

MINIBUS FACT SHEET

8-76

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MINIBUS FACT SHEET
(For Service Effective July 11, 1976)

SERVICE SUMMARY

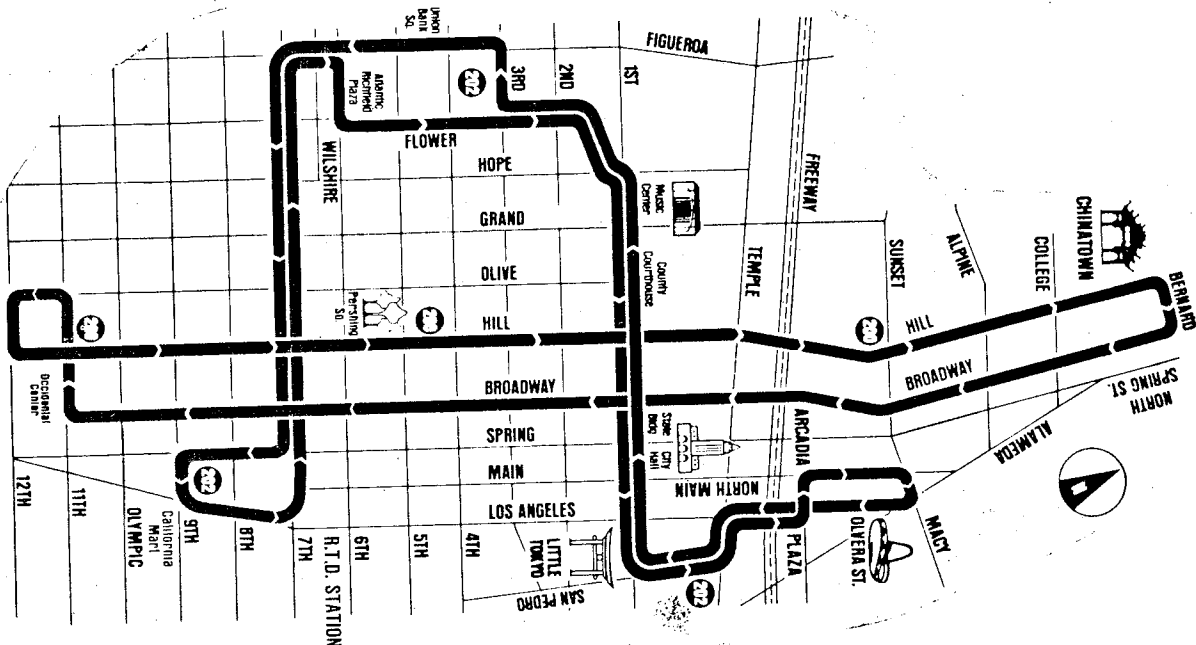
Two minibus routes operate in downtown Los Angeles. Designed for internal circulation within the Los Angeles Central Business District (CBD), these two routes supplement the existing heavy concentration of RTD bus routes. The latter routes, in addition to providing longer distance trips also provide internal CBD circulation for many riders.

Line 200 is a one-way loop operating northbound on Hill Street and southbound on Broadway, between Chinatown and Occidental Center, a round-trip distance of 5.2 miles. Line 202 has a "U"-shaped route configuration which operates from the Olvera Street area, via Civic Center, Bunker Hill redevelopment area, 7th Street to the California Mart, a one-way distance of 3.3 miles or 6.6 miles round-trip.

During midday, the buses operate every 5 minutes on weekdays and every 6 minutes on Saturdays, with slightly longer headways during the morning and late afternoon periods. Service operates 7 AM to 6:30 PM on weekdays and 9 AM to 4 PM on Saturdays.

The fare is 25 cents, with free transfer good only for transfer between the two minibus routes. No RTD system passes or regular transfers are honored.

ROUTE DIAGRAM (Lines 200 and 202)



OPERATING STATISTICS

<u>Period</u>	<u>Weekday</u>		<u>Saturday</u>	
	<u>Headway</u>	<u>Buses</u>	<u>Headway</u>	<u>Buses</u>
7 AM-- 9 AM	8 min.	15	No Service	14
9 AM--11 AM	6 min.	18	6 min.	19
11 AM-- 2 PM	5 min.	25	6 min.	19
2 PM-- 5 PM	6 min.	21	6 min.	19
			(No Service after 4 PM)	
5 PM--6:30 PM	8-10 min.	13	No Service	

During weekday midday of the 25 minibuses in service 12 are assigned to Line 200 and 13 to Line 202.

