which dramatically increase the number of calls

lost. The only current option is to bring people in to work on their day off, a practice which increases sickness and mistakes on the job if continued for any period of time. It has also been found that part-time workers, unless they work at least 20 hours each week, lose speed at answering calls through lack of practice. Temporary help is also not a possibility because of the vast knowledge of San Diego and all the transit systems required of the operators.

There are basically two types of calls that come into the telephone information office; simple and complex. Simple calls consist of people asking when the next bus comes to their stop. Complex calls are requests for route information of the type "How do I get from here to there?," and other general information questions. It is the simple calls that have been found to be most volatile. If a way could be found to answer them without using an operator, this would flatten the call rate curve, improve the operator scheduling, and increase the capability to answer more complex calls. For that reason, San Diego Transit is considering installing a computer-based call answering system to answer the simple calls of the type "When does my next bus run?". The system being considered involves assigning each bus stop in the system with a unique phone number. The customer calls the number of his/her stop and listens for a computer voice to give the time when the next two buses arrive. "The next Route 13 bus arrives in 10 and 40 minutes." It will also give the status information such as "short delays due to an accident." The initial cost of the system is not small but can be justified because of the additional rider/ revenue that better, more accessible information will generate.

In addition to adding the automatic system San Diego Transit will take several other steps to improve the phone system:

1. Two additional telephone information operators will be added to handle the complex calls more quickly and therefore reduce customer waiting time.
2. A marketing campaign will be designed to encourage people to call for information during our less busy times; between 6-7:30 a.m. on weekdays and from 12:30-4:30 p.m. on weekends.
3. Another North County Transit trunk line will be added to handle the increased calls from that area.
4. Two additional evening shifts will be scheduled to handle our heaviest period which is from 3:30-8:30 p.m..

The telephone Information Office will continue to be closely monitored to find additional efficiencies, to maintain or reduce the cost per call, and to reduce the number of calls lost to 10% or less.

"How to Ride the Bus" brochure. This brochure continues to be one of San Diego Transit's most well-used information aids. It was updated and reissued several times this year. A mini-survey was conducted during the year to determine, from users, how the brochure could be made useful. While the sample size was small, it was a well chosen sample, and indicated that the guide is picked up to answer specific questions as well as general interest. It is usually not carried with the person, so additional copies of the guide are taken on an as-needed basis. While most customers felt that the guide had answered their questions, several suggestions were made to improve on its usefulness:

1. Different colors for each route.
2. More landmarks shown.
3. More streets and highways shown.
4. Make brochures different enough so it is easily distinguished from the timetables.
5. Change the name, something like, "San Diego Transit System Map and Users' Guide" rather than "How to Ride the Bus." The old title does not convey the information that the brochure includes a system map 82.
6. The brochure of the survey, should be more readily available on the bus.

As a result of the survey, the guide is being redesigned for FY .

Schedule racks. Another important customer information aid is the bus schedule published for each route. Thus, the distribution of schedules is extremely important to the use of the bus by new riders and increased usage by present riders. SDT has placed 125 large freestanding schedule racks in appropriate locations throughout the city. They are maintained weekly and kept stocked with the most current schedules, "How to Ride the Bus" brochures, and other information pamphlets. Because of the increased number of requests for racks, and the feeling that many of the existing locations were not as

effective as they could be, the entire system was inventoried and locations evaluated. Location changes were then made to better serve the needs of customers. In addition, 113 desk top racks holding six different schedules or brochures were distributed to locations that have a need for only limited number of schedules. The mini-racks with locations evaluated periodically, to determine if they are still effective.

Shakeup information. SDT schedules three system shakeups per year though additional ones are sometimes required. To inform transit riders of these changes, ads are placed in newspapers and flyers are made available on appropriate routes with new schedules and/or route information.

Inside the bus. Inside the bus it is necessary to provide customers with information regarding rules of the road and courtesies requested. Advertising space is sold to add to transit's income. On looking at the inside of the bus we discovered that it was cluttered and unclean, a generally unpleasant place to be. The Maintenance department implemented a cleaning program to cure part of the problem and transit staff from marketing/public relations, maintenance, and transportation got together to review the signs in the interior and come up with ways to improve the appearance. The committee came up with new signs which are standardized and less obtrusive, and a way of placing the advertising that was more aesthetically pleasing. The new signs will be on all buses by September, 1981, and all old signs will have been removed. It is felt that the new signs and advertising displays will make the buses more attractive and a more restful atmosphere.

Customer service activities. The customer service area is a very important one in that it gives bus riders an opportunity to make known their problems and concerns. It also can serve as a trouble-shooting function for the organization, making other managers aware of problems before they become crises. It is a source of data on recurring problems, and is a way, if well-handled, to enhance SDT's credibility with these riders. This year more time was spent analyzing the trends in complaints and dealing with chronic problem areas than in the past. SDT has also implemented a complaint procedure that allows easy follow-up with other departments and a shorter response time to transit customers.

In Transit. During FY81, a new source of entertaining and information was provided to SDT bus riders, In Transit, an on-board newspaper. The first issue of In Transit appeared January 23, 1981. The paper is a totally independent entity, in no way related to San Diego Transit.

The idea for an on-board newspaper was the inspiration of the General Manager who felt that if it worked on airplanes it was worth trying on buses. The paper is aimed at providing reading entertainment for customers while they are on the bus with stories emphasizing local attractions and events. The paper also gives passengers information transit changes that will affect them.

In Transit is a tabloid measuring 11 by 17 inches, folded in half cross-wise. At present it has 12 pages long but the publisher hopes to increase the size to 24 pages within the first year. Thirty thousand copies are printed and placed on the buses every other weekend. Copies are kept on the bus until the supply of papers is exhausted. The papers are placed in a special rack near the front door of the bus where they are easily accessible to the passengers when they board. The paper is free to the customer and is totally supported by advertising revenue. No transit funds are used in its production or distribution.

Each month San Diego Transit has one full page to use for advertising or informational copy. After the first year, in addition to the free advertising, San Diego Transit will receive 15% of the gross advertising revenue as a fee for the exclusive distribution rights on the bus.

The paper seems to be popular with the passengers and advertising sales are going well. As is true of any new publication, readership and advertising revenues will take time to build. After only four months of existence, however, it appears that the paper will be a success.

The first issue of In Transit contained a survey asking passengers how they liked the idea of the paper and what types of articles they would like to read. The responses showed enthusiastic support of the concept with numerous suggestions given for articles. After six months of operation a survey will again be conducted to determine if the paper is living up to SDT's expectations and to the publisher's.

SDT Employee Relations Program

Over the years it has become apparent that San Diego Transit employees, especially the drivers are a very important part of the service being offered to the public. In past studies, drivers' attitudes and behavior were the second most important aspect of transit to riders. It is essential that the employees be perceived as an important, on-going means for communicating with the riding public. Because all personnel with San Diego Transit have significant and varying degrees of effect on the development, delivery evaluation, and change of service to the public, all personnel should understand the marketing program goals and their means of accomplishment. Those personnel whose work does not bring them into direct contact with the public also need to understand how their work affects the public's usage of the system.

In spite of awareness of the need for a comprehensive program, because of budgetary and staff restraints, only a rudimentary program was implemented this year. The major vehicle for communication is the company newsletter, called Bus Stop. This year the newsletter format was redesigned. It became a monthly publication and an employee editorial committee was set up to make suggestions for articles. The issues are more employee-related and the response seems to be good.

This year, SDT also developed a new program of employee meetings with the General Manager. About mid-year it became obvious that FY82 was going to be an extremely difficult year for San Diego Transit, in terms of funding and morale of our personnel. The General Manager organized a series of meetings at various times through the week to discuss SDT's future, and invited all interested employees to come. The meetings were well attended and appreciated. Meetings of this type will continue whenever such major areas of concern arise.

To recognize excellent employees, SDT holds an annual Employee Awards banquet to give recognition not only to safe driving and safe work habits, but also to good attendance and good work performance overall. This year the winners were chosen by a committee made up of management, employees and Union officials based on set criteria and a numerical ranking system. The new system worked well and will be refined and used again next year.

Community Relations Program

San Diego Transit is an integral part of the San Diego community. It is a transportation, but it is not often perceived as such nor is its expertise fully utilized by civic groups or the business community. Because SDT is a tax-supported organization, it is very important for us to be available and visible to the public to answer questions and explain what is being done in public transit. To accomplish this, the staff and Board of Directors participate in the following activities:

Speakers bureau. A speakers bureau was established to make presentations to community, special interest, and educational groups on transit in San Diego. The response from these groups has been very positive. It has given San Diego a heightened visibility in the community and opened additional communication channels between San Diego Transit and the public.

Publicity releases. Periodic publicity releases have been issued dealing with special events and service changes. This year SDT increased the number of news releases issued and drew attention to positive efforts or actions taken by the Board or San Diego Transit management which might serve to meet the needs of the public. A special effort is made to continue to keep citizens informed of San Diego transit policies which affect them and the rationale behind those policies. A key element has been maintaining good rapport with the local media in order to encourage balanced reporting of transit activities.

Television and radio appearances. San Diego Transit representatives continued to appear on television and radio programs to explain SDT actions, rebut negative or misleading editorials, and to increase public awareness of San Diego Transit.

San Diego Transit personnel. San Diego Transit is undoubtedly viewed by the public as a rather impersonal entity. This can be partly overcome by providing the media with interesting stories on San Diego Transit personnel. In addition, insight into transit operations can be gained by stories featuring bus drivers, information clerks, or mechanics. Seemingly mundane operations, such as lost and found,

have generated human interest stories. An excellent story was one by the television media when the telephone information office installed teletype equipment to communicate with the deaf.

Annual report. This year's "Report To The Community" emphasized people and impressed on employees and the public how important good people are to providing good service. The annual report is sent to all SDT employees as well as to public officials, community leaders, and interested customers.

Community relations audit. The community relations activities were guided by an audit that was done by a local public relations consultant to show where SDT's strengths and weaknesses lay in terms of community relations. The audit has also served as the basis for an expanded community relations program for FY82.

Senior Program

The Senior Program has several objectives this year in addition to increasing usage of transit by seniors. Senior citizens are an active ridership group which uses the buses frequently and is very vocal in their demands. San Diego Transit has had communication problems with the senior community on occasion. As a result, a program was developed to achieve the following objectives:

1. Evaluate the needs, concerns, and travel patterns of seniors so we can better serve and communicate with them.
2. Increase the quality and quantity of communication and information between San Diego Transit and Seniors.
3. Improve the bus riding experience for seniors and stimulate more positive feelings from them toward SDT.
4. Increase the number of seniors riding during off-peak periods, especially on weekends.

The program elements designed to achieve the objectives includes activities begun last year, informational activities and two new elements; the senior hotline and the senior advisory committee.

Senior hotline. The Senior Hotline was established in February, 1981 to give seniors better access to San Diego Transit to inform us of problems with transit service and to make suggestions about improving the service. The senior community seems particularly subject to rumors, is always very concerned when transit changes occur, and needs and wants answers to their questions immediately. Complaints escalate in seriousness if they are not handled quickly. The seniors have expressed their feelings verbally and in writing that getting a busy signal when they call SDT for any reason is very upsetting to them. In addition, from the survey data received and from talking to senior groups, San Diego Transitstaff found that there was a lot of misinformation and misunderstanding among seniors about transit policies, procedures, and transit services available to them.

To alleviate some of these problems a special phone line was installed, staffed by senior volunteers, and operated from 9:00 a.m. to 4:00 p.m. on weekdays. At other times an answering machine takes down names and phone numbers so people can be called back by the next volunteer who is in the office. The volunteers who staff the Hotline are compensated with a free bus pass each month. To make the seniors aware of the new service, San Diego Transit ran ads in the senior newspaper and in the on-board newspaper and sent flyers to over 250 senior centers advertising the service.

From the comments received after only three months of operation we feel that the Hotline is contributing to the overall impression that Transit is trying to improve communications with the seniors. To date, however, usage has been small. SDT recently mailed the flyers to the senior centers and hope that word will spread about the service as a result. SDT plans to run a contest or an ad that encourages call-ins during the summer to see if usage can be increased. Also, a survey will be run in the senior newspaper in July asking for reactions to the Hotline and other senior programs.

There has been an unexpected side benefit from the Hotline. Having senior volunteers at San Diego Transitwhere staff can get to know them is working to dispel the idea that seniors only create problems and criticize transit. Until the Hotline was instituted, staff only saw seniors at Board Meetings when they were complaining about the system or fares.

It has also given the seniors a chance to see how San Diego Transit works from all insider's view. They are now more understanding of SDT's constraints and problems and spread the word among their

friends. The volunteers have also been very helpful in implementing other aspects of the senior program involving phone calls and bulk mailing.

It is planned to continue the Hotline for six months, promoting it whenever possible. After six months, the usage will be evaluated and then a decision will be made as to whether the service is a valuable one to continue, or if the funds could be better spent elsewhere.

Senior Advisory Committee. The Senior/Disabled Advisory Committee was originally formed in 1979 to deal with the issue of a senior/disabled photo-I.D. card which would qualify them to pay a reduced fare on the bus. The committee was so helpful in solving the problems and offering creative ideas that the San Diego Transit Board of Directors decided to expand the committee's advisory capacity to include all transit activities that were related to senior citizens and the disabled. The committee proved an effective way to communicate with senior and disabled people and helped San Diego Transit deal with senior/disabled concerns before they became problems.

The committee was originally composed of six seniors (nominated by the President's Council of Seniors) and one disabled person. Staff felt that better attendance was possible if the number was expanded to between 10 and 16. This was done in late 1980. After much discussion, the group decided that they could be more effective if they were just a senior committee. Senior and disabled problems were sometimes similar but not the same. It was felt that the disabled committee should have their own committee. Staff agreed to set up a disabled committee in mid-1981 or to use an existing committee such as the one already by SANDAG or MTDB. The committee adopted a set of by-laws and decided to meet every other month with special additional meetings when warranted.

The committee has discussed and offered advice on such issues as the marketing program to seniors, the $11.00 pass, the Senior Hotline, San Diego Transit finances and how they affect seniors, Courtesy Seating, and Senior/Driver interactions. The group has been extremely enthusiastic and cooperative with San Diego Transit, has provided us with valuable insights into senior perceptions and problems with transit, and has greatly increased the flow of information to and from the senior community.

The future plans for the advisory committee are to continue its meetings on a regular basis as long as the results are mutually productive to San Diego Transit and the senior community.

General Advertising Campaign

This year SDT's advertising campaign was run predominantly on the radio with some coverage in various print media. The theme was "Visit Exotic San Diego by Bus" –a travel ad to San Diegans about their city. The purpose of the ad was to sell San Diego as a great place to explore, especially during our off-peak periods, and provide them with an alternative to their car by which to do it. The effectiveness of the campaign is being measured in a Before-After Advertising Awareness Survey.

SAFETY AND TRAINING

SDT has combined Safety and Training into one department which has been assigned the responsibility of reducing losses in manhours and to equipment and property. This is done through a series of programs designed to reduce preventable accidents, to insure that employees understand their duties and responsibilities, to reduce assaults and vandalism and to reduce customer complaints.

Training

Drivers. All new bus drivers undergo an intensive 40 hour training class under the direction of the Manager of Safety and Training. A minimum of 20 hours of this training is behind-the-wheel instruction. The classroom portion deals with SDT policies and rules with special emphasis given to safety. Thus the new employee has a thorough knowledge of all his duties before being assigned to training under a line instructor.

Each new driver also has to qualify on every route operated by San Diego Transit. By this means the driver has minimum of 35 days of actual driving experience, under the guidance of a line instructor, in

handling the equipment, handling passengers, issuing and receiving transfers and, most importantly, learning the route thoroughly on a first hand basis. In this manner a new driver also becomes acquainted with each type of vehicle operated by SDT and learns to develop normal reflex actions to driving situations, rather than a need to stop and think, "What do I do now?"

The line instructor meets the trainee before beginning work to explain what is required for a particular route. The instructor then drives the trainee one full round trip in revenue operation. Upon completion of this round trip, the trainee takes over the bus in operation, and is evaluated on performance by the instructor. At the end of the day, evaluation cards are turned in to the Safety and Training Department, where they are reviewed and problem areas noted. The problem areas are then discussed with the trainee.

Near the completion of the six weeks of route instruction, the trainees are returned to the classroom to evaluate their knowledge of their duties. They are also required to pass an on-the-road driving test given by the Safety and Training Department. Upon satisfactory completion of all requirements, the trainees are then assigned to driver's duties.

The Safety and Training Department has also designed a driver retraining program and manual. This training emphasizes driver courtesy and safety. As a result of this program, driver complaints have been reduced. Defensive driving techniques are discussed as well as trends that have been established through a review of accident reports. Drivers are also made aware of eminent driving problems. Passenger and driver security procedures are discussed with a view toward reducing problems of assault and vandalism.

"Selftrain," a new and fully automated computer training aid, is now approximately 90 percent implemented and operational. Eight of the nine modules are complete and only that module dealing with route descriptions remains to be completed. Each new bus operator is given basic training with Selftrain on his or her first day of instruction and this is continued on a daily basis throughout the 40 hour training period. Each student spends approximately 10 hours on the eight completed modules which cover: employee policies, bus operations, bus maneuvers, fares and transfers, accident avoidance when turning, accident avoidance when passing, accident and emergency procedures and forms and reports.

The benefit from having student operators take these eight instructional modules is that each student receives exactly the same instruction which eliminates the often heard excuse, "I was never told that," as well as providing the instruction department with a complete printout of the test scores, the exact time taken by the student on each module and, most importantly, how much instruction and reinstruction each student required to reach a passing grade.

In addition to this basic training for new operators, the Safety and Training department has also instituted a retraining program for veteran drivers who demonstrate a particular weakness in any of the eight modules listed above. This has been exceptionally well received by these operators who have completely accepted the automated instruction system.

The ninth module concerns route descriptions in conjunction with which a map of the route is displayed on the CRT screen. In describing a bus route, Selftrain will display a map of the route, the names of major cross streets to the route and distances between turning movements and between cross streets. Landmarks will be noted where the bus turns and at major street intersections. Critical traffic conditions along the route will be noted. These include the number of lanes of traffic on each street of the route, the direction of traffic on each, speed along the route, points of traffic entering and exiting, the hours of regular traffic congestion and specific regulations and/or lanes for buses. In addition, transfer stops will be noted by street name and route number of the connecting route. At other stops, where a walkover transfer is possible, these locations will also be noted with the route number of the connecting route and the frequency of service on that route as well as answers to frequently asked questions about destinations.

The department has made a capital budget request of $29,000 for the expansion of the Selftrain system. If these funds are allotted the following modifications would be made:

1. The four existing terminals will be converted to high resolution terminals including all necessary changes in software.
2. Two new high resolution terminals will be added.

3. A multi-color plotter, including necessary software, will be added to the system.

The purpose of these modifications is to expand the capacity and resolution of the system. With these changes implemented, the scope of Selftrain can be expanded to provide detailed training and maintenance procedures, including computer graphics of a very detailed nature.

One of the special advantages of the new automated system will be its built-in continuity and consistency of instruction. Every student will receive precisely the same instruction. Another advantage of this system will be its built-in documentation of operators who have received instruction, the specific date of instruction, how much time was spent on the instruction, and, most importantly, how well the student responded and how much he or she was able to learn.

The Selftrain program will release instructors from the routine training and will allow them to spend more time in other training and retraining programs to introduce an element of sensitivity on human relations learning that is currently not adequately covered. It is obvious that as the numbers of elderly and disabled passengers increase, drivers will need to become more sensitive to their individual situations and needs. Selftrain will assist in filling this very real need.

Maintenance Personnel. All new maintenance employees are scheduled to attend a safety training class. In this class, rules and policies are reviewed and a copy of SDT's "General Safety Manual" is given to each employee. The training consists of yard and garage area safety as well as on-the-road safety policies. It includes a familiarization of all types of buses and bus components.

Those maintenance employees who will be required to operate buses are required to attend twenty hours of behind-the-wheel training. This training includes bus handling and defensive driving techniques used on the road as well as those used in the yard. Thorough training is given on the use of the bus washer, how to drive onto maintenance pits and proper backing procedures. The final phase of training involves a refresher course in behind-the-wheel training just prior to the employee's advancement. All maintenance employees receive a twice-a-year retraining course.

Safety

All SDT vehicles are required to meet specific standards for appearance, comfort, and safety. The Safety and Training department, in conjunction with the Maintenance department, is continuing its ongoing program of securing maximum usage of equipment and optimum output from personnel in order to maintain these standards. The items that are covered are as follows:

1. Clean windows.
2. Adjustable, clean, crack-free mirrors.
3. Body condition.
4. Tire tread and sidewalls.
5. Interior floors, ceiling and trim.
6. Clean and comfortable seats.
7. Heater, air conditioning; operation of blowers.
8. Windshield wipers and horns.

All accidents are reviewed by the Safety department. If special investigations are required of any vehicle, they are requested through the Safety and Training department. There are two classifications of accidents; preventable and non-preventable. If there is no doubt of preventability, or a question arises in determining preventability, the person involved is requested to come to the Safety office for an interview. A determination is made prior to completion of the interview, and if the accident is determined to be preventable, the person is advised as to why it is judged preventable, and is instructed in defensive driving techniques that could have prevented the accident.

Although the primary purpose of accident and injury reports is to protect the company in the event of subsequent claims and/or litigation, these reports serve a useful secondary purpose to establish historical records.

Route safety evaluations, for example, will give SDT information in the following areas:

1. Troublesome locations.
2. Types of incidents.

3. Types of vehicles involved.
4. Types of people involved.

The number of complaints received from passengers about drivers has been reduced. The retraining program, in part, deals with human relations and how best to deal with personal situations. Since the bus driver is the primary personal contact which a passenger has with SDT, it is important that the driver understand human relations and be trained in the best and most consistent manner to handle a given situation.

In an effort to broaden this aspect of safety, two fulltime evaluators have been riding with operators during their normal working day for the past year. These evaluators are not candid checkers; they make their presence known and explain to the operator that they, are there to assist as well as check on his or her operational procedures.

The evaluator checks the basic operational quality of the driver; does he or she observe good road space, are the right and left turns being made in safe and proper manner, is the positioning, of the bus in traffic as it should be, are the pull-ins to and pull-outs from a bus stop smooth, regular and properly executed? These and many other operational procedures are checked. In addition, the attitude of the operator is observed and noted; does he or she smile, does he have good eye contact when speaking to and assisting a passenger; does he or she display bad body language, does he or she say “please” and “thank-you” and generally behave in a professional and polite manner?

These evaluators complete a question evaluation sheet on which the operator is scored. Additionally, the evaluator writes brief but detailed reports to supplement the various observations made on the checksheet.

To date the safety department has evaluated 533 of a total of 563 operators. The areas of common and easily correctable errors in driving techniques are:

1. The operator drives the bus with all or some part of his/her hand(s) inside of the rim of the steering wheel.
2. The operator opens the front door (of the bus) before the bus comes to a complete stop.
3. The operator fails to bring the bus to a complete slop behind the limit line/crosswalk.
4. The operator does not brake in a smooth manner.
5. The operator uses excessive accleration/speed when leaving a bus stop.

The concern a passenger has about personal security on the bus is an important consideration. SDT’s tele-camera program and two-way radio equipment serve to reduce passenger anxiety.

SDT continues to pursue several other avenues towards achieving additional security. Among these is the liason with school authorities and the San Diego Police Department.

The Safety and Training Department has direct contact with the Police School task force and all school vice-principals. When a problem presents itself, the driver notifies the Safety department which, in turn, notifies the school and, if necessary, the Police School Task Force. The cooperation extended by these agencies has continued at a high level and is beneficial to SDT.

If necessary, for a specific problem, the Manager of Safety and Training visits the school in question and works with the vice-principal and the drivel in seeking a solution. This approach has been extremely effective in controlling assaults and vandalism on supplemental bus service.

Reducing vandalism and assaults is a major area of emphasis. Reduction of these types of occurrences not only improves the morale of bus drivers, but also improves SDT’s image to its passengers and to community in general. Continued communication with police departments as to specific problem areas assures SDT that police surveillance and/or assistance is more responsive. Coordination with community and special task forces (sponsored by police departments) assures action in troubled areas. Tele-camera installations on buses have further reduced problems in the area of assaults on drivers and passengers.

Reducing the number of claims arising, from vehicle accidents, passenger injuries and industrial injuries have a significant impact on job duties and a thorough defensive driving course tends to reduce accidents that are common to new drivers.

Compilation and evaluation of incidents is aimed at aiding in the understanding of SDT's claims. Investigations pinpoint high cost areas and indicate where efforts should be concentrated. This informa-

tion is communicated to the police indicating trends and troublesome areas. Passenger safety and system security is an ongoing program, 365 days a year.

The Safety department makes daily inspections of the property. Contact is made with employees regarding safety practices as well as problem areas. In addition, the department investigates security problems and reviews any physical changes that occur which may require safety supervision. The Safety department also looks closely for unsafe work procedures and/or conditions that may exist. Items coming into the department's attention are noted, marked "imminent" and are corrected as soon as possible.

On a weekly basis, the department runs a housekeeping (cleanliness) inspection. Deficient items are noted and turned over to the maintenance foreman. When corrective action is taken, Safety is then called to reinspect the items. First aid kits are also inspected and replenished on a weekly basis.

Once a month, the safety department makes a thorough inspection on a different department. All standing equipment is inspected, department safety procedures are analyzed, and checked when applicable. All fire extinguishers are physically inspected on a once-a-month basis and once a year the extinguishers are checked and recharged by a qualified licensed firm.

The afety department is alert in the area of product evaluation. Every product that is used must meet federal, state, local and Occupation Safety and Health Administration (OSHA) standards for safety. Proper identification of all products is essential, and personnel using the product must be thoroughly indoctrinated in its safe use.

HUMAN RESOURCES ELEMENT

San Diego Transit employed 941 persons as of October, 1980. This was an increase over the previous year's total of 873. Cutbacks in service, described under Routes in the System Description section of this chapter, reduced the FY81 employment to 867. All data in this section is based upon the 941 level.

Table III-25 represents a breakdown of employees by racial category by departmental area.

TABLE III-25
SDT HUMAN RESOURCES
FY 81

	Total	Causasian	Black	Hispanic	Asian/ Pacific Islander	American Indian Alaskan Native
Operator	637	377	174	66	18	2
Maintenance	173	84	29	44	16	0
Clerical	54	38	2	8	4	2
Administrative	77	62	6	6	3	0
TOTAL	941	561	211	124	41	4

SDT is proud of the progress made by its Affirmative Action Program. Table III-26 clearly displays the gains made in employment of overall minority groups as well as females since it was determined in 1973 that improvements should be made. It remains a goal that female employment should continue to increase over the next five years.

Table III-27 presents a profile of all employees at SDT by department. This includes average years of service with the company which increased to 7.8 years from 6.7 years in January, 1980. Average age increased by half a year from 37.7 years to 38.2. The third area, the very important turn over rate, went down, dropping to 8.0% from 9.2% as it was fifteen months earlier.

SDT has a program designed to support development of management staff by training programs. Mid-level managers are encouraged to attend seminars and work shops in order to meet their individual needs for training and development. A management consultant has been retained to work with top management, maintenance foremen and transportation supervisors. This consultant has tailored programs for each of these groups to provide the skills and training as needed in their respective areas.

TABLE III-26
AFFIRMATIVE ACTION EMPLOYMENT
1973 - 1980

Year	Minority Employees	Female Employees
1973	21.4%	11.1%
1974	25.2	12.7
1975	28.1	14.3
1976	29.9	15.1
1977	33.0	16.3
1978	33.0	16.3
1979	36.7	17.5
1980	40.4	18.6

TABLE III - 27
SDT EMPLOYEE PROFILE
APRIL, 1981

Department Area	Years Service	Average Age	Turnover Rate
Bus Operators	8.0	38.9	6.8%
Maintenance	6.6	34.1	10.7%
Clerical	7.9	40.3	10.7%
Administrative	9.0	40.6	10.3%
TOTAL	7.8	38.2	8.0%

San Diego Transit Corporation has two unions on the premises, Amalgamated Transit Union (ATU), Local #1309 representing the bus operators and clericals, and International Brotherhood of Electrical Workers (IBEW), Local #465 representing the maintenance employees.

PLANNING

San Diego Transit has had in house planning capabilities since 1973. Basic responsibilities include system and route evaluations, development of one and five year development plans and capital programs, system data gathering, analysis and forecasting, agency coordination, bus stop maintenance, brushfire fighting and informational services including schedule and special announcement graphics.

Three specialized planning tools are utilized to support the planning function. They are a system and route evaluation procedure, TRANES and the Regional Surveillance Passenger Counting Program. A fourth tool is being developed which will identify home to work trip demand from the CALTRANS Commuter Computer data files.

System and Route Evaluation

SDT staff conducts a quarterly system and route evaluation. Low Four standards are utilized for route evaluation as shown on Table III-28

TABLE III - 28
ROUTE EVALUATION STANDARDS

Evaluation	Standard	Data	Data Source
Percentage Revenue Hours	70%	Revenue Hours, Total Hours	RUCUS "OPERSTATS"
Total Passengers/Trip	30%	Total Passenger, Trips	Monthly Statistical Reports
Operating Ratio	40%	Farebox Revenue, Costs	Monthly Statistical Reports, Financial Statements
Peak Load Factor	100%	Maximum Load Points	Passenger Counting Program

In addition, a composite score is calculated to indicate an overall relative ranking for each route. System totals for each three month reporting period are also derived. A sample of this planning evaluation tool for January-March, 1981 may be found in a following section on Evaluation of FY81 System.

Transportation Network and Evaluation System

The Transportation Network and Evaluation System (TRANES) is a computer program which has been developed by SANDAG to assist in evaluating route location and transit station stops. It is a simplified transit planning tool with the capability of accessing census information at the block level along a given route or route segment without going through a sophisticated and expensive modeling process.

The group of computer programs used in TRANES is based on the DIME (Dual Independent Map Encoding) geographic base file. The DIME file system consists of a detailed street network featuring a numeric form for processing by a computer. For this purpose, each street intersection and block are identified by unique numbers. A point of interest to other operators, the DIME file is a federally funded program for all SMSA's (Standard Metropolitan Statistical Area), which suggests TRANES transferability to other areas of the country.

TRANES permits the user to specify existing or planned transit lines or stops and then retrieve information on the numbers and types of present and potential transit users within specific walking distance parameters. It provides an easily accessible measure of the possible impacts associated with a route or bus stop realignment. Nine categories of socio-economic information such as total population, employment data and housing values are available. In addition, the user can run the programs interactivily using a CRT (Cathode Ray Tube) to provide an immediate response to "what if" questions.

SDT's service area boundaries were redefined in FY81 to more accurately reflect areas served. Also, the population standard within quarter mile of a bus route was revised to quarter mile of a bus stop. TRANES was utilized to develop the demographic data necessary to effect and analyze these changes.

Regional Surveillance Passenger Counting Program

In the spring of 1979 San Diego Transit, in cooperation with the North County Transit District, Chula

Vista Transit and the lead agency, the San Diego Association of Governments, initiated work on a Regional Surveillance Passenger Counting Program. This program provides an ongoing sample count of passenger activity for every run on every route. All passenger “ons” and “offs” are recorded by stop for each run on the survey day. This produces detailed counts of passenger activity at each stop, total ridership, average ridership per trip, average maximum load, average bus capacity, time point checks and a route profile.

Data gathered by checkers is processed by an analysis program developed by SANDAG. This passenger counting program offers more detailed and timely data than the SDT passenger counting program it replaced.

Work Trip Demand Program

A new planning tool is under development to identify potential transit demand for home to work trips. In cooperation with CALTRANS, the Commuter Computer data files are utilized to identify the location of households from which respondents have indicated an interest in car/van pooling or using public transit as an alternative transportation mode for their trip to work. By assigning all locations to a grid cell map of SDT's service area, any individual employer or employment center may be sorted out and all work trips destined to the work cell may be identified and mapped by cell of home origin. This map may be utilized to evaluate existing or planned routes as related to persons who are seeking an alternative to their private auto for their work commute.

Regional Coordination

SDT's Planning Department has, as one of its tasks, the responsibility for coordinating transit planning with jurisdictions within the service area as well as with other public transit operators. Most of the planning activity of this type during FY81 has been with the Metropolitan Transit Development Board. MTDB is scheduled to begin light rail transit service in July, 1981 from San Diego's Centre City through the southbay communities of National City at Chula Vista to San Ysidro adjacent to the international Border and Mexico. This will necessitate a major rerouting and rescheduling of SDT service in the southbay area. SDT and MTDB planning staffs have been joined by staffs representing SANDAG, the County and the Cities of National City and Chula Vista in forming a task force in formulating transit service concepts for short range planning. This task force has also given SDT input in planning the southbay service adjustments.

Another important area for coordinated planning is Centre City. Work addressing this San Diego CBD area included SDT staff involvement with the Mayor's Select Committee on Transportation and Parking, the San Diegans, Incorporated Transportation Committee and the Centre City Development Corporation.

SCHEDULING

SDT's Scheduling section serves two primary functions; the development and ongoing evaluation (with Planning) of schedules for all routes in the system and conducting the drivers bids for work. Computer programs have been developed for each, with resultant savings in time and labor over previous manual methods.

