

SAN DIEGO TROLLEY
GUIDEWAY IMPLEMENTATION MONITORING STUDY

Phase I: Before Implementation

January 1982 Draft

San Diego



ASSOCIATION OF
GOVERNMENTS



1993

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CHAPTER 1

INTRODUCTION AND EXECUTIVE SUMMARY

Because it is the first light rail system to be built in this country in over 26 years,* the San Diego Trolley represents a unique opportunity to study the impact of light rail transit on the modern urban environment. Planned, designed and constructed by the San Diego Metropolitan Transit Development Board (MTDB), the Trolley started operation in the summer of 1981.

To evaluate the impact this system will have on travel characteristics, land use, and socioeconomic changes in the area, MTDB and the San Diego Association of Governments (SANDAG) have developed a three-phase Guideway Implementation Monitoring Study, with funding support from the Urban Mass Transportation Administration (UMTA).

Unlike other impact studies funded by the federal government (i.e., BART and MARTA) which have attempted to measure a broad range of transportation effects, this impact study will concentrate on more localized changes in travel characteristics, land use development, and socioeconomic characteristics.

This study effort is divided into three distinct phases, the first of which is the subject of this report.

Phase I: Study Area Inventory (1980-81)

This first phase was designed to capture a picture of a moment in time of the study area prior to implementation of the San Diego Trolley. Land use, travel, and socioeconomic data was gathered, as well as information on the early effects of system construction.

*Cleveland built the most recent system in 1955.

Phase II: Initial Operating Stage (1981-82)

The second phase is intended to monitor incremental changes in the study area during its first year of trolley operation.

Phase III: Impact Evaluation (1982-83)

The final phase of the study will update the data collected in Phase I, followed by an evaluation of the impacts of light rail construction and operation.

At the start of the study a series of questions was asked about the trolley system and its potential impact on the area it serves (see Table 3). These questions form the basis for the data collected. While the study focuses primarily on these questions, other unexpected impacts will also be documented.

Those portions of the communities most directly impacted by the San Diego Trolley were included in the study area, as shown in Figure 2. The entire Centre City San Diego planning area is included.

The City of Imperial Beach is included in the study area even though it is not directly served by the San Diego Trolley. Its extreme southwestern location in relation to the trolley indicates that it will be directly impacted.

In 1980, 177,000 persons lived in the study area. This is 9.5% of the population of the San Diego region.

TABLE 3

GUIDEWAY IMPLEMENTATION MONITORING STUDY
(QUESTIONS)

Change to be Monitored	Questions	Date Base Needs
Travel	<p>What effect will the LRT have on mode split?</p> <p>What effect will the LRT have on current bus operations in the South Bay?</p>	<p>Measurement of trips by mode in corridor area.</p> <p>Transit line volumes by operator</p> <p>Transit boarding counts by operator</p> <p>Transfers among and between operators</p> <p>Bus access mode</p> <p>Transit rider profile</p> <p>Transit trip purpose</p> <p>Private transit operator counts</p> <p>Pre-LRT bus route map in corridor</p> <p>Transit trip length</p>
	<p>What effect will the LRT have on freeway and arterial travel?</p>	<p>Transit counts on freeway & major arterials</p> <p>Peak hour congestion counts</p> <p>Accident records</p> <p>Household vehicle ownership in corridor</p> <p>Trips/dwelling unit - Trips/income category</p>
	<p>What effect will the LRT have on non-transit (i.e., carpool, vanpool, paratransit, jitney) travel?</p>	<p>Auto occupancy counts at selected activity centers and on selected arterials.</p>
	<p>What effect will the LRT have on the number of trips, trip distances, and trip purposes in the corridor area?</p>	<p>Trips per individual by income and mode</p> <p>Average trip distance by income and mode</p> <p>Trip purpose by mode</p>
	<p>What effect on highway travel conditions will the LRT stations have?</p>	<p>Traffic counts near stations</p> <p>Turning counts near stations</p>
Land Use & Development	<p>What changes in land use will come about because of LRT?</p>	<p>Composite land use map from jurisdictions in LRT corridor area.</p>

Change to be Monitored

Questions

Date Base Needs

What zoning changes will come about because of the LRT?

Composite zoning map from jurisdictions in LRT corridor area.

What will happen to land costs in the LRT area, particularly around LRT stations?

Inventory current land values

What public and private development will come about because of the LRT?

Inventory through pre-LRT interview public and private development proposals in corridor area.

What changes in the housing market will take place in LRT corridor?

Current dwelling units by type
Housing costs, corridor/non-corridor
Rental costs, corridor/non-corridor

What changes in regional population distribution will take place because of LRT?

Population in corridor area vs. region
Population near LRT stations
Population by age, sex, ethnicity, and income in corridor area

Socioeconomic Characteristics

What effect will the LRT have on accessibility for elderly, handicapped, and poor?

Population in corridor stratified by sex, age, income
Distribution of handicapped in corridor
Trips by age, income, handicap

What effect will the LRT have on employment opportunities?

Employment by standard industrial classification (i.e., agriculture, manufacturing, etc.) of residents in corridor area
Major employers in corridor area
Employment status in corridor (& unemployed)

What effect will the LRT have on international border crossings?

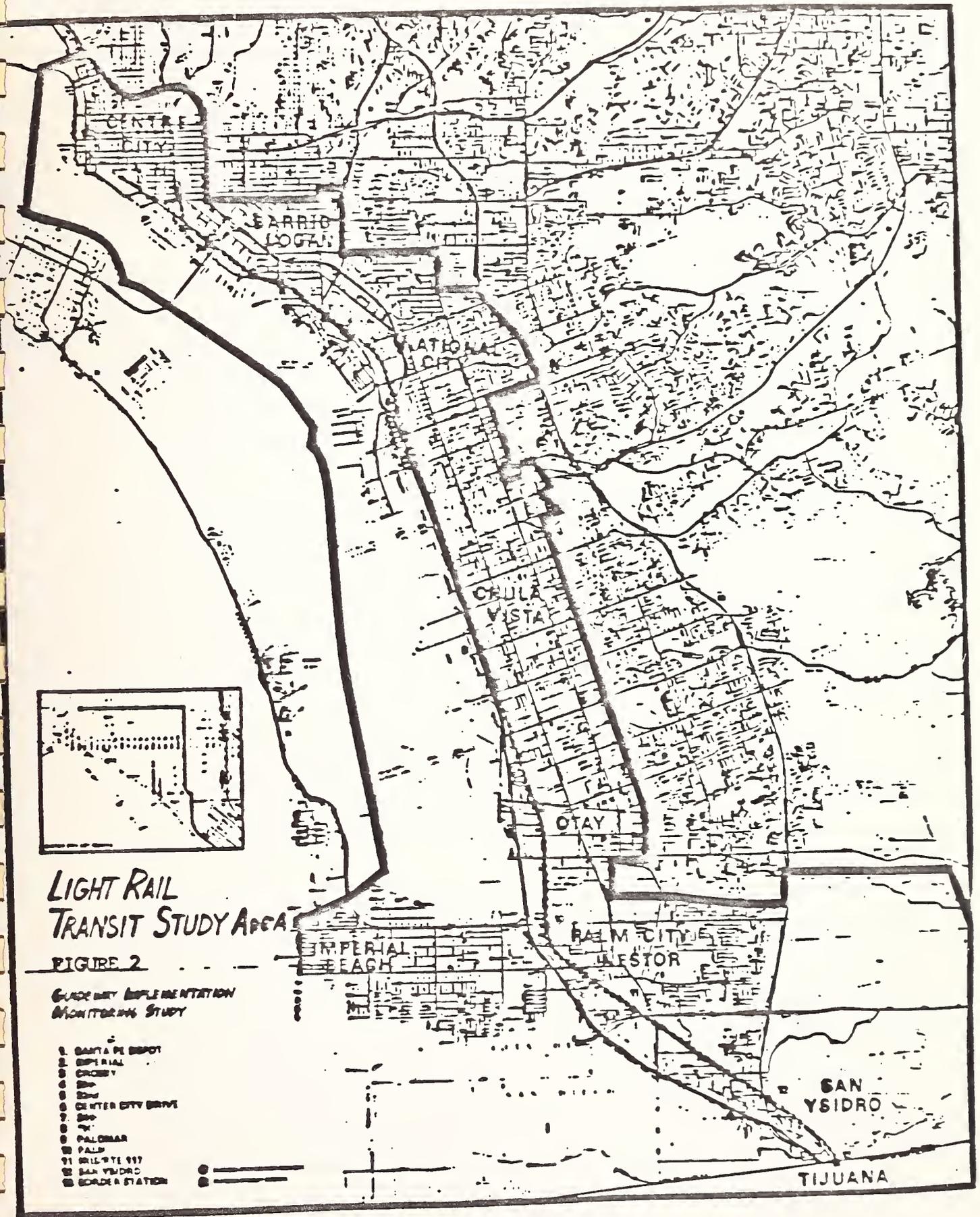
Border crossing counts

Centre City

What effect will the LRT have on the Centre City?

Traffic volumes
Bus patronage
Auto occupants
Parking supply and cost
Pedestrian movements
Employees
Current public & private development





**LIGHT RAIL
TRANSIT STUDY AREA**

FIGURE 2

*GUIDELINE IMPLEMENTATION
MONITORING STUDY*

- 1. SANTA FE DEPOT
- 2. IMPERIAL
- 3. CROSBY
- 4. SDU
- 5. SDU
- 6. CENTER CITY DRIVE
- 7. SDU
- 8. SDU
- 9. PALOMAR
- 10. PALM
- 11. BLUE HTE 997
- 12. SAN YSIDRO
- 13. BORDER STATION





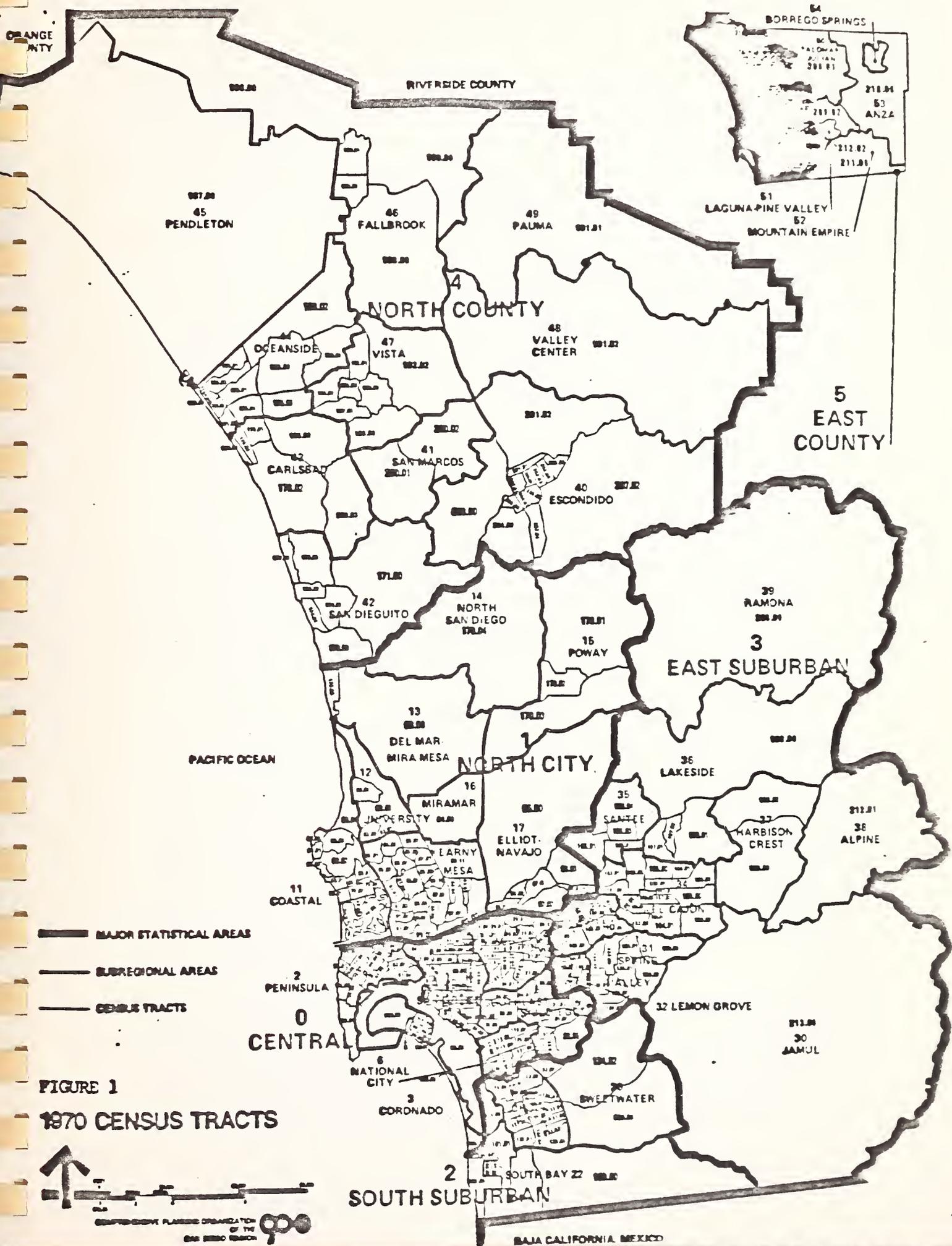
THE SAN DIEGO REGION

San Diego County contains over 4,000 square miles in the extreme Pacific Southwest corner of the United States. The urbanized area lies within the western third of the region along the coastal plain and foothills. The eastern two-thirds contain mountains and desert and is, for the most part, in public ownership. San Diego is relatively isolated from the rest of Southern California, with mountains to the east, the ocean to the west and a large military reservation to the north. The southern boundary is the Mexican border, which is not geographically distinct, but presents a strong barrier to travel and economic interaction. Tijuana, immediately south of the border, has a population of over one million persons.

In 1980, the total regional population was 1.86 million persons, with over 1.4 million persons living in the San Diego metropolitan area. The urbanized communities of "north county" are economically and culturally distinct from the metropolitan area. Population density is relatively low; 450 persons per square mile for the county as a whole, 1,350 persons per square mile for the metropolitan area.

The San Diego economy has diversified significantly from the military and aerospace dominance which characterized it from the 1940's through the early 1960's. Of the 750,000 jobs in the region, 17% are military related, 14% are manufacturing and 21% are tourist related.

Between 1970 and 1980, San Diego County was the fifth fastest growing metropolitan area in the country. During this decade the region grew by 37%, or 3.2% a year. In comparison, California grew by 1.7% a year; the nation by 1.1%. All major statistical areas (MSA's) gained population, and all cities except one gained population. The MSA's are shown in Figure 1. The central area, which contains the northern portion of the light rail corridor, had the lowest growth; the south suburban area, which contains the remainder of the light rail corridor, had the next lowest growth.





The shift of population to the north is shown in Table 1:

TABLE 1
POPULATION GROWTH
1970 - 1980

<u>Area</u>	<u>1980 Population</u>	<u>Number</u>	<u>Percent</u>
0 Central	495,500	21,800	4.6
1 North City (Suburban)	436,300	147,900	51.3
2 South Suburban	195,600	56,600	40.7
3 East Suburban	331,300	103,200	45.2
4 North County	389,000	168,700	76.6
5 East County (Rural)	14,100	5,800	69.9
TOTAL COUNTY	1,861,800	504,000	37.1

San Diego is a single county region, although the county government itself has a limited role in regional transit planning. In the north county, a single agency has the responsibility for short-range transit planning and transit operations. SANDAG, the Regional Transportation Planning Agency and Council of Governments, is responsible for long-range transit planning throughout the region.

In the San Diego metropolitan area, transit funding and responsibilities are diverse. The San Diego Metropolitan Transit Development Board (MTDB) was created by state law in 1975, with the specific charge to determine feasibility and implement a fixed guideway system in San Diego. Originally, the MTDB was precluded from operating a bus system until a guideway system was in operation. Although this prohibition was removed, MTDB has never exercised this option. In addition, two cities within the metropolitan area, part of a third and several unincorporated communities are not within the MTDB jurisdiction.

Within the metropolitan area, the individual cities receive allocations of state sales tax money on the basis of population to provide transit service. These cities can either contract for transit service with another operator or provide their own intra-city service. There are

five fixed-route transit operators, four taxi-based dial-a-ride services, five accessible dial-a-ride services and one light rail service in the metropolitan area. MTDB has short-range planning and coordination responsibility for all of these operations. MTDB and SANDAG must approve the funding for each of these operations.

San Diego Transit Corporation (SDTC), which is owned by the City of San Diego, is by far the largest operator in the region, as shown in Table 2. SDTC provides intercommunity service to most of the other cities in the metropolitan area by contract. It is the only federally funded transit operator in the metropolitan area. All other service is provided by contracts with private-sector operators.

TABLE 2
PUBLIC TRANSIT OPERATORS
SAN DIEGO REGION
(FY81 Statistics)

<u>Fixed-Route Systems</u>	<u># Vehicles</u>	<u># Revenue Passengers</u>	<u># Revenue Miles</u>
San Diego Transit	312	26,131,600	11,320,800
North County Transit District	112	6,000,000	6,700,000
Chula Vista Transit	12	428,800	487,000
National City Transit	8	234,287	232,900
County Transit System	14	395,000	797,400
Rural Bus System	8	13,500	134,500
Strand Express	4	106,500	133,600
San Diego Trolley	14	(Began operations 7/81)	
<u>Dial-A-Ride Systems</u>			
El Cajon Express	20*	196,100	376,000
La Mesa Dial-A-Ride	15*	151,300	327,854
Lemon Grove Dial-A-Ride	3*	37,300	50,100
Coronado Dial-A-Ride	1*	12,700	16,600
<u>Elderly and Handicapped Systems</u>			
San Diego Dial-A-Ride	24	141,900	416,000
Handytrans (Chula Vista)	4	25,200	84,000
Lifeline (North County)	7	20,000	125,000
WHEELS (East County)	6	20,800	165,800
National City Dial-A-Ride	1	(To begin operations 10/81)	

*On an as-needed basis.

THE SAN DIEGO TROLLEY

The San Diego Trolley is classified as a light rail transit (LRT) system. The vehicles are manually operated and there is minimal grade separation. The trolley uses overhead power pick-up and has the capability of operating in a mixed traffic environment.

The trolley system is 15.9 miles in length. It operates on existing streets for a distance of 1.7 miles in Centre City. The vehicles travel at-grade on an exclusive, reserved path essentially in the center of the street. Eventually, the 3/4 mile portion within the major office district will be developed as a pedestrian and transit way. However, during the initial stage of the guideway operations, automobile traffic is permitted in this area. Preferential signalization is used to minimize interference with auto traffic at intersections. There are seven "stops" within Centre City with approximately quarter-mile spacing.

The remaining 14.2 miles of the system operates on the rehabilitated rail facilities of the SD&AE Railway. The main line of the SD&AE Railway is located on the east side of Interstate 5 and Harbor Drive from the International Border to just south of San Diego Centre City. Most of the SD&AE Railway was a single track, at-grade system designed for freight operations. Light rail transit operations required that the existing track and roadbed be upgraded. All grade crossings are protected by automatic crossing gates which are activated by approaching light rail and freight trains. Although service was initiated as a single track operation, a double track system will be operating within a year.

The 11 suburban stations are modest, low level platforms with a waiting shelter, benches, light standards, transit information, ticket machines, public telephones and trash receptacles. Except for the Border facility, the stations are not manned, and restroom facilities are provided only at the terminal stations. A television surveillance system is monitored by the trolley dispatcher. A total of 2,150 free parking spaces are provided at six suburban stations. All stations have pedestrian access,

bus access, and bicycle storage facilities. Local bus routes and schedules have been modified to provide feeder service to the trolley.

A fleet of 14 Duwag U2 light rail transit vehicles is used to provide transit service. Trains consisting of two and three cars are currently being used, with five trains in operation at most times. Each articulated vehicle is capable of carrying up to 200 passengers. Thus, one driver operating a three-car train can carry up to 600 passengers. Each car is equipped with one wheelchair lift and one wheelchair tie-down position.

The guideway operates seven days per week. Trains are scheduled at 20-minute headways between 5:00 AM and 9:45 PM. Once double-tracking is complete, the guideway will operate at 15-minute headways and service will be extended between 9:45 AM and 1:00 AM at 30-minute headways. Travel time between Centre City and the International Border is approximately 45 minutes. The average system speed through Centre City is nine miles per hour. Along the railway portion of the right-of-way the trains average 35-40 miles per hour. The running time from end to end is approximately twice as fast as the previous bus service.

The LRT system uses a self-service, barrier-free, fare collection method. Self-service "vendomat" machines are used by the passengers to purchase a ticket before boarding the train. No fare payment or ticket collection is made aboard the LRT vehicle. However, passengers are subject to inspections by roving transit personnel to assure that a ticket purchase was made. Violation rates are estimated at less than 1%. The following fares are charged:

One Way Fare	\$ 1.00
One Way Elderly & Handicapped Fare	.40
Reduced Downtown Area Fare	.25
"Ready Ten" - Ten Trip Ticket	7.50
Regional Monthly Pass	31.00
Regional Monthly Elderly & Handicapped Pass	15.00
Transfer Charge from LOCAL or URBAN Services	.20
Transfer Charge from METRO (Express) Services	Free
Transfer Charge for Elderly & Handicapped	Free

During the first month of operation, fares amounted to nearly 90% of operating costs, which are estimated at \$10,000 per day. Since Labor Day, farebox recovery is estimated at 76%. The farebox recovery is expected to amount between 50% and 70% of operating costs over the first year. This farebox recovery rate is approximately equal to the rate achieved by the bus route which the trolley replaced.

Total guideway patronage forecasts range from 28,000 to 30,000 daily in 1995. The seven Centre City stops represent a major portion of guideway activity, ranging from 50% to 68% of the daily patronage. Initial patronage was estimated at 9,800 trips per day. During the first week of operations, the trolley averaged around 12,000 trips per weekday, based on SANDAG counts. Although this patronage may be due to curiosity among one-time tripmakers, patronage actually increased to 13,000 trips per day in the third week of operation.

Based on "vendomat" sales, MTDB estimates that average weekday ridership was 13,400 and weekend ridership was over 15,000 during August. About 15% of the riders boarded at the Santa Fe Depot; 29% at the Border.

The trip purpose distribution of forecasted guideway ridership reveals that home-work trips predominate over other trip types, representing 37% to 42% of all guideways usage (excluding Border crossings). Approximately 15% of the Border-crossing travelers using San Diego Transit were destined to a work location.

Peak-hour guideway patronage is expected to represent approximately 10% of the daily usage. Most other rail systems in the United States experience much higher peaking characteristics (15.0% to 20.0% peak hour versus all day). The relatively low peak hour demand on the trolley reflects the flat all-day distribution of Border-crossing travel (7.0% during the peak hour).

The light rail project is being developed in two phases. The original Phase I project included all those activities required to implement a

16-mile single track LRT system utilizing 14 light rail vehicles. Phase II, which is scheduled for completion in September, 1982, involves the complete double-tracking of the LRT line, additional traction power equipment, and the purchase of 10 additional vehicles.

The total cost of the Phase I project was \$86,000,000, with major cost categories as follows:

Vehicles (14)	\$12,000,000
Construction and Other Procurement Contracts	35,200,000
SD&AE Purchases	18,100,000
Non-SD&AE Right-of-Way	4,000,000
Engineering and Construction Management	7,000,000
Interest on Fund Advances	9,000,000
Start-Up Activities	<u>700,000</u>
TOTAL	\$86,000,000

The estimated cost of the Phase II project is \$27,900,000, with major cost categories as follows:

Vehicle Purchases (10)	\$ 9,600,000
Construction and Other Procurement	16,400,000
Engineering and Construction Management	<u>1,900,000</u>
TOTAL	\$27,900,000

Guideway operating costs are estimated to be \$3.7 million per year based upon 1981 dollars. Approximately 62% of this budget will go towards labor costs.

The financial plan for the light rail system indicates that 87.5% of the capital expenditures for Phase I would be derived from state gas tax. This funding source produces about \$15 million annually. The remainder of Phase I funding must be obtained from state sales tax revenues. The Phase II project will be funded with additional state sales tax monies which have been made available for transit purposes.

DEVELOPMENT OF THE TROLLEY

The first serious discussions of a fixed guideway transit system for the San Diego region began in 1971 as a part of the development of the Regional Comprehensive Plan. Shortly thereafter, county voters approved a ballot proposition which permitted up to 25% of the state gasoline tax to be used for the construction (but not operation) of guideway transit systems. A 60-mile, intermediate capacity guideway system was adopted as part of the first Regional Transportation Plan in 1975. The state legislation creating MTDB in 1975 directed that the planning and design of exclusive mass transit guideways be pragmatic, low cost, and incremental in nature. Based on these directions, the following principles were adopted at the initiation of the Guideway Planning Project:

- o The selected corridor should extend a long distance and offer high speed operation.
- o The guideway system capital cost should be low.
- o The guideway system should be primarily at-grade and primarily within exclusive right-of-way.
- o The transit system operating costs should be low, and the guideway system should attempt to meet operating costs out of fares (although this was not a prerequisite for system feasibility).
- o The project should measure the impact of the proposed transit system on residential growth.

To determine the feasibility of guideway transit in San Diego, the MTDB initiated an 18-month Guideway Planning Project study. The project was conducted in two phases. Phase 1 was initiated in December, 1976, and involved evaluation of candidate corridors based on the Regional Transportation Plan. Phase 2 began in April, 1977, and involved further screening of corridors, selection of a corridor for a starter segment,

and technical assessment of transit alternatives within the selected corridor.

Selection of the South Bay corridor came in the early stages of the Phase 2 study. In the analysis leading to the selection of the corridor, the MTDB considered environmental, social, and economic impacts; station location studies; and cost and patronage estimates. The dominant considerations for the selection were low cost and high prospective ridership.

Ultimately, the major factor that led to the selected project alignment was the availability of the San Diego & Arizona Eastern (SD&AE) Railway. On September 10, 1976, a severe storm passed through the eastern part of San Diego County washing out major portions of the SD&AE Railway. In 1978, the Interstate Commerce Commission (ICC) denied a request to abandon rail service on the line. Because of these events, MTDB was able to purchase the railroad for \$18.1 million.

The project approval process was initiated in June, 1978, when the MTDB Board of Directors made a determination that the trolley project in the South Bay corridor was feasible. The San Diego City Council approved the project and transit financial plan in October, 1978. In March, 1979, MTDB received final project and financial plan approval from CALTRANS and the California Transportation Commission. The first construction contract was awarded in December, 1979, the first vehicles arrived in August, 1980, and revenue service began in July, 1981.

EXISTING TRAVEL CHARACTERISTICS

Of the 8.3 million person-trips in the region each day, 1.2 million, or 14.5%, occur within the trolley corridor. Within the corridor, approximately 3.6% of all trips are on transit, twice the mode split of the region. Table 4 summarizes the major characteristics:

TABLE 4

1980 TRAVEL CHARACTERISTICS

	TRANSIT TRIPS		AUTO TRIPS
	<u>Region</u>	<u>Corridor</u>	<u>Regional</u>
Daily Trips	145,500	40,100	8,000,000
Average Trip Length (Miles)	5.2	5.2	7.1
Average Trip Length (Minutes)	19.2	17.3	9.3
Percent of Trip in AM Peak	22%	22%	8%

The freeway system in the San Diego region is probably the finest in the country. Of a total of 272 miles of freeway in the region, 25.8 miles are located within the corridor. There is no severe congestion in the corridor and only one area of moderate congestion caused by a narrowing of the freeway to cross the Sweetwater River.

The characteristics of transit riders in the South Bay is not significantly different from the region as a whole. Ridership reflects the demographic characteristics in the area, the large military population and the area's proximity to Mexico. Table 5 shows the characteristics of transit riders in the corridor and region. In addition, rider characteristics on the three transit routes which parallel the trolley are also shown.

TABLE 5

TRANSIT RIDERSHIP CHARACTERISTICS

	<u>Region</u>	<u>Trolley Corridor</u>	<u>Transit Routes</u>		
			<u>29</u>	<u>32</u>	<u>100</u>
Percent Female	51.3%	53.2%	29.2%	48.8%	41.9%
Median Age	33.1	28.9	24.7	35.4	29.6
Median Income (000)	\$9.9	\$9.9	\$10.2	\$8.6	\$12.4
Ethnicity: % Hispanic	18.0%	18.8%	12.2%	56.7%	14.6%
% White	60.3%	58.5%	52.4%	30.0%	68.8%
% Transit Dependent	45.5%	46.2%	49.9%	44.3%	40.5%

EXISTING LAND USE

The light rail corridor impact area covers 38 square miles, or over 24,000 acres. Table 6 summarizes the land uses in the corridor. The primary land use is residential (31.2%), followed by agriculture (13.3%) and manufacturing (12.7%). Because the study area is skewed to take in a large part of Otay Mesa, which is currently largely undeveloped, agriculture may seem to account for a disproportionately large share of the corridor land use. However, a significant amount of agricultural land is in close proximity to the trolley alignment.

Commercial land uses, which include both shopping center and strip commercial, make up 9.4% of the area. The balance of the land uses include: federal reservations (11.9%), transportation and utility corridors (11.6%), public and quasi-public (4.4%), water areas (2.7%), wildlands (1.5%), and open space (1.3%).

Specific land use, zoning and general plan designations in the area of the stations have also been collected and mapped.

TABLE 6
GUIDEWAY CORRIDOR
1980 Land Use Acreage

<u>Land Use</u>	<u>Total Acres</u>	<u>% of Total</u>
Residential	7,550.65	31.2%
Agricultural	3,238.44	13.3%
Manufacturing	3,092.48	12.7%
Federal Reservations	2,887.92	11.9%
Transportation and Utilities	2,810.01	11.6%
Commercial	2,282.28	9.4%
Public and Quasi-Public	1,078.80	4.4%
Water Areas	627.31	2.7%
Wildlands	260.09	1.5%
Recreational and Open Space	318.27	1.3%
TOTAL:	24,276.25	100.0%

EMPLOYMENT

Over 20% of the civilian work force is employed in the study area. Table 7 shows that the largest concentration of civilian employees are located in the Centre City area. There are 61,811 Centre City workers. The second largest employment center is in Barrio Logan where 26,046 jobs are provided. An additional 13.3% of corridor area jobs are in Chula Vista and 9.8% in National City.

TABLE 7
CIVILIAN EMPLOYEES BY COMMUNITY
(1980)

<u>Community</u>	<u>Number</u>	<u>Percent of Total</u>	
		<u>Study Area</u>	<u>San Diego Region</u>
Centre City	61,811	46.5	9.6
Barrio Logan	26,046	19.7	4.1
National City	13,000	9.8	2.0
Chula Vista	17,719	13.3	2.8
Otay	3,351	2.5	0.5
Palm City/Nestor	2,033	1.5	0.3
San Ysidro	6,169	4.6	1.0
Imperial Beach	2,857	2.1	0.4
TOTAL	132,986	100.0	20.8

The major categories of employment in the study area are: military, government, service industries, retail trade, and manufacturing. Table 8 shows that 18.8% of those employed are in the military. Local governments and retail trade both employ 12% of the workers. The vocational breakdown varies from community to community. Military employment is heavily concentrated in Barrio Logan and National City, just south of Centre City. Manufacturing employment is concentrated in Barrio Logan and at a single Chula Vista industry, which is located within walking distance of a light rail station.

TABLE 8

COMMUNITY EMPLOYMENT BY STANDARD
INDUSTRIAL CLASSIFICATION (SIC)
(Percent of Total)

<u>SIC</u>	<u>Centre City</u>	<u>Total Light Rail Corridor</u>	<u>Region</u>
Agriculture & Mining	0.6	1.0	2.0
Construction	1.5	2.3	5.3
Manufacturing:			
Non-Durable	3.4	3.8	2.5
Durable	3.0	11.7	9.0
Transportation, Utilities	8.5	5.2	3.6
Wholesale Trade	6.3	4.9	3.0
Retail Trade	12.9	12.1	16.3
Finance, Insurance, Real Estate	15.9	7.3	4.9
Services	23.6	14.2	18.0
Government:			
Federal, Civilian	5.9	5.9	5.6
Military	1.1	18.8	16.8
State	1.4	0.8	2.5
Local	15.9	12.0	10.5
TOTAL:	100.0	100.0	100.0

SOCIAL CHARACTERISTICS

The 177,000 people living in the study area occupy 57,000 housing units. More than 53% of these are single-family dwellings. The average household size in the study area is 3.1 persons, which is the same as the regional average.

Females comprise a slightly lower percentage (49.2%) of the population in the corridor, than in the region as a whole (50.6%). This undoubtedly reflects the high military presence in the area. The study area has a

higher incidence of transportation-handicapped persons than the region as a whole.

Residents of the study area tend to be younger than the population of San Diego County. More than 50% of the study area is under 25 years old, as shown in Table 9. Within San Diego County, less than 40% of the residents fall into this age bracket. Countywide, a larger percent of the residents are age 55 or older.

TABLE 9
AGE DISTRIBUTION
(1980)

	Age in Years (in total percentages)					
	0-14	15-24	25-35	35-54	55-64	65 or Over
LRT Study Area	28.9	21.2	15.6	19.9	6.8	7.6
San Diego County	22.4	17.4	18.9	22.1	8.8	10.4

In 1980, the median household income was \$14,129 for the San Diego region. Within the study area only the Palm City/Nestor area had a median household income equivalent to the region. Centre City and Barrio Logan report the lowest median household incomes in the study area, as shown in Table 10.

TABLE 10
MEDIAN HOUSEHOLD INCOME
(1980)

<u>Jurisdiction</u>	<u>Income</u>
San Diego Region	\$14,129
Centre City	4,102
Barrio Logan	6,515
National City	9,883
Chula Vista	11,623
Otay	11,253
Palm City/Nestor	13,535
San Ysidro	6,548
Imperial Beach	11,263

A total of 81.3% of the residents of San Diego County are White, compared to only 64% of the study area population. Table 11 shows that almost one-fifth of the residents of the study area identified themselves as "Other". An additional 9.3% reported an Asian background. Hispanics comprise 41.3% of the total population in the study area, compared to less than 15% regionwide. Racial and ethnic distribution varies considerably amongst the study area communities.

TABLE 11

RACIAL DISTRIBUTION
(In Total Percentage)
(1980)

	<u>LRT Study Area</u>	<u>San Diego County</u>
White	64.0	81.3
Other	19.6	7.5
Asian	9.3	4.8
Black	6.5	5.6
Indian	0.6	0.8
Hispanic Ethnicity	41.3	14.8

Table 12 shows that within the study area, the median housing prices in 1980 range from \$39,570 in Barrio Logan to \$79,066 in Chula Vista. The regional average was \$104,205 for a single-family home. Thus, the median housing costs in the study corridor were significantly lower than the regional average.

TABLE 12

AVERAGE SALE PRICE
SINGLE FAMILY DWELLINGS

Year to Date, June 1980

Barrio Logan	\$ 39,570
National City	56,862

1940
1941
1942
1943
1944
1945
1946
1947
1948
1949
1950

1951
1952
1953
1954
1955
1956
1957
1958
1959
1960

Chula Vista	79,066
Otay	61,497
South San Diego	65,888
Imperial Beach	71,454
San Diego Region	104,205

INTERNATIONAL BORDER CHARACTERISTICS

Almost three million people live in the combined San Diego/Tijuana area, which is one of the fastest growing areas in the world. On a typical weekend day, over 40,000 persons cross the border from Mexico. The following information is based on a non-expanded border crossing survey conducted in 1980.

San Diego County residents account for 38.7% of those people surveyed, as shown in Table 13. A total of 31.4% of the sample were residents of Tijuana and an additional 3.1% were residents from other parts of Mexico. Almost 22% of the respondents were Californians from outside of San Diego County.

TABLE 13

RESIDENCE OF PERSONS CROSSING THE BORDER (1980)

<u>Residence</u>	<u>Percent of Total</u>
Trolley Corridor	14.0%
San Diego County	38.7%
Tijuana	31.4%
Other California	1.8%
Other U.S.A.	4.1%
Other Mexico	3.1%
Other Foreign Nation	0.9%
TOTAL	100.0%

Although the automobile is the most common access mode to the border, transit carries a significant percentage of border crossing trips, as

shown in Table 14. In contrast, less than 2% of the trips in the region are made by transit. As indicated in Table 14, several private bus operators provide cross-border service, most commonly from Centre City.