			<u>Weekday</u>
	<u>Weekday</u>	<u>Saturday</u>	<u>RTD System Average (Estimated)</u>
Daily bus hours	228	139	
Daily bus miles	1,550 ¹	996	342,000
Daily boardings (est.)	6,400	1,530	1,045,000
Boardings per bus mile (est.)	4.1	1.5	3.06
Boardings per bus hour (est.)	28.0	11.0	40.00
Operating cost per bus mile	\$ 2.93	\$ 2.73	\$ 1.70
Operating cost per ride	.71	1.78	.57
Subsidy per ride	.46	1.53	.40
Average speed (incl. layover)	6.2 mph	6.9 mph	14.0 mph

¹ Excludes minibus-to-minibus free transfers between Lines 200 and 202.

The estimated average trip length for Lines 200 and 202 is 0.8 miles, compared with an estimated average trip length for the system as a whole of 3.8 miles.

The higher operating cost per mile for this minibus service is due primarily to the lower average speed caused by downtown traffic congestion and many stops for boarding and alighting. Secondly, the higher cost is due to proportionately higher maintenance and fuel costs of the minibus, compared with the standard transit bus.

FUNDING

Cost projections to operate the downtown minibus for FY 76-77 are as follows:

<u>Estimated Expense</u>	<u>Estimated Revenue</u>	<u>Estimated Subsidy Required</u>
\$ 1,299,294	\$ 435,442	\$ 863,852

As a special local service which supplements regular RTD service, the downtown minibus service is funded as follows, by special service contract:

City of Los Angeles (60%)	\$ 518,311
County of Los Angeles (20%)	172,770
Community Redevelopment Agency (CRA) (20%)	<u>172,770</u>
Total	\$ 863,851

The terms of the service contract provide that if actual deficit is greater than subsidy payment provided, RTD shall attempt to negotiate amendment for additional subsidy, or, failing in that, shall terminate minibus service sooner than end of fiscal year. Similarly, if deficit is less than subsidy payment, RTD shall credit participating agencies for the unspent funds.

PATRONAGE ESTIMATES

The downtown minibus patronage was projected to be about 1,742,000 revenue boardings, excluding 3% minibus-to-minibus transfers per year. This is compared to about 2,597,000 annual patronage, for previous year for a patronage loss (deflection) of about 855,000 fewer rides per year, or 33% decrease.

Actual riding for the first 3 weeks after the fare increase and service reduction show riding to be within 2% of forecast patronage.

Effective July 1, 1976, the fare was increased from 10¢ to 25¢, which amounts to a 150% fare increase. At the same time, bus miles were reduced about 25%. However, it was expected this service decrease would be perceived as much smaller than a 25% cut, due to (1) service cuts being made in early morning and evening when few were riding and (2) only slightly longer waiting times (from the previous very frequent service of every 4 minutes to service every 5 to 6 minutes).

Assuming service cuts did not affect patronage, the elasticity with respect to fare was estimated to be .22. The 150% fare increase \times .22 = 33% decrease in patronage.

RIDERSHIP

Ridership quickly climbed to 4,000 weekday riders within the first 2 months of the start of service October 18, 1971.

PATRONAGE CHANGE

<u>Service Level</u>	<u>Date</u>	<u>Average Patronage Totals</u>		<u>Average Number of Trips for Week</u>	<u>Weekday Bus Miles*</u>	<u>Weekday Rides Bus Mile</u>
		<u>Average Weekday Trips</u>	<u>Average Saturday Trips</u>			
Original Route 4 min. Headway (AM-4 PM Eff. Oct. 18, 1971	Apr.- May 1972	3,960	1,200	21,000	883	4.43
Route Extension to Olvera St. and to Chinatown 5 min. Headway Eff. June 12, 1972	Aug.- Sept. 1972	4,860	1,700	26,000	1,020	4.76
Expanded hours/ service 7 AM-7 PM Weekday 5 min. Headway Eff. Dec. 16, 1974	Jan.- Feb. 1975	5,518	2,223	29,813	1,205	4.58
Route Extension to Occidental Center and Calif. Mart, 2 routes -- 200 and 202 Eff. Dec. 15, 1975	Jan.- Feb. 1975 Apr.- May 1976	8,771	2,850	46,705	2,269	3.87
		10,121	3,070	53,675	2,269	4.46

* Mileage is deducted for operation of Line 201, Convention Center shuttle, from Line 200 and Line 202 buses.

