

EVALUATION
OF
NEW SERVICE
IN
EAST LOS ANGELES

SOUTHERN CALIFORNIA
RAPID TRANSIT DISTRICT

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RAPID TRANSIT DISTRICT

Prepared by
Surface Planning

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TABLE OF CONTENTS

	Page
TABLES	ii
ILLUSTRATIONS	ii
Background	1
Purpose of Report	2
Characteristics of the Area	5
Community Involvement and System Refinements	5
Community Involvement	5
System Refinement	5
Evaluation	6
Objectives and Criteria	6
Methodology	10
Sector Boundaries	10
Ridership	11
Ridership Growth With Time	11
Results	14
100% Ridership Checks	14
Farebox Vault Checks	14
Passenger Totals	15
Eight Weeks Compared to Nine Months	15
Eight Weeks Compared to 12 Months	15
Factors Contributing to the Decrease	15
Factors Contributing to the Recovery-12 Mos.	15
Productivity	22
Conclusions	23
Acknowledgement	24

LIST OF TABLES

	Page
1. Average Weekday System Wide Boardings	4
2. Modifications to East Los Angeles Sector Lines	7
3. Objectives and Criteria	6
4. Post Implementation Line Description	12
5. Sector Only, Nine Month Checks	16
6. Inter-Sector Lines End-to End, Nine Month Checks	17
7. Difference Between Eight Week and Nine Month Checks- Sector Passengers	18
8. Difference Between Eight Week and 12 Month Checks - Total Line Passengers	20

LIST OF ILLUSTRATIONS

1. East Los Angeles Transit Improvement Program - Map	3
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BACKGROUND

The East Los Angeles Transit Improvement Program was implemented on January 25, 1976 in an area roughly bounded by Garfield Avenue, Valley Boulevard, the Los Angeles River and Washington Boulevard. General features of this program are:

- Twenty-one buses added to the daily fleet requirements for a 16% increase.
- 5,437 additional daily vehicle miles for a 32% increase.
- Increased frequency and spread of service yielding a more efficient use of equipment.
- Increase weekend service.
- Improved service to educational, medical, shopping and institutional facilities.
- Establishment of 3 new lines.
- Rerouting or extension of 18 existing lines.
- Discontinuance of passenger restrictions on former interurban lines travelling on surface streets within the area.
- More efficient operation complimenting the service provided by Montebello Municipal Bus Lines.

Particular attention was directed to the most salient transit deficiencies of the East Los Angeles community. These points included poor weekend service and incompatible service frequencies between lines. Although the previous system in the study area contained many routes, the actual service was marginally productive for residents due to the incorporation of former established transit properties. The Los Angeles Railway, Pacific Electric, Metropolitan Coach Lines and Eastern Cities Lines operated many varied levels of service, with passenger restrictions. These properties, acquired by the District at different times, were never totally modified to bring full transit service due to lack of funding for necessary improvements. The East Los Angeles Transit Improvement Program addressed these specific requirements by establishing a minimum

SOUTHERN CALIFORNIA RAPID TRANSIT DISTRICT EAST LOS ANGELES TRANSIT IMPROVEMENT PROGRAM.

LEGEND

- 28** RTD LINES
- COMMERCE LINES
- M** MONTEBELLO LINES
- LINE TERMINAL
- LINE CONTINUATION BEYOND MAP AREA
- FREEWAYS
- LINE DESIGNATION
- RTD STATIONS
- POINTS OF INTEREST