RUCUS Program

The first of these programs, RUCUS (Run Cutting and Scheduling), was first utilized for the September, 1975 shakeup. San Diego Transit had been selected, under a grant from UMTA as one of five test properties. The implementation cost to SDT was approximately $65,000. Today, it would cost a property the size of SDT between $250,000 and $300,000 to make RUCUS operational. The annual budget for RUCUS at SDT is approximately $40,000. When RUCUS was first put into service at SDT, a savings of 5% in manpower was realized. This was at a point in time when drastic system expansion,

SDT's Action Plan, was being implemented. Under a more normal working situation, a savings of one to one and one-half percent could be expected.

RUCUS was developed to perform two major functions. One was to take a series of trips, not necessarily on the same route, and put them together to form a trip sheet or block. The other function was to assign drivers to these blocks and these assignments are called runs.

At SDT, because of the number of different types of buses, it was not possible to use the blocks routine. Scheduling puts the blocks together manually before they are entered into RUCUS. Blocks were tried but it was found that too few lines have terminals close enough together which used the same type of bus (i.e., Rt. 34 uses a 51 passenger, 6 cylinder bus and Rt. 30 uses a 51 passenger, 8 cylinder bus. While they use the same terminal in the CBD, because of the different requirement, they cannot be inter-lined.)

During the years San Diego Transit has used RUCUS, the advantages have become very obvious. It has allowed SDT to expand the sophistication of the scheduling process greatly without an increase in manpower. Runs have been cut much more efficiently than if done by hand. It has allowed SDT to vary parameters and do several run cuts before deciding which is best. This is extremely important during this inflationary time. During labor negotiations it also allows SDT to immediately see what impact any change in driver work rules might have on the overall cost of operations.

As of now, SDT uses RUCUS for run-cutting, producing driver schedules and “Operating Statistics.” Very soon, RUCUS will be used to develop passenger timetables, headways (a headway program is available but not yet used by SDT), and to produce schedule frame inserts.

SDT is required to have a full system shakeup at least three times per year. If done manually, each shakeup would require at least four months of preparation by the present scheduling staff. By using RUCUS, only about four weeks of preparation is needed. Over a period of a year, all time would be spent just preparing for a shakeup without RUCUS, but now only three months are required. That leaves nine months for more creative scheduling work.

DIBS Package

After the run cuts have been done and it is decided which ones to use, a program is run that converts the run cut to magnetic data tape. The tape is put onto the in-house System 3 computer and thus becomes the major file for the Driver Interactive Bidding System package (DIBS). Besides the run cuts themselves, the other files used by DIBS are the current seniority list, the list of day-off combinations and the labor contract work restrictions.

DIBS is a series of programs that can be broken into three parts:

1. Run maintenance and pre-bidding reports.
2. Driver bidding.
3. After bidding reports.

During bidding, each operator, starting with the number one in seniority, chooses which runs he or she wants to work. This is entered into the computer via a CRT terminal located in the shakeup room. The computer then checks all work restrictions and if the bid meets all requirements, the computer will accept the bid. If the bid does not meet requirements, the computer will reject the bid, and will show where the bid must be corrected. This process is continued until all bidding has been completed, then bidding reports are printed. The bid report includes a list of all runs with the names of the operators and any other work he or she might have bid. It also shows what day-off that operator has. A schedule by driver lists alphabetically all operators showing their work for each day of the week along with their days off. The schedule by extra board operators is a list, of all extra board operators, by seniority, and any work they may have bid. It also shows which days an operator will be assigned to the extra board. The list of work left unbid is used by the dispatchers to assign the extra board operators on a daily basis.

It is estimated 270 person hours per shakeup are saved by this computerized package. The DIBS files are now being used as a master file for an exception payroll system that was started in September, 1980.

EVALUATION OF FY81 PLAN

FY81 OPERATING PLAN

To serve as a benchmark for the evaluation of San Diego Transit as it operated in the period from July, 1980 through June, 1981, it should be helpful to compare the FY81 Development Plan from the previous report, San Diego Transit Five Year Plan Update, FY81-85, with the implementation of changes during this fiscal year. Following is a route by route evaluation of this FY81 Plan.

- Route 4 — Peak service frequency increased, however, late night and weekend service reduced in April cutback.
- Route 5 — Increased frequency delayed due to funding limitation. Programmed for FY82.
- Route 6 — Evaluation determined rewrite not necessary.
- Route 7 — Frequency adjusted as planned.
- Route 11— Increased frequency delayed due to funding limitation. Programmed for FY82.
- Route 12— Realigned as planned.
- Route 14— Evaluation made and route eliminated in April cutback.
- Route 15— Frequency increased as planned.
- Route 21— Rewritten to improve transfer and running time, evaluated and eliminated in April cutback. Programmed for evaluation in FY82.
- Route 27— Evaluation determined rewrite not necessary.
- Route 29— Frequency increase not possible due to cost and/or contract service limitations. Programmed for FY82.
- Route 30— Service adjustments delayed due to funding limitation.
- Route 34— Rewritten with existing resources, increased frequency delayed due to funding limitation. Programmed for FY82.
- Route 36— Realigned as planned.
- Route 40— Implementation delayed due to lack of funding. Programmed for FY82.
- Route 41— Realigned as planned.
- Route 43— Frequency reduced due to low productivity. Programmed for FY82.
- Route 50— Evaluated and maintained because of growth.
- Route 110— Realigned as planned.

A complete list of changes made during FY81 may be found in Table III-6.

1980 REGIONAL TRANSPORTATION IMPROVEMENT PROGRAM

In addition to the operating plan for FY81, SDT also developed a program for capital improvements and operations which included FY81. This program was amended in january, 1981 to reflect both a revision in UMTA funding available and an unusually large increase in new bus costs. UMTA Section 5 operating funds available to SDTC were increased from $7.747 million to $8.829 million. When combined with other changes in revenue passengers, California TDA funds and local support, the net operating budget for FY81 was amended from $33.163 million to $36.075 million.

The original capital program included $1.2 million in Section 3 funds which were never made available to SDT. Over $4.6 million in state money, originally programmed, was not made available or claimed. This reduced the FY81 capital program from $9.286 million to $3.762. As a result, the new bus program was reduced from 35 to 20 vehicles. Also, SDT's second bus division was reprogrammed for FY82 (due to both planning and programming priorities).

EVALUATION OF FY81 SYSTEM

Each year the San Diego Board of Directors reviews and approves a set of service and route evaluation standards as well as goals and policies, all of which guide system evaluations and service change considerations. Evaluation of the FY81 system is based upon these service and route evaluation standards and, in addition, upon an evaluation of SDT's marketing program, the scope of which falls beyond these operations measurements.

SERVICE STANDARD EVALUATIONS

The service standards shown below have evolved at San Diego Transit over a number of years. They represent a comprehensive set of measurements which are designed to improve and maintain quality service by SDT.

1. 50% of the population in the service area should be within a one-quarter mile of a bus stop.
   Discussion:
   SDT's service area represents approximately 258 square miles as redefined for this report. Also changed this year is the standard itself. The old "quarter mile to a bus route" concept was determined to be far less meaningful than the revised quarter mile to a bus stop. With invaluable help from SANDAG, necessary geographic and demographic data was gathered and computed for this evaluation. The estimate derived by SANDAG was that 60.5% of the population in the service area is within one quarter mile of a bus stop. This standard is recommended for re-evaluation for FY82, a minimum of 60% is likely though a higher objective may be set. Also served was 63% of the total dwellings and 89% of the total employment.
   In the FY81-85 Plan Update, seven sub-areas were identified within the service area which should have transit service added. By redefining the service area boundary, four of these areas were eliminated from the list. The community of Mira Mesa, which had its local service terminated in the April cutback, is added to the list for a new net total of four. Areas which should be served by SDT are as follows:
   a) A residential area bound by El Cajon Boulevard on the north, University Avenue on the south and east and College Avenue on the west.
   b) A mixed medium density area bound on the west by Morena Boulevard, by Burgener Boulevard on the east, by Balboa Avenue on the north and by Milton Street on the south.
   c) A mixed residential and commercial area along Mission Gorge between Princess View Drive and the City of Santee.
   d) A mixed medium density area west of I-15 and north of Miramar Road known as Mira Mesa.
2. A frequency of 30 minutes should be the minimum frequency during peak hours.
   Discussion:
   Of SDT's thirty routes, three do not meet this standard. They are Routes 12, 16 and 43. Both Routes 12 and 16 are partially contract service and therefore limited to the level of service the contracting jurisdiction is able or willing to pay for. Route 43 was reduced from the standard of 30 minutes to 60 minutes in the April cutback due to low ridership. Overall, SDT's AM peak average is 27 minutes and for PM peak, 28 minutes.
3. A frequency of 60 minutes should be the minimum frequency during off peak hours.
   Discussion:
   All of SDT's routes meet or better this measure. For the system, the midday average frequency is 35 minutes and for evening service, 46 minutes.
4. The bus fleet average age should be eight years or less with the oldest bus not exceeding 15 years.
   Discussion:
   This service standard is the biggest problem for SDT. Table III-15 profiles the FY81 fleet. Average age for the 365 buses owned by SDT is 13 years, in excess of the standard five years. As reported one year ago, 108 buses are over 15 years of age. Looking ahead just a little, 50 more buses are

now fourteen years old and another 49 are thirteen. If all are retained, SDT would have 207 buses 15 or over in two more years.

Current plans for acquisition and disposition call for 65 new buses being delivered during the summer of 1981 and 87 buses being sold, including 63 over twenty years old. This will reduce the excessive aged vehicles to 45 and bring the average age down to ten years. While this will still exceed the standard, it is a substantial recovery and points out the direction SDT is now moving in.

5. 100% of the fleet should be equipped with heaters and air conditioners with at least 90% in working order.

   Discussion:

   In SDT's fleet of 365 buses, all have heaters and 257, or 70%, have air conditioning. All of the buses without air conditioning are the 108 buses over 15 years of age discussed in service standard number four. In FY82 this should increase to 87% with fleet improvements. Maintenance records show that about 95% of the air conditioners are in working order at any given point in time.

6. A bus stop bench should be provided at those bus stops which serve a major traffic generator and/or which are used by more than 50 persons per day.

   Discussion:

   With 3,700 nonduplicating bus stops in the system, it is estimated that 1,100 (30%) have benches. Since the benches are provided and maintained by a private bench ad company, SDT does not have absolute control over which stops do and which do not have benches. However, the level of cooperation with this private enterprise is very good and this system is judged to be very satisfactory.

   During FY82, SDT will be conducting a bus stop inventory, from which one data item will be a count of the stops meeting this standard.

OPERATIONAL STANDARD EVALUATIONS

The operational standards provide an objective analysis of each individual route in the system, whereas the service standards were oriented more toward the entire system. These operational standards are applied on a route-by-route basis.

Because SDT's operating support has been reduced since FY78, the effectiveness of the service offered is of particular concern. Four categories plus a composite now form the basis of SDT's route evaluation procedure. This evaluation is normally carried out four times each year. The timing of these evaluations is such that the evaluation procedure allows SDT to assess the impacts of service/fare changes within a very short time and take corrective action where necessary. Standards utilized for FY81 were identified back on Table II-1. They were chosen based upon operational feasibility along with natural breaks in the ranked data.

The following is a brief description of each category:

1. Percentage Revenue Hours—This category provides a good index of utilization of equipment in service and reflects optimized scheduling. It is a simple ratio between the number of hours which a route's buses are in revenue service and the total bus hours (including layover and deadhead time). Thus, a route having 38 daily hours in revenue operation and 12 hours involved with layover and deadhead travel time would receive a value of 76% (38 ÷ 50). The standard is 70%.
2. Total Passengers Per Trip—This index measures productivity. It is the total number of passengers on a route over a specified period of time divided by the number of trips operated in this time period. A route carrying 2,000 total passengers in a day operating 50 trips would calculate to 40%. The standard is 30%.
3. Operating Ratio—This category provides a good index of resource efficiency, indicating how productive the return on investment is. It represents the ratio between the revenue (return) generated by a route, divided by the cost (investment) of the route. Thus, a bus route which collects $6,500/month at a cost of $15,000 in providing that service would have an operating ratio

of 43% (6,500 ÷ 15,000). The revised standard is 40%.

4. Peak Load Factor–This statistic is an index of seating availability (or unavailability) in a route's passenger peak. It is calculated by dividing the average load at a route's maximum load point (MLP) over its heaviest one-hour period by the seating capacity of the buses assigned to the route. Thus, a route averaging 58 passengers on each bus at the MLP over the course of the peak hour with a seating capacity of 50 per bus would receive a value of 116% (58 ÷ 50). Routes showing a value greater than 100% are experiencing standing loads and, thus, have a restricted ability to attract new ridership. The standard is 100%.

The composite evaluation represents an aggregation of the four standards to form a single, overall ranking. To prepare a composite graph it was necessary to apply a factor to each of the four calculated scores to derive an overall score. Fixed comparative base values were established for each category and each route was scored based upon its numerical ratio to the fixed base value. Each route's scores are totaled and an average score calculated. These composite scores are then ranked and graphed.

Once the evaluation procedure has been completed, SDT is ready to diagnose the results. The composite graph is reviewed, with particular attention paid to those routes not achieving the standard. Each route is then reviewed, category by category, to find its weakest points, and remedial actions are suggested and discussed.

The four evaluation categories form the basis for critique of the system. They are not, however, the sole source of information in decision making. Another important factor for consideration is route growth. Percentage of growth is calculated for each route, and one which is growing well will be evaluated more leniently than stable routes. Other factors which are considered, in addition to the evaluation, are revenue per mile and per hour, passengers per trip, cost per passenger, and the age of the route and history of significant changes to its structure. Each route is also compared against ridership projections to assess its performance over time. The evaluation for January-March, 1981 is offered as an example of this operations standard evaluation.

The system evaluation scores for San Diego Transit during the third quarter of FY81 are almost identical to those for the same period in FY80. This is significant because, during the period between the two route evaluations, SDT implemented a major fare change that raised local fares by ten cents and express fares by fifteen cents and eliminated senior discounts during the peak period and student discounts entirely. This fare change increased revenues by 10% which matched exactly the amount operating costs increased. While the increases were not equal in dollars, the rates were. This impacts the route evaluation scores.

Ridership declined by 5% when comparing the third quarter of FY80 with the third quarter of FY81. This can be attributed particularly to the fare increase and particularly to a 3% reduction in the number of trips being operated.

There was little impact on operating costs resulting from fuel price increases during this quarter. The reasons for a 10% operating cost increase over the last year were general maintenance costs.

The system “Composite Score,” reflecting the overall performance of the system in Figure III-19, was up just slightly over the first half of FY81. This was due, primarily, to the mild weather conditions during the winter months as compared with last year. “Total Passengers per Trip,” Figure III-20, and “Percent Revenue Hours,” Figure III-21, were both well above the system standard. The “Operating Ratio,” Figure III-22, came out just slightly over standard with a score of 40.4% for the total system. The standard, 40%, was raised from 30% at the beginning of the fiscal year. The reason for this change is the mandate by the Metropolitan Transit Development Board that SDT maintain a rate of 40% in order to qualify for state operating assistance. This increase in the “Operating Ratio” standard in turn increased the “Composite Score” standard, the basis by which all routes are compared. As a result, more routes are now considered below standard than one year ago.

Figure III-23, showing the “Peak Load Factor,” indicates a very small decrease, from 105 one year ago to 104. This reflects mild success in shifting senior citizen travel times, for those able to do so, with the full fare peak program.

FIGURE III-19

COMPOSITE SCORE EVALUATION
JAN-MAR, 1981

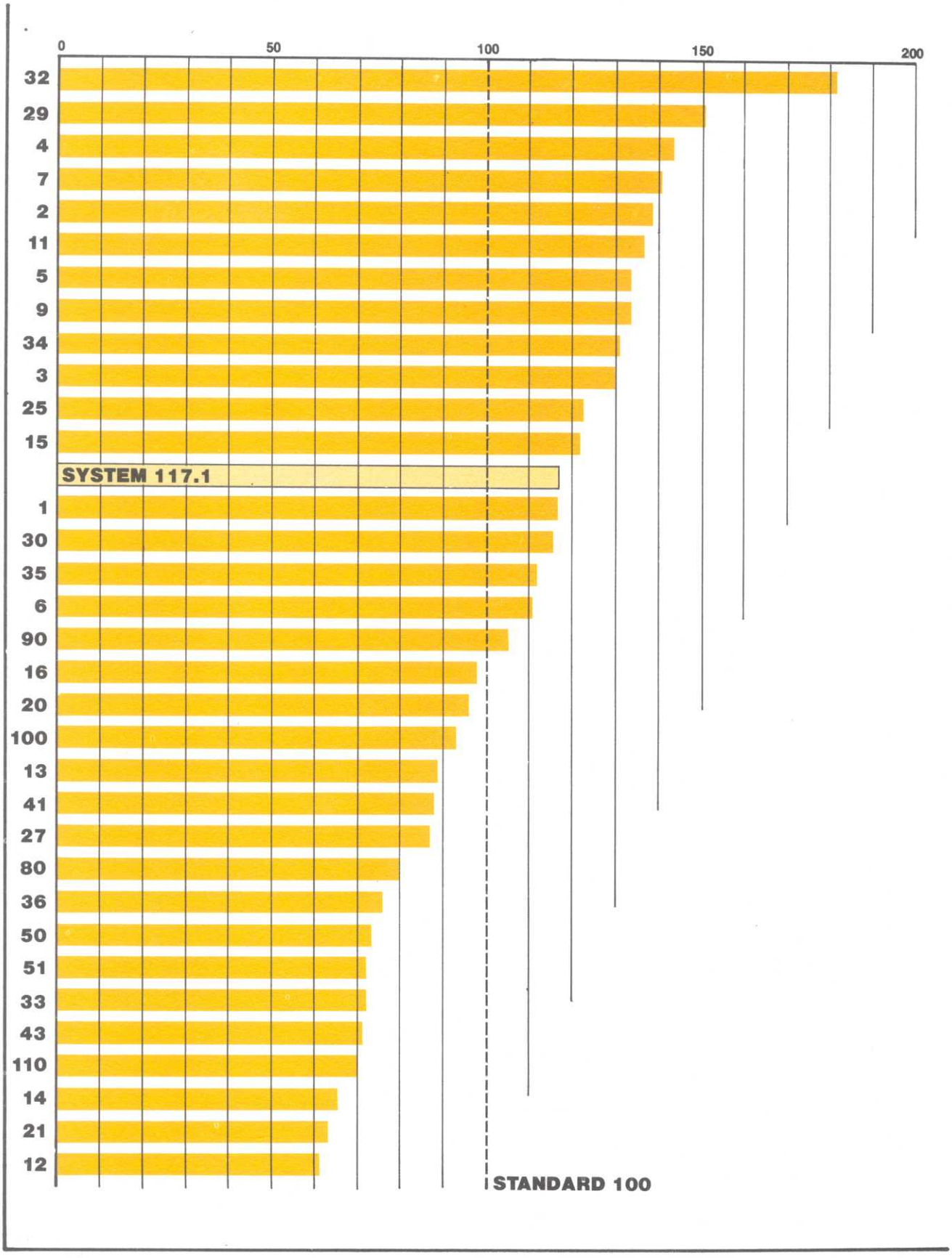


FIGURE III-20

TOTAL PASSENGERS PER TRIP
JAN-MAR, 1981

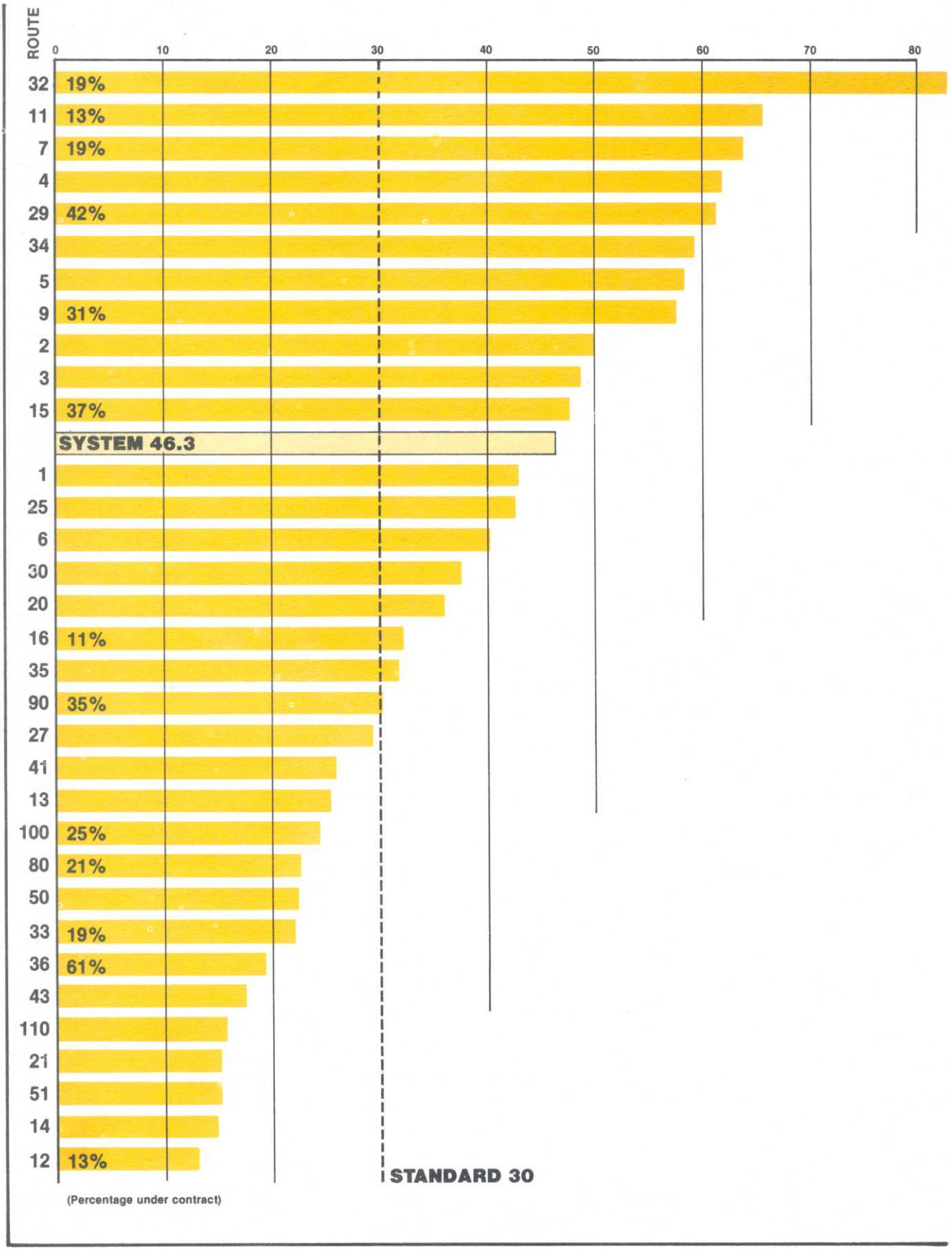


FIGURE III-21

PERCENT REVENUE HOURS
JAN-MAR, 1981

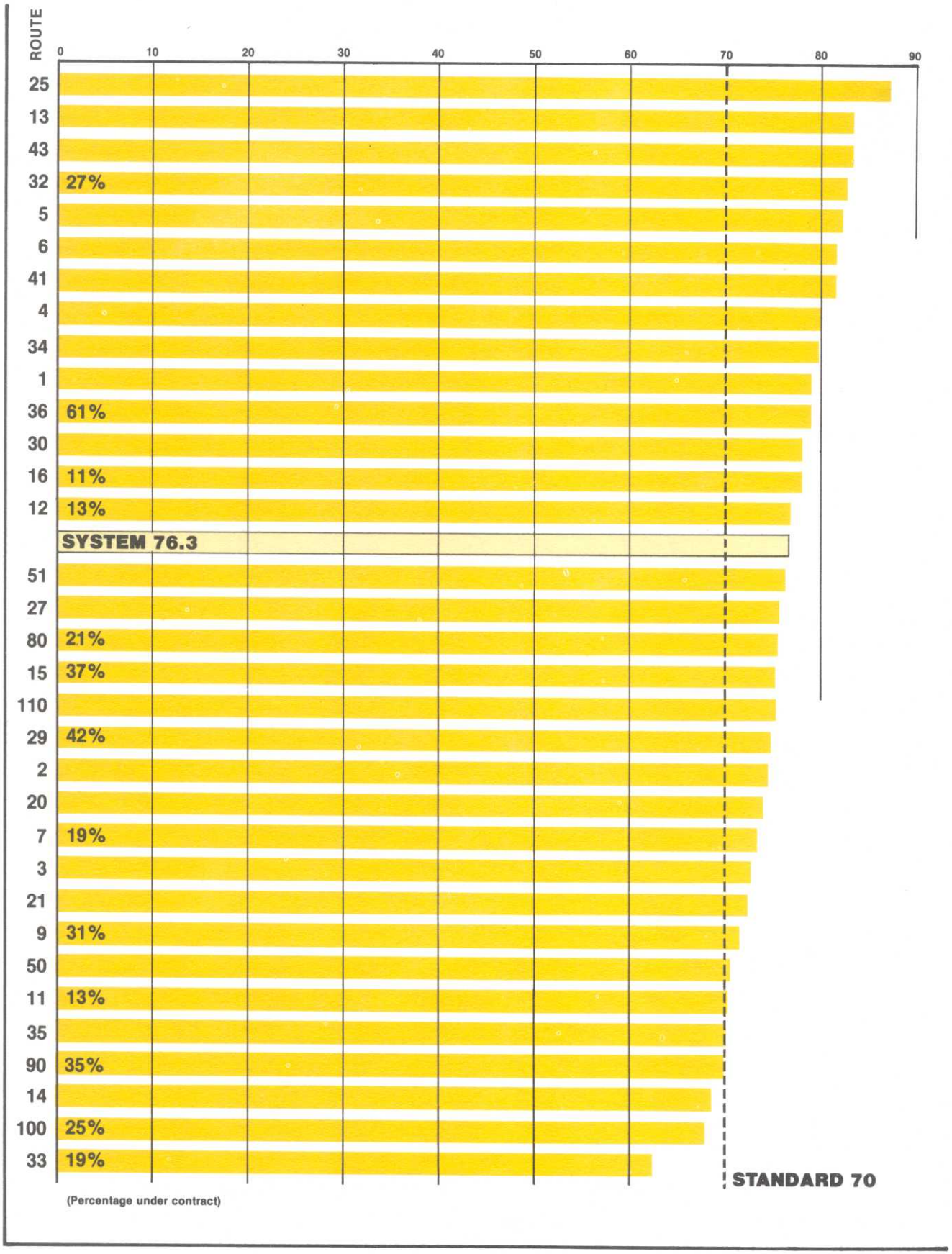


FIGURE III-22

OPERATING RATIO
JAN-MAR, 1981

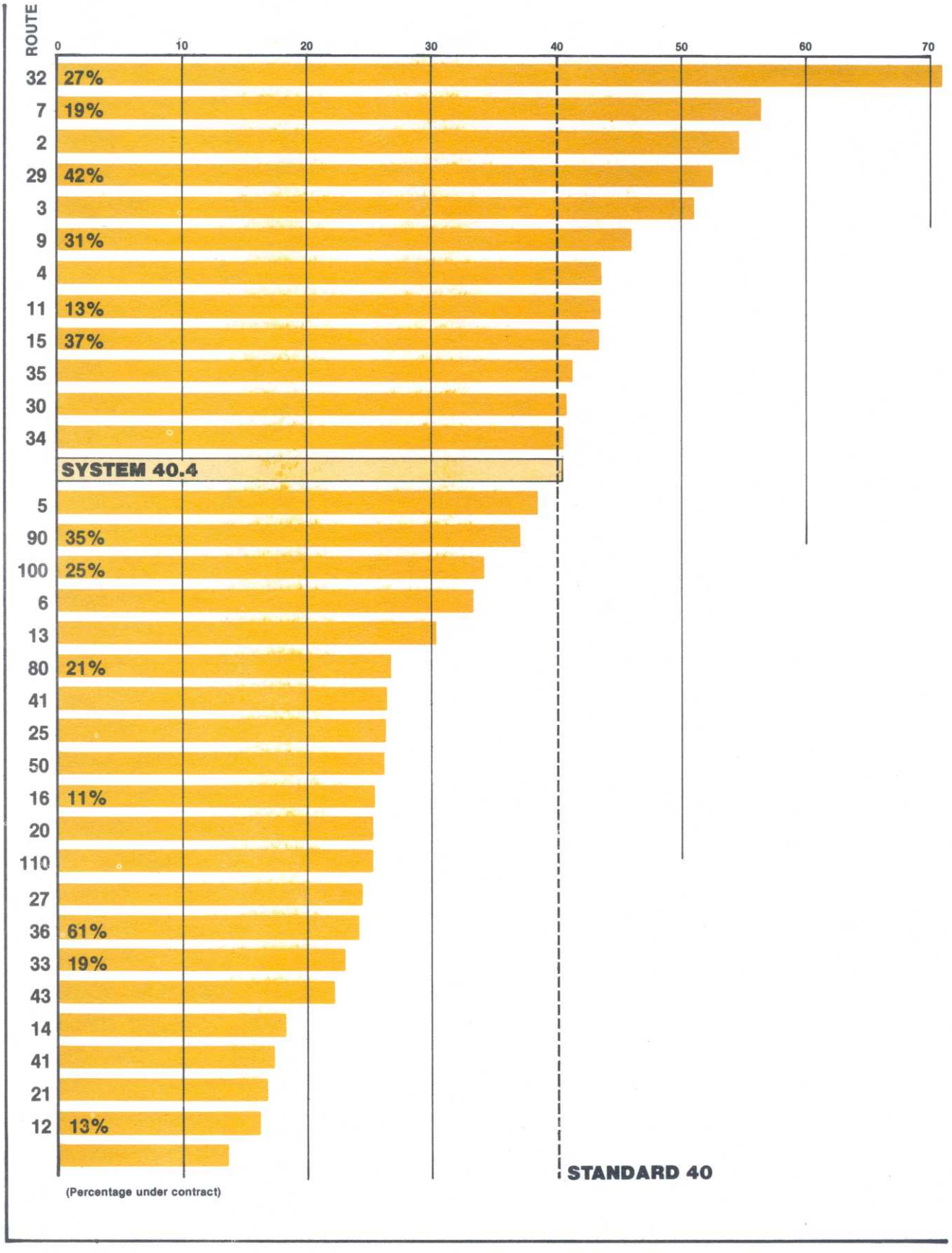
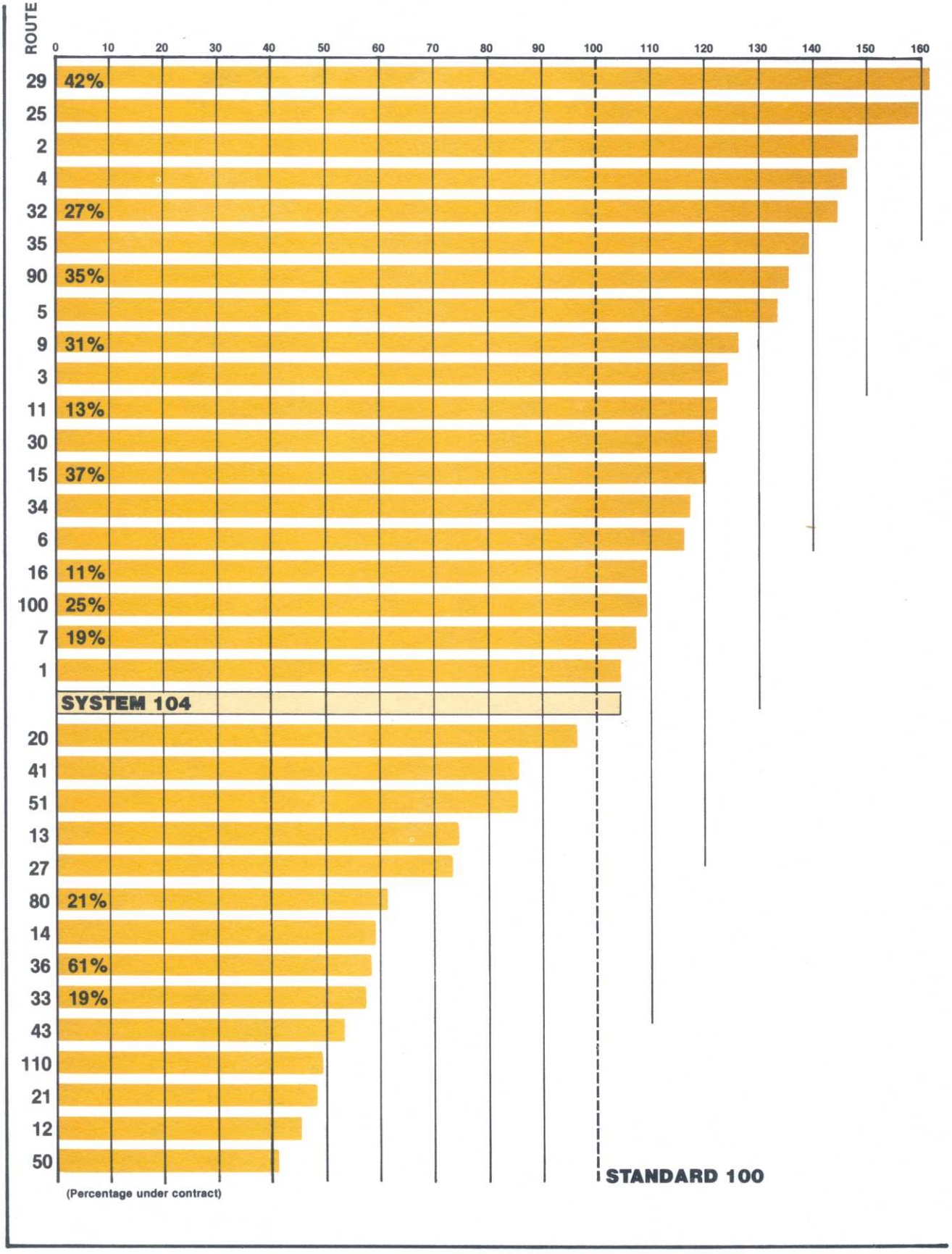


FIGURE III-23

PEAK LOAD FACTOR
JAN-MAR, 1981



Routes Below Standard

In addition to the system total scores discussed above, each of the operational standards are evaluated in depth on a route by route basis. Since individual considerations can account for a below standard score in any one category, the initial quarterly evaluation is based upon the composite score. Those routes falling below system standard of 100 are listed below in descending older.

