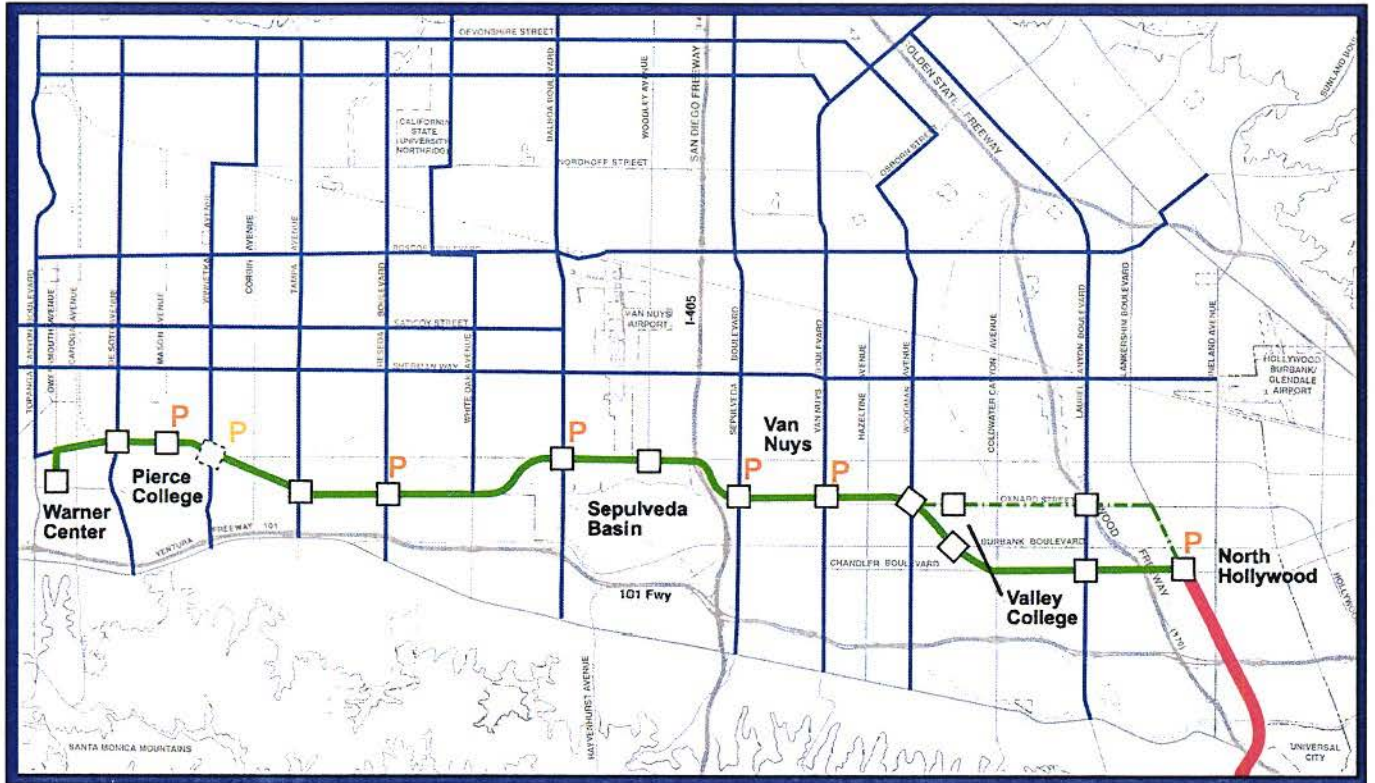


# Revised Final Environmental Impact Report Volume 5 – Chapter 9 (Book 5 of 6)



## SAN FERNANDO VALLEY EAST-WEST TRANSIT CORRIDOR



Los Angeles County  
**Metro** Metropolitan Transportation Authority (MTA)

December 2004

**EXHIBIT XVIII**

**THOMAS A. RUBIN PUBLIC RECORDS ACT  
REQUESTS FOR DRFEIR MATERIALS**

**Thomas A Rubin**

**From:** Thomas A Rubin [tarubin@earthlink.net]  
**Sent:** Tuesday, October 26, 2004 4:37 PM  
**To:** 'carpenterj@metro.net'  
**Subject:** Public Records Act Request  
**Follow Up Flag:** Follow up  
**Flag Status:** Red

John:

This is a Public Records Act Request.

The following instructions apply to each of the individual items below:

1. Please notify me when each individual item, or even part of an item, becomes available – do NOT wait for everything to come in.
2. e-mail is probably the best means of communications. Feel free to call me if you have any questions, or whatever, at the following numbers: (a) Working days, (213) 633-7463, (b) Cell, (213) 447-6601.
3. Any questions, please do not hesitate to call or e-mail. I rather spend a few minutes clearing up what I had in mind that have you waste time.
4. I am aware of the \$.10 a page copying charge and authorize you to make the copies, except where I specifically ask for items to be produced for inspection first, up to \$100.00 (1,000 pages). If this amount would be exceeded, please notify me for authorization to proceed.

The individual requests are:

1. The MTA National Transit Database submission to the Federal Transit Administration for the year ended June 30, 2003.
2. MTA's adopted Budget for the 2004-2005 fiscal year in both printed and electronic (CD) format.
3. The contract with North American Bus Industries (NABI) for 200 low floor compressed natural gas articulated buses for \$138.9 million, the proposal from NABI to MTA to provide these buses, and all change orders and correspondence between MTA and NABI regarding performance, including time/speed/distance information, braking rates, and vehicle weight in transit service, including weight by axle. I authorize copying of the contract, the proposal, and any and all change orders. Please hold all other correspondence and documentation for my review and authorization prior to copying.
4. California Transportation Commission Resolution BFP-91-18, executed April 10, 1992, to provide \$44.8 million of Proposition 108 funds for the purchase of the "Burbank Branch" from the Southern Pacific Transportation Company. The above is my best information of the details of this transaction for your assistance in locating it, but there may be some errors in some of the particulars.

Thanks for your assistance.

Tom Rubin

11/21/2004

**Thomas A Rubin**

**From:** Thomas A Rubin [tarubin@earthlink.net]  
**Sent:** Thursday, October 28, 2004 9:07 AM  
**To:** 'carpenterj@metro.net'  
**Subject:** FW: Public Records Act Request  
**Follow Up Flag:** Follow up  
**Flag Status:** Red

John:

This is a Public Records Act Request. Please e-mail back that you have received and, when you can, let me know how long it will take to get these items for me.

The following instructions apply to each of the individual items below:

1. Please notify me when each individual item, or even part of an item, becomes available – do NOT wait for everything to come in.
2. e-mail is probably the best means of communications. Feel free to call me if you, or anyone else, have any questions, or whatever, at the following numbers: (a) Working days, (213) 633-7463, (b) Cell, (213) 447-6601.
3. Any questions, please do not hesitate to call or e-mail. I rather spend a few minutes clearing up what I had in mind that have you waste time.
4. I am aware of the \$.10 a page copying charge and authorize you to make the copies, except where I specifically ask for items to be produced for inspection first, up to \$100.00 (1,000 pages). If this amount would be exceeded, please notify me for authorization to proceed.
5. All of the requests relate to the Draft Revised Final Environmental Impact Report, San Fernando Valley East-West Transit Corridor, October 2004 or for the previous, February 2002 FEIR for the same project.

The individual requests are:

1. For all transit lines, bus and rail, operated by MTA and other transit operators, serving the San Fernando Valley, the (non-holiday) weekday ridership projections for the forecast year 2020, for each of the various alternatives evaluated in the "original" FEIR (adopted February, 2002) and in the October Draft Revised FEIR, including (a) No Build, (b) TSM, (c) Bus Rapid Transit – Full BRT, (d) Bus Rapid Transit – Lankershim/Oxnard On-Street Alignment and Weekend Service, (e) Bus Rapid Transit – Minimum Operable Segment, (f) Rapid Bus – Three East-West Rapid Bus Routes (RB-3), (g) Rapid Bus – Five East West Rapid Bus Routes (RB-5), and (h) Rapid Bus Network (RB-Network). If there are more than one type of service on a particular route, such as Rapid Bus and local service, provide ridership separately for each type of service. If available, these data are to be provided in both "hard copy" printout and electronic format, such as a spreadsheet file. For this and all other electronic records, the preferred delivery formats are, in order of preference, (1) CD, (2) e-mail, (3) 1.44 meg "floppy," and (4) DVD.
2. For each of the transit lines identified in request 1. above, for each of the EIR alternatives identified in request 1. above, the revenue vehicle hours of service and the revenue vehicle miles of service for weekdays and annually, for the forecast year 2020.
3. For each of the transit lines identified in request 1. above, for each of the EIR alternatives identified in request 1. above, the cost per revenue vehicle hour of service. If a common cost per hour is utilized for all service of a particular mode, such as motor bus, for a particular operator, such as MTA or LA-DOT, it will be acceptable to simply state the rate(s) for the specific lines it/they apply to.
4. For each of the transit lines identified in request 1. above, for each of the EIR alternatives identified in request 1. above, the farebox and other (probably mostly advertising) operating revenues.
5. For each of the Rapid Bus lines in each of the three Rapid Bus alternatives – three for "RB-3," five for "RB-5," and nine for "RB-Network" – provide the detailed calculation of end to end running time. Note the format utilized by MTA for such calculations for the February 2002 FEIR, "Figure A-3: 36-Minute

11/21/2004

Run Time Estate of the BRT Alternative," AR 03267, which I am providing to you. I am looking for the information in the identical or similar format. If, however, the run times were calculated in a different manner, provide the details for the run times that are presented in the October 2004 EIR, Table 8-6.6: Year 2020 Transit Travel Times on Valley Arterials, p. 8-6-10.