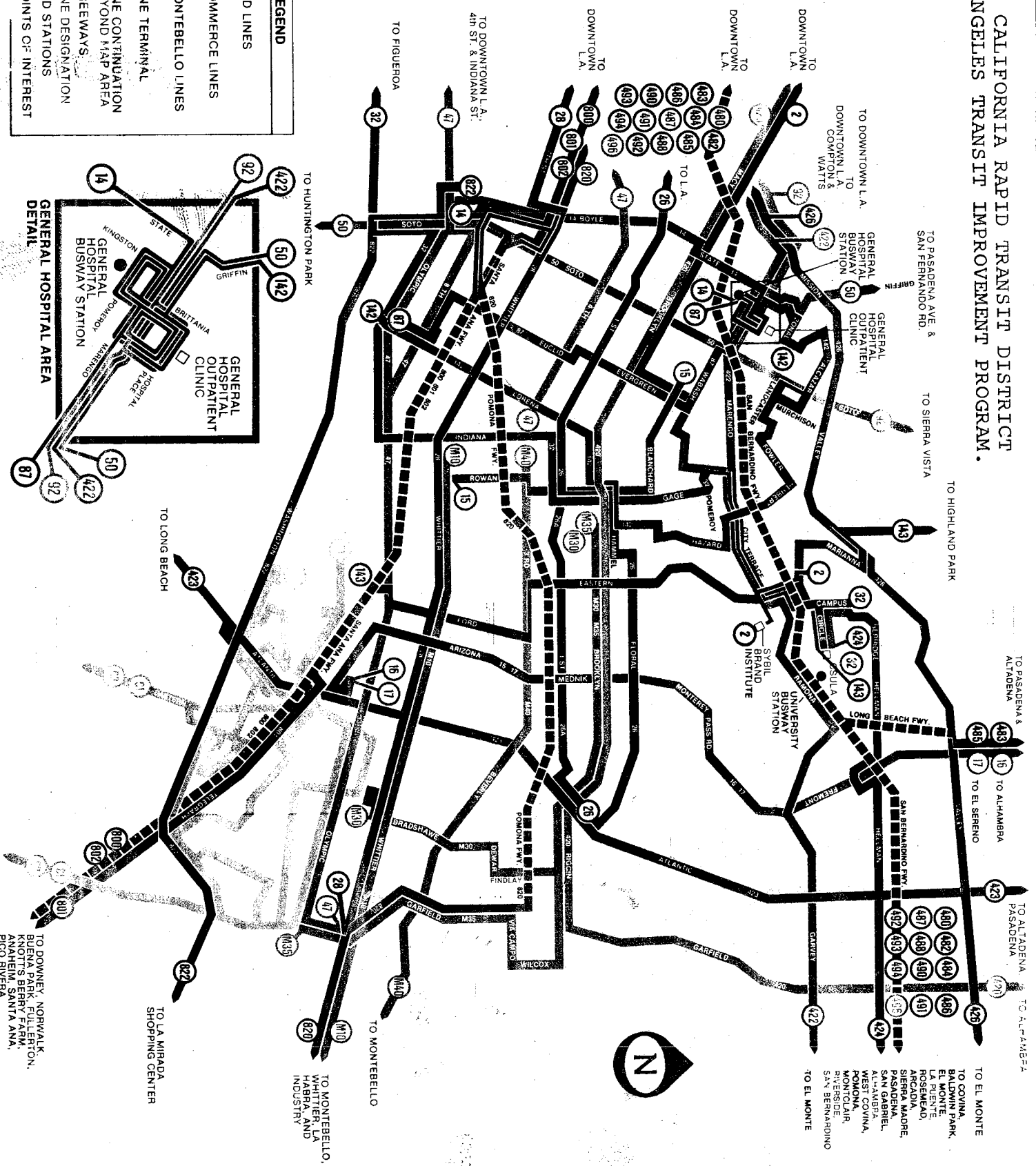


Table 1

SOUTHERN CALIFORNIA RAPID TRANSIT DISTRICT

Average Weekday System-wide Boardings

<u>Month</u>	<u>Estimated Boardings*</u>	<u>% Change from June '76</u>
June 1976	1,080,000	base
July 1976	1,070,000	- 1%
August 1976	1,010,000	- 6%
October 1976	900,000	-17%
November 1976	1,010,000	- 6%
December 1976	990,000	- 8%
January 1977	1,030,000	- 5%
February 1977	1,050,000	- 2 %
March 1977	1,050,000	- 3%
April 1977	1,070,000	- 1%
May 1977	1,060,000	- 2%

* System boarding estimates are derived from system revenues.

CHARACTERISTICS OF THE AREA

The modifications of this program were tailored to accommodate and benefit the demographic and socio-economic characteristics of the East Los Angeles Community. Approximately 20 square miles make up the sector and contain about 290,000 people, according to the 1970 census, or an average density of 14,500 people per square mile. Family income is less than \$5,000 per year for 50% of the population and only 20% have family incomes exceeding \$10,000 per year (1970 dollars). Over 50% of the households do not own an automobile although usually more than one member of the family works. Over 50% of the workers travel to work by bus, bicycle, or on foot. About 35% of the population is either too old or too young to drive.

COMMUNITY INVOLVEMENT & SYSTEM REFINEMENTS

Community Involvement

Staff has continued to work closely with organizations representing East Los Angeles including the Transportation Advisory Committee, Supervisor Edelman's staff, East Los Angeles College and The East Los Angeles Community Union. Additionally, the General Manager has conducted a community meeting in East Los Angeles on May 9, 1977 to receive public comment about the service.