TABLE 14
MODE OF ACCESS IN THE U.S.A.
(1980)

<u>Mode</u>	<u>Percent of Total</u>
Private Vehicle	70.8%
San Diego Transit	12.0%
Walked	12.0%
Private Bus	4.3%
Taxicab	0.8%
Bicycle	0.1%
TOTAL	100.0%

As expected, the residents of the San Diego/Tijuana metropolitan area cross the border more frequently than non-residents. Table 15 shows that 18.4% of the Mexicans and 6.6% of the San Diegans cross the border daily. Approximately 14.5% of the local residents surveyed complete this trip several times per week. Additionally, 27% of the San Diegans and 36.7% of the Mexicans travel across the border at least once a week.

TABLE 15
FREQUENCY OF BORDER CROSSING
(Percent of Total)
(1980)

<u>Frequency of Crossings</u>	<u>Residence</u>				
	<u>San Diego County</u>	<u>Mexico</u>	<u>Other California</u>	<u>Other U.S.A.</u>	<u>Other Foreign</u>
Daily	6.6	18.4	0.7	2.1	0
Several Times Per Week	14.5	14.4	1.0	0	0
Weekly	27.0	36.7	2.9	0	0
Bi-Monthly	16.6	16.0	11.2	1.4	0
Occasionally	35.3	14.5	84.2	96.5	100.0
TOTAL	100.0	100.0	100.0	100.0	100.0

Table 16 shows that more than 50% of the San Diegans and 72.7% of the Mexicans crossed before noon. In contrast, most visitors to the area cross the border in the afternoon. It is important that none of these peaks occur during normal transit peak periods.

TABLE 16
RESIDENCE BY TIME OF CROSSING
(1980)

<u>Time of Crossing</u>	<u>Percent of Total</u>				
	<u>San Diego County</u>	<u>Mexico</u>	<u>Other California</u>	<u>Other U.S.A.</u>	<u>Other Foreign</u>
8:00 - 9:59 AM	9.2	20.6	4.3	2.8	3.2
10:00 - 11:59 AM	23.6	31.0	16.0	12.7	16.1
Noon - 1:59 PM	22.2	21.1	29.5	22.5	12.9
2:00 - 3:59 PM	29.4	20.7	31.7	33.8	45.2
4:00 or Later	15.6	6.6	18.5	28.2	22.6
TOTAL	100.0	100.0	100.0	100.0	100.0

As previously noted, 12% of the people used San Diego Transit as their primary mode of travel in the U.S.A. Table 17 shows the time of day when the passengers crossed the border. Almost one third of them crossed between 2:00 PM and 4:00 PM. This coincides with the fact that 45.7% of the pedestrian border crossings occurred during the same period.

TABLE 17
TIME OF CROSSING BY TRANSIT RIDERS
(1980)

<u>Time</u>	<u>Percent of Total</u>
8:00 - 9:59 AM	9.9
10:00 - 11:59 AM	24.3
Noon - 1:59 PM	22.8
2:00 - 3:59 PM	32.6
4:00 - 6:00 PM	9.7
After 6:00 PM	0.7
TOTAL	100.0

24 27

CONSTRUCTION AND OPERATIONAL IMPACTS

Two additional activities were carried out to determine the effects of trolley construction on adjacent businesses and to monitor land use or economic impacts once the trolley began operation. The first activity, a survey of businesses along the trolley route, was conducted in 1980 and will be repeated in the third year of the project. The second activity is a periodic inventory of vacant land, vacant buildings and private construction or redevelopment activity.

When the business survey was conducted, construction had begun only on 12th Street. Along this street, over 60% of the businesses had experienced a decrease in sales or service activity; approximately 4% had experienced an increase. Over 40% of the merchants along the route where construction had not yet begun anticipated a decrease in sales during the construction period.

Most of the merchants surveyed felt that there would be no change in the level of their business activity due to trolley operations. However, 14% of the 12th Street business operators and 46% of the operators in other areas felt there would be an increase in their business activity because of trolley operations.

CHAPTER 2

SAN DIEGO TROLLEY PROJECT

Following an 18-month analysis of transit alternatives, the MTD Board of Directors made a determination that the San Diego Trolley was a feasible project in June 1978. Final design engineering was initiated in January 1979, the first construction contracts were awarded in December 1979, and revenue service was initiated in July 1981.

PLANNING AND APPROVAL

The San Diego Metropolitan Transit Development Board (MTDB) was created in 1975. California Senate Bill 101, the legislation creating MTDB, directed that the planning and design of exclusive mass transit guideways be pragmatic, low cost, and incremental in nature. Based on this direction, principles were adopted by the Board at the initiation of the Guideway Planning Project, which provided direction for conduct of the project study. These principles, adopted on December 27, 1976, are as follows:

- o The selected corridor should extend a long distance and offer high speed operation.
- o The guideway system capital cost should be low.
- o The guideway system should be primarily at-grade and primarily within exclusive right-of-way.
- o The transit system operating costs should be low, and the guideway system should attempt to meet operating costs out of fares (although this is not a prerequisite for system feasibility).
- o The project should measure the impact of the proposed transit system on residential growth.

The feasibility determination came at the conclusion of the 18-month Guideway Planning Project. This project was conducted in two phases.

Phase 1 was initiated in December 1976 and involved evaluation of candidate corridors based on the Regional Transportation Plan, subsequent technical studies, and policy guidance by the MTD Board of Directors. Phase 2 began in April 1977 and involved further screening of corridors, selection of a corridor for a starter segment, and a technical assessment of transit alternatives within the selected corridor. Several project objectives were considered in evaluating the transit alternatives, including:

- o Making better use of existing transportation facilities.
- o Using existing financial resources more productively.
- o Providing an effective alternative to the automobile.
- o Improving the attractiveness of public transportation.
- o Making public transportation accessible to all.
- o Making a positive contribution to the quality of life.

The purpose of the Guideway Planning Project was to determine guideway feasibility and select a corridor alignment which would represent an initial guideway element of an overall public transit improvement program. Selection of the South Bay corridor came in the early stages of the Phase 2 study. In the analysis leading to the selection of the corridor limits, a broad array of planning and engineering data was assembled. Included were analyses of available guideway alignments within the corridors; probable environmental, social and economic impacts, station location studies, and order-of-magnitude cost and patronage estimates. The dominant considerations for the selection were low cost, high prospective ridership, and minimal environmental impact.

Ultimately, the major factor that led to the selected project alignment was the availability of the San Diego & Arizona Eastern (SD&AE) Railway. On September 10, 1976, a severe storm passed through the east part of San Diego County washing out major portions of the SD&AE Railway between Division and Plaster City. In 1978, the Interstate Commerce Commission (ICC) denied the parent company's request from Southern Pacific Trans-

portation Company to abandon rail service on the line. MTDB then agreed to a purchase price of the railroad of \$18.1 million, and the ICC approved sale in October 1979. Actual purchase took place November 1, 1979.

The project approval process was initiated in June 1978, when the MTD Board of Directors made a determination that the trolley project in the South Bay corridor was a feasible project. Unfortunately, this action coincided with the passage of State of California Proposition 13 (Property Tax Initiative) which slowed the approval process. The San Diego City Council finally approved the project and areawide transit financial plan in October 1978. In March 1979, MTDB received final project and financial plan approval from CALTRANS and the California Transportation Commission.

SYSTEM CHARACTERISTICS

The trolley system was designed to use a combination of exclusive right-of-way and mixed street operation. The LRT travels a total of 15.9 miles (25.3 KM) through Centre City, Barrio Logan, National City, Chula Vista, Otay, Palm City/Nestor, and San Ysidro (see Figure 3).

The majority of the system will operate on the existing rehabilitated rail facilities of the SD&AE Railway. The main line of the SD&AE Railway extends along the east side of Interstate 5 and Harbor Drive from the International Border at San Ysidro to just south of San Diego Centre City at Commercial Street (see Figure 2).

Because the SD&AE Railway was built as a single track system designed for freight operations only, light rail transit operations required that the existing track and roadbed be upgraded. All grade crossings are protected by automatic crossing gates. Although service was initiated as a single track operation, a double track system will be operating a year after transit service begins.

The guideway operates on existing streets for a distance of 1.7 miles (2.7 KM) in Centre City. The LRT vehicles travel at-grade on an exclusive, reserved path essentially in the center of the street. Eventually, C Street from Kettner Boulevard to 10th Avenue will be developed as a pedestrian and transit way. However, during the initial phase of the guideway operations, automobile traffic is permitted on C Street. Preferential signalization will be used to minimize interference with auto traffic at intersections.

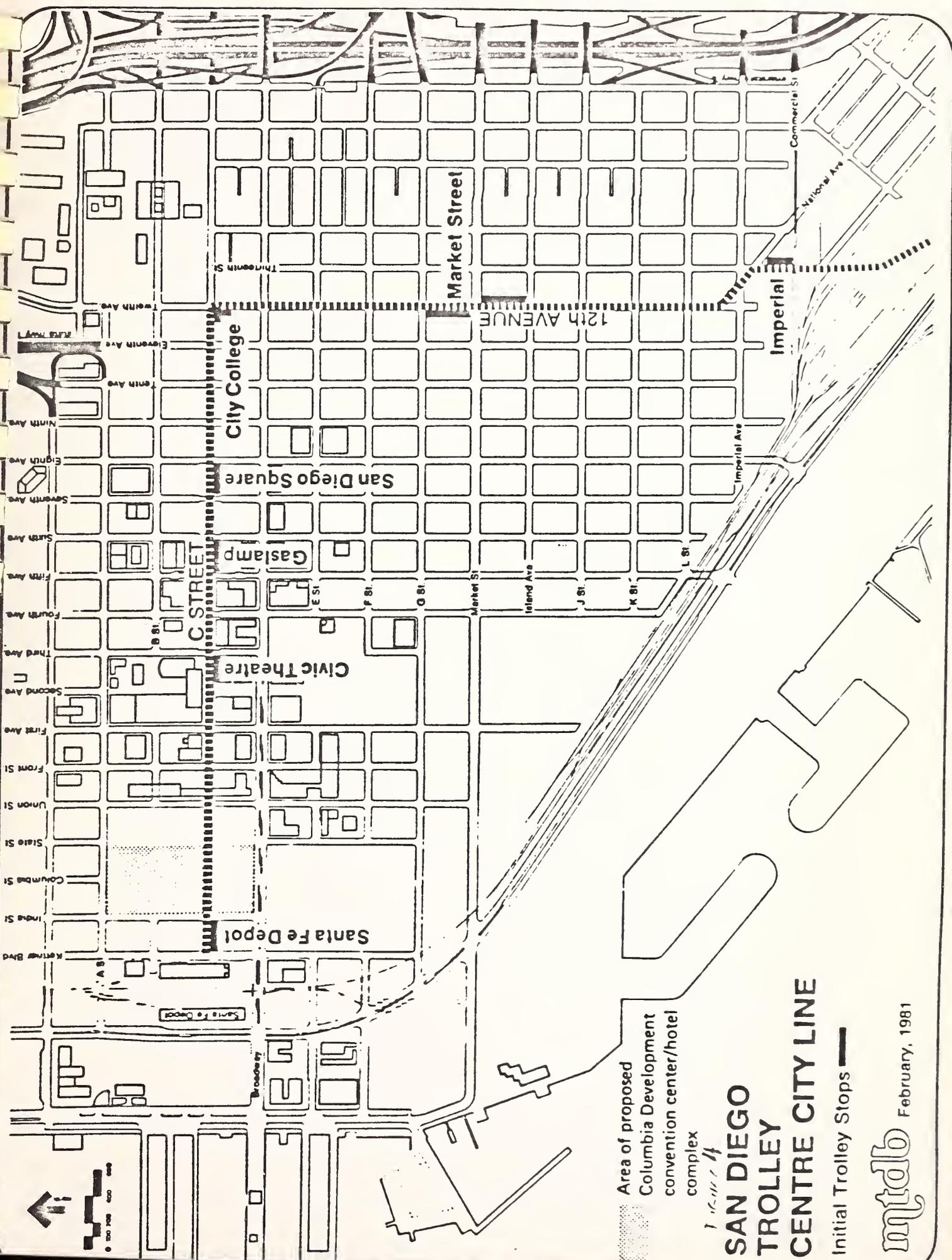
The light rail transit system is designed to provide for intra-community transit as well as connections between communities. The stations are spaced to offer high accessibility to the guideway by maximizing access for pedestrians, cyclists, local transit users, and motorists. In Centre City San Diego, the train stops four times along C Street and three times along 12th Avenue. There are eleven suburban stations.

In Centre City, the LRT stops in zones protected from bypassing traffic. The Centre City trolley stops shown in Figure 4 are:

- o Santa Fe Depot, near the intersection of Kettner Street and C Street.
- o Civic Theatre, between 2nd Avenue and 3rd Avenue on C Street.
- o Gaslamp, between 5th Avenue and 6th Avenue on C Street.
- o San Diego Square, between 7th Avenue and 8th Avenue on C Street.
- o City College, at the intersection of 12th Avenue and C Street.
- o Market Street, Southbound - on 12th Avenue between Market Street and G Street; Northbound - on 12th Avenue between Island Avenue and Market Street.
- o Imperial, at the intersection of Imperial Avenue and 13th Street.

The eleven suburban stations shown in Figure 3 are:

- o Barrio Logan, on Crosby Street and Harbor Drive. Bus transfers to Coronado and southeast San Diego.
- o Harborside, on 28th Street and Harbor Drive, serving National Steel and Shipbuilding and other industrial sites.



Area of proposed
Columbia Development
convention center/hotel
complex

SAN DIEGO TROLLEY CENTRE CITY LINE

Initial Trolley Stops



February, 1981

- o Pacific Fleet, on 32nd Street and Harbor Drive, serving 32nd Street Naval Base.
- o National City 8th Street, on 8th Street near Harbor Drive, serving 32nd Street Naval Base and North National City. Bus transfers to National City.
- o National City 24th Street, on Wilson Avenue near 24th Street, serving residential, commercial and industrial areas of National City. The station provides direct access to Route 54, Bonita, and communities within the Sweetwater River area. There are 180 parking spaces available.
- o Chula Vista H Street, on H Street near Interstate 5, serving the central business district and northern neighborhoods of Chula Vista. The station provides direct access to Rohr Industries and Chula Vista Shopping Center. Bus transfers to Chula Vista, including Southwestern College. Parking is available for 300 automobiles.
- o Chula Vista Palomar Street, on Palomar Street at Industrial Boulevard, serving Otay, Chula Vista, and Castle Park. Bus transfers to the area. There are 370 parking spaces at the station.
- o Palm City, on Palm Avenue at Hollister Street, serving Imperial Beach, Palm City, and Nestor. Local bus transfers to Imperial Beach and Coronado. The Palm City station has the largest parking lot on the line with 470 spaces.
- o Iris Avenue, on Iris Avenue at Howard Avenue near Highway 117, serving the rapidly growing residential and industrial community of South San Diego. Local bus service is available. There is parking for 330 automobiles at this station.
- o Beyer, located between Seaward Avenue and Beyer Boulevard, will serve the San Ysidro community. Local buses will serve the community. There are 170 parking spaces at this station.
- o San Ysidro-International Border, located directly north of the International Border on San Ysidro Drive, will serve travelers across the border as well as the local community. Local bus service is available.

THE TROLLEY LINE

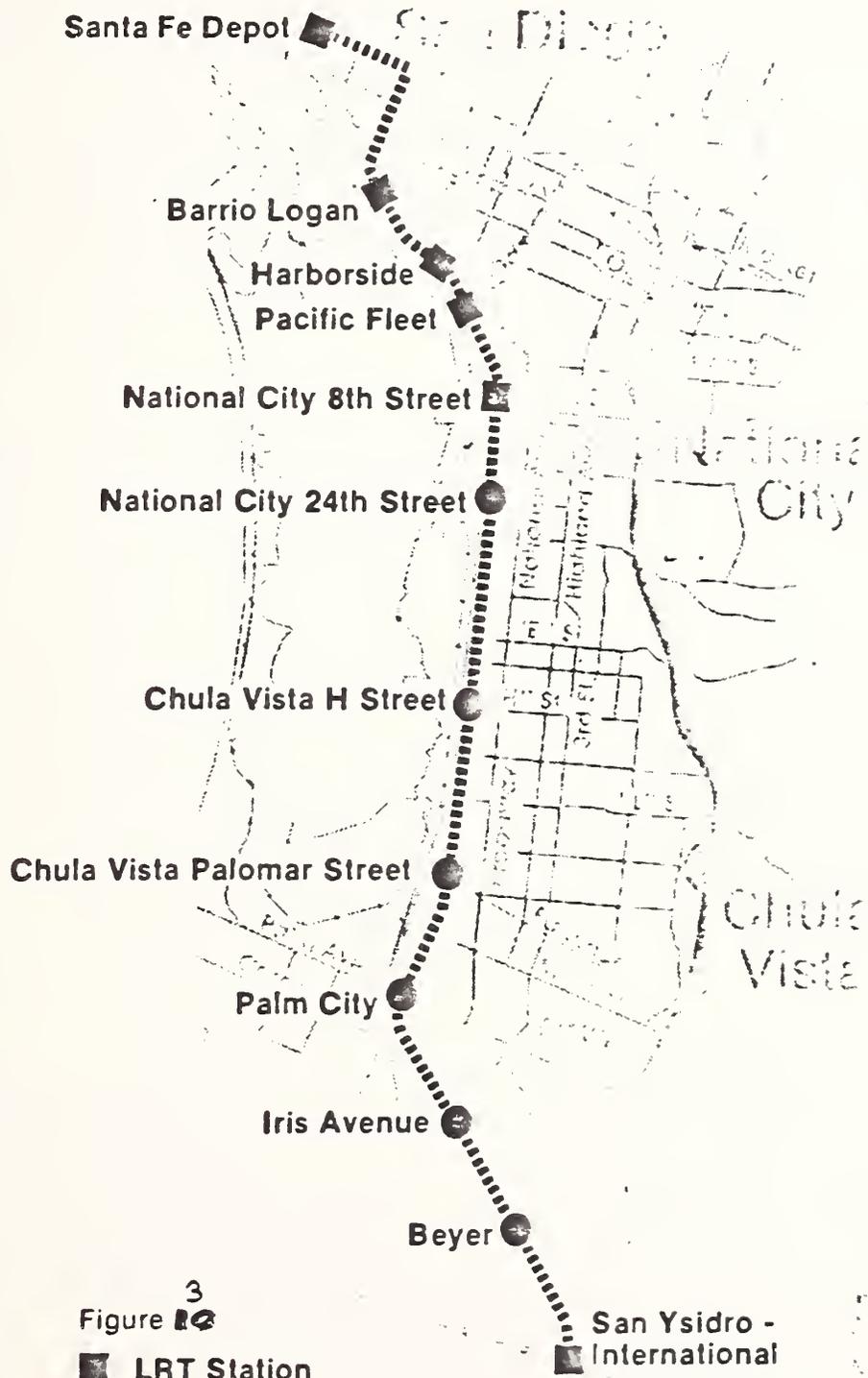


Figure 3

■ LRT Station

● LRT Station With Parking

February, 1981

mtddb

Guideway stations are modest, low level platforms with a waiting shelter, benches, and light standards. Transit schedule and fare information are provided on large, easy-to-read graphics. Transit system regulations are posted in conspicuous locations. Figure 5 shows a typical station design. Public telephones and trash receptacles are provided.

The design of the stations gives special attention to the needs of people with low mobility. This includes people with low incomes, the elderly, the young, and the handicapped. The entire light rail transit system has been designed to be accessible to elderly and handicapped passengers.

Parking is available at six of the eleven suburban stations. Approximately 2,150 free parking spaces are distributed among the stations. All stations have pedestrian and/or bus access. Bicycle storage facilities are also provided.

A fleet of 14 articulated light rail (LRT) vehicles are used to provide transit service. Each car can carry 200 passengers and trains of two or three cars are normally used. The Duwag U2 LRT vehicles are a proven standard design. The vehicles are electrically powered receiving a current from overhead catenary or wires by means of a panograph. This is a distinguishing feature of a light rail vehicle. Approximately eleven transformer substations are transmitting 600 volts of direct current power.

The LRT system uses a self-service, barrier-free, fare collection method. Self-service machines are used by the passengers to purchase a ticket before boarding the train. No fare payment or ticket collection will be made aboard the LRT vehicle. However, passengers will be subject to inspections by roving transit personnel to assure that a ticket purchase was made. This technique will speed service since passengers may board through several doors and drivers are not required to supervise fare collections.

SYSTEM OPERATIONS

MTDB's light rail line is designed to operate as an integral part of the areawide transit system. LRT users are permitted transfer privileges between other transit services in the areas. Free transfers are provided as a user service as well as the development of a common monthly pass.

The Metropolitan Transit Development Board implemented a fare structure for transit operations based upon the following criteria:

- o that a flat fare (no fare zones) exist for all regularly scheduled services
- o that a premium fare supplement be assessed for trolley use and transfers to any service that, on an average, transports people more than seven miles
- o that special class fares exist for elderly and handicapped during the non-peak periods
- o that special class fares be available to students at the discretion of each operation
- o that the MTDB Transfer Policy be a part of the fare structure

On April 20, 1981, the MTD Board adopted the initial trolley fare structure:

One Way Fare	\$ 1.00
One Way Elderly and Handicapped	.40
Reduced Downtown Area Fare	.25
"Ready Ten" - Ten Trip Ticket	7.50
Regional Monthly Pass	31.00
Regional Monthly Elderly & Handicapped Pass	15.00
Transfer Charge from LOCAL or URBAN Services	.20
Transfer Charge from METRO (Express) Services	Free
Transfer Charge for Elderly and Handicapped	Free

The light rail transit system is a community collector and distribution system. The guideway system distributes passengers to local transit routes. Currently, bus service in the Study Area is provided by San Diego Transit Corporation, National City Transit Corporation, Chula Vista Transit Corporation, and the Strand Express. Existing bus service was restructured to produce an integrated transit network in the study area, as shown in Figure 7.

The trolley operates seven days per week. Trains are currently scheduled at 20-minute headways between 5:00 a.m. and 9:45 p.m. Eventually, the guideway will also operate between 10:00 p.m. and 1:00 a.m. at 30-minute headways.

The time required to travel between Centre City San Diego and the International Border is approximately 45 minutes. The overall average system speed through City Centre is nine miles per hour (14.3 KM/hr). Along the railway portion of the right-of-way the trains average 35-40 miles per hour (55.6-63.5 KM/hr). Numerous efforts to minimize operational conflicts are incorporated into the guideway system. The running time from end to end is approximately twice as fast as the previous bus service.

PATRONAGE

The actual characteristics of patronage movements on the guideway are subject to numerous factors including the type and level of feeder bus services, guideway linkage to other express transit corridors, guideway service levels, and border crossing travel demands. Total guideway patronage forecasts range from 28,000 to 30,000 daily in 1995. The seven Centre City stops represent a major portion of guideway activity, ranging from 50-68% of the daily patronage.

During the first week of operations, the trolley averaged around 12,000 trips per day. This is greater than anticipated during the initial runs. Although this may be due to curiosity among one-time

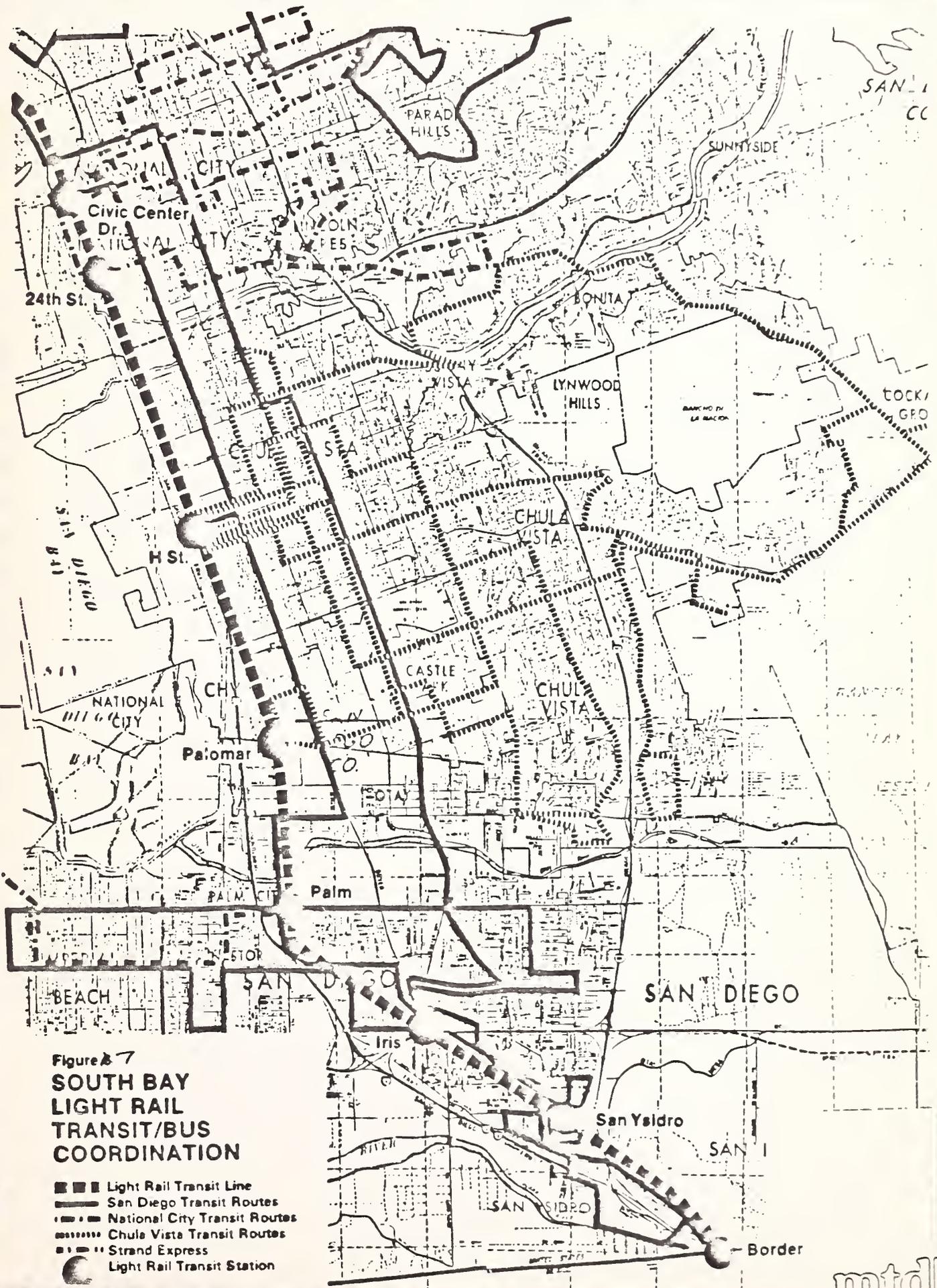


Figure 7
SOUTH BAY
LIGHT RAIL
TRANSIT/BUS
COORDINATION

- ■ ■ Light Rail Transit Line
- San Diego Transit Routes
- · · National City Transit Routes
- · · · · Chula Vista Transit Routes
- ○ ○ Strand Express
- Light Rail Transit Station

tripmakers, patronage actually increased to 13,000 trips per day in the third week of operation.

The trip purpose distribution of forecasted guideway ridership reveals that home-work trips predominate over other trip types, representing 37 to 42% of all guideway usage (excluding border crossings). Approximately 15% of the border crossing travelers using San Diego Transit were destined to a work location. Shopping was identified as the primary border crossing activity.

Peak hour guideway patronage represents approximately 10% of the daily usage. As most other rail systems in the United States experience much higher peaking characteristics (15.0 to 20.0% peak hour versus all-day), this relatively low peak hour demand reflects the flat all-day distribution of border crossing travel (7.0% peak hour versus all-day).

COSTS AND FUNDING

The light rail project is being developed in two phases. The original Phase 1 project included all those activities required to implement a 16-mile single track LRT system utilizing 14 light rail vehicles. Phase 2, which is scheduled for completion in September 1982, involves the complete double-tracking of the LRT line, additional traction power equipment, and the purchase of 10 additional vehicles.

The total cost of the Phase 1 project was \$86,000,000 with major cost categories as follows:

Vehicles (14)	\$ 12,000,000
Construction and Other	
Procurement Contracts	35,300,000
SD&AE Purchases	18,100,000
Non-SD&AE Right-of-Way	4,000,000
Engineering and Construction	
Management	7,000,000
Interest on Fund Advances	9,000,000
Start-up Activities	700,000
	<hr/>
TOTAL:	\$ 86,000,000

The estimated cost of the Phase 2 project is \$27,900,000, with major cost categories as follows:

Vehicle Purchases (10)	\$ 9,600,000
Construction and Other	
Procurement	16,400,000
Engineering and Construction	
Management	<u>1,900,000</u>
TOTAL:	\$ 27,900,000

Guideway operating costs are estimated to be \$3.7 million per year in 1981 dollars. Approximately 62% of this budget will go towards labor costs. Various operation costs include:

- o Maintenance of Guideway and Structure
- o Maintenance of Vehicles
- o Electrical Power
- o Control of the System
- o Station Operations
- o Yard Operations
- o General and Administrative

The financial plan for the light rail system indicates that 87.5% of the capital expenditures for Phase 1 was derived from MTDB's State Constitutional Amendment (SCA 15) account. SCA 15 sets aside a portion of California's state gas tax for guideway development. Beginning in 1980, this funding source produces about \$15 million annually. The remainder of Phase 1 funding will be obtained from Transportation Development Act (TDA) monies. TDA monies result from 0.25% state sales tax proceeds.

The Phase 2 project will be funded with California SB 620 Transit Guideway Program monies. These are state sales tax monies which have been transferred to the State Transportation Planning and Development Account to be used for transit purposes.

RAIL FREIGHT OPERATIONS

When the petition to abandon service on the SD&AE Railway was filed, MTDB embarked on a study to determine the feasibility of retaining rail freight operations through public ownership and possible joint use by freight and transit. When it became apparent that there existed a good possibility that such joint use was feasible, the MTDB requested and obtained a ruling from the State Transportation Board permitting acquisition of the SD&AE right-of-way.

There are three segments of the SD&AE located within the San Diego metropolitan area — the Mainline, the La Mesa branch, and the Coronado branch. The Mainline is that portion extending from the International Border at San Ysidro to just south of Centre City San Diego which has been rehabilitated and electrified for passenger use. The La Mesa branch extends 15.5 miles from the intersection with the Mainline south of Centre City to the City of El Cajon. The Coronado branch extends along the west side of Interstate 5 from National City to Imperial Beach.

At the International Border, the tracks enter Mexico. The SD&AE Transportation Company, a private operator under contract to MTDB to operate the freight service, has an agreement with the Ferrocarril Sonora Baja California to operate over 44 miles of their tracks. The railroad re-enters the United States in eastern San Diego County and extends to Plaster City in Imperial County.

In the process of rehabilitating the Mainline and constructing light rail facilities, provisions were made to facilitate freight service. This was accomplished by extending freight leads to accommodate clusters of shippers off the Mainline, providing a series of ladder tracks to sort and store cars crossing the International Border, and building a freight maintenance facility just north of the International Border. Complete double tracking of the Mainline is now underway, and will be completed in September 1982. Although this is being done primarily to improve operating efficiencies of the LRT service, it will also simplify joint transit/freight operations.

CHAPTER 3

TRANSPORTATION SYSTEM AND TRAVEL CHARACTERISTICS

Information on existing travel patterns in the study corridor has been gathered to help determine in Phase III of the impact study what effect the LRT has had on changes in travel. Of particular importance will be any modal shift in peak-hour work-trip travel patterns.

This chapter documents existing transit, highway, and paratransit facilities, service and travel in the corridor which existed prior to trolley service. Where possible, travel in the study area is contrasted with travel in the region as a whole. Much of the information comes from on-going surveillance efforts of the San Diego Association of Governments. Additional information was gathered through special surveys or counts.

FIXED ROUTE TRANSIT

Four of the region's six fixed route transit operators provide service in the study. San Diego Transit Corporation (SDTC), National City Transit (NCT), Chula Vista Transit (CVT), and the Strand Express Agency (SEA) operate a total of 18 routes within the study area as shown in Table 19 and Figure 6. Together, these operators provide 685.5 line miles of transit service. A total of 124.7 line miles or 18.2% of the transit routes are located within the study area. (Countywide, there are 1,318.6 line miles of transit service.)

TABLE 19
FIXED ROUTE TRANSIT OPERATORS
(FY80)

Operator	Year Began	Number of Buses		Number of Routes		Line Miles		Percent of Total
		Systemwide	Study Area	Countywide	Study Area	Countywide	Study Area	
San Diego Transit	1967	326	45	33	7	573.5	75.5	13.2%
National City Transit	1979	9	9	3*	3	18.8	10.7	56.8%
Chula Vista Transit	1970	12	12	7	7	70.7	32.0	45.3%
Strand Express Agency	1980	4	4	1	1	22.5	6.5	28.7%
TOTAL:		351	70	44	18	685.5	124.7	18.2%

*A fourth route provided service only on Sunday, when the other routes were not in service.

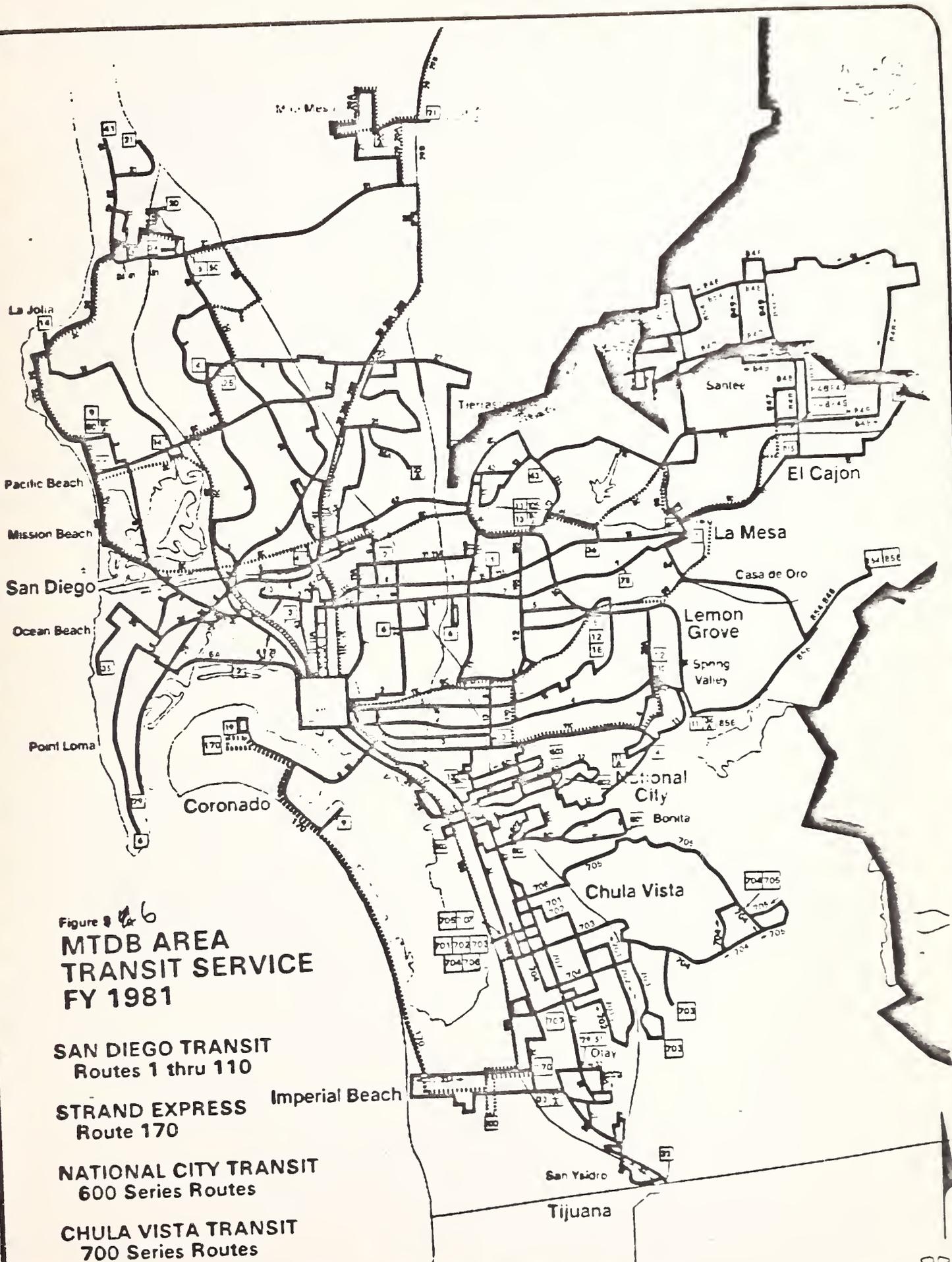


Figure 8-6
**MTDB AREA
 TRANSIT SERVICE
 FY 1981**

SAN DIEGO TRANSIT
 Routes 1 thru 110

STRAND EXPRESS Imperial Beach
 Route 170

NATIONAL CITY TRANSIT
 600 Series Routes

CHULA VISTA TRANSIT
 700 Series Routes

COUNTY TRANSIT SYSTEM
 800 Series Routes

An essential part of the LRT project is the provision of bus feeder service to the trolley. All South Bay transit routes were restructured to provide convenient transfers between the trolley and bus services, effective with the initiation of the trolley service.