6. For the Transportation Model and Transportation Model runs utilized to develop the transit ridership for each of the EIR Alternatives in both the February 2002 and October 2004 EIR documents:
  1. Travel forecasting methodology appendix
  2. Model coefficients & bias constants
  3. Travel forecasting model methodology documentation (if it is not completed, I am interested in what does exist)
  4. Mode choice model structure
  5. Mode choice utility equations
  6. Path tracing rules governing multimodal trip assignment
  7. Transit travel times, including comparison of projected travel times to current on current routes
  8. Highway/transit speed curves
  9. Transit access link methodology
  10. Transit network path tracing parameters
  11. Parking facility choice methodology
  12. Method and sources of data for calculating modeling fare values (from the various type of fares in the current fare structures)

For this one, don't copy anything yet, I want to review the paper first. Your contact and source will be Chaushie Chu.

Thanks for your assistance. Again, any questions, you call, or have the person who is the technical expert, call or e-mail me. I don't want anyone doing a lot of work to produce something I'm not really interested in.

Tom Rubin

11/21/2004

**EXHIBIT XIX**

**STATE OF CALIFORNIA  
DEPARTMENT OF FINANCE  
DEMOGRAPHIC RESEARCH UNIT  
“NEW STATE PROJECTIONS SHOW 20 MILLION  
MORE CALIFORNIAN BY 2020; HISPANICS TO  
BE STATE’S MAJORITY ETHNIC GROUP BY  
2040,” MAY 19, 2004**



**NEW STATE PROJECTIONS SHOW 20 MILLION MORE CALIFORNIANS BY 2050;  
HISPANICS TO BE STATE'S MAJORITY ETHNIC GROUP BY 2040**

FOR IMMEDIATE RELEASE:

CONTACT: H.D. Palmer  
(916) 323-0648  
Mary Heim/Melanie Martindale/  
Nicola Standish  
(916) 323-4086

**SACRAMENTO** – California's population will have jumped by more than 20 million people over 50 years to reach a total state population in 2050 of nearly 55 million, according to long-range population projections released today by the California Department of Finance.

From fewer than 34 million Californians counted in the 2000 Census, the new data indicate that the state is projected to pass the 40 million mark in 2012, and to top 50 million by 2036.

The new projections also show that Hispanics will constitute the majority of Californians by 2040. By the middle of the century, the projections indicate that Hispanics will represent 53.6 percent of the state's population, with Caucasians comprising 23.3 percent, the Asian population at 12.1 percent, the African American population at 6.4 percent, the Pacific Islander population at less than one-half of one percent, and Native Americans and people of more than one race 2.1 percent each.

This is the department's first population projection series that separates the Asian race group from the Pacific Islanders race group, and is also the first projection series that includes a multi-race category. The 2000 Census marked the first time that Asians and Pacific Islanders were listed as separate racial/ethnic groups, and the first time that respondents were allowed to self-select more than one racial category.

The new projections also show changes in the State's county populations. Los Angeles will remain the largest county in California, exceeding 11 million in 2050. In numeric terms, Riverside County is expected to add more people than any other county with 2.8 million new residents. By 2050, Riverside is projected to overtake Orange County and become the third most populous county behind Los Angeles and San Diego.

San Joaquin County is expected to triple in size and experience the greatest percentage increase over the 50-year period – 201 percent. Other counties with large percentage increases include Merced, Riverside, Placer, and Madera. Seven counties in California – Inyo, Marin, Modoc, Plumas, San Francisco, Siskiyou, and Trinity – are expected to have fewer people at mid-century than they did in 2000. The population loss in these counties is for the most part due to natural decrease – the amount of deaths over births.

By 2050, the new projections indicate that Sierra County will have the highest percentage of Caucasians of any county, and Imperial County will have the highest percentage of Hispanics. San Francisco City and County will have the highest concentration of Asians, San Mateo County will have the highest percentage of Pacific Islanders, Sacramento County will have the largest proportion of African Americans, and Alpine County will have the highest percentage of Native Americans. Californians identifying themselves as being multi-race are expected to have the highest concentration in Inyo County. Whites will remain the majority in less than 40 percent of the counties in California. Hispanics will be the majority race/ethnic group in 20 counties in California.

- MORE -

This is the first Department of Finance projection series to incorporate 2000 Census information. Compared to the projections released in 1998, these projections forecast 7 million fewer people by 2040, which was the end point of the previous projection series.

Projections of the age and sex characteristics of the population will soon be available from the Demographic Research Unit.

###

NOTE TO EDS: Other population reports are available from the Department's website: <http://www.dof.ca.gov/> under Demographic Information.



Population Projections by Race/Ethnicity for California and Its Counties 2000-2050

California State Department of Finance  
Demographic Research Unit  
915 L Street  
Sacramento, CA 95814  
(916) 323-4086

May 2004

**ACKNOWLEDGMENTS**

Mary Heim, Melanie Martindale and Nicola Standish prepared this population projection series. Cynthia Singer assisted with testing the projection model. Doug Kuczynski worked on production. Carol Corcoran assisted with both production and report generation. Dolores Lykins provided administration support.

**SUGGESTED CITATION**

State of California, Department of Finance, *Population Projections by Race/Ethnicity for California and Its Counties 2000-2050*, Sacramento, California, May 2004.

These population projections were prepared under the mandate of Government Code, Sections 13073 and 13073.5. In addition, the State Administrative Manual, Section 1100 on state plans, sets the general policy of . . . "(3) The use of the same population projections and demographic data that is provided by the State's Demographic Research Unit."

**TECHNICAL NOTES**

The Department of Finance uses a baseline cohort-component method to project population by gender, race/ethnicity and age. For the purposes of this projection, the seven-race/ethnic categories are mutually exclusive. Upon request race group breakdowns can be provided for those of Hispanic ethnicity. However, because of small cohort sizes the information may be unreliable for some counties.

A baseline projection assumes people have the right to migrate where they choose and no major natural catastrophes or war will befall the state or the nation. A cohort-component method traces people born in a given year through their lives. As each year passes, cohorts change due to the mortality and migration assumptions. Applying the fertility assumptions to the women of childbearing age forms new cohorts.

Special Populations

The primary sources of special populations are prisons, colleges, and military installations. Special populations display very different demographic characteristics and behavior. In counties where special populations represent a significant proportion of a specific race/ethnic population, they were removed from the base and projected separately. For prison and military populations, the determination was made based on an examination of sex ratios and, to a lesser extent, the age structure. College adjustments were based on an examination of age structure. Forecasts from the Department of Corrections, the California Youth Authority and the various college campuses were used to determine the timing and capacity of facilities. In most other instances, the special populations were held at the 2000 level.

Survival, Fertility and Migration Proportions

Survival rates are constructed separately for men and women at the state level for each of twelve race/ethnic groups. A life table was created for each race/ethnic group by sex using a three-year average of death data (Vital Statistics 1999, 2000, and 2001) and the 2000 Census population aged forward three

months to July 1, 2000. The survival rate for each race/ethnic group by sex is taken from the life table and used as the starting rate for 2000.

Race/ethnic-and age-specific fertility rates were calculated for each county. The Census Bureau's MR (Modified Race) file was used as the denominator and the average of 1999, 2000, and 2001 births was used as the numerator. In many counties it was apparent that the census counts and the vital statistics were inconsistent. In these cases, the rates were adjusted to reflect census results. As a final step, rates were additionally adjusted to be consistent with actual fiscal birth totals for 2001-2002.

Migration proportions were developed for the decade of the 1990s by a survived population method. The 1990 population was aged forward in time to 2000 by adding recorded births to form new cohorts and subtracting deaths from existing cohorts. The survived 1990 population was compared to the 2000 population and differences were assumed to be migration. The ten-year migration was annualized and divided by the total to derive a proportion. Then a three-year moving average was used to smooth the migration proportions.

#### Assumptions

**Base Population:** As the benchmark (or starting population), the Department of Finance has used the 2000 Census counts as modified by the Bureau of the Census to eliminate the "Other" race category. These counts represent a modification to the race distribution of the census count and not an adjustment for undercount to the total. These race groups are consistent with the population that is being used by the Census Bureau for current estimates as well as the national projections. The Department of Finance further refines this base population for special populations as discussed earlier.

**Fertility:** The projections assume that each county's race/ethnic-specific and age-specific fertility rates merge toward a state norm forecast of fertility rates by age and race/ethnic group. County differences merge to the state norm in 50 years. The state fertility norms as expressed in term of total fertility are as follows:

- Non-Hispanic Whites: 1.62
- Non-Hispanic Blacks: 1.64
- Non-Hispanic American Indians: 1.32
- Non-Hispanic Asians: 1.68
- Non-Hispanic Native Hawaiian and Other Pacific Islanders: 1.74
- Non-Hispanic Multirace: 1.25
- Hispanic White: 2.80
- Hispanic Black: 1.71
- Hispanic American Indian: 1.68
- Hispanic Asian: 1.75
- Hispanic Native Hawaiian and Other Pacific Islander: 1.88
- Hispanic Multirace: 2.58

**Mortality:** Evaluation of the life tables by county, gender, and race/ethnic group revealed that the county tables contained many small data cells that could not deliver consistent results. Therefore, statewide survival rates by gender and race/ethnic group were used for all counties in California. Survival rates are projected separately for men and women by race/ethnic group in the following manner:

- Non-Hispanic Whites: survival rates are held constant through 2050
- Non-Hispanic Blacks: survival rates are held constant through 2050
- Non-Hispanic American Indians: survival rates are held constant through 2050
- Non-Hispanic Asians: survival rates are held constant through 2050
- Non-Hispanic Native Hawaiian and Other Pacific Islanders: survival rates are held constant through 2050

- Non-Hispanic Multirace: 2050 survival rate is the average of the 2000 survival rates of non-Hispanic Multirace and 2000 non-Hispanic Whites, with straight-line interpolation for the in-between years
- Hispanic White: survival rates are held constant through 2050
- Hispanic Black: 2050 survival rate is the average of 2000 Hispanic Black survival rate and 2000 overall Hispanic survival rate, with straight-line interpolation for the in-between years
- Hispanic American Indian: 2050 survival rate is the average of 2000 Hispanic American Indian survival rate and 2000 overall Hispanic survival rate, with straight-line interpolation for the in-between years
- Hispanic Asian: 2050 survival rate is the average of 2000 Hispanic Asian survival rate and 2000 overall Hispanic survival rate, with straight-line interpolation for the in-between years
- Hispanic Native Hawaiian and Other Pacific Islander: 2050 survival rate is the average of 2000 Hispanic Native Hawaiian and Other Pacific Islander survival rate and 2000 overall Hispanic survival rate, with straight-line interpolation for the in-between years
- Hispanic Multirace: 2050 survival rate is the overall survival rate for Hispanics in 2000, with straight-line interpolation for the in-between years

**Migration:** The Department of Finance relied on the expertise of local agencies to assist in the development of local area migration assumptions. When local input was not available, the migration assumptions were made by the Department of Finance based on historical analysis of the county's migration patterns. The sum of the county net migration assumptions averages 186,000 over the 50-year period.