Route 16 — This route operates between College Grove Shopping Center and Mission Village via Lemon Grove, Downtown San Diego and Mission Village. At 97.6 this route is slightly below the "Composite Score" standard of 100. The only evaluation category below standard is "Farebox Recovery Rate," which is at 25.1 percent. Unproductive trip eliminations should help this route move above the system standard.

Route 20 — This express route achieved a composite score of 96.3 — just below standard. It provides express service between the communities of Rancho Bernardo, Mira Mesa and San Diego's CBD. The elimination of unproductive trips should improve Route 20's overall productivity and improve its over-all rating.

Route 100 — This express route serves Imperial Beach area residents with a fast alternative mode to Downtown San Diego. When the new San Diego Trolley begins operation on July 26, 1981, this route will be discontinued as it would be competing with that service.

Route 13 — This route serves San Diego State University and Southeast San Diego via the communities of Allied Gardens, Grantville and East San Diego. As is the case with many other routes, certain unproductive trips will be eliminated. Further, Saturday service has recently been eliminated. During FY82, this route will be extended to serve the "Trolley," and another routing alignment will be implemented to improve productivity and population coverage.

Route 41 — This route provides service between the University of California, San Diego and Fashion Valley. Because of its alignment, it is subject to productivity fluctuations. Usually, the third quarter shows this route below standards. However, during the 2nd and 4th quarters, it tends to meet the standards. Unproductive trips have been eliminated since the 3rd quarter evaluation.

Route 27 — This route provides service between the communities of Tierrasanta and Pacific Beach. Being a so called "cross town" route it receives a high number of transfers from the other routes it crosses. The system's transfer rate is 21%, and this route has a transfer rate of 25%. A high transfer rate has a negative impact on any farebox recovery rate, and the 24% figure for this route reflects that fact. Weekend service and weekday trip eliminations should help this route to meet standards.

Route 80 — As is the case with Route 41, this crosstown express is subject to seasonal fluctuations. Further marketing and some touting changes are stated for this route in FY82. It serves the communities of La Mesa and Pacific Beach, connecting Fashion Valley and San Diego State University in between.

Route 36 — It is a crosstown route serving Lemon Grove and San Diego State University. In order to improve its productivity, routing changes and a marketing effort will be undertaken in FY82.

Route 50 — This express route operates between Downtown San Diego and the University City area by way of Clairemont. While it is below standards, this route has shown tremendous growth. This fiscal year, it has increased ridership over 25% — the system leader. Additional marketing could help this route.

Route 51 — This shuttle route was eliminated April 26, 1981.

Route 33 — This Imperial Beach-Otay Mesa shuttle route is scheduled to be realigned in July to interface with the trolley and serve the passengers lost on Route 100. These changes should improve the productivity of this route.

Route 43 — This route operates between Downtown San Diego and Allied Gardens, and its ridership fluctuates from quarter to quarter. Even so, this route does not meet standards in any cate-

gory. As a result, service frequency was reduced from 30 to 60 minutes. Recent statistics show this route's productivity increasing.

Route 110 — This express route operates between San Diego's CBD and Lomita Village in Southeast San Diego. Unproductive trips have been eliminated. The route does, however, show growth. It has increased ridership over 12% since last fiscal year. Route changes are being considered for FY82.

Routes 14, 21, and 12 — Routes 14 and 21 have been eliminated, and Route 12 is slated to be discontinued on July 26, 1981.

AVAILABLE CAPACITY EVALUATION

With considerations for improved system productivity and energy contingent planning necessitated by dwindling financial and energy resources, SDT wil be focusing attention on capacity utilization more than ever during the 1980's. This will involve time of day analysis of available capacity on a route by route basis. An attempt was made in FY81 by SDT to improve available capacity in the peak AM and PM periods by eliminating half fare privileges to elderly and handicapped passengers.

One methodology for evaluating available capacity is the calculation of passenger miles per seat mile. This analysis divides the product of the number of passengers carried and their average trip length by the seated capacity of the bus times the total miles operated, by route, by time of day. Table-III-29 presents these figures for FY81. The AM peak is defined as prior to 9, midday is 9 to 3 PM, the PM peak from 3 to 6 and evening service is afer six. A bus with a continuous full seated load would have passenger miles equal to seat miles and a rating of 1.00.

As may be seen from this table, some routes rate high in occupancy (and therefore lower in available capacity) for each time period such as Route 15 and 32. Other routes are identified as commuter service by higher occupancy for the AM and PM peaks like Routes 30 and 90. Routes 3 and 7 show their lowest available capacity in the midday periods, a function of the socio-economic make up of the communities they serve as well as land use patterns. Additional planning insight may be realized by tracking these capacity values over time as changes in service are implemented.

MARKETING EVALUATION

Several tools were used by SDT in FY81 to evaluate the effectiveness of the marketing program and to determine the direction of next year's program. Some of the program-specific evaluations are discussed under the individual marketing programs beginning on page 96 of this report. However, three of the surveys were more extensive, dealing with the overall marketing effort and deserve special discussion.

Origin/Destination Survey

As was previously mentioned in this report, the Origin/Destination (on-board) Survey was conducted for San Diego Transit by SANDAG in late 1980. Bus passengers were interviewed about their travel patterns, demographic characteristics and attitudes about San Diego Transit. The results are summarized briefly on Table III-12.

The results of the survey indicated that there was a dramatic decrease in student riders (due primarily to elimination of various school oriented trips), an increase in the number of work related trips, more Spanish speaking riders, more tourists and people in the armed forces using the service, smaller households, fewer cars owned, and upward shift in the average age of riders to the 25-44 age group.

In addition, 51% of the riders said they had used the service less than 2 years. Since ridership has been relatively stable in the last several years, the percentage of new riders indicate that San Diego Transit is attracting new riders to the system but is unable to keep riders once they have other transportation alternatives.

TABLE III-29
SDT AVAILABLE CAPACITY BY ROUTE
FY 81

Route	AM Peak	Midday	PM Peak	Evening	Total
1	.21	.20	.35	.19	.30
2	.31	.29	.30	.16	.27
3	.29	.33	.29	.17	.29
4	.44	.36	.42	.15	.34
5	.30	.31	.40	.11	.26
6	.22	.29	.31	.12	.25
7	.32	.38	.34	.17	.31
9	.36	.39	.54	.23	.37
11	.37	.37	.40	.12	.31
12	.29	.29	.26	.24	.27
13	.16	.15	.19	.10	.16
15	.48	.56	.56	.32	.49
16	.29	.28	.30	.18	.26
20	.35	.29	.42	.29	.34
25	.34	.32	.35	.12	.30
27	.24	.23	.28	.08	.22
29	.46	.33	.59	.35	.44
30	.47	.34	.48	.19	.37
32	.51	.61	.65	.47	.57
33	.12	.20	.28	.10	.17
34	.47	.43	.45	.22	.38
35	.48	.39	.60	.20	.38
36	.11	.15	.15	.05	.12
41	.20	.15	.17	.11	.17
43	.21	.22	.30	.10	.20
50	.41	.20	.27	.14	.28
80	.28	.28	.24	.12	.25
90	.53	.43	.55	.31	.48
100	N/A	N/A	N/A	N/A	N/A
110	.16	.12	.13	N/A	.13

Community Relations Audit

A second survey tool was used in 1980-81 to assess San Diego Transit's communication program and recommend ways of improving the process. This audit involved extensive interviewing through detailed individualized questionnaires of San Diego Transit management, employees, San Diego Transit Board members, public officials, and media representatives. The audit not only highlighted areas where improvements were needed but brought to light several strengths that San Diego Transit had underestimated in the past; the generally positive image San Diego Transit and its Board has with public officials, opinion leaders, the media, and its own employees. It is clear that what San Diego Transit has done in community relations is basically good but is not intense enough nor does it reach a large enough audience.

Awareness Survey

The third survey that was conducted was the Before-After Advertising Awareness Survey. Each year for the last two years San Diego Transit has contracted with a local research firm to conduct a random telephone survey of 600 households, 300 at the beginning of the year and 300 at the end of the year, to determine public awareness of SDT's advertising campaigns. For FY81 the survey was designed to accomplish the following:

1. Measure the change in advertising awareness, if any, that occurred between May 1980 and May 1981.
2. Identify changes in awareness of fares, telephone information, and other aspects of bus service.
3. Determine changes in bus usage.
4. Identify the attitudes of bus riders and non-riders toward San Diego Transit.
5. Compare the socioeconomic characteristics of bus riders and non-riders.
6. Determine the reasons for using San Diego Transit buses.

Of primary concern was the similarity between the May 1980 and May 1981 sample members. A comparison of the two samples' characteristics was made to determine if any significant differences existed.

In most cases, the difference in characteristics between the two samples was not considered statistically significant. The only exceptions were in the responses to questions concerning motor vehicle, access and income.

In the current sample, a slightly lower proportion of households had no licensed driver and no motor vehicles. Further examination did not reveal any evidence of bias due to this difference.

As could be expected during a period of high inflation, there was a trend toward a larger percentage of households in higher income categories. This was not considered a problem. In fact, when taking into account the economic inflation rate, if this phenomenon had not occurred, some doubt would have been riased as to the ability of the sample to accurately reflect the income characteristics of the population of San Diego County.

Awareness of advertising. Advertising awareness was measured by first asking repondents to identify the company that used the slogan, "We Are the People Movers." Following this, respondents were asked to recall points from San Diego Transit advertisements and to identify the media on which they had seen or heard these ads.

Only 15 percent of those interviewed could recall the slogan and correctly identified San Diego Transit Corporation as its sponsor. This was a significant percentage decrease from the May 1980 survey.

When asked if they could recall any San Diego Transit advertising, one half of those interviewed were able to do so. This recall level is somewhat lower than that obtained in May, 1980. Again, riders had a higher recall than non-riders, probably due to their greater exposure to Transit advertising and the fact that people have a greater tendency to retain what is of interest to them (selective retention).

Summary. A reduction in the emphasis on the slogan in San Diego Transit's advertising has brought about a significant reduction in San Diego Transit's slogan awareness. Because those items connected with the bus system (exterior and interior of buses, timetables, maps, etc.) have had the slogan printed on them, the greatest awareness of the slogan has been among frequent riders.

Recall of specific media. Television ads were the most highly recalled in the current survey, even though television has not carried San Diego Transit advertising for some time. The percentage of respondents who recalled television ads has remained constant in the past year. Exterior bus ads showed the greatest decrease from May 1980, which coincides with their reduction in use.

Although the "Chicken" character has not been part of San Diego Transit's advertising for quite some time, he still is strongly associated with the transit system as he was the most recalled point from television ads. "We Are the People Movers" was the point recalled in most of the various advertising media mentioned by respondents.

Summary. Television ads had the most "staying power" and, subsequently, during the period of relatively reduced advertising, were remembered most frequently. Since television is such an overpowering medium, consideration must be given to the possibility that respondents are attributing to television those ads which actually had been seen on other media.

Recall of telephone information number. Almost three quarters of those who recalled ads could not remember if they had seen or heard the telephone information number in the ads. This is an increase over last year. Again, as could be expected, frequent riders recalled seeing the telephone number most often.

Summary. Because of the call overload in the Telephone Information office there was a conscious decision to downplay the information number while emphasizing other information sources. Thus the reduced awareness of the information number was to be expected.

Awareness of bus information. One objective of San Diego Transit advertising was to inform the public about the existence of an changes in services or operations. Several questions focused on the respondents' knowledge or usage of special services.

"How Was Usage of the Telephone Information Service Affected By Advertising Changes?" It was noted that there was a decrease from the pervious survey in awareness of the telephone information number in ads. This decrease in awareness is supported by a shift away from using the telephone number and toward other means of obtaining information about the system.

On an overall basis, there was very little change in the actual use of the telephone information service from last year. In addition, there was almost no change in the relative satisfaction with the service.

"What Is the Knowledge of Bus Fares?" Almost one third of those interviewed knew that the FY81 bus fare was 60¢. However, over one fourth of the respondents believed it still c sts 50 cents to ride a bus. This respondent group was made up mainly of non-riders. More than eight out of ten frequent riders knew the correct fare.

"What Is the Knowledge of Special Services?" The most well-known service was the highly visible bicycle racks on the rear of the buses. This was generally known, although frequent riders had an especially high awareness of the bicycle racks, probably due to their increased exposure to buses. Almost one half of those interviewed knew about special bus service to Charger football games at San Diego Stadium. This was higher than the awareness of special service to Padre baseball games.

"Awareness of In-Transit." Special emphasis was placed on gathering information on the extent of awareness of San Diego Transit's on board newspaper, In-Transit. Ten percent of those interviewed had heard of the newspaper, and about half of those had read it. Awareness of In-Transit was highest among frequent riders; however, one out of every twenty non-riders had also heard of it.

Summary. It appears that the more visible services, such as the bicycle racks and the special buses to sporting events, were the most widely known.

Bus ridership. The survey covered the use of buses the characteristics of bus users, and the attitudes about bus usage by riders and non-riders.

A general trend of decreased ridership was seen. This could be due to a variety of reasons including an increase in the use of personal automobiles following stabilization of gasoline prices, higher fares and elimination of some bus services. Usage of buses for shopping and personal reasons declined the most.

For analysis, the bus riders and non-riders were divided into the following groups:

Frequent Riders: Those who reported riding the bus at least once in the three weeks prior to the survey (10% of the respondents).

Infrequent Riders: Those who rode a bus at some time between three weeks and one year prior to the interview (14% of those interviewed).

Non-Riders: Those who did not ride a San Diego Transit bus in the year prior to the interview (76% of the sample).

Characteristics of these three categories are shown in Table III-30. Among some of the differences between frequent, infrequent, and non-riders were usage, sex, and affluence. Frequent riders were the most likely to be under 25 years of age. They were also more likely to be male, while infrequent riders and non-riders were more likely to be female. The main difference among the three rider /non-rider groups in the income categories was the smaller proportion of frequent riders with household incomes in excess of $35,000 per year.

Attitudes toward bus riding. When asked to rate the importance of specific reasons for riding the bus, two thirds of the riders said that "no other transportation available" was a very important reason. The next most important reason was "saving energy."

Over two thirds of non-riders said that they preferred other transportation over buses, and almost one half said that the lack of convenient routes was a very important factor in their decision not to ride the bus. Adding more routes was the most frequent suggestion for encouraging non-riders to use the bus.

The ability and courtesy of the drivers were rated very good by one half of the frequent riders interviewed. Overall, the drivers and the reliability of the buses were rated higher than company services such as information, responsiveness to customer complaints, and scheduling. Cleanliness of the buses received the lowest ratings of any category.

Attitudes toward San Diego Transit. A series of rating scales and an open-ended question were used to solicity the opinions of respondents on the performance of the San Diego Transit bus system.

The general attitude toward San Diego Transit was much more positive than negative. The largest number of respondents stated that the company was doing pretty good or "OK." A number of respondents stated that San Diego Transit was "dependable."

Summary. In spite of recent media attention to route cutbacks and fare increases, the attitude toward San Diego Transit was favorable. The only exception to this was a poor rating for the cleanliness of the buses.

A more extensive review of the survey results and evaluation is available in the 1981-82 San Diego Transit Marketing Plan. Table III-31 offers a summary comparison of responses for the 1980 and 1981 awareness surveys.

EVALUATION OF FY81 FINANCIAL PROGRAM

OPERATING BUDGET

For several years the volatile financial conditions in this country have made budget planning an arduous task. Particularly in the transit industry this has been the situation with fuel, parts, labor and new vehicle costs all outstripping annual inflation rates of 15 to 20 percent. However, SDT's FY81 operating budget came in closer to projection than it has in recent years. This could he attributable to improved skills in financial forecasting. Of course, relatively stable diesel fuel costs and a lowr overall inflation rate for FY81 of 12.7% may have helped too.

Table III-32 presents a comparison of the FY81 budget as shown in the FY81-85 Plan Update versus the April, 1981 amended version. Total costs are $280,000 lower than originally projected. However, it must be noted that revenue miles and revenue passengers were also lower. With a one-half million revenue mile reduction from the projected level, reduced operating costs should have followed. As it worked out, maintenance costs, particularly for replacement parts, have exceeded budget projections. Once again, the overall age of SDT's operating fleet and the related expenses of maintaining these buses for service is detrimental to efficient operation.

Capital expenses maintained the level as projected at the beginning of the fiscal year. Total revenues were within $108,000 which is 0.3%, certainly an acceptable tolerance for forecasting. The increase in

TABLE III-30
AWARENESS SURVEY RESPONDENT CHARACTERISTICS
MAY, 1981

Characteristics	Frequent Riders	Infrequent Riders	Non-Riders
Age:			
Under 25 Years	43%	36%	20%
25 to 44 Years	30	43	47
45 to 59 Years	17	7	17
60 or Older	10	14	16
Median Age (Years)	29	31	38
Sex:			
Male	66%	36%	40%
Female	34	64	60
Chief Wage Earner's Occupation:			
Civilian Employed Full Time	73%	78%	71%
Civilian Employed Part Time	7	9	2
Military	7	2	5
Student	7	0	3
Retired	3	4	10
Unemployed	0	0	2
Not Employed Outside of Home	0	0	1
No Chief Wage Earner/Refused	3	7	6
Occupation:			
Civilian Employed Full Time	60%	52%	51%
Civilian Employed Part Time	7	9	7
Military	7	2	4
Student	20	18	9
Retired	3	14	13
Unemployed	0	2	2
Not Employed Outside of Home	3	2	13

TABLE III-30 (Continued)
AWARENESS SURVEY RESPONDENT CHARACTERISTICS
MAY, 1981

Characteristics	Frequent Riders	Infrequent Riders	Non-Riders
Persons in Household:			
1 Person	17%	18%	20%
2 or 3 Persons	46	50	57
4 or More Persons	37	32	23
Licensed Drivers in Household:			
None	7%	5%	1%
1 or 2	60	77	78
3 or More	33	18	21
Vehicles in Household for Everyday Use:			
None Available	20%	5%	3%
1 or 2	47	68	71
3 or More	23	27	26
Annual Household Income:			
Over $35,000	4%	17%	16%
$25,000 to $35,000	17	11	16
$20,000 to $24,999	22	22	18
$15,000 to $19,999	26	22	21
$10,000 to $14,999	22	22	23
Less than $10,000	9	6	6
Median Income	$18,000	$20,000	$23,500
Respondents	30	44	232
Percent of Total	10%	14%	76%

TABLE III-31
AWARENESS SURVEY SUMMARY
1980 and 1981

	May, 1980	May, 1981
Advertising Awareness:		
Recall “People Movers”	53%	46%
Recall Any Transit Ads	59	50
Recall TV Ads	21	21
Recall Exterior Bus Ads	31	15
Last Time a Bus Schedule Was Picked Up: [1)]		
Within Past Week	8	5
8 to 30 Days Ago	13	6
Over a Month Ago	19	16
Over a Year Ago	26	36
Never Obtained	32	37
Don’t Know/Refused	2	0
Last Time a System Map Was Picked Up: [1)]		
Within Past Week	-	1
8 to 30 Days Ago	-	2
Over a Month Ago	-	7
Over a Year Ago	-	22
Never Obtained	-	67
Don’t Know/Refused	-	1
Have a Timetable in Possession Now: [2)]		
Yes	36	23
No	63	77
Have a System Map in Possession Now: [2)]		
Yes	-	8
No	-	92
Don’t Know/Refused	-	0

TABLE III-31 (Continued)
AWARENESS SURVEY SUMMARY
1980 and 1981

	May, 1980	May, 1981
Last Time a San Diego Transit		
Bus Was Used:		
Within Past Week	12%	5%
8 to 21 Days Ago	6	5
22 to 59 Days Ago	8	6
Two Months to a Year Ago	10	8
Over a Year Ago	40	54
Never Used	24	22
Purpose of Most Recent Bus Trip:		
To or From Work	8	10
Personal Reasons	16	8
Shopping	9	3
School	2	3
No Riding During Last Year	65	76
Normal Frequency of Bus Use:		
Almost Daily	7	2
Several Times Per Week [3)]	12	3
A Few Trips Per Month [3)]	-	7
Use Very Rarely	16	12
No Riding In Past Year	65	76
Cost in Relation to Service:		
Too High	N/A	19
Too Low		1
Fair		64
Don't Know/Refused		16

TABLE III-31 (Continued)
AWARENESS SURVEY SUMMARY
1980 and 1981

	May, 1980	May, 1981
Percentage Aware of Special Services:		
Bicycle Rack Service	N/A	74
Special Service to Weekend Padre Games		39
Special Service to Charger Games		48
Charter Buses		38
Senior Hot Line		28
TTY Phone		9
Awareness of In-Transit Newspaper:		
Yes	N/A	10
No		90
Read In-Transit:		
Yes	N/A	47
No		50
Not Aware		3
Sample Size	300	306

1) Combined in 1980

2) Combined in 1980

3) Combined in 1980

carry over funds from $4,000 to $177,000 is the result of the April, 1981 service cutback. This reduction in service was implemented specifically to create a larger carry over for FY82 in anticipation of more severe budgetary problems as discussed in the next chapter.

FEDERAL GRANT APPLICATION STATUS

San Diego Transit has submitted a federal capital grant application for FY81 in the amount of $3.084 million. This figure is broken down to cover twenty 51-passenger buses, administration and contingency costs. This is shown in Table III-33. Past grants which have not yet been closed out are also listed in this table. The combined FY80 and FY79 grants for 45 buses will be expended upon delivery during the summer of FY81. Only shop tools and equipment remain to be purchased. This grant(s) should be closed out by June, 1982.

It is anticipated that the FY78 grant will be closed out by August, 1981 after accepting delivery on six new buses. The same holds true for the fourteen buses in the FY76 grant. With the delivery of two complete engine assemblies and radio communication equipment in September, 1991, the FY75 grant

TABLE III-32
FY 81 OPERATING PROGRAM
PROPOSED VS. AMENDED

	FY 81 1980 Plan Update	FY 81 April Amendment
Program		
Staffing	893	873
Routes	33	30
Revenue Miles	11,947	11,473
Revenue Passengers	27,951	25,566
Costs		
Operating	$36, 356	$36,076
Capital	3,762	3,762
Total Costs	$40,118	$39,838
Revenues		
Passenger	$14,660	$14,556
Misc. Other	680	680
Carry Over	55	55
Local Support	109	109
State Funding:		
TDA	13,338	13,319
Federal Funding:		
UMTA Sec. 5	11,280	11,296
Total Revenue	$40,122	$40,014
Carry Over (Deficit)	$4	$177

Note: All figures in 1,000's except staffing and fleet.
Total imbalances due to rounding.

will be closed. FY74 is being closed out at the time of this writing and FY73 should be closed out with the purchase of the remaining elements for the Selftrain automated driver training system. Figure III-24 offers an overview of all grants, FY73-81. In summary, by the close of FY82, all of the outstanding grants except FY81 should be closed.

TABLE III-33
CAPITOL GRANT STATUS
FY 73 – FY 81

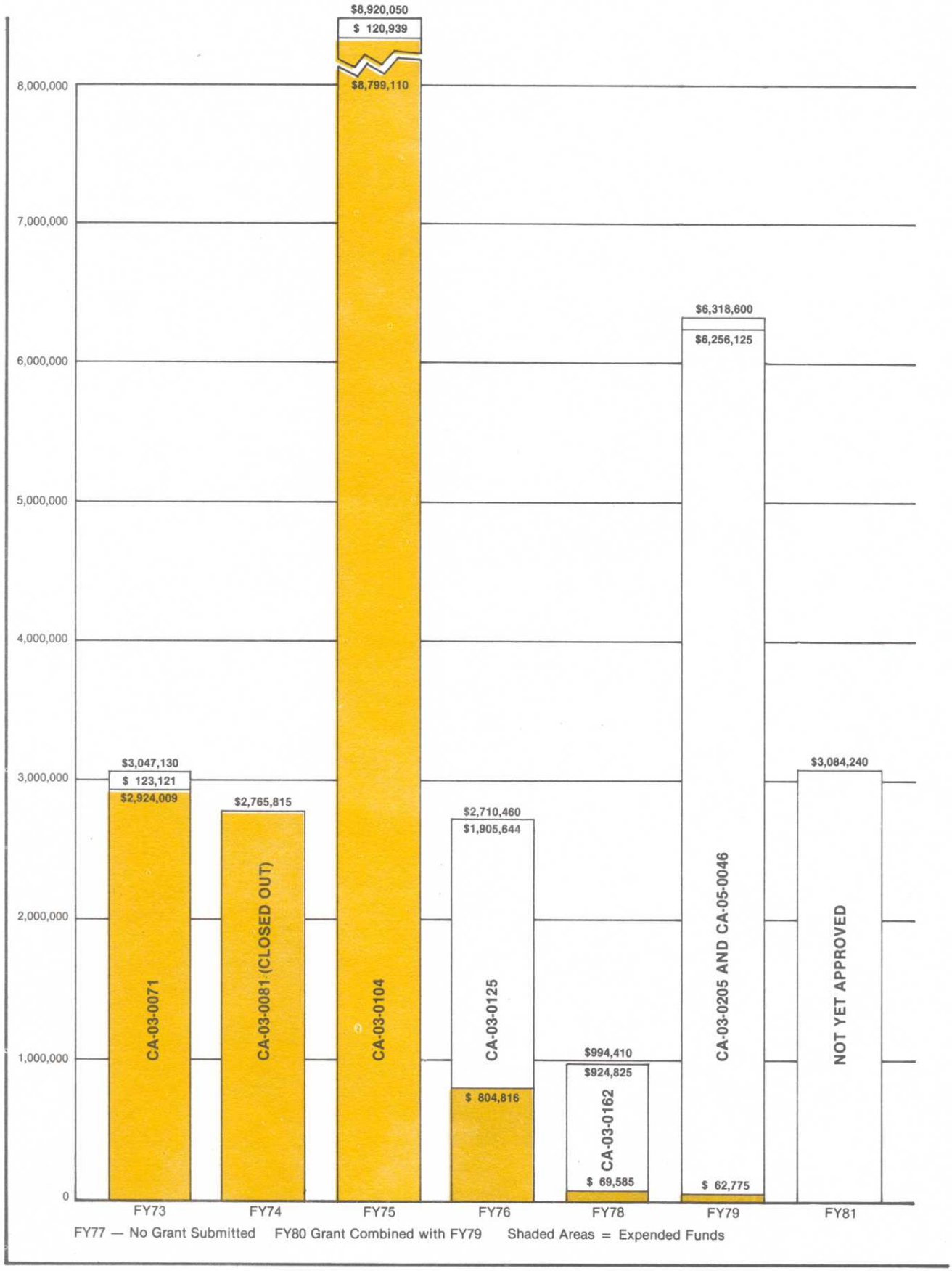
Fiscal Year	Grant Number	Category	Amount
1981	App. pending	Net Cost	$3,084,240
		20 buses	2,850,000
		administration	6,000
		contingencies	266,240
1980 &	CA – 03 – 0205 &	Net Cost	$6,318,600
1979	CA – 05 – 0046	Expended	62,775
	combined	To Be Expended	6,256,125
		45 buses	6,183,733
		shop tools	26,545
		administration	15,000
1978	CA – 03 – 0162	Net Cost	$ 994,410
		Expended	69,585
		To Be Expended	924,825
		6 buses*	896,347
		bus washer	20,000
		administration	16, 934
1977	No grant submitted		
1976	CA – 03 – 0125	Net Cost	$ 2,710,460
		Expended	804,816
		To Be Expended	1,905,644
		14 buses*	1,899,270
		administration	48,174
1975	CA – 03 – 0104	Net Cost	$ 8,920,050
		Expended	8,799,110
		To Be Expended	120,939
		shop equipment	79,939
		Communication equip.	41,000

TABLE III-34 (Continued)
CAPITOL GRANT STATUS
FY 73 – FY 81

Fiscal Year	Grant Number	Category	Amount
1974	CA – 03 – 0081	Net Cost	$ 2,765,815
		Expended	2,759,844
		To Be Closed Out	5,971
1973	CA – 03 – 0071	Net Cost	$ 3,047, 130
		Expended	2,924,000
		To Be Expended	123,121
		computer equipment	92,813
		route signs	30,308

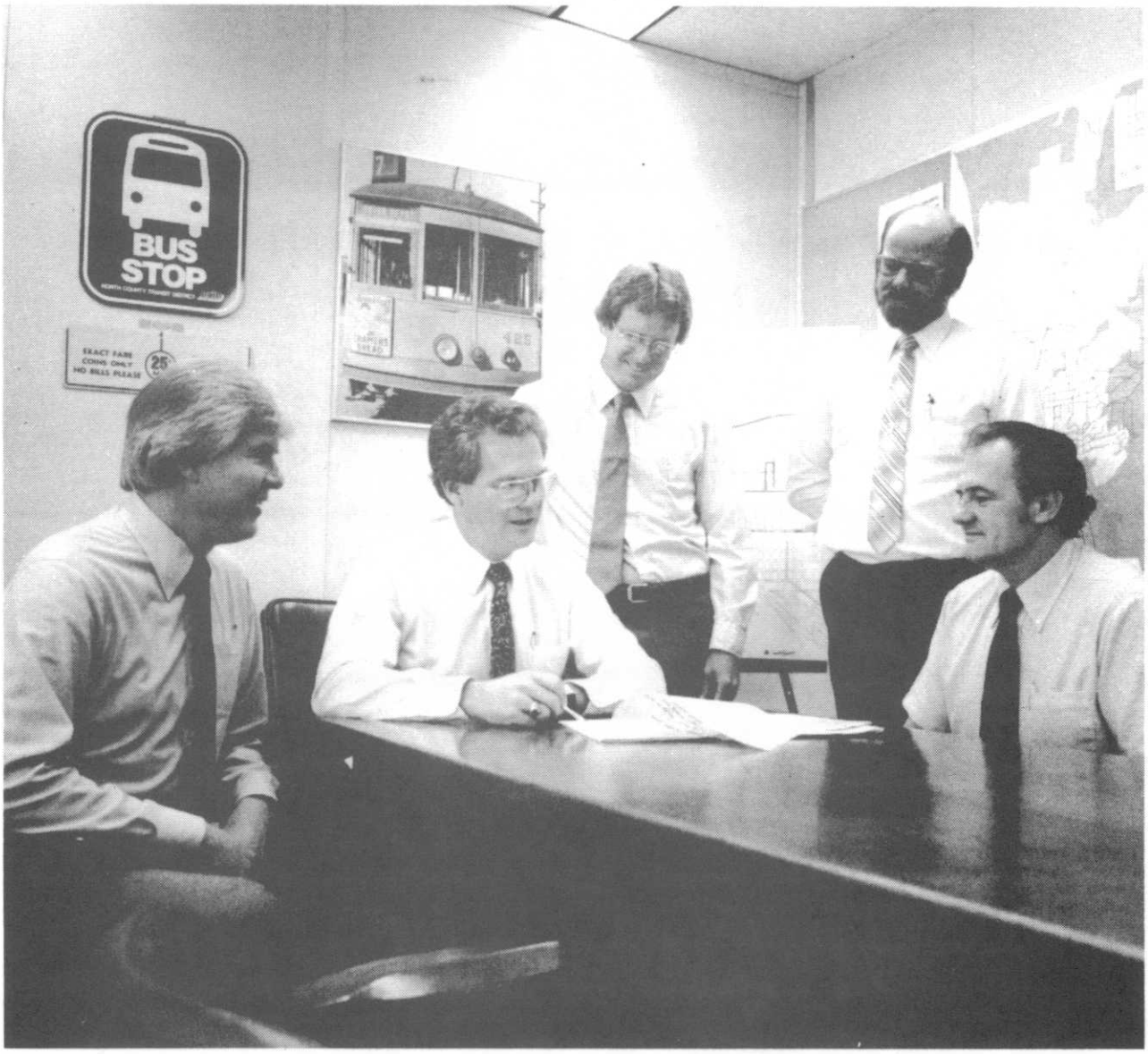
*Approved grants for FY78 and FY76 totaled 26 buses,
cost escalation forced a reduction to 20 buses.

FIGURE III-24
STATUS OF GRANT APPLICATIONS
FY73-81



IV

PLAN ALTERNATIVES



Introduction ☐ Funding Resources ☐
Funding Alternatives ☐ Special Service Plan Elements ☐
Operating Plan Alternatives

INTRODUCTION

In the traditional planning process, a simplified procedure might include five steps:

1. Problem identification,
2. Evaluation of existing conditions,
3. Identification of alternative solutions,
4. Evaluation of alternative plans, and
5. Selection of recommended plan.