Table 20 shows that nearly 177,000 people, or 9.5% of the County's residents, live in the study area. Yet the study area generates 40,100, or 26.2%, of the region's 145,500 daily unlinked transit trips. Major transit generating areas include Centre City, Barrio Logan, and National City.

TABLE 20

TRANSIT TRIPS WITHIN THE STUDY AREA

<u>Jurisdiction</u>	<u>Transit Trips</u>		<u>1980 Population</u>	
	<u>Number</u>	<u>% of Region</u>	<u>Number</u>	<u>% of Region</u>
Centre City	21,150	13.8	9,266	0.5
Barrio Logan	6,951	4.5	22,482	1.2
National City	3,544	2.3	22,675	1.2
Chula Vista	2,653	1.7	23,195	1.3
Otay	1,288	0.8	18,718	1.0
Palm City/Nestor	1,095	0.7	24,090	1.3
San Ysidro	2,097	1.4	33,824	1.8
Imperial Beach	1,330	0.9	22,689	1.2
TOTAL:	40,108	26.2	176,939	9.5

PRIVATE TRANSIT OPERATORS

Greyhound, Trailways and Mexicoach provide service between Centre City, International Border (San Ysidro), and Downtown Tijuana. In addition, Mexicoach connects Centre City with Tijuana Airport. Table 21 shows the level of service provided by these operators.

TABLE 21

PRIVATE TRANSIT OPERATIONS
SAN DIEGO - INTERNATIONAL BORDER - MEXICO

<u>Operator/Service</u>	<u>Daily Trips</u>	<u>Daily Passengers</u>
GREYHOUND		
Centre City - Tijuana	17	
Tijuana - Centre City	20	
Centre City - San Ysidro	21	
San Ysidro - Centre City	38	
MEXICOACH		
Centre City - Tijuana	7	
Tijuana - Centre City	9	
Centre City - Tijuana Airport	8	
Tijuana Airport - Centre City	9	
San Ysidro - Tijuana	7	
Tijuana - San Ysidro	7	
TRAILWAYS		
Centre City - San Ysidro - Tijuana	9	
Tijuana - San Ysidro - Centre City	9	

Source: Operators' Timetables, January 1981.

TRANSIT RIDERSHIP PROFILE

Conducted during 1980 and 1981, the Transit Ridership Survey was an on-board origin and destination study used to determine travel patterns and characteristics of people using public transportation in the San Diego region. Surveys were conducted on all SDTC, NCT and CVT routes which operate during weekdays. Because the Strand Express is a relatively new service, data is not yet available. As shown in Table 22, survey data from the study area is contrasted with data from all routes serving the MTDB jurisdiction. Study area data is tabulated for transit riders with an origin or destination in the light rail corridor, except that riders outside of the corridor to Centre City are excluded. Tables 23, 24 and 25 list the same transit ridership profile by individual route.

TABLE 22
TRANSIT RIDERSHIP PROFILE
(1981)

	MTDB AREA	SDTC	NCT	CVT		MTDB AREA	SDTC	NCT	CVT
MODE TO BUS STOP					WAS A PRIVATE VEHICLE AVAILABLE FOR THIS TRIP?				
Transferred	28.5	32.3	44.8	23.7	Yes	17.9	15.7	13.5	22.7
Walked	67.7	64.0	54.4	73.3	No	82.1	84.3	86.5	77.3
Drove	1.4	1.1	0.3	0.3	WHAT ALTERNATIVE TO TRANSIT FOR THIS TRIP?				
Was Driven	2.1	2.4	0.5	2.5	Auto Driver	12.6	11.1	6.9	17.9
Bicycled	0.2	0.1	0.0	0.2	Auto Passenger	25.4	26.2	19.5	16.3
Dial-a-Ride	0.1	0.1	0.0	0.0	Bicycle	9.0	6.6	5.1	8.1
FARE USED FOR THIS TRIP					Walking	17.6	16.3	43.6	26.5
Cash	57.2	61.2	52.0	85.1	Taxi	11.8	14.6	8.4	3.6
Transfer Slip	20.4	25.6	39.2	9.3	Dial-a-Ride	3.9	3.1	4.6	N/A
Transfer Slip & Cash	2.3	2.4	0.3	N/A	Social Service	0.7	0.8	1.1	N/A
Pass	16.1	8.4	6.1	4.2	Not Take Trip	19.0	21.3	10.8	13.1
Pass & Cash	3.0	2.0	2.0	N/A	SDTC				8.3
Single Fare Ticket	1.0	0.4	0.4	N/A	Other				6.2
PURPOSE AT ORIGIN OF TRIP					ARE YOU A LICENSED DRIVER?				
Home	55.7	52.9	51.0	52.9	Yes	57.1	58.2	39.2	N/A
Work	19.2	24.2	12.7	11.8	No	42.9	41.8	60.8	N/A
School	9.8	5.8	23.8	24.9	HOW MANY LICENSED DRIVERS IN HOUSEHOLD?				
Shopping	3.8	4.5	4.9	4.8	None	18.2	14.0	17.9	N/A
Personal Business	7.6	8.9	6.6	3.6	One	30.7	33.1	26.1	N/A
Social	1.9	1.3	0.5	(1.1)	Two	31.1	31.7	34.0	N/A
Other	0.1	0.0	0.1	1.5	Three	11.3	11.5	10.0	N/A
Multi-Purpose	0.1	0.1	0.1	0.0	More than Three	8.7	9.7	12.0	N/A
MODE FROM THE BUS STOP					PERSONS PER HOUSEHOLD				
Transfer	25.5	29.9	29.5	25.0	One	19.8	12.6	9.0	8.1
Walk	72.0	68.5	70.3	N/A	Two	26.2	19.1	15.6	16.5
Drive	1.0	0.4	0.0	N/A	Three	18.1	20.1	18.8	19.2
Will Be Driven	1.2	1.2	0.2	N/A	Four	14.2	16.5	15.8	18.1
Bike	0.2	0.0	0.0	N/A	Five	9.6	13.7	17.2	16.8
Dial-A-Ride	0.1	0.0	0.0	N/A	Six of More	12.1	18.0	23.6	21.3
PURPOSE AT THE DESTINATION					PASSENGER STATUS				
Home	36.3	37.5	47.5	43.1	Visitor-Tourist	4.3	6.5	1.2	1.2
Work	27.9	30.2	17.0	13.3	Member of Armed Forces	8.8	18.5	3.5	1.4
School	9.9	6.2	17.8	27.2	Student	28.6	20.2	45.2	64.4
Shopping	6.3	6.5	5.4	4.4	Employed	50.6	49.4	34.9	41.3
Personal Business	13.1	13.8	8.4	4.9	Volunteer Worker	3.7	3.2	3.2	-
Social	3.3	3.3	3.4	(3.0)	Homemaker	14.0	13.7	14.5	-
Other	0.1	0.0	0.0	4.0	Retired	10.3	4.9	9.2	5.6
Multi-Purpose	0.3	0.0	0.0	0.0	Handicapped	3.7	3.3	3.0	-
NORMAL USE OF TRANSIT					SEX OF RIDER				
6-7 Days a Week	32.9	34.2	27.6	56.5	Male	46.8	554.1	40.5	39.5
4-5 Days a Week	39.4	35.0	41.4	29.3	Female	53.2	45.9	59.5	60.5
1-3 Days a Week	12.9	12.8	14.2	14.2	AGE OF RIDER				
Several Times per Month	5.9	6.9	5.8	N/A	12-16 years	4.0	2.7	11.8	17.4
Occasionally	8.9	11.1	11.0	N/A	17-18	9.3	9.2	25.8	(46.3)
LENGTH OF TIME AS A BUS RIDER					19-24 years	28.1	32.5	14.4	()
Less than One Month	8.2	9.6	13.9	N/A	25-44 years	33.3	36.2	26.1	20.5
One Month to a Year	30.0	31.8	48.2	N/A	45-59 years	11.9	11.6	10.8	9.5
One Year to Two Years	13.3	13.6	17.1	N/A	60 and over	13.4	7.8	11.1	6.2
More than Two Years	48.5	45.0	20.8	N/A	HOUSEHOLD INCOME				
RATING OF OVERALL SERVICE					Less than \$5,000	23.6	24.2	24.3	18.2
Good	49.7	53.3	63.3	50.1	\$5,000 - \$10,000	26.6	30.3	31.2	12.5
Fair	40.7	39.4	29.8	37.5	\$10,000 - \$15,000	16.7	18.7	15.6	11.9
Poor	9.6	7.3	6.9	9.2	\$15,000 - \$20,000	12.5	11.4	7.5	18.0
Don't Know	-	-	-	3.2	\$20,000 - \$25,000	8.7	7.5	9.5	19.9
RATING TRANSFER SERVICE					\$25,000 - \$35,000	5.7	3.5	7.1	(19.5)
Good	49.7	45.0	49.0	61.1	Over \$35,000	6.2	4.4	4.8	()
Fair	40.7	40.1	38.1	24.0	ETHNIC BACKGROUND				
Poor	9.6	14.9	12.9	5.2	White	58.5	35.8	31.8	N/A
Don't Know	-	-	-	9.7	Black	16.9	19.9	20.3	N/A
NUMBER OF VEHICLES IN HOUSEHOLD					Hispanic	16.8	40.2	36.2	N/A
None	46.2	45.8	39.6	22.6	Oriental	3.2	3.3	11.9	N/A
One	32.9	34.5	30.7	30.5	Other	0.3	0.4	0.0	N/A
Two	15.3	15.3	21.4	27.7	Undeterminable	0.3	0.4	0.2	N/A
Three +	5.6	4.4	8.3	19.0					

TABLE 24

MCTC ROUTE
PASSENGER PROFILE
(1981)

	601	602	603	601	602	603	601	602	603
MADE TO BUS STOP									
Transferred	45.1	42.3	54.7	25.4	31.5	19.2			
Walked	54.6	56.2	45.3	45.6	39.4	28.3			
Drove	0.0	0.8	0.0	12.3	16.4	19.2			
Was Driven	0.3	0.7	0.0	5.1	2.1	26.9			
Bicycled	0.0	0.0	0.0	11.6	10.6	6.4			
Dial-a-Ride									
PAY USED FOR THIS TRIP									
Cash	54.1	52.2	35.7	14.9	8.4	43.2			
Transfer Slip	39.5	35.8	54.3	47.4	33.4	33.4			
Pass	4.1	0.2	0.0	17.1	19.0	9.0			
Pass & Cash	1.8	1.2	7.1	20.6	21.5	14.4			
Single Fare Ticket	0.2	0.8	0.0						
PURPOSE AT ORIGIN OF TRIP									
Home	41.5	58.5	66.3	59.6	67.5	58.3			
Work	13.1	11.0	10.4	29.8	29.2	39.5			
School	33.4	17.3	15.7	10.6	3.3	2.6			
Shopping	4.6	6.3	0.0	19.8	6.2	4.6			
Personal Business	6.8	5.2	7.6	35.1	18.7	15.2			
Social	0.0	1.1	0.0	9.8	21.4	1.3			
Recreation	0.3	0.6	0.0	20.7	28.3	36.5			
Other	0.3	0.0	0.0	10.9	10.5	5.1			
Multi-Purpose	0.0	0.0	0.0	3.7	14.9	37.3			
MODE FROM BUS STOP									
Transfer	25.1	30.2	67.1	45.0	50.8	78.1			
Walk	74.6	69.8	32.9	40.8	36.2	21.9			
Drive	0.0	0.0	0.0	14.2	13.0	13.0			
Will Be Driven	0.3	0.0	0.0	27.5	50.0	56.1			
Bike	0.0	0.0	0.0	32.0	29.5	24.2			
Dial-a-Ride	0.0	0.0	0.0	29.0	16.6	5.3			
PURPOSE AT THE DESTINATION									
Home	54.6	43.3	30.9	11.5	3.9	14.4			
Work	12.6	20.6	18.2	45.0	50.8	78.1			
School	20.5	16.6	4.9	40.8	36.2	21.9			
Shopping	2.9	6.7	14.3	14.2	13.0	13.0			
Personal Business	4.4	9.7	31.7	27.5	50.0	56.1			
Social	4.7	2.3	0.0	32.0	29.5	24.2			
Recreation	0.3	0.8	0.0	29.0	16.6	5.3			
Other	0.0	0.0	0.0	11.5	3.9	14.4			
Multi-Purpose	0.0	0.0	0.0						
ARE YOU A LICENSED DRIVER?									
Yes	37.8	38.5	34.6						
No	62.2	61.5	65.4						
HOW MANY LICENSED DRIVERS IN HOUSEHOLD?									
None	10.8	21.5	43.0						
One	21.7	35.0	10.5						
Two	37.6	30.0	34.4						
Three	15.0	4.6	5.1						
More than three	14.9	8.9	7.0						
PERSONS IN HOUSEHOLD									
One	5.8	12.3	12.1						
Two	11.9	17.3	27.3						
Three	16.6	23.1	4.7						
Three	16.6	23.1	4.7						
Four	20.6	11.6	6.0						
Five	19.7	15.3	21.9						
Six or More									
PASSENGER STATUS									
Visitor-Tourist	1.8	0.7	0.0						
Member of Armed Forces	3.6	3.0	3.4						
Student	61.7	32.2	24.1						
Employed	30.7	36.0	42.0						
Volunteer Worker	2.3	4.5	0.0						
Homemaker	9.6	20.5	9.8						
Retired	3.9	13.9	19.6						
Handicapped	0.3	3.4	17.3						
SEX OF RIDER									
Male	48.5	31.2	26.4						
Female	51.5	68.8	73.6						
HOUSEHOLD INCOME									
Less than \$5000	13.5	32.7	53.6						
\$5 - 10,000	28.0	38.7	6.1						
\$10 - 15,000	20.6	10.7	3.3						
\$15 - 20,000	8.1	3.7	24.7						
\$20 - 25,000	13.3	7.9	2.7						
\$25 - 35,000	8.7	4.4	9.6						
Over \$35,000	7.8	1.9	0.0						
ETHNIC BACKGROUND									
White	24.4	36.9	41.8						
Black	26.3	15.8	6.4						
Hispanic	35.5	39.3	25.0						
Oriental	13.5	7.6	26.8						
Other	0.0	0.0	0.0						
Undeterminable	0.3	0.4	0.0						

TABLE 25
CVT ROUTE
PASSENGER PROFILE
(1981)

	1	2	3	4	5	7
MODE TO BUS STOP						
Transferred	23.8	17.1	37.6	16.6	29.5	20.3
Walked	73.3	80.8	57.8	81.7	64.5	78.9
Drove	0.5	0.0	0.0	0.6	0.6	0.0
Was Driven	1.9	2.1	4.6	1.1	5.4	0.8
Bicycled	0.5	0.0	0.0	0.0	0.0	0.0
Dual-mode	N/A	N/A	N/A	N/A	N/A	N/A
FARE USED FOR THIS TRIP						
Cash	86.2	89.4	79.5	86.8	80.7	85.6
Transfer Slip	9.0	4.9	14.3	6.9	12.0	10.2
Pass	N/A	N/A	N/A	N/A	N/A	N/A
Transfer & Cash	3.7	4.3	5.3	4.6	6.1	1.7
Pass & Cash	N/A	N/A	N/A	N/A	N/A	N/A
Single Fare Ticket	N/A	N/A	N/A	N/A	N/A	N/A
WILL TRANSFER BUSES AT BUS STOP						
	21.2	31.2	26.6	27.7	21.5	128.4
PURPOSE AT THE DESTINATION						
Home	50.7	39.3	40.5	48.0	32.5	34.2
Work	13.2	20.7	6.3	13.7	9.7	16.2
School	17.2	22.9	41.5	27.4	42.7	28.2
Shopping	6.5	5.0	3.6	1.2	3.1	4.3
Personal Business	3.0	6.4	4.5	4.6	6.0	8.6
Recreation	4.0	1.4	1.8	2.2	1.8	3.4
Other	5.4	4.3	1.8	2.9	4.2	4.3
NUMBER OF VEHICLES IN HOUSEHOLD						
None	19.6	25.0	20.2	22.0	25.9	30.3
One	25.3	35.2	33.6	26.2	29.1	34.3
Two	27.3	25.7	32.7	36.6	22.8	19.2
Three +	23.8	14.1	13.5	15.2	22.2	16.2
WAS A PRIVATE VEHICLE AVAILABLE FOR THIS TRIP?						
Yes	23.7	24.1	21.7	23.3	23.4	17.1
No	76.3	75.9	78.3	76.7	76.6	82.9
WHAT ALTERNATIVE TO TRANSIT FOR THIS TRIP?						
Auto Driver	16.2	20.0	20.2	17.8	23.4	11.4
Auto Passenger	14.2	16.2	18.4	19.8	18.6	13.0
Bicycle	9.5	9.2	4.6	10.2	6.8	4.3
Walking	30.9	30.0	22.9	12.6	21.0	40.0
Taxi	5.0	1.5	5.5	4.2	1.9	1.8
San Diego Transit	8.9	4.6	5.5	7.8	3.0	21.7
Not Take Trip	11.1	10.8	16.5	18.5	17.9	3.5
Other	4.2	7.7	6.4	9.0	7.4	4.3
PERSONS IN HOUSEHOLD						
One	3.9	6.6	12.7	7.7	14.5	9.5
Two	15.3	14.1	20.6	19.9	14.4	17.9
Three	18.2	16.5	18.7	19.2	20.8	24.2
Four	20.4	19.0	14.7	17.3	17.0	15.8
Five	17.3	19.0	13.7	18.0	16.3	13.7
Six or More	24.9	24.8	19.6	17.9	17.0	18.9
PASSENGER STATUS						
Visitor-Tourist	2.1	0.0	1.0	0.6	1.3	1.0
Member of Armed Forces	0.3	1.6	1.0	4.3	1.3	1.0
Student	55.2	52.5	76.0	72.7	78.5	61.9
Employed	38.0	48.4	46.2	45.3	39.2	35.1
Volunteer Worker	N/A	N/A	N/A	N/A	N/A	N/A
Homemaker	N/A	N/A	N/A	N/A	N/A	N/A
Retired	5.9	5.7	4.8	5.6	4.4	7.2
Handicapped	N/A	N/A	N/A	N/A	N/A	N/A
SEX OF RIDER						
Male	38.2	41.0	42.7	40.7	38.0	33.3
Female	60.8	59.0	57.3	59.3	61.0	66.7
AGE OF RIDER						
12-16 Years	38.3	15.6	9.6	3.1	13.8	18.0
17-18 Years	37.6	44.5	52.9	59.6	50.3	44.0
19-24 Years						
25-44 Years	18.6	18.8	26.9	20.5	20.8	22.0
45-59 Years	8.5	14.8	6.8	10.0	10.7	7.0
60 or Over	7.0	6.3	3.8	6.8	4.4	8.0
HOUSEHOLD INCOME						
Less than \$5,000	16.2	8.4	22.0	16.3	22.9	29.2
\$5 - 10,000	24.8	23.2	24.2	27.9	22.1	23.1
\$10 - 15,000	17.4	17.9	17.5	16.3	20.0	20.0
\$15 - 20,000	20.8	23.1	18.7	18.6	17.9	20.0
\$20 - 25,000						
\$25 - 35,000						
Over \$35,000	20.8	27.4	17.6	21.0	17.1	7.7

TRANSIT USE IN THE SOUTH BAY CORRIDOR

The SANDAG Passenger Counting Program was developed to provide detailed information on bus stop usage, on-time performance and ridership for the region's fixed route transit service. Passenger Counting Program data for SDT and CVT was collected in late 1979; data for NCT was collected in late 1980. In the future, data for each route will be updated annually.

Table 26 shows that the study area generates 30.3% of regional transit boardings and alightings. Centre City represents 66.5% of the transit passenger counts in the study area. Major transit activity also occurs in Barrio Logan and San Ysidro. Major bus stop locations in the study area are shown in Table 27.

TABLE 26

TRANSIT PASSENGER COUNTS

<u>Community</u>	<u>ONS</u>	<u>OFFS</u>	<u>Total</u>	<u>Percent of Total Study Area</u>	<u>Region</u>
Centre City	28,792	29,387	58,179	66.5%	20.2%
Barrio Logan	4,671	4,546	9,217	10.5	3.2
National City	2,727	2,650	5,377	6.1	1.9
Chula Vista	2,067	2,175	4,242	4.8	1.5
Otay	171	158	329	0.4	0.1
Palm City/Nestor	1,343	1,388	2,731	3.1	0.1
Imperial Beach	338	336	674	0.8	0.2
San Ysidro/Otay Mesa	3,596	3,184	6,780	7.8	2.3
TOTAL:	43,705	43,824	87,529	100.0%	30.3%

TABLE 27

MAJOR BUS STOP LOCATIONS

<u>Street Intersection</u>	<u>Passenger Counts</u>	
	<u>Ons</u>	<u>Offs</u>
CENTRE CITY		
Fourth Avenue and Broadway	6,536	7,036
Fifth Avenue and Broadway	3,224	2,193
Sixth Avenue and Broadway	1,613	2,996

Broadway and First Avenue	1,437	1,747
Broadway and Front Street	1,395	1,654
Broadway and Second Avenue	1,897	1,106
Eleventh Avenue and Broadway	1,184	1,164
Broadway and Tenth Avenue	593	929
Third Avenue and Plaza	424	964
Broadway and Twelfth Avenue	751	633
Broadway and Eighth Avenue	583	703
Fourth Avenue and E Street	984	204
Twelfth Avenue and Market Street	550	557
E Street and Fifth Avenue	963	51
BARRIO LOGAN		
Harbor Drive and 32nd Street	837	475
16th Street and Imperial Avenue	393	397
43rd Street and National Avenue	257	238
Sigsbee Street and Logan Avenue	182	188
NATIONAL CITY		
National City Boulevard and 8th Street	557	590
National City Boulevard and 12th Street	205	168
Highland Avenue and Plaza Boulevard	201	170
CHULA VISTA		
Chula Vista Shopping Center	572	702
Broadway and I Street	340	396
Broadway and F Street	144	121
Broadway and G Street	128	109
Broadway and E Street	130	106
OTAY		
Broadway and Naples Street	70	63
Broadway and Moss Street	56	47
Broadway and Arizona Street	45	48
PALM CITY/NESTOR		
Coronado Avenue and 25th Street	719	602
Hollister Street and Palm Avenue	106	123
Coronado Avenue and Madden Avenue	108	111
IMPERIAL BEACH		
Palm Avenue and 9th Street	26	37
1st Street and Palm Avenue	34	16
Palm Avenue and 11st Street	29	28
SAN YSIDRO		
International Border, east of I-5	2,168	0
International Border, west of I-5	64	1,825
Beyer Boulevard and Palm Avenue	284	342
Beyer Boulevard and Del Sur Boulevard	93	108

TRANSIT ROUTE CHARACTERISTICS

Based on the Passenger Counting Program data, a profile of each route serving the study area is shown on the following pages. The configuration of these routes is shown on Figure __ (page __).

San Diego Transit Corporation: Routes 3, 9, 29, 32, 33, 51, 100.

San Diego Transit Corporation operates seven routes in the non-Centre City portion of the study area. These routes generate 25.6% of the total annual passengers and 25.9% of the total revenue passengers within the SDTC system.

Chula Vista Transit: Routes 701, 702, 703, 704, 705, 706, 707.

All seven routes operated by CVT serve the study area.

National City Transit: Routes 601, 602, 603, 604.

All four NCT routes serve the study area.

Strand Express Agency: Route 170.

This route serves the southern part of the study area.

ROUTE 3

Provides local service between Mission Hills and Logan Heights via Centre City. The route travels along Market Street and Ocean View Boulevard in the study area. Buses operate every day between the hours of 4:45 AM and 12:50 AM. During the AM peak, midday, and PM peak, buses operate every 20 minutes. During the evening there are 30-minute headways. Seven buses are required to provide service along the 10.3 mile route.

Route Data

Scheduled Miles	388,991	
Total Revenue Passengers	1,475,916	
Total Annual Passengers	1,801,326	
Basic Fare Riders	849,673	47%
Cash Student Riders	43,364	2%
Cash Senior Riders	144,417	8%
All Saverpass Riders	438,462	24%
Transfer Riders	325,410	18%
Average Fare	.399	

Performance Data

Number of Trips	91
Total Passengers	6,878
Passengers per Trip	76
Passengers per Trip/Average Max. Load	2.08
Percent of Trips Over Capacity	11.0
Revenue Miles	892
Passengers per Revenue Mile	7.7
Revenues Miles Over Capacity	11.3
% of Revenue Miles of Capacity	1.3
Passenger Miles	14,316.5
Average Trip Length in Miles	2.1
Passenger Miles per Trip	157.3
Revenue Hours	78.45
Passenger per Revenue Hours	88
Passenger Hours	1,318.16
Average Trip Length in Minutes	11.50
Gallons of Fuel Used	360.37
Passenger Miles per Gallon of Fuel	39.7
Passenger Miles per Seat Mile	0.25



ROUTE 9

Provides local service between Pacific Beach and Coronado via Centre City and Barrio Logan. Coronado contracts for 30.7% of this route. Buses operate at 30 minute headways during the day and at 60 minute headways in the evening. Buses operate every day. Operating hours are between 5:00 AM and 3:20 AM. Seven buses are required to serve the 20.5 line miles.

Route Data

Scheduled Miles	359,998	
Total Revenue Passengers	1,482,437	
Total Annual Passengers	1,808,979	
Basic Fare Riders	1,122,918	62%
Cash Student Riders	11,488	6%
Cash Senior Riders	91,300	5%
All Saverpass Riders	256,731	14%
Transfer Riders	326,542	18%
Average Fare	.439	

Performance Data

Number of Trips	75
Total Passengers	5,176
Passengers per Trip	69
Passengers per Trip/Average Max. Load	1.86
Percent of Trips Over Capacity	18.7
Revenue Miles	1,356.1
Passengers per Revenue Mile	3.8
Revenue Miles Over Capacity	51.7
% of Revenue Miles of Capacity	3.8
Passenger Miles	27,478.8
Average Trip Length in Miles	5.3
Passenger Miles per Trip	366.4
Revenue Hours	86.57
Passenger per Revenue Hours	60
Passenger Hours	1,783.1
Average Trip Length in Minutes	20.67
Passenger Minutes per Trip	1,426.5
Percent Slow at Time Points	21.6
Percent Fast at Time Points	10.6
Gallons of Fuel Used	339.88
Passenger Miles per Gallon of Fuel	80.8
Passenger Miles per Seat Mile	0.397



ROUTE 29

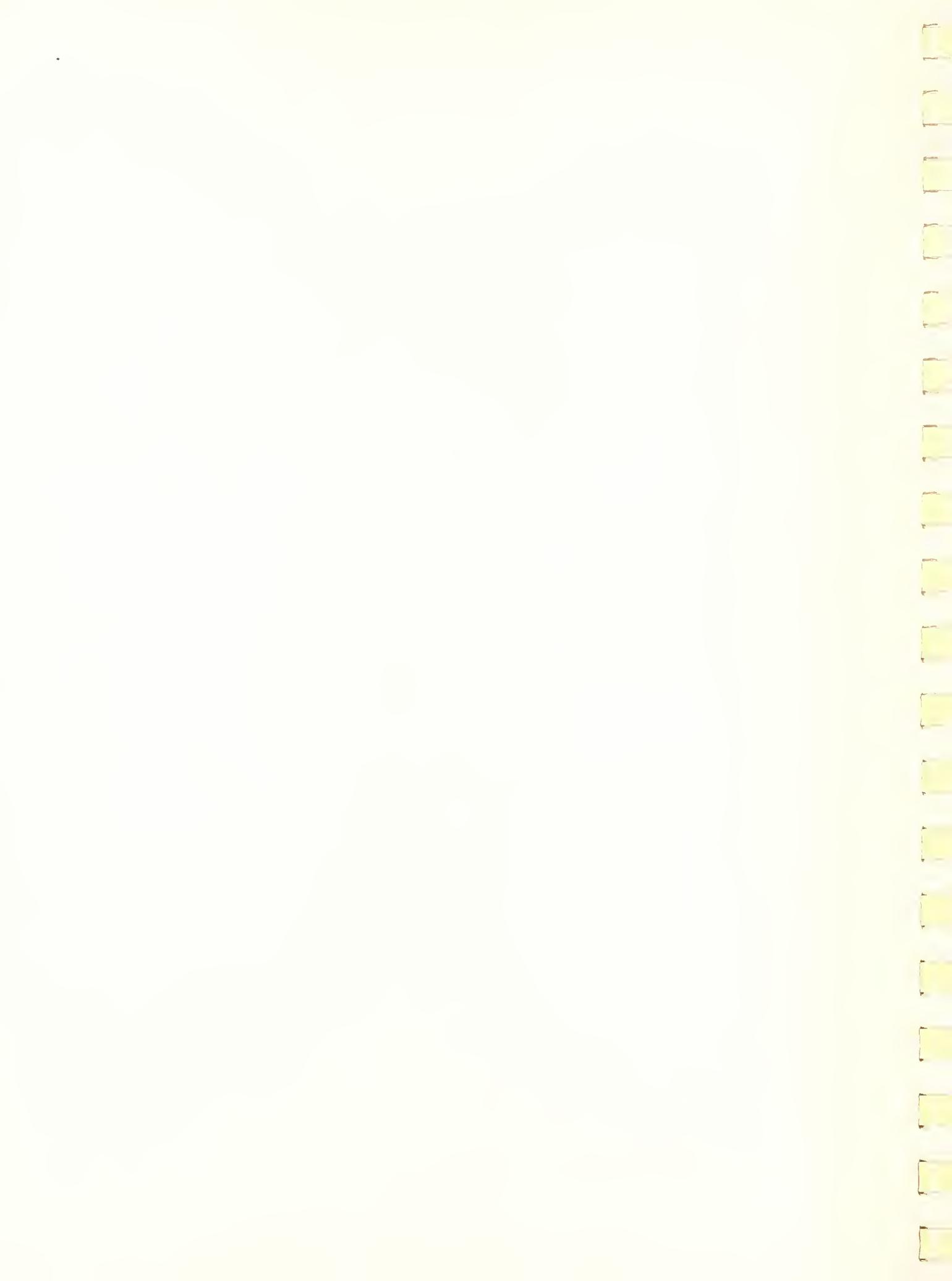
Provides local service between Point Loma and Otay Mesa via Centre Cite, National City, and Chula Vista. Buses serve the 32nd Street Naval Station. 41.5% of this route is contracted for by Chula Vista, National City, and San Diego County. Buses operate daily between 4:27 AM and 1:37 PM. AM peak and PM peak headways are 15 minutes. Midday headway is 30 minutes. During the evening buses operate on 60 minute headways. Peak periods require eight buses and base periods require seven buses to provide service along the 22.4 mile line.

Route Data

Scheduled Miles	701,665	
Total Revenue Passengers	1,953,132	
Total Annual Passengers	2,392,276	
Basic Fare Riders	1,609,092	67%
Cash Student Riders	33,203	1%
Cash Senior Riders	94,539	4%
All Saverpass Riders	216,298	9%
Transfer Riders	439,144	18%
Average Fare	.459	

Performance Data

Number of Trips	88
Total Passengers	7,532
Passengers per Trip	95
Passengers per Trip/Average Max. Load	2,07
Percent of Trips Over Capacity	28.4
Revenue Miles	1,717.8
Passengers per Revenue Mile	4.4
Revenue Miles Over Capacity	85.9
% of Revenue Miles of Capacity	5.0
Passenger Miles	36,655.9
Average Trip Length in Miles	4.9
Passenger Miles per Trip	416.5
Revenue Hours	111.63
Passenger per Revenue Hours	67
Passenger Hours	2,469.98
Average Trip Length in Minutes	19.68
Passenger Minutes per Trip	1,648.08
Percent Slow at Time Points	48.9
Percent Fast at Time Points	11.7
Gallons of Fuel Used	430.08
Passenger Miles per Gallon of Fuel	85.2
Passenger Miles per Seat Mile	0.419



ROUTE 32

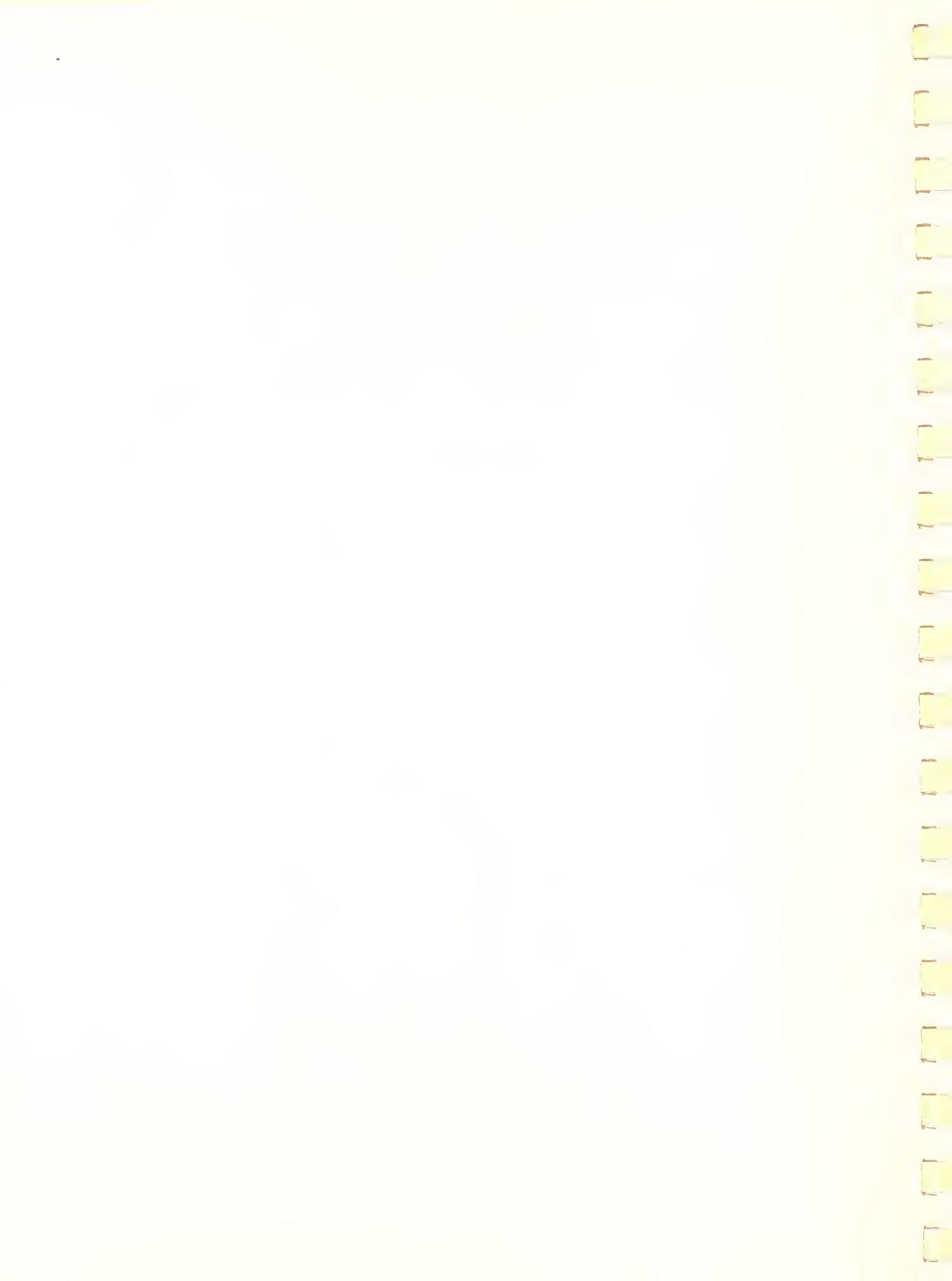
Provides local service between Centre City and the International Border via National City and Chula Vista. 27% of this route is contracted for by National City, Chula Vista, and San Diego County. Service is provided on a daily basis. Weekdays, buses operate between 4:55 AM and 1:53 AM at 15 minute headways. Evening headways are 60 minutes. Peak hour service requires 16 buses and base period service required 14 buses to travel the 18.5 mile route. The trolley route is a revised configuration of Route 32.