Demographic Model

The benchmark population was projected using the final assumptions—i.e., local age and race/ethnic fertility will merge toward state norms, life expectancy will stabilize or improve, and there will be an annual average net in-migration to California of 186,000 throughout the forecast period. Applying the fertility assumptions to the women of childbearing ages creates new cohorts. The population ages with time, as the gender, race/ethnic, age-specific survival rates are applied to the population at risk. In addition, the overall migration assumption is distributed using the assumed gender, race/ethnic, and age proportions. The process is carried forward for 50 years from 2000. Special populations are then added to produce total population projections. For the period 2000 and 2003, the populations are benchmarked to the Department's 2004 E-2 Report. These population projections depict only one possible course of future population change, i.e., the one reflecting recent trends in fertility, mortality, and migration. These projections do not necessarily show what is most desirable but rather what can be reasonably expected if current trends continue until the year 2050.

TABLE 1

	TOTAL POPULATION					
	2000	2010	2020	2030	2040	2050
ALAMEDA	1,451,108	1,651,164	1,864,145	2,038,482	2,187,098	2,315,045
ALPINE	1,247	1,377	1,441	1,413	1,322	1,263
AMADOR	35,434	39,287	42,257	44,404	45,929	47,829
BUTTE	204,672	228,020	260,730	278,828	282,492	287,130
CALAVERAS	40,890	48,595	58,691	70,577	81,886	92,856
COLUSA	18,923	22,697	26,337	29,353	32,449	35,544
CONTRA COSTA	854,504	1,116,298	1,327,081	1,543,053	1,701,209	1,848,177
DEL NORTE	27,652	29,126	30,765	32,442	32,713	32,890
EL DORADO	158,570	188,471	221,289	250,173	266,788	282,331
FRESNO	803,401	949,961	1,114,654	1,297,476	1,476,099	1,658,281
GLENN	26,718	29,348	31,950	34,379	37,182	40,167
HUMBOLDT	127,173	133,136	139,518	142,412	141,213	139,692
IMPERIAL	143,660	178,201	214,386	254,989	296,656	339,506
INYO	18,257	18,396	18,404	18,256	17,899	17,699
KERN	664,694	808,808	950,112	1,114,878	1,325,648	1,549,594
KINGS	129,823	156,334	184,751	223,767	252,762	282,364
LAKE	58,863	69,259	79,676	89,638	99,501	109,488
LASSEN	34,038	36,954	38,232	38,630	39,157	39,510
LOS ANGELES	9,559,635	10,461,007	10,885,092	11,236,734	11,380,841	11,423,198
MADERA	124,372	150,278	183,966	219,832	259,353	302,859
MARIN	248,473	252,440	251,260	248,684	237,244	225,127
MARIPOSA	17,185	18,608	20,607	22,435	23,979	25,456
MENDOCINO	86,852	84,300	100,664	106,092	111,407	118,621
MERCED	210,876	277,715	360,831	437,880	528,788	625,313
MODOC	9,475	9,547	9,285	8,922	8,455	7,999
MONO	12,939	14,705	16,248	17,471	18,178	18,862
MONTEREY	403,636	453,292	505,359	556,962	605,963	654,847
NAPA	124,945	142,121	165,946	190,234	205,338	221,466
NEVADA	92,431	106,910	126,912	137,965	146,432	155,161
ORANGE	2,854,026	3,260,162	3,526,144	3,665,343	3,704,802	3,702,641
PLACER	249,471	349,113	456,040	544,690	603,637	657,385
PLUMAS	20,829	21,067	20,983	20,330	19,660	19,413
RIVERSIDE	1,553,902	2,165,148	2,675,648	3,180,411	3,717,961	4,305,161
SACRAMENTO	1,230,465	1,555,848	1,946,679	2,293,028	2,579,720	2,856,427
SAN BENITO	53,770	62,530	73,547	84,727	94,994	105,032
SAN BERNARDINO	1,719,615	2,133,377	2,456,089	2,762,307	3,029,750	3,289,254
SAN DIEGO	2,832,563	3,258,951	3,633,572	4,005,624	4,289,739	4,506,099
SAN FRANCISCO	781,174	816,230	820,545	795,208	757,161	706,192
SAN JOAQUIN	567,798	747,149	989,462	1,229,757	1,457,128	1,707,599
SAN LUIS OBISPO	248,327	277,437	305,274	330,949	337,247	343,548
SAN MATEO	710,493	747,134	786,740	814,065	825,638	826,342
SANTA BARBARA	400,778	440,337	464,019	467,292	477,658	481,840
SANTA CLARA	1,691,183	1,844,146	2,006,992	2,152,963	2,252,668	2,325,538
SANTA CRUZ	256,874	271,222	286,044	294,711	294,253	293,350
SHASTA	164,748	186,464	227,922	260,160	296,007	334,348
SIERRA	3,636	3,530	3,654	4,023	4,477	4,896
SISKIYOU	44,696	45,611	45,862	45,400	44,063	43,045
SOLANO	396,784	455,647	555,264	677,628	751,782	830,830
SONOMA	461,347	515,968	602,783	715,298	751,906	786,792
STANISLAUS	449,777	559,051	653,841	744,599	843,523	941,562
SUTTER	79,464	95,757	111,856	126,216	139,805	154,210
TEHAMA	56,042	62,442	66,323	74,171	80,640	88,006
TRINITY	13,081	13,442	13,402	13,191	12,980	12,923
TULARE	369,355	447,315	543,749	650,466	754,790	867,482
TUO, UMNE	54,946	59,863	65,452	66,566	70,537	72,265
VENTURA	757,172	860,664	924,410	982,794	1,025,709	1,071,906
YOLC	169,882	222,277	271,040	320,434	363,663	407,691
YUBA	60,553	71,506	84,816	98,959	112,097	125,650
CALIFORNIA	34,043,196	39,246,767	43,851,741	48,110,671	51,538,596	54,777,700

Table 2

YEAR 2000

County	TOTAL	YEAR 2000						Multirace
		White	Hispanic	Asian	Pacific Islander	Black	American Indian	
ALAMEDA	1,451,109	594,970	279,521	306,973	9,514	212,061	6,242	41,828
ALPINE	1,247	856	110	4	1	7	223	44
AMADOR	35,434	29,209	3,206	396	31	1,433	586	604
BUTTE	204,672	163,913	21,947	7,193	326	2,887	3,650	4,758
CALAVERAS	40,890	35,685	2,679	367	41	360	652	906
COLUSA	16,923	9,007	6,644	275	83	103	362	249
CONTRA COSTA	954,504	555,747	171,239	106,705	3,461	88,534	4,059	24,759
DEL NORTE	27,652	19,324	3,913	667	18	1,176	1,660	894
EL DORADO	158,570	134,626	15,044	3,507	199	833	1,459	2,902
FRESNO	803,401	321,396	356,912	66,050	730	41,334	6,755	11,225
GLENN	26,718	16,716	7,931	983	23	137	475	453
HUMBOLDT	127,173	104,234	8,515	2,107	250	1,089	6,931	4,047
IMPERIAL	143,660	28,978	103,602	2,632	88	5,417	1,866	777
INYO	18,257	13,576	2,313	191	18	21	1,726	412
KERN	664,694	329,532	257,016	22,482	786	36,415	6,258	10,205
KINGS	129,823	55,085	57,041	3,641	233	10,510	1,332	1,980
LAKE	56,863	47,226	6,896	511	94	1,271	1,536	1,328
LASSSEN	34,039	24,091	4,776	293	162	3,111	1,003	603
LOS ANGELES	9,559,635	3,056,684	4,264,140	1,139,396	24,132	916,140	27,691	131,452
MADERA	124,372	58,536	55,361	1,627	193	4,892	1,817	1,946
MARIN	246,473	196,494	27,691	11,210	373	7,183	679	4,843
MARIPOSA	17,185	14,443	1,367	146	22	131	578	465
MENDOCINO	86,852	65,151	14,450	1,106	124	599	3,502	1,948
MERCED	210,676	87,130	96,265	14,715	328	7,736	1,186	3,516
MODOC	9,475	7,588	1,129	62	7	68	386	233
MONO	12,939	9,867	2,313	167	10	70	307	205
MONTEREY	403,636	166,443	184,166	23,484	1,666	15,787	1,676	6,212
NAPA	124,945	86,411	29,940	3,814	283	1,637	713	2,147
NEVADA	92,431	83,656	5,310	754	79	276	718	1,636
ORANGE	2,854,026	1,477,117	880,754	389,607	8,391	43,717	6,714	45,726
PLACER	246,471	208,741	24,337	7,399	376	1,980	1,723	4,915
PLUMAS	20,829	18,346	1,230	132	22	156	462	445
RIVERSIDE	1,553,902	786,892	566,714	57,356	3,459	94,332	10,633	25,516
SACRAMENTO	1,230,465	713,744	199,516	139,311	7,637	120,820	9,867	39,390
SAN BENITO	53,770	24,995	25,803	1,252	81	521	306	810
SAN BERNARDINO	1,719,615	754,952	682,859	82,436	4,717	153,976	10,483	30,189
SAN DIEGO	2,832,563	1,560,794	769,984	252,179	12,574	156,492	15,916	62,622
SAN FRANCISCO	781,174	347,396	109,853	243,060	3,720	56,083	2,479	16,581
SAN JOAQUIN	567,796	270,630	175,488	65,336	1,764	37,380	3,691	13,510
SAN LUIS OBISPO	246,327	189,620	40,823	6,697	263	4,830	1,663	4,431
SAN MATEO	710,493	358,020	155,905	144,386	9,886	24,056	1,627	16,530
SANTA BARBARA	400,778	228,857	137,853	16,186	646	6,372	2,226	6,633
SANTA CLARA	1,691,183	755,102	409,166	436,720	5,376	46,330	5,509	34,976
SANTA CRUZ	256,874	169,270	69,447	8,917	352	2,302	1,426	5,160
SHASTA	164,746	142,067	9,356	3,256	182	1,311	4,426	4,129
SIERRA	3,636	3,254	236	6	3	6	64	64
SISKIYOU	44,695	37,074	3,543	575	56	600	1,660	1,187
SOLANO	396,784	197,465	69,706	50,353	3,016	58,749	2,452	15,044
SONOMA	461,347	345,095	80,742	14,687	895	6,439	3,782	9,707
STANISLAUS	449,777	260,076	144,321	19,546	1,602	11,065	3,829	6,336
SUTTER	79,464	47,686	17,843	9,527	167	1,467	1,011	1,761
TEHAMA	56,042	44,016	6,947	459	54	320	1,056	1,189
TRINITY	13,081	11,231	568	76	16	63	626	503
TULARE	369,355	155,960	186,432	11,956	289	5,271	3,194	4,251
TUOLUMNE	54,946	46,674	4,540	421	93	1,159	946	1,111
VENTURA	757,172	425,336	257,861	42,176	1,529	13,690	3,974	12,604
YOLO	169,882	99,247	44,472	17,082	540	3,283	1,257	4,001
YUBA	60,563	39,719	10,516	4,713	117	1,856	1,364	2,267
CALIFORNIA	34,043,196	16,047,989	11,062,085	3,746,292	111,200	2,222,816	182,753	639,163