Peak riding on the two CBD minibus routes occurs midday in contrast to the usual morning and evening peaking found on regular RTD routes.

MINIBUS PATRONAGE BY TIME PERIODS*

Line 200 and Line 202

<u>Peak Period</u>	<u>Service Level</u>	<u>Patronage</u>				
		<u>Number of Bus Trips</u>	<u>Percent of All-Day Ridership</u>	<u>Number of Passengers Boarding</u>	<u>Average Passengers Per Trip</u>	<u>Average Passengers Boarding Per Bus Mile</u>
11:30- 1:30	4 min.	60	39%	3,571	60	10.2
<u>Balance</u>						
7:00- 9:00	4 min.	60	9%	837	14	2.4
9:00- 11:30	4 min.	76	19%	1,604	21	3.6
1:30- 4:00	4 min.	74	22%	2,070	28	4.7
4:00- 5:00	4 min.	30	7%	669	22	3.7
5:00- 7:00	4 min.	62	4%	349	5.6	.94
Total		362	100%	9,100	25.1	4.25

* Passenger Count: Tuesday, January 6, 1976

Effective July 11, 1976, service reduced as indicated in current operating statistics above. For the two routes (200 and 202), 218 bus round trips are provided weekdays and 148 bus round trips are provided Saturday.

Based on the passenger check of January 6, 1976, below, Lines 200 and 202 carry about 43 and 57 percent, respectively, of the total weekday patronage.

Summary of Passengers Carried
By 30-Minute Periods
Tuesday 1/6/76

Time Period*	LINE 200			LINE 202		
	No. Psgrs.	No. Trips	Avg. Psgrs. Per Trip	No. Psgrs.	No. Trips	Avg. Psgrs. Per Trip
7:00- 7:30 AM	80	8	10	186	8	23
7:30- 8:00	88	7	13	123	7	18
8:00- 8:30	82	8	10	109	8	14
8:30- 9:00	62	7	9	107	7	15
9:00- 9:30	66	8	8	125	8	16
9:30-10:00	73	7	10	111	7	16
10:00-10:30	124	8	15	195	8	24
10:30-11:00	149	7	21	177	7	25
11:00-11:30	245	8	31	339	8	42
11:30-12:00	379	7	54	499	7	71
12:00-12:30 PM	457	8	57	458	8	71
12:30- 1:00	352	7	50	477	7	68
1:00- 1:30	406	8	51	433	8	54
1:30- 2:00	192	7	27	258	7	37
2:00- 2:30	198	8	25	268	8	33
2:30- 3:00	198	7	29	196	7	28
3:00- 3:30	203	8	25	222	8	28
3:30- 4:00	132	7	19	203	7	29
4:00- 4:30	136	8	17	245	8	31
4:30- 5:00	145	7	21	143	7	20
5:00- 5:30	77	8	10	105	8	13
5:30- 6:00	34	7	5	33	7	5
6:00- 6:30	33	8	4	38	8	5
6:30- 7:00	8	8	1	21	8	3
TOTALS	3,919	181		5,181	181	

* Time period indicates time trips depart north terminal

MINIBUS SURVEY¹

Excerpts below are from in-person interviews conducted at 14 minibus stops in May, 1975.

MODE OF TRAVEL TO DOWNTOWN LOS ANGELES
1972 vs. 1975

	May, 1972	May, 1975
Automobile	66%	52%
Bus	27%	43%
Live in area	6%	3%
Taxi/walk/other	1%	4%

PURPOSE OF TRIP TO DOWNTOWN*

	Total	Weekday	Saturday	Frequency of Using Minibus		
				High	Medium	Low
To or from job	56%	63%	8%	70%	64%	36%
On Business	12%	13%	5%	8%	11%	19%
Shopping	18%	13%	58%	14%	19%	21%
Recreation	7%	4%	25%	2%	1%	16%
Lunch/medical/ other	8%	9%	7%	7%	7%	10%

*May total to more than 100% because of multiple reasons for coming downtown.

HOW TRIP MADE BEFORE MINIBUS*

Auto	14%
Bus	25%
Walked	29%
Didn't make trip	31%
Taxi/Other	4%

* May total to more than 100% because of multiple modes named.