San Diego Transit's annual plan update process follows this procedure except that for the past few years, step four has been extremely limited by funding constraints. This is to say that if the forecase for funds available for the coming year will barely cover the costs of continuing the existing level of service for these next twelve months, the exercise of developing alternative improvement plans becomes redundant. With the exception of a modest improvement in FY80, SDT has been faced with greater financial limitations, and therefore no opportunities for expanded service for the past four years. Not coincidentally this has followed the passage of the Proposition 13 tax reduction initiative. For this reason a true alternative plan identification and evaluation has not been completed.

For FY1982 and beyond to FY1986, several significant developments will be taking place. This chapter discusses these events including funding, operating plans for bus service, coordination with the new trolley light rail transit service, capital plans for buses, stations and a maintenance facility, and several subsystem plans for related areas such as lift equipped service, air quality standard compliance and an energy contingency plan.

FUNDING RESOURCES

FEDERAL

Since San Diego Transit became a publicly owned operator, it has relied upon financial assistance from the Federal Urban Mass Transportation Administration (UMTA) as one funding source, just as other operators throughout the U.S. have. Until 1979, SDT received UMTA Section 3 funds for capital purchases. As of FY82, these funds are expected to be available to San Diego again. Current federal budget proposals would reduce future Section 3 fund amounts at the national level and eliminate other federal support funds so that by 1985, Section 3 could be the only remaining source of federal dollars.

UMTA Section 5 funds have also been utilized by SDT since they became available in 1974. These funds are applied to both capital and operating expenditures. The Section 5 program has been authorized through FY82 and SDT anticipates about $11 million for this next year. The Administration in Washington is committed to making substantial budget cuts in coming years, including the elimination of Section 5 funding by 1985. The amount of Section 5 operating funding available would be reduced each year from FY82 to FY85 when it reaches zero. Carryovers in Section 5 capital dollars should provide some funds through FY86.

STATE

California passed the Transit Development Act (TDA) which created additional funding for public transit operators within the state beginning in Fy73. These funds have been an important element of SDT's budget since their creation. Currently, they provide over $12 million annnually. There is a significant advantage to these funds: a built-in inflation adjustment since they are based upon state sales tax. One difficulty with these funds, however, is that SDT has dropped from second position originally to sixth in priority for allocation within the San Diego region. This situation is not seen as likely to be improved in the future and, though SDT's TDA fund amount should continue to increase annually, it will not likely be as much as it potentially could be.

An additional source of transit revenue to the region has been created by the State of California, State Transit Assistance Funds (STAF). Unless extended, this will expire after FY82. A bill is in committee at the time of this writing which would extend STAF monies three more years, through FY85. SDT received STAF dollars only to cover unexpected fuel cost increase in FY80.

LOCAL

In past years, SDT received operating support dollars from property tax generated Transportation Reserve Funds from the City of San Diego and from general funds from the outlying communities contracting for service. Proposition 13, a property tax/state spending reduction initiative, eliminated this source in 1978. At present, no alternative to this loss of funds has been identified as a likely replacement.

The other local sources are the revenues generated by SDT. Passenger revenues are the primary factor here. The recent pattern in ridership indicates an overall leveling as increased fares are countered by increased operating costs for the private auto. The extent of this elasticity to prevent severe reductions in ridership with future fare increases is unknown. If even higher diesel fuel prices or other inflation factors force future fare increases, passenger revenue could be reduced if these increases exceed the transit rider's elasticity to pay. Obviously, this is a delicate situation which warrants continual monitoring throughout the five year plan period.

Other revenues generated by SDT include advertising space sold for both the exterior and the interior of the buses. Another source is from special service and charter, but this is intentionally limited by SDT so that it does not interface with regularly scheduled service and, therefore, adds little to the operating budget.

Local funds are critical not only for themselves, but because federal monies require a 20% match to qualify for 80% of project UMTA dollars and state funds have farebox recovery requirements for qualification.

FUNDING ALTERNATIVES

INTRODUCTION

San Diego Transit has documented severe funding shortfalls in each five year plan update since 1978. At the time of the writing of this report the funding picture is darker than ever due to pending reductions in federal funding support. To present a clear perspective on the extent of funding cutbacks for FY82, the following points must be considered:

1. Proposition 13—This elimination of local property tax support cost SDT $2.9 million in FY78 and could have contributed about $4 million for FY82.
2. Competition for TDA Funds—Since their creation in 1973, SDT has been reduced from a second level priority to a sixth level priority; also the number of operators has increased from only SDT and one other operator receiving funds in the first year to FY82 when thirteen operators will be receiving TDA funds. This reduces the amount available to SDT by about $4 million.
3. Reduced TDA Funds—The nationwide economic downturn has resulted in reduced consumer spending. Since TDA funds are derived from sales tax revenues, lower spending has resulted in actual fund amounts being lower than the projected dollar amounts which SDT utilized for budget planning purposes. This resulted in the TDA allocation available to San Diego being about $4 million lower than expected.
4. Reduced Federal Funds—Washington's new UMTA funding budget calls for reductions in the proposed amounts for Section 3 dollars and the elimination of Section 5 budgeting authority by 1985 with reductions over the intervening years.
5. Total Funding Potential Loss—The aggregate loss to SDT for FY82 from these sources is at least $10 million. By FY86 it is likely to be at least $20 million. (Keep in mind that these reductions are related to SDT's sources of funding; not to the need for operating and capital expenses.) Budget deficits limit the alternative plans discussed in this chapter should be compared to these figures for a complete picture of the impact of these reductions to SDT's program.

With these financial impacts in mind, attention may be turned to potential sources of additional funding support. Many new sources have been identified from which the following list for funding assistance is drawn. No single source is without its difficulties but this list identifies those that are the most reasonable.

ADDITIONAL FUNDING ALTERNATIVES

1. Local Sales Tax—A metropolitan San Diego area wide sales tax of one-half cent could generate approximately $40 million annually. The collecting authority could decide allocation for various transportation purposes, unless the enabling legislation itself defined explicitly such distribution. The State Constitution, as amended by Proposition 13, requires a two-thirds approval for any "special" tax increase by voters within the subject jurisdiction. Legal ramifications of this alternative are currently being tested by Los Angeles County.
2. Regional Assessment District—Could cover the entire service area or a selected portion such as the CBD. Definition of district boundaries would be critical. San Diego's diffuse geographical/ commercial layout could raise serious questions of equity unless such a fee included nearly all areas of transit service. This alternative would be subject to the Proposition 4 (Gann Initiative) governmental spending limit control.
3. Payroll Tax—State enabling legislation would be required followed by a two-thirds local voter approval. Again the Catch-22 spending limitations: even if the additonal revenue were secured, spending would be limited to both the State Gann Iniaitve and, if City sponsored, San Diego's Proposition "J." This tax has a relatively low administrative cost.
4. Parking Surcharge—A parking surcharge could include the positive effects of discouraging automobile commuting, reducing congestion, and encouraging transit ridership. However, the surcharge could still be subject to a 2/3 voter approval and the Gann and J spending limits. Questions would also arise concerning equity, which lots to include, and any negative impact to the business community. This would logically be only in the CBD and as such, the dollar potential is limited.
5. Hotel/Motel Tax—To reallocate existing funding would require city council action and to increase the existing tax a two-thirds voter approval would again be required. Competition for these funds is keen and their use by transit is not favored by the city.
6. General Fund/Revenue Sharing—With nearly all departments in the City of San Diego facing funding problems, this source cannot be considered as a likely one for SDTC.
7. Reinstate City of San Diego Special Property Tax—This has been the traditional source of local funding for the majority of U.S. transit systems. The City of San Diego had collected 10¢ per $100 of assessed value property tax for public transit prior to its being invalidated by Proposition 13. It is estimated reinstatement of the property tax would currently generate approximately $4 million. The City does not favor this alternative. Also, a constitutional amendment would be required via voter approval.
8. Pooling of TDA Funds—This would require a change from the present allocation to each jurisdiction by population to pool all or part of the funds coming to the metro San Diego area for public transit services.
9. Operating Transit District—Favored by SDT as the most logical overall solution if included with a viable fund generating mechanism. This would allow all state generated funds (TDA, STAF, etc.) for the metro area to come under a single management and administrative head.
10. Excise Tax—There are two general types of State excise taxes on special goods and services to maintain and improve transportation services:
    1) unnecessary consumption (alcohol and tobacco),
    2) user charge (motor fuel taxes). The latter is better suited as a funding source for transit needs, although the cigarette tax deposited in the City's general fund is technically available for any purpose for which the Council may approve general fund expenditures.

    The State Legislature is currently considering SB 215 (Foran), which would increase state gas taxes and fees for trucks, driver's licenses, and vehicle registration. This could be passed by a 2/3 vote of the legislature and be enacted upon the Governor's signature. (The City, County, SANDAG and the California League of Cities are actively supporting this measure. It has cleared the Senate

Transportation Committee, chaired by the sponsor, but the prospect of enaction does not appear especially promising to some observers.) It should be noted that MTDB currently has the authority to levy a one cent per gallon fuel tax with a two-thirds local voter approval but has not exercised this as yet. Enabling legislation for this authority specifies capital expenditures only, not for operations.

11. Municipal Bond Financing—To be utilized only for capital expenses, the question here is one of adequate revenues to pay off the bond financing. Since capital expenditures only require a twenty percent local match anyway, the benefits of this funding alternative are doubtful. The real need is for funding for operating expenses.

SPECIAL SERVICE PLAN ELEMENTS

In addition to the three operating plan alternatives presented in this chapter, several specialized service elements have also been prepared for consideration and/or input into the selected plan. Included in these elements are the south bay service coordination necessitated by the introduction of trolley transit service, the transition plan for elderly and handicapped services, the air quality plan and planning for improved transit service in Centre City.

SOUTH BAY SERVICE COORDINATION

The San Diego Trolley, as owned and operated by the Metropolitan Transit Development Board, begins operations July 26, 1981. This new service operates in the south bay corridor between Centre City San Diego and the International Border at San Ysidro. Since this corridor service was previously provided by San Diego Transit and two other fixed route bus operators, considerable coordination efforts were required to interface existing bus service with the new trolley. SDT staff has been working with MTDB staff for the past two years in planning for this new service.

SDT's goal in changing south bay service is to provide efficient feeder service to the trolley and to maintain local bus service and operational standards. This has been achieved by SDT, MTDB and the cities and communities within the south bay service area. In addition, passenger movements on the previously operating bus routes were analysed to determine demand. With timed transfers between the bus and rail systems, much faster public transit service will now be available to residents of this corridor.

San Diego Transit's involvement began with the review stage for the rail alignment and station location and design plans. Several factors were evaluated relating to the stations. Safe and efficient access for buses to the station bus stop locations as well as passenger access between the bus stop and the station were evaluated. Another part of the review was to insure adequate bus facilities were available. An overall concern was to insure passenger safety and convenience.

As the trolley-bus station locations were determined, staff began developing alternative bus service routings. Four major concerns guided this work. First was to review the impact on current ridership. To do this, existing alignments were maintained to the degree possible. Secondly, potentials for increased ridership by penetrating new or densely developed areas were evaluated. Third, travel time impacts for the bus riders were analyzed. Lastly, transfer connections based upon known trips movements were considered. Emphasis in trip movement analysis was given to northbound trips in the AM and southbound trips in the PM. These considerations led to the development of alternative routings for all routes involved. These alternatives were reviewed with MTDB and recommendations for route alignments were developed.

Next the scheduling for each route was analyzed. First, tentative bus schedules were developed for the recommended route alignments. The tentative schedules were matched against transfer times at the major southbay transit stations. The Iris Street Station was assigned the first level priority. Secondary level priorities were made for the Border, Palm and "H" Street. Timed transfers were not a consideration for Centre City due to the level and frequency of bus service there. Next, transfers between bus routes were considered. This involved timing between SDT's own routes as well as National City Transit and SCOOT. Part of the bus service feeding the trolley system is shuttle service. Shuttle routes may operate in a loop configuation, therefore the direction of major person movements were considered for

positive connections. At all the trolley stations it was necessary to allow for walk times to and from the bus stops to the station loading platform. Design limitations prevented direct access for transferring passengers, some stations have less of a problem than others.

Table IV-1 lists the revision for the routes to be implemented in July, 1981 with the start up of the San Diego Trolley service. The south bay service alignment is shown in Figure IV-1.

In addition to San Diego Transit's normal ongoing system and route evaluation program, special attention will be given to monitoring this new south bay corridor service. For the first several months after the startup date, the trolley stations will be monitored by SDT. Several factors will be checked and/or counted such as transfers between San Diego Transit buses and the San Diego Trolley, bus running times, on-time performance for both the buses and the trolley, operational problems of any nature and special observation of passenger safety. Any obvious problems with relatively simple solutions will be addressed by SDT's normal September system shakeup. Most initial problems which may require scheduled adjustments may not be able to be corrected until the January shakeup. These corrective measures will apply to any considerations for changes in routing as well as those for schedule changes. The five routes providing connecting service in the southbay corridor will receive special attention in SDT's quarterly route evaluation process over the next year as well. Fine tuning, as with the entire system, will be an ongoing process.

LIFT EQUIPPED BUS TRANSITION PLAN

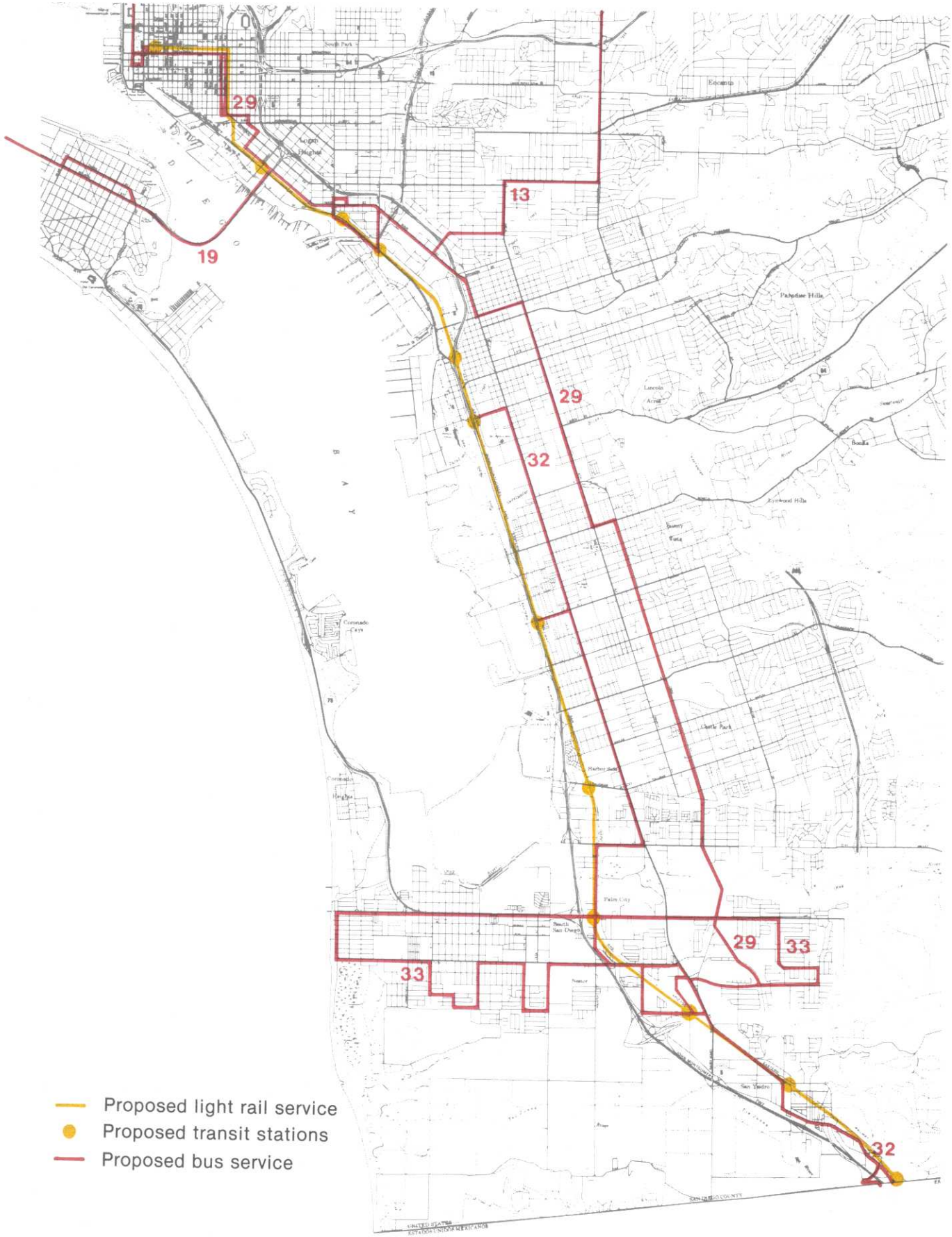
San Diego Transit developed a handicapped and elderly transportation plan in 1980 which became part of the FY81-85 Plan Update as well as part of the Regional Transit Development Plan. For the FY82-86 Plan Update, the transition Plan receives a major revision. Previously, the San Diego Transit Board established a policy that all new buses to be purchased would be lift equipped to assist accessibility. Therefore, the capital grant program which provided sixty-five new buses to be placed into service for FY82 specified that these buses be lift equipped. In anticipation of receipt of these vehicles, SDT staff worked with SANDAG's Subcommittee for Elderly and Handicapped Transportation (SEHT) and staff over half a year in developing and evaluating alternatives for utilization of these vehicles and selecting a recommended plan for implementation in September, 1981.

Two assumptions were basic to the development of a passenger lift service program. First it was determined that providing hourly service to a greater number of routes would be more beneficial than providing full service on a limited number of routes. Secondly, though a normal spare fleet ratio of ten percent might be adequate for standard new buses, because of potential problems with the additional complexity of the lift mechanisms, a spare ratio higher than ten percent should be utilized, at least until the new equipment has a chance to prove itself. It should be added that SDT plans to retrofit the five existing lift equipped buses with the same model lift as on the new coaches. This will provide the latest version lift on the older buses and simplify the maintenance program for the complete lift equipped fleet. The total lift equipped fleet will then be 70 buses.

TABLE IV-1
SOUTH BAY CORRIDOR SERVICE CHANGES
SAN DIEGO TRANSIT
JULY, 1981

Route	Description
9 (19)	Establish service from the Crosby St. Station at Crosby & Harbor Dr. direct to Building 463 on North Island. This will provide quick service to and from North Island for South bay residents working at North Island. Only one trip per day is planned initially. This service can be increased if there is sufficient demand.
13	Extend to the Naval Station and NASSCO on a half hour basis on the southend. This extension will provide service to the trolley stations on Harbor Dr. at 32nd St. and 28th St. for the residents of southeast San Diego.
29	Extend south to the Iris St. Trolley Station. This will provide south Chula Vista and Otay residents direct access to the trolley and to all other bus routes using this station. It is also recommended this route be realigned to serve the area from 8th and National City Blvd. to Downtown San Diego via the existing route 32 alignment. Route 29 will no longer provide service along Harbor Dr. as this would be in direct competition with the trolley.
32	Realign route to operate from the 24th St. Trolley Station in National City to the International Border. This route will no longer operate to Downtown San Diego. Feeder service will be provided to the following Trolley Stations: a. International Border b. Beyer St. Station, San Ysidro c. Iris St. Station d. Palm Station e. “H” St. Station, Chula Vista f. 24th St. Station, National City
33	This route will be realigned from its current figure eight alignment to a circular route, which will allow better transfer connections at the Palm St. and Iris St. trolley stations. The service area will remain the same except for a slight deviation to serve those approximately 200–Route 100 patrons boarding in the Satellite and Saturn area.
100	This route is scheduled for elimination, as it would duplicate the service provided by the trolley. The portion of this route served in the South bay area in the Saturn and Satellite loop will be served by Route 33/33A. Cost savings are 4 buses and 8 operators.

FIGURE IV-1
SAN DIEGO TRANSIT SOUTH BAY SERVICE REALIGNMENT



Four alternative concept plans were developed for lift equipped service. These concepts were reviewed by both the SANDAG SEHT and the SDT Planning and Marketing Committee.

Alternative I: Major Transfer Center Network

Eight major transfer centers were identified and all routes serving these centers were designated for hourly lift equipped service. Though the CBD is the major transfer center with 22 routes interfacing, it was not included since this concept would end up identifying 90% of SDT's routes for lift service. Alternative I identified 24 routes which would provide a high level of accessibility to the metro San Diego area but would require 64 buses, too high a demand if the spare fleet ratio is to be held well above 10%. Once the buses prove themselves and a near 10% ratio is reasonable, this may become the expanded lift service recommendation.

Alternative II: Service Facility Network

Ten major facilities which provide special services utilized by the handicapped and/or elderly community were identified and all routes serving these facilities were evaluated for hourly lift equipped service. This alternative would require 45 buses to operate on 17 routes. Hospitals, special service centers and college campuses served by the SDT system were utilized to determine this alternative network.

Alternative III: Service Distribution Network

Routes were selected for this alternative based upon geographic distribution through San Diego Transit's service area. Twelve routes were identified which provided maximum penetration to all points in the service area. This would require 38 buses which would allow an adequate reserve fleet to expand service after a period of operational experience.

Alternative IV: Demand Responsive Lift Demand Network

Data was obtained from the City of San Diego Dial-A-Ride log sheets for lift service requests. The origin or destination of these requests were plotted on SDT's system map and all routes passing within three blocks were identified. This designated 11 routes which would require 33 buses to provide hourly service. Data of this type was not available for all suburban contract city areas so that while this alternative was well founded in concept, it did not have a sufficient data base.

Of the 65 new, lift-equipped buses, a conservative 20 bus spare fleet is recommended, at least until such time as the new vehicles are able to prove themselves. This would allow for 45 to 50 buses to be assigned for scheduled service, depending upon how soon the five bus retrofit program can bring the total SDT lift equipped fleet up to 70 buses. In the future, a normal 10% spare ratio would provide 63 buses for daily assignment with 7 spares.

A fifth alternative concept would provide a specific number of lift equipped buses to be available on a 24 hour advance call reservation basis. This concept could provide a lift bus on any route at any regularly scheduled time point by calling in a request at least one day in advance. While this concept could provide a high level of service to those desiring to use the lift buses, it would present a number of operational problems. This will be evaluated during FY82 after the scheduled lift service has had sufficient time for its operational shake down.

These alternatives were reviewed and discussed not only by the Subcommittee for Elderly and Handicapped Transportation but by the Community Service Center for the Disabled staff, the Paratransit Coordination Project Committee and the San Diego Committee for Removal of Architecural Barriers (CRAB) as well.

Recommended Lift Service Plan

Basic to any of the alternative system plans for SDT for FY82-86 is the inclusion of a lift service plan. Following an analysis of the lift service concepts just described, Alternative II, Service Facility Network

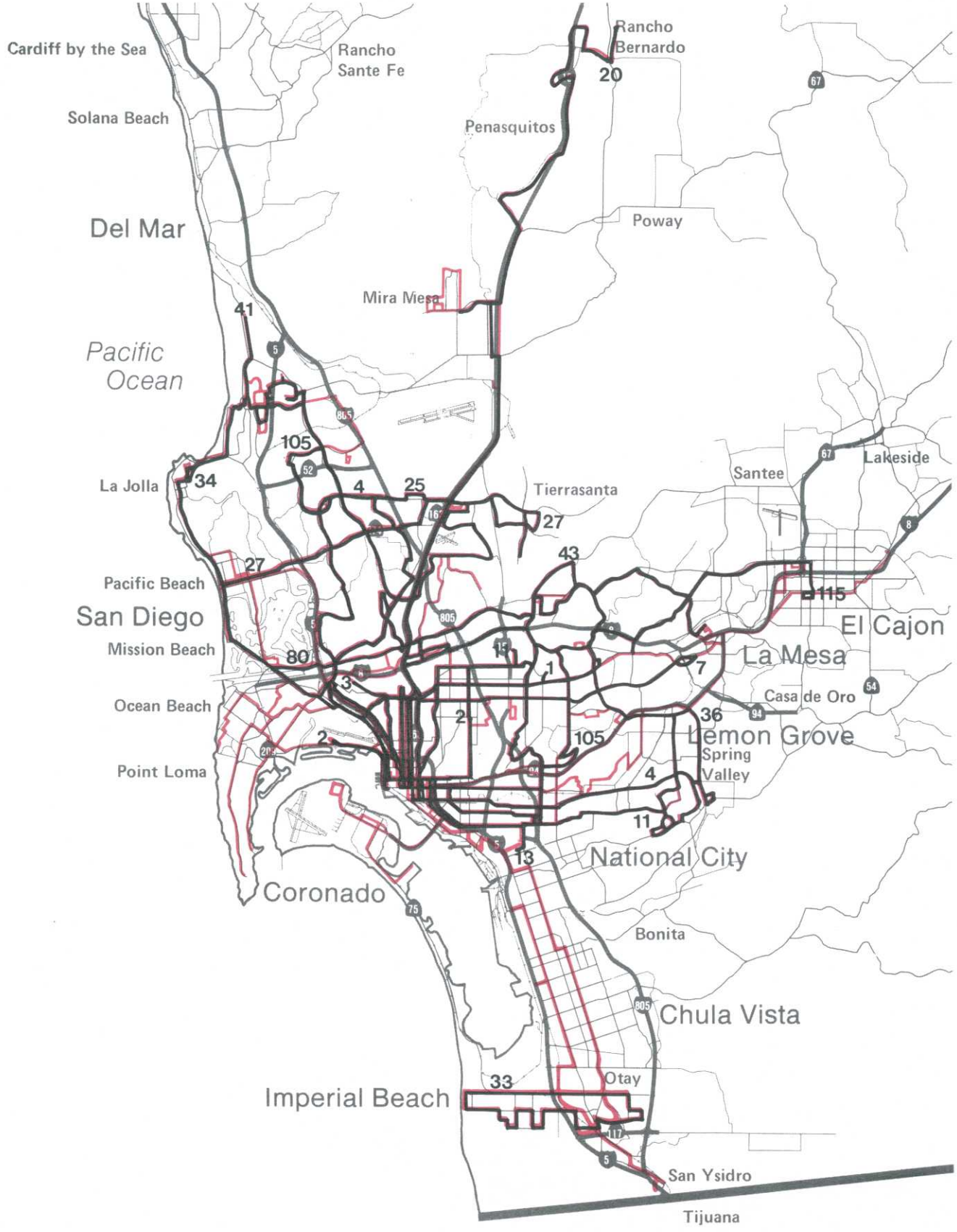
was selected. With the addition of Route 20 providing inland corridor service to San Diego's North City area and connections to the North County Transit System (NCTD) and two other route replacements from the original alternative concept, the recommended lift service plan evolved. Figure IV-2 calls out the routes with scheduled lift service and Table IV-2 offers a summary description. Base period headways are shown only along with base bus requirements. Then the number of buses required for hourly service is given. In the event that the complete lift service network is not implemented at one time (the September, 1981 shakeup), an implementation sequence is also given. SDT intends to reintroduce service on Routes 3 and 7 as soon as possible since this lift service has been suspended for months.

TABLE IV-2
RECOMMENDED LIFT SERVICE ROUTES
SAN DIEGO TRANSIT
FY 82

ROUTE	BASE PERIOD HEADWAY	TOTAL BASE PERIOD BUSES	LIFT BUSES FOR HOURLY SERVICE	ROUTE IMPLEMENTATION SEQUENCE	AGGREGATE BUS REQUIREMENT
1	20	6	2	3	2
2	20	6	2	7	4
3	20	7	2	25	8
4	30	8	4	11	12
7	10	15	2	34	16
11	30	8	4	80	18
13	30	5	2	4	22
20	30	7	4	33	24
25	20	7	4	115	27
27	30	5	3	41	29
33	30	2	2	105	33
34	30	7	4	1	35
36	30	4	2	43	37
41	30	5	2	13	39
43	30	4	2	36	41
80	30	4	2	2	43
105(5)	60(30)	5(9)	4	20	47
115(15)	60(30)	5(9)	3	27	50
18			50		

An extensive program to introduce the new lift equipped buses to the community will begin in July, 1981. Buses will be available for inspection and demonstration at a variety of shopping centers, college campuses, specialized community service centers and other selected spots throughout SDT's service area.

FIGURE IV-2
SDT LIFT SERVICE ROUTES
FY82



This will introduce the lift service to new bus riders who may want to take advantage of this added mobility opportunity as well as familiarize San Diego's existing bus riding public.

ENERGY CONTINGENCY PLAN

Introduction

The energy related experiences of the last decade have made the government and the citizens of the United States acutely aware of the impacts a shortage in foreign oil can have on the quality of life in America. Public mass transit can and should play an important role in minimizing these impacts. In SDT's FY81-85 Plan Update, an Energy Contingency Plan was included to directly address this issue for the first time.

A significant cut in the supply of foreign oil would impair the mobility of most Americans and force many to seek alternative means of transportation. Mass transit, as a primary alternative to the auto, would be faced with the job of providing transportation for a large percentage of these persons. This job is further complicated by President Reagan's executive order of January 28, 1981, deregulating fuel prices and eliminating all fuel purchasing priorities. As a result, transit and other essential services are no longer guaranteed the fuel necessary for them to operate.

The purpose of this report is to identify and evaluate contingency strategies that would be considered in the event of an energy crisis and also to identify those programs, currently underway, that would aid in handling the increased demand more effectively. The first section lists the assumptions that have been used to develop the contingency strategies. The second section describes the ongoing planning currently being employed that would help prepare San Diego Transit for the effects of an energy shortage. The third section, the plan, discusses the additional strategies that could be implemented if an energy crisis were to take place.

Assumptions

The assumptions listed below are based largely on past experience, most notably the 1973-74 fuel crisis. This is not meant to be a complete list of the efforts for an energy shortage; rather it is to serve as a guideline for the development of various tactics necessary to accommodate the greater demand that would be placed upon the San Diego Transit system.

With the elimination of U.S. Department of Energy Special Rule No. 9, which guaranteed transit operators 100% of their fuel requirements, it cannot be assumed that SDT will receive even its present fuel requirement in an energy crisis, let alone any additional fuel to support necessary service expansion. Therefore, the assumptions on fuel availability also apply to transit systems. Two scenarios are presented, a moderate shortage condition and a severe shortage situation.

Moderate Shortage—

- Fuel available to the public reduced by 20%.
- Transit ridership could increase up to 40%.
- Gas stations would be forced to reduce their hours of operation and would be closed on weekends.
- An odd/even gas allocation program would be put into effect.

Severe Shortage—

- A moderate shortage would proceed a severe shortage.
- Fuel available to the public would be reduced from 20% to 50% of the current amount.
- Transit ridership could increase anywhere from 40% up to 150%.
- Effects would be felt nationwide.
- It would not be possible to purchase used buses.
- The amount of time required from date of order to receipt of the new buses would increase as the demand increases.

Ongoing Planning

The current, unstable fuel situation makes it necessary to be prepared for an unusual increase in patronage. The increase may result from either the continued escalation of fuel prices or from an actual fuel shortage. Regardless of the cause, people will be looking more and more to transit as an alternative to the automobile. At present, the average peak load factor for the SDT system is 104%, with nine routes averaging over 130% (see Table IV-3). It is evident from this information, that on many routes even a slight increase in ridership will have an impact in overcrowding.