Table 2 continued

YEAR 2010

COUNTY	TOTAL	YEAR 2010						MULTIRACE
		White	Hispanic	Asian	Pacific Islander	Black	American Indian	
ALAMEDA	1,651,164	474,206	409,895	486,425	15,050	199,154	15,615	50,615
ALPINE	1,377	935	110	4	1	7	275	45
AMADOR	36,287	31,894	3,766	526	31	1,436	886	740
BUTTE	228,020	163,766	33,623	11,062	453	5,259	7,926	5,929
CALAVERAS	49,596	41,967	4,236	481	41	596	1,256	1,030
COLUSA	22,697	8,745	12,595	356	87	102	491	321
CONTRA COSTA	1,116,298	515,397	283,455	161,516	5,314	106,386	12,189	30,029
DEL NORTE	29,126	19,459	4,559	761	20	1,180	2,029	1,118
EL DORADO	188,471	152,024	21,955	5,945	199	1,445	3,249	3,654
FRESNO	946,961	276,470	514,076	74,604	831	54,294	15,515	14,171
GLENN	29,348	16,896	9,956	1,225	23	169	506	586
HUMBOLDT	133,136	103,070	11,808	2,361	290	1,341	9,033	5,233
IMPERIAL	176,201	25,292	136,623	4,168	88	6,594	2,529	907
INYO	16,396	12,789	2,824	215	16	25	1,921	604
KERN	806,806	306,167	386,096	36,301	1,001	52,874	14,129	13,240
KINGS	156,334	57,419	75,754	4,803	254	13,125	2,342	2,637
LAKE	66,256	50,509	11,011	674	94	2,067	3,159	1,745
LASSEN	36,954	25,467	5,531	317	212	3,445	1,185	777
LOS ANGELES	10,461,007	3,078,169	5,060,274	1,131,189	24,842	969,868	35,866	160,799
MADERA	150,278	60,636	75,896	2,203	193	6,370	2,701	2,275
MARIN	252,440	190,346	34,179	13,163	393	7,301	1,396	5,663
MARIPOSA	16,608	15,221	1,626	151	22	132	731	525
MENDOCINO	94,300	63,953	20,601	1,632	125	927	4,638	2,424
MERCED	277,715	101,416	144,014	16,053	363	6,479	2,267	5,071
MODOC	8,547	7,427	1,216	70	7	68	454	303
MONTECALA	14,705	10,746	3,124	189	10	70	307	259
MONTEREY	453,292	149,354	244,716	26,156	1,939	18,643	2,596	9,888
NAPA	142,121	84,735	43,542	5,946	317	2,830	2,114	2,635
NEVADA	106,910	95,779	7,331	1,430	79	509	1,863	1,919
ORANGE	3,260,162	1,402,620	1,180,042	527,546	13,685	52,852	26,669	56,548
PLACER	349,113	278,574	36,036	14,337	420	7,117	4,114	6,515
PLUMAS	21,067	18,169	1,476	151	22	195	540	506
RIVERSIDE	2,166,148	819,380	1,019,756	106,845	6,796	180,014	18,836	33,519
SACRAMENTO	1,555,648	680,646	349,014	234,917	12,766	187,057	41,354	50,094
SAN BENITO	62,530	27,134	31,942	1,519	81	600	326	926
SAN BERNARDINO	2,133,377	475,005	1,201,405	156,475	9,173	236,285	16,002	38,032
SAN DIEGO	3,256,951	1,506,321	1,099,634	347,146	17,267	180,754	27,220	78,607
SAN FRANCISCO	816,230	367,348	117,306	252,760	4,086	51,793	3,003	19,932
SAN JOAQUIN	747,149	262,985	263,006	82,916	2,633	63,532	14,346	17,727
SAN LUIS OBISPO	277,437	195,750	56,774	10,643	283	6,053	2,692	5,242
SAN MATEO	747,134	344,481	192,636	156,562	10,912	15,913	3,261	20,319
SANTA BARBARA	440,337	219,013	176,802	19,989	812	8,064	4,619	9,038
SANTA CLARA	1,844,146	738,626	489,144	516,712	6,023	43,626	6,775	43,240
SANTA CRUZ	271,222	163,170	85,618	12,000	366	2,435	1,562	6,073
SHASTA	19,464	149,337	18,604	6,206	196	3,515	13,570	5,027
SIERRA	3,530	3,145	241	6	3	6	64	65
SISKIYOU	45,611	36,894	4,146	633	56	620	1,877	1,385
SOLANO	456,647	143,266	121,215	75,791	5,283	81,301	9,582	19,209
SONOMA	515,968	356,318	106,784	21,672	1,321	8,425	7,749	11,689
STANISLAUS	556,051	266,122	223,800	25,557	2,142	19,404	9,749	12,277
SUTTER	96,757	47,986	27,046	14,071	185	2,162	2,189	2,113
TEHAMA	62,442	44,566	13,313	767	54	456	1,865	1,414
TRINITY	13,442	11,106	759	121	16	63	747	627
TULARE	447,315	145,481	271,934	10,357	316	7,925	6,101	5,161
TUOLUMNE	55,683	45,692	5,196	547	93	1,203	1,800	1,353
VENTURA	860,664	306,568	411,837	92,367	2,905	12,607	16,674	15,712
YOLC	222,277	107,536	75,560	24,967	956	4,910	3,515	4,835
YUBA	71,506	46,420	11,962	6,115	191	2,393	1,604	2,831
CALIFORNIA	38,246,767	15,377,946	15,161,594	4,715,663	151,385	2,626,971	396,046	786,146