¹ Survey and analysis by Jackie Matosian (RTD, Market Research)

MINIBUS VEHICLES

Of the 59 vehicles purchased so far, 19 were purchased in 1971 and 40 were purchased in 1975. All of the vehicles were manufactured by Minibus, Inc., of Pico Rivera, California, and are similar in dimensions and seating capacity.

The 19 original minibuses were powered by a V-8 Chrysler engine which was modified to permit the use of either gasoline or compressed natural gas (CNG). They originally used the CNG until it was exhausted and then switched over to the gasoline for the rest of the daily operation; the tanks for the CNG not being able to hold enough fuel for an entire day's operation. These vehicles now operate as a supplement to the later-purchased 40 minibuses and are now using gasoline exclusively.

The 40 minibuses purchased in 1975 are nearly identical in outside appearance, but contain some mechanical improvements over the original, maintenance-plagued vehicles--including the use of propane in place of the diesel fuel of the earlier buses.

For the first order of minibuses, the experimental compressed natural gas was selected due to its quiet operation and clean fuel characteristics. Given a requirement for a small bus of about 24 feet in length, at the time only front engine vehicles were available. An engine quieter than the diesel was therefore desired. The bulk of the CNG fuel storage tanks results in limited on-board fuel storage, with, in turn, a limited range of only 80-85 miles between refuelings. In operation, the experimental dual CNG-gasoline fuel system proved to be mechanically unreliable. Of the two other non-diesel alternatives--gasoline and propane--propane was selected for the second order of minibuses, due to its low emissions characteristics.

COST COMPARISONS

Comparisons of costs, both capital and operating, of small transit vehicles, i.e. "minibuses," with full-size transit buses must consider the fact that for comparable seat configurations, the minibus has a capacity of less than half of a standard-size bus.

The 1971 vehicles cost about \$19,000 per bus and the 1975 vehicles cost about \$35,000 per bus. Both vehicles have a life expectancy of six years. In 1975, a full-size, standard transit bus cost about \$67,000, with a life expectancy of 15 years. However, the durability of the standard transit bus makes it economically feasible to operate this vehicle well beyond 15 years, whereas it appears it is uneconomical to operate the present minibuses much beyond a 6 or 7 year period. (As with all capital purchases, the federal government, through the Urban Mass Transit Act (UMTA), now funds 80% of bus purchase costs.)

Maintenance costs on the minibus presently amount to 14.2¢ per mile. This compares to an 11.1¢ per mile RTD system average cost, which includes the higher minibus maintenance costs (April, 1976).

When equivalent mileage rates between diesel and propane are considered, propane fuel costs on the minibus presently amount to 9.1¢ per mile (26¢/gal ÷ 2.87 mpg). This compares to a 7.1¢ per mile RTD system average diesel fuel cost (32¢/gal ÷ 4.56 mpg).

When figured on a cost per passenger basis, all minibus operating costs, including labor costs, which amount to about 80% of all operating costs, are more than double unit costs of standard buses due to the lower capacity of the smaller bus.

HISTORY

The downtown Minibus Service was established in October, 1971, to help downtown mobility. The service was made possible with financial assistance provided by the City of Los Angeles, the County of Los Angeles and the Los Angeles Community Redevelopment Agency (CRA), in the same proportion (60%-20%-20%) as provided for in the present service contract.

Nineteen (19) minibuses were purchased for the start of minibus service in October, 1971. Operating on a 4-minute headway, Line 200 required 17 minibuses in midday and 15 buses for the midmorning and midafternoon service. The route extension to Chinatown and to Olvera Street in June, 1972, was accomplished without additional buses by expanding the headway from 4 minutes to 5 minutes. In December, 1974, the hours of service were extended, from 9 AM to 4 PM, to 7 AM to 7 PM, with an approximate 10-minute headway during the extended early morning and evening service. For the expansion of the CBD minibus service into two routes, Lines 200 and 202, effective December, 1975, 40 additional new minibuses were purchased. At that time, the route was divided into two separate lines with service extended to Occidental Center and to the California Mart. The U-shape portion of the old line 200 from Olvera Street to 7th Street via Bunker Hill became Line 202, with the route extended to the California Mart. From December, 1975, through June, 1976, a 4-minute headway was operated from 7 AM to 7 PM (9 AM to 4 PM on Saturday) which required a combined total of 32 minibuses for the two routes (29 minibuses Saturdays).