1. Route Evaluation — Each of the San Diego Transit's routes is evaluated quarterly. These evaluations are based on four criteria: total passengers per trip; percent revenue hours; peak load factor, indicating the maximum load that a route experiences; and operating ratio, which is the ratio of farebox revenues to the cost of providing that service. These categories (shown in Table IV-3) were developed in order to analyze the productivity and efficiency of each route.
   In April, 1979, SANDAG implemented a more comprehensive bus passenger counting program for San Diego Transit. A detailed report is developed from the counting program for each route. This report includes data concerning the on-time performance of the route, fuel efficiency, total ridership and the boardings and alightings by bus stop. This information makes possible a detailed evaluation of each route that can be used as a basis for determining necessary changes to improve the route's performance.
2. Spread Peak Demand — As an ongoing program, SDT encourages employees to implement staggered or flexible work hours to help utilize the full potential of the bus system. Figure IV-3 demonstrates that the majority of work and school trips are made over relatively short periods during the morning and evening peak hours. By staggering hours, more people would be able to use the bus because of the high demand on many routes would be spread over a longer period of time. During an energy shortage, this need to spread passenger loads over a longer span would increase as more commuters turn to transit for their work trips. Approximately 28% of the buses operating during the peaks are providing supplemental service. This means that after one trip they are no longer required. If a substantial number of employers allowed staggered or flexible hours, many of these "trippers" could be used for additional service.
   The success of this strategy lies with the employers. It is uncertain whether enough employers would be willing to implement this strategy unless a severe energy shortage required more of their employees to use mass transit to get to work. San Diego Transit is currently working with a number of major employers located in Centre City in an effort to educate them on benefits and to implement programs of staggered or flexible hours.
3. Bus and HOV Lanes — SDT utilizes both bus lanes and high occupancy vehicle (HOV) freeway access lanes to avoid congestion and, therefore, to conserve fuel and maintain on-time schedules. Currently, bus lanes insure safe passenger boarding at the highest use point on Broadway in Centre City San Diego and speed up access to California 163 and Interstate 15. HOV freeway access lanes, controlled by ramp metering signals, aid car pool vehicles as well as SDT buses in entering CA 94 and 163 as well as I-8.
   In 1974, for a test period of only two weeks, bus lanes were implemented in a ten block segment of Broadway in Centre City. This eliminated both parking and turning movements by private vehicles in both directions for nearly a mile. Buses realized an average savings of up to seven minutes per trip during this test, thus providing a daily savings of 114 hours and a considerable conservation of fuel. At the time of this test, the change was politically unfavorable. San Diego Transit is working in association with the City of San Diego to reestablish Broadway and implement other bus lanes in areas of major congestion. Planning is also in progress with CALTRANS for additional HOV freeway access lanes. Both items are important tools in providing savings in both time and fuel.
4. Light Rail Service — Light rail service along San Diego's southbay corridor is scheduled to begin operating July 26, 1981. San Diego Transit has developed plans to provide feeder service to the rail system. Transit capacity will be increased significantly along this corridor with two-car trains

FIGURE IV-3
DISTRIBUTION OF TRIPS BY TRIP TYPE BY HOUR OF THE DAY
SAN DIEGO TRANSIT

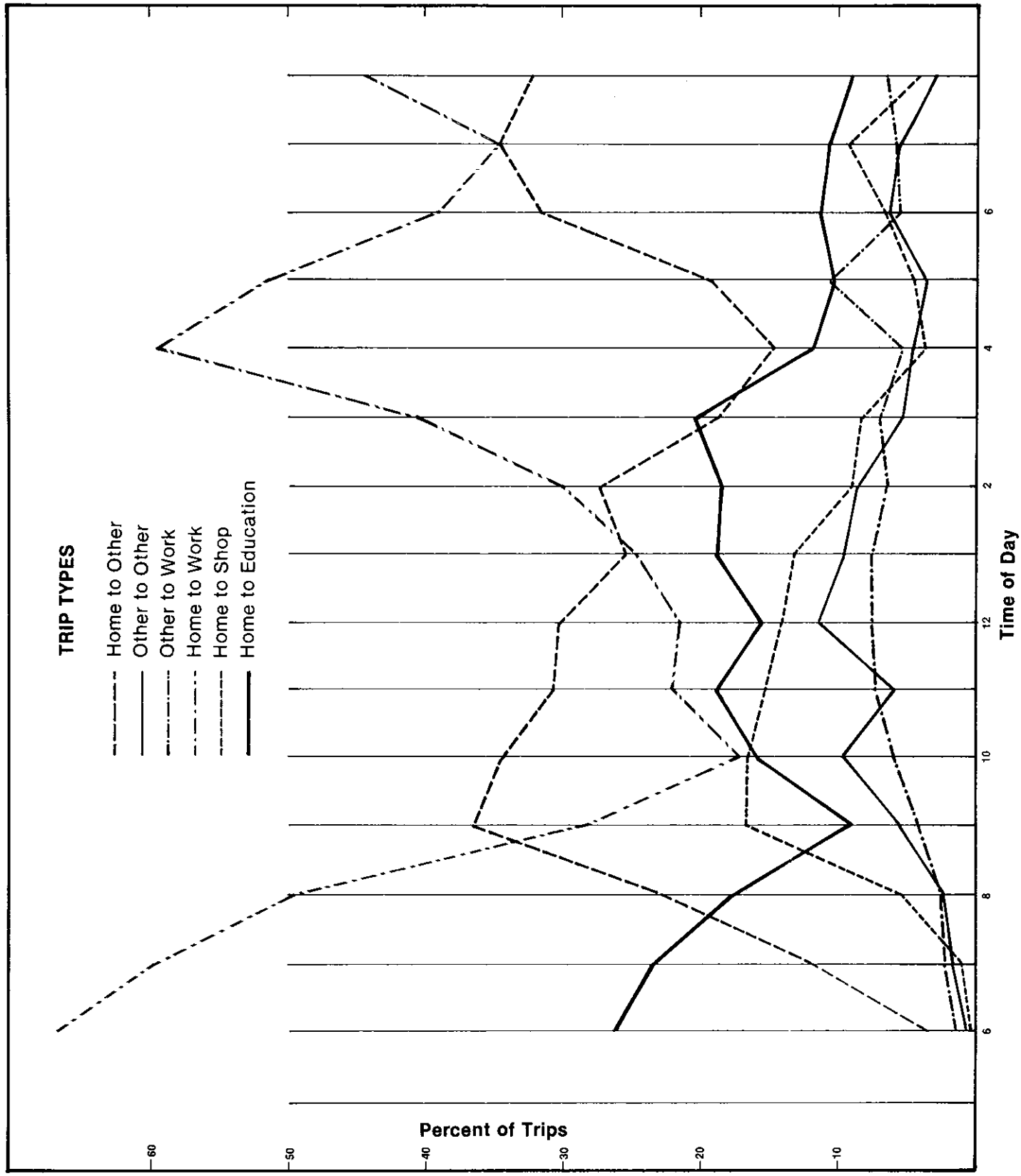


TABLE IV–3
FY 81 ROUTE EVALUATION
JULY – DECEMBER, 1980

Route	Ranked Composite	Total Passengers / Trip	Percent Revenues Hours	Farebox Recovery Rate	Peak Load Factor
32	183.3	86.3	82.7%	73.3%	144%
29	154.6	63.5	75.0	55.4	161
4	143.1	60.9	80.5	43.3	146
9	140.7	57.1	71.9	49.1	147
7	136.9	59.2	73.3	55.5	207
2	136.2	46.9	73.4	54.3	148
11	136.0	63.5	70.7	43.8	122
5	135.8	60.0	82.1	37.2	133
34	133.2	59.9	79.6	40.9	117
3	130.7	49.2	72.6	52.3	124
25	124.6	45.2	84.9	27.0	159
15	119.5	45.1	75.1	40.1	120
1	115.6	42.0	76.2	43.8	104
30	113.2	35.9	78.0	39.9	122
35	111.7	31.8	68.6	41.6	139
90	103.8	29.1	69.9	33.3	135
6	102.6	39.9	80.3	31.9	83
16	95.3	26.4	73.7	31.6	109
20	94.5	34.0	74.2	25.0	96
100	91.7	23.2	67.8	33.4	109
41	90.3	28.2	81.3	26.5	85
27	88.8	29.8	75.5	26.0	83
13	84.1	22.3	83.0	23.8	84
80	82.7	23.6	75.3	29.4	71
36	74.6	19.4	78.7	21.4	68
43	71.3	17.1	83.0	18.6	63
33	70.7	21.4	62.5	22.0	67
50	68.7	19.7	71.0	22.7	51
110	67.7	14.1	75.0	23.0	59
12	56.2	9.9	76.4	11.0	55
System Average	116.1	45.6	76.3	41.4	104
Standard	100.0	30.0	70.0	40.0	100.0

operating oil 15 minute headways. Each car has a seated capacity of 64 and a maximum capacity, including standing room, of 200 persons.

5. Paratransit — Plans are now being developed with the City of San Diego and UMTA that would utilize paratransit in providing feeder service to communities of San Diego in which ridership demand is not great enough to sustain conventional transit service. An evaluation of this service would allow San Diego Transit to determine the effectiveness of this approach as well as its applicability to other areas of San Diego. The feasibility of using paratransit in an energy shortage will also be determined.
6. Second Division — A high priority has been placed on the establishment of a second operational division. A site has been identified and negotiations are currently underway for the purchase of this land.

   The operational efficiency of the entire system would be improved significantly with this facility. A private consulting firm working on a site location study for this facility has estimated the annual cost saving, resulting from a reduction in deadhead miles and hours, to be in excess of $500,000. All paint and body work for the entire fleet will be performed at this division as well as the routine daily maintenance for the approximately 100 buses that will initially be stationed there. Construction of the second division is expected to begin during FY82.
7. Expansion of Park-and-Ride Lots — San Diego Transit is currently working with CALTRANS to expand the number of Park-and-Ride lots adjacent to bus routes. San Diego Transit provides assistance in determining the locations for these lots so that they will allow convenient access to mass transit. CALTRANS has the capability of both building and providing liability insurance for the lots.

   At present, there are five park-and-ride lots served by San Diego Transit. However, eight more lots that will provide access to the SDT system are planned for construction within the next five years.

   As the population continues to grow in the outlying portions of the SDT service area, this program will become even more important. Park-and-ride lots will provide persons who live in new developments not receiving bus service safe convenient access to the transit system. In the event of a fuel shortage, park-and-ride lots could be valuable to the persons wanting to conserve fuel who do not live near a bus route. Depending oil the locations of the lot and the length of the trip, these lots could allow significant fuel savings, especially for the commuter riding the bus four to five days a week.

Contingency Plan

The purpose of the contingency plan is to identify, evaluate and recommend actions that would aid in coping with the effects of an energy shortage. The “shopping list” format of this section will allow each strategy to be evaluated in light of the circumstances existing at the time of an emergency.

Some of the variables to be considered when determining which strategies to employ are: the extent to which the ridership increases, diesel fuel availability and obtainable funding.

Ridership will be monitored by using farebox audit sheets. These sheets provide daily ridership figures by route and type of fare paid. The availability of diesel fuel would be monitored by frequent communication with the fuel distributor.

There is no funding source available for contingency measures. Any option that would expand the existing system will require additional funding. Given the current inadequacy of funding for maintaining the existing service level, and the projected elimination of all federal operating money, it is very unlikely that any funds could be set aside for use only in an emergency.

The funding issue is among those being discussed by the Regional Transportation Energy Task Force. Comprised of staff members from local government and transportation agencies, this task force has the goal of developing a single, coordinated contingency plan for the region. The main issues being studied

by the task force that would affect transit are:

- The encouragement of staggered or flexible work hours among the major employers in the region.
- The implementation of exclusive bus lanes during an emergency.
- The possibility of establishing a major fuel depository for contingency use.
- The coordination of transit and paratransit operators during an emergency.
- Alternative means of funding contingency actions.
- The use of school buses to supplement public transit.

Table IV-4 provides a summary listing of contingency actions and their application. A discussion of each follows.

TABLE IV–4
CONTINGENCY ACTIONS

Action	Level of Shortage When Implemented		Time for Implementation	
	Moderate	Severe	<6 wks	>6 wks
1. Expansion of Public Information	x		x	
2. Bus Stop Elimination	x		x	
3. Increase Service on High Demand Routes	x			x
4. Decrease service to Conserve Fuel	x			x
*5. Purchasing New Buses		x		x
*6. Activate Buses in Storage	x		x	
7. Use of Paratransit		x	x	
8. Private Charter Bus Lines		x		x

* Assumes 2nd Division in operation

1. Expansion of Public Information Services — With the onset of an energy crisis, focusing funds on major public relations and marketing programs would no longer be necessary to induce new ridership. At such a point, efforts would be directed toward providing information to the public on how to use transit, which would include bus schedules and routing information. An increased number of public timetables would be printed and distributed throughout the service area. The telephone information system would be expanded as necessary to accommodate additional demand.
2. Bus Stop Elimination — Along much of the SDT route network, bus stops are located at one to two block intervals. By eliminating bus stops at certain locations, a considerable amount of fuel and time would be saved without causing much inconvenience to the bus patrons. Fuel and time would be saved as the bus would not need to slow down and accelerate as often. The stops to be eliminated would be determined by the distance to the adjacent stops and ridership demand.
3. Increase Service on High Demand Routes — The alteration of existing service would be considered only if there were not sufficient resources available to expand the system. In order to increase service on one route, service would have to be reduced on another. As an example, if one

route needed additional service during the peak period, a bus would be transferred from another route that exhibited little peak hour demand. Some under-utilized routes might eventually be eliminated if the demand on others continued to increase. The re-allocation of buses to high demand routes would provide service for a greater number of riders but would be used only until additional buses were made available to reinstate service to a standardized level on all routes. The SANDAG Passenger Counting Program provides a ridership profile for each route by time of day. This information would be used to identify those routes that are under-utilized during portions of the day.

4. Decrease Service to Conserve Fuel — If there were a cutback in diesel fuel availability to transit, there would have to be a commensurate cutback in service. Service reductions would be based upon data from the SDT Route Evaluation Program and the SANDAG Passenger Counting Program. Both reports provide measures of productivity and efficiency by route. The objective is to maximize fuel savings and minimize the impact on passengers. Most passengers can adjust their schedules accordingly if individual trips are eliminated. The SANDAG Passenger Counting Program would be the primary tool used since it gives an analysis of each route by trip. The first step in cutting back service is to evaluate individual trips for ridership versus fuel costs. Those trips that do not meet an established standard would be the first to be considered for elimination. Total passengers per mile would be used to establish a standard; however, the type of route must also be considered. An express route may have fewer passengers per mile than a local route, but its rate of fuel consumption would not necessarily be as high. The total elimination of routes provides the largest fuel savings as deadhead mileage is also eliminated. However, this approach also has the most dramatic impact on passengers. In most cases, the total elimination of a route forces its riders to seek other methods of transportation. Therefore, this tactic would only be considered when all remaining trips exceed the established standard. Routes would be eliminated based on their performance as indicated in the most recent SDT Route Evaluation Program, Table IV-3.
5. Purchase New Buses — The possibility of being able to purchase new buses during an energy crisis would be slight. Under current conditions, approximately two years is required for receipt of new vehicles once grant applications have been sent to Washington for approval. This time lag can be expected to increase as the nationwide demand for additional buses increases. A plan for adding new buses, therefore, cannot be considered realistic for meeting the immediate demands of an energy shortage but would be implemented to insure future capacity for the growing ridership.
6. Activate Buses in Storage — The activation of buses now in storage is dependent upon having a second division established to house and maintain these buses. At present, the second division is expected to be in operation by FY83. Additional personnel and funding for rehabilitation and operations would be necessary for these buses to be returned to service. Table IV-5 shows the additional personnel required along with an approximation of the overall costs of putting these 60 buses into service.
7. Use of Paratransit — As discussed previously in the Ongoing Planning section, the feasibility of using Paratransit to supplement fixed route bus service during an emergency will be evaluated when a similar plan is implemented to provide feeder service to the existing bus system.
8. Use of Private Charter Buses — In an energy emergency, San Diego Transit would be available to help co-ordinate private charter bus lines to provide additional bus service to the general public. Private bus companies could provide subscription service to work areas or develop their own temporary route system. This plan would depend entirely on the willingness of private bus companies to provide such service.

Conclusion

Because of recent actions taken by the federal government, the ability of San Diego Transit to accommodate any significant increase in ridership is uncertain. Additional fuel and funding are absolutely necessary for SDT to respond effectively to a severe energy crisis. With no guaranteed fuel supply even maintaining current service levels is not a certainty. The federal government has made it clear they do not wish to be involved with fuel allocations or in providing operating funds to transit. The Regional Transportation Energy Task Force has the responsibility of evaluating any and all strategies that could possibly eliminate the uncertainty associated with these two issues.

Under a moderate energy shortage, San Diego Transit could accommodate the increase in ridership with existing resources and fuel allocation. Accomplishing this would require the cooperation of local government and employers to implement such strategies as increasing the number of bus/HOV lanes and staggered or flexible work hours. It is unlikely SDT would receive the cooperation necessary under a moderate shortage, therefore it is probable some of the contingency fleet would have to be activated.

A severe energy crisis would require the activation of the vehicles in storage and, depending upon ridership increases, it could necessitate paratransit and private charter bus lines operating service which SDT would not have the capacity to provide. The length and severity of the crisis would determine if purchasing new buses would be appropriate.

To mitigate successfully the impacts of a fuel shortage, the participating and coordination of both the public and private sector will be essential The Regional Transportation Energy Task Force is presently working on this issue.

Recommendations

The following list of recommendations has been developed solely to identify measures that San Diego Transit feels should be considered by the appropriate agencies to aid in the implementation of local transit energy contingency plans.

1. The federal government should reinstate Special Rule 9 or equivalent legislation that would guarantee public transit all of its fuel requirements. Without such legislation it could become extremely difficult, in an emergency situation, to obtain adequate fuel on a timely basis.
2. The federal government, in conjunction with bus manufacturers, should develop plans that will make it possible to increase the rate of bus production in case of an energy crisis. These plans should be developed prior to an energy shortage so that they can be implemented as soon as the need arises.
3. The federal government should streamline the capital grant process to reduce further the amount of time required to obtain new buses. During an emergency situation, time would become most critical.
4. Federal and State governments need to establish and maintain a funding source to utilize in the event of an energy crisis. Potential strategies for acquiring these funds could be a surcharge on auto registration fees, additional parking fees, an increase in new car sales tax or a combination of these or other strategies.
5. With any fuel rationing or allocation program, persons working on jobs that provide essential services to the public should be given a priority on purchasing gasoline so that the services they provide will be maintained. Public transit operators and maintenance personnel should be included in this category.

TABLE IV-5
REQUIREMENTS FOR ACTIVATION
OF SDT CONTINGENCY FLEET

Item	Number	First Year Costs
Buses (1)	60	$ 165,000
Staffing: (2, 3)		
Drivers	116	3,611,080
Maintenance	17	557,124
Clerical	2	40,572
Materials (4)		2,043,312
Total Cost		$ 6,417,088
Revenue (5)		4,798,446
Net Cost		$ 1,618,642
Total Miles (6)	3,439,920	
Revenue Miles	3,058,088	
Revenue Passengers (7)	6,758,374	

ASSUMPTIONS:
(1) Making buses operational costs an average of $2,750 per bus.
(2) Number of additional personnel required based on current average per bus.
(3) Annual costs for additional personnel based on average wage plus benefits for each department.
(4) Materials cost59.4¢ per mile.
(5) Revenue based average fare of 71¢.
(6) Annual miles based on first six months of FY 81.
(7) Annual revenue passengers based on 2.21 revenue passengers per revenue mile.

REGIONAL AIR QUALITY STRATEGY

The Regional Air Quality Strategy (RAQS) is a tactic identified by the U.S. Environmental Protection Agency which includes a plan for reduced auto vehicle miles traveled through increased transit ridership. Regional air quality objectives have been identified and ridership targets established for all fixed route operators to help meet the objective. The recommended revenue ridership objective for San Diego Transit by FY86 is 37,063,000. None of the alternative plans discussed in this chapter reach this ridership target. The shortfall varies from 15.3 million for the first alternative, the continuous service level, to 2 million for the third alternative, the population growth rate determined system expansion.

The reason the RAQS target cannot be reached by San Diego Transit is funding; both capital and operating finances cannot provide for the necessary expansion for this level of service. Table IV-6 summarizes the five year plan costs for the recommended system and the RAQS system as determined by operating fleet improvements necessary to reach the FY86 levels. To achieve the RAQS ridership level for FY86, a peak fleet requirement of 345 was determined. Assuming a 10% spare fleet ratio and a 5% out of service ratio, an operating fleet requirement of 403 was calculated. No buses would exceed SDT's standard of 12 years. The recommended plan peak requirement for FY86 is 240 buses. A 10% spare ratio and 11% out of service ratio were utilized for this projection allowing a maximum bus age up to 15 years. The RAQS system requirement of 243 new buses to be purchased within the next five years would cost $36.5 million at 1981 prices for "new look" (not "advanced design") buses. Combined with the second division development cost of $6.1 million, total capital costs to meet the RAQS FY86 targt ridership would be $42.6 million. The recommended system, which cannot be financed with presently existing funding sources, totals $28.7 million or about 67% of the RAQS cost. If a $28 million capital program currently looks improbable, one in excess of $42 million must look impossible. Note that while the conclusion is the same, different assumptions were utilized in the RAQS analysis in the FY81-85 Plan Update, therefore the figures are not directly comparable.

TABLE IV-6
RAQS FY82-86 CAPITAL REQUIREMENT
FOR SDT RIDERSHIP TARGET

	FY81 SDT System	FY86 Recommended System 2)	FY86 RAQS System 3)
Revenue Passengers [1]	26,410	23,559	37,063
Peak Fleet Requirement	217	240	345
Operating Fleet	312	293	403
Additional Buses		0	91
Replacement Buses		148	152
Bus Costs [1]		$22,200	$36,450
Second Division Costs [1]		6,164	6,164
Total Capital Costs [1]		$28,364	$42,614

1) Figures in 1,000's, costs in constant 1981 dollars.
2) Assumes 10% spare ratio and 11% out of service. No buses over 15 years of age which permits lowered spare ratio. The 65 new buses for FY 82 were included in operating fleet line item since they were previously funded. Buses purchased at $150,000 each.
3) Assumes 10% spare ratio and 5% out of service ratio. No buses over standard of 12 years of age which permits lower out of service ratio. The 65 new buses were included in operating fleet since previously funded. Buses purchased at $150,000 each.

Based upon FY81 budget expenses of SDT, the annual operating cost by FY86 for the RAQS target level of service would be over $50 million.

The Environmental Protection Agency has established higher ridership objectives for FY86, which may well be admirable, though certainly not cheap to attain, while the federal budget department is eliminating Section 5 operating funding by 1985 and reducing projected Section 3 capital funding. This shows obvious lack of coordination and commonality of purpose in federal programs.

CENTRE CITY BUS PLAN

Centre City San Diego, a.k.a. the CBD, is the primary focus of the San Diego Transit system. Of the 30 routes operated, 22 serve Centre City and 25% of all passengers in the system have their trip origin or destination there. An average load of 22 passengers per bus has been determined on an all day basis while Centre City buses operating in the AM or PM peak periods average 58 passengers. This calculates to a peak trip load factor of 114%. Mode split for transit for this downtown area is 9% as compared to 2% for the SDT system overall.

Two activities to date have focused on the problems and potentials of transit service in Centre City. The Mayor's Committee for Transportation and Parking in Centre City, which included San Diego Transit, completed an eighteen month study with a final report recommendation that,

> "San Diego Transit and the San Diego Trolley both have potential to assist in the reduction of traffic volume in Centre City. SDT, MTDB and CCDC staffs, along with any other interested agencies, should form a task force with City Planning and Engineering staffs to address two major areas of concern: (1) the movement of transit vehicles within Centre City in the most efficient manner and in greatest concert with private auto traffic, and (2) the ways and means for improving overall transit service to and from the CBD."

If the final report is adopted by the San Diego City Council, specific transit planning work in FY82 will be directed at the CBD area.

The second activity is an outgrowth of the first. The chairperson for the Mayor's Committee also serves on the transportation committee of San Diegans Inc., an organization of concerned businessmen with interests in the Centre City area. A series of "roundtable" discussions have been initiated to provide business community input to San Diego Transit's planning process. With the addition of trolley service, major redevelopment underway guided by the Centre City Development Corporation, and significant retail and office space growth, the need is there for a reevaluation of SDT's service for this area. SDT plans to do this during FY82, with appropriate plan for improvements to bus service will be a major part of the next plan update.

OPERATING PLAN ALTERNATIVES

INTRODUCTION

San Diego Transit's Plan Update for FY1982-86 includes three alternative concepts for service. They are identified in this chapter as service which, 1) maintains the FY81 base level, with adjustments to coordinate with the new trolley service, 2) includes new service and improvements to existing routes in response to existing trip demand, and 3) grows at the same 2% rate as the service area population. Continuation of the adjusted FY81 level of service as a constant for the next five years is not desirable from a service planning viewpoint, however it must be a consideration due to current and future funding constraints, thus it appears as the first alternative. The second alternative is based upon the Service Concept Element developed by a metro area planning task force to offer a fundable plan for improved transit service to meet a growing demand. The third alternative developed was based upon the concept that transit service should at least be expanded at the same rate as population growth. This would maintain a relative level of service such as miles per population for example.

Two other alternative plan concepts were considered, then discarded. First was a service cut-back plan which included a balanced budget. As discussed earlier in this chapter under funding, a great many financial variables face SDT over the next five years. The available resource assumptions for the plan budget in Chapter V represent a "best guess" at this time; a wide variety of other total resource possibilities exist, both higher and lower in dollar amounts. A service cut-back plan based upon these financial assumptions would certainly not be balanced for long in this five year planning period due to variations from these assumptions. Also, SDT is required to adopt a balanced budget each year for the upcoming fiscal year. This ongoing process allows budgetary imbalances to bed dealt with on a shorter, one year time frame, when the variables are far more limited than for the five year plan. Finally, since San Diego Transit is committed to provide the best service possible to the metro San Diego area, a plan for anything less than the current level of service is considered unacceptable.

A second alternative not included in this report would be shown a five year plan for greatly expanded service, increasing at a rate higher than the metro area population growth such as the Regional Air Quality Strategy plan. Since transit system growth at a rate equivalent to that late for population is not fundable, developing an alternative for a system expanding at a greater rate would serve no real purpose. Each of the three alternatives which are included are described following an identification of SDT's service planning process.

The service improvements incorporated within this plan were formulated primarily from SDT's analysis procedures. Service improvements fall under three general categories: route extensions, improvements in service frequency on existing routes, and new services. Other factors influencing the plan were conditions on existing bus routes, public demands or pressures for new or improved service, and equity in the distribution of the improvements.

The ranking of the improvements was designed along a three-level plan: (1) "fine tuning" existing routes, (2) service improvements on heavily patronized routes, and (3) service into new areas and special services. These were tempered by such factors as potential patronage, expected operating cost/revenue comparisons, conditions on existing routes, public demands for new or improved service, and equity in the distribution of improvements.

The objective of San Diego Transit's planning process is to develop an implementable plan which is designed to meet the transportation needs of the region as well as to provide a transit service which is cost efficient, cost effective, and productive. To this end, a five-phase process is used.

The first phase is the "demand" phase. The following are some of the analyses that are completed in this step:

1. Analysis of route evaluation.
2. Analysis of travel demand.
3. Analysis of neighborhood socio-economic characteristics.
4. Analysis of current routes' passenger counts.
5. Analysis of transfer patterns.
6. Analysis of petitions and requests for new or extended services—citizen input.

The second phase is called the "availability" phase. The following must be determined after a demand has been evidenced:

1. Availability of funds.
2. Availability of manpower.
3. Availability of equipment.

Once the demand for the service has been identified and the availability of resources established, the "approval" phase is next, which includes:

1. Approval by the Board of Directors.
2. Approval by the various political entities involved in the new routing/service.

Phase four is the "operational" phase of the plan. The following actions are included in this phase:

1. Locating bus stops.
2. Writing schedules.
3. Printing and distributing timetables.
4. Marketing the service.
5. Placing the service into operation.

Transit planning as done by San Diego Transit, has a major advantage in that the planners are also implementers and are responsible for putting the service on the street. The fifth phase is the "fine tuning" phase of the process. This phase may continue indefinitely on any given route or cease when a route is eliminated. It generally has two steps. They are:

1. Surveillance and evaluation of the route.
2. Schedule and route adjustment.

The planning process is a "closed-loop" process that continually evaluates and reevaluates each of the services provided. Elimination of deficiencies when and where they occur as well as pointing to areas in need of new or expanded services is the objective of the process.

CONTINUATION AND REFINEMENT OF FY1981 SERVICE LEVEL-ALTERNATIVE I

As described earlier in this report, San Diego Transit cut back service in the spring of FY81 to insure that a revenue carryover would be available for FY82. Preliminary budget analysis indicated that continuation of the January, 1981 service level through FY82 could result in up to a $6 million funding shortfall. Reductions were made in April by eliminating the three least productive routes in the system, 14, 21 and 51; by discontinuing Saturday and/or Sunday service on three other routes and by reducing frequencies on eight routes. This allowed a modest carryover amount for FY82 to be realized. It also set the stage for a mroe productive service system to be in operation July 1, 1981 the beginning of FY82.

The SDT operational plan and capital program for this new fiscal year will basically be a continuation of the FY81 system as it existed after April, 1981. Several service adjustments, described earlier in this chapter, will be implemented in July, 1981 to provide bus transit support to the new trolley service. Two additional routes will be terminated, Route 100 which is the south bay express and the route essentially replaced by the light rail transit system and Route 12, a crosstown link which had been cut back previously due to contract service limitations. Route 12 was at the bottom of SDT's route evaluation rating and was very costly to maintain. Other south bay routes will be rerouted and have new schedules written to provided timed transfers with the trolley. Resources saved from the Route 100 termination will be expended on the other south bay route restructuring. As shown in Table IV-7, the total number of routes would be 28 initially, expanding to 29 by splitting Route 6 in FY82

TABLE IV – 7
ALTERNATIVE I
CONTINUATION OF EXISTING SERVICE LEVEL
FY 82 – 86

Total Bus Fleet	340
Peak Bus Requirement	207
Number of Routes	28[1)]
Total Miles	11,425,000
Total Passengers	27,529,000
Revenue Passengers	21,748,000

1) increased to 29 during FY82

During the summer months, San Diego Transit will receive 65 new GMC Canada "new look" buses equipped with lifts. As described in this chapter in the Transition Plan Lift Service section, hourly, scheduled lift service will be fully implemented by September, 1981 on eighteen routes. This service is implicit in all alternative plans.

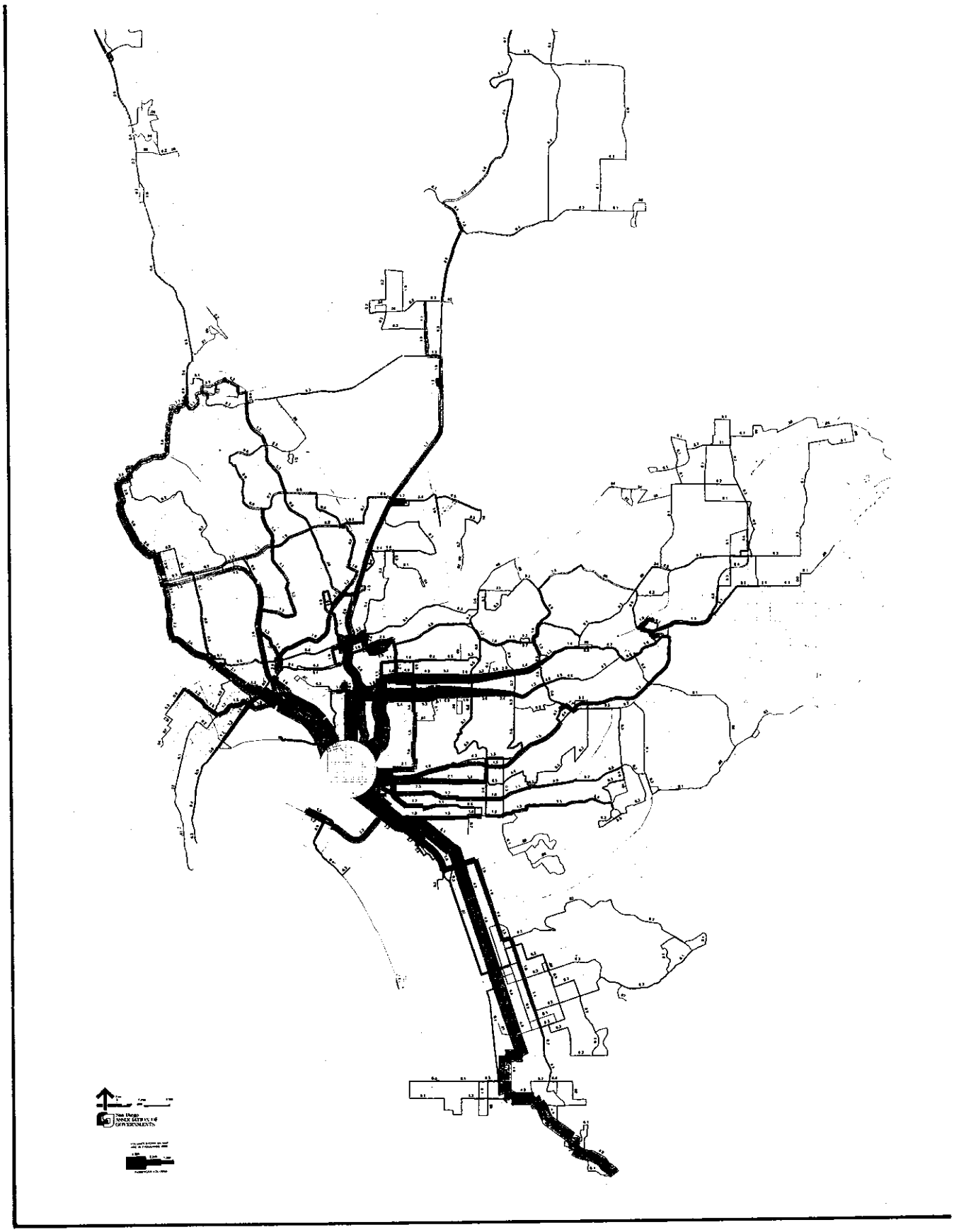
Total miles will be reduced from the FY81 level to allow a balanced budget. Part of the FY82 budget, detailed in Chapter V, is an increased fare structure. Elasticity calculations therefore project lower total and revenue passengers for FY82.

Alternative I assumes this basic level of service will be maintained throughout the five year planning period. SDT's normal system refinement program will be ongoing however, so this cannot be considered to be an absolutely static system. Figure IV-4 is a transit flow map, developed by SANDAG, which will be utilized to aid this refinement process for all system planning. The lift service program, Centre City planning project and Energy Contingency Plan are all inherent with this alternative.

SERVICE CONCEPT ELEMENT PLAN — ALTERNATIVE II

During recent years there have been some inconsistencies between the transit service which San Diego Transit has been able to provide and service which the San Diego Metropolitan Transit Development had determined would best meet the transportation needs of the metro San Diego area. The inconsistency has been due in large part to funding and operational restrictions. A revised Service Concept Element (SCE) plan is presented here to propose a transit system that is operationally feasible

FIGURE IV-4
SDT TRANSIT FLOW MAP



and compatible with the goals of both MTDB and San Diego Transit.