Table 2 continued

County	TOTAL	YEAR 2020						
		White	Hispanic	Asian	Pacific Islander	Black	American Indian	Multirace
ALAMEDA	1,864,145	455,827	525,434	567,264	15,176	201,217	21,564	56,641
ALPINE	1,441	945	110	4	1	7	331	45
AMADOR	42,257	33,571	4,336	725	31	1,434	1,287	870
BUTTE	260,730	162,919	50,670	16,507	663	8,913	13,980	6,066
CALAVERAS	59,691	48,896	5,906	679	41	626	2,064	1,175
COLUSA	26,337	6,640	16,030	436	67	97	640	406
CONTRA COSTA	1,327,081	476,506	411,890	236,060	7,645	136,076	23,753	33,947
DEL NORTE	30,765	16,520	5,506	860	20	1,180	2,307	1,282
EL DORADO	221,289	169,678	30,775	6,632	196	2,260	5,366	4,386
FRESNO	1,114,654	263,563	655,054	84,177	626	68,656	25,436	16,626
GLENN	31,950	16,962	12,112	1,445	23	186	546	670
HUMBOLDT	139,518	101,530	16,346	3,075	310	2,407	10,543	6,305
IMPERIAL	214,386	23,281	166,850	5,745	66	12,035	3,280	1,007
INYO	18,404	11,857	5,346	241	18	25	2,072	645
KERN	950,112	300,676	500,202	45,834	1,093	65,821	20,296	16,067
KINGS	184,751	56,246	96,920	5,951	280	15,523	3,574	3,277
LAKE	79,676	53,238	15,266	845	93	2,945	5,049	2,210
LASSEN	36,232	25,862	6,064	317	262	3,430	1,346	941
LOS ANGELES	10,885,062	2,832,727	5,850,010	1,197,401	27,606	642,273	54,961	180,114
MADERA	183,996	64,353	100,666	3,207	169	8,771	3,947	2,540
MARIN	251,260	176,564	40,842	17,442	402	7,181	2,622	6,207
MARIPOSA	20,607	15,855	2,961	150	22	131	916	582
MENDOCINO	100,664	61,772	27,052	2,255	125	1,239	5,370	2,853
MERCED	360,831	126,411	186,873	19,375	420	9,470	3,441	6,841
MODOC	9,285	7,016	1,260	70	7	68	486	376
MONO	16,248	11,264	4,092	206	10	70	300	303
MONTEREY	505,359	145,130	265,477	28,706	2,179	19,566	3,030	11,246
NAPA	165,946	64,096	80,683	6,846	380	4,529	4,176	3,062
NEVADA	126,912	108,692	9,446	2,262	79	691	3,316	2,222
ORANGE	3,526,144	1,263,850	1,460,286	632,611	15,976	55,561	33,606	64,231
PLACER	456,040	346,421	53,579	23,983	456	12,470	7,864	8,277
PLUMAS	20,983	17,530	1,834	206	22	241	575	573
RIVERSIDE	2,675,648	776,857	1,456,741	141,784	9,202	212,689	32,317	41,066
SACRAMENTO	1,946,670	670,583	512,027	332,637	17,885	271,318	82,825	56,624
SAN BERNITO	73,547	30,146	39,366	1,900	60	622	342	996
SAN BERNARDINO	2,456,089	342,155	1,559,593	194,849	11,511	281,074	21,866	44,149
SAN DIEGO	3,633,572	1,473,792	1,399,870	436,151	21,712	201,307	38,266	80,475
SAN FRANCISCO	820,545	386,889	120,872	257,756	4,527	47,119	3,251	21,131
SAN JOAQUIN	998,462	282,440	446,371	116,966	3,673	61,349	25,139	21,524
SAN LUIS OBISPO	305,274	197,290	76,485	14,650	302	6,967	3,746	5,612
SAN MATEO	786,740	333,318	226,566	171,032	11,725	16,011	3,541	22,547
SANTA BARBARA	464,016	182,856	226,956	25,774	1,189	6,013	5,821	11,511
SANTA CLARA	2,006,962	724,491	808,542	567,670	6,196	43,526	7,996	46,567
SANTA CRUZ	286,044	155,016	103,969	15,353	385	2,963	1,667	6,671
SHASTA	227,622	151,530	30,427	9,603	218	5,989	24,365	5,790
SIERRA	3,654	3,271	239	6	3	6	64	65
SISKIYOU	45,862	36,041	4,816	712	56	613	2,073	1,546
SOLANO	555,264	137,951	184,796	86,863	6,648	96,796	16,760	23,246
SONOMA	602,783	390,924	139,402	32,007	2,497	11,594	13,104	13,256
STANISLAUS	653,641	277,764	290,031	29,650	2,446	24,206	14,716	15,022
SUTTER	111,856	45,333	34,435	19,732	205	3,139	3,621	2,391
TEHAMA	66,323	43,296	18,636	1,060	54	585	2,763	1,606
TRINITY	13,402	10,775	866	121	16	63	797	732
TULARE	543,749	145,750	361,296	11,197	556	11,439	7,885	5,615
TUOLUMNE	65,452	52,904	5,945	752	93	1,264	2,635	1,561
VENTURA	924,410	247,362	500,749	117,623	3,790	12,164	23,781	15,561
YOLO	271,040	111,096	106,962	32,376	1,379	6,176	5,816	5,406
YUBA	84,816	54,010	14,734	7,407	270	3,175	1,880	3,342
CALIFORNIA	43,851,741	14,757,146	16,677,560	5,585,651	164,457	2,935,926	615,392	915,675

Table 2 continued

County	TOTAL	YEAR 2030						Multirace
		White	Hispanic	Asian	Pacific Islander	Black	American Indian	
ALAMEDA	2,036,482	424,596	636,718	661,788	20,314	202,783	27,080	62,203
ALPINE	1,413	863	110	4	1	7	363	45
AMADOR	44,404	34,277	4,646	880	26	1,414	1,781	978
BUTTE	276,626	151,806	66,303	21,246	877	12,104	18,695	7,786
CALAVERAS	70,577	55,981	7,954	1,076	41	1,226	3,042	1,257
COLUSA	26,353	8,704	18,707	462	67	91	782	490
CONTRA COSTA	1,543,053	452,761	538,219	309,892	10,161	180,800	35,278	37,821
DEL NORTE	32,442	19,233	6,777	946	20	1,256	2,763	1,445
EL DORADO	250,173	182,525	40,802	11,310	199	3,133	7,360	5,046
FRESNO	1,257,476	252,113	809,836	90,856	985	86,142	36,802	18,939
GLENN	34,379	18,047	13,141	1,832	23	167	576	771
HUMBOLDT	142,412	96,676	19,016	3,571	327	3,376	12,007	7,236
IMPERIAL	254,989	21,900	202,719	6,016	86	16,674	4,185	1,105
INYO	16,256	10,915	3,825	257	18	25	2,076	1,140
KERN	1,114,675	204,692	630,516	60,097	1,232	80,567	26,841	18,933
KINGS	223,767	80,866	126,896	7,675	300	19,266	5,777	3,982
LAKE	89,636	55,231	19,746	995	89	3,956	6,945	2,670
LASSEN	36,630	25,712	6,378	316	319	3,374	1,446	1,085
LOS ANGELES	11,296,734	2,614,550	6,221,668	1,214,042	29,101	686,468	73,120	197,785
MADERA	219,832	67,703	128,696	4,194	189	11,206	5,041	2,708
MARIN	248,664	162,296	46,842	21,678	412	6,677	9,811	6,665
MARIPOSA	22,435	16,197	4,237	144	22	128	1,089	620
MENDOCINO	106,082	57,917	34,430	2,875	124	1,662	5,900	3,184
MERCED	437,860	142,086	249,045	22,262	456	10,151	4,466	8,772
MODOC	6,922	6,505	1,287	64	7	66	537	453
MONTE	17,471	11,352	5,173	225	10	70	282	359
MONTEREY	556,862	136,190	349,096	30,836	2,311	19,656	3,320	12,245
NAPA	190,234	82,667	79,435	11,686	445	6,361	6,175	3,483
NEVADA	137,965	117,096	10,617	2,719	79	917	4,086	2,469
ORANGE	3,686,343	1,205,680	1,856,771	625,874	16,086	53,453	32,577	71,642
PLACER	544,690	404,276	66,696	32,760	473	17,041	11,283	10,149
PLUMAS	20,330	16,456	2,003	241	22	315	584	619
RIVERSIDE	3,180,411	718,496	1,924,103	171,358	11,211	261,596	44,776	48,901
SACRAMENTO	2,285,026	656,675	661,199	419,170	21,884	347,006	117,732	66,262
SAN BENITO	84,727	32,796	47,376	2,303	78	752	346	1,072
SAN BERNARDINO	2,782,307	247,307	1,866,890	231,160	13,869	327,053	27,246	46,782
SAN DIEGO	4,006,624	1,418,641	1,674,056	616,274	25,623	216,756	48,695	102,584
SAN FRANCISCO	796,208	344,885	122,282	256,661	4,768	42,616	3,242	21,745
SAN JOAQUIN	1,226,757	306,073	616,676	146,312	4,542	98,325	30,727	25,296
SAN LUIS OBISPO	330,649	193,625	99,381	19,285	320	7,614	4,580	6,144
SAN MATEO	614,065	319,172	261,096	177,844	12,149	15,432	3,563	24,789
SANTA BARBARA	467,262	136,704	273,906	26,536	1,362	7,634	6,089	13,636
SANTA CLARA	2,167,963	707,456	743,414	586,152	6,062	46,816	8,993	54,041
SANTA CRUZ	264,711	143,448	121,884	17,294	396	3,166	1,662	7,036
SHASTA	280,180	150,735	44,216	13,572	234	6,731	36,251	8,420
SERRA	4,023	3,622	230	96	3	6	83	63
SIKIYOU	45,400	34,635	5,641	741	56	574	2,103	1,650
SOLANO	677,626	142,052	257,205	107,754	9,023	107,636	26,725	27,231
SONOMA	716,296	436,463	178,242	45,874	4,041	15,662	16,470	14,546
STANISLAUE	744,599	263,780	356,512	32,720	2,646	26,662	19,523	17,734
STUTTER	126,216	47,606	42,046	24,781	221	3,976	4,930	2,640
TEHAMA	74,171	41,584	25,136	1,343	51	726	3,562	1,737
TRINITY	13,191	10,266	1,061	121	16	85	800	842
TULARE	650,486	157,301	446,988	12,896	372	15,707	6,883	6,236
TUOLUMNE	86,566	54,191	6,526	863	63	1,266	3,906	1,716
VENTURA	982,764	204,453	564,076	143,867	4,706	11,756	32,417	21,404
YOLCO	320,434	114,180	143,917	39,722	1,607	7,422	7,496	6,880
YUBA	86,959	60,806	19,454	6,571	301	3,897	2,037	3,804
CALIFORNIA	46,110,671	14,182,100	22,520,626	6,156,956	210,406	3,182,862	615,054	1,030,861