Route Data

Scheduled Miles	919,845	
Total Revenue Passengers	3,227,414	
Total Annual Passengers	3,862,470	
Basic Fare Riders	2,663,225	69%
Cash Student Riders	46,350	1%
Cash Senior Riders	201,125	5%
All Saverpass Riders	316,714	8%
Transfer Riders	635,056	16%
Average Fare	.459	

Performance Data

Number of Trips	108
Total Passengers	11,330
Passengers per Trip	104
Passengers per Trip/Average Max. Load	1.86
Percent of Trips Over Capacity	25.9
Revenue Miles	1,892.8
Passengers per Revenue Mile	6.0
Revenue Miles Over Capacity	208.2
% of Revenue Miles of Capacity	11.0
Passenger Miles	77,768.6
Average Trip Length in Miles	6.9
Passenger Miles per Trip	720.1
Revenue Hours	143.98
Passenger per Revenue Hours	79
Passenger Hours	6,008.95
Average Trip Length in Minutes	31.82
Passenger Minutes per Trip	3,338.31
Percent Slow at Time Points	37.4
Percent Fast at Time Points	16.9
Gallons of Fuel Used	881.54
Passenger Miles per Gallon of Fuel	88.2
Passenger Miles per Seat Mile	0.599



ROUTE 33

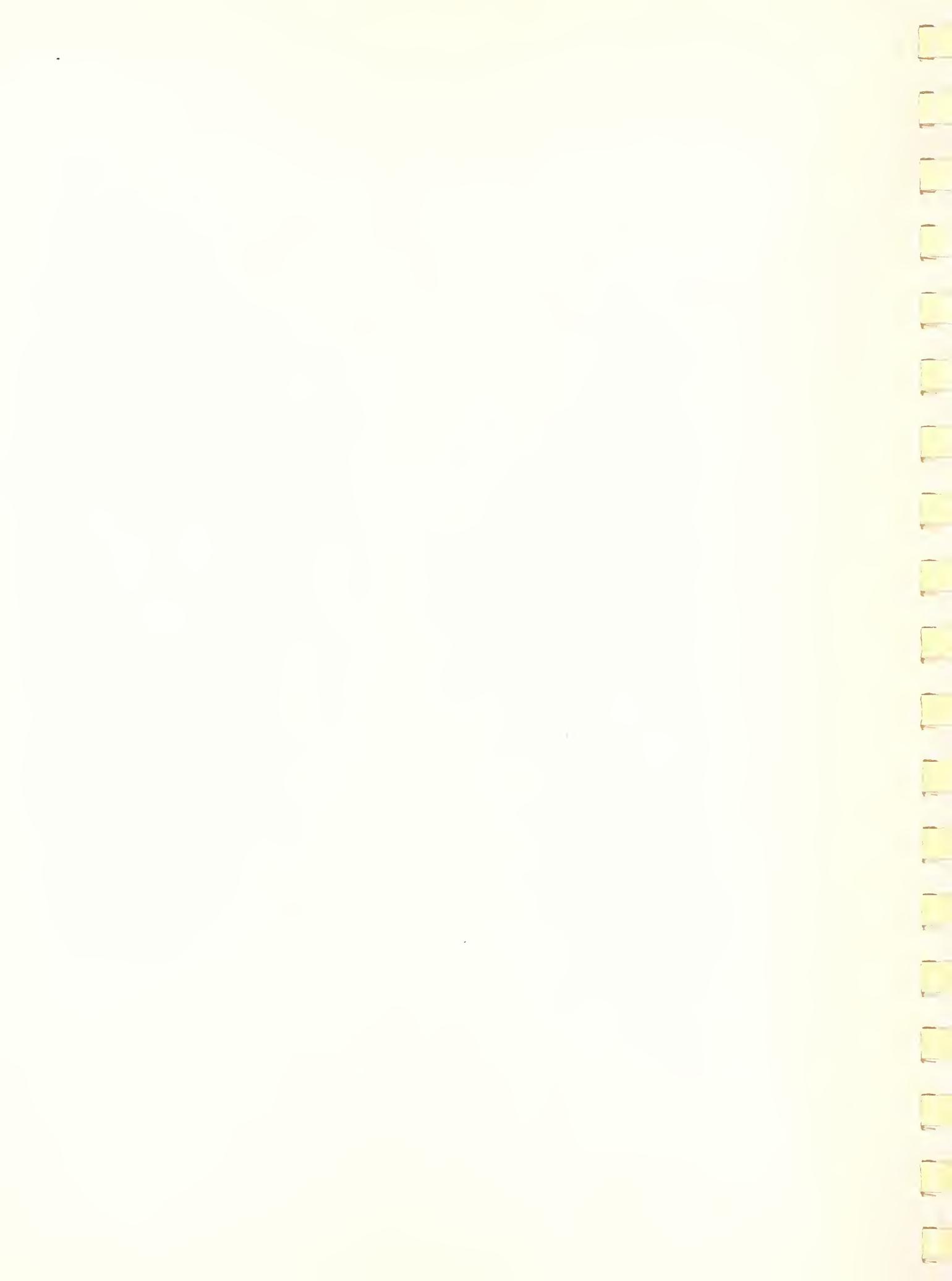
Provides shuttle service between Imperial Beach and Otay Mesa via Palm City/Nestor. Imperial Beach contracts for 19.3% of this route. The buses operate daily. On weekdays, buses operate between 5:20 AM and 11:02 PM at 30 minute headways. Two buses are required to serve the 7.2 mile route.

Route Data

Scheduled Miles	157,648	
Total Revenue Passengers	178,197	
Total Annual Passengers	269,450	
Basic Fare Riders	128,143	48%
Cash Student Riders	12,420	4%
Cash Senior Riders	11,683	4%
All Saverpass Riders	25,951	10%
Transfer Riders	91,253	34%
Average Fare	.449	

Performance Data

Number of Trips	17
Total Passengers	539
Passengers per Trip	31
Passengers per Trip/Average Max. Load	2.21
Percent of Trips Over Capacity	11.8
Revenue Miles	228.9
Passengers per Revenue Mile	2.4
Revenue Miles Over Capacity	6.1
% of Revenue Miles of Capacity	2.8
Passenger Miles	1,719.6
Average Trip Length in Miles	3.2
Passenger Miles per Trip	101.2
Revenue Hours	12.13
Passenger per Revenue Hours	44
Passenger Hours	92.58
Average Trip Length in Minutes	10.31
Passenger Minutes per Trip	6.25
Percent Slow at Time Points	-
percent Fast at Time Points	-
Gallons of Fuel Used	33.64
Passenger Miles per Gallon of Fuel	51.1
Passenger Miles per Seat Mile	0.255



ROUTE 51

Provides shuttle service between Otay Mesa and the International Border. Buses operate on weekdays between 5:15 AM and 7:07 PM at 60 minute headways. One bus is required to provide service along the 7.8 mile route.

Route Data

Scheduled Miles	67,601	
Total Revenue Passengers	48,616	
Total Annual Passengers	58,861	
Basic Fare Riders	29,032	49%
Cash Student Riders	6,698	11%
Cash Senior Riders	8,359	14%
All Saverpass Riders	4,527	8%
Transfer Riders	10,245	17%
Average Fare	-	

Performance Data

Number of Trips	14
Total Passengers	288
Passengers per Trip	20
Passengers per Trip/Average Max. Load	2.2
Percent of Trips Over Capacity	7.1
Revenue Miles	212.5
Passengers per Revenue Mile	1.4
Revenue Miles Over Capacity	0.5
% of Revenue Miles of Capacity	0.2
Passenger Miles	985.6
Average Trip Length in Miles	3.4
Passenger Miles per Trip	70.4
Revenue Hours	11.12
Passenger per Revenue Hours	26
Passenger Hours	51.8
Average Trip Length in Minutes	10.79
Passenger Minutes per Trip	221.9
Percent Slow at Time Points	13.4
Percent Fast at Time Points	19.6
Gallons of Fuel Used	24.98
Passenger Miles per Gallon of Fuel	39.5
Passenger Miles per Seat Mile	0.197



ROUTE 100

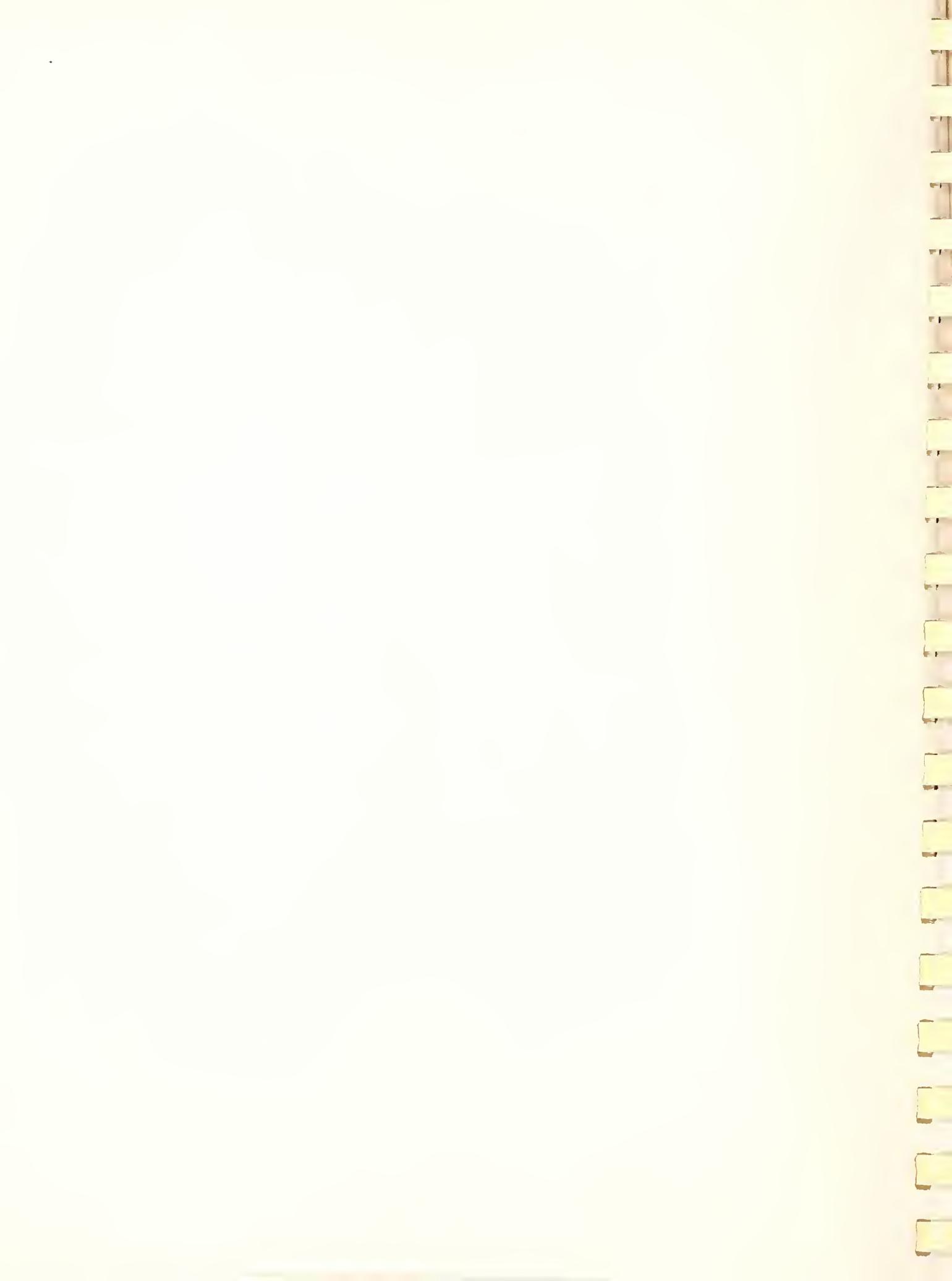
Provides express service between Centre City and Imperial Beach via Chula Vista and Palm City/Nestor. Buses operate weekdays between 5:47 AM and 8:04 PM. AM peak and PM peak headways are 30 minutes, midday headway is 60 minutes. Peak periods require four buses and base periods require two buses to serve the 14.3 mile route.

Route Data

Scheduled Miles	179,571	
Total Revenue Passengers	170,492	
Total Annual Passengers	214,842	
Basic Fare Riders	123,530	57%
Cash Student Riders	2,263	1%
Cash Senior Riders	10,210	5%
All Saverpass Riders	34,489	16%
Transfer Riders	44,350	21%
Average Fare	.683	

Performance Data

Number of Trips	42
Total Passengers	1,059
Passengers per Trip	25
Passengers per Trip/Average Max. Load	1.1
Percent of Trips Over Capacity	7.1
Revenue Miles	602.7
Passengers per Revenue Mile	1.8
Revenue Miles Over Capacity	11.9
% of Revenue Miles of Capacity	2.0
Passenger Miles	8,841.0
Average Trip Length in Miles	8.3
Passenger Miles per Trip	210.5
Revenue Hours	31.45
Passenger per Revenue Hours	34
Passenger Hours	-
Average Trip Length in Minutes	-
Passenger Minutes per Trip	-
Percent Slow at Time Points	-
Percent Fast at Time Points	-
Gallons of Fuel Used	139.19
Passenger Miles per Gallon of Fuel	63.5
Passenger Miles per Seat Mile	-



ROUTE 701

Provides local service between Rohr Industries (northwest Chula Vista) and Otay via central Chula Vista. Buses operate every day except Sunday. Service is provided between 5:48 AM and 8:48 PM at 60 minute headways. One bus is required to serve the 14.8 mile route.

Route Data

Scheduled Miles	37,036	
Total Revenue Passengers	90,200	
Total Annual Passengers	123,200	
Basic Fare Riders	35,436	28.8%
Cash Student Riders	41,900	34.0%
Cash Senior Riders	12,600	10.2%
Transfer Riders	33,264	27.0%
Average Fare	.23	

Performance Data

Number of Trips	29
Total Passengers	814
Passengers per Trip	28.1
Passengers per Trip/Average Max. Load	1.59
Percent of Trips Over Capacity	3.4
Revenue Miles	432.8
Passengers per Revenue Mile	1.9
Revenue Miles Over Capacity	1.3
% of Revenue Miles of Capacity	0.3
Passenger Miles	3,479.6
Average Trip Length in Miles	4.3
Passenger Miles per Trip	120.0
Revenue Hours	27.0
Passenger per Revenue Hours	30
Passenger Hours	316.3
Average Trip Length in Minutes	15.94
Passenger Minutes per Trip	447.52
Percent Slow at Time Points	16.03
Percent Fast at Time Points	1.46
Gallons of Fuel Used	108.46
Passenger Miles per Gallon of Fuel	32.1
Passenger Miles per Seat Mile	0.158
Average Miles per Average Capacity	0.33



ROUTE 702

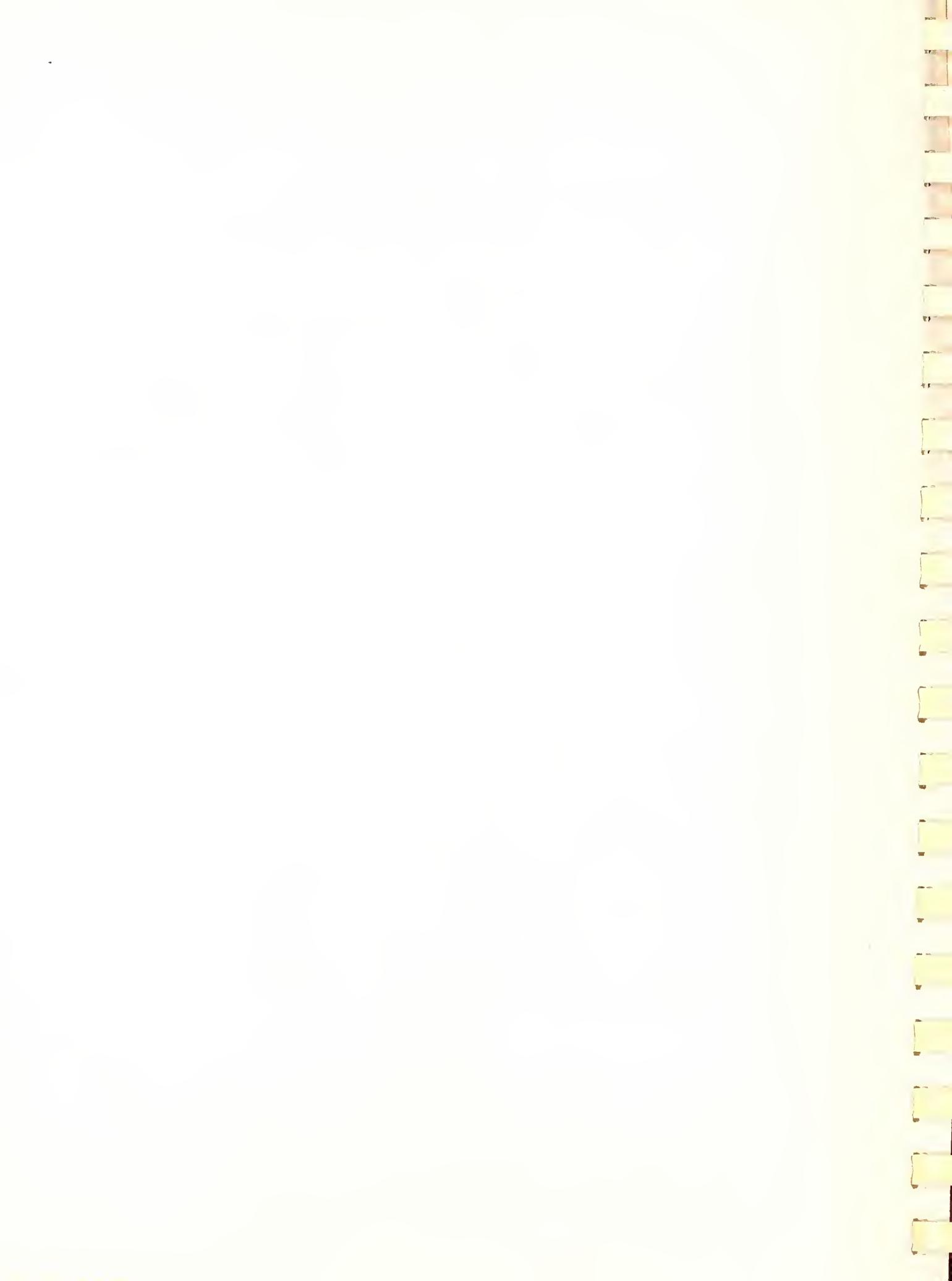
Provides local service between Rohr Industries and Otay via central Chula Vista. Route 702 operates daily between 5:58 AM and 6:39 PM at 60 minute headways. One bus is required to serve the 15.6 mile route.

Route Data

Scheduled Miles	35,555	
Total Revenue Passengers	88,200	
Total Annual Passengers	117,600	
Basic Fare Riders	42,300	36.0%
Cash Student Riders	37,200	31.6%
Cash Senior Riders	8,700	7.4%
Transfer Riders	29,400	25.0%
Average Fare	.22	

Performance Data

Number of Trips	13
Total Passengers	372
Passengers per Trip	28.6
Passengers per Trip/Average Max. Load	1.76
Percent of Trips Over Capacity	0.0
Revenue Miles	207.9
Passengers per Revenue Mile	1.8
Revenue Miles Over Capacity	0.0
% of Revenue Miles of Capacity	0.0
Passenger Miles	1,589.9
Average Trip Length in Miles	4.3
Passenger Miles per Trip	122.3
Revenue Hours	12.73
Passenger per Revenue Hours	29.2
Passenger Hours	97.45
Average Trip Length in Minutes	15.72
Passenger Minutes per Trip	449.77
Percent Slow at Time Points	30.39
Percent Fast at Time Points	0.00
Gallons of Fuel Used	52.10
Passenger Miles per Gallon of Fuel	30.5
Passenger Miles per Seat Mile	0.150
Average Miles per Average Capacity	0.31



ROUTE 703

Provides local service between Rohr Industries and east Chula Vista. Route 703 operates weekdays between 6:02 AM and 6:51 PM at 60 minute headways. One bus is required to serve the 17.9 mile route.

Route Data

Scheduled Miles	29,983	
Total Revenue Passengers	40,800	
Total Annual Passengers	56,000	
Basic Fare Riders	20,680	37.0%
Cash Student Riders	15,900	28.4%
Cash Senior Riders	4,300	7.7%
Transfer Riders	15,120	27.0%
Average Fare	.22	

Performance Data

Number of Trips	26
Total Passengers	272
Passengers per Trip	10.5
Passengers per Trip/Average Max. Load	1.25
Percent of Trips Over Capacity	0.0
Revenue Miles	244.1
Passengers per Revenue Mile	1.1
Revenue Miles Over Capacity	0.0
% of Revenue Miles of Capacity	0.0
Passenger Miles	1,347.5
Average Trip Length in Miles	5.0
Passenger Miles per Trip	51.8
Revenue Hours	12.40
Passenger per Revenue Hours	21.9
Passenger Hours	72.02
Average Trip Length in Minutes	15.89
Passenger Minutes per Trip	166.19
Percent Slow at Time Points	14.97
Percent Fast at Time Points	0.00
Gallons of Fuel Used	6.118
Passenger Miles per Gallon of Fuel	22.0
Passenger Miles per Seat Mile	0.108
Average Miles per Average Capacity	0.16



ROUTE 705

Provides local service between central Chula Vista and east Chula Vista. Route 705 operates every day except Sunday from 5:55 AM to 9:22 PM at 60 minute headways. One and a half buses are required to serve the 19.4 mile route.

Route Data

Scheduled Miles	44,510	
Total Revenue Passengers	54,000	
Total Annual Passengers	78,400	
Basic Fare Riders	32,896	42.0%
Cash Student Riders	18,400	23.5%
Cash Senior Riders	2,800	3.6%
Transfer Riders	24,304	31.0%
Average Fare	.23	

Performance Data

Number of Trips	32
Total Passengers	395
Passengers per Trip	12.3
Passengers per Trip/Average Max. Load	1.23
Percent of Trips Over Capacity	0.0
Revenue Miles	302.4
Passengers per Revenue Mile	1.3
Revenue Miles Over Capacity	0.0
% of Revenue Miles of Capacity	0.0
Passenger Miles	2,398.1
Average Trip Length in Miles	6.1
Passenger Miles per Trip	74.9
Revenue Hours	13.60
Passenger per Revenue Hours	29.0
Passenger Hours	109.30
Average Trip Length in Minutes	16.68
Passenger Minutes per Trip	204.94
Percent Slow at Time Points	17.46
Percent Fast at Time Points	2.65
Gallons of Fuel Used	75.79
Passenger Miles per Gallon of Fuel	31.6
Passenger Miles per Seat Mile	0.155
Average Miles per Average Capacity	0.20



ROUTE 706

Provides downtown shuttle service between Rohr Industries and central Chula Vista. Route 706 operates every day except Sunday between 9:20 AM and 5:00 PM at 20 minute headways. One bus is required to serve the 3.6 mile route.

Route Data

Scheduled Miles	13,101	
Total Revenue Passengers	43,300	
Total Annual Passengers	50,400	
Basic Fare Riders	43,344	86.0%
Cash Student Riders	-	
Cash Senior Riders	-	
Transfer Riders	7,056	14.0%
Average Fare	.10	

Performance Data

Number of Trips	21
Total Passengers	276
Passengers per Trip	13.1
Passengers per Trip/Average Max. Load	1.88
Percent of Trips Over Capacity	0.0
Revenue Miles	83.1
Passengers per Revenue Mile	3.3
Revenue Miles Over Capacity	0.0
% of Revenue Miles of Capacity	0.0
Passenger Miles	317.4
Average Trip in Length in Miles	1.2
Passenger Miles per Trip	15.1
Revenue Hours	7.92
Passenger per Revenue Hours	34.8
Passenger Hours	31.38
Average Trip Length in Minutes	6.82
Passenger Minutes per Trip	89.67
Percent Slow at Time Points	58.90
Percent Fast at Time Points	0.00
Gallons of Fuel Used	20.81
Passenger Miles per Gallon of Fuel	15.2
Passenger Miles per Seat Mile	0.075
Average Miles per Average Capacity	0.14

ROUTE 707

Provides local service between central Chula Vista and Otay. Route 707 operates except Sunday between 6:10 AM and 7:07 PM at 30 minute headways. One bus is required to serve the 6.6 mile route.

Route Data

Scheduled Miles	32,750	
Total Revenue Passengers	22,300	
Total Annual Passengers	33,600	
Basic Fare Riders	10,212	30.4%
Cash Student Riders	7,900	23.5%
Cash Senior Riders	4,400	13.1%
Transfer Riders	11,088	33.0%
Average Fare	.20	

Performance Data

Number of Trips	26
Total Passengers	270
Passengers per Trip	10.4
Passengers per Trip/Average Max. Load	1.73
Percent of trips Over Capacity	0.0
Revenue Miles	182.5
Passengers per Revenue Mile	1.5
Revenue Miles Over Capacity	0.0
% of Revenue Miles of Capacity	0.0
Passenger Miles	602.5
Average Trip Length in Miles	2.2
Passenger Miles per Trip	23.2
Revenue Hours	9.95
Passenger per Revenue Hours	27.1
Passenger Hours	33.87
Average Trip Length in Minutes	7.53
Passenger Minutes per Trip	78.15
Percent Slow at Time Points	5.04
Percent Fast at Time Points	6.59
Gallons of Fuel Used	45.73
Passenger Miles per Gallon of Fuel	13.2
Passenger Miles per Seat Mile	0.065
Average Miles per Average Capacity	0.12



ROUTE 601

Provides local service between downtown Division/4th Street and downtown National City and residential and commercial areas to the east. Route 601 operates daily except Sunday between 6:15 AM and 7:08 PM at 30 minute headways. Two buses are required to serve the 15 mile route. The short route is 12 miles.

Route Data

Scheduled Miles	353	
Total Revenue Passengers	111,000	
Total Annual Passengers	173,640	
Basic Fare Riders	37,200	21.4%
Cash Student Riders	66,000	38.0%
Cash Senior Riders	7,800	4.5%
Transfer Riders	44,040	25.4%
All Saverpass Riders	10,800	6.2%
Average Fare	.37	

Performance Data

Number of Trips	53
Total Passengers	690
Passengers per Trip	13.0
Passengers per Trip/Average Max. Load	1.30
Percent of Trips Over Capacity	1.9
Revenue Miles	332.9
Passengers per Revenue Mile	2.1
Revenue Miles Over Capacity	3.1
% of Revenue Miles of Capacity	0.9
Passenger Miles	1,711.0
Average Trip Length in Miles	2.5
Passenger Miles per Trip	32.3
Revenue Hours	22.12
Passenger per Revenue Hours	21.2
Passenger Hours	117.45
Average Trip Length in Minutes	10.2
Passenger Minutes per Trip	133.0
Percent Slow at Time Points	6.20
Percent Fast at Time Points	3.84
Gallons of Fuel Used	72.38
Passenger Miles per Gallon of Fuel	33.6
Passenger Miles per Seat Mile	0.097
Average Miles per Average Capacity	0.19

ROUTE 602

Provides local service between downtown National City and residential and commercial areas to the east. Route 602 operates daily except Sunday between 6:35 AM and 7:18 PM at 30 minute headways. Two buses are required to provide service along the 14 mile route.

Route Data

Scheduled Miles	355	
Total Revenue Passengers	123,600	
Total Annual Passengers	214,560	
Basic Fare Riders	60,000	28.0%
Cash Student Riders	33,600	15.7%
Cash Senior Riders	30,000	13.9%
Transfer Riders	63,360	29.5%
Free Riders	13,200	6.2%
All Saverpass Riders	14,400	6.7%
Average Fare	.37	

Performance Data

Number of Trips	53
Total Passengers	893
Passengers per Trip	16.8
Passengers per Trip/Average Max. Load	1.68
Percent of Trips Over Capacity	0.0
Revenue Miles	347.3
Passengers per Revenue Mile	2.6
Revenue Miles Over Capacity	0.0
% of Revenue Miles of Capacity	0.0
Passenger Miles	1,613.1
Average Trip Length in Miles	1.8
Passenger Miles per Trip	30.4
Revenue Hours	25.78
Passenger per Revenue Hours	34.6
Passenger Hours	120.07
Average Trip Length in Minutes	8.1
Passenger Minutes per Trip	79.32
Percent Slow at Time Points	25.00
Percent Fast at Time Points	0.35
Gallons of Fuel Used	75.50
Passenger Miles per Gallon of Fuel	21.4
Passenger Miles per Seat Mile	0.888
Average Miles per Average Capacity	0.19

ROUTE 603

Provides local service between central National City and western industrial areas. Route 603 operates daily except Sundays between 7:33 AM and 6:43 PM at 60 minute headways. One bus is required to provide service along the 7.0 mile route.

Route Data

Scheduled Miles	80	
Total Revenue Passengers	13,440	
Total Annual Passengers	24,600	
Basic Fare Riders	7,200	29.3%
Cash Student Riders	1,440	5.9%
Cash Senior Riders	4,800	19.5%
Free Riders	1,800	7.3%
All Saverpass Riders	3,000	12.1%
Transfer Riders	6,360	25.4%
Average Fare	.37	

Performance Data

Number of Trips	23
Total Passengers	87
Passengers per Trip	4.9
Passengers per Trip/Average Max. Load	1.26
Percent of Trips Over Capacity	0.0
Revenue Miles	77.5
Passengers per Revenue Mile	0.9
Revenue Miles Over Capacity	0.0
% of Revenue Miles of Capacity	0.0
Passenger Miles	130.7
Average Trip Length in Miles	1.5
Passenger Miles per Trip	5.8
Revenue Hours	6.23
Passenger per Revenue Hours	14.0
Passenger Hours	10.43
Average Trip Length in Minutes	8.2
Passenger Minutes per Trip	27.22
Percent Slow at Time Points	0.94
Percent Fast at Time Points	0.00
Gallons of Fuel Used	16.85
Passenger Miles per Gallon of Fuel	7.8
Passenger Miles per Seat Mile	0.032
Average Miles per Average Capacity	0.06



ROUTE 604

Provides local service in central and northern National City. Route 604 operates on Sundays between 7:06 AM and 8:58 PM at 60 minute headways. One bus is required to provide service along the 11 mile route. Performance data is not available.

Route Data

Scheduled Miles	132	
Total Revenue Passengers	5,040	
Total Annual Passengers	9,360	
Basic Fare Riders	2,400	25.6%
Cash Student Riders	960	10.6%
Cash Senior Riders	1,680	18.0%
Free Riders	840	8.9%
All Saverpass Riders	7,720	7.7%
Transfer Riders	2,760	29.5%
Average Fare	.37	

ROUTE 170

The Strand Streaker, or Route 170, provides service between Coronado and Palm City/Nestor via Imperial Beach. Route 170 operates daily except Sunday. Monday through Friday it operates between 5:42 AM and 5:16 PM. During AM and PM peaks, buses run at 30 minute headways. Midday service operates at 60 minute headways, as does Saturday service. Saturday service operates between 8:00 AM and 5:15 PM. Three buses are required for weekday service and one bus is required for Saturday service along the 39 mile route. Performance data is not available.

Route Data

Scheduled Miles - Weekdays	70,863	
Scheduled Miles - Saturdays	11,721	
Total Revenue Passengers	71,220	
Total Annual Passengers	76,563	
Basic Fare Riders	49,572	64.9%
Transfer Riders	5,343	7.0%
All Saverpass Riders	21,468	28.1%
Average Fare	.61	
Number of Trips	32	
Total Passengers	368	
Passengers per Trip	12	
Revenue Miles	182.2	

PARATRANSIT

There are several categories of paratransit service provided in the San Diego Trolley study area. Paratransit services include public dial-a-ride, social service agency transportation service, taxicab service, jitney service, vehicles for hire, and sightseeing vehicles. Each city in the study area, the Port District, and the County has specific operating regulations on paratransit services.

Public Dial-A-Ride

The eight demand-responsive or dial-a-ride systems in the region carry over 500,000 riders per year on 70 vehicles over nearly 1.2 million service miles. San Diego Dial-A-Ride and Handytrans (operated by the City of Chula Vista) are the only operators within the LRT study area. (See Table 28 and Figure 8.)

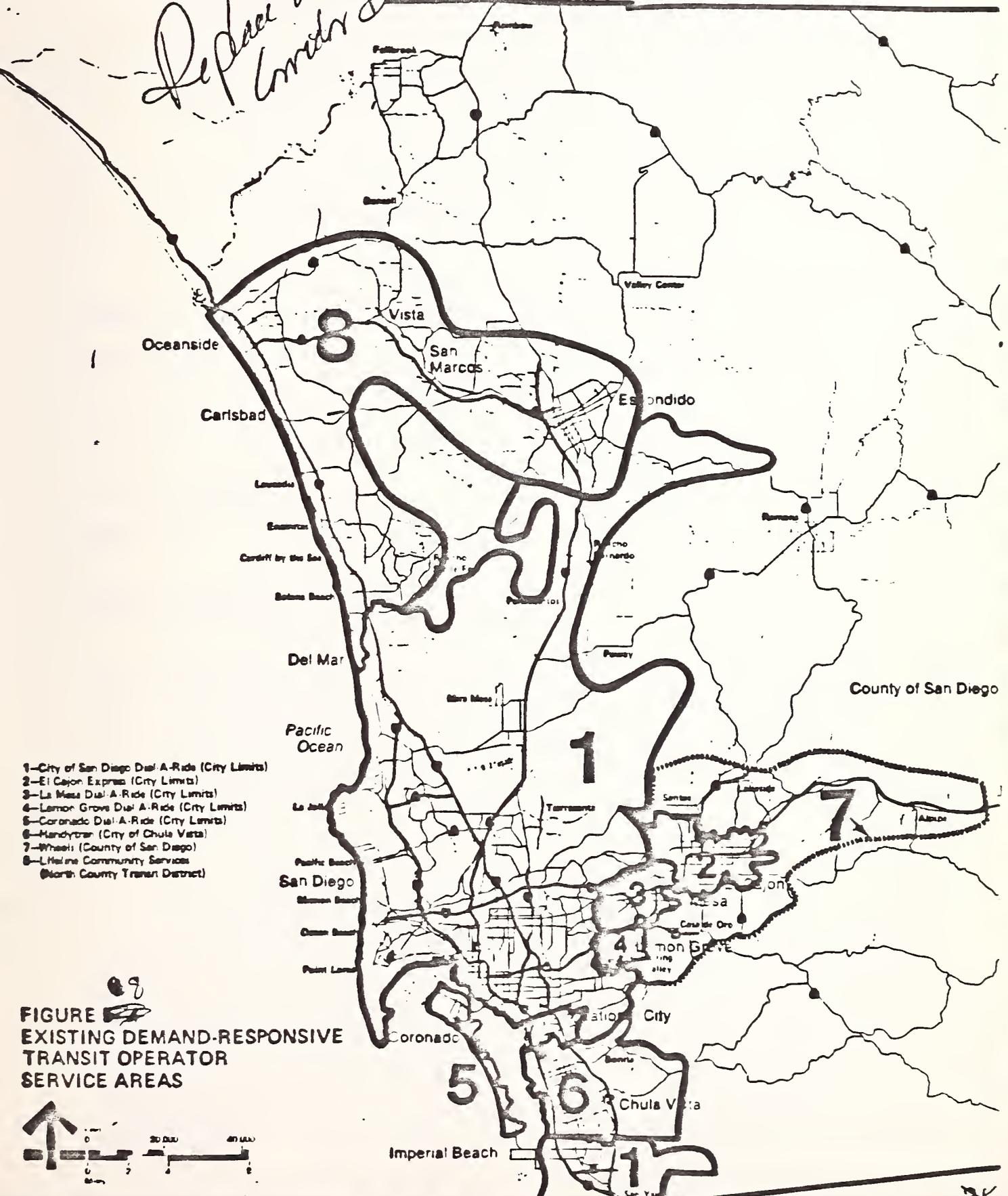
Handytrans provides demand-responsive service to the elderly and handicapped in the Chula Vista and Otay areas. Service is provided eight hours a day, five days a week. All vehicles used are wheelchair accessible. During fiscal year 1980, Handytrans' four vehicles carried 13,000 revenue passengers a total of 41,000 revenue miles. Bus fare is 75 cents.