The District Planning and Community Relations staff operated a field office in the El Monte Division to serve the San Gabriel Valley and East Los Angeles sectors. Resources of the District were coordinated through the field office to respond to the needs of the community.

Since the strike, however, the field office has operated with reduced staffing and the contacts have been gradually shifted to the Planning and Community Relations departments in the headquarters building in Los Angeles. District's staff has continued to meet the needs of the public and local governments from the central offices through coordinated efforts.

System Refinements

The thrust of the system refinements made since the preliminary evaluation report in June 1976 has been to adjust service frequencies and stop locations in response to public requests for improved service or complaints about bus service on residential streets. Where these requests for local improvements

Table 2
 SOUTHERN CALIFORNIA RAPID TRANSIT DISTRICT
 SERVICE CHANGES TO EAST LOST ANGELES SECTOR (1/25/76 to 6/19/77)

Line No./Name	Effective date of Chg	City	Service Changes	Reason	DAILY		SATURDAY		SUNDAY				
					Veh.	Hours	Veh.	Hours	Veh.	Hours	Veh.	Hours	
2/Brooklyn Ave.- Hooper Ave.- Compton Ave.	7/25/76	City Terrace & Monterey Park	1. Service extended from City Terrace/Eastern Ave. to Sybil Brand-Women's Correctional Facility. 2. Reduction in daily peak service	Public transportation needed for women released in the evening. Load factors	-2	-11	-165						
14/87/Boyle Ave.- State St.-Euclid Ave.-Evergreen Ave.	4/16/76	E.L.A. Boyle Heights	Line 87-South terminal turning loop changed from Concord and Opal STs.-but retaining layover zone on Eighth St.	Streets too narrow to accommodate bus operations. (Residential)	-1	-19.98	-110	-1	-20.55	-111	-1	-15.23	-83
15/Roman Ave.	2/27/77	E.L.A.	DA-SA-SU--Reduce base from 20 to 22"; reduce night 30 to 60".	District service reduction program	-1	-13.16	-93	-1	-13.16	-93	-1	-11.46	-81
16/Arizona Ave.- Fremont Ave.- Alhambra	11/07/76	E.L.A.	DA-SA-SU--Reduce base from 20 to 30".	Low productivity.	-5	-84		-5	-84		-5	-60	
17/Arizona Ave.- Templeton St.	6/19/77	E.L.A.	DA-SA-SU--Reduce base service from 30 to 40", cancel night service. SA-SU--Reduce base service 30 to 40".	Low productivity. Low productivity.	-9.34	-104	-1	-22.81	-234	-1	-14.22	-160	-202

Table 2
 SOUTHERN CALIFORNIA RAPID TRANSIT DISTRICT
 SERVICE CHANGES TO EAST LOS ANGELES SECTOR (1/25/76 to 6/19/77)

Line No./Name	Effective date of Chg	City	Service Changes	Reason	DAILY			SATURDAY			SUNDAY		
					Veh.	Veh. Hours	Veh. Miles	Veh.	Veh. Hours	Veh. Miles	Veh.	Veh. Hours	Veh. Mile
142/Lorena St.- Hazard Ave.- Fowler St.	2/27/77	E.L.A.	DA-SA-SU--Reduce service base 20 to 30"; reduce nights 30 to 60".	Low productivity	-1	-19.15	-250	-1	-19.65	-250	-1	-15.87	-198
143/Eastern Ave.	2/27/77	E.L.A.	DA--Reduce base service 20 to 20/25" SA--Reduce base 20 to 2/25 and cancel night service SU--Reduce 20 to 30" and cancel night service.	Low productivity	-1	-13.10	-172	-1	-22.98	-322	-2	-35.98	-455
420/LA-Alhambra-Via Brooklyn & Garfield Aves.	6/19/77	E.L.A.	SU--Reduce service base 20 to 30" and minor adjustment to early night service.	Low productivity							-2	-25.60	-363
422/LA-El Monte-Via Garvey Ave.	6/19/77	E.L.A.	SA-SU--Reduce service nights, 30 to 60"								-2	-12.37	-199
423/Long Beach-Pasadena-Altadena-Via Atlantic Blvd.	6/19/77	E.L.A.	DA-SA--Service reduction nights from 30/60 to 60". SU--Reduce base 20 to 30" and nights 30/60 to 60".	Low productivity	-1	-5.01	-72	-1	-6.04	-85	-1		
820/LA-Whittier-La Habra-Puente Hills	6/19/77	E.L.A.	DA-SA--Retie present schedule	Service Improvement	-1	-9.6	10	-1	-10.67	4			
822/La-Whittier-La Mirada	10/24/76	E.L.A.	Reduced daily peak service.	Load factors	-1	-6	-97						
					29	233	1948	22	290	2429	19	257.8	2239

OBJECTIVES

To determine if productivity is adequate to continue service.