Table 2 continued

YEAR 2040

County	TOTAL	YEAR 2040						
		White	Hispanic	Asian	Pacific Islander	Black	American Indian	Multirace
ALAMEDA	2,187,080	586,552	794,035	886,900	20,815	198,817	31,965	85,014
ALPINE	1,322	732	110	4	1	7	423	45
AMADOR	45,929	34,155	5,618	1,336	27	1,380	2,343	1,061
BUTTE	282,492	131,896	80,185	24,570	1,181	14,485	21,930	8,437
CALAVERAS	81,888	62,643	10,382	1,575	40	1,800	3,917	1,229
COLUSA	32,449	6,663	21,545	556	85	87	950	564
CONTRA COSTA	1,701,209	430,784	634,711	361,018	11,735	179,528	43,210	40,225
DEL NORTE	32,713	18,067	7,892	991	19	1,250	2,974	1,520
EL DORADO	296,786	164,300	50,605	13,403	190	3,808	6,872	5,512
FRESNO	1,476,669	242,457	857,532	94,453	1,024	100,624	50,043	20,566
GLENN	37,182	18,435	15,180	1,932	25	200	565	547
HUMBOLDT	141,213	86,210	22,936	3,576	336	4,001	13,160	7,993
IMPERIAL	296,658	20,722	237,163	10,408	81	22,076	5,039	1,171
INYO	17,899	6,861	4,224	266	18	25	2,003	1,480
KERN	1,325,648	291,945	786,327	60,195	1,770	99,496	41,551	21,364
KINGS	252,762	61,589	146,776	8,586	310	20,795	7,189	4,545
LAKE	99,501	56,827	24,592	1,101	84	5,096	8,060	3,101
LASSEN	36,157	26,851	6,810	302	385	3,343	1,470	1,196
LOS ANGELES	11,380,641	2,379,749	6,686,252	1,163,877	28,517	807,261	89,334	207,851
MADERA	259,359	70,856	160,495	5,105	181	13,977	6,006	2,727
MARIN	237,244	143,806	51,098	23,697	407	6,696	4,505	6,755
MARIPOSA	23,979	16,223	5,613	126	22	125	1,233	835
MENDOCINO	111,407	53,071	42,898	3,421	116	2,080	6,387	3,334
MERCED	528,788	188,575	307,894	24,919	481	10,566	5,391	10,953
MODOC	6,455	6,010	1,241	56	7	63	590	516
MONO	18,178	11,075	6,152	235	10	63	252	391
MONTEREY	605,963	130,578	404,167	32,434	2,356	20,092	3,582	12,751
NAPA	205,336	78,707	93,810	13,411	486	7,822	7,358	5,664
NEVADA	146,432	123,550	11,541	3,149	77	920	4,642	2,553
ORANGE	3,704,802	1,133,000	1,822,070	578,672	15,251	48,827	29,405	76,477
PLACER	603,937	436,467	81,230	39,837	471	20,654	14,050	11,926
PLUMAS	19,880	15,391	2,483	247	18	360	558	823
RIVERSIDE	3,717,981	643,746	2,446,744	165,514	12,872	307,362	68,334	56,389
SACRAMENTO	2,579,720	630,975	819,486	474,349	24,052	410,744	143,561	76,533
SAN BENITO	94,994	34,426	55,624	2,696	77	757	325	1,117
SAN BERNARDINO	3,029,750	196,094	2,119,680	253,716	15,478	359,529	32,088	53,164
SAN DIEGO	4,289,739	1,350,789	1,924,956	589,736	26,982	226,892	58,126	110,263
SAN FRANCISCO	757,161	322,429	116,853	248,900	4,876	37,404	3,121	21,775
SAN JOAQUIN	1,457,128	329,580	776,034	169,351	4,896	114,724	32,400	26,343
SAN LUIS OBISPO	337,247	174,800	120,321	22,519	324	7,742	5,303	6,236
SAN MATEO	825,838	300,502	280,342	176,545	12,136	14,564	3,482	26,089
SANTA BARBARA	477,858	117,653	302,430	26,312	1,497	7,430	6,090	16,246
SANTA CLARA	2,252,965	673,157	870,896	586,910	5,649	48,885	9,821	57,347
SANTA CRUZ	294,253	127,670	137,164	17,435	373	3,017	1,527	7,037
SHASTA	296,007	149,587	60,477	18,026	243	11,779	48,947	6,948
SIERRA	4,477	4,040	209	106	3	6	57	56
SISKIYOU	44,083	32,672	6,406	741	55	530	2,049	1,630
SOLANO	751,782	136,592	319,746	110,522	9,782	111,862	31,236	30,040
SONOMA	751,906	426,071	214,126	50,077	5,119	18,730	24,507	15,274
STANISLAUS	843,523	283,304	437,036	40,421	3,311	34,290	25,006	20,154
SUTTER	139,805	46,203	50,745	29,196	231	4,866	6,026	2,736
TEHAMA	80,640	39,606	32,333	1,592	45	857	4,246	1,756
TRINITY	12,980	9,878	1,244	115	16	62	752	913
TULARE	754,790	162,863	541,425	14,406	375	19,394	10,044	6,483
TUOLUMNE	70,537	54,566	7,167	946	92	1,281	4,685	1,766
VENTURA	1,025,709	173,946	597,725	171,216	5,620	12,076	41,811	23,312
YOLO	383,863	111,512	179,639	48,832	2,277	6,527	8,802	6,074
YUBA	112,097	66,966	25,300	9,669	647	4,331	2,180	4,106
CALIFORNIA	51,536,596	13,435,378	25,856,527	6,464,396	226,226	3,363,142	982,073	1,107,850

Table 2 continued

County	TOTAL	YEAR 2050						
		White	Hispanic	Asian	Pacific Islander	Black	American Indian	Multirace
ALAMEDA	2,315,045	346,951	957,036	694,846	20,799	194,229	36,153	64,907
ALPINE	1,263	644	105	4	1	7	459	43
AMADOR	47,826	34,052	6,575	1,713	25	1,359	2,998	1,119
BUTTE	267,130	113,286	64,857	27,542	1,533	16,891	24,120	8,898
CALAVERAS	92,856	68,964	13,230	2,101	36	2,895	4,701	1,225
COLUSA	35,544	8,606	24,406	622	74	85	1,120	631
CONTRA COSTA	1,848,177	406,362	733,260	405,406	13,016	196,766	50,203	41,141
DEL NORTE	32,890	16,771	9,152	990	17	1,254	3,141	1,565
EL DORADO	282,331	184,491	61,503	15,283	157	4,741	10,178	5,995
FRESNO	1,855,261	236,072	1,128,834	66,321	695	113,696	60,455	21,754
GLENN	40,167	16,807	17,448	2,247	22	196	529	918
HUMBOLDT	136,692	81,693	26,975	3,520	333	4,605	14,004	6,568
IMPERIAL	339,506	20,561	271,061	13,089	76	27,503	5,951	1,243
JNYC	17,899	9,077	4,573	253	16	25	1,898	1,855
KERN	1,549,564	304,009	950,281	69,580	2,181	116,621	53,252	23,670
KINGS	282,364	61,791	175,635	9,218	309	21,719	6,637	5,055
LAKE	109,488	57,945	29,545	1,217	76	6,120	10,877	3,610
LASSEN	39,510	25,408	7,295	254	467	3,320	1,473	1,303
LOS ANGELES	11,422,198	2,163,318	7,079,074	1,121,185	29,314	717,093	104,295	206,919
MADERA	302,859	74,462	196,902	5,989	165	16,691	6,896	2,758
MARIN	225,127	127,135	54,205	25,541	385	6,286	5,045	6,545
MARIPOSA	25,456	16,267	6,996	98	21	110	1,355	619
MENDOCINO	116,621	46,224	52,520	3,967	102	2,545	6,783	3,500
MERCED	625,213	184,940	372,001	27,577	489	10,744	6,163	13,379
MODOC	7,999	5,585	1,128	46	7	57	586	567
MONTE	18,862	10,733	7,190	237	10	56	207	429
MONTEREY	654,647	123,397	456,215	33,568	2,343	19,874	3,795	12,853
NAPA	221,466	76,472	107,849	14,941	496	6,335	6,390	3,813
NEVADA	155,181	130,695	12,235	3,520	62	896	5,080	2,670
ORANGE	3,702,641	1,057,520	1,870,726	514,090	14,080	43,649	24,990	77,636
PLACER	667,365	462,017	93,616	46,390	436	24,650	16,961	13,745
PLUMAS	19,413	14,786	2,754	284	14	446	506	623
RIVERSIDE	4,305,161	570,757	3,023,926	216,391	14,362	351,503	67,129	61,103
SACRAMENTO	2,858,427	600,593	890,406	521,254	25,939	471,725	166,335	82,176
SAN BENITO	105,032	36,754	64,063	2,997	72	755	285	1,086
SAN BERNARDINO	3,268,254	164,014	2,359,043	270,880	16,812	367,056	36,340	55,109
SAN DIEGO	4,506,099	1,272,446	2,137,878	650,518	31,622	233,362	66,367	113,686
SAN FRANCISCO	706,162	206,562	111,291	234,807	4,802	32,319	2,947	20,464
SAN JOAQUIN	1,707,599	352,044	986,852	189,541	4,915	130,262	33,026	30,639
SAN LUIS OBISPO	343,546	156,880	142,032	25,515	318	7,776	5,946	6,081
SAN MATEO	626,342	280,795	314,810	175,873	11,864	13,736	3,283	25,646
SANTA BARBARA	481,640	100,634	326,919	22,525	1,605	6,928	5,625	16,304
SANTA CLARA	2,321,536	636,867	999,052	565,935	5,078	50,161	10,443	57,872
SANTA CRUZ	295,350	113,136	151,680	17,204	326	2,930	1,364	6,705
SHASTA	334,346	149,630	78,231	22,689	235	14,812	61,257	7,494
SERRA	4,896	4,409	162	180	3	6	53	52
SIKIYOU	43,045	31,026	7,221	690	54	461	1,990	1,803
SOLANO	830,630	136,065	396,636	113,933	10,314	116,554	34,985	32,143
SONOMA	796,762	421,596	250,862	54,669	6,103	18,138	30,154	15,423
STANISLAUS	641,562	280,601	516,520	45,662	3,906	39,409	30,120	22,342
SUTTER	154,210	44,778	60,632	33,267	232	5,423	7,058	2,819
TEHAMA	88,006	36,163	40,500	1,749	40	996	4,786	1,760
TRINITY	12,623	9,656	1,439	105	15	52	661	975
TULARE	867,462	186,524	641,242	15,746	366	22,678	10,965	6,657
TUOLUMNE	72,265	54,664	7,946	1,011	72	1,310	5,416	1,824
VENTURA	1,071,905	150,612	626,678	197,777	6,473	12,586	50,630	24,649
YOLCO	407,691	107,258	216,347	53,697	2,716	9,634	9,911	6,126
YUBA	126,650	70,866	32,065	10,676	740	4,643	2,277	4,380
CALIFORNIA	54,777,700	12,754,396	29,386,940	6,617,904	237,190	3,500,356	1,130,854	1,149,259



<http://www.latimes.com/news/yahoo/la-me-birthrate4oct04,1,794639.story>

## California Cuts Its Population Projection

**The state is reconsidering the demands for new schools and other services primarily because of an unexpectedly large decline in the Latino birthrate.**

By Daryl Kelley  
Times Staff Writer

October 4, 2004

California analysts have sharply reduced estimates of the state's future population, and state planners are reconsidering long-term needs for new schools and other public services primarily as the result of an unexpectedly large decline in the birthrate among Latinos.