San Diego Dial-A-Ride uses 21 minibuses and nine wheelchair lift vans to serve the entire city area comprising _____ square miles and an estimated _____ elderly and handicapped individuals. Service is provided five days a week from 8:00 AM to 6:00 PM. During FY80, 138,000 passengers were carried a total of 400,000 revenue miles. Wheelchair-bound passengers numbered 56,000. The base fare is 50 cents, with a 25 cent charge for each additional zone. There are ___ zones in the entire city. One zone includes the San Ysidro, Palm City/Nestor area. The central zone includes Centre City and Barrio Logan. Some medical trips are provided through a contract with taxi operators. It is estimated that ___% of the dial-a-ride service and ___% of the City of San Diego's elderly and handicapped are within the study area.

E COUNTY

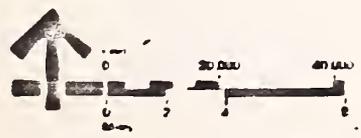
RIVERSIDE COUNTY

*Replace with
limited Base Map
during service
P.R.*



- 1—City of San Diego Dial-A-Ride (City Limits)
- 2—El Cajon Express (City Limits)
- 3—La Mesa Dial-A-Ride (City Limits)
- 4—Lemon Grove Dial-A-Ride (City Limits)
- 5—Coronado Dial-A-Ride (City Limits)
- 6—Mandytan (City of Chula Vista)
- 7—Wheels (County of San Diego)
- 8—L. Malone Community Services (North County Transit District)

FIGURE 9
EXISTING DEMAND-RESPONSIVE
TRANSIT OPERATOR
SERVICE AREAS





Prior to the initiation of trolley service, no door-to-door service was available in either National City or Imperial Beach. Corridor service was not fully accessible to the disabled and the amount of transferring between the dial-a-rides and regional (inter-community) service, while not specifically known, was determined to be negligible.

TABLE 28

PUBLIC DIAL-A-RIDE SERVICE
(FY1980)

<u>Operator</u>	<u>Fleet Size</u>	<u>Revenue Miles</u>	<u>Revenue Passengers</u>	<u>Base Fare</u>	<u>Operating Budget</u>
Total For All Systems	70	1,158,000	505,000	\$.50- \$.75	\$1,675,000
San Diego: Total	21	400,000	138,000	\$.50+ \$.25/zone	596,000
Trolley Corridor					
Chula Vista	4	41,000	13,000	\$.75	179,000

Social Service Agency Transportation Services

Of the 249 social service agencies in San Diego County which provide some form of transportation service, 84 are located in the study area. Table 29 shows that 25 agencies are located in the Centre City and 23 in Barrio Logan. It is estimated that the social service agencies carry at least as many persons as the public dial-a-ride services.

TABLE 29

DISTRIBUTION OF SOCIAL SERVICE AGENCIES

<u>Community</u>	<u>No. of Agencies</u>	<u>No. of Vehicles</u>	<u>Estimated Trips</u>
Centre City	25		
Barrio Logan	23		
National City	10		
Chula Vista	11		
Otay	2		
Nestor/South San Diego	3		
San Ysidro	6		
Imperial Beach	4		
TOTAL:	84		



Taxicab Service

In San Diego County, there are 188 taxicab companies operating 645 taxicabs. There are 76 taxicab companies operating 516 licensed taxicabs throughout the study area, as shown in Appendix II. Six jurisdictions within the study area have taxicab ordinances. They are the Cities of San Diego, National City, Chula Vista, and Imperial Beach, the County of San Diego, and the San Diego Unified Port District.

There are approximately 10,000 taxicab trips per day in the San Diego region. The LRT study area generates an estimated 3,500 taxicab trips each day. Of the total taxicab passengers, 72.1% were residents and 27.9% were visitors to the San Diego region. Major trip generators are Centre City, Barrio Logan and National City.

Table 30 shows that 33.5% of all resident taxicab trips originate in the LRT study area. Additionally, 34.2% of the residents traveling by taxicab have a destination in the study area. One out of five resident taxicab trips had an origin or destination in either Centre City or Barrio Logan.

TABLE 30

RESIDENT TAXICAB TRIP GENERATORS
(Percent of Regional Total)

<u>Community</u>	<u>Origin</u>	<u>Destination</u>
Centre City	11.5	14.7
Barrio Logan	11.1	6.9
National City	5.3	7.5
Chula Vista	1.9	2.1
Otay	0.9	0.3
Palm City/Nestor	0.1	1.1
San Ysidro	0.1	0.6
Imperial Beach	2.6	1.0
TOTAL:	33.6	34.2

Almost 37% of all visitor taxicab trips either originate or terminate in the study area. Table 31 shows that up to a third of the visitor



trips are generated in Centre City and Barrio Logan. Major trip generators are the central business district, Harbor Drive, and 32nd street Naval Base.

TABLE 31

VISITOR TAXICAB TRIP GENERATORS
(Percent of Regional Total)

<u>Community</u>	<u>Origin</u>	<u>Destination</u>
Centre City	22.7	23.1
Barrio Logan	12.4	5.4
National City	3.1	3.5
Chula Vista	0.5	1.1
Otay	0.3	0.0
Palm City/Nestor	0.0	0.3
San Ysidro	0.0	1.2
Imperial Beach	0.0	0.0
TOTAL:	39.0	34.6

Jitney Service and Vehicles for Hire

Jitney service is difficult to define. The term was first applied generically to a type of transportation which spread rapidly through the urban areas of the United States in 1914 and 1915. Most commonly the jitneys provide a form of taxi service which is limited to fixed routes and is open to shared riding. A potential passenger could hail a jitney with a vacant capacity anywhere along its route or at designated stops and for a fare could ride to any other point along the route. Sometimes fares were based on a zone-rate. The vehicles used are small, usually carrying no more than twelve passengers.

All eight jitney operators in the region operate in the study area, serving military bases and visitors to the San Diego region. Table 32 shows the licensed jitney operators.



TABLE 32

JITNEY COMPANIES
(December 1980)

Company

ATS Howard Equipment
Border Van
Clipper Express Club Car
Hedricks Jitney
Mexicocoach
Paul the Greeks Limo
Roders Van
The Short Run

Vehicles for hire include traditional limousine service and other pre-arranged transportation vehicles which would base their fares on a per hour, per mile (whichever is greater), or special event contract basis. There are 10 vehicle for hire operators in the study area, as shown below:

Bus That Goes In Circles
Chair There, Inc.
Chauffeured Rolls Royce Services, Ltd.
El Paseo Tours
Eugene Nettleton Chauffeuring Service
Howard Equipment Corporation
Mexicocoach, Inc.
Para-Transit
South Bay Wheel Chair Transport
Victoria Tours

HIGHWAYS

Highways are the major component of the region's transportation system. The deserts, mountains, and coastal plains of San Diego County are connected by 7,722 miles of roadway. There are 4,699 miles of roads in the urbanized area. Within the LRT study area, there are 450 miles of highways, streets, and roads. A total of 9.5% or 25.8 miles of the region's freeways are located in this area.



The major freeway in the study area is Interstate 5 which services the International Border Crossing north along San Diego Bay through Centre City, a distance of 17.1 miles. The San Diego Trolley route parallels Interstate 5 through the South Bay. Other freeways which serve the study area are:

Route 163, South-North travel, connects Centre City to Mission Valley and merges with Interstate 15.

Route 94, West-East, connects Centre City to Southeast San Diego and the eastern suburban areas, and merges with Interstate 8.

Route 75 (Coronado-San Diego Bridge), connects Coronado and Interstate 5 at Barrio Logan. The bridge is two miles long.

Interstate and State Route 15, South-North, connects Barrio Logan and 32nd Street Naval Base to Mission Valley, Escondido and Riverside County.

Route 117, West-East, partially completed freeway, connects I-5 and I-805, continues as Otay Mesa Road to Brown Field Airport. The completed portion of the freeway travels 3.3 miles.

Interstate 805, South-North, connects San Ysidro at I-5, Chula Vista, National City, Mission Valley, and merges with I-5 in Sorrento Valley. I-805 travels 3.2 miles of its 28 miles through the study area.

Vehicles Per Household

There are approximately 35,000 registered motor vehicles in the study area. This is an average of 1.5 motor vehicles per household,

compared to a regional average of 1.6 vehicles per household. Ten percent of the households in National City do not own a motor vehicle. Table 33 shows that fewer than one percent of the homes in Chula Vista and Palm City/Nestor are without an automobile.

TABLE 33
VEHICLES PER HOUSEHOLD
(Percent of Total)

<u>Jurisdiction</u>	<u>None</u>	<u>One</u>	<u>Two or More</u>	<u>Total</u>
San Diego Region	11.4	35.5	53.1	100.0
National City	10.0	45.0	45.0	100.0
Chula Vista	0.0	38.9	61.1	100.0
Palm City/Nestor	0.0	65.0	35.0	100.0

Trip Generation

Each day there are more than eight million driver trips in the San Diego region. Almost 1,100,000, or 13.4%, of these trips are generated within the LRT study area. Table 34 shows that the study area attracts approximately 200,000 more driver trips than it produces. Centre City is the major attraction of driver trips in the study area. National City produces the most driver trips.

TABLE 34
DAILY DRIVER TRIP GENERATION

Jurisdiction	Trip Production		Trip Attraction		Total	
	Number	Percent of Total	Number	Percent of Total	Number	Percent of Total
Centre City	79,855	18.5	255,464	38.9	355,319	30.9
Barrio Logan	41,800	9.7	81,796	13.5	123,596	11.3
National City	80,899	18.7	107,788	16.4	188,687	17.3
Chula Vista	70,450	16.4	92,474	14.0	162,924	15.0
Otay	32,268	7.7	28,992	4.4	62,260	5.7
Palm City-Nestor	33,516	7.8	16,775	2.5	50,291	4.6
San Ysidro	44,219	10.3	38,738	5.9	82,957	7.6
Imperial Beach	46,866	10.9	36,332	5.5	83,198	7.6
TOTAL	430,873	100.0	658,359	100.0	1,089,232	100.0

SOURCE: SANDAG, Series V Regional Growth Forecasts, 1980

- LESS THAN 1000 TRIPS
- 1000 TO 5000 TRIPS
- 5000 TO 10000 TRIPS
- 10000 TO 20000 TRIPS
- MORE THAN 20000 TRIPS

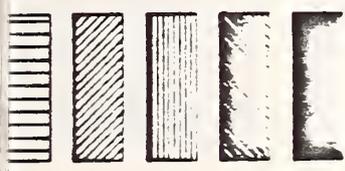
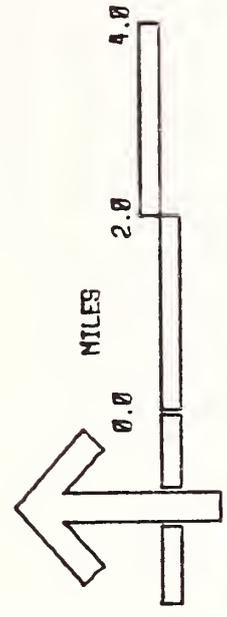


Figure 9

TAZ TRIP PRODUCTIONS



San Diego
ASSOCIATION OF
GOVERNMENTS

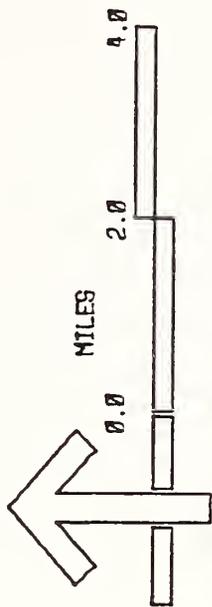
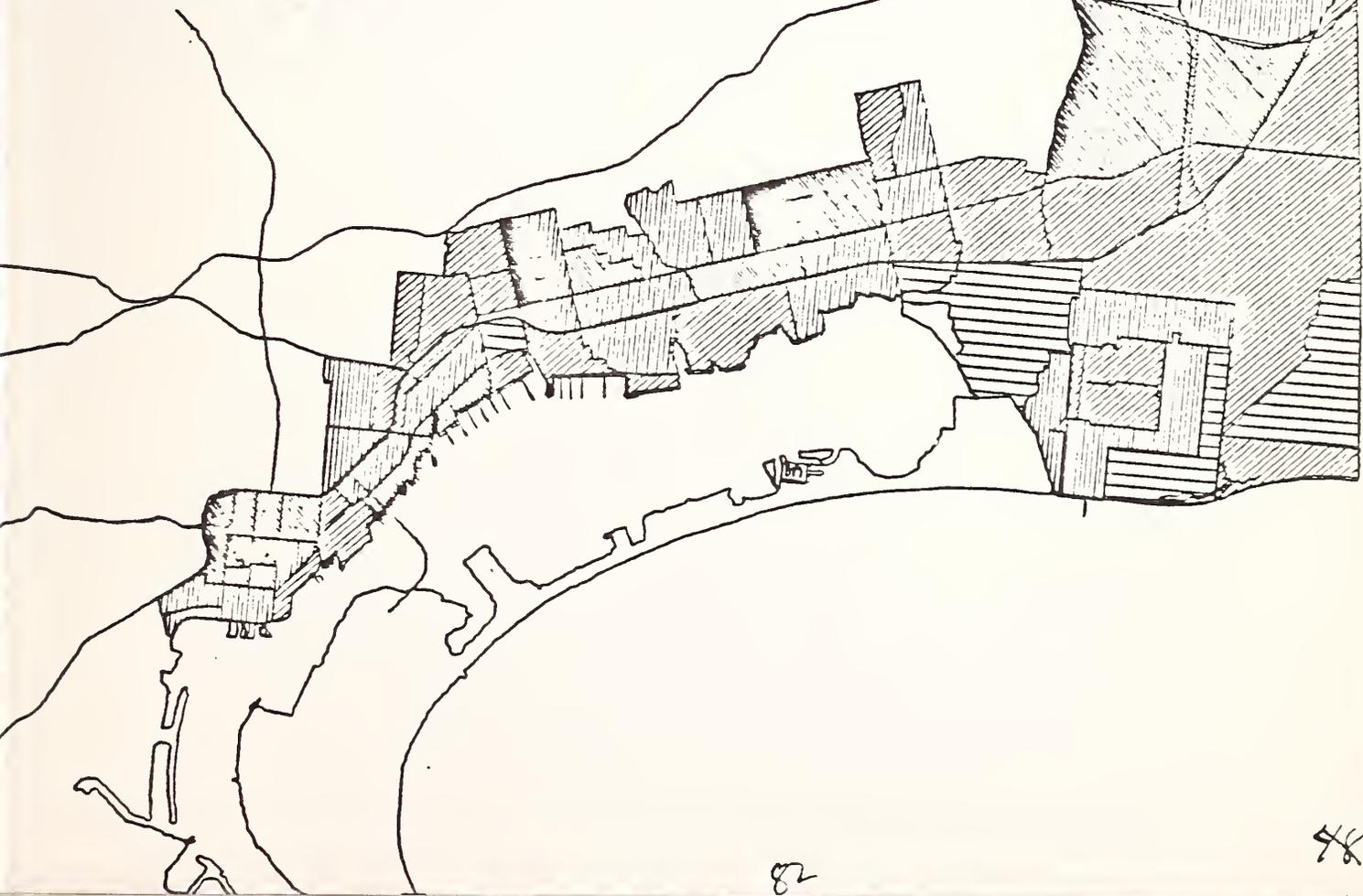
JUNE 5, 1981



- LESS THAN 1000 TRIPS
- 1000 TO 5000 TRIPS
- 5000 TO 10000 TRIPS
- 10000 TO 20000 TRIPS
- MORE THAN 20000 TRIPS

Figure 10

TAZ TRIP ATTRACTIONS



San Diego
ASSOCIATION OF
GOVERNMENTS

JUNE 5, 1981

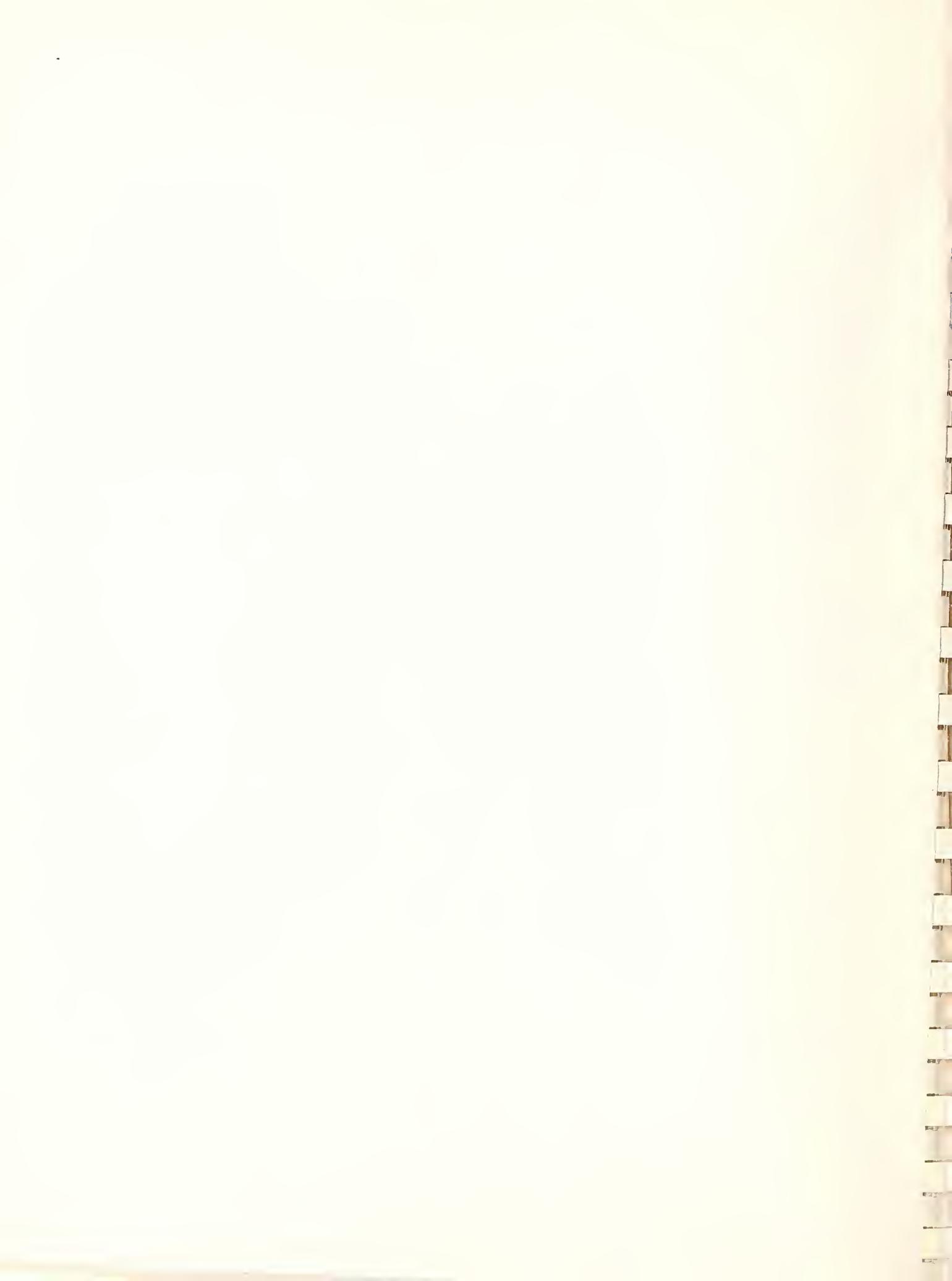


Figure 9 shows the traffic analysis zones (TAZ) which produce the most driver trips in the study area. The South Bay Plaza in National City is the major driver trip producer. Other major trip producers are San Ysidro and Chula Vista Shopping Center.

Major driver trip attractors are presented in Figure 10. As shown, Centre City attracts the most driver trips. The government and financial district attracts 51,812 driver trips, more than the entire City of Imperial Beach. Other major driver trip attractors are the South Bay Plaza in National City, the Chula Vista Shopping Center, the Horton Plaza area in Centre City. A complete listing of driver trip generators is shown in Appendix III.

Vehicle Occupancy

The average vehicle occupancy for the whole San Diego region during the peak hour is 1.24 occupants per vehicle (automobiles and light-duty vehicles). Within the LRT study area, the average vehicle occupancy is 1.30 occupants per vehicle. Table 35 shows the average vehicle occupancy from the randomly selected sites in the study area.

TABLE 35
 AVERAGE VEHICLE OCCUPANCY

<u>Jurisdiction</u>	<u>Location</u>	<u>Direction</u>	<u>Vehicle Occupancy</u>
Barrio Logan	Vesta Street, south of Birch Street	Southbound	1.332
	I-15 off-ramp, at Ocean View Boulevard	Northbound	1.450
	Highway 75 on-ramp, to Coronado	Southbound to Westbound	1.347
	Sampson Street, south of Kearney Avenue	Southbound	1.290
National City	8th Street, west of R Avenue	Westbound	1.290
Chula Vista	F Street, east of 3rd Avenue	Westbound	1.185
	C Street, east of 4th Avenue	Westbound	1.195
Imperial Beach	Imperial Beach Boulevard, east of 4th Street	Eastbound	1.458
Otay	Palm Avenue, west of I-805	Eastbound	1,386
	Del Sol Boulevard, east of Picador Boulevard	Westbound	1.234

Traffic Volumes

Traffic volume data was analyzed to determine peaking and seasonal variations in the study area. A total of 10 sites were selected for this purpose. Four of the sites are located along Interstate 5 in National City, Chula Vista, Palm City/Nestor, and San Ysidro. The additional sites are:

- o Harbor Drive, between Beardsley Street and Crosby Street, Barrio Logan
- o Harbor Drive, north of 28th Street, Barrio Logan
- o Harbor Drive, north of 32nd Street, Barrio Logan
- o Palm Avenue, between Hollister Street and Harris Avenue, Palm City/Nestor
- o Hollister Street, south of Palm Avenue, Palm City/Nestor
- o East Beyer Boulevard, north of Border Village Road, San Ysidro

Table 36 shows the traffic peaking characteristics for the Interstate 5 locations. As shown, the weekday peaking characteristics are quite similar for 8th Street, E Street, and Palm Avenue. During the AM, the peak period occurs between 7:00 AM and 8:00 AM for the northbound traffic. The southbound peak occurs between 11:00 AM and noon.

TABLE 5 TRAFFIC VOLUME CHARACTERISTICS

Location	Season	Direction	Morning Peak				Afternoon Peak			
			Weekday		Weekend		Weekday		Weekend	
			Hour	% of Total	Hour	% of Total	Hour	% of Total	Hour	% of Total
15 at 8th Street National City	Winter	N	7:00 - 8:00 am	10.8%	11:00 - Noon	6.8%	3:00 - 4:00 pm	7.9%	1:00 - 2:00 pm	7.3%
		S	7:00 - 8:00 am	6.4%	11:00 - Noon	6.9%	4:00 - 5:00 pm	11.2%	3:00 - 4:00 pm	7.8%
	Spring	N	7:00 - 8:00 am	10.1%	11:00 - Noon	7.2%	3:00 - 4:00 pm	7.5%	Noon - 1:00 pm	7.3%
		S	11:00 - Noon	7.1%	11:00 - Noon	7.5%	4:00 - 5:00 pm	10.4%	Noon - 1:00 pm	6.9%
	Summer	N	7:00 - 8:00 am	9.5%	11:00 - Noon	6.6%	3:00 - 4:00 pm	7.4%	Noon - 1:00 pm	7.2%
		S	11:00 - Noon	5.5%	11:00 - Noon	6.7%	4:00 - 5:00 pm	10.2%	3:00 - 4:00 pm	6.9%
Fall	N	7:00 - 8:00 am	10.9%	11:00 - Noon	6.7%	3:00 - 4:00 pm	7.6%	1:00 - 2:00 pm	6.7%	
S	7:00 - 8:00 am	6.5%	11:00 - Noon	6.7%	4:00 - 5:00 pm	10.4%	4:00 - 5:00 pm	7.0%		
15 at E Street Chula Vista	Winter	N	7:00 - 8:00 am	10.9%	11:00 - Noon	6.9%	3:00 - 4:00 pm	7.3%	1:00 - 2:00 pm	7.1%
		S	11:00 - Noon	5.5%	11:00 - Noon	7.0%	4:00 - 5:00 pm	11.7%	3:00 - 4:00 pm	7.6%
15 at Palm Ave. Nestor	Fall	N	7:00 - 8:00 am	9.1%	11:00 - Noon	7.2%	3:00 - 4:00 pm	7.0%	Noon - 1:00 pm	6.9%
		S	11:00 - Noon	5.4%	11:00 - Noon	7.1%	4:00 - 5:00 pm	10.7%	Noon - 1:00 pm	7.6%
15 at Sycamore San Ysidro	Winter	N	8:00 - 9:00 am	6.5%	11:00 - Noon	7.8%	2:00 - 3:00 pm	7.2%	4:00 - 5:00 pm	7.4%
		S	11:00 - Noon	5.7%	11:00 - Noon	7.5%	5:00 - 6:00 pm	9.8%	1:00 - 2:00 pm	8.6%
Spring	Summer	N	11:00 - Noon	5.9%	10:00 - 11:00 am	6.5%	3:00 - 4:00 pm	6.0%	1:00 - 2:00 pm	6.6%
		S	11:00 - Noon	5.9%	11:00 - Noon	8.5%	6:00 - 6:00 pm	8.6%	Noon - 1:00 pm	7.4%
Fall	Summer	N	11:00 - Noon	5.8%	10:00 - 11:00 am	6.3%	1:00 - 3:00 pm	11.6%	3:00 - 4:00 pm	6.2%
		S	10:00 - 11:00 am	5.9%	11:00 - Noon	7.9%	4:00 - 5:00 pm	8.6%	Noon - 1:00 pm	7.7%
Fall	Summer	N	8:00 - 9:00 am	6.4%	11:00 - Noon	7.1%	2:00 - 3:00 pm	6.6%	Noon - 1:00 pm	6.8%
		S	11:00 - Noon	4.7%	11:00 - Noon	8.1%	4:00 - 5:00 pm	10.0%	Noon - 1:00 pm	8.8%

The PM peak hour for northbound traffic occurs between 3:00 pm and 4:00 pm. The southbound peak occurs between 4:00 pm and 5:00 pm. The northbound AM peak and the southbound PM peak traffic volumes range from 9.1 percent to 11.7 percent of the daily traffic volume. The southbound AM peak and the northbound PM peak account for approximately seven percent of the daily traffic count. The PM peaks tend to be more congested than the AM peak periods.

Handwritten initials and a checkmark.

Turning Movements

As part of the monitoring efforts, turning movements were recorded to determine the impact of the LRT operations on the flow of traffic in the vicinity of the stations. Turning movements were recorded at the sites shown in Table 37.

TABLE 37

TURNING MOVEMENTS SITES

NATIONAL CITY

National Avenue and 22nd Street

Wilson Avenue and 24th Street

Hoover Avenue and 24th Street

CHULA VISTA

Woodlawn Avenue and H Street

PALM CITY/NESTOR

Iris Avenue and 25th/27th Streets

Data was collected during AM and PM peak-hour periods on 15-minute intervals. Pedestrian activity was also documented. Data collection activities continued during March, April, May, June and August of 1980. The turning movement forms are attached for review in Appendix IV.

Traffic Accidents

An inventory was made of traffic accidents reported in 1979 that occurred along the heavily traveled street sections located close to the then-proposed San Diego Trolley stations. Table 38 documents the location and number of accidents by area.

TABLE 38

TRAFFIC ACCIDENTS IN THE STUDY AREA

<u>Location/Street Segment</u>	<u>Number of Accidents</u>
BARRIO LOGAN AREA	
Crosby from National to Sante Fe Railroad	15
Harbor Drive from 8th to Coronado Bridge	76

Imperial Avenue between 17th and 10th Avenue	15
Ocean View between Imperial and 32nd Street	99
Main Street	101
Sampson Street	24
30th Street between Main and Ocean View Blvd.	24
32nd between Ocean View and Main Street	56
Wabash Blvd. from 32nd to Boston Avenue	3
Vesta Street	8

NATIONAL CITY AREA

D Avenue from 18th to 30th	25
24th Street between Tidelands and Highland Ave.	72
30th - to Highland Avenue	65
Division Street - Osburn to Highland	22
4th Street between Roosevelt and Highland	175
Roosevelt Avenue	27
18th between Wilson and Highland	66

CHULA VISTA AREA

H Street - Broadway to Bay Boulevard	53
Broadway between F and J Streets	94
5th Avenue between F and J Streets	55
Bay Boulevard	18
Industrial Boulevard	24
F Street between Bay Blvd. and 5th Street	30
I Street between Bay Blvd. and 5th Street	15
J Street between Tidelands Blvd. and 5th Street	22
4th Avenue between F and J Streets	62
Palomar between Bay Blvd. and Broadway	6
Intersection Palomar at Industrial Boulevard	8

SAN YSIDRO/PALM CITY AREA

Palm Avenue from Hollister to Beyer Way	14
Beyer Boulevard	44
Coronado Avenue from Beyer Blvd. to 19th Street	54
Hollister Street between Main and Coronado Ave.	16
Iris Avenue	6
Dairy Mart Road between Beyer and San Ysidro Blvd.	5
San Ysidro Blvd. between West Park and Dairy Mart	30
West Park Avenue	8
East Park Avenue	3
Otay Mesa Road	7
25th Street	7
Del Sol Blvd. between Picador Blvd. and Beyer Way	8
Picador Boulevard	9
Outer Road	5



Centre City Travel Characteristics

Centre City encompasses 243 city blocks, an area approximately two square miles. It is bounded on the north by Laurel Street and Interstate 5, on the east by Interstate 5, on the south by Commercial Street and 8th Avenue, and on the west by San Diego Bay.

Centre City is located at the heart of the region's transportation system. It is accessed by three major freeways and a large number of major surface streets. Over 56% of the region's population can reach the downtown area by auto in 20 minutes or less.

Traffic Volumes in Centre City

Traffic volume data was gathered at five Centre City locations. Traffic volumes were analyzed to determine peaking variations.

Five of the traffic study sites were located in the Centre City. The peak traffic characteristics are quite similar at these sites, as shown in Table 39. The AM peak traffic volumes are recorded between 10:00 AM and noon at all sites and in all directions except westbound traffic on Market Street, where the traffic peak occurs between 7:00 AM and 8:00 AM.

TABLE 39

CENTRE CITY TRAFFIC CHARACTERISTICS

LOCATION	DIRECTION	AM		PM		PEAK	
		HOUR	PERCENT OF ADT*	HOUR	PERCENT OF ADT*	HOUR	PERCENT OF ADT*
C Street, between 10th & 11th Avenues	EAST	11:00 AM-NOON	7.2%	5:00 PM-6:00 PM	12.4%		
First Avenue, between A & Ash Streets	NORTH	11:00 AM-NOON	7.2%	6:00 PM-7:00 PM	13.3%		
11th Avenue, between B & C Streets	NORTH	11:00 AM-NOON	7.9%	5:00 PM-6:00 PM	10.4%		
12th Avenue, between B & C Streets	NORTH	11:00 AM-NOON	8.0%	5:00 PM-6:00 PM	5.8%		
		11:00 AM-NOON	10.9%	2:00 PM-3:00 PM	8.6%		
Market St., between 4th & 5th Avenues	EAST	11:00 AM-NOON	7.2%	5:00 PM-6:00 PM	11.5%		
		7:00 AM-8:00 AM	9.7%	1:00 PM-2:00 PM	8.8%		

*ADT stands for the Average Daily Traffic, 1979.



The PM peak traffic period occurs between 5:00 PM and 6:00 PM except for southbound traffic on 12th Avenue, westbound traffic on Market Street, and traffic to 1st Avenue. On 12th Avenue, the southbound traffic peaks between 2:00 PM and 3:00 PM, on Market Street the westbound peak period occurs between 1:00 PM and 2:00 PM, and on 1st Avenue the traffic peak occurs between 6:00 PM and 7:00 PM.

Centre City Turning Movements

Turning movements were recorded at 17 sites in Centre City as shown below. The data reflected in Appendix IV will assist in determining changes in traffic movement during peak hour periods.

Centre City Sites

12th Avenue and Market Street
Island Street and Market Street
12th Avenue and G Street
6th Avenue and C Street
Broadway and 6th Avenue
12th Avenue and Broadway
C Street and 8th Avenue
C Street and 5th Avenue
12th Avenue and Imperial Avenue
C Street and Front Street
12th Avenue and C Street
12th Avenue and F Street
12th Avenue and E Street
12 Avenue and Market Street
Columbia Street and B Street
Front Street and A Street
11th Avenue and Broadway

Speed Delay Counts

Speed delay counts were obtained at six locations along 13th Street in the Centre City area. 13th Street was selected for the counts instead of 12th due to LRT construction activities at the time of the survey. Once the trolley is operating along 12th Avenue, it will share right-of-way with automobiles and trucks. Both streets run in a north-south direction and are quite similar in nature. The streets are one block apart.



The speed delay counts were taken at five different times on March 6, 1980, as shown in Table 40. As shown, the time and location of the count impacts the time required to travel between points.

TABLE 40
SPEED DELAY COUNTS
(Time Shown in Minutes)

<u>Time</u>	<u>FROM:</u> <u>TO:</u>	<u>C Street</u> <u>Broadway</u>	<u>Broadway</u> <u>F Street</u>	<u>F Street</u> <u>G Street</u>	<u>G Street</u> <u>Market</u>	<u>Market</u> <u>K Street</u>	<u>K Street</u> <u>Imperial</u>
7:39a		.30	.83	1.08	2.55	4.45	5.05
7:59a		3.91	3.46	2.65	2.38	1.65	.55
8:04a		.28	1.08	1.45	2.65	4.08	4.71
10:32a		.26	1.23	1.83	2.06	3.28	3.80
10:52a		4.03	3.61	2.71	2.35	1.66	.56

Centre City Parking

All parking spaces located within the Centre City area in the summer of 1981 are shown in Figure 11. The overall parking space total in the Centre City between 1977 and 1981 has remained about the same, slightly over 39,000 spaces. Distribution of the spaces and the type of spaces available have changed due to redevelopment. The core area has shown a slight decrease in the number of spaces while the fringe area has gained in the number of spaces.

The parking space inventory (Table 41) identifies all downtown parking by type, location, capacity and vacancies. The non-CBD heading refers to the fringe area within the Centre City, outside the core area. There were 39,438 parking spaces counted for the Centre City, not including passenger zones, commercial zones, red curbing, taxi and off-street business equipment lots. During the periods 9:00 AM - 11:00 AM and 1:30 PM - 3:00 PM, 10,890 spaces were vacant, a 27.6% vacancy rate. The core area had 15,545 total spaces with 3,383 vacancies, a rate of 21.8%. On-street parking spaces were vacant less than half the rate of off-street parking.