This plan was developed by the Service Concept Element Refinement and Implementation (SCERI) Task Group, which consisted of staff members from San Diego Transit, MTDB, SANDAG, and San Diego County DOT. National City Transit, Chula Vista Transit and San Diego County Transit staffs were involved with service considerations within their particular jurisdiction. It was felt that by involving a multi-agency task force, all metro area service needs could be considered.

The transit network for Alternative II presented here consists of a hierarchy of routes; metro, urban and local which focus on transit centers to increase accessibility. Figure IV-5 shows the SCE network with the proposed transit centers. Metro routes are high speed intercommunity routes with few stops, operating on freeways whenever possible. Urban routes are moderate speed intercommunity routes which operate primarily on arterial streets. Local routes provide intracommunity service with feeder service to urban and metro routes. Transit centers are off street transfer facilities located where large volumes of passengers may interface their trip links. Major transfer points have also been identified in this plan. They are located at points where either the transfer activity is not great enough to warrant a transit center or where the development of an off street facility is not feasible. Table IV-8 defines the different transfer point and transit center classifications, and identifies the bus and passenger amenities generally associated with each.

The first step in developing the Alternative II network was to analyze travel movements within the region. Community sectors were established to allow differentiation between local and regional travel movements and to make the job of analyzing data more manageable. Trip tables, aggregated by sector, were then developed for the years 1978 and 1985 from regional transportation planning models. These tables delineated person movements throughout the region. This same procedure was used to analyze transit trip movements. A comparison between transit and person trip movements data was then performed to determine how well the existing transit system might be serving the major travel movements in the metro San Diego area. Sectors were analyzed individually to evaluate how well local travel demands were being accommodated by transit. Local and regional traffic generators were also identified during this analysis to associate trip purpose with the travel movements. Additional information on transit trip characteristics was obtained from the 1980 on-board transit ridership survey.

Based on this analysis several changes to the existing system were recommended, including proposals for three new metro routes (40, 130, 150) and the re-instatement of two previously discontinued routes (12 and 51). Due to a route split for schedule efficiency a new route, Route 28, was also created.

All of the changes to the system including the route additions were prioritized in order to develop an implementation plan for the five year planning period. First priority was given to those changes not requiring additional resources to implement. The remaining service changes were ranked by first prioritizing all of the existing and proposed transit centers by number of buses served daily. The route changes and additions were then ranked according to the priority assigned the transit centers they serve. Then, the routes serving each transit center were prioritized based on four criteria: demand/service index, generalized cost benefit, connectivity and transferability. This resulted in a ranked listing of all proposed service changes, which are now planned for implementation over the next five years.

Table IV-9 offers a summary of this alternative plan. While all improvements are funding dependent, this does represent a significant, though limited, improvement over the service level in Alternative I.

The Transition Plan lift service is assumed to be included in Alternative II as are the ECP and Centre City transit planning efforts.

An additional change to the present transit system is the proposed development of twelve transit centers. These facilities are throughout the SDT service area at locations determined to have the greatest transfer activity. The purpose of focusing transit routes at transit centers is to centralize transfer movements, thereby allowing more convenient and efficient transfers. With a central location, routes can be scheduled to interface with more than one other route to transfer passengers.

GROWTH RELATED SERVICE EXPANSION PLAN—ALTERNATIVE III

As discussed in the FY81-85 Plan Update, Dr. Pangloss' "best of all possible worlds" would provide adequate funding to support an expanding transit system able to serve a dynamic, growing community

TABLE IV- 8
SERVICE CONCEPT ELEMENT PLAN
TRANSFER FACILITIES

Type of Transfer Facility	Level	Passenger Volume (Daily)	Design Characteristics		Passenger Amendities [1]						
			On street	Off street	Bench	Schedule Info.Frame	Curb Cuts	Shelter(s)	Phone	Bus Bay(s)	Bike Storage
	I	250-500	x		x	x					
transfer	II	500-1000	x		x	x	x				
point	III	1000	x		x	x	x	x	x	x[2]	
	IV(P&R) -		x	parking lot	x	x					x
transit	I	1000-1500		x	x	x	x	x	x	x	x
center 3)	II	1500 +		x	x	x	x	x	x	x	x

1) All transfer facilities will be evaluated for additional operational safety features (traffic control, bus lanes, etc.), with priority given to the facilities with higher passenger loading.

2) Bus pull-out if possible.

3) The difference between Level I and Level II Transit centers is the acutual size of the facility and the number of each passenger amenity required.

FIGURE IV-5
ALTERNATIVE II – SERVICE CONCEPT ELEMENT PLAN
FY82-86

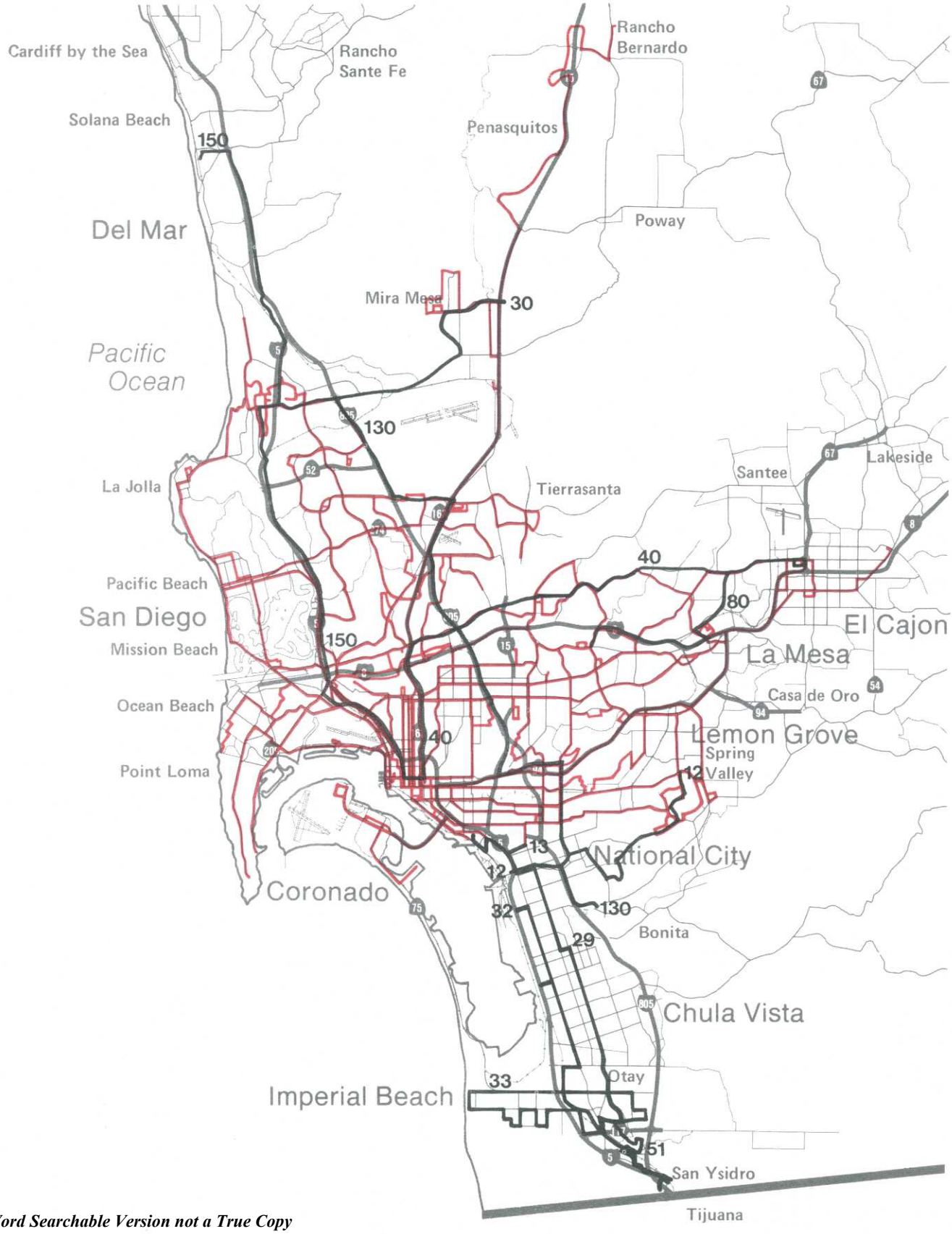


TABLE IV-9
ALTERNATIVE II
SERVICE CONCEPT ELEMENT PLAN
FY 1982 - 1986

	82	83	84	85	86
Total Bus Fleet	340	348	364	357	353
Peak Bus Requirement	207	215	225	234	240
Number of Routes	29	30	31	33	34
Total Miles*	11,425	11,628	12,159	12,678	12,866
Total Passengers*	27,529	27,811	28,558	29,343	29,822
Revenue Passengers*	21,748	21,971	22,561	23,181	23,559

*Figures in 1,000's

such as the metro San Diego area. Given the area's two percent mode split for transit, public transit should grow at a greater rate than the population if San Digo is to begin to approach the levels of transit service in other major metropolitan areas in the U.S.. A considerable resource of new and/or expanded funding will be necessary to achieve this. With San Diego Transit's fareboxes already bringing in over 40% of the operating budget, increased fares alone cannot be considered to be the solution.

Short of a system expanding faster than the region's growth, SDT believes that a system increasing services at at least the same rate as population growth should be identified as a benchmark concept. Alternative III provides this benchmark.

A review of San Diego Transit's history shows an impressive growth trend from FY1972 to FY1978. At this point, the often discussed Proposition 13 eliminated nearly $3 million from SDT's budget, forcing a cut-back in service and an increase in fares. In spite of extensive "belt tightening" through system efficiency refinements, the momentum of growth has not been regained. Alternative III is based upon the assumption that the San Diego area's annual growth rate of 2% should apply to the SDT system from FY78 to maintain this momentum of expanding service and increasing ridership. Figure IV-6 shows the areas of population growth to 1985.

Table IV-10 details this plan for the next five years though the base year of FY81 is higher than the actual system, having been expanded at a 2% annual rate since 1978. Though the peak bus requirement increases from 300 to 325 buses, the total fleet would remain at 450. This is because the buses exceeding the standard maximum age of twelve years would be phased out totally, thus allowing a standard ten percent spare fleet ration to be realized with a reduction in the percent of out of service vehicles. A 60 bus contingency fleet is included in the total. The number of routes would increase at one per year and the miles and passengers would increase at the defined rate of 2% annually.

As defined from Figure IV-6, six major subareas are projected for the greatest growth. The expanded service in this plan concept would be oriented to improve service to these areas. They are: 1) North City, 2) the University Towne Center triangle, 3) Tierrasanta, 4) Mission Valley, 5) Otay Mesa, and 6) Centre City.

This alternative includes the same assumptions concerning lift service, trolley service coordination, energy contingency planning and Centre City transit service planning as the other alternatives.

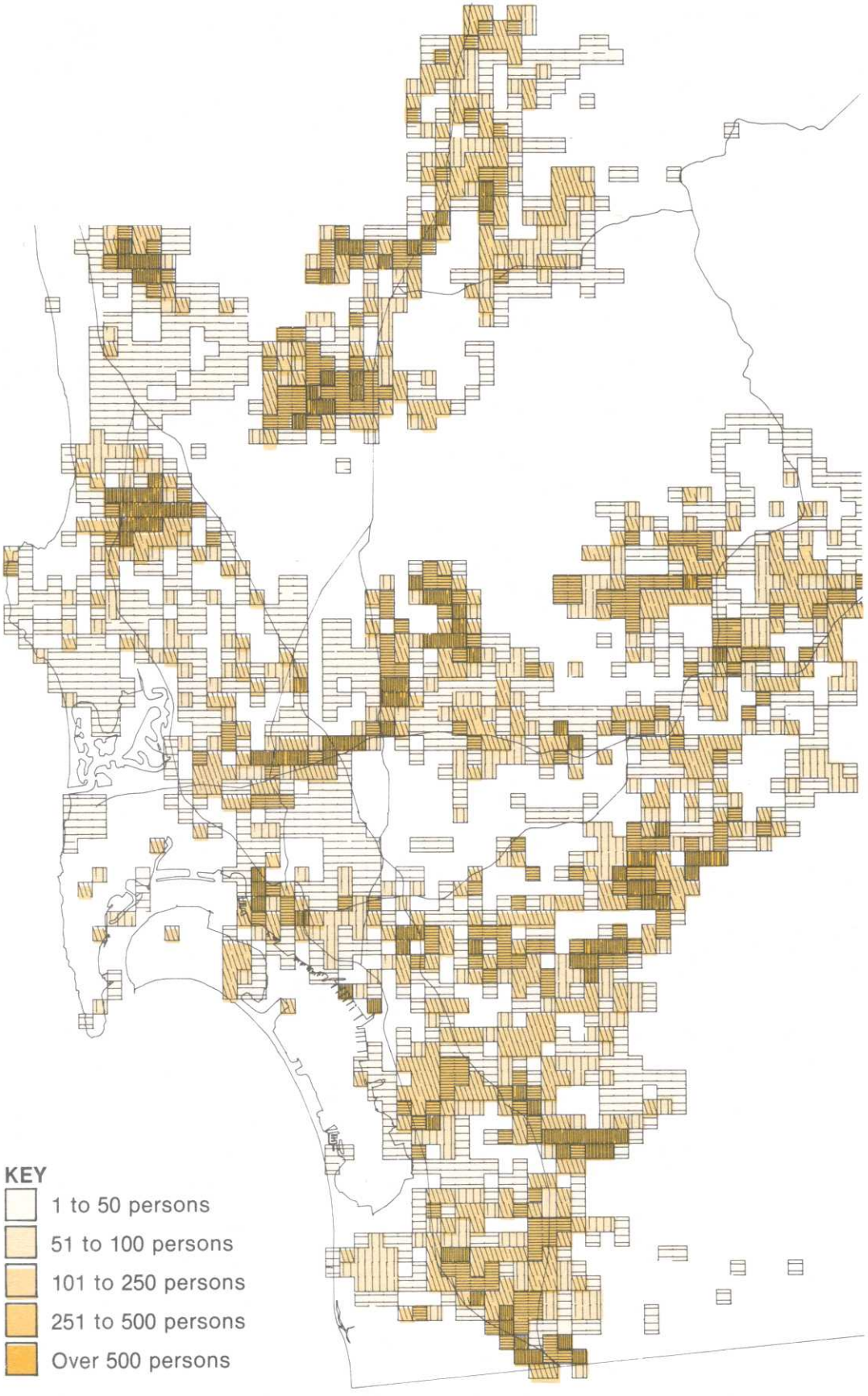
A rough estimate of the projected costs for operating Alternative III for FY82 would be $44.5 million (in 1981 dollars). It is interesting to note that this represents a $10 million overrun in comparison to the adopted balanced FY82 budget and the analysis of funding losses to San Diego Transit for FY82, as discussed previously, equalled about $10 million. Therefore, a plan for SDT service to keep pace with service area population growth is reasonable, even if this is not possible with current funding conditions.

TABLE IV-10
ALTERNATIVE III
GROWTH RELATED SERVICE EXPANSION PLAN
FY 1982 - 1986

	82	83	84	85	86
Total Bus Fleet	450	450	450	450	450
Peak Bus Requirement	300	306	312	318	325
Number of Routes	45	46	47	48	49
Total Miles*	16,409	16,373	17,072	17,413	17,761
Total Passengers*	39,690	40,483	41,293	42,119	42,961
Revenue Passengers*	32,386	33,034	33,695	34,369	35,056

*Figures in 1,000's

FIGURE IV-6
SAN DIEGO METRO AREA POPULATION GROWTH
1978-85



V

PLAN AND PROGRAM FY 82–86

Introduction ☐

Recommended Plan ☐ Constrained Plan ☐

Service and Management Elements

INTRODUCTION

San Diego Transit's recommended operating plan and financial program for fiscal years 1982 through 1986 is described in this chapter. This is the update to the SDT Plan and Program, FY1981-1985. A new fifth year, 1986, is added and the intervening four years have been reevaluated. The recommended plan is one of limited service expansion due to the financial constraints, for both operations and capital expenditures, under which SDT is forced to operate. Because of this bleak funding outlook for at least the next five years, a second plan which is financially constrained even further is also identified to serve as a fall back program in addition to the recommended plan. In addition to the recommended plan and the constrained plan, the major service element improvements which will support the bus service in these plans are also identified. These elements include a second bus maintenance division, transit centers, major transfer points, bus stop improvements and planning for CBD bus service improvements.

Following adoption, the San Diego Transit Five Year Plan Update, FY1982-1986 will become an input element for both the metropolitan and regional Transportation Improvement Program (TIP) as well as for the San Diego Regional Short Range Transportation Plan (SRTP) and the Regional Transportation Plan.

RECOMMENDED PLAN

The recommended plan for San Diego Transit for the five year period for fiscal years 1982 through 1986 is Alternative II, the Service Concept Element Plan, discussed in Chapter IV. This plan represents moderate growth in the system over the next five years including six new routes and an 18% increase in mileage. With the funding resources known to be available at the time this document was written, an unfunded deficit in excess of $40 million would result from full implementation of the annual service improvements and capital purchases included in this five year plan.

One or more new and/or underutilized existing funding resources must be made available to SDT if any of the elements of the recommended plan are to be realized. Eleven additional alternative funding sources such as UMTA Section 3, Federal Aid Urban and California State Transit Assistance Funds are not now known to be available to SDT for each of the five years of the plan so they should be pursued for each year.

OPERATING PLAN

San Diego Transit's Recommended Plan for FY1982-1986 represents a further refinement to the recommended plan for the previous five year planning period, FY1981-1985. The key to the development of this plan update has been the work of the Service Concept Element Refinement and Implementation Task Force. This working committee, representing planning expertise from a variety of agencies concerned with transit planning in the San Diego metro area, developed a plan that is operationally feasible and compatible within the goals of both San Diego Transit and the Metropolitan Transit Development Board. Though SDT was represented on the SCERI Task Force, periodic reviews of the Service Concept Element Plan were held with SDT staff members as the plan evolved to insure compatibility with operational planning requirements.

The operating plan is divided into two sections in this report. For the two years for FY82 and 83, service changes are shown by month of implementation. This is necessary to provide input to the next MTDB Transit Development Plan. The remaining years of the plan, FY84-86, identify service changes on an annual basis since there will be ample time to reevaluate the specifics of these years before implementation.

Table V-1 identifies the FY82-83 service changes by year and month. Two new routes are shown, Route 28, which is a split off of Route 6 necessitated by scheduling demands to serve the new Midway Transit Center, and Route 40, a new metro express route connecting the Elliot-Navajo area to Centre City. Route 40 has been recommended for implementation for several years but always postponed due

to lack of funding. Routes 12 and 100 will be eliminated with the implementation of the southbay trolley service in July, 1982. Unproductive off-peak service is scheduled to be reduced on Routes 50 and 110. Route 29 overcrowding should be relieved with increased service in September, 1982. Four routes are planned for extensions to reach additional areas with potential demand for transit service. These include Routes 13 and 29 which will be extended to Grossmont Center, a regional shopping center. An analysis by SDT of the North City community area of Mira Mesa indicated that previously eliminated service might be restored in a more cost effective manner by extending Route 30 rather than reinstating Route 21. This extension is recommended for September, 1982. The remaining nine routes in Table V-1 are slated to be modified which means either a schedule rewrite or a minor route alignment change.

San Diego Transit's recommended operating plan for the remaining three years of the update is shown in Table V-2. This includes four new routes, five routes to be extended and four with increased frequency. The new routes include two express metro routes, 130 and 150, and two previously discontinued routes, 12 and 51. Route 130 is an inland north-south express connecting Southeast San Diego with industrial parks and regional shopping centers. Route 150 is a coastal north-south express route connecting developing residential areas in North City and the University Towne Center area to Centre City. Route 12, an urban level route, would connect areas of Paradise Hills and National City to the trolley line. Local Route 51 would serve the Otay Mesa area and provide connections to the trolley line.

Routes 2 and 80 would both be extended to serve the Midway Transit Center. In the east-suburban area, Route 7 would be extended to Grossmont Center and Route 115 to the El Cajon Valley Hospital. Route 25 could be extended westward to a new transit center near Balboa Ave. and I-5. Four additional routes, 4, 5, 27 and 34, would have their frequencies increased to relieve overcrowding.

The full five years of service improvements for the Recommended Plan, FY21-86 are shown in Figure V-1. Each individual element of this plan is funding dependent for implementation.

CAPITAL FACILITIES PLAN

San Diego Transit's capital facilities plan segment of the Recommended Plan FY82-86 focuses on three areas; buses in the fleet, opening a second maintenance division and expanding the fleet to accommodate the new routes in the plan. Table V-3 delineates the bus acquisition program for the five year planning period. By September, 1981, sixty-five new lift equipped buses will be into service. Ninety buses, 67 old standard coaches and 23 mini buses, are scheduled to be disposed of in FY82. Establishing a reserve fleet of sixty of the best of the remaining oldest buses in FY82, this policy will be

TABLE V–1
FY 82–83 DETAILED SERVICE CHANGES
RECOMMENDED PLAN

FY	ROUTE	ACTION	DATE	TOTAL[1] MILES	BUSES[2]	DRIVERS[2]
1982	3	Route Modification	Jan.,'82	–	–	–
	5	Route Modification	Jan.,'82	–	–	–
	6	Route Modification	Jan.,'82	–52,000	–1	–3
	12	Route Elimination	July,'81	–182,000	–2	–6
	13	Route Extension	July,'81	40,000	1	2
	19	Route Modification	July,'81	4,000	–	–
	28	New Route	Jan.,'82	51,000	1	3
	29	Route Extension	July,'81	51,000	–	–
	32	Route Modification	July,'81	–253,000	–5	–15
	33	Route Modification	July,'81	10,000	–	–
	80	Route Modification	Jan.,'82	–34,000	–	–
	100	Route Elimination	July,'81	–179,000	–4	–6
1983	29	Increase Frequency	Sept.,'82	350,000	2	6
	30	Route Extension	Sept.,'82	64,000	1	2
	36	Route Extension	June,'83	91,000	2	3
	40	New Route	Jan., '83	193,000	5	10
	50	Service Reduction	Jan., '83	–76,000	–	–
	80	Route Modification	June,'83	–11,000	–	–
	90	Route Modification	Jan., '83	–	–	–
	110	Service Reduction	Jan., '83	–48,000	–	–

1) Figures reflect difference in annual total miles

2) Figures reflect difference in resource requirement

continued throughout the five year plan period as per SDT's Energy Contingency Plan. Each year the best sixty buses over and above the operating fleet requirement will be retained and the remainder will be disposed of. The policy for a reserve fleet of sixty buses will be reviewed annually in light of national and local energy resource availability and adjusted as necessary.

The operating fleet is shown to expand from 280 buses in FY82 to 304 buses in FY84 in Table V-3 as the respective peak requirements increase from 207 to 225 buses. Then, for the last two years, though the peak requirement increases from 225 to 240, the operating fleet decreases from 304 to 293 buses. This is because the average fleet age has been reduced to 5.3 years by FY85 so that the spare fleet and operating fleet ratios are assumed to be reduced in these last two years. The thirty-three additional buses required by the Recommended Plan beyond Alternative I, the financially constrained Contingency Plan, are added to the capital grant programs for FY83 and F84 so that with a two year lead time, they may be received in time to be put into service during FY85 and FY86.

TABLE V – 2
FY 84–86 RECOMMENDED DEVELOPMENT PLAN

FY	ROUTE	ACTION	TOTAL[1] MILES	BUSES[2]	DRIVERS[2]
1984	34	Increase Frequency	226,000	4	9
	80	Route Extension	50,000	1	2
	130	New Route	255,000	5	12
1985	2	Route Extension	163,000	1	3
	4	Increase Frequency	298,000	2	6
	5	Increase Frequency	300,000	2	6
	12	New Route	100,000	2	4
	115	Route Extension	25,000	–	–
	150	New Route	233,000	6	12
1986	7	Route Extension	39,000	1	2
	25	Route Extension	55,000	1	2
	51	New Route	54,000	1	2

1) Figures reflect difference in annual total miles

2) Figures reflect difference in resource requirement

Though SDT's average fleet age (5.3) would meet the standard of eight years maximum average, 44 buses would still exceed the maximum age of twelve. With an energy contingency reserve fleet of 60 buses, no bus in the operating fleet would exceed this standard. FY86 is the first year in the Recommended Plan that this standard would be met. In FY85 the average bus age standard would be realized for the first time with a 6.6 year average however, 93 coaches would exceed twelve years, leaving 33 in the operating fleet after the reserve fleet vehicles are set aside.

FINANCIAL PROGRAM

The financial program for the San Diego Transit Recommended Plan is shown in Table V-4. Mileage and fleet requirements are both expanded as described in the Service Concept Element Plan, Alternative II. Passenger forecasts assumed a zero elasticity since fare increases were maintained at the level of overall inflation, thus keeping the relative cost of bus travel constant. The transfer rate is assumed to continue at 21 percent.

Operating costs have been assumed to increase at between 8% and 15% per annum, depending upon the line item. New bus costs were determined at a rate of 9% per year. FY82 capital costs include FAU funding for eight buses and $6.16 million for SDT's second maintenance division. Remaining capital items include buses, related items and contingencies. A twenty percent local match was calculated for all UMTA funding throughout the five year period.

On the revenue side, passenger revenue assumed the average fare will go up at 12% per year. TDA and UMTA Section 5 capital funds were based upon projects furnished by SANDAG. For FY82, the carry-over includes $3 million capital carry-over for the second division. The deficits shown for FY83

FIGURE V-1
SDT RECOMMENDED SERVICE PLAN
FY82-86

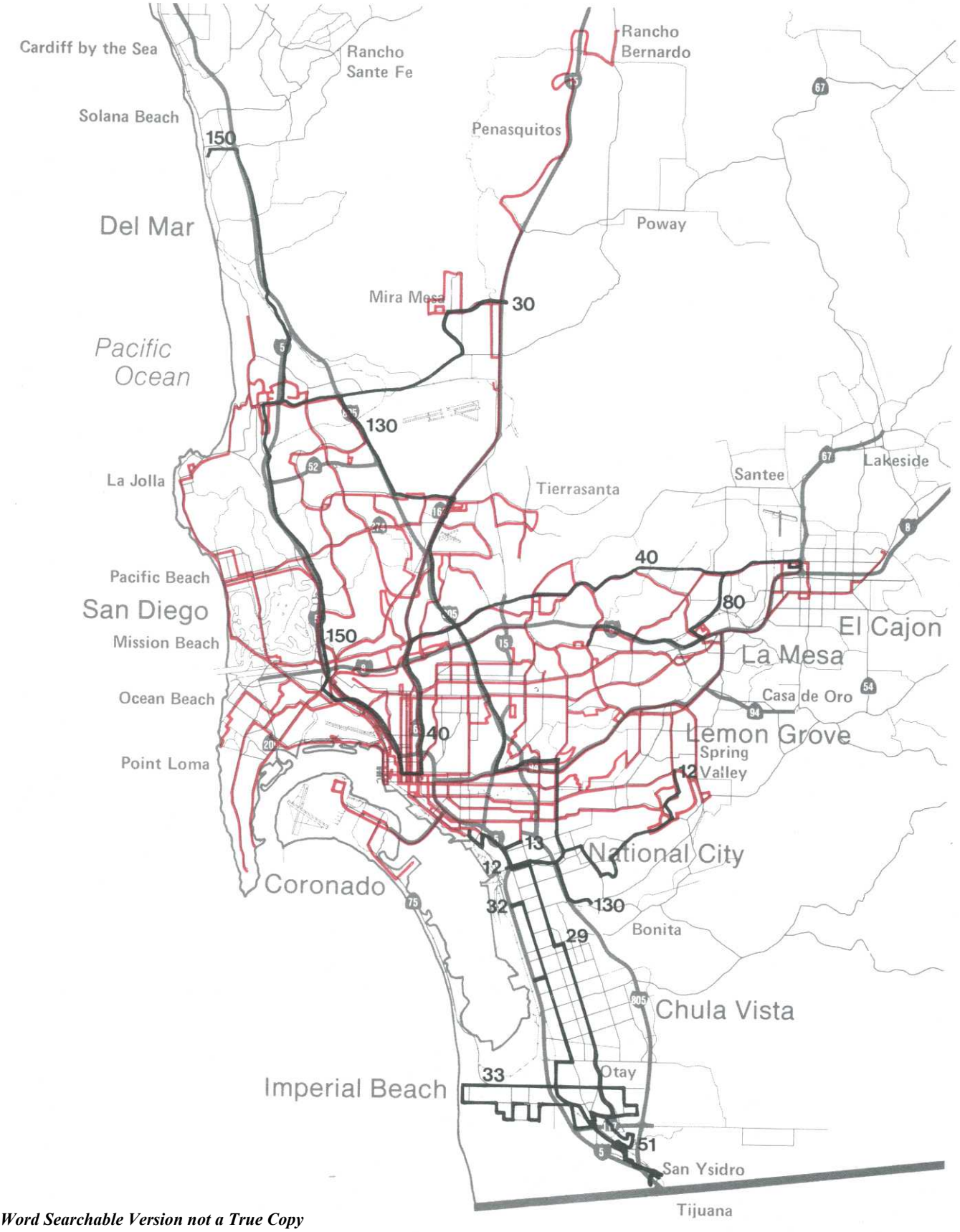


TABLE V–3
BUS ACQUISITION PLAN
RECOMMENDED DEVELOPMENT PLAN
FY 1982 – 1986

Fiscal Year	82	83	84	85	86
Fleet at Start	365	340	348	364	357
New Buses	65	19	32	53	45
To Be Sold	90	11	16	60	49
Reserve Fleet	60	60	60	60	60
Operating Fleet	280	290	304	297	293
Spare Fleet	235	243	255	258	264
Peak Requirement	207	215	225	234	240
Fleet at End	340	348	364	357	353
Capital Grant #	32	53	45	30	25

through FY86 which range from $9.5 million to $11.2 million per year represent an unmet funding need based upon current availability. These deficits must be balanced each year if the recommended Service Concept Element Plan is to be implemented. Existing funding mechanisms such as Section 3 and FAU will be pursued for capital program support. Local match capital dollars and operating cost funding will be sought from the list of new transit funding sources identified in Chapter IV.

CONSTRAINED PLAN

Due to the $40 million plus deficit for five years in the SDT Recommended Plan, a financially constrained plan has also been developed. This is the continuation of the existing FY81 level of service as described for Alternative I in Chapter IV. A reduction of roughly one-quarter of the deficit would be realized with the Constrained Plan, reducing the unmet funding need to $31.5 million. Once again, this indicates the severity of San Diego Transit's financial problems for this five year planning period.

OPERATING PLAN

SDT's Constrained Plan represents a continuation of the FY81 level of service for FY82–86 with service operating adjustments identified only for FY82. While it is assumed that the normal quarterly route evaluation process will identify further "fine tuning" adjustments to be made to the system over FY83 through FY86, the basic level of service in terms of hours and miles operated will not change by more than two to three percent. This plan concept is not presented by San Diego Transit as one which is desirable, rather it is included as one which is necessary because of the uncertain funding future.

Table V-5 lists the service changes by month of implementation for FY82. Though this detailed service plan should now encompass two years as first described for the Recommended Plan, no further changes beyond the first year are identified for the Constained Plan. Route 6 is scheduled to be split in January, 1982 to create new Route 28 to serve the Midway Transit Center. Both Routes 12 and 100 will be eliminated in July, 1981 as part of the southbay service change to accommodate the new trolley service. Routes 13 and 29 will be extended to provide connections for the trolley service. For the same reason, Route 33 will be realigned. Of the five remaining routes to be modified, Routes 19 and 32 will change to better serve the trolley and Routes 3, 6 and 80 are scheduled to be altered in January when the Midway Transit Center opens.

Figure V-2 shows the SDT route network as it would appear with the FY82 system changes in place as the base system for the next five years. Only moderate service adjustments would be made in FY82 through FY86 as determined by SDT's ongoing system evaluation and refinement process.

TABLE V – 4
FINANCIAL PROGRAM
SDT RECOMMENDED PLAN
FY 1982 – 1986

FISCAL YEAR	82	83	84	85	86
OPERATIONS					
Routes	29	30	31	33	34
Operating Fleet	280	290	304	297	293
Revenue Miles	9,846	10,022	10,479	10,926	11,089
Total Miles	11,425	11,628	12,159	12,678	12,866
Revenue Passengers	21,748	21,971	22,561	23,181	23,559
Total Passengers	27,529	27,811	28,558	29,343	29,822
COSTS					
Operating (Less Depreciation)	35,648	39,353	44,131	49,200	54,352
Capital	12,164	10,033	9,381	6,971	6,166
Total Costs	$47,812	$49,386	$53,512	$56,171	$60,518
REVENUE and SUPPORT					
Passenger Revenue	15,446	17,476	20,088	23,130	26,327
Other Revenue	500	500	500	500	500
Carry-Over	1,227	–0–	–0–	–0–	–0–
Local Support	–0–	–0–	–0–	–0–	–0–
State Funding:					
TDA	12,240	14,196	16,350	18,385	20,302
Federal Funding:					
FAU	1,000	–0–	–0–	–0–	–0–
UMTA Section 3	3,164	–0–	–0–	–0–	–0–
UMTA Section 5	14,196	7,700	5,400	3,300	3,700
Total Revenue & Support	47,873	39,872	42,338	45,315	50,829
CARRY-OVER (DEFICIT)	$ 61	$(9,514)	$(11,174)	$(10,856)	$(9,689)

NOTE: all figures except operating fleet are in 1, 000's.