Effective July 11, 1976, service was modified to provide 5-minute headways during the midday (6-minute headways Saturday) with 6 to 8 minute headways in the early and midmorning and mid and late afternoon periods. The close of service was reduced from 7 PM to 6:30 PM. As previously noted, this present service requires 25 minibuses during the midday (19 minibuses Saturdays).

RECREATIONAL USES

On Sundays, minibuses have operated in experimental recreational services. During the summer of 1973, 4 minibuses operated on Sundays over a 12.9-mile one-way circulation loop route, on a 20-minute headway, within Griffith Park. The fare was 25¢ or a 50¢ all-day pass. Patronage developed into an average of 600-700 rides per Sunday. This service was funded by the Los Angeles City Department of Parks and Recreation.

Minibuses have also been tried in beach park/ride shuttles between Manhattan and Malibu beaches and respective nearby parking lots. Two buses operated over the Manhattan Beach route from a TRW parking lot (3.6 one-way route miles) on a 20-minute headway. One bus operated over the Malibu Beach route from a civic center lot (1.4 roundtrip route miles) on a 15-minute headway. Funded by revenue sharing funds made available by Los Angeles County, the fare on each route was 10¢. The lines were only lightly patronized.

OTHER CURRENT USES OF MINIBUSES

Minibuses are also currently in use on three other services.

Line 201

Commencing with the start of Line 200 in October, 1971, Line 201, a park/ride shuttle (3.2 route miles roundtrip) between the Convention Center and the westside financial district and the Bunker Hill Redevelopment area, was established, using up to 8 minibuses. Originally, this service was operated using a portion of the 17 minibuses that operated during 9 AM to 4 PM over the Line 200 route. The Convention Center park/ride shuttle, which reached a peak of more than 600 monthly subscribers, is now down to 150 monthly subscribers plus a small number of parkers who pay daily. The decline in usage is attributable to the opening of additional parking garages on the westside, along with expansion of RTD park/ride services and RTD fare reductions. Both of the latter two service improvements have encouraged parkers to use longer distance RTD services instead of driving their cars to the Convention Center. Effective July 11, 1976, the Convention Center shuttle, Line 201, is now operated with 3 buses (operated as a part of pull-in or pull-out segments to Lines 200 and 202, thus saving on costs, providing an approximate headway range of 10-20 minutes during the peak periods AM and PM. The one midday bus formerly providing 20-minute headways on Line 201 was eliminated at this time. The present Convention Center park/ride monthly pass for combined parking and shuttle service is \$24.00 a month or \$1.50 per day. Regular RTD monthly passes are honored.

Line 205

To alleviate traffic congestion and to provide more parking on Friday and Saturday in Westwood, a shuttle line, Line 205, started December, 1975, for a 13-week trial period. The line, operating as a one-way loop (3.0 roundtrip route miles), links the large parking lot at the Westwood Federal Building with theaters, restaurants and shops in the concentrated Westwood Commercial Center. The shuttle now carries an average of 350 riders (boardings) on Friday night and 450 riders (boardings) on Saturday night.

By a new contract with the Western Los Angeles Regional Chamber of Commerce, who, in turn, receive Los Angeles City parking meter revenue for this bus subsidy, service is to be provided June through December, 1976. The

Saturday night service operates from 7 PM to 1 AM, with an 8-minute headway, and requires 3 buses. Contingent upon additional funding, a Saturday midday shuttle service between 11 AM and 7 PM may be operated on an 8-minute headway, requiring 3 minibuses. The fare is 10 cents; no monthly passes or transfers are honored.

Line 206

As a part of the area-wide South Bay improvement program, starting June, 1976, 4 minibuses are used to operate a one-way shuttle loop service (2.6 roundtrip route miles) between the Los Angeles International Airport (LAX) and an adjacent RTD transfer terminal for connection to RTD lines serving the area. The service operates on a 6-12 minute headway 7 days a week, between 5 AM and 1 AM. This service operated as a part of the regular RTD system, and, as such, is included in the regular RTD fare structure, except that transfer between line 206 and other RTD lines at LAX transfer terminal (Vicksburg and 98th Street) is free.

OTHER POSSIBLE USES OF MINIBUSES

The remaining few uncommitted minibuses are available for use in other specially funded special local minibus services as well as short trip services (such as the LAX shuttle, Line 206) which are included as a part of the regular RTD system. In accord with present RTD Board of Directors' policy, special local services which supplement the existing RTD network of lines require an additional source of funding.

Use of the minibuses for other recreational services is outlined in the history section.