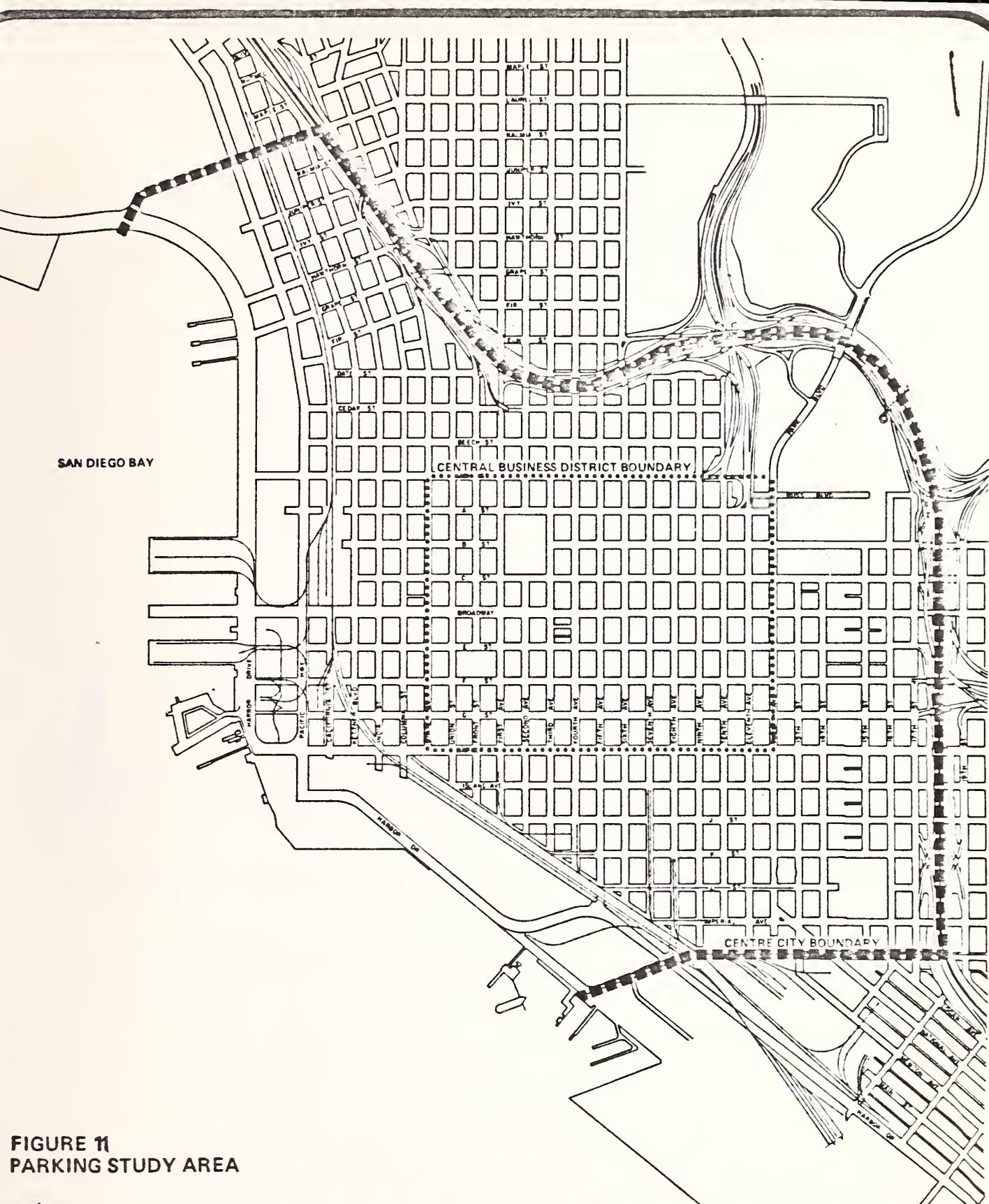
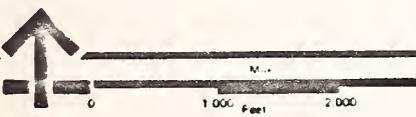


FIGURE 11
PARKING STUDY AREA



BASE MAP COURTESY OF THE CITY OF SAN DIEGO PLANNING DEPARTMENT

San Diego
ASSOCIATION OF
GOVERNMENTS

centre city
SAN DIEGO

91



TABLE 41

CENTRE CITY PARKING STUDY

Type of Facility	Centre City Spaces	Centre City Vacancy	Centre City Vacancy %	Core Spaces	Core Vacancy	Core Vacancy %	Non-CBD Spaces	Non-CBD Vacancy	Non-CBD Vacancy %
	White Passenger Zone	279			216			63	
Yellow Commercial Zone	1,190			459			731		
Non No Parking	3,606			1,257			2,349		
Red Bus Stop	659			243			416		
Taxi Stand	33			23			10		
Handicapped Parking	58	28	48.28	31	11	35.48	27	17	62.96
Special parking (Police, Sheriff, Port. Perm.)	82	37	45.12	6	1	16.67	76	36	47.37
Motorcycle	211	95	45.02	126	40	31.75	85	55	64.71
12-Minute Meter	2	0	0.00	2	0	0.00	0	0	0.00
36-Minute Meter	29	7	24.14	29	7	24.14	0	0	0.00
1-Hour Meter	411	118	26.76	335	55	16.42	106	63	59.43
2-3 Hour Meter	2,100	574	27.33	1,021	205	20.08	1,079	369	34.20
1-Hour Diagonal Meter	23	13	56.52	0	0	0.00	23	13	56.52
2-3 Hour Diagonal Meter	963	622	64.59	4	0	0.00	959	622	64.86
2-Hour Meter, No Parking 1530-1800	19	8	42.11	19	8	42.11	0	0	0.00
Metered Parking, Total:	3,577	1,342	37.52	1,410	275	19.50	2,167	1,067	49.24
Unmetered, 2-Hour	349	48	13.75	120	17	14.17	229	31	13.54
Unmetered, Unlimited	4,838	642	13.27	257	18	7.00	4,581	624	13.62
Unmetered, Diagonal Unlimited	1,167	174	14.91	0	0	0.00	1,167	174	14.91
Unmetered, Unlimited except 600-900	18	2	11.11	9	1	11.11	9	1	11.11
Unmetered Parking, Total:	6,372	886	13.59	386	36	9.33	5,986	830	13.87
Construction Zone	756			239			517		
Total On-Street Parking	10,300	2,368	22.99	1,959	363	18.53	8,341	2,005	24.04
Structure, Non-Public	1,571	432	27.50	1,273	341	26.79	298	91	30.54
Structure, Public	6,287	1,379	21.93	5,600	1,122	20.04	687	257	37.41
Structure, Customers Only	771	396	51.36	231	114	49.35	540	282	52.22
Total Structure Parking:	8,629	2,207	25.58	7,104	1,577	22.20	1,525	630	41.31
Lot, Non-Public	7,735	2,233	28.87	1,492	337	22.59	6,243	1,896	30.37
Lot, Public	5,817	1,170	20.11	2,638	551	20.89	3,179	619	19.47
Lot, Public - Attendants	2,849	738	25.90	1,589	265	16.68	1,260	473	37.54
Lot, Customers Only	4,108	2,174	52.92	763	290	38.01	3,345	1,884	56.32
Total Surface Lot Parking:	20,509	6,315	30.79	6,482	1,443	22.26	14,027	4,872	34.73
Total Off-Street Parking:	29,138	8,522	29.25	13,586	3,020	22.23	15,552	5,502	35.38
Lot Business Equipment	389	119	30.59	34	13	38.24	355	106	29.86
TOTAL CENTRE CITY PARKING:	39,438	10,890	27.61	15,545	3,383	21.76	23,893	7,507	31.42



Centre City Pedestrian Counts

The Centre City pedestrian survey was conducted to examine pedestrian traffic in the downtown area. Survey sites are shown in Figure 12. Pedestrian counts were recorded at 15 minute intervals during the following periods:

March 5, 6, 8, 1980	7:00 AM - 9:00 AM
	11:00 AM - 1:00 PM
	4:00 PM - 6:00 PM
	9:00 PM - 10:00 PM
March 12, 13, 15, 1980	7:00 AM - 9:00 AM
	11:00 AM - 2:00 PM
	4:00 PM - 6:00 PM

Appendix V shows the results of the Centre City pedestrian survey. Pedestrian travel characteristics vary significantly between sites. Those survey sites experiencing the heaviest pedestrian traffic are:

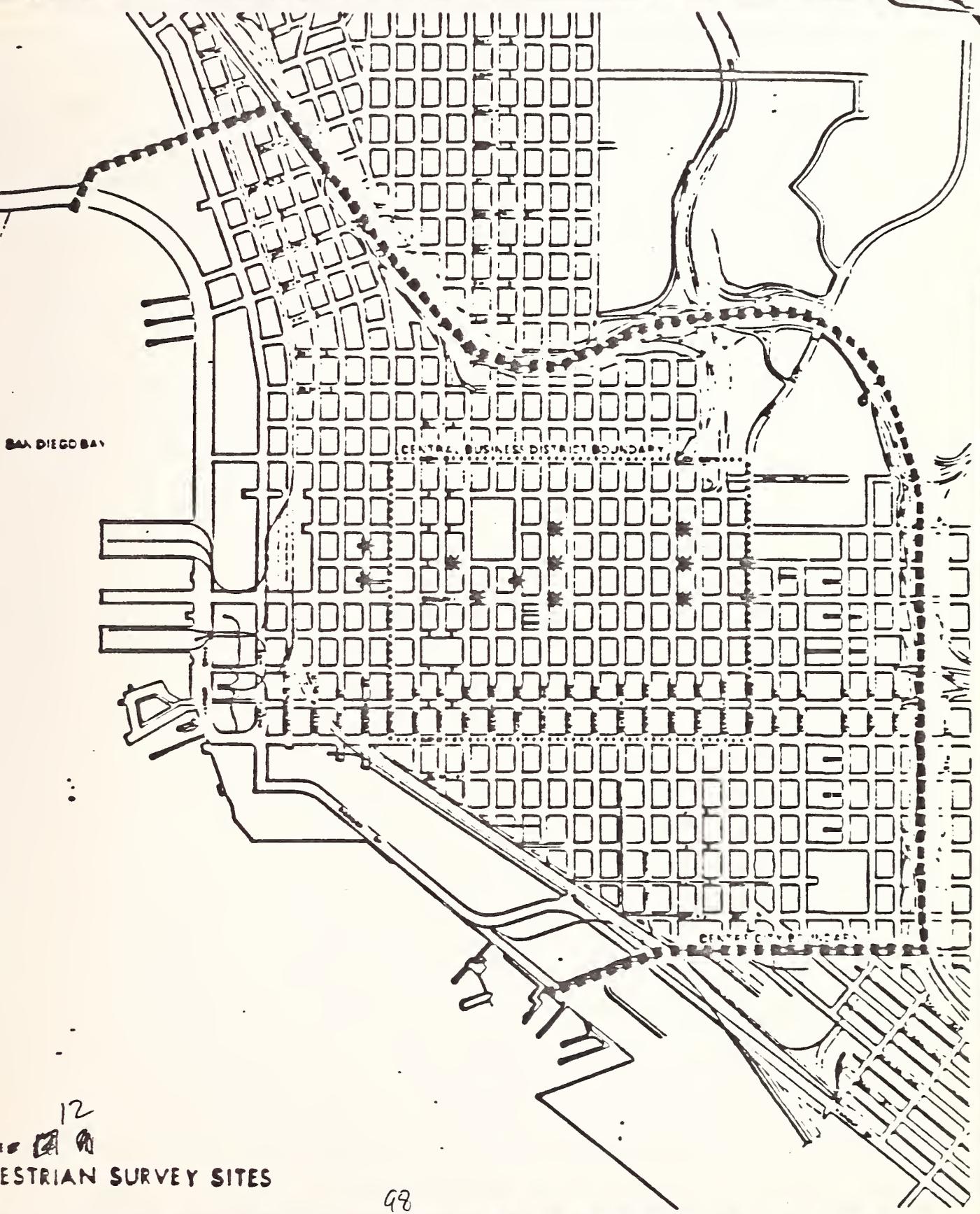
- o Broadway between 1st and 2nd Avenues
- o Broadway between 9th and 10th Avenues
- o 3rd Avenue between Broadway and C Street
- o C Street between 4th and 5th Avenues
- o B Street between 4th and 5th Avenues
- o 12th Avenue and Broadway Intersection

All but one of these sites is located in the heart of the central business district. Numerous activities, such as work, shopping, and eating establishments, are located in this area. Some sites generated very little pedestrian traffic. The existing land use and location of these sites is the primary reason for this. These sites include:

- o Columbia Street between B and C Streets
- o Columbia Street between C and Broadway

All sites record a drop in pedestrian activity on the weekend. Only the sites along Broadway and C Street between 4th and 5th Avenue recorded



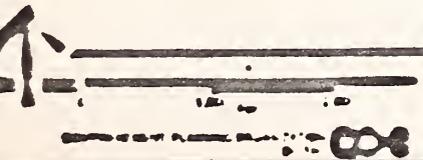


SAN DIEGO BAY

CENTRAL BUSINESS DISTRICT BOUNDARY

CENTRAL CITY BOUNDARY

12
 FIGURE 12
 PEDESTRIAN SURVEY SITES



significant volumes of weekend pedestrians. Fewer than one hundred pedestrians were recorded on Columbia Street between B and C Streets.

The peak period for pedestrian activity occurs between 11:00 AM and 2:00 PM. At some locations almost 75% of the daily pedestrian activity was recorded during this time. The evening pedestrian count tends to be lower than the morning period. The only sites with a substantial level of activity are located along Broadway.

Centre City Vehicle Occupancy

Regionally, the average vehicle occupancy is 1.29 persons per vehicle. Within the LRT study area, the average vehicle occupancy is 1.30. Table 42 shows that the average vehicle occupancy is 1.286 in Centre City.

TABLE 42

CENTRE CITY AVERAGE VEHICLE OCCUPANCY

Centre City	<u>Location</u>	<u>Direction</u>	<u>Vehicle Occupancy</u>
	Market Street, west of 21st Street	Westbound	1.386
	1-5, Second Avenue off-ramp	Southbound	1.234
	Route 94, at 16th Street	Westbound	1.307
	Route 94, on 94 to I-5	Westbound to Northbound	1.283
	Route 163, at A Street	Southbound	1.212
			<hr/>
		OVERALL	1.286

Commute Mode Data

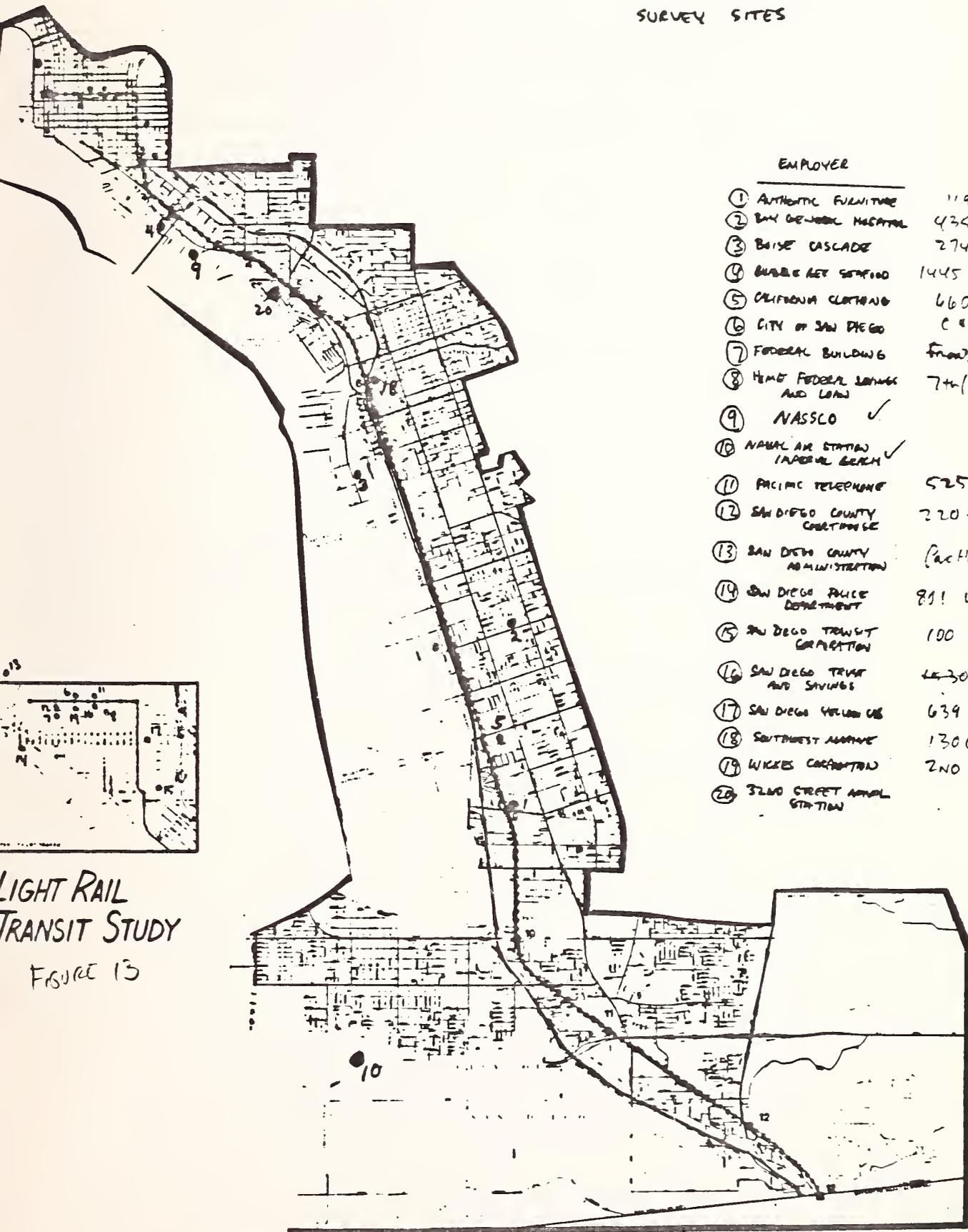
Commute mode data was acquired from the CALTRANS Commuter Computer ride-sharing program. Through Commuter Computer efforts, employers in the San Diego region are contacted and asked to participate in a program to encourage ridesharing. Participants periodically survey employees to determine the mode of travel used. Within the LRT study area, commute mode data have been acquired from 20 major employers.

Figure 13 shows how the employers are distributed throughout the study area. Ten of the employers are located in Centre City, the region's governmental and financial center. Commute mode data are shown in Table 43. The single occupant automobile is the most prominent mode of travel used in the study area. However, workers in Centre City are less likely to travel this way than in other parts of the study area. Boise Cascade, Bay General Hospital, and Southwest Marine have the highest percentage of single occupant vehicle commuters in the study area. These employers are located close to LRT stations.

Carpoolers and vanpoolers account for almost one-quarter of all commuters. Businesses with the highest percentage of personnel commuting by carpools are Pacific Telephone, Home Federal Savings and Loan, the Federal Building, and NASSCO. The location of the employer does not appear to be as significant a factor when selecting commute mode as does the type of employment.

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FIGURE 13
 COMMUTE MODE
 SURVEY SITES



EMPLOYER	
①	AUTHENTIC FURNITURE 1196 J. Street
②	BAY GENERAL HOSPITAL 435 H. C.V.
③	BOISE CASCADE 2745 Tiddler
④	BUBBLE NET SWEETING 1445 Gentry
⑤	CALIFORNIA CLOTHING 660 21st C.I.
⑥	CITY OF SAN DIEGO C 4300 CC
⑦	FEDERAL BUILDING FROMAGE CC
⑧	HAND FEDERAL SERVICES AND LOAN 7th / Broadway C.
⑨	NASSCO ✓
⑩	NAVAL AIR STATION IMPERIAL BEACH ✓
⑪	PACIFIC TELEPHONE 525 B CC
⑫	SAN DIEGO COUNTY COURTHOUSE 220 W Broadway
⑬	SAN DIEGO COUNTY ADMINISTRATION Factory & Cedar
⑭	SAN DIEGO POLICE DEPARTMENT 891 W Market
⑮	SAN DIEGO TRANSIT CORPORATION 100 16th C
⑯	SAN DIEGO TRUST AND SAVINGS 4630 Broadway
⑰	SAN DIEGO YELLOW BUS 639 13th C
⑱	SOUTHWEST AIRLINE 1300 Wilson
⑲	WIKES CORPORATION 2ND / C ✓
⑳	32ND STREET ANNUAL STATION

LIGHT RAIL
 TRANSIT STUDY

FIGURE 13



TABLE 43

STUDY AREA COMMUTE MODE
(1980)

Employer	Car		Carpool	Public Transit	Car		Motorcycle	Buspool	Vanpool	Walk	Bicycle	Other	Total
	Drive Alone	Dropped-Off			Dropped-Off	Vanpool							
Authentic Furniture	62.3	21.1	4.5	5.8	2.7	0.0	*	0.0	0.0	4.6	*	3.6	100.0
Ray General Hospital	78.5	8.2	1.6	5.1	0.9	0.4	4.6	0.4	0.7	0.0	0.7	-	100.0
Boise Cascade	83.9	12.1	0.5	1.5	0.5	0.0	0.0	0.0	1.5	0.0	*	-	100.0
Rumble Bee Seafood	68.8	18.0	1.9	4.9	1.1	2.3	*	2.3	*	*	*	3.0	100.0
California Clothing	59.8	21.1	5.4	9.4	0.1	0.2	*	0.2	*	*	*	4.0	100.0
City of San Diego	53.5	23.6	15.1	3.9	0.8	0.1	*	0.1	*	*	*	3.0	100.0
Federal Building	40.2	19.4	14.1	3.4	0.8	0.2	1.4	0.2	0.3	0.0	0.0	0.0	100.0
Home Federal Savings & Loan	46.4	35.8	10.9	3.6	0.9	0.4	*	0.4	*	*	*	2.0	100.0
NASSCO	55.7	31.2	4.0	0.0	3.6	3.4	0.7	3.4	1.4	0.0	0.0	0.0	100.0
Naval Air Station	63.5	16.0	1.7	6.6	5.0	0.0	*	0.0	*	*	*	7.2	100.0
Imperial Beach	36.9	37.7	17.2	6.5	0.3	0.3	*	0.3	*	*	*	1.1	100.0
Pacific Telephone	48.7	18.6	22.6	5.2	0.5	2.4	1.4	2.4	0.6	1.4	0.6	0.0	100.0
San Diego Co. Courthouse	67.2	20.6	7.6	3.0	0.7	0.2	0.7	0.2	0.0	0.7	0.0	0.0	100.0
San Diego Co. Adm.	74.0	12.3	6.2	2.1	4.8	0.0	*	0.0	*	*	*	1.3	100.0
San Diego Police Dept.	69.4	10.4	10.6	2.8	5.5	0.0	*	0.0	*	*	*	1.3	100.0
San Diego Transit Corp.	41.5	20.7	17.6	8.7	0.3	0.0	*	0.0	*	*	*	11.2	100.0
San Diego Trust & Savings	50.7	4.5	23.9	6.0	4.5	0.0	*	0.0	*	*	*	10.4	100.0
San Diego Yellow Cab	72.00	20.5	1.5	3.0	1.5	0.0	*	0.0	*	*	*	1.5	100.0
Southwest Marine	69.7	11.9	14.7	2.8	0.0	0.0	*	0.0	*	*	*	0.9	100.0
Wickes Corporation	67.1	21.0	2.2	3.3	3.7	0.0	*	0.0	*	*	*	2.6	100.0
32nd St. Naval Station	60.3	22.3	7.9	4.3	2.1	0.5	0.4	0.5	0.2	0.4	0.2	2.0	100.0
Total	60.3	22.3	7.9	4.3	2.1	0.5	0.4	0.5	0.2	0.4	0.2	2.0	100.0

*Walking and bicycling

CHAPTER 4

LAND USE, EMPLOYMENT AND HOUSING

CORRIDOR DESCRIPTION

The South Bay corridor contains some of the oldest development in the San Diego region. National City began to develop in the late 19th Century as a railroad terminal, about the same period in which downtown San Diego began to develop. The tidelands, or bay front area, to the west of the light rail alignment contains a significant amount of the region's manufacturing activities. Commercial and residential areas are located to the east of the trolley line.

Land Use

Land use data was collected from April 1980 aerial photographs, and is shown on Figure 14.

Table 44 summarizes land uses in the guideway corridor. Definitions for each land use can be found in Appendix VI. The primary land use is residential (31.2%) followed by agricultural (13.3%) and manufacturing (12.7%). Because the study area is skewed to take in a large part of Otay Mesa, which is largely undeveloped, agriculture accounts for a large share of the corridor land use.

Employment

A total of 20.8% of the region's civilian work force is employed in the study area. Table 45 shows that the largest concentration of civilian employees are located in the Centre City area.

TABLE 44
GUIDEWAY CORRIDOR
1980 Land Use Acreage

<u>Land Use</u>	<u>Total Acres</u>	<u>% of Total</u>
Residential	7,550.65	31.2%
. Spaced Residential-(Rural Lots 2.0 Acres or More)	298.58	
. Single Family Dwelling-Detached	5,574.20	
. Mobile Home Parks	474.18	
. Multi-Family Dwelling-(Duplex, Apt., Condominium)	1,155.49	
. Multi-Family Dwelling (Military)	42.20	
Agriculture	3,238.44	13.3%
. Intensive Crops Agriculture-(Truck Crop and Nursery Stocks)	416.78	
. Intensive Animal Agriculture-(Dairies and Chickens)	43.05	
. Field Crops-(Grain, Pasture, Fallow)	2,778.61	
Manufacturing	3,092.48	12.7%
. Heavy Industrial-(Machinery, Shipbuilding, Aircraft Engines & Parts)	407.24	
. Light Industrial-(Electrical, Fabricated Products & Food Processing)	1,540.12	
. Industrial - Extractive	1,145.12	
Federal Reservations	2,887.92	11.9%
Transportation and Utilities	2,810.01	11.6%
. Transportation	2,586.06	
. Utilities (including communications)	223.66	
Commercial	2,282.28	9.4%
. Shopping Centers	173.62	
. Strip or other retail/wholesale, professional services	2,108.66	
Public and Quasi-Public	1,078.80	4.4%
. Higher Education-(Universities, Colleges & Junior Colleges)	32.88	
. High Schools	250.19	
. Junior High Schools	169.46	
. Elementary Schools (includes Kindergartens)	295.93	
. Government Services and Centers	252.25	
. Health Care Services	14.19	
. Other-(Churches and Cemeteries)	42.70	
. Military Schools	21.20	
Water Areas	627.31	2.7%
. Reservoirs, Lakes, Bays, and Lagoons		
Wildlands	260.09	1.5%
. State Parks		
Recreational and Open Space	318.27	1.3%
. Golf Courses	28.43	
. Local Parks-(County and City)	243.63	
. Commercial Use of Open Space-(Fairgrounds, Race Tracks, Stadiums)	46.21	
TOTAL	24,276.25	100.0%

TABLE 45

CIVILIAN EMPLOYEES BY COMMUNITY
(1980)

<u>Community</u>	<u>Number</u>	<u>Percent of Total</u>	
		<u>Study Area</u>	<u>San Diego Region</u>
Centre City	61,811	46.5	9.6
Barrio Logan	26,046	19.7	4.1
National City	13,000	9.8	2.0
Chula Vista	17,719	13.3	2.8
Otay	3,351	2.5	0.5
Palm City/Nestor	2,033	1.5	0.3
San Ysidro	6,169	4.6	1.0
Imperial Beach	2,857	2.1	0.4
TOTAL:	132,986	100.0	20.8

The major categories of employment in the study area are: military, government, service industries, retail trade, and manufacturing.

Table 46 shows that 18.8% of those employed are in the military.

Local governments and retail trade each employ 12% of the workers.

The vocational breakdown varies from community to community. A list of major employers in the study area is shown in Appendix VII.

Land Values

The profile of land values in the study area is based upon land parcel appraisals gathered by the Metropolitan Transit Development Board during 1978 and 1979. A complete inventory of land values is included in Appendix VIII.

During 1978 and 1979, MTDB purchased several land parcels for the construction of the light rail transit line. Most of the land acquisitions are located around the LRT station sites. The land parcels' appraisals were used to determine the fair market value based upon property listings and sales at the time of the MTDB purchase.

TABLE 46

COMMUNITY EMPLOYMENT BY STANDARD INDUSTRIAL CLASSIFICATION
(Percent of Total)

SIC	Centre City	Barrio Logan	National City	Chula Vista	Otay	Palm City/ Nestor	San Ysidro	Imperial Beach	South Bay Corridor
Agriculture	0.6	0.7	0.4	0.4	5.4	12.0	4.5	0.8	1.0
Construction	1.5	1.8	3.0	1.8	2.9	15.5	7.6	6.3	2.3
Manufacturing: Non-Durable	3.4	4.0	4.0	0.3	27.8	6.8	0.6	0.1	3.8
Durable	3.0	18.6	6.1	57.9	4.8	0.2	0.1	0.4	11.7
Transportation, Utilities	8.5	3.2	2.7	2.0	1.0	2.8	4.5	0.5	5.2
Wholesale Trade	6.3	5.1	4.0	1.4	2.1	5.2	1.6	0.7	4.9
Retail Trade	12.9	3.5	17.7	17.9	24.5	17.0	21.3	31.3	12.1
Finance, Insurance, Real Estate	15.9	0.3	2.0	2.4	4.5	0.7	4.7	4.7	7.3
Services	23.6	6.0	9.0	8.2	10.8	12.7	11.0	16.0	14.2
Government: Federal, Civilian	5.9	9.1	1.2	0.2	0.0	0.2	16.0	2.8	5.9
Military	1.1	41.1	43.0	0.0	0.0	0.0	0.0	0.0	18.8
State	1.4	0.4	0.1	1.2	0.5	0.1	0.7	0.0	0.8
Local	15.9	6.2	6.8	6.3	15.7	26.8	27.4	36.4	12.0
TOTAL	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0

HOUSING COSTS

Residential construction activity slowed in 1980 primarily because of increases in home mortgage costs. However, data collected for Development Dimensions Research by California-World Title Companies shows that San Diego County's inventory of unsold tract housing remained relatively stable during that year. Table 47 shows that in December 1979, there were 521 unsold single-family units in the study area.

TABLE 47

UNSOLD SINGLE-FAMILY UNITS

<u>Area</u>	<u>Under Construction</u>		<u>Completed</u>		<u>Total</u>
	<u>Detached</u>	<u>Attached</u>	<u>Detached</u>	<u>Attached</u>	
National City	30	66	—	1	97
Chula Vista/Otay	112	21	6	4	143
Imperial Beach/ South San Diego	189	36	37	19	281
TOTAL:	331	123	43	24	521

Data on average sale prices for the San Diego region were gathered by the Economic Research Bureau of the Chamber of Commerce. Table 48 shows that median housing prices in 1980 range from \$39,570 in Barrio Logan to \$79,066 in Chula Vista. The regional average was \$104,205 for a single-family home. Thus, the median housing costs in the study area were at least 24% lower than the regional average.

TABLE 48

AVERAGE SALE PRICE (Year to Date, June 1980)

Barrio Logan	\$ 39,570
National City	56,862
Chula Vista	79,066
Otay	61,497
South San Diego	65,888
Imperial Beach	71,454
San Diego Region	104,205

COMMUNITY DESCRIPTION

The characteristics of each community in the study area vary significantly. The remainder of this chapter presents data on each community separately.

Barrio Logan (City of San Diego)

Barrio Logan is a highly industrial area located to the south of Centre City along San Diego Bay. The most prominent characterization of Barrio Logan is its Mexican-American community together with the waterfront industrial complex employing 50,000 people. Barrio Logan is, also, home to the 32nd Street Naval Base. Pockets of commercial and high density residential zones are scattered throughout the area.

TABLE 49

BARRIO LOGAN

Area Size:	2,560 acres
	4.0 square miles
1980 Population:	23,000
Population Density:	24.9 persons/acre
Household Size:	3.0 persons
Housing Units:	5,832
	68% single-family
	% multi-family
	% mobile home
Gross Residential Density:	6.7 units/acre
Total Employment:	50,000
Military	41.0%
Manufacturing (durables)	18.6%
Federal Govt. (civilian)	9.1%
Major Employers:	
32nd Street Naval Base	
Campbell Industries	
Health Services	
Kelco Company	
National Steel and Shipbuilding Company	
Ocean Fisheries	
Plant Maintenance	

San Diego Marine Construction Company
 Sun Harbor Industries
 Triple A Machine Shop
 Van Camps Seafood Company
 Westgate Terminals

<u>Land Use</u>	<u>Acres</u>	<u>Percent</u>
Single-Family Residential	590.4	23.1
Multi-Family Residential	295.2	11.5
Shopping Centers	0.2	-
Strip Commercial	421.3	16.5
Heavy Industry	144.0	5.6
Light Industry	348.9	13.6
Higher Education, Colleges & Universities	30.7	1.2
High Schools	0.8	-
Junior High Schools	20.8	0.8
Elementary Schools	34.2	1.3
Government Services	88.3	3.4
Churches, Cemeteries	11.9	0.5
Golf Courses	23.9	1.0
Local Parks	40.2	1.6
Transportation	315.0	12.3
Utilities	52.5	2.0
Military Reservations	87.9	3.5
Military Schools	16.2	0.6
Military Residential	39.3	1.5
TOTAL:	2,561.7	100.0

National City

National City is located between Barrio Logan and the Sweetwater River. Approximately two-thirds of the western section of the City is included in the study area. The community is heavily influenced by its location along San Diego Bay. Approximately 300 acres with 8,300 feet of bay frontage are under the jurisdiction of the U.S. Navy.

Most of the area west of the San Diego Trolley line is comprised of heavy and light industrial uses. This is the largest lumber receiving area in the San Diego region. The area directly east of the guideway system is a mix of older residential and light industrial use. Much of this area is part of the National City redevelopment area. Currently, new industrial parks and commercial establishments are planned or being built in the area.

TABLE 50
NATIONAL CITY

Area Size:	2,435 acres
	_____ square miles
1980 Population:	22,500 (study area only)
Population Density:	30.7 persons/acre
Household Size:	2.8 persons
Housing Units:	7,355
	____% single-family
	55% multi-family
	____% mobile home
Gross Residential Density:	8.8 units/acre
Total Employment:	
Military	43.0%
Retail Trade	17.7%
Manufacturing	10.1%
Service	9.0%

Major Employers:

Alfred M. Lewis
Diamond Cab Company
E.J. Christman Park
John Hancock Furniture
Montgomery Wards
Paradise Valley Hospital
Pepper Industries
San Diego County Welfare Department
Southport and Southland Industrial Parks
Western Lumber Company

<u>Land Use</u>	<u>Acres</u>	<u>Percent</u>
Single-Family Residential	655.8	27.0
Mobile Home Parks	9.6	0.4
Multi-Family Residential	73.2	3.0
Shopping Centers	39.0	1.6
Strip Commercial	289.7	11.9
Heavy Industry	233.9	9.6
Light Industry	596.7	24.5
Extractive Industry	117.8	4.8
High Schools	27.5	1.1
Junior High Schools	12.3	0.5
Elementary Schools	22.3	0.9
Government Services	17.7	0.7
Local Parks	23.3	1.0
Commercial Use of Open Space	12.0	0.5
Intensive Crop Agriculture	9.9	0.4
Transportation	109.0	4.5

Military Reservations	132.5	5.4
Military Residential	0.1	-
Water Areas	52.8	2.2
TOTAL:	2,435.1	100.0

Chula Vista

Chula Vista is located along San Diego Bay south of the Sweetwater River and 10 miles north of the International Border. Chula Vista is the second largest city in the San Diego region. The study area includes the section of town extending from the Bay to approximately one mile east of the San Diego Trolley line. The area east of the guideway system is mixed residential and commercial use. Chula Vista Shopping Center is one-half mile from the H Street Station. The residential areas are a mix of medium density single-family developments and higher density areas of townhouses, condominiums and garden apartments. Several mobile home parks are located within the study area. Rohr Corporation, the City's major employer, and other major manufacturers are located in the Tidelands area.

TABLE 51

CHULA VISTA

Area Size:	1,060 acres (or 2,397.5?) square miles
1980 Population:	23,195
Population Density:	22 persons/acre
Household Size:	2.2 persons
Housing Units:	10,386
	58% single-family
	___% multi-family
	___% mobile home
Gross Residential Density:	9.8 units/acre
Total Employment:	
Manufacturing (durables)	58.0%
Retail Trade	17.9%
Services	8.2%

Major Employers:

Allstate Insurance Company
 Auto Club of Southern California
 Bay General Hospital
 Broadway Department Store
 City of Chula Vista
 Community Hospital of Chula Vista
 Rohr Industries
 San Diego Gas and Electric
 Sears, Roebuck Company
 U.S. Post Office

<u>Land Use</u>	<u>Acres</u>	<u>Percent</u>
Single-Family Residential	692.1	28.9
Mobile Home Parks	93.6	3.9
Multi-Family Residential	269.9	11.3
Shopping Centers	68.5	2.9
Strip Commercial	325.2	13.6
Light Industry	234.7	9.8
Extractive Industry	32.3	1.4
High Schools	39.4	1.6
Junior High Schools	16.3	0.7
Elementary Schools	26.2	1.1
Government Services	25.0	1.0
Health Care Facilities	14.0	0.6
Local Parks	31.4	1.3
Commercial Use of Open Space	5.8	0.2
Intensive Crop Agriculture	117.1	4.8
Intensive Animal Agriculture	10.3	0.4
Transportation	89.5	3.7
Utilities	83.4	3.5
Water	222.8	9.3
TOTAL:	2,397.5	100.0

Otay (Unincorporated)

Otay is the unincorporated area south of Chula Vista and north of the Otay River. The area is evenly divided between vacant and developed land. Development is characterized by a mix of both commercial/industrial and residential uses. Residential uses consist primarily of older one-story single-family units. Industrial uses vary widely, but most establishments are small and utilize open storage.