CRITERIA

Productivity of the line at maturity should exceed 20 passengers per bus hour, or 250 passenger miles per bus hour, day & night, by sector and by line. Transit dependency and system integrity are considered on a subjective basis.

Methodology

In designing the service evaluation program for projects implemented early in 1976, it was felt that all improvement projects should be evaluated the same way so that any one could be compared with another. Project evaluations for recently implemented service in East Los Angeles, Mid-Cities and the San Gabriel Valley should be comparable to the San Fernando Valley and South Central Grid evaluations performed in 1975.

Sector Boundaries

To satisfy this requirement, the improvement project sectors were clearly defined so that projects were mutually exclusive. Passengers would be counted only within one sector regardless of whether the line operated within the sector or partly outside it. The East Los Angeles sector for the purpose of evaluation is bounded by:

- The Los Angeles River from Washington Boulevard to Mission Road.
- Mission Road from Macy Street to Valley Boulevard.
- Valley Boulevard from Mission Road to the Long Beach Freeway.
- Long Beach Freeway from Valley Boulevard to Ramona Boulevard.
- Ramona Boulevard - Ramona Road from the Long Beach Freeway to Garvey Avenue.
- Garvey Avenue from Ramona Road to Monterey Pass Road.
- Monterey Pass Road from Garvey Avenue to Brooklyn Avenue.

EAST LOS ANGELES TRANSIT IMPROVEMENT PROGRAM
POST IMPLEMENTATION LINE DESCRIPTION

Table 4

Line No.	Line Name	Total One Way Route Miles	Segment Of Line In Sector	
			From	To
2	Brooklyn-Hooper-Compton Aves.	20.2	Macy & Alameda	North Terminal
16	Arizona Ave.-Fremont Ave.-Alhambra	8.6	South Terminal	Monterey Pass & Garvey
15	Rowan Ave.	2.9	Terminal	Terminal
17	Fremont Ave. - Arizona Ave.	9.8	South Terminal	Monterey Pass & Garvey
26	West Pico - East First St. - Hammel Dr.	13.2	1st & Mission	North Terminal
28	Whittier Blvd. - W. 3rd St.	12.9	7th & Boyle	East Terminal
420	Los Angeles-Alhambra via Brooklyn & Garfield Aves.	14.2	West Terminal	Brooklyn & Atlantic
32	Washington Blvd.-Indiana St.-Gage Ave.	11.6	Washington & Soto	North Terminal
47	East Olympic Blvd.-E. 4th St.	12.7	Terminal	Terminal
50	Florence Ave.-Soto St.	16.0	Slauson & Pacific	North Terminal
423	Long Beach-Pasadena-Altadena via Atlantic Blvd.	30.9	Atlantic & Washington	Atlantic & Brooklyn
422	Los Angeles-El Monte via Garvey Ave.	16.6	West Terminal	Eastern & Ramona

Results

Passenger counts were initially scheduled so as to allow the evaluation of approximately six months of operation after school resumed in the fall of 1976.

100% Ridership Checks

Passengers are counted by District checkers who ride each trip on a line from end to end. In what is known as a 100% check, the checker counts the passengers boarding and alighting at each stop and records the type of fare paid and the running time between timepoints. The 100% check is widely accepted as representative of annual ridership on a line but has limitations because of daily ridership fluctuations of 5% or more. Inclement weather can cause variations of 10% or more. The 100% check is, in reality, a sample and is subject to normal sampling errors when it is used to draw conclusions about the total annual ridership of a line. It took from November 15, 1976 to December 21, 1976 to complete riding checks for the 18 lines involved in the study. Total sector ridership, therefore, contains some inconsistencies introduced by possible variations between lines checked on different days. The same procedure was followed for the initial checks reported in June 1976, except checks were taken in 7 working days from March 29 to April 6, 1976.