FIGURE V-2
SDT CONSTRAINED SERVICE PLAN
FY82-86

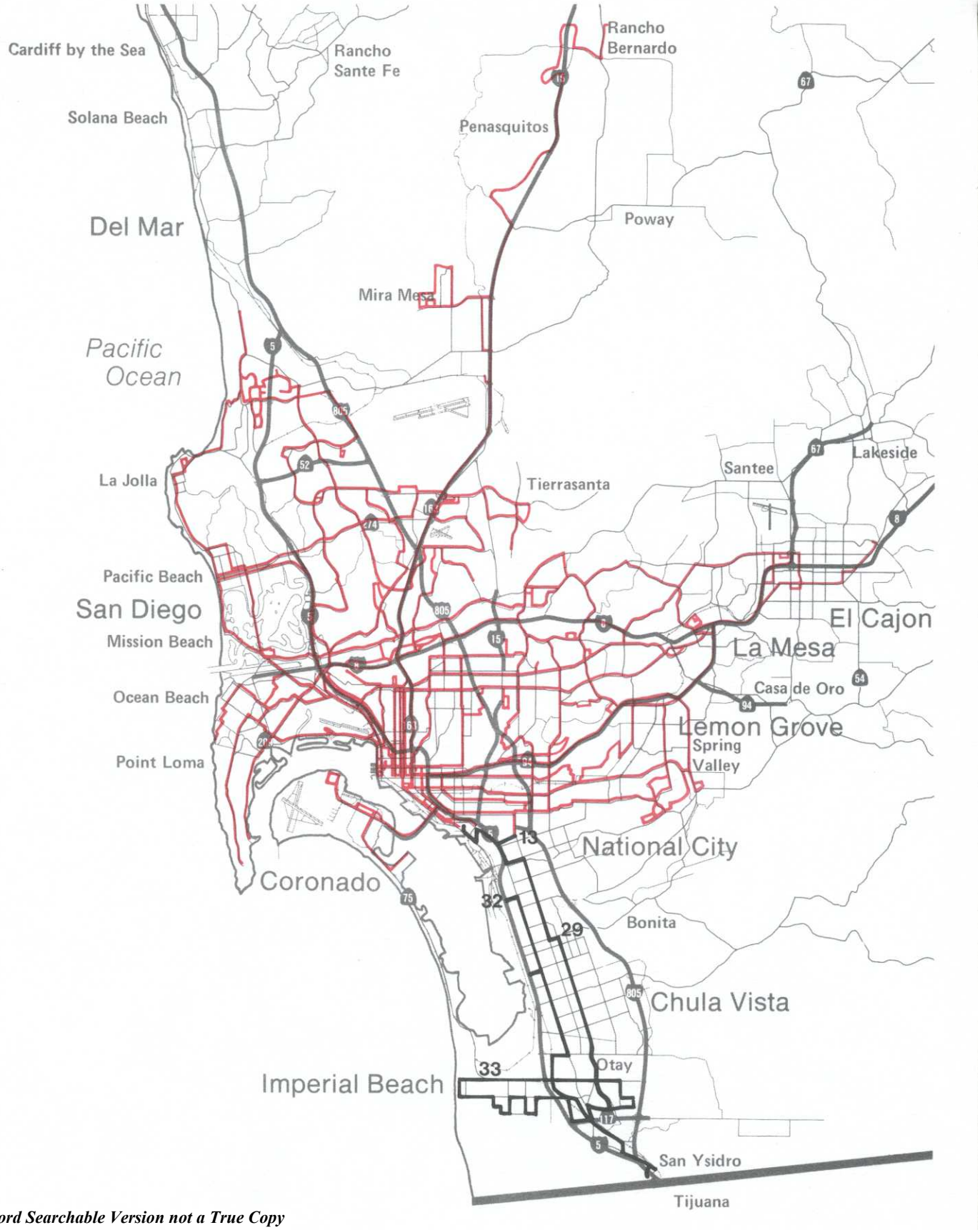


TABLE V–5
FY 82 DETAILED SERVICE CHANGES
CONSTRAINED PLAN

ROUTE	ACTION	DATE	TOTAL MILES	BUSES	DRIVERS
3	Route Modification	Jan., ‘82	–	–	–
5	Route Modification	Jan., ‘82	–	–	–
6	Route Modification	Jan., ‘82	–52,000	–1	–3
12	Route Elimination	July, ‘81	–182,000	–2	–6
13	Route Elimination	July, ‘82	40,000	1	2
19	Route Modification	July, ‘81	4,000	–	–
28	New Route	Jan., ‘82	57,000	1	3
29	Route Extension	July, ‘81	51,000	–	–
32	Route Modification	July, ‘81	–253,000	–5	–15
33	Route Modification	July, ‘81	10,000	–	–
80	Route Modification	Jan., ‘82	–34,000	–	–
100	Route Elimination	July, ‘81	–179,000	–4	–6

1) Figures reflect difference in total annual miles

2) Figures reflect difference in resource requirement

CAPITAL FACILITIES PLAN

San Diego Transit’s bus acquisition plan for the Constrained Plan is shown on Table V-6. Two objectives are sought with the capital plan for this concept; to replace the excessive number of older buses to the extent possible and to obtain a second bus maintenance division. This table shows that the fleet size of 340 buses attained during FY82 will be maintained throughout the planning period. Assumptions for operating fleet, spare fleet and peak bus requirement remain the same for five years. The reserve fleet is held at sixty vehicles though, as previously mentioned, this may be changed to adjust for Energy Contingency Plan requirements. Buses shown for the capital grant program have been reduced somewhat from the previous year’s plan so they will be more compatible with capital fund allocations. The 152 new buses in this capital program represent 33 fewer vehicles than the recommended program because of service expansion constraints.

This plan reduces the average bus age below the standard of eight years by FY84 when an average of 7.7 years would be reached. By FY86 average bus age would be 6.5 years. In terms of the number of buses over the standard of twelve years, the Constrained Plan would have 63 by FY86. With a reserve fleet of 60 buses, only three buses in the operating fleet would not meet this standard. The standard level for the fleet should be reached by the first year after the five year planning period.

FINANCIAL PROGRAM

The financial program for the San Diego Transit Constrained Plan is shown in Table V-7. By definition for this plan, the number of routes, buses and miles are held constant for the full five years. Passengers are held constant because although fares are assumed to increase, they will do so at the rate of inflation so the relative cost of bus transportation would remain the same. Also, with a population growth rate of two percent per year, the potential for new rides should offset any negative fare elasticity.

Assumptions for costs are the same as those for the Recommended Plan. Operating costs per year should increase from 8% to 15%, depending upon the element. New bus costs are assumed to increase at 9% per year. SDT's second maintenance division is included in FY82 and a twenty percent local match requirement was calculated for all UMTA funded capital items.

For revenue and support, the average fare would increase at the same rate as overall inflation, 12% per year. TDA and Section 5 fund forecasts came from SANDAG. Second divison carry-over funds of $3 million are included in FY82. No local support is identified nor are Section 3 or FAU funds shown beyond FY82. The results are deficits for FY83 through FY86 ranging from $6.2 million to $9.6 million. Considering the constrained service concept implicit in this alternative, the message in the total $31.5 million deficit is clear, if additional funding sources are not found within a year, severe service cutbacks must be implemented by SDT. San Diego Transit is obligated to operate with a balanced budget. Therefore either additional financial support must be found or service will be reduced.

TABLE V–6
BUS ACQUISITION PLAN
CONSTRAINED DEVELOPMENT PLAN
FY 1982–1986

Fiscal Year	82	83	84	85	86
Fleet at Start	365	340	340	340	340
New Buses	65	19	32	35	30
To Be Sold	90	19	32	35	30
Reserve Fleet	60	60	60	60	60
Operating Fleet	280	280	280	280	280
Spare Fleet	235	235	235	235	235
Peak Requirement	207	207	207	207	207
Fleet at End	340	340	340	340	340
Capital Grant #	32	35	30	30	25

SERVICE AND MANAGEMENT ELEMENTS

SECOND MAINTENANCE DIVISION

A second operating division is planned by SDT for development during FY82. The bus congestion at the existing facility could be significantly reduced by assigning a portion of the fleet to a second division. In addition to the benefits to the bus maintenance programs gained by a second division, actual operating costs could be reduced. By selecting a site north of Mission Valley, in the direction which the center of the metro area's population is moving, a significant operating cost savings may be realized from a reduction in non-productive deadhead miles and hours for trips operated out of the second divison. In San Diego Transit's current financial condition, such savings become extremely important.

The San Diego Metropolitan Transit Development Board concurs with SDT on the importance of this project and during FY82 contracted with a consulting firm to prepare a site location and conceptual design study. This firm was also contracted to develop an environmental assessement/impact report on the site determined to best meet the needs of San Diego Transit. The environmental assessment/impact report is a federal and state requirement which must be submitted prior to any construction that could possibly have a negative impact on the environment.

To determine the optimum location, a computer assisted site location study was performed that identified the general area which sould provide the greatest reduction in deadhead mileage. The next step

TABLE V–7
FINANCIAL PROGRAM
SDT CONSTRAINED PLAN
FY 1982 – 1986

FISCAL YEAR	82	83	84	85	86
OPERATIONS					
Routes	29	29	29	29	29
Operating Fleet	280	280	280	280	280
Revenue Miles	9,846	9,846	9,846	9,846	9,846
Total Miles	11,425	11,425	11,425	11,425	11,425
Revenue Passengers	21,748	21,748	21,748	21,748	21,748
Total Passengers	27,529	27,529	27,529	27,529	27,529
COSTS					
Operating (Less Depreciation)	$35,648	$38,811	$42,371	$46,295	$50,625
Capital	12,164	6,760	6,408	6,971	6,166
Total Costs	$47,812	$45,571	$48,779	$53,266	$56,791
REVENUE and SUPPORT					
Passenger Revenue	15,446	17,298	19,550	21,994	24,743
Other Revenue	500	500	500	500	500
Carry-Over	1,227	–0–	–0–	–0–	–0–
Local Support	–0–	–0–	–0–	–0–	–0–
State Funding:					
TDA	12,240	13,887	15,869	17,844	19,624
Federal Funding:					
FAU Funds	1,100	–0–	–0–	–0–	–0–
UMTA Section 3	3,164	–0–	–0–	–0–	–0–
UMTA Section 5	14,196	7,700	5,400	3,300	3,700
Total Revenue & Support	47,873	39,385	41,319	43,638	48,567
CARRY-OVER (DEFICIT)	$61	$(6,186)	$(7,460)	$(9,628)	$(8,224)

NOTE: All figures except routes and operating fleet are in 1,000's.

was to evaluate all available land in that area in terms of cost, vehicle accessibility, lot size and configuration, and the savings in deadhead miles the site would allow. Based on this evaluation, a recommendation was made for the site of the SDT Second Division. The desired site, as shown in Figure V-3, is located in the Kearny Mesa area between Interstate 805 and SR 163 just north of Balboa Avenue. This location would allow fast access to major arterials and freeways.

The environmental assessment/impact report developed for the recommended site states that, while

there would be some adverse impacts resulting from this project, none of them are considered significant so this should not hold up the project.

Initially 100 buses would be maintained at this facility, however there will be adequate capacity to house an additional 100. Paint and body work for the entire fleet will be performed at the second division as well as the routine daily maintenance for those buses operating out of that location. Diesel fuel storage for 200,000 gallons is included in the facility design.

Negotiations are currently underway to purchase the land at the proposed site. Three million dollars have been set aside for this project. Any additional funding required will come from State and/or Federal sources.

TRANSIT CENTERS

As part of the work developed by the SCERI Task Force in cooperation with the SDT Planning and Scheduling Department, a refined concept for additional transit centers for SDT's service area has evolved. The concept for these centers is of off street facilities with a number of passenger amenities at major transfer points served by a number of routes.

The amenities would include sheltered seating areas, transit telephone information service direct lines, system maps, route maps and timetables and full passenger accessibility. The seven centers in this program are identified in Table V-8, including their relative priority, and their locations are shown in Figure V-4.

TABLE V–8
SDT TRANSIT CENTERS
RECOMMENDED PLAN
FY 1982–1986

Priority	Transit Center
1	Midway
2	UCSD/UTC
3	Grossmont Center
4	SDSU
5	City of El Cajon – Main and Marshall
6	Kearny Mesa
7	Balboa & I–5

At present, only the Midway Transit Center has firm development plans. This facility will have ten bus bays to handle the nine routes which will be scheduled to operate at the Midway Drive site. At the time of this writing, final negotiations are underway for the land. Design and implementation will proceed as quickly as possible once the land is obtained. Conceptual planning and an extensive public hearing process were completed during FY1981 in preparation of this project.

TRANSFER POINTS

The next level down from transit centers are transit points. These facilities are conceived to be on-street and smaller in scale than the off street facilities. They may or may not include shelters, telephone information system direct lines and other amenities depending upon their size. In work to be completed in FY82, three levels of service for transfer points will be defined based upon passenger counts. Passenger amenities will be defined for each level and a program to develop priorities for a capital improvement program will be completed.

BUS STOPS

With the implementation of lift service by San Diego Transit for handicapped and elderly passengers,

FIGURE V-3
SDT SECOND MAINTENANCE DIVISION

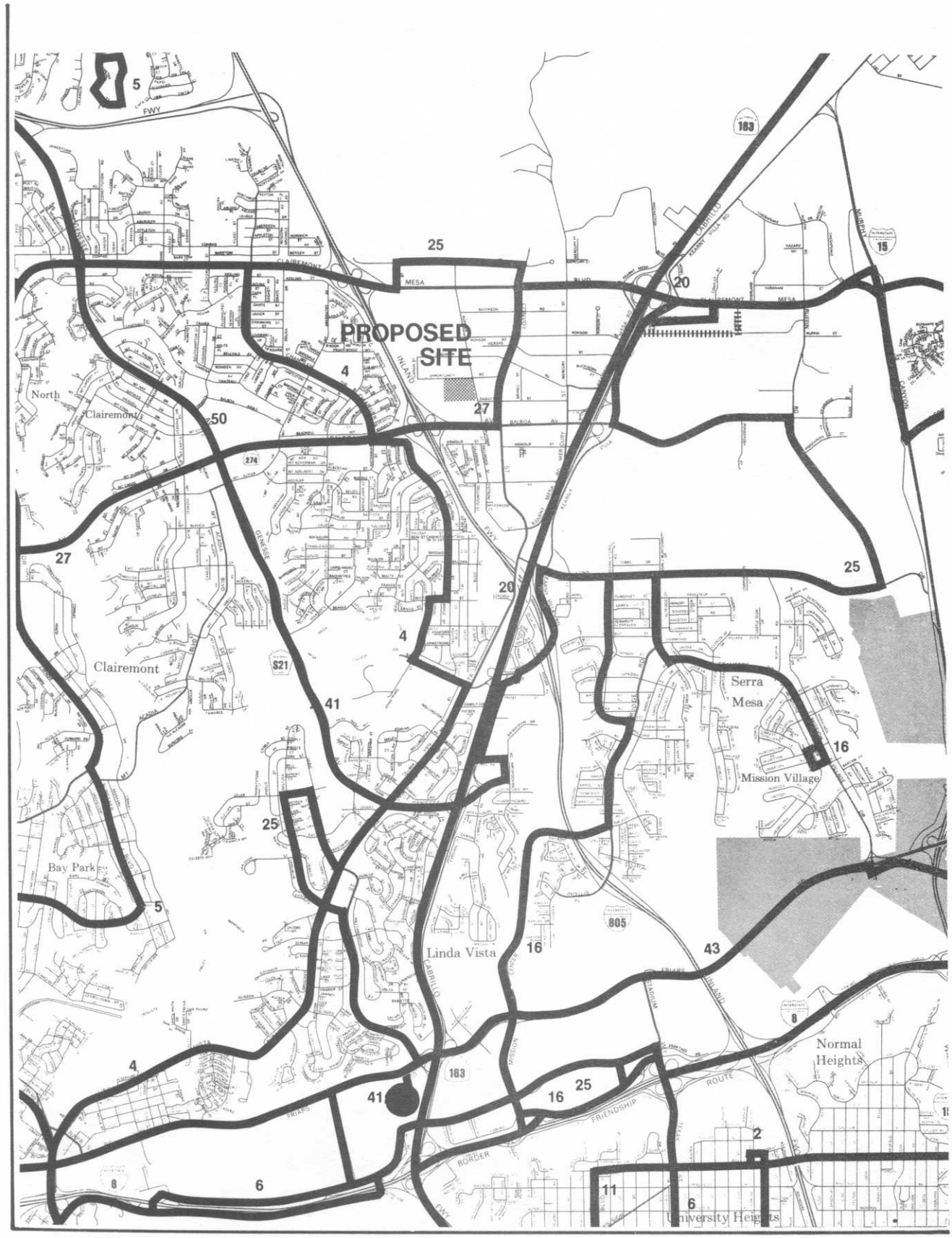
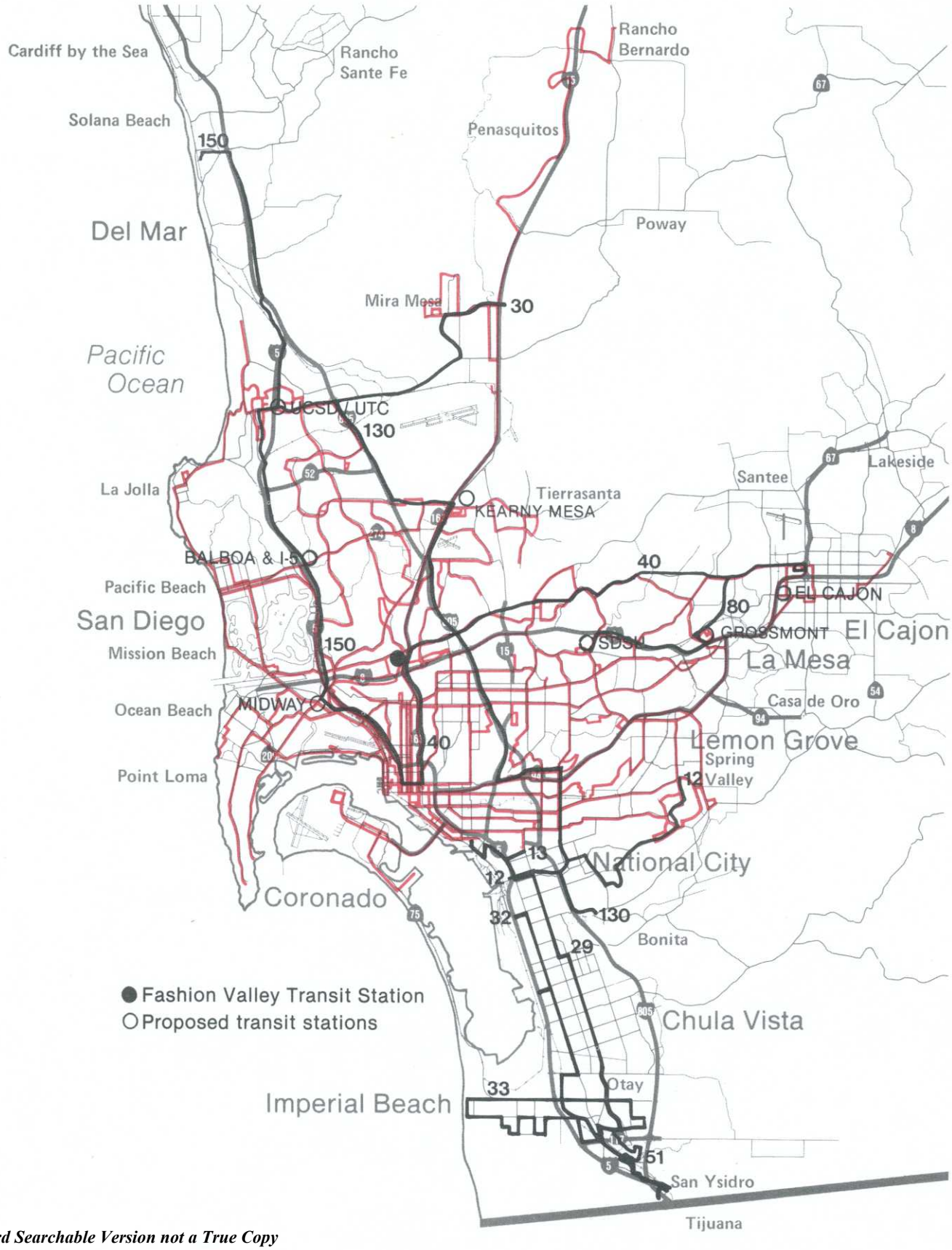
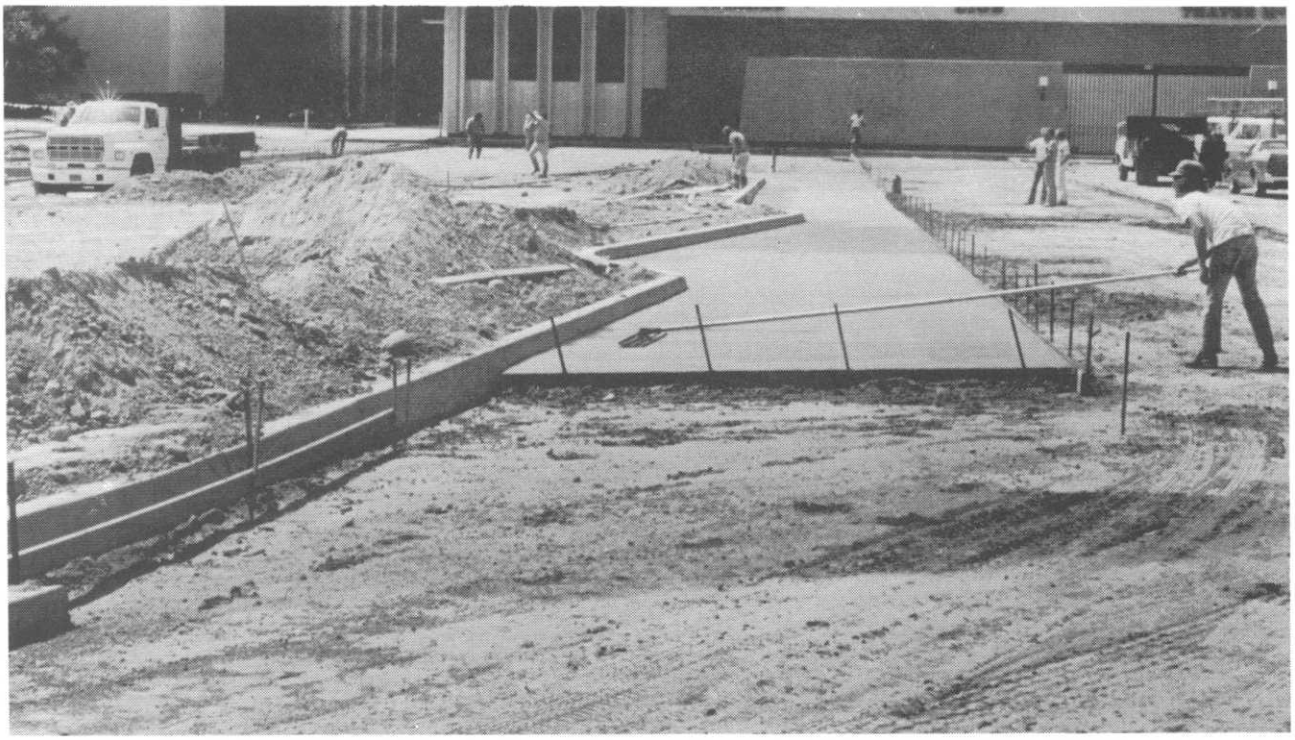


FIGURE V-4
SDT TRANSIT CENTER LOCATIONS
RECOMMENDED PLAN





a related work program must be completed. All bus stops on the eighteen routes designated to operate life equipped service must be surveyed and evaluated for safety of bus operation and accessibility for the passenger. This work will commence in July, 1981. Since SDT is not responsible for maintaining or improving the bus stop sites, problems identified in the bus stop survey will be brought to the attention of the respective political jurisdictions in which they are located. SDT will then seek cooperation in assuring that these stops are made fully accessible.

CENTRE CITY

As discussed in Chapter IV, Centre City San Diego is the focal point of the metro area and of the SDT system. With a considerable amount of new development and redevelopment currently underway and planned for future years, traffice and parking congestion will continue to worsen. Since greater congestion is costly to SDT in operational terms and since public transit has been identified as one solution to these problems, San Diego Transit will necessarily be heavily involved with this problem. Two areas where SDT seeks to realize changes in FY82 are the implementation of elements which will speed up running time on Broadway (the major artery in Centre City) and the planning for possible realignment of selected routes in this area to broaden service coverage and reduce bus operations on Broadway. Further restriction of on street parking and loading and limiting turning movements at certain intersections have been determined to offer real time and therefore cost savings to SDT. With the financial picture presented in this plan update, every cost efficiency which San Diego Transit can identify must aggressively be pursued.

APPENDICES

Definitions ☐ SANDAG Contract ☐

MTDB Memorandum of Understanding

APPENDIX A

DEFINITIONS

Accidents — a situation which occurs on a bus, or involves a revenue vehicle, in which personal injury, property damage, or both results.

Administrative Employee — all employees who are not members of an employee bargaining unit.

Base Period — all hours of operation not defined as peak period.

Operating Cost — all costs directly applied to the day to day operation of SDTC. Operating Cost does not include depreciation or capital cost.

Operating Revenue — all revenues derived from the operation of SDTC.

Pay Hours — all hours paid for regardless of hourly rate. Pay Hours applies to bus drivers only.

Peak Load Factor — average maximum passenger loading for a given route during the route's peak hour.

Peak Period — hours of operation experiencing the heaviest system demand (such as before 9 AM and between 3 to 6 PM).

Revenue Hours (Vehicle Service Hours) — the total number of hours that each motor vehicle is in revenue service, including layover time. Revenue Hours exclude deadhead hours.

Revenue Miles (Vehicle Service Miles) — the total number of miles that each motor vehicle is in revenue service. Revenue Miles exclude deadhead miles.

Revenue Passengers — the number of passengers, exclusive of transfers, carried by SDTC.

Road Calls (for mechanical failure) — a count of the revenue service interruptions during the reporting periods caused by failure of some mechanical element of the revenue vehicle. This includes breakdowns of air equipment, brakes, body parts, doors, cooling system, heating system, electrical units, fuel system, engine, steering and front axle, rear axle, and suspension and torque converters. This does not include service interruptions caused by tire failure, farebox failure, or air condition system malfunction.

Total Employees — the total count of employees based on the assumption that one employee is paid for two thousand and eighty (2,080) hours of employment in one year.

Total Hours (Vehicle or Bus Hours) — the total hours of travel by revenue vehicles.

Total Miles (Vehicle or Bus Miles) — the total distance traveled by revenue vehicles.

Total Passengers - all passengers boarding regularly scheduled service. This excludes charter and special stadium service.

AGREEMENT BETWEEN
SAN DIEGO ASSOCIATION OF GOVERNMENTS
AND
SAN DIEGO TRANSIT CORPORATION
FOR PROFESSIONAL SERVICES
TO ASSIST IN THE UPDATE OF THE
SHORT RANGE TRANSIT PLAN FOR 1982-1986

This agreement is entered into as of this day of 4th day of February, 1981, between San Diego Transit Corporation (hereinafter referred to as "Contractor") and the San Diego Association of Governments, a public agency (hereinafter referred to as "SANDAG").

R E C I T A L S

WHEREAS, the SANDAG Board of Directors at its meeting of May 19, 1980 adopted Resolution #80-68 authorizing the Executive Director to contract for professional services to assist in Job 201.11, the San Diego Transit Corporation Short Range Transit Plan.

WHEREAS, SANDAG desires to engage the Contractor to render certain services hereinafter described in connection with an undertaking which is to be financed, in part, by the Urban Mass Transportation Administration (UMTA); and

WHEREAS, the Contractor is desirous and able to participate in Job 201.11,

NOW THEREFORE, the parties hereto do agree as follows:

Section 1. Employment of the Contractor

SANDAG hereby engages the Contractor and the Contractor agrees to perform the services hereinafter described in connection with the update of the Short Range Transit Plan for 1982-1986.

Section 2. Scope of Contractor's Responsibilities

A. Financial

The Contractor shall be responsible for providing the in-kind services non-federal match of $20,000 against the total cost to SANDAG of $124,000. Total value of professional services to be rendered by the Contractor is $144,000. This total includes $44,000 in FY80 funds, for which the required in-kind service match has been provided, designated for the completion of Task 4.11 of this contract.

B. Personnel

1. Richard Murphy, Manager of Planning and Scheduling, shall be in charge of the performance of this Agreement on behalf of the Contractor.

C. Work Description

1. Short Range Transit Plan

The Urban Mass Transportation Act of 1964, as amended, makes the continuing planning of mass transportation systems a precondition for UMTA funding. Section 8 of the Act is the basis for UMTA's planning requirement. It states:

"a...The Planning process shall include an analysis of alternative transportation system management and investment strategies to make more efficient use of existing transportation resources and to meet needs of new transportation facilities.

"b...The Secretary shall not approve for an urbanized area any such program of projects in whole or in part unless 1) the Secretary finds that the planning process on which such program is based is being carried on in conformance with the objectives of this section, and 2) the Secretary finds that the program of projects is based on the planning process."

UMTA has implemented the requirements contained in Section 8 through the promulgation of the Joint Planning Regulations. Section 450.120 of the regulations describes the elements which comprise the transportation planning process. The regulations require the successful conduct of the elements for a positive certification finding. Such a finding is a precondition for receipt of UMTA capital and operating assistance.

The elements described in Section 450.120 require the monitoring and analysis of public transportation service and related activities, the evaluation of alternative short-term improvements to the public transportation system, including improved management, and an effective program for short-range transit planning which would include:

a. a set of quantifiable objectives for the analysis of existing and new transportation services and urban conditions;

b. a surveillance system for monitoring the transit system and related urban conditions; and

c. a system for evaluating transit service and management including procedures for conducting the analysis, selecting projects and actions, and following up on the results.

The work outlined in this scope is designed to continue the planning process as defined above, and to assist in the development of new transit activities that will improve service to the region. The FY82-86 update, as developed by SDTC in accordance with Tasks identified

in this Agreement, will be included in the 1981 Transportation Systems Management Element (TSME) for the San Diego region.

The following Tasks identify the minimum to be performed.

Task 1: Identification of service guidelines.

1.1 Review and update as required the goals and objectives for public transit service within the service area.

1.2 Review and update service and operational standards and criteria which will be utilized to evaluate existing service and plan alternatives at both the system and route levels and eliminate those which cannot be objectively measured or controlled.

Task 2: Implementation of FY81 TIP and Five-Year Plan Update (TSME).

2.1 Identify and describe status of recommended operating improvements and re-evaluate appropriateness of service improvements not yet implemented.

2.2 Describe implementation or grant approval status of capital improvements appearing in the FY81 Annual Element of the TIP.

2.3 Identify and describe status of all grant applications submitted. Include items and cost for each application, fiscal year submitted, Federal grant number, and amount expended to date.

2.4 Evaluate the FY81-85 finance program.

Task 3: Description of existing system.

3.1 Develop a service area profile including population, dwelling units, and employment served by the system. SANDAG will assist in providing the required data.

3.2 Update system map. Prepare supplemental maps at the same scale identifying major trip generators and areas with concentrations of transit dependents: low income, handicapped, elderly, minorities, etc.

3.3 Describe existing services by type (express/local), frequency, hours of operation, days of operation, route mileage, ridership, and any other indicators deemed appropriate.

3.4 Update fleet inventory as necessary. Include the number of vehicles by size and type (capacity), average age, spare ratio (the difference between the total number of vehicles available for service and the number of vehicles required for peak-hour service divided by the total number of vehicles available), total fleet mileage, average annual mileage per vehicle, fuel consumption, oil consumption, and any other indicators deemed appropriate.

3.5 Update Title VI documentation as needed according to UMTA Circular 1160.1. Include distribution of service to minority areas, vehicle assignment record, load factor analysis, distribution of other facilities, accessibility provided by service, service map, and distribution of other transportation benefits. SANDAG will assist in providing the necessary data.

Task 4: Evaluation of Transit Services.

4.1 Analyze system data by standards and criteria from Task 1.2. Include update of trend information. SANDAG will provide a form as guidance by February 1, 1981.

4.2 Analyze route data by standards and criteria from Task 1.2. Include ridership growth, farebox recovery ratio, peak load factor, and other indicators as appropriate.

4.3 Review and evaluate system and route ridership data. Include trend information developed through the SANDAG passenger counting program, and ridership profile comparisons using 1977 and 1980 on-board survey update information.

4.4 Analyze available capacity by time period and by route (passenger miles per total seat miles) utilizing passenger counting program data.

4.5 Describe the route evaluation methodology and summarize results of the route evaluations.

4.6 Based on route and system evaluations, identify needs and deficiencies of the existing transit service.

4.7 Identify specific deficiencies by route including, but not limited to, route location, hours/days of service, scheduling/ frequency problems, transfer problems, capacity overloads, and ability to meet travel demands.

4.8 Review and evaluate management and efficiency improvements discussed in the FY81-85 Five-Year Plan Update (TSM actions).

4.9 Evaluate special programs such as the articulated bus program, the bike rack program, and the wheelchair lift program. Include pertinent data, program efficiency and effectiveness, and proposed improvements.