TABLE 52

OTAY

Area Size:	2,248 acres
	square miles
1980 Population:	18,718
Population Density:	16.3 persons/acre
Household Size:	2.5 persons
Housing Units:	3,385
	59% single-family
	% multi-family
	% mobile home
Gross Residential Density:	6.5 units/acre
Total Employment:	
Manufacturing	
(non-durables)	27.8%
Retail	24.0%
Local Government	15.7%
Services	10.8%

Major Employers:

California Clothes (PATNER)
 Crestwood Manufacturing
 Flo-Nor
 Pacific Telephone and Telegraph
 Star News Publishing Company

<u>Land Use</u>	<u>Acres</u>	<u>Percent</u>
Spaced Residential	31.1	1.4
Single-Family Residential	795.5	35.4
Mobile Home Parks	226.0	10.1
Multi-Family Residential	94.7	4.2
Shopping Centers	57.9	2.6
Strip Commercial	151.4	6.7
Light Industry	169.2	7.5
Extractive Industry	76.6	3.4
High Schools	5.7	0.3
Junior High Schools	23.4	1.0
Elementary schools	43.7	1.9
Churches, Cemeteries	6.0	0.3
Golf Courses	159.7	7.1
Intensive Crop Agriculture	85.3	3.8
Intensive Animal Agriculture	0.4	-
Field Crops	193.0	8.6
Transportation	38.7	1.7
Utilities	74.3	3.3
Water Areas	15.0	0.7
TOTAL:	2,247.6	100.0



Palm City/Nestor (City of San Diego)

Palm City/Nestor is located between San Diego Bay on the north, the Tia Juana River Valley on the south, Imperial Beach on the west, and Interstate 805 on the east. The area is mixed open space, agriculture, residential, commercial, and light industrial use. Recently, the area has been developing rapidly. Existing housing is medium density mixed with convenience commercial developments. New units are detached single-family tracts and low density townhouses and condominiums.

TABLE 53

PALM CITY/NESTOR

Area Size:	4,530 acres
	_____ square miles
1980 Population:	24,000
Population Density:	23.0 persons/acre
Household Size:	3.1 persons
Housing Units:	6,328
	75% single-family
	____% multi-family
	____% mobile homes
Gross Residential Density:	6.6 units/acre
Total Employment:	
Local Government	26.8%
Retail	17.0%
Construction	15.5%
Agriculture	12.0%
Major Employers:	

<u>Land Use</u>	<u>Acres</u>	<u>Percent</u>
Spaced Residential	107.1	2.3
Single-Family Residential	700.3	15.5
Mobile Home Parks	138.7	3.1
Multi-Family Residential	95.9	2.1
Strip Commercial	71.0	1.6
Light Industry	26.0	0.5
Extractive Industry	892.3	19.7
High Schools	16.9	0.3
Junior High Schools	75.9	1.7
Elementary Schools	37.9	0.8
Churches, Cemeteries	3.5	0.1
Local Parks	27.1	0.6

Intensive Crop Agriculture	167.5	3.7
Intensive Animal Agriculture	20.4	0.5
Field Crops	1,748.0	38.6
Transportation	200.4	4.4
Utilities	7.6	0.2
State-Owned Wildlands	116.7	2.6
Military Reservations	17.1	0.4
Military Residential	1.1	-
Water Areas	58.1	1.3
TOTAL:	4,529.5	100.0

San Ysidro (City of San Diego)

San Ysidro is located across the border from Tijuana, B.C., Mexico. Currently, the community is a mix of an older border community, new suburbs and agricultural lands. The old town is comprised of small, older single-family houses, stores and businesses. The new development is scattered throughout the community. Light industries are located along the SD&AE Railroad and Interstates 805 and 5. Trucking, warehouses, offices, and imports are some of the industries located here. Visitor-serving facilities are located near the border crossing. The Otay Mesa area, east of San Ysidro, is primarily open spaces and agricultural. Brown Field Municipal Airport and related industries are located in this area.

TABLE 54

SAN YSIDRO

Area Size:	10,860 acres
	square miles
1980 Population:	33,824
Population Density:	24.0 persons/acre
Household Size:	4.0 persons
Housing Units:	7,000
	75% single-family
	% multi-family
	% mobile homes
Gross residential Density	5.7 units/acre

Total Employment:	
Local Government	27.4%
Retail Trade	21.3%
Federal (civilian)	16.0%
Services	11.0%

Major Employers:

<u>Land Use</u>	<u>Acres</u>	<u>Percent</u>
Spaced Residential	210.9	1.9
Single-Family Residential	970.6	9.0
Mobile Home Parks	31.7	0.3
Multi-Family Residential	193.8	1.8
Shopping Centers	6.8	0.1
Strip Commercial	122.9	1.1
Light Industry	36.8	0.3
Extractive Industry	27.7	0.3
High Schools	43.3	0.4
Junior High Schools	33.6	0.3
Elementary Schools	101.0	0.9
Government Services	14.5	0.1
Churches, Cemeteries	3.0	-
Local Parks	89.8	0.8
Commercial Use of Open Space	156.0	1.4
Intensive Crop Agriculture	74.5	0.7
Intensive Animal Agriculture	8.3	0.1
Field Crops	6,622.5	61.0
Transportation	1,107.0	10.2
Federal Wildlands	777.7	7.2
Military Reservations	227.9	2.1
TOTAL:	10,860.3	100.0

Imperial Beach

Imperial Beach is located on the Pacific Ocean and is not directly served by the San Diego Trolley. The city is primarily residential. The Imperial Beach Naval Air Station is located along the Tia Juana Estuary.

TABLE 55

IMPERIAL BEACH

Area Size:	2,860 acres
	square miles
1980 Population:	22,689

Population Density:	24.4 persons/acre
Household Size:	2.9 persons
Housing Units:	7,200
	57.6% single-family
	— % multi-family
	— % mobile homes
Gross Residential Density	7.0 units/acre
Total Employment:	
Local Government	36.4%
Retail	31.3%
Services	16.0%
Military	— %

Major Employers:

<u>Land Use</u>	<u>Acres</u>	<u>Percent</u>
Single-Family Residential	788.8	27.6
Mobile Home Parks	13.8	0.4
Multi-Family Residential	121.7	4.3
Shopping Centers	4.9	0.2
Strip Commercial	97.1	3.4
Heavy Industry	0.4	-
Light Industry	381.7	13.3
Extractive Industry	12.4	0.4
High Schools	55.1	2.0
Elementary Schools	28.3	1.0
Government Services	16.4	0.6
Churches, Cemeteries	3.4	0.1
Local Parks	37.6	1.3
Commercial Use of Open Space	1.3	0.1
Field Crops	23.0	0.8
Transportation	324.3	11.3
State-Owned Wildlands	275.6	9.6
Military Reservations	302.5	10.6
Military Residential	7.4	0.3
Water Areas	364.1	12.7
TOTAL:	2,859.8	100.0

Centre City (City of San Diego)

Centre City San Diego is located along the eastern shores of the San Diego Bay, at the north end of the light rail corridor. The area is the hub of financial and government activities in the San Diego region. Currently, numerous redevelopment projects are under construction or planned for

Centre City. The projects include new residential development, office buildings, hotels, retail centers, entertainment places, and transportation projects.

TABLE 56

CENTRE CITY

Area Size:	945 acres
	_____ square miles
1980 Population:	9,266
Population Density:	57 persons/acre
Household Size:	1.7 persons
Housing Units	4,994
	6.2% single-family
	93.8% multi-family
	0.0% mobile homes
Gross Residential Density:	30.5 units/acre
Total Employment:	61,811
Agriculture	0.6%
Construction	1.5%
Manufacturing	
Non-Durable	3.4%
Durable	3.0%
Transportation,	
Utilities	8.5%
Wholesale Trade	6.3%
Retail Trade	12.9%
Finance, Insurance,	
Real Estate	15.9%
Services	23.6%
Government	
Federal Civilian	5.9%
Military	1.1%
State	1.4%
Local	15.9%

<u>Land Use</u>	<u>Acres</u>	<u>Percent</u>
Single-Family Residential	29.8	3.3
Multi-Family Residential	13.5	1.5
Strip Commercial	570.7	62.4
Heavy Industry	6.2	0.7
Light Industry	40.0	4.4
Higher Education, Colleges, Universities	30.7	3.4
High Schools	0.8	0.1
Government Services	76.2	8.3
Churches, Cemeteries	13.9	1.5
Local Parks	2.8	0.3
Transportation	90.2	9.8
Utilities	9.0	1.0
Military Reservations	30.8	3.3
TOTAL:	914.6	100.0

Centre City has more than 40 buildings with over 75,000 square feet of floor space. These buildings are used as private offices, governmental centers, hotels, and residential complexes. These major buildings are shown in Table 57 and Figure 15.

TABLE 57
MAJOR ACTIVITY CENTERS

Figure Number	Building	Approximate Square Feet	Size Floors	Parking Spaces
<u>Private Offices:</u>				
1	Bank of America	181,000	14	370
2	Bank of California Plaza	280,000	18	400
3	California First Bank	210,000	25	370
4	Central Federal Tower	330,000	22	320
5	Centre City Building	81,000	14	-
6	Chamber Building	142,000	23	283
7	Crocker Bank	214,000	25	384
8	Fifth and Broadway Building	85,000	12	-
9	Fox Building	75,000	4	200
10	Harcourt, brace, Jovanovich	92,000	14	243
11	Home Tower	150,000	18	675
12	San Diego Gas & Electric	325,000	21	N/A
13	San Diego Federal Building	300,000	24	N/A
14	San Diego Trust & Savings	127,000	15	-
15	Security Pacific Plaza	233,000	18	427
16	Spreckles Building	90,000	6	143
17	Title Insurance and Trust	76,000	3	N/A
18	Union Bank Building	375,000		518
	TOTAL:	3,366,000 sq.ft.		4,333 spaces
<u>Government Buildings:</u>				
<u>City of San Diego</u>				
19	Civic Theatre	112,000	1	
20	Convention Facility	170,000	2	
21	City Administration Building	180,000	14	
22	City Operations Building	200,000	5	
23	City Parking/Exhibition Bldg.	75,000	11	1,000
	TOTAL:	737,000 sq.ft.		1,000 spaces
<u>County of San Diego</u>				
24	County Administration Building			

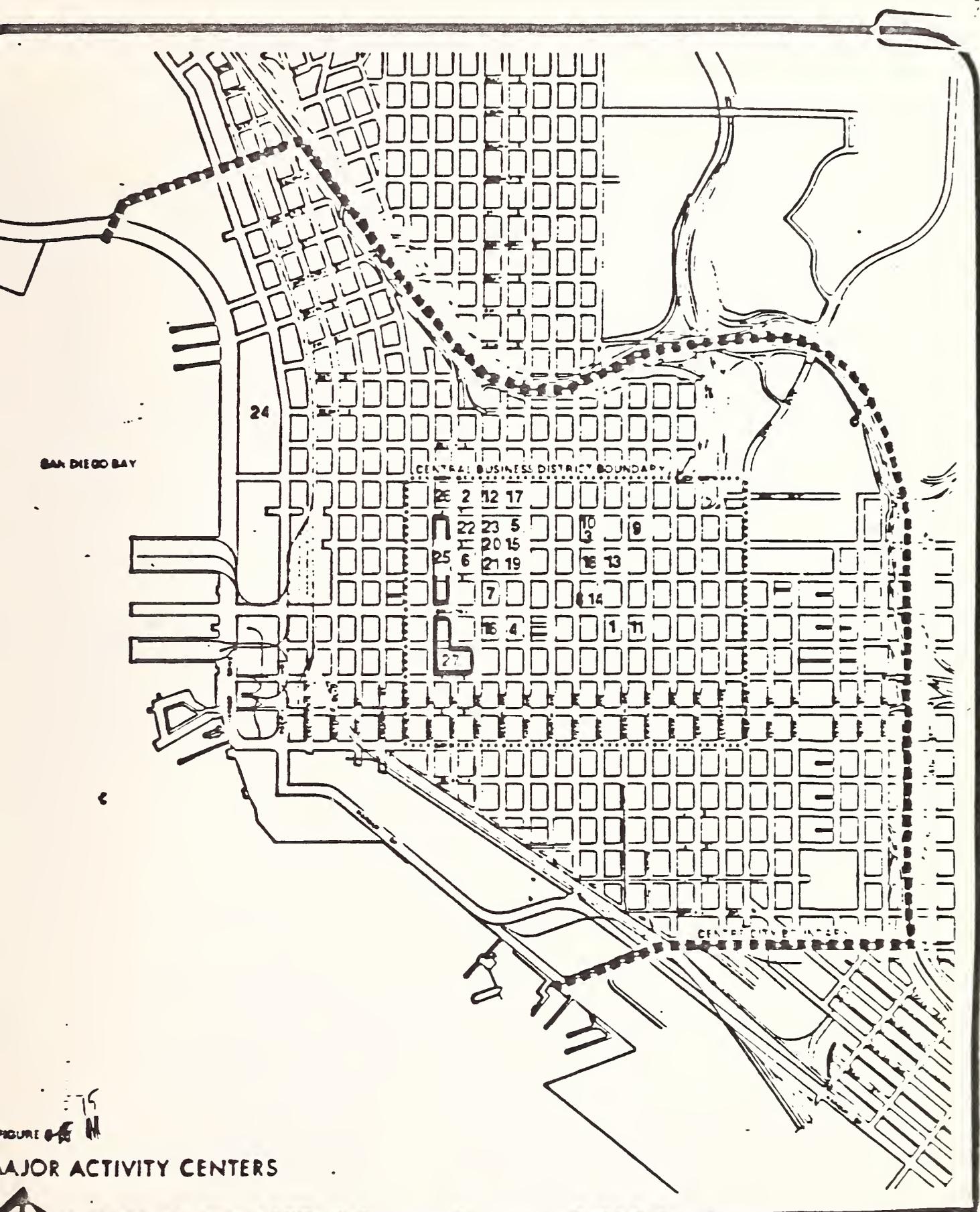
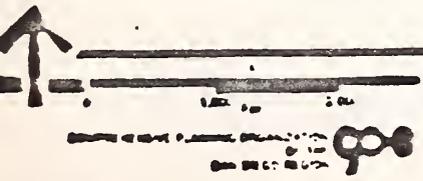


FIGURE 1-15
MAJOR ACTIVITY CENTERS



centre city



25	County Court House Annex	85,000	5
TOTAL:			
<u>State of California</u>			
26	State Office Building	140,000	6
<u>Federal</u>			
27	Federal Building	840,000	

The 18 largest private office buildings supply the region with 2,266,000 square feet of leasable office space. According to a report prepared for the Centre City Development Corporation, Centre City experienced a total absorption rate of about 250,000 square feet of office space in 1977.* Downtown San Diego's vacancy rate dropped from 20% in ____ to 9.3% in 1980.

Major hotels in Centre City provide more than 1,800 rooms; 14% of the visitor accommodations in the San Diego region. Many hotels in Centre City are used as housing by retired people living on a fixed income. Table 58 shows several of the major visitor-serving and residential buildings in Centre City.

TABLE 58

CENTRE CITY RESIDENTIAL AND HOTEL BUILDINGS

<u>Building</u>	<u>Units/Rooms</u>
Cortez Hill	160
Luther Tower	202
San Diego Square	150
Westminister Tower	156
Golden West Hotel	325
Grant Hotel	300
St. James Hotel	141
Hotel Churchill	92
Pickwick Hotel	250
Southern Hotel	86

*Gladstone Associates, Analysis of Private Land Use Markets, San Diego Convention Center Project, Los Angeles, June 1978.

Senator Hotel	54
Thompson Hotel	92
William Penn Hotel	68
Workman's Hotel	60
Yale/Keystone Hotels	120
Executive Hotel	102
Holiday Inn (Wharfside)	627
Holiday Inn (CBD)	206
Westgate Hotel	223
San Diego Hotel	354

Table 59 describes the residential characteristics in Centre City.

Table 61 shows the major employers in Centre City. As shown, there are three businesses each employing more than 3,000 employees in Centre City. Pacific Telephone and Telegraph employees are stationed at four sites in the Centre City area. San Diego Gas and Electric and Solar employ more than 3,000 workers at locations shown in Figure 16. Between 1,000 and 2,999 persons are employed by six employers, including various city and county departments.

Centre City Lease Rates

A survey of the Economic Research Bureau shows that office space in Centre City is dwindling. In May 1979, only 9.3% of the total office space surveyed was available for lease. The average monthly lease rate for this office space was 72 cents per square foot and the median rate was 66 cents. Table 62 shows the downtown office buildings surveyed and their rates.



TABLE 59

CENTRE CITY RESIDENTIAL CHARACTERISTICS

Centre City Census Tract	Occupied Housing Units			Total	Household Population	Household Size	Residential Acreage	Gross Residential Density Units/Acre
	Single Family Number	Single Family %	Multiple Family Number					
52.00	63	5.3	1,129	94.7	1,192	1.3	36 acres	33.0
53.00	10	0.5	1,833	99.5	1,843	1.0	47 acres	39.2
54.00	9	2.5	350	97.5	359	1.1	10 acres	36.4
56.00	77	6.6	1,098	93.4	1,175	1.4	38 acres	38.9
58.00	151	35.5	274	64.5	425	2.1	33 acres	12.8
TOTAL	310	6.2	4,684	93.8	4,994	1.7	164 acres	30.5



TABLE 61

MAJOR CENTRE CITY EMPLOYERS
(Including Map Identification Number)

3,000 or More Employees

Pacific Telephone & Telegraph (4 locations: 1a, 1b, 1c, 1d)
San Diego Gas & Electric (2 locations: 2a, 2b)
Solar (3)

1,000 to 2,999 Employees

Ratner Clothing Corporation (4)
San Diego City (2 locations: 5a, 5b)
San Diego City College (6)
San Diego Police Department (7)
San Diego County (8)
San Diego County Courthouse (9)

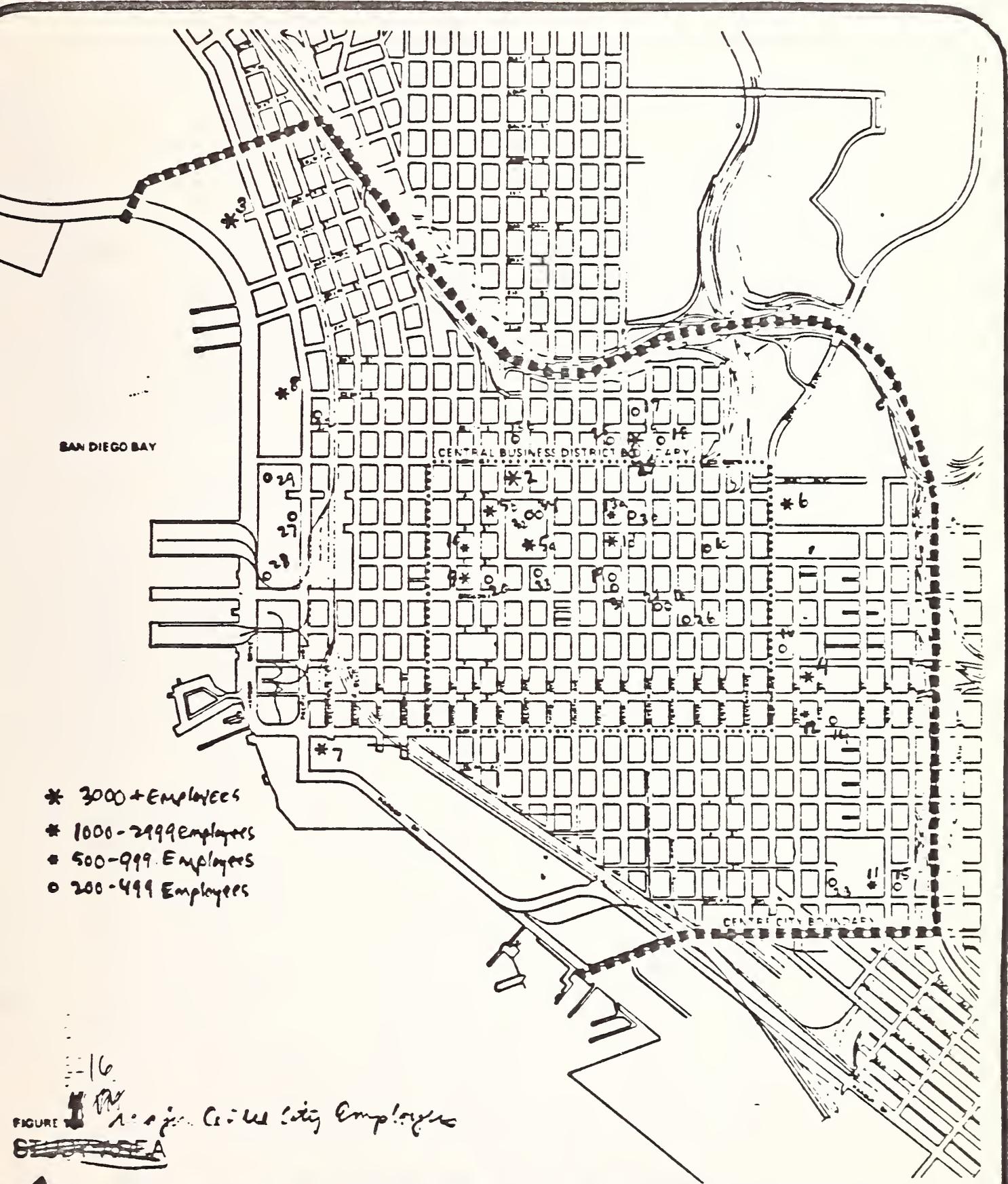
500 to 999 Employees

San Diego County Sheriff Department (10)
San Diego Transit Corporation (11)
San Diego Yellow Cabs, Incorporated (12)
Southern California 1st National Bank (2 locations: 13a, 13b)

200 to 499 Employees

ADT - Sterling Security Service (14)
California Laundry and Dry Cleaners (15)
Centre City Adult Center (16)
EDS Service Corporation (17)
El Cortez Hotel (18)
F.W. Woolworth Company (19)
Greyhound Lines, Incorporated (20)
Home Federal Savings & Loan (21)
International Motel (22)
ITT Continental Baking Company (23)
Kelly Labor Division (24)
KFMB Radio and T.V. (25)
Central Library (26)
Naval Facilities (27)
Pacific Maritime Association of California (28)
Royal Inn at the Wharf (29)
San Diego Federal Savings & Loan (30)
San Diego Trust and Savings (31)
Security Pacific National Bank (32)
Westgate Plaza (33)
Xerox Corporation (34)





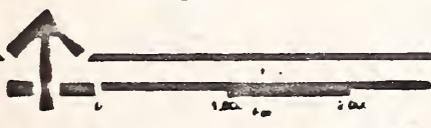
SAN DIEGO BAY

CENTRAL BUSINESS DISTRICT BOUNDARY

CENTRE CITY BOUNDARY

- * 3000+ Employees
- * 1000-2999 Employees
- * 500-999 Employees
- o 200-499 Employees

16
 FIGURE 1-16
 A map of Centre City Employees
 SOURCE: SEA



COURTESY OF P. HANCOCK, DIRECTOR OF THE
 SAN DIEGO REGIONAL

centre city

TABLE 62
CENTRE CITY LEASE RATES
February, 1981

Name or Address	Year Built	# of Floors	Net Rentable Sq.Ft.	% Leased	Lease Rates Sq. Ft. per Mo.
Bank of America Bldg.	1927	16	181,973	93%	.54- .85
Bank of California Plaza	1971	18	312,400	98%	.98-1.20
California Theatre Bldg.	1927	8	28,000	(NA, renovation)	
California First Bank Bldg.	1966	24	210,000	100%	.89-1.07
Central Federal Tower	1975	22	287,108	73%	.86-1.57
Centre City Bldg.	1927	14	81,208	89%	.60- .70
Chamber Building	1963	23	145,000	88%	.78- .98
Dunn Bldg.	(NA)	2	15,000	70%	.50- .55
Fifth & Ash Bldg. (1400 Fifth)	1958	4	24,000	98%	.56- .60
Fifth Ave. Financial Bldg.	1965	12	119,700	97%	.95-1.05
Fifth & Broadway Bldg.	1910	12	85,000	80%	.55- .60
Fox Bldg.	1929	5	75,000	95%	.60- .75
Gaslamp Plaza/Jeweler's Exchg.	1913	12	38,000	88%	.36- .46
Granger Bldg.	1904	5	24,000	98%	.20- .25
Harcourt, Brace Bldg.	1918	12	104,000	75%	.55- .70
Home Tower Bldg.	1961	18	138,000	100%	.75- .85
Imperial Savings Bldg.	1969	3	29,000	100%	.60- .72
Independent Bldg.	1911	4	28,000	97%	.35- .55
John Hancock Bldg.	1972	3	18,600	100%	.70- .78
Keating Bldg.	1890	5	20,000	85%	.20- .80
Lloyds Bank	1961	4	32,000	74%	.65
Milford Bldg.	1976	2	12,000	(NA)	.68
San Diego Federal Savings	1974	24	300,000	97%	.98-1.30
San Diego Trust & Savings	1928	14	126,000	100%	.50- .60
Scripps Bldg.	1907	6	25,800	86%	.45- .60
Security Pacific Plaza	1972	18	233,200	96%	.90-1.24
Sixth & Broadway Bldg.	1924	4	40,000	(NA, renovation)	
Spreckels Bldg.	1912	6	90,759	38%	.39- .80
State & Beech Bldg.	1971	2	23,000	63%	.70- .76
Sunset Bldg.	1920	3	26,000	75%	.50- .65
Title Insurance Bldg.	1959	3	76,000	88%	.65- .75
Travelator Bldg.	1961	4	30,000	90%	.50- .65
Union Bank Bldg.	1969	22	375,000	99%	(NA)
Wickes Bldg.	1963	25	214,000	92%	.85-1.35
111 Elm Street	1970	4	25,000	100%	.85- .90
620 "C" Street Bldg.	1929	6	68,860	83%	.65- .95
635 "C" Street Bldg.	1925	5	50,050	60%	.50- .65
861 Sixth Avenue Bldg.	1907	8	65,470	100%	.50 up
1400 Sixth Avenue Bldg.	1960	5	33,000	100%	.76

Source: Economic Research Board, San Diego Economic Bulletin, July 1979.

CHAPTER 5

SOCIOECONOMIC PROFILE

STUDY AREA CHARACTERISTICS

The socioeconomic characteristics of the South Bay corridor are significantly different than the region as a whole. Because of the strong military presence, the population in the study area is younger and contains a larger percentage of males than the region as a whole. Both income and the cost of housing in the corridor are lower than in the rest of the region.

Sex and Age Distribution

Females comprise 50.6% of the total population of San Diego County, whereas males account for 50.8% of the residents of the LRT study area. The distribution varies among communities.

Residents of the study area tend to be younger than the population of San Diego County. More than 50% of the study area is under 25 years old, as shown in Table 63. Within San Diego County, less than 40% of the residents fall into this age bracket.

TABLE 63

AGE DISTRIBUTION

	Age in Years (in total percentages)					
	<u>0-14</u>	<u>15-24</u>	<u>25-34</u>	<u>35-54</u>	<u>55-64</u>	<u>65 or Over</u>
Study Area	28.9	21.2	15.6	19.9	6.8	7.6
Region	22.4	17.4	18.9	22.1	8.8	10.4

Transportation-Handicapped Persons

In 1980, it is estimated that nearly 8,000 persons in the study area were

unable to use conventional transit or had severe difficulties using transit. As shown in Table 64, the study area is estimated to have a smaller percentage of transportation-handicapped residents than the region as a whole.

TABLE 64

TRANSPORTATION-HANDICAPPED PERSONS
(1980 Estimates)

	<u>Under 15</u>	<u>16-64</u>	<u>65 or Over</u>	<u>Total Wheelchair Users</u>	
Study Area	800	3,900	3,000	7,700	1,000
% of Region	12.0	9.0	7.2	8.4	8.4
Region	6,700	43,800	41,600	92,100	12,200

Household Income

Data on household income are based on Zones for Analysis and Planning. (The Zones extend beyond the study area limits in Barrio Logan, National City and Chula Vista.) Table 66 shows that the median household income was \$14,129 for the San Diego region in 1980. Within the LRT study area, no community has a median household income as high as that of the region. Centre City and Barrio Logan report the lowest median household incomes in the light rail corridor.

TABLE 66

MEDIAN HOUSEHOLD INCOME
(1980)

<u>Jurisdiction</u>	<u>Income</u>
San Diego Region	\$14,129
Centre City	4,102
Barrio Logan	6,515
National City	9,883
Chula Vista	11,623
Otay	11,253
Palm City/Nestor	13,535
San Ysidro	6,548
Imperial Beach	11,263



Racial and Ethnic Background

A total of 81.3% of the residents of San Diego County are White, compared to only 64% of the study area population. Table 67 shows that almost one-fifth of the residents of the study area identified themselves as "Other." An additional 9.3% reported an Asian background. Hispanics comprise 41.3% of the total population in the study area, compared to less than 15% regionwide. Racial and ethnic distribution varies considerably among the study area communities.

TABLE 67

RACIAL DISTRIBUTION (In Total Percentage)

	<u>LRT Study Area</u>	<u>San Diego County</u>
White	64.0	81.3
other	19.6	7.5
Asian	9.3	4.8
Black	6.5	5.6
Indian	0.6	0.8
Hispanic Ethnicity	41.3	14.8

COMMUNITY SOCIOECONOMIC PROFILE

Tables 86 through 75 catalogue the socioeconomic data of the study area by community. Included in each are data on population, average household size, sex, age, median household income, and transportation handicap.





TABLE 69
 NATIONAL CITY
 SOCIOECONOMIC PROFILE
 (1980)

Population: 22,675 Average Household Size: 3.1

Sex: Female 50.0% Male 50.0%

Age in Years (in total percentage):

0-14	28.5%
15-24	25.3%
25-34	17.2%
35-54	15.5%
55-64	6.1%
65 or over	7.4%

Median Household Income: \$9,883

Income Distribution (in total percentage)

\$1,000- 2,999	\$3,000- 4,999	\$5,000- 6,999	\$7,000- 9,999	\$10,000- 14,999	\$15,000- 19,999	\$20,000- 24,999	\$25,000- 39,999	\$40,000+
5.1%	12.6%	14.4%	18.7%	20.6%	11.4%	6.5%	7.6%	3.1%

Racial Distribution (in total percentage):

<u>White</u>	<u>Asian</u>	<u>Black</u>	<u>Indian</u>	<u>Other</u>	<u>Hispanic Ethnicity</u>
55.1%	11.4%	7.7%	0.7%	25.1%	47.7%

Transportation-Handicapped Persons: (estimates)

<u>Under 15</u>	<u>16-64</u>	<u>65 or Over</u>	<u>Total</u>	<u>Wheelchair Users</u>
100	510	360	970	130



TABLE 70
 CHULA VISTA
 SOCIOECONOMIC PROFILE
 (1980)

Population: 23,195 Average Household Size: 2.4

Sex: Female 50.8% Male 49.2%

Age in Years (in total percentage):

0-14	18.8%
15-24	22.7%
25-34	16.2%
35-54	20.1%
55-64	11.0%
65 or over	11.2%

Median Household Income: \$11,623

Income Distribution (in total percentage)

\$1,000- 2,999	\$3,000- 4,999	\$5,000- 6,999	\$7,000- 9,999	\$10,000- 14,999	\$15,000- 19,999	\$20,000- 24,999	\$25,000- 39,999	\$40,000+
3.9%	10.0%	12.2%	17.2%	20.9%	12.8%	7.8%	10.1%	5.1%

Racial Distribution (in total percentage):

<u>White</u>	<u>Asian</u>	<u>Black</u>	<u>Indian</u>	<u>Other</u>	<u>Hispanic Ethnicity</u>
82.5%	4.0%	2.3%	0.5%	10.7%	26.0%

Transportation-Handicapped Persons: (estimates)

<u>Under 15</u>	<u>16-64</u>	<u>65 or Over</u>	<u>Total</u>	<u>Wheelchair Users</u>
70	570	560	1,200	160



TABLE 72

PALM CITY/NESTOR
SOCIOECONOMIC PROFILE
(1980)

Population: 24,090 Average Household Size: 3.9

Sex: Female 50.1% Male 49.9%

Age in Years (in total percentage):

0-14	33.2%
15-24	19.5%
25-34	16.7%
35-54	22.4%
55-64	4.5%
65 or over	3.7%

Median Household Income: \$13,535

Income Distribution (in total percentage)

\$1,000- 2,999	\$3,000- 4,999	\$5,000- 6,999	\$7,000- 9,999	\$10,000- 14,999	\$15,000- 19,999	\$20,000- 24,999	\$25,000- 39,999	\$40,000+
1.2%	5.0%	8.6%	16.1%	25.1%	17.3%	10.6%	12.1%	4.0%

Racial Distribution (in total percentage):

<u>White</u>	<u>Asian</u>	<u>Black</u>	<u>Indian</u>	<u>Other</u>	<u>Hispanic Ethnicity</u>
66.0%	15.1%	2.9%	0.4%	15.6%	35.6%

Transportation-Handicapped Persons: (estimates)

<u>Under 15</u>	<u>16-64</u>	<u>65 or Over</u>	<u>Total</u>	<u>Wheelchair Users</u>
130	530	190	850	110



TABLE 73

SAN YSIDRO
SOCIOECONOMIC PROFILE
(1980)

Population: 33,824 Average Household Size: 4.8

Sex: Female 50.7% Male 49.3%

Age in Years (in total percentage):

0-14	41.3%
15-24	16.6%
25-34	14.4%
35-54	21.5%
55-64	3.0%
65 or over	3.2%

Median Household Income: \$6,548

Income Distribution (in total percentage)

\$1,000- 2,999	\$3,000- 4,999	\$5,000- 6,999	\$7,000- 9,999	\$10,000- 14,999	\$15,000- 19,999	\$20,000- 24,999	\$25,000- 39,999	\$40,000+
15.9%	20.6%	16.8%	17.0%	14.7%	6.8%	3.4%	3.5%	1.3%

Racial Distribution (in total percentage):

<u>White</u>	<u>Asian</u>	<u>Black</u>	<u>Indian</u>	<u>Other</u>	<u>Hispanic Ethnicity</u>
52.5%	17.1%	3.5%	0.4%	26.5%	55.9%

Transportation-Handicapped Persons: (estimates)

<u>Under 15</u>	<u>16-64</u>	<u>65 or Over</u>	<u>Total</u>	<u>Wheelchair Users</u>
220	660	230	1,110	150



TABLE 75

CENTRE CITY
SOCIOECONOMIC PROFILE
(1980)

Population: 9,266 Average Household Size: 1.9

Sex: Female 32.4% Male 67.6%

Age in Years (in total percentage):

0-14	5.2%
15-24	9.1%
25-34	12.1%
35-54	24.2%
55-64	14.4%
65 or Over	35.0%

Median Household Income: \$4,102

Income Distribution (in total percentage)

\$1,000- 2,999	\$3,000- 4,999	\$5,000- 6,999	\$7,000- 9,999	\$10,000- 14,999	\$15,000- 19,999	\$20,000- 24,999	\$25,000- 39,999	\$40,000
34.6%	27.9%	16.0%	11.6%	6.7%	2.0%	0.7%	0.5%	Ø

Racial Distribution (in total percentage):

<u>White</u>	<u>Asian</u>	<u>Black</u>	<u>Indian</u>	<u>Other</u>	<u>Hispanic Ethnicity</u>
74.8%	3.3%	8.9%	0.8%	12.2%	24.5%

Transportation-Handicapped Persons: (estimates)

<u>Under 15</u>	<u>16-64</u>	<u>65 or Over</u>	<u>Total</u>	<u>Wheelchair Users</u>
10	190	700	900	120

CHAPTER 6

INTERNATIONAL BORDER CROSSINGS

The San Diego/Tijuana area is one of the most rapidly developing regions in the world. Almost three million people currently reside in the adjacent metropolitan areas. On a typical Saturday or Sunday there are approximately 43,500 trips into the United States through the International Border Crossing at San Ysidro. The 1980 International Border Survey was conducted to collect information on travel characteristics between Tijuana and San Diego. During the survey a total of 3,445 valid samples were received. Of those people surveyed, 42.7% were pedestrians and the others used some type of motor vehicle. More than 70% of those surveyed were residents of the San Diego/Tijuana area.