The state's population will keep growing as the result of two things: immigration, and births continuing to outpace deaths. But the increase will be notably slower than once believed.

Demographic experts now project California's population to hit about 51 million by 2040 — 7 million fewer than they forecast a few years ago, according to new state estimates. The state currently has about 36 million residents.

So instead of 600,000 new residents a year, officials now project the state will average about 400,000 annually.

"That maybe takes some pressure off. But even at 51 million, that's nearly a 50% increase over today's population," said Terry Roberts, a director in the Governor's Office of Planning and Research.

"We still have to take care of the people who are here today and who arrive next year, much less 35 years down the line," she said. "And we're already behind."

Much of the drop in projected population results from about 6 million fewer births than originally estimated.

"I think you could safely say more than half the reduction [in births] is because of the reduced ... fertility among Latinas," said Mary Heim, chief of the state Finance Department's demographic research unit, which provides California's official population estimates.

Birthrates have declined among all racial and ethnic groups tracked by the state. But Latinas deliver about half of California's babies, Heim said. Their fertility rate — the average number of children born to each woman of childbearing age — has dropped by nearly a quarter in a little more than a decade. Latina mothers now deliver 2.6 babies on average, down from 3.41 in 1990.

The decline was particularly steep, as much as 30%, among the hundreds of thousands of Latinas born in foreign countries, said Hans Johnson, a demographer at the San Francisco-based Public Policy Institute of California.

"It's a big story for California's future," he said. "It will have a significant effect on demand for everything from schooling to water and infrastructure and other public services."

The change reflects, in part, the rapid assimilation into the broader American society of upwardly mobile immigrant Latinos, said Dowell Myers, a USC urban planner and demographics expert.

"People tend to think that Latinos have big families — six kids — but the reality is more like three," he said.

Maricela Morales, a 33-year-old daughter of Mexican immigrants and a graduate of Stanford University, is a social activist and a city councilwoman in Port Hueneme. She and her friends were determined not to have children young, she said.

"We saw how difficult it was for our parents: There were so many demands at work and at home that it didn't allow for a high quality of life with the children," she said.

The advantages of a smaller family "was something we'd heard about from our friends who were more middle-class," she said. "And we wanted it too."

Catalina Solis, 45, an office manager in Ventura, grew up in a family of seven children. "It seemed such a hardship making ends meet," she said, recalling how her father, a mariachi musician, worked at a steel plant in Vernon and her mother took factory jobs beginning at age 46.

In all, Solis and her six brothers and sisters — four of whom were born in Mexico — have had only nine children. Those children, in turn, have had only nine babies.

"We were pretty textbook when it came to assimilation," Solis said.

Immigration and population experts say the drop in fertility rates reflects changes that have occurred around the world during the last decade as women increasingly have joined the paid workforce and gained greater access to education, contraception and family planning.

"The shift from rural economies to urbanization is a big part of it," said Tim Miller, a demographer at UC Berkeley. Around the globe, when families move from farms to cities, they no longer need children as laborers and begin to have fewer.

From 1950 through 1955, women worldwide had nearly twice as many children on average as they do today — five, compared with 2.69, the United Nations reports. In Mexico, the average family size has dropped since 1960 from nearly seven children to 2.5.

Within Mexico, birthplace of the largest share of California's Latino immigrants, the government has encouraged family planning, Johnson noted. "You even see it on Mexican soap operas," he said. "People talk about using condoms."

Such shifts have caused demographic experts to greatly lower their predictions of how large the world's human population will eventually get.

Here at home, California's overall fertility rate has dropped to 2.13 children for each woman of childbearing age, down from 2.46 in 1990, according to the state's most recent figures.

Johnson, who studied immigrant births in California during the period 1982-1998, said the state experienced a spike in the number of babies born to Latino parents during the 1990s partly as a result of the Reagan administration's amnesty program for illegal immigrants.

About 3 million Latino immigrants, more than half in California, were granted amnesty. "Almost all were male, and they sent for their wives, and we had a baby boom," Johnson said.

The waning of that boom, combined with assimilation and the changing social mores in Mexico, have all contributed to sharply lower birthrates now.

The implications are most immediate for California's schools. Some urban districts are already closing campuses, not building new ones. And more of the same is projected for at least a decade, according to state forecasts that show California public school enrollments peaking in 2007.

The Los Angeles Unified School District experienced a small decline in enrollment last year. But Supt. Roy Romer has said schools remain overcrowded and that dips in enrollment are having little effect.

The district is embarking on a \$14-billion program to build 160 schools over about a decade because for years no new schools were built as crowding increased. Thousands of students attend campuses on multiple tracks and year-round calendars, while others are bused to less-crowded campuses miles from their neighborhoods.

State projections show enrollments in schools throughout Los Angeles County peaking next year. Enrollments in Orange, San Diego and Santa Clara counties should peak in 2007, the state reports.

Lower fertility rates account for much of that shift, said Shelley Lapkoff, a demographer in Berkeley who consults with about two dozen Northern California school districts.

The picture is uneven around the state. The recession of the 1990s, the bursting of the Silicon Valley computer industry bubble and a skyrocketing cost of living have slowed population growth in the Bay Area, Lapkoff noted. At the same time, school systems are still expanding in high-growth areas such as the Central Valley and the Inland Empire, where residents from pricey coastal areas are moving in order to find affordable housing.

Overall, however, "most of my clients are experiencing declining enrollments, at least the elementary grades, and now it's reaching the middle schools," Lapkoff said.

"Births peaked in 1990 and they've been falling ever since. Just everywhere we look, they're closing schools."

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# Los Angeles Daily News

## Population forecast falls

Drop in Latina fertility rates signals shift

By **Beth Barrett**

Staff Writer

**Monday, October 04, 2004** - The fertility rate for Latinas in Los Angeles County and statewide has plunged, lowering population growth projections, but the need for more schools, major highway and transit improvements and expanded public services will remain, officials said Monday.

Driven by economics as more families strive to join the middle class, Latinas in the county last year averaged 2.56 children, down from 3.30 in 1998, according to state fertility estimates.

The drop is mirrored statewide -- from an estimated 3.02 children per Latina in 1998 to 2.59 children in 2003.

"Chicanos and Latinos are joining the middle class, and starting to express middle-class aspirations ... homeownership, future education of children, potentially college," said David Diaz, professor of Chicana/o and urban studies at California State University, Northridge.

"This is quite obviously a significant shift ... a major demographic change."

Mary Heim, chief of the state Finance Department's demographic research unit, called the decline in fertility rates the "single, driving factor" in the downward revision of long-term growth trends. Officials now expect California's population in 2040 to reach 51.5 million -- 7 million fewer than previously predicted.

The impact in Los Angeles County is even greater -- the county's population is expected to reach 11.3 million in 2040 -- 2.5 million fewer people than projected in 1998. The county now has 10.1 million residents -- 45 percent Hispanic compared with 35 percent statewide.

The decline in the Latina birthrate has steadily impacted the state's fertility rate, which dropped from 2.46 children per woman in 1990 to 2.2 in 1998, and 2.13 in 2003.

The fertility rate for all women in L.A. County dropped from an estimated 2.32 children per woman in 1998 to 2.12 in 2003.

Fertility rates are regarded as a more accurate measure than birth rates, which include men in the calculation.

The implications from the shifting demographics are expected to be felt mostly in the long term because the county and state already are so far behind in building schools, roads and providing health services.

Tom Rubin, consultant to the bond oversight committee on the Los Angeles Unified School District's nearly \$15 billion school construction and modernization effort, said the district's massive building

program addresses current and immediate space needs so that students won't have to be bused involuntarily or have shortened school years.

But he cautioned that in another decade or so the district will have to carefully evaluate new construction phases.

"Ten years down the line, the district will have to be more careful where it puts its schools, and (do) a far better job of seeing where the growth is."

Rena Perez, the LAUSD's director of master planning and demographics, said the district projects five years ahead on birth rates and a decade ahead using other projections.

"Our building program is what we need today," Perez said.

The state includes a margin of error of about 0.7 percent per year in its long-range projections, or about 25 percent through 2040.

Brad Mcallester, deputy executive officer for long-range planning for the Metropolitan Transportation Authority, said despite the scaled-back projections, the county still is expected to grow by nearly 1.4 million people by 2040. That means the agency will continue to face a "sizable challenge" in meeting the region's transportation demands, he said.

"Maybe we'll have a little breathing room."

Diaz, the CSUN professor, said Latinos likely are expressing a combination of middle-class aspirations and a "working-class logic" that recognizes the high cost of living in California.