4.10 Refine detailed route planning in cooperation with MTDB as required for opening of the San Diego Trolley.

4.11 Assist in the refinement of metropolitan area transit plans through a task force including SANDAG. MTDB, and the other operators in the area (MTDB Service Concept Element Refinement and Implementation Task Force). Summarize the results of the task force efforts (see attached work program for completion of

this task) and include study results in the development and evaluation of alternative plans (Tasks 8 and 9).

Task 5: Energy Contingency Planning

5.1 Develop strategies for implementation of the transit actions included in the adopted Regional Transportation Energy Plan.

5.2 Refine energy contingency planning work in relation to state and federal guidelines, as appropriate.

Task 6: Transition Plan.

6.1 Assist SANDAG in the development of the annual status report on the implementation of the 504 Transition Plan, including a summary of plan accomplishments and activities for meeting the adopted schedule of the improvements.

6.2 Refine transition planning work to include a prioritization of routes for expansion of lift-equipped services as equipment becomes available. This work should be reviewed by the Sub-committee on Elderly and Handicapped Transportation in an advisory role.

6.3 Inventory bus stops along routes identified in Task 6.2. Identify and prioritize those stops requiring accessibility improvements.

6.4 Assist in the development of standardized accessible bus stop layout including special treatment for the visually handicapped.

Task 7: Marketing.

7.1 Evaluate results of before/after surveys conducted in FY80 for application in marketing strategies and campaigns.

7.2 Evaluate existing marketing programs, including special programs for bike rack services, etc., for effectiveness and modify as necessary.

7.3 Utilize data from the on-board survey update and passenger counting program, developed through SANDAG, to identify potential target groups or strategies.

7.4 Based on above, develop specific objectives and strategies for inclusion in the FY82-86 marketing program.

Task 8 Development of alternative five-year plans and capital improvement programs.

8.1 Identify service improvements and develop alternative plans for implementation. Include a Regional Air Quality Strategy

(RAQS) alternative. For route improvements include estimates of route miles and bus miles of service, number of buses required, platform hours, total cost, patronage, and revenue.

8.2 Develop capital improvement programs for alternative plans. Summarize improvements in a five-year capital budget, including estimates of vehicle and fixed-facility needs.

8.3 Develop an alternative plan consistent with the results of the metropolitan area transit plan refinement work in Task 4.11.

8.4 Specifically address how the alternative plans address the needs and deficiencies identified in Task 4.

Task 9: Evaluation of alternative short range plans.

9.1 Evaluate alternatives identified in Task 8 in terms of adopted service guidelines.

9.2 Compare alternatives with the existing system in terms of the accessibility of population, dwelling units, and employment to the existing and proposed transit services with SANDAG support using Series V forecasts, the TRANES program, and other SANDAG information systems. Accessibility should be evaluated using both base year data and projected data.

9.3 Evaluate alternatives in terms of the needs of the elderly, handicapped and minority groups.

9.4 Evaluate alternatives in terms of the Revised RAQS ridership targets.

9.5 Evaluate alternatives in terms of programming constraints and financial limitations.

Task 10: Development of the transit operations plan and detailed financial program for FY 1982-86.

10.1 State Assembly Bill 402 of the 1977-78 session requires that all adopted regional TIP's be transmitted to the State by April 1. Therefore, the Contractor must prepare and submit its proposed five-year capital and operating programs for FY82-86 to SANDAG by January 15, 1981 for inclusion in the 1981 State TIP.

10.2 Based upon the evaluation of existing service, alternative short range plans, the Regional Transportation Plan and MTDB Service Concept Element, develop a transit operations plan and program. This plan may include alternatives to acknowledge future financial limitations and uncertainties. This plan shall include a detailed final program for FY82, as well as a detailed FY83 program for inclusion in the 1982 TIP annual element. The final FY82 program should include a discussion

of the implications of final budget actions in terms of modifications to FY82 operational and capital improvement programs contained in previous plans.

Task 11: Preparation of Short Range Transit Plan 1982-1986 draft report.

11.1 Prepare and publish Short Range Transit Plan 1982-1986 draft report.

11.2 The draft SRTP will be completed by July 1, 1981. After review and comment by SANDAG and other interested agencies, and once UMTA gives the necessary authorization, a final report will be prepared.

11.3 Final draft and final report will be prepared according to Tasks 1-10 for insertion into the Regional Transportation Systems Management Element.

D. Submission of Reports

1. The operators shall meet monthly with SANDAG at regularly scheduled TOCS meetings to discuss progress, data needs and problem areas.

2. Quarterly reports shall be made to SANDAG in accordance with Section 7 of this contract.

3. Two copies of the first draft report must be submitted by July 1, 1981 to the SANDAG Project Manager for review. In the absence of any express written statement of dissatisfaction within 15 working days, the draft will be deemed satisfactory for inclusion in the TSME. Six copies of the final draft must be submitted to SANDAG by October 1, 1981. UMTA shall review and comment on the final draft before it is printed in final form for general distribution.

E. Notice Regarding Late Delivery

In the event the Contractor encounters difficulty in meeting performance requirements, or anticipates difficulty in complying with the contract delivery schedule or date, the Contractor shall immediately notify the SANDAG Project Manager thereof giving pertinent details, including the date by which it expects to complete the performance or make delivery; provided, however, that this notification shall be informational only in character and that receipt thereof shall not be construed as a waiver by the SANDAG of a contract delivery schedule or date, or any rights or remedies provided by law under this contract.

Section 3. Scope of the SANDAG's Responsibilities

A. Personnel

1. The SANDAG Project Manager will provide direction and guidance in matters related to:

   a. Administration of the contract on behalf of SANDAG;
   b. Procedures for obtaining information relative to the project;
   c. Review of drafts and final copies of Work Products required of the Contractor by this contract.

2. Division of Labor

   a. Prepare a draft of the study design for the project and review this draft with SANDAG staff working on related projects, staff of local planning agencies, and representatives of other interests.

   b. Insure coordination between the update of the SRTP and any other transit related SANDAG project.

   c. Coordinate with the Transit Operators' Cordination Subcommittee (TOCS).

   d. Provide the Contractor with local plans and other regional documents pertinent to the study.

   e. Review Contractor's report.

B. Data to be Furnished to Contractor

1. SANDAG shall furnish to the contractor all information, data and reports as are existing, available, and reasonably necessary for carrying out the project.

2. The transit version of the ADT map will be made available by SANDAG by April 1, 1981.

3. SANDAG will provide bus passenger counter data as soon as it is processed by route.

4. Base data relating to the region's elderly and handicapped population derived from survey work will be made available by SANDAG by February 1, 1981.

5. SANDAG will provide all guidelines and suggested formats mentioned in the work tasks of this agreement at the time of its execution.

Section 4. Time of Performance

The services of the Contractor shall commence within 5 days after the signing of this agreement and shall be undertaken and carried out in such sequence as to assure their expeditious completion in the light of the purpose of this

contract. In any event, all of the services required herein shall be completed in draft form by July 1, 1981. It is hereby mutually agreed by the parties hereto that time is of the essence of this contract and that any schedule of delivery of work products set forth herein shall be binding upon the parties.

Section 5. Costs

A. Maximum Total Cost

The maximum total cost to SANDAG for the performance of work pursuant to this Agreement shall not exceed $124,000. The Contractor specifically agrees to perform all obligations under this Agreement within such agreed cost and provide the in-kind service match of $20,000. The total cost includes $44,000 in FY80 funds designated for the completion of Task 4.11.

B. Ostensible Agency Disclaimer Notice

Contractor is hereby expressly put on notice that no employee of SANDAG has authority to authorize in writing or otherwise any additional work which would increase the cost of this Agreement without SANDAG Board of Directors' approval.

C. Incorporation of Federal Guidelines

The terms of all relevant federal and state grant provisions and guidelines, as presently written or as changed during the life of this Agreement, bearing on this Agreement are hereby wholly incorporated by reference herein and made a part of this Agreement and take precedence over any inconsistent terms of this Agreement.

Section 6. Payment

For the performance of this Agreement, SANDAG shall pay the Contractor upon submission of approved quarterly requests for payment. A quarterly progress report shall accompany each request for payment showing total expenditures for each task (as set forth in the Scope of Contractor's Responsibilities under the provisions of this contract) as well as all information required by UMTA. SANDAG will review and approve the requests for payment and issue a check within 30 days.

Upon completion of this agreement, Contractor shall submit a final invoice showing the cumulative costs incurred by Contractor. This invoice shall be accompanied by a certification from an accredited, independent auditor/accountant selected by Contractor and approved by SANDAG attesting that all invoiced costs are accurately reported, and were incurred under the terms and conditions of this agreement for services performed in connection with this agreement. Any costs incurred by Contractor to obtain this independent certification are allowable costs for the performance of this agreement.

Section 7. Quarterly Progress Reports

Quarterly progress reports must be submitted by the Contractor to SANDAG according to the Urban Mass Transportation Administration requirements and guidelines. Quarterly progress reports, as required by UMTA, should include the following items:

1. A summary of work completed by task, according to the passthrough agreement listed in this contract.
2. A summary of work remaining to be done by task.
3. Problems encountered in developing each task.
4. Copies of any technical memoranda or reports produced.
5. Approximately percentage of work completed on the entire update (contract).
6. Corresponding financial documents required by SANDAG and UMTA.

Quarterly reports shall be due within twenty (20) days after the calendar quarters ending December 31, 1980, March 31, 1981, June 30, 1981, and September 30, 1981. Separate quarterly reports shall be completed for activities under Task 4.11.

Section 8. Audit and Inspection of Records

The Contractor shall maintain complete and accurate records with respect to costs incurred under this Agreement. All such records shall be maintained on a generally accepted accounting basis and shall be clearly identified and readily accessible. The Contractor shall provide reasonable access to the representatives of SANDAG or UMTA, or their appointees, at all proper times to such books and records, and the right to examine and audit the same, and to make transcripts therefrom as necessary, and to allow inspection of all work data, documents, proceedings, and activities related to this Agreement for a period of three years from the date of final payment under this Agreement. In addition to the above accounting records, the Contractor shall maintain records to show actual time and allowable costs as required by UMTA.

The Contractor shall permit the authorized representative of the U.S. Department of Transportation and the Comptroller General of the United States, SANDAG or their respective agents to inspect and audit all data and records of the Contractor relating to his performance under the contractor.

Section 9. Termination for Cause

Except as otherwise provided herein, if the Contractor shall fail to fulfill in timely and proper manner his obligations under this contract, or if the Contractor shall violate any of the covenants, agreements, or stipulations of this contract, SANDAG shall thereupon have the right to terminate this contract by giving written notice to the Contractor of such termination and specifying the effective date thereof, at least five (5) days before the effective date of such termination. In that event, all finished or unfinished documents, data studies, surveys, drawings, maps, models, photographs, and reports prepared by the Contractor shall, at the option of SANDAG, become its property, and the Contractor shall be entitled to receive just and equitable compensation for any satisfactory work performed on such documents and other materials. Notwithstanding the above, the Contractor shall not be relieved of liability to SANDAG for damages sustained by SANDAG by virtue of any breach of the contract by the Contractor.

Section 10. Equal Opportunity

During the performance of this contract, the Contractor agrees to comply with all the requirements imposed by Title VI of the Civil Rights Act of 1964 (78 Stats 252) and the regulations issued thereunder (Title 49, CFR part 21).

A. The Contractor will not discriminate against any employee or applicant for employment because of race, color, religion, sex, or national origin. The Contractor will take affirmative action to ensure that applicants are employed, and that employees are treated during employment without regard to their race, color, religion, sex, or national origin. Such action shall include, but not be limited to, the following: employment upgrading, demotion, or transfer, recruitment, or recruitment advertising; layoff or termination, rates of pay or other forms of compensation; and selection of training, including apprenticeship. The Contractor agrees to post in conspicuous places, available to employees and applicants for employment, notices to be provided by the Contracting Officer setting forth the provisions of this equal opportunity clause.

B. The Contractor will, in all solicitations or advertisements for employees placed by or on behalf of the Contractor, state that all qualified applicants will receive consideration for employment without regard to race, color, religion, sex, or national origin.

C. The Contractor will send to each labor union or representative or workers with which he has a collective bargaining agreement or other contract or understanding, a notice, to be provided by the Contracting Office advisinq the labor union workers' representative of the Contractor commitments under this Equal Opportunity clause, and shall post copies of the notice in conspicuous places available to employees and applicants for employment.

D. The Contractor will comply with all provisions of Executive Order No. 11246 of September 24, 1965, Executive Order No. 11375 of October 13, 1967, and of the rules, regulations and relevant orders of the Secretary of Labor.

E. The Contractor will furnish all information and reports required by Executive Order No. 11246 of September 24, 1965, and by the rules, regulations, and orders of the Secretary of Labor, pursuant thereto, and will permit access to his books, records, and accounts by the Contractor and the Secretary of Labor for purposes of investigation to ascertain compliance with such rules, regulations, and orders.

F. In the event of the Contractor's noncompliance with the Equal Opportunity clause of this contract or with any of the said rules, regulations, or orders, this contract may be cancelled, terminated, or suspended, in whole or in part, and the Contractor may be declared ineligible for further Government contracts in accordance with procedures authorized in Executive Order No. 11246 of September 24, 1965, and such other sanctions may be imposed and remedies invokes as provided in Executive Order No. 11246 of September 24, 1965, or by rule, regulation, or order of the Secretary of Labor, or as otherwise provided by law.

G. The Contractor will include the provisions of paragraph (a) through (g) in every subcontract or purchase order unless exempted by rules, regulations, or orders of the Secretary of Labor issued pursuant to Section 204 of Executive Order No. 11246 of September 24, 1965, so that such provisions will be binding upon each subcontractor or vendor. The Contractor will take such action with respect to any subcontract or purchase order as the Contractor may direct as a means of enforcing such provisions, including sanctions for noncompliance; provided, however, that in the event the Contractor becomes involved in, or is threatened with, litigation with a

subcontractor or vendor as a result of such direction by the Contractor, the Contractor may request the United States to enter such litigation to protect the interests of the United States.

Section 11. Affirmative Action Compliance

The Contractor shall have a written Affirmative Action Plan in conformance with regulations of the Department of Transportation 149 CFR, part 21. The Plan shall contain, at a minimum, the required provisions as outlined and described in UMTA Circular 1155.1, issued December 30, 1977. A copy of the Affirmative Action for the period of time covered by this Agreement is required for review by SANDAG prior to first payment.

Section 12. Minority Business Enterprise

In connection with the performance of this contract, the Contractor will cooperate with UMTA and SANDAG in meeting their commitments and goals with regard to the maximum utilization of minority business enterprises. It is UMTA policy that MBE's shall have the maximum opportunity to participate in the performance of contracts financed in whole or in part with UMTA funds. This policy requirement shall be met according to UMTA's current guidelines.

Section 13. Conflict of Interest

No elected officials of SANDAG any of its member agencies, the State of California or the United States Government shall personally benefit from the financial proceeds of this agreement. Costs incurred in violation of the above provision shall be unallowable costs.

If it is determined that Contractor is a designated consultant for purposes of the SANDAG Conflict of Interest Code, Contractor shall comply with and be subject to all the provisions therein.

Section 14. Assignability

The Contractor shall not assign any interest in this contract and shall not transfer any interest in the same (whether by assignment or novation), without the prior written consent of SANDAG thereto; provided, however, that claims for money due to beome due to the Contractor from SANDAG under this contract may be assigned to a bank, trust company, or other financial institution without such approval. Notice of any such assignment or transfer shall be furnished promptly to SANDAG in writing.

Section 15. Hold Harmless

A. The Contractor agrees to indemnify, defend, and save harmless SANDAG, its officers, agents, and employees from any and all claims and losses accruing or resulting to any and all contractors, subcontractors, materialmen, laborers, and any other person, firm or corporation furnishing or supplying work services, materials, or supplies in connection with the Contractor's activities under this contract and from any and all claims and losses accruing or resulting to any person, firm, or corporation who may be injured by the Contractor in connection with its activities under this contract.

B. SANDAG agrees to indemnify, defend, and save harmless the Contractor, its officers, agents, and employees from any and all claims and losses accruing or resulting to any person, firm, or corporation who may be injured by SANDAG in connection with its activities under this contract.

C. The Contractor, and the agents and employees thereof, in carrying out this contract, shall act in an independent capacity and not as officers or employees of SANDAG.

Section 16. Subcontractors

The Contractor shall not enter into any agreement to perform work in connection with this contract without first obtaining written approval of SANDAG as to the scope of work and the subcontractor.

Section 17. Notice

Any notice required or permitted under this contract may be personally served on the other party, by the party giving notice, or may be served by certified mail, return receipt requested, to the following addresses:

SANDAG:

Wayne T. Sink
Director of Finance and Administration
San Diego Association of Governments
Suite 524, Security Pacific Plaza
1200 Third Avenue
San Diego, CA 92101

Contractor:

Roger Snoble, General Manager
San Diego Transit Corporation
P. O. Box 2511
San Diego, CA 92112

Section 18. Construction

All provisions of the contract shall be construed by the laws of the State of California.

IN WITNESS THEREOF, the authorized parties have below signed:

SAN DIEGO ASSOCIATION OF GOVERNMENTS

SDTC GENERAL MANAGER

Approved as to sufficiency
of form and legality:

SANDAG General Counsel

SDTC Legal Counsel

APPENDIX C

MEMORANDUM OF UNDERSTANDING

BETWEEN

THE SAN DIEGO METROPOLITAN
TRANSIT DEVELOPMENT BOARD

AND

SAN DIEGO TRANSIT CORPORATION

This Memorandum of Understanding is entered into between the San Diego Metropolitan Transit Development Board, herein referred to as MTDB, and the San Diego Transit Corporation, herein referred to as SDTC.

CHAPTER I

DEFINITIONS

1. Operating Cost is defined as all cost directly applied to the day-to-day operation of SDTC. Operating Cost does not include depreciation or capital cost.
2. Operating Revenue is defined as all revenues derived from the operation of SDTC.
3. Revenue Passengers is defined as the number of passengers, exclusive of transfers, carried by SDTC.
4. Vehicle Service Hours is defined as the total number of hours that each motor vehicle is in revenue service, including lay-over time. Vehicle Service Hours excludes deadhead hours.
5. Vehicle Service Miles is defined as the total number of miles that each motor vehicle is in revenue service. Vehicle Service Miles excludes deadhead miles.
6. Total Employees is defined as the total count of employees based on the assumption that one employee is paid for two thousand and eighty (2,080) hours of employment in one (1) year. The count of employees shall also include

those individuals employed by the operator which provides services to the agency of the operator responsible for the operation of the public transportation system even though not employed in that agency.

7. Pay Hours is defined as all hours paid for regardless of hourly rate. Pay hours applies to bus drivers only.
8. Road Calls for mechanical failure is defined as a count of the revenue service interruptions during the reporting period caused by failure of some mechanical element of the revenue vehicle. Road Calls for mechanical failure shall include breakdowns of air equipment, brakes, body parts, doors, cooling system, heating system, electrical units, fuel system, engine, steering and front axle, rear axle, and suspension and torque converters. Road Calls for mechanical failure shall not include service interruptions caused by tire failure, farebox failure, or air condition system malfunction.
9. Accidents is defined to include a situation which occurs on a bus or involves a revenue vehicle in which personal injury, property damage, or both result.
10. Administrative Employees is defined as all employees who are not members of an employee bargaining unit.
11. Vehicle or Bus Miles is defined as the total distance traveled by revenue vehicles, including scheduled miles consumed in passenger service and deadhead travel.
12. Vehicle or Bus Hours is defined as the total hours of travel by revenue vehicles.

13. Operator is defined as agency responsible for the operation of a public transit system within the area of MTDB jurisdiction.

CHAPTER II

FIVE-YEAR MTDB - AREA TRANSIT DEVELOPMENT PROGRAM

1. Definition. The MTDB Transit Development Program (TDP) shall be a short-range (Five-Year) Plan which directs implementation and funding of proposed transit development projects.
2. TDP Objectives. The TDP shall contain a set of transit development objectives.
3. Service Concept Element. For the fifth year of the program, the TDP shall contain a generalized routing and service plan sufficient to identify: service area boundaries; key transfer (coordination) points; and primary service corridor classifications.
4. Financial Plan Element. The TDP shall include a detailed Financial Plan Element based on all anticipated sources of funding, including the costs and revenues derived from the Operating Plan Element.
5. Operating Plan Element. The TDP shall contain a detailed Operating Plan Element for each of the five (5) years which shall:
   a. Describe specific routings, hours and days of service,

frequency of service, vehicle miles and hours and number of vehicles.

b. Include Transit System Management (TSM) projects in compliance with Urban Mass Transportation Administration (UMTA) guidelines.

c. Project financial needs predicated on the services and projects identified in this chapter.

6. Capital Element. The TDP shall contain a detailed Capital Element for each of the five (5) years which shall identify:

a. Bus acquisition/replacement by vehicle type.

b. Capital Facilities (e.g., garage, transfer centers, etc.) by type and location.

c. Maintenance Equipment.

CHAPTER III
TRANSPORTATION DEVELOPMENT ACT CLAIM

1. Definition. A Transportation Development Act (TDA) Claim shall be a formal request for TDA monies to be used for operating and capital expenses pursuant to Sections 99200 et seq. of the Public Utilities Code. Approval of a TDA Claim must be obtained from MTDB before the TDA monies can be transferred to an operator. A TDA Claim shall be consistent with the first year program of the MTDB TDP.

2. Submission of Claims. It shall be the responsibility of

SDTC to submit a TDA Claim to MTDB on or before April 1st of each year. The claim shall meet the State requirements for TDA claims and shall include the following:

a. The entire program of projects covering detailed capital improvements, operating and financial plans in accordance with "MTDB 'TIP' guidelines."

(1) The operating plan shall be a detailed account of specific routings and hours of service, days of service, service frequencies, miles and hours to be operated, and projected passenger loadings on a route-by-route basis. Service changes (i.e., reductions or expansions) shall be specifically noted.

(2) The financial plan shall be a detailed accounting of estimated costs and revenues.

b. Identification and justification for any inconsistencies with the first year element of the TDP and MTDB's transit objectives.

c. All data and information specified under Chapter III, Section 3.

3. Claim Review. It shall be the responsibility of MTDB to review and direct the payment of TDA claims in their area of jurisdiction. MTDB claim review shall include, but not be limited to, the following criteria:

a. Consistency with the approved MTDB Transit Development Program.

b. Findings and recommendations of required performance audits pursuant to Sections 99200 et seq. of the California Public Utilities Code.

c. Advice from the Transit Productivity Advisory Committee, pursuant to Sections 99200 et seq. of the California Public Utilities Code.

d. Operational performance of individual routes as measured by the evaluation procedures which shall become a part of this agreement upon approval by the Boards of Directors of MTDB and SDTC. Routes not meeting the composite score standards shall be accompanied by a detailed explanation specifying actions to be taken (e.g., elimination, reduction of service, modification or promotional activity or conducting special surveys, etc.).

e. System operational and management performance as measured by the following specific indicators:

   (1) Operating Cost per Passenger

   (2) Operating Cost per Vehicle Service Hour

   (3) Revenue Passengers per Vehicle Service Hour

   (4) Revenue Passengers per Vehicle Service Mile

   (5) Vehicle Service Hours per Employee

   (6) Percentage of Total Operating Revenue to Total Operating Cost. MTDB shall establish a goal for this indicator on or before

January 15th of each year in order to give operators sufficient time to evaluate alternatives to comply with this criterion.

(7) Pay Hours per Bus Hour. MTDB shall require justification in the TDA claim if this measure increases over the previous year.

(8) Vehicle Miles per Road Call. MTDB shall require justification in the TDA claim if this measure decreases over the previous year.

(9) Accidents per 100,000 Vehicle Miles. MTDB shall require justification for any increase in this measure from the previous year.

(10) Administrative Employees to Total Employees. MTDB shall require justification for any increase in this indicator.

f. The following data shall be provided to MTDB by SDTC for the prior, current and proposed fiscal year:

(1) Average Fare and Fare Structure.

(2) Non-Operating Revenues.

(3) Total Passengers, including Transfers by Route.

(4) Revenue Passengers by Type (i.e., pass, adult fare, student) by Route.

(5) Pay Hours by Pay Category.

(6) Scheduled Overtime.

(7) Unscheduled overtime.

(8) Bus Hours and Miles.

(9) Vehicle Service Hours and Miles.

g. Review and evaluation of the efforts made to implement the prior year's recommended improvements.

4. Resolution of Claim Disagreements. Indicators (1) through (5) of Chapter III, Section 3.e. above are required by Sections 99200 et seq. of the California Public Utilities Code. MTDB shall use these indicators to help judge SDTC's performance by requiring SDTC to justify any negative change in these indicators from the previous year. Such justification shall be included as part of the TDA Claim. Indicators (6) through (10) of Chapter III, Section 3.e. shall be used by MTDB in the same manner. Actual year-to-date figures shall be used to compare with previous year actuals and SDTC budget projections. Should SDTC fail to adequately justify any indicator showing a decrease in efficiency, MTDB shall notify SDTC in writing thirty (30) days prior to the scheduled MTDB action date as to specifically what is not acceptable. Issues of compliance shall be reviewed at a joint meeting of the SDTC Finance Committee and the MTDB Administration Committee. Unresolved issues shall be resolved by the MTDB Board of Directors.

CHAPTER IV
RESPONSIBILITIES OF THE PARTIES

1. Short-Range Transit Planning Process. On or before October 1st of each year a work program shall be jointly prepared by SDTC and MTDB which identifies specific tasks and responsibilities. The generalized process and annual schedule of key events to be used by MTDB and SDTC is shown by Figure 1.
2. TDP Objectives. As part of the TDP preparation, MTDB shall be responsible for adopting a set of transit development objectives for its area of jurisdiction not later than July 1st of each year. The proposed objectives will be transmitted to SDTC on or before May 15th of each year for review and comment.
3. Service Concept Element (SCE). This element shall be an extension of the TDP objectives adopted by the MTDB Board of Directors. It shall be prepared by MTDB and transmitted to SDTC on or before August 15th of each year for review and comment. Adoption of the SCE by MTDB shall be not later than October 1st of each year.
4. Operating Plan Element. In accordance with the TDP objectives and service concept element, SDTC shall be responsible for developing the "Five Year Operating Plan Element" for services to be offered by SDTC within its service area.

The Operating Plan Element developed by SDTC shall be submitted to the MTDB on or before December 15th of each year and used by the MTDB in the preparation of the areawide Five Year Transit Development Plan. MTDB shall afford SDTC reasonable opportunity (not less than ten (10) working days) to comment prior to adoption if any part of the operating Plan Element recommended by SDTC is considered for deletion or change.

5. Financial Plan Element. Primary responsibility for estimating operating and capital costs, and operating revenues, shall be with SDTC, in cooperation with MTDB. Primary responsibility for determining all anticipated sources of operating assistance shall be with MTDB, in cooperation with SDTC. This element shall be completed on or before December 15th of each year.
6. Capital Element. The capital element shall be a direct output from the Operating Plan Element as initially prepared by SDTC. Composition of the Final Capital Element, as used by both SDTC and MTDB, shall be prepared by MTDB, in cooperation with SDTC, and used as the basis for the MTDB Transportation Improvement Program. This element shall be prepared by December 15th of each year.
7. Areawide TDP. The areawide Five Year Transit Development Program shall be adopted by MTDB on or before March 1st of each year and contained in a document separate from the SDTC "Short Range Plan Update" as required by UMTA.

8. TDA Claim Statistics. All statistics and figures required to satisfy Chapter III, Section 3, of this Memorandum of Understanding shall be prepared by SDTC. These figures shall cover three distinct time periods:
   a. Actual previous year end.
   b. Actual year-to-date.
   c. Projected next year.
9. Year 1 Projects. The first year program of projects shall address:
   a. First year projects not implemented from the current TDP.
   b. Second year projects scheduled to be implemented as part of the current TDP. New project submittals shall be addressed separately with justification provided according to MTDB "TIP" guidelines.
10. Setting Project Priorities. On or before March 1st of each year, priorities for Year 1 Projects and Years 2-5 projects shall be initially set by MTDB based on the adopted objectives. SDTC shall evaluate these priorities for consistency with their short-range plan on or before May 1st of each year.

CHAPTER V
GENERAL PROVISIONS

1. Limitation of Memorandum of Understanding. It is specifically understood by both parties that the execution of this Memorandum of Understanding is in no way to be construed as a limitation of the specific legislative authority of MTDB and SDTC.

2. Termination. Either party may, at its sole discretion, terminate this Memorandum of Understanding at any time upon thirty (30) days notice by delivering the notice to that effect in writing to the other party.
3. Review. Commencing one (1) year after the date of execution of this Memorandum of Understanding, and annually thereafter, the parties shall conduct a formal review of this Memorandum of Understanding to assure its continuing efficacy and consider any proposed amendments.
4. Superseding Memorandum of Understanding. This Memorandum of Understanding (M.O.U.) shall supersede the March, 1978 M.O.U. between the parties.

APPROVED AS TO FORM:

PETERSON, GAMER, MUNS & PRICE,
A PROFESSIONAL CORPORATION

By: _____
Attorney for San Diego Metropolitan Transit Development Board

SCALES, PATTON ELLSWORTH & CORBETT
A PROFESSIONAL CORPORATION

By: _____
Attorney for San Diego Transit Corporation

SAN DIEGO METROPOLITAN TRANSIT DEVELOPMENT BOARD

By: _____
Chairwoman of the Board

Date: Oct. 26, 1979

By: _____
MTDB General Manager

SAN DIEGO TRANSIT CORPORATION

By: _____
Chairman of the Board

Date: 6 November 1979

Rev. 10-8-79

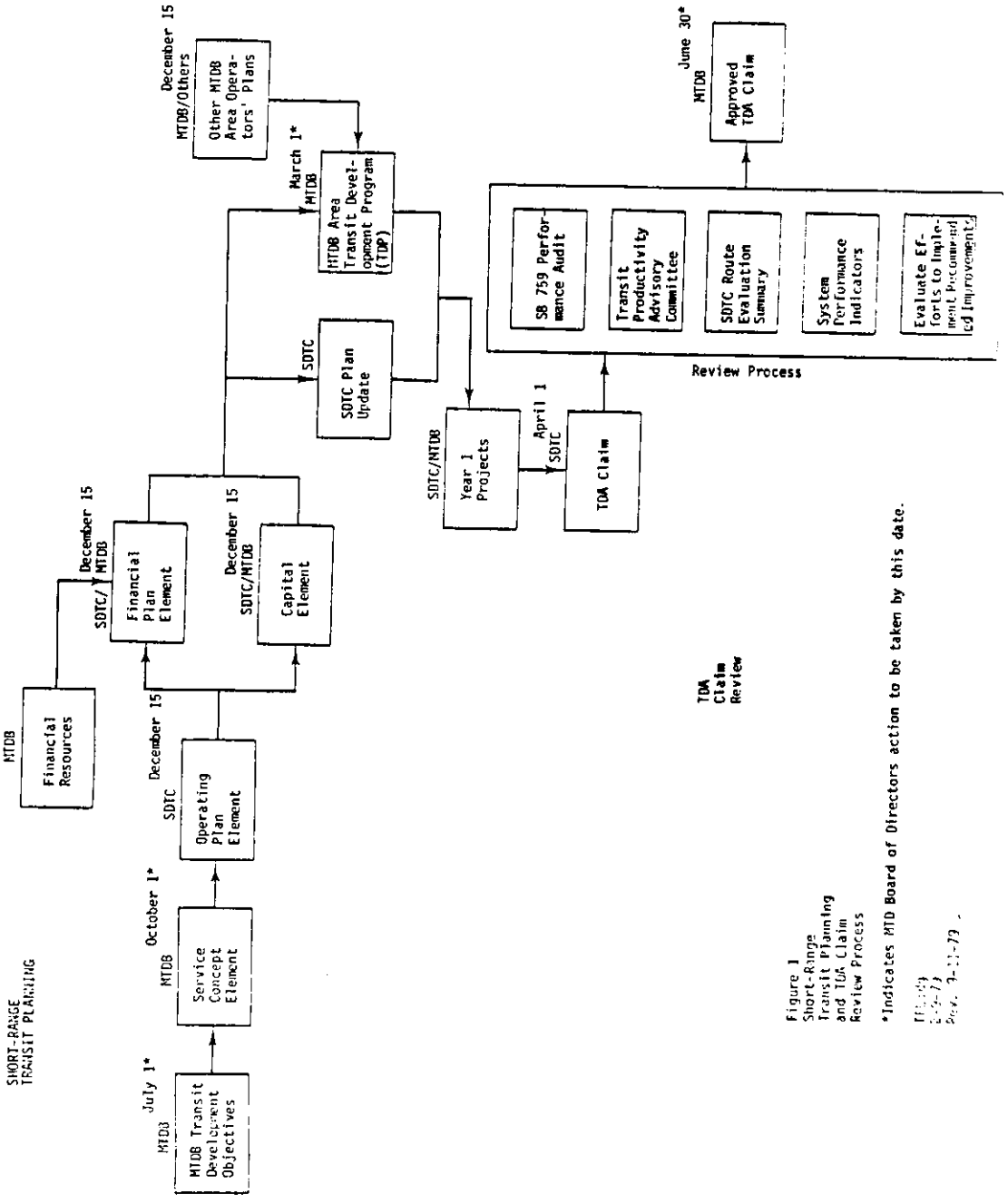


Figure 1
Short-Range Transit Planning and TDA Claim Review Process

*Indicates MTD Board of Directors action to be taken by this date.

San Diego Transit

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