RESIDENCE OF PERSONS CROSSING BORDER

Table 76 shows the residence of survey respondents. San Diego County residents account for 38.7% of those people surveyed. A total of 31.4% of the sample were residents of Tijuana and an additional 3.1% were residents from other parts of Mexico. Almost 22% of the respondents were Californians from outside of San Diego County.

TABLE 76

RESIDENCE OF BORDER CROSSINGS

<u>Residence</u>	<u>Percent of Total</u>
San Diego County	38.7%
Tijuana	31.4%
Other California	21.8%
Other U.S.A.	4.1%
Other Mexico	3.1%
Other Foreign Nation	0.9%
TOTAL:	100.0%

Table 77 shows that 14% of the border crossings were made by residents of the light rail corridor. Four percent of these people lived in San Ysidro. Approximately 2% each lived in Chula Vista, Barrio Logan, National City, and Palm City/Nestor.

TABLE 77
RESIDENCE IN THE GUIDEWAY CORRIDOR

<u>Residence</u>	<u>Percent of Total</u>
Centre City	0.5%
National City	1.8%
Chula Vista	2.1%
Otay	0.7%
Palm City/Nestor	1.8%
Imperial Beach	1.3%
San Ysidro	4.0%
TOTAL:	14.0%

Table 78 shows the communities in which the residents of Mexico lived who crossed the border. Slightly more than 91% of the Mexicans lived in Tijuana. An additional 3.1% lived in Ensenada. The rest lived in various other communities.

TABLE 78
DISTRIBUTION OF MEXICAN RESIDENTS

<u>Residence</u>	<u>Percent of Total</u>
Tijuana	91.1%
Ensenada	3.1%
Mexicali	1.0%
Rosarita	1.0%
Santa Rosalia	0.5%
Ciudad Obregan	0.2%
Other Locales	3.3%
TOTAL:	100.0%

MODE OF ACCESS TO BORDER

Pedestrians accounted for 42.7% of the trips sampled. The remaining trips were distributed among various other motor vehicles, as shown in Table 79. Almost 44% of the respondents used an automobile.

TABLE 79
MODE OF ACCESS

<u>Mode</u>	<u>Percent of Total</u>
Automobile	43.7%
Walking	42.7%
Pick-up Truck	6.7%
Van	4.5%
Camper	2.2%
Motorcycle	0.2%
TOTAL:	100.0%

The residence of the respondent influenced the mode of access used to cross the border. Table 80 shows that residents of San Diego County and California were more dependent upon private motor vehicles than other respondents. Only 30% of these people walked across the border, whereas almost two-thirds of the Mexicans, and other groups, walked across the border.

TABLE 80
MODE BY RESIDENCE

<u>Mode</u>	<u>Residence</u>				
	<u>San Diego County</u>	<u>Mexico</u>	<u>Other California</u>	<u>Other State</u>	<u>Other Foreign</u>
Automobile	52.9%	32.9%	49.5%	21.4%	29.0%
Walked	30.6%	60.7%	29.5%	67.9%	67.7%
Pick-up Truck	8.4%	3.8%	8.9%	4.3%	-
Van	5.2%	2.3%	7.3%	3.6%	-
Camper	2.6%	0.3%	4.4%	2.1%	3.3%
Motorcycle	0.3%	-	0.4%	0.7%	-
TOTAL:	100.0%	100.0%	100.0%	100.0%	100.0%

VEHICLE OCCUPANCY AT THE BORDER

The average vehicle occupancy was 2.5 persons. Table 81 shows that San Diegans, with an average of 2.2 persons per vehicle, had the lowest occupancy rate. Californians and foreign travelers made the best use of their vehicles with almost three persons per vehicle. The survey shows that the average vehicle occupancy increases as the day progresses. The average group size for pedestrians is 2.2 persons.

TABLE 81
AVERAGE VEHICLE OCCUPANCY

<u>Residence</u>	<u>Average Vehicle Occupancy</u>
San Diego County	2.2 persons
Mexico	2.5 persons
Other California	2.8 persons
Other U.S.A.	2.6 persons
Other Foreign Nations	2.9 persons
TOTAL:	2.5 persons

After crossing the border there was a change in the mode of access for many of the respondents. Table 82 shows that 70.8% of those surveyed used a private motor vehicle to complete their trip. A total of 12% of the people continued their trip on San Diego Transit and 4.3% used a private bus. The number of pedestrians dropped to 12% after crossing the border.

TABLE 82
MODE OF ACCESS IN THE U.S.A.

<u>Mode</u>	<u>Percent of Total</u>
Private Vehicle	70.8%
San Diego Transit	12.0%
Walked	12.0%
Private Bus	4.3%
Taxicab	0.8%
Bicycle	0.1%
TOTAL:	100.0%

FREQUENCY OF CROSSING

As expected, the residents of the San Diego/Tijuana area cross the border more frequently than non-residents. Table 83 shows that 18.4% of the Mexicans and 6.6% of the San Diegans cross the border daily. Approximately 14.5% of the local residents surveyed complete this trip several times per week. Additionally, 27% of the San Diegans and 36.7% of the Mexicans travel across the border at least once a week.

TABLE 83

FREQUENCY OF BORDER CROSSING (Percent of Total)

<u>Frequency of Crossings</u>	<u>San Diego County</u>	<u>Mexico</u>	<u>Residence Other California</u>	<u>Other USA</u>	<u>Other Foreign</u>
Daily	6.6%	18.4%	0.7%	2.1%	-
Several Times per Week	14.5%	14.4%	1.0%	-	-
Weekly	27.0%	36.7%	2.9%	-	-
Bi-Monthly	16.6%	16.0%	11.2%	1.4%	-
Occasionally	35.3%	14.5%	84.2%	96.5%	100.0%
TOTAL:	100.0%	100.0%	100.0%	100.0%	100.0%

The frequent border travelers tend to use a private motor vehicle more than the pedestrian mode for their trip into the U.S.A., whereas, the weekly and bi-monthly traveler tend to walk across the border. More than 43.1% of the occasional respondents stated that they walked, as shown in Table 84.



TABLE 84

FREQUENCY BY MODE

<u>Mode</u>	<u>Daily</u>	<u>Several Times per Week</u>	<u>Weekly</u>	<u>Bi-Monthly</u>	<u>Occasionally</u>
Automobile	54.0%	70.1%	36.1%	38.6%	40.1%
Walking	33.8%	9.5%	55.7%	52.4%	43.1%
Pick-up Truck	8.3%	8.1%	4.0%	5.3%	7.7%
Camper	0.3%	3.4%	1.1%	0.8%	3.3%
Van	3.6%	8.9%	2.8%	2.7%	5.4%
Motorcycle	-	-	0.3%	0.2%	0.4%
TOTAL:	100.0%	100.0%	100.0%	100.0%	100.0%

Figure 17 shows the variations in the frequency of travel based upon the time at which the border crossing occurs. As shown, the peak travel period occurs between 10:00 AM and noon. An afternoon peak occurs between 2:00 PM and 5:00 PM.

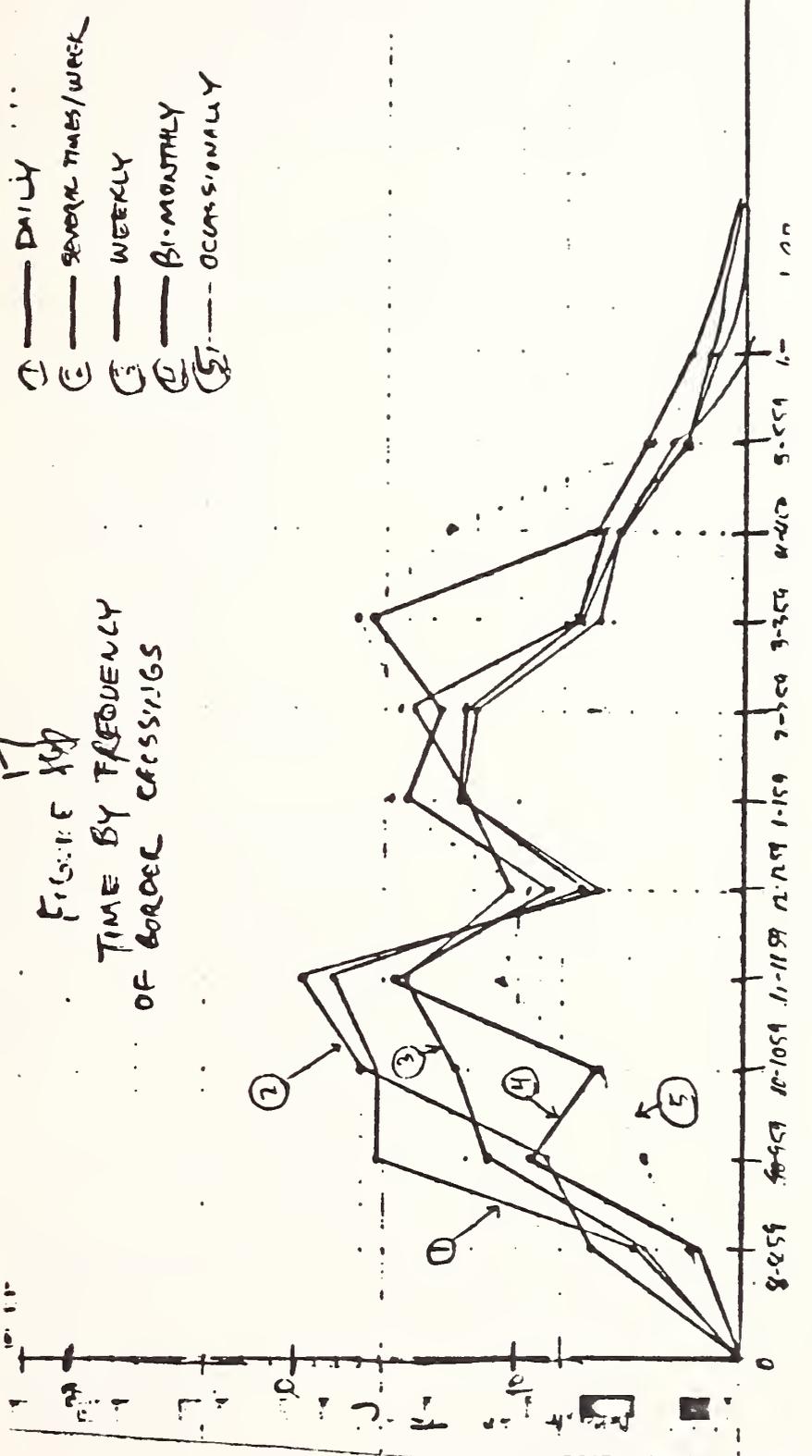
Table 85 shows that more than 50% of the San Diegans and 72.7% of the Mexicans crossed before noon. More than 20% of the Mexicans surveyed crossed before 10:00 AM. This is more than twice the percent of San Diegans crossing during the same period.

TABLE 85

RESIDENCE BY TIME OF CROSSING
(Percent of Total)

<u>Time of Crossing</u>	<u>San Diego County</u>	<u>Mexico</u>	<u>Other California</u>	<u>Other USA</u>	<u>Other Foreign</u>
8:00 - 9:59 AM	9.2%	20.6%	4.3%	2.8%	3.2%
10:00 - 11:59 AM	23.6%	31.0%	16.0%	12.7%	16.1%
Noon - 1:59 PM	22.2%	21.1%	29.5%	22.5%	12.9%
2:00 - 3:59 PM	29.4%	20.7%	31.7%	33.8%	45.2%
4:00 or Later	15.6%	6.6%	18.5%	28.2%	22.6%
TOTAL:	100.0%	100.0%	100.0%	100.0%	100.0%

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 FIGURE 14
 TIME BY FREQUENCY
 OF BORDER CROSSINGS



As previously stated, 12% of those crossing the border used San Diego Transit as their primary mode of travel in the U.S.A. Table 86 shows the time of day when the passengers crossed the border. Almost one-third of them crossed between 2:00 PM and 4:00 PM. This coincides with the fact that 45.7% of the pedestrian border crossing occurred during the same period.

TABLE 86

TIME OF CROSSING BY TRANSIT RIDERS

<u>Time</u>	<u>Percent of Total</u>
8:00 - 9:59 AM	9.9%
10:00 - 11:59 AM	24.3%
Noon - 1:59 PM	22.8%
2:00 - 3:59 PM	32.6%
4:00 - 6:00 PM	9.7%
After 6:00 PM	0.7%
TOTAL:	100.0%

DESTINATIONS OF BORDER CROSSINGS

As previously stated, 14% of the survey respondents lived in the study area. However, 41.8% of all those surveyed stated that their destination was in the light rail corridor. Table 87 shows that almost one-fifth of those surveyed were going to San Ysidro. An additional 9% were going to the area of Chula Vista located in the study area. Both Centre City and National City attracted 3% of the border crossings.

TABLE 87

TRIP DESTINATIONS IN THE LIGHT RAIL CORRIDOR

<u>Destination</u>	<u>Percent of Total</u>
San Ysidro	19.0%
Chula Vista	9.0%
Centre City	3.1%
National City	2.9%
Otay	2.3%
Barrio Logan	2.1%
Palm City/Nestor	1.9%
Imperial Beach	1.5%
TOTAL:	100.0%

TRIP PURPOSE

Table 88 shows the primary reasons for making the trip across the border. The survey shows that much of the AM traffic is Mexicans crossing to shop in San Diego. In the afternoon, the trend is reversed as Americans return from shopping in Mexico. Recreation was listed as the primary trip purpose of 23.8% of the respondents. An additional 14.1% of the people were making social trips.

TABLE 88

PRIMARY TRIP PURPOSE

<u>Trip Purpose</u>	<u>Percent of Total</u>
Home/Accommodation to:	
Shopping	42.9
Recreation	23.8
Social Activity	14.1
Personal Business	7.6
Work	2.4
Other	2.4
Medical	1.7
School	0.9
Home/Accommodation	0.5
Recreation to Recreation	0.6
Shopping to:	
Recreation	0.4
Social Activity	0.4
Personal Business	0.3
Work to:	
Shopping	0.2
Recreation	0.2
Social Activity	0.1
Social Activity to:	
Social Activity	0.2
Recreation Activity	0.2
Personal Business to Personal Business	0.2
Other	0.9
TOTAL:	100.0%

As expected, the residence of the respondent had a role in the trip purpose. Table 89 shows the trip purpose in Mexico based upon place of residence. The response of Mexican residents is not included in this table because 97.1% of their trips originated in their homes. As shown, the three major reasons for traveling in Mexico were shopping, recreation, and social activities. Almost 10% of the San Diegans and Californians were making personal business trips. The primary trip purpose for out-of-state and foreign residents was a recreational activity. Almost one-third of the San Diegans were in Mexico to shop.

TABLE 89
TRIP PURPOSE IN MEXICO
(In Total Percentage)

Trip Purpose	Residence			
	San Diego County	Other California	Other USA	Other Foreign
Home/Accommodation	1.1	1.9	1.4	3.4
Work	1.6	0.7	0.7	-
Medical	2.0	3.0	3.5	-
Shopping	34.0	27.3	33.8	27.6
School	1.1	0.8	1.4	-
Personal Business	9.8	9.5	1.4	-
Social Activity	17.1	18.8	8.5	10.4
Recreation Activity	28.8	37.3	47.9	55.2
Other	4.5	0.7	1.4	3.4
TOTAL:	100.0	100.0	100.0	100.0

Table 90 shows the primary trip purpose in the United States based upon residence. Over 65% of those surveyed from Mexico stated their primary trip purpose was shopping. Fewer than 5% of the residents of Mexico stated that they were working in the U.S.A.

TABLE 90

TRIP PURPOSE IN THE U.S.A.
(In Total Percentage)

<u>Trip Purpose</u>	<u>San Diego County</u>	<u>Residence</u>		
		<u>Other California</u>	<u>Other USA</u>	<u>Other Foreign</u>
Home/Accommodation	2.2	93.3	81.7	58.7
Work	4.8	0.8	0.7	3.4
Medical	0.4	-	-	-
Shopping	65.5	1.5	1.4	3.4
School	0.6	0.1	-	-
Personal Business	6.3	1.1	1.4	-
Social Activity	10.3	1.1	3.5	3.4
Recreation Activity	8.3	1.8	11.3	27.7
Other	1.6	0.3	-	3.4
TOTAL:	100.0	100.0	100.0	100.0

Table 91 shows how often the people making various types of trips cross into the United States. These people making work or school trips tend to cross the border more frequently than any other trip purpose. More than 41% of those shopping in the U.S.A. do so on a weekly basis. The percentage of people making medical trips is small, yet 50% of these trips are made weekly or several times per week.

TABLE 91

FREQUENCY OF TRIP PURPOSE IN THE U.S.A.
(Percent of Total)

<u>Trip Purpose</u>	<u>Frequency</u>				
	<u>Daily</u>	<u>Several Times Per Week</u>	<u>Weekly</u>	<u>Bi-Monthly</u>	<u>Occasionally</u>
Work	51.1	16.9	11.3	1.4	18.3
Medical	-	16.7	33.3	-	50.0
Shopping	13.1	12.9	41.6	18.5	13.9
School	37.1	37.5	12.5	-	12.5
Personal Business	23.3	19.8	15.1	17.4	24.4
Social Activity	17.6	11.0	27.2	13.2	40.0
Recreation Activity	14.5	10.1	29.7	5.8	39.9

Table 92 shows the primary trip purpose in the U.S.A. by the time of crossing. The percentage of Home/Accommodation trips increases, while the percentage of Shopping trips decreases, as the day progresses. Also, the percentage of Personal Business and Work trips decreases as it gets later in the day.

TABLE 92
TRIP PURPOSE IN U.S.A. BY TIME OF CROSSING

<u>Time</u>	<u>Home/ Accommodation</u>	<u>Work</u>	<u>Medical</u>	<u>Shopping</u>	<u>School</u>	<u>Personal Business</u>	<u>Social Activity</u>	<u>Recreation Activity</u>	<u>Other</u>
8:00 - 8:59 AM	39.2	9.6	-	30.4	2.6	5.2	4.3	7.8	0.9
9:00 - 9:59 AM	34.9	4.0	0.4	42.4	-	9.4	5.0	2.9	1.0
10:00 - 10:59 AM	49.6	5.1	0.3	33.9	-	3.3	3.6	3.3	0.9
11:00 - 11:59 AM	53.5	2.1	-	31.0	0.2	3.8	3.6	4.7	1.1
Noon - 12:59 PM	61.8	1.0	0.3	23.2	0.3	2.0	3.9	6.9	0.6
1:00 - 1:59 PM	68.1	1.9	0.4	18.1	0.2	1.2	6.6	3.3	1.2
2:00 - 2:59 PM	66.1	1.9	-	21.7	0.2	1.0	3.9	4.6	0.6
3:00 - 3:59 PM	78.1	0.2	0.2	14.7	0.2	1.1	3.3	2.2	-
4:00 - 4:59 PM	82.9	0.3	-	9.4	-	0.6	2.6	2.6	1.6
5:00 - 5:59 PM	79.4	0.8	-	7.4	-	0.8	2.5	8.3	0.8
6:00 PM Onward	93.6	-	-	4.3	-	-	-	2.1	-

CHAPTER 7

CONSTRUCTION IMPACTS

THE COMMERCIAL-RETAIL SURVEY

The Commercial-Retail Survey was conducted to provide information concerning economic changes which might occur because of the construction and operation of the San Diego Trolley.

The areas surveyed are located along the route of the San Diego Trolley. These areas include:

- o C Street, Centre City
- o 12th Avenue, Centre City
- o 24th Street and Wilson Avenue, National City
- o H Street, Chula Vista
- o San Ysidro Boulevard, San Ysidro

The surveys were conducted during April and May of 1980. Surveys were distributed to 132 businesses located in the study area. A total of 84.9% of the survey forms were completed. Table 93 shows the distribution and return rate of the surveys.

TABLE 93

SURVEY DISTRIBUTION RATE

<u>Location</u>	<u>Percent of Total</u>		<u>Number Distributed</u>
	<u>Completed</u>	<u>Refused</u>	
C Street	83.6%	16.4%	61
12th Avenue	87.1%	12.9%	31
24th & Wilson	60.0%	40.0%	5
H Street	83.0%	16.7%	24
San Ysidro Blvd.	100.0%	-	11

Methodology

The survey form was designed to acquire data on the business characteristics, as well as the attitude of each establishment towards the construction and operation of the San Diego Trolley. A sample survey form is shown in Figure 18. Each survey form was distributed by a surveyor to the owner or manager of the business. The surveyor left the form at the business and collected it at a pre-arranged time.

At the time of the survey, San Diego Trolley construction activities were in progress on 12th Avenue. Portions of the street were torn up or blocked off and construction equipment was present at the site. Vehicle and pedestrian access in the area was disrupted. Thus, the response of the impacted businesses on 12th Avenue can be compared to the non-impacted businesses at other sites. Also, the five businesses located at 24th Street and Wilson Avenue were newly opened. They are located in a new shopping center in National City's redevelopment area.

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 FIGURE 2 ~~15~~ 15

LIGHT RAIL TRANSIT STUDY
COMMERCIAL-RETAIL
SURVEY FORM



Currently, the Metropolitan Transit Development Board (MTDB) is constructing a Light Rail Transit Line from Centre City to the International Border. As part of this effort the Comprehensive Planning Organization, in conjunction with MTDB, is conducting a study to provide information concerning economic changes which may occur because of the project. This information will help the community to increase the benefits from the rail project and minimize any adverse effects.

You can help by answering the following questions. If you have any comments, please contact:

Dennis Prescott, CPD 236-5320

1. Name of business _____
2. Address _____
3. Phone _____
4. Type of business _____
5. Manager or owner: _____
6. Business hours _____
7. Number of employees _____
8. How long have you been located at this address? Years _____ Months _____
9. Do you own, lease, or rent your building? Own Lease Rent
10. Gross square footage of floor space _____
11. Current monthly rental _____
12. Is off-street parking available at this address? Yes No If YES, how many spaces? _____
13. Parking cost (if available):
 Monthly Daily Hourly
 a. Employees _____
 b. Customers _____
14. Total taxable sales in 1979 _____
15. Was the Light Rail Transit Line important to your decision to locate at this address? Yes No
16. Is the Light Rail Transit Line important to your business staying at this address? Yes No
17. During the construction of the Light Rail Transit Line are you experiencing or do you anticipate an INCREASE or DECREASE in your business?

(Please Check Your Response)
 INCREASE DECREASE NO CHANGE

- | | | | |
|--|--------------------------|--------------------------|--------------------------|
| a. Total taxable sales, retail trade, or services. | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| b. Total number of employees. | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| c. Total amount of floor space. | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| d. Hours open for business. | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |

Official Use

6a	4		
6b	E		
7	12		
8	1E		
9	21		
10	27		
11	32		
12	37		
13a	41		
13b	4E		
14	53		
15	5E		
16	5C		
17	6E		

18. After the Light Rail Transit Line is operating do you anticipate an INCREASE or DECREASE in your businesses:

(Please Check Your Response)

	INCREASE	DECREASE	NO CHANGE
a. Total taxable sales, retail trade, or services.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
b. Total number of employees.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
c. Total amount of floor space.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
d. Hours open for business.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
e. Amount of available parking.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
f. Interference with deliveries and pick-ups.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
g. Cost per square foot of floor area.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

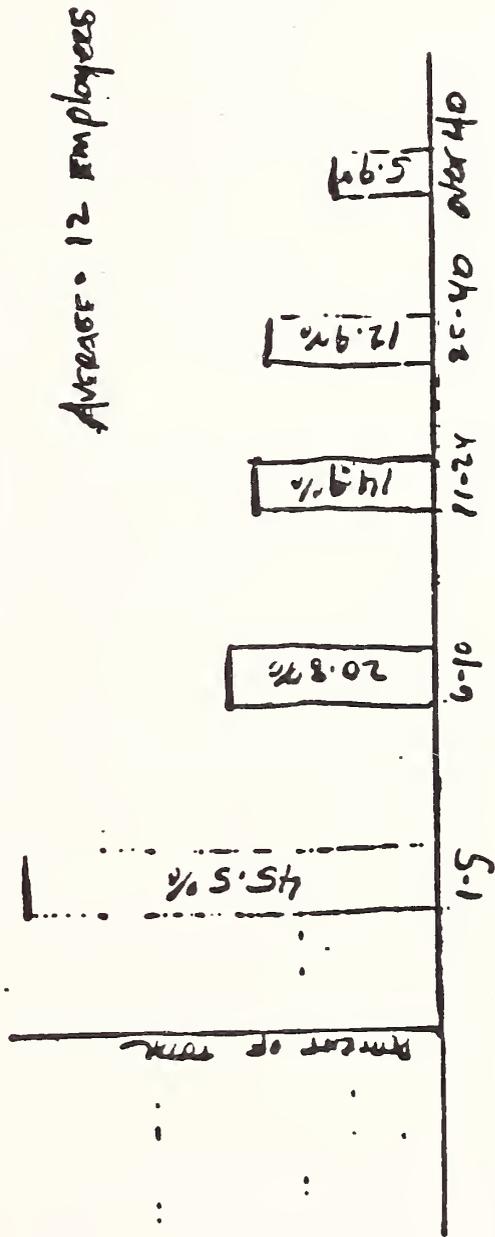
19. Comments:

Business Characteristics

More than 13% of the businesses surveyed operate on a 24-hour basis. One-third of the businesses open between 8:00 AM and 9:00 AM and an additional 23.6% opened between 9:00 AM and 10:00 AM. Almost 34% of the businesses closed between 5:00 PM and 6:00 PM, with another 18.8% closing between 6:00 PM and 7:00 PM.

There is an average of 12 employees per business in the study area. Figure 19 shows that one-half of the businesses employed fewer than nine people. Only 5.9% of the businesses had more than 40 employees.

Figure 19
SIZE OF EMPLOYMENT SITES



number of employees
 Figure 18

Table 94 shows the range of square footage occupied by the businesses. More than one-half of the businesses cover 2,500 square feet or less. The average business occupies 7,000 square feet. However, almost 4% of the establishments cover more than 25,000 square feet. Almost 60% of the businesses did not have on-site parking.

TABLE 94

SIZE OF BUSINESSES
(Percent of Total)

Square Footage					
<u>100-1,000</u>	<u>1,001-2,500</u>	<u>2,501-5,000</u>	<u>5,001-10,000</u>	<u>10,001-25,000</u>	<u>25,000+</u>
26.4%	25.0%	19.7%	14.5%	10.5%	3.9%

Only 20.8% of the businesses own the property they occupy. The other lease or rent their establishment. Monthly rental fees range from \$150 to over \$5,000 per month. The average monthly rental fee is \$1,250. However, 50% of the businesses paid \$800 or less per month.

The average length of stay at their present location was ten years. More than 11% of the businesses have been at the same location for more than 20 years. However, 17% of the businesses have been at the current location less than one year.

The average taxable sales were recorded at \$1,890,000 per year. However, the median annual taxable sales were \$165,000.

Attitudinal Survey

A major component of the Commercial-Retail Survey was to determine the impact of the construction and operation of the light rail transit system on the businesses located along the route. The survey posed a number of questions to those businesses to determine their attitudes and personal comments on the guideway system.

Only 2% of the businesses surveyed stated that the San Diego Trolley was important to them locating at their current address. None of the businesses along 12th Avenue selected their location because of the LRT.

However, many of the businesses said that the LRT is important to them remaining at their current address. More than 17% of the 12th Avenue businesses and 24% of all businesses expressed the importance of the guideway system to their businesses.

Table 95 shows the various attitudes towards the impacts of construction. This table shows that the impacts of construction on the 12th Avenue businesses were more severe than anticipated by those business located in other areas. Almost 63% of the 12th Avenue businesses experienced a loss of taxable sales, retail trade, or services, whereas only 41.7% of the non-impacted businesses anticipated a decrease in business. Surprisingly, 4.2% of the 12th Avenue merchants experienced an increase in business. Almost 10% of the non-impacted merchants anticipated an increase in business during construction.

TABLE 95

IMPACTS OF CONSTRUCTION

During the construction of the Light Rail Transit Line
are you experiencing an INCREASE OR DECREASE
in your business?

	INCREASE		DECREASE		NO CHANGE	
	12th Ave.	Other Sites	12th Ave.	Other Sites	12th Ave.	Other Sites
Total taxable sales, retail trade, or services	4.2	9.7	62.5	41.7	33.3	48.6
Total number of employees	-	4.0	29.2	14.7	70.8	81.3
Total amount of floor space	-	2.6	-	1.3	100.0	96.1
Hours open for business	-	2.7	12.5	2.7	87.5	94.6
Amount of available parking	4.1	1.4	54.5	26.0	45.5	72.6
Interference with deliveries and pick-ups	66.7	34.7	-	8.0	33.3	57.3

More than 29% of the 12th Avenue businesses laid off employees during the construction phase. Almost 15% of the non-impacted merchants anticipated that they may have to do the same. However, the vast majority of businesses either experienced or anticipated no change in their employee count.

None of the 12th Avenue businesses experienced a loss of floor space due to construction. However, 54.5% of the impacted businesses did lose some available parking. Almost 96% of the non-impacted businesses anticipated no change in the total amount of floor space. However, 26% of the non-impacted merchants anticipated a loss of available parking.

Most businesses did not experience or anticipate a loss of business hours due to construction activities. However, 12.5% of the 12th Avenue merchants did shorten their business hours. Fewer than 3% of the non-impacted businesses did anticipate that such an action would be necessary.

Almost two-thirds of the businesses on 12th Avenue stated that construction activities interfered with business deliveries and pick-ups. More than 34% of the non-impacted businesses anticipate this type of interference.

As shown in Table 96, most businesses anticipated that there will be no change in their business once the San Diego Trolley was operating. More than 14% of the impacted businesses anticipated increased sales, retail trade or services. At other survey areas, 45.6% of the merchants felt that their business will increase. However, 28.6% of the businesses located on 12th Avenue anticipated a loss of business.

Most businesses do not anticipate any change in their employment figures. More than 17% of the non-impacted businesses anticipate an increase in personnel. Only 14.3% of the impacted businesses expect a decrease in personnel.

However, many businesses do anticipate a reduction in available parking and interference with business deliveries and pick-ups. Parking losses

are expected by 54.5% of the 12th Avenue merchants and 25% of the non-impacted businesses. A higher percentage of the non-impacted business than those located along 12th Avenue anticipate interference with deliveries and pick-ups.

TABLE 96

IMPACTS OF TROLLEY OPERATIONS

After the Light Rail Line is operating
do you anticipate an INCREASE OR DECREASE
in your business?

	INCREASE		DECREASE		NO CHANGE	
	<u>12th Ave.</u>	<u>Other Sites</u>	<u>12th Ave.</u>	<u>Other Sites</u>	<u>12th Ave.</u>	<u>Other Sites</u>
Total taxable sales, retail trade or services	14.3	45.6	28.6	4.4	57.1	50.0
Total number of employees	-	17.6	14.3	2.9	85.7	79.5
Total amount of floor space	-	2.9	-	-	100.0	97.1
Hours open for business	-	7.4	-	-	100.0	92.6
Amount of available parking	-	2.9	54.5	25.0	45.5	72.1
Interference with deliveries and pick-ups	15.0	25.0	-	4.4	85.0	70.9
Cost per square foot of floor area	-	25.0	-	1.5	100.0	73.5

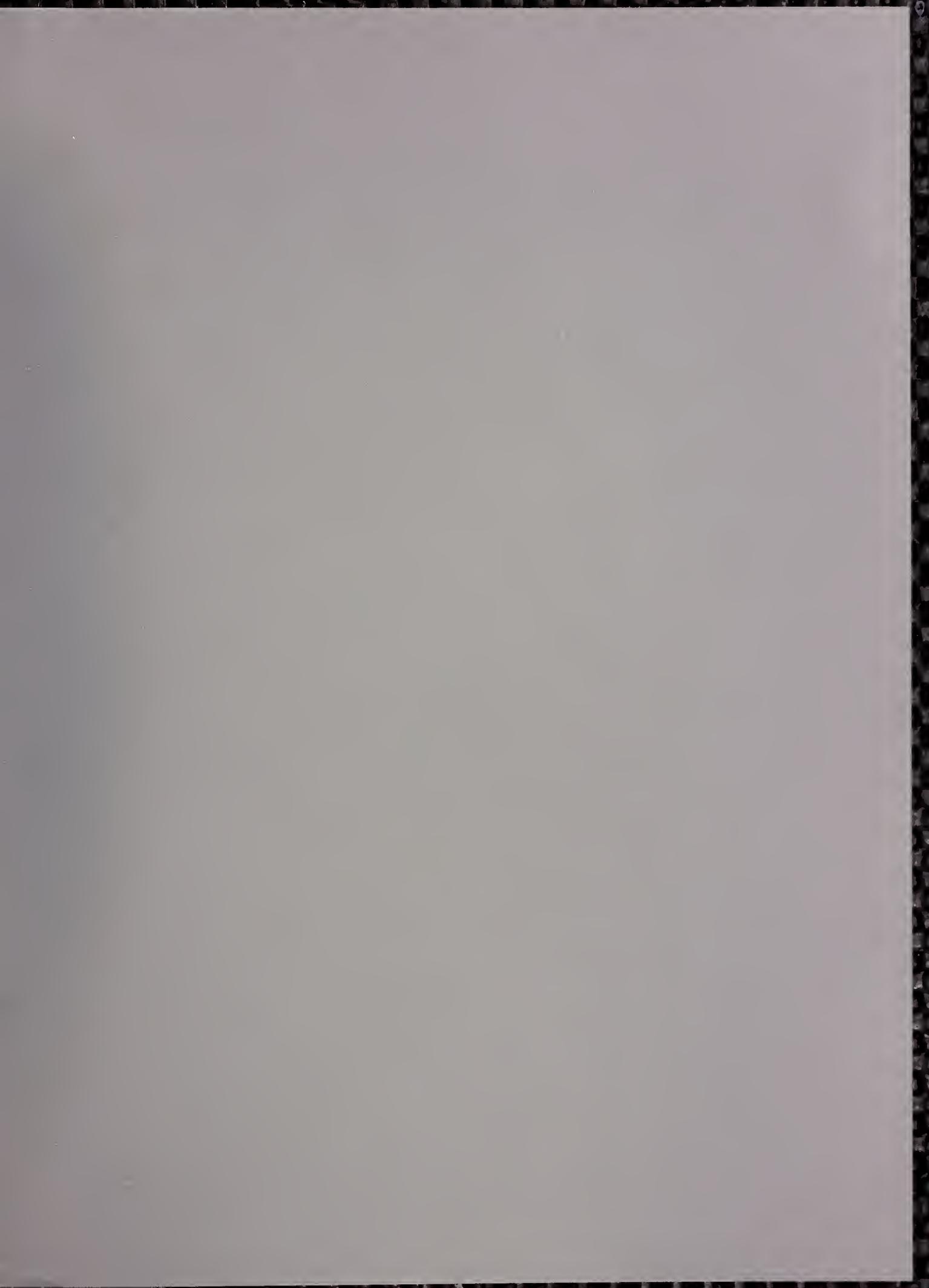
Comments

Numerous comments were received on the San Diego Trolley. These comments are attached in Appendix X. Many of the respondents anticipate that the trolley will help their businesses. However, many businesses state that the construction activities have caused a decrease in their businesses. Some people mentioned that communication between MTDB and the businesses was poor or lacking.

DETAILED EXISTING CONDITIONS (WINDSHIELD SURVEY)

In order to document conditions along the Trolley right-of-way in Centre City and around suburban stations, a windshield survey of conditions will

be conducted at six-month intervals. Conditions which were recorded include abandoned or vacant property, construction and redevelopment projects, and changes to the transportation system, as well as any other factors which might be or will have an impact on the guideway system. The windshield survey was initially conducted on Friday, January 9, 1981. Surveys will be repeated every six months. These surveys are contained in Appendix __.



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