The East Los Angeles schedule for 100% ridership checks was interrupted by the strike, and the checks were not completed until after some East Los Angeles service economies were implemented on October 24, 1976. In order to obtain fast estimates of ridership on the lines impacted by service cutbacks, and to measure recovery from the strike and fare increase, a new method of passenger counts was introduced to supplement the 100% riding check previously used for line evaluations.

Farebox Vault Checks

The new method is known as a farebox vault check whereby the passengers boarding a line can be estimated from the current line revenue. The cash received on a line is divided by the average cash fare obtained from a previous 100% riding check to yield the estimated daily boarding passengers.

The procedure is largely clerical and is much less expensive than a full riding check. It has the disadvantage of providing only gross total passengers, so no estimates can be made about passengers by time of day or segment of a line. In addition to the sampling errors over time mentioned above, its point accuracy depends on the assumption that the composition of ridership used in arriving at the average cash fare has not changed between the time the riding check was taken and the time the farebox cash was counted.

SOUTHERN CALIFORNIA RAPID TRANSIT DISTRICT
 EVALUATION OF EAST LOS ANGELES TRANSIT IMPROVEMENT PROGRAM
 INTER-SECTOR LINES, END-TO-END

9 MONTH CHECKS

Line	Passengers Boarding			Vehicle Hours			Productivity		
	Day	Night	Total	Day	Night	Total	Day	Night	Total
2	11,611	695	12,306	197.77	28.60	226.37	58.7	24.3	54.4
16	656	108	764	48.17	9.87	58.04	13.6	10.9	13.2
17	917	6	923	42.03	1.33	43.36	21.8	4.51	21.3
26	43,227	2,190	45,417	528.73	43.37	572.10	81.8	50.5	79.4
1	27,587	1,376	28,963	409.48	21.58	431.06	67.4	63.8	67.2
17	3,281	55	3,336	82.62	8.79	91.41	39.7	6.3	36.5
50	17,983	1,021	19,004	219.11	47.93	267.04	82.1	21.3	71.2
143	1,614	92	1,706	68.17	10.35	78.52	23.7	8.9	21.7
420	3,948	194	4,142	100.67	16.74	117.41	39.2	11.6	35.3
422	3,451	227	3,678	128.82	28.67	157.49	26.8	7.9	23.4
423	4,058	151	4,209	105.88	34.54	140.42	38.3	4.4	30.0
820	5,912	406	6,318	251.46	36.02	287.48	23.5	11.3	22.0
822	555	20	575	71.03	4.18	75.21	7.8	4.8	7.6

SOUTHERN CALIFORNIA RAPID TRANSIT DISTRICT
 EVALUATION OF EAST LOS ANGELES SECTOR TRANSIT IMPROVEMENT PROGRAM
 DIFFERENCE BETWEEN 8 WEEK AND 9 MONTH CHECKS
 SECTOR PASSENGERS

Line No.	PASSENGERS				P R O D U C T I V I T Y						ACTION TAKEN as of Check Date			
	8 Weeks	9 Months	Diff	% Diff	8 Weeks		9 Months		Difference (No./%)					
					Day	Night	Total	Day	Night	Total				
2	4392	3476	- 916	-21	62.7	27.3	58.2	48.8	19.4	45.1	-13.9/-22	-7.9/-2	-13.1/-23	Reroute
14/87	1617	1534	- 83	- 5	22.9	6.8	20.7	21.8	5.4	19.7	-1.1/ - 5	-1.4/-21	-1 / -5	Reroute
15	772	941	+ 169	+22	27.6	NNS	27.6	34.3	NNS	34.3	+6.7/ +24	NNS	+6.7/+24	Line 11 terminated
16	1099	567	- 532	-48	31.3	7.8	25.9	24.8	3.6	21.2	-6.5/ -21	-4.2/-54	-4.7/-18	Frequency cut
17	420	563	+ 143	+34	41.5	65.0	42.4	31.7	10.0	30.9	-9.8/-24	-5.5/-85	-11.5/-27	Reroute
26	14523	12354	-2169	-15	61.9	29.7	59.4	55.4	19.7	52.7	-6.5/-11	-10/ -34	-6.7/-11	Reroute
28	10936	7666	-3270	-29	51.2	23.2	49.4	39.6	38.9	39.5	-11.6/-23	15.7/ 68	-9.9/-20	Reroute. Frequency cut.
32	2598	2084	- 514	-20	47.4	19.0	44.9	33.7	7.8	31.2	-13.7/-29	-11.2/-59	-13.7/-31	Reroute
47	11967	9935	-2032	-17	64.3	23.6	59.8	54.2	19.1	50.1	-10.1/-16	-4.5/-19	-9.7/-16	Reroute
50	14154	13442	- 712	- 5	107.7	73.0	105.4	101.8	63.6	99.4	-5.9/-5	-9.4/-13	-6 / -6	Reroute
142	1767	1609	- 158	- 9	33.1	7.6	29.0	28.3	4.7	24.3	-4.8/-15	-2.9/-38	-4.7/-16	Improve Service
143	1347	1033	- 314	-23	23.7	8.4	21.4	23.0	6.8	20.9	-0.7/-3.0	-1.6/-19	-0.5/-20	Improve Service
* 420	2608	2618	+ 10	None	40.9	32.1	39.9	43.4	9.1	38.6	2.5/6	-23/-71	1.3/3	

Table 8 SOUTHERN CALIFORNIA RAPID TRANSIT DISTRICT
EVALUATION OF EAST LOS ANGELES TRANSIT IMPROVEMENT PROGRAM

DIFFERENCE BETWEEN 8 WEEK AND 12 MONTH CHECKS
TOTAL LINE PASSENGERS

Line No.	P A S S E N G E R S				P R O D U C T I V I T Y				ACTION TAKEN Up To 6-19-77 See Table 2 for details
	8 Weeks	12 Months	Diff.	% Diff.	8 Wks Total	12 Mos. Total	Difference (No./%) Total		
2	14,466	12,560	-1,906	-13	64	58.0	-6.0/-9	Yes - Service reduction, reroute.	
14/87	1,617	2,584	967	60	21	44.5	23.5/112	Yes - Service reduction, reroute.	
15	782	674	-108	-14	27.9	47.2	19.3/69	Yes - Service reduction.	
16	584	829	245	42	8	15.8	7.8/98	Yes - Service reduction.	
17	858	1,257	399	47	30	29.0	-1.0/-3	Yes - Service reduction.	
26	49,801	46,133	-3668	-7	87	84	-3.0/-3	Yes - Service reduction, reroute.	
28*	28,113	30,932	2819	10	94.7	86.1	-8.6/-9	Yes - Service reduction, reroute.	
32	3,670	3,668	-2	-	39.9	42.9	3/8	Yes - Service reduction, reroute.	
47	11,763	10,775	-988	-8	58.8	55.7	-3.1/-5	Yes - Service reduction, reroute.	
50	23,168	18,309	4859	-21	91.9	70.1	-21.8/-24	Yes - Service reduction.	
142	1,766	1,354	-412	-23	29	29.1	0.1/-	Yes - Service reduction.	

* Line 28: 3-30-76 Riding check not available
Previous check 3-2-77 used.

Overall the decrease of 2.6% recorded after approximately one year of operation while the entire system had only recovered to 3% below the base level of June 1976 indicates that the East Los Angeles area is performing slightly better than the system as a whole.

Productivity

To determine whether the productivity of service after 9 months and 12 months was as high as productivity after eight weeks, the passengers per line (in the sector at 9 months) were divided by the bus hours per line (in the sector at 9 months) to get passengers per bus hour (PPBH).

The overall productivity of lines in East Los Angeles at eight weeks was 49.5 PPBH with individual lines ranging from a high of 105.4 PPBH to a low of 9.7 PPBH. Table 7 compares the sector productivity at eight weeks with figures at 9 months when the overall productivity had slipped to 42.9. Single lines ranged from a high of 99.4 PPBH to a low of 10.3 PPBH. There were 2 lines with productivity in the sector below 20 PPBH, and both were below 10 PPBH at eight weeks compared to 4 lines below 20 PPBH, and none below 10 PPBH at nine months. Average sector night productivity over the same period dropped from 24.0 PPBH to 16.5 PPBH, down 31%.

After twelve months, average productivity for the whole lines had risen to 58.7 PPBH, up 19% compared to the total line productivity at eight weeks. At eight weeks, there were 3 lines with end-to-end productivity less than 20 PPBH including one line below 10 PPBH; after 12 months of operation only 2 lines were below 20 PPBH and none were below 10 PPBH.

CONCLUSIONS

The East Los Angeles bus riders, largely transit dependent because of low incomes, were heavily impacted by the fare increase of July 1, 1976, and the 36-day strike.

However, East Los Angeles ridership did not decline as sharply as the whole system and appeared to recover slightly faster. Staff will continue to monitor line performance and community input to determine where further modifications may be made in the interests of attracting additional ridership, better serving the community and making additional service economies as necessary.

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