"Newly forming families are starting to take a serious look at what they can seriously afford."

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**EXHIBIT XX**

**MTA – PRE- AND POST-RAPID BUS  
CONVERSION – NUMBER OF VEHICLES  
ASSIGNED, AM PEAK PERIOD**



**LOS ANGELES COUNTY METROPOLITAN TRANSPORTATION AUTHORITY  
PRE- AND POST-RAPID BUS CONVERSION  
NUMBERS OF VEHICLES ASSIGNED, AM PEAK PERIOD**

	<u>Line</u>	<b>*Pre-Rapid AM Peak Vehicles Gross AM</b>	<b>Post-Rap (June-04) AM Peak Vehicles Gross AM</b>	<u>Change in AM Pk Veh</u>
<b>Wilshire Whittier 720</b>	18, 318	45	34	
	20/1/2, 320/2	74	46	
<b>Implemented: Jun-00</b>	720	0	88	
	<b>All Lines</b>	<b>119</b>	<b>168</b>	<b>49</b>
<b>Vermont 754</b>	424/425-150	37	33	
	522-240	23	0	
<b>Implemented: Jun-00</b>	750	0	25	
	<b>All Lines</b>	<b>60</b>	<b>58</b>	<b>-2</b>
<b>Vermont 754</b>	204, 354	52	22	
<b>Implemented: Dec-02</b>	754	0	32	
	<b>All Lines</b>	<b>52</b>	<b>54</b>	<b>2</b>
<b>East Van 745</b>	45/46	47	28	
<b>Implemented: Dec-02</b>	745	0	22	
	<b>All Lines</b>	<b>47</b>	<b>50</b>	<b>3</b>
<b>Pico 711</b>	111	24	18	
	112	1	0	
<b>Implemented: Jun-03</b>	711	0	11	
	<b>All Lines</b>	<b>25</b>	<b>29</b>	<b>4</b>
<b>Van Noy 761</b>	233/561	36	14	
<b>Implemented: Jun-03</b>	761	0	21	
	<b>All Lines</b>	<b>36</b>	<b>35</b>	<b>-1</b>
<b>Crenshaw 710</b>	210	34	17	
<b>Implemented: Feb-04</b>	710	0	16	
	<b>All Lines</b>	<b>34</b>	<b>33</b>	<b>-1</b>
<b>Vernon-La Cien 705</b>	105	24	11	
<b>Implemented: Jun-04</b>	705	0	13	
	<b>All Lines</b>	<b>24</b>	<b>24</b>	<b>0</b>
<b>Soto 751</b>	251	28	16	
<b>Implemented: Jun-04</b>	751	0	13	
	<b>All Lines</b>	<b>28</b>	<b>29</b>	<b>1</b>
<b>Grand Totals</b>		<b>425</b>	<b>480</b>	<b>55</b>
<b>Grand Totals without 720/20/18</b>		<b>306</b>	<b>312</b>	<b>6</b>

\*All "Pre-Rapid" figures are from shake-up six months prior to Rapid implementation

**EXHIBIT XXI**

***MTA, FINAL REPORT – LOS ANGELES METRO,  
RAPID DEMONSTRATION PROJECT, JULY 2001***

**Final Report**  
Los Angeles Metro *Rapid*  
Demonstration  
Program





# Metro Rapid

## Final Report

Los Angeles Metro Rapid  
Demonstration  
Program  
March 2002



**Metro**

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Metro Rapid was developed  
and is operated  
by the Los Angeles County  
Metropolitan Transportation Authority

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The Metro Rapid  
transit priority system  
was developed and is operated  
by the Los Angeles  
Department of Transportation

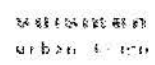
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Prime Contractor:  
Transportation Management &  
Design, Inc.

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Architecture and Graphic Design:  
Sutton Urban Design

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# Metro *Rapid* Program

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# Metro Rapid Program

## Executive Summary

The MTA Board of Directors, following an initial feasibility study, initiated the Metro Rapid Demonstration Program in March 1999. Staff was directed by the Board to conduct the feasibility study in response to a visit to Curitiba, Brazil by MTA and City of Los Angeles officials. The Curitiba urban design and public transportation model has been widely praised internationally for its success and has been a major force in the Federal Transit Administration creation of a national Bus Rapid Transit (BRT) initiative. The feasibility study recommended that MTA, in partnership with the City of Los Angeles, conduct a demonstration along two-to-three major arterials which have strong ridership and unique characteristics to provide broad actual experience regarding the feasibility of full-scale deployment of BRT within the MTA system. However, of the 12 key attributes associated with the successful Curitiba BRT (Curitiba does not have bus signal priority), only seven (highlighted) were deemed feasible for implementation during the expedited Phase I Demonstration Program. The remaining six attributes would be deployed in Phase II, system expansion, if the initial demonstration proved successful.

CURITIBA KEY ATTRIBUTES	Metro Rapid	
	Phase I Demonstration	Phase II Expanded System
1. Simple Route Layout	Yes	Yes
2. Frequent Service	Yes	Yes
3. Headway-based Schedules	Yes	Yes
4. Less Frequent Stops	Yes	Yes
5. Level Boarding and Alighting	Yes	Yes
6. Color-coded Buses and Stations	Yes	Yes
7. Bus Signal Priority	Yes	Yes
8. Exclusive Lanes	No	Yes
9. Higher Capacity Buses	No	Yes
10. Multiple Door Boarding & Alighting	No	Yes
11. Off-Vehicle Fare Payment	No	Yes
12. Feeder Network	No	Yes
13. Coordinated Land Use Planning	No	Yes

Phase I demonstration implementation planning was initiated in the summer of 1999 with a Spring 2000 goal for start-up of Metro Rapid. Two lines were selected for the demonstration:

- Line 720 Wilshire/Whittier (very high passenger demand urban corridor connecting through the Los Angeles Central Business District (LACBD))
- Line 750 Ventura (high passenger demand suburban corridor serving the Metro Rail Red Line)

The two Metro Rapid lines were implemented on June 24, 2000, coinciding with the opening of the extension of the Metro Red Line to the San Fernando Valley. All seven of the Phase I attributes were fully operational at start-up with the exception of the Metro Rapid Stations where temporary stops were utilized. The Stations with "next bus" displays are currently under construction, with completion of all sites expected in spring 2001.

## **Demonstration Has Been Successful**

The Metro Rapid Demonstration Program has been a success, meeting all 7 of the program's original objects.

**Objective 1: Reduce Passenger Travel Times** - The Metro Rapid program introduced several attributes specifically to reduce passenger travel times, including bus signal priority, level boarding/alighting with low-floor buses, headway rather than timetable-based schedules, fewer stops, far-side intersection location of stations, and joint active management of the service operation from the Transit Operations Supervisors (TOS) in the field and the MTA Bus Operations Control Center (BOCC). Since the initial date of service, Metro Rapid operation has achieved the following improvements in operating speeds:

- Wilshire/Whittier Corridor - operating speeds increased by 29%.
- Ventura Corridor - operating speeds increased by 23%.

**Objective 2: Increase Ridership** - The increase in ridership has come from three principal sources: (1) 1/3 of the increase is from brand new riders (riders from households making over \$50,000 per year rose to over 13% of total line ridership); (2) 1/3 are current riders riding more often (a higher percentage now ride 5 or more days a week); and (3) 1/3 are current MTA riders who changed routes (diversion).

- Wilshire/Whittier Corridor - ridership has increased by 42%.
- Ventura Corridor - ridership has increased by 27%.

**Objective 3: Attract New Riders** - As noted above, approximately 1/3 of the ridership increase are new riders based on a survey conducted in September 2000, prior to the work stoppage.

**Objective 4: Increase Service Reliability** - Metro Rapid was designed to improve service reliability by addressing bus bunching and the incidence of vehicle overcrowding. To date, service reliability has been excellent on the Ventura Metro Rapid, out-performing the time-point based local service in terms of achieving lower bus bunching and improved reliability. Service reliability has been mixed on the Wilshire/Whittier Metro Rapid, largely due to heavily loaded trips during much of the day. Scheduled service was increased in September and December 2000, and will again be increased this coming June 2001 in order to match service levels with demand. Service reliability has been improving with the increase in service and with the introduction of a new module in LADOT's bus signal priority system that helps maintain headway intervals. It is further anticipated that service reliability will continue to improve with the next round of improvements in June 2001.

**Objective 5: Improve Fleet and Facility Appearance** - Fleet appearance has been excellent with both Divisions 7 and 8 turning in strong ongoing performances. The improvement in fleet cleanliness was very obvious to customers as they indicated in the on-board before and after surveys. Facility appearance has not yet been measured; the Stations have been only recently constructed along Ventura and Wilshire-Whittier Boulevards.

**Objective 6: Improve Service Effectiveness** - Service effectiveness (passengers per revenue hour or mile) has been mixed: Wilshire/Whittier is up, while Ventura is not. The Wilshire/Whittier corridor shows significant improvement in effectiveness (productivity is up 17% and subsidy per passenger improved 18%) despite increased service (service hours are up 20% but resulted

in a 42% ridership gain). The Ventura corridor has showed a marked decline in service effectiveness that is the result of large increases in local service concurrent with the initiation of Metro Rapid (the local service was operating twice as often as Metro Rapid in peak periods). This increase in local service has not generated a significant change in ridership and may be addressed by Operations in the June 2001 Shake-Up. It is anticipated that the effectiveness of the Ventura corridor will improve dramatically with better matching of local service levels with local service demand.

Objective 7: Build Positive Relations with Communities - As part of the development of the Metro Rapid Station concept and design, staff worked closely with the individual communities to implement the Metro Rapid program. Staff have developed a uniform station design that meets the "image-linkage with the vehicle" requirement, while simultaneously meeting community preferences. Staff has worked with the local jurisdictions to address any concerns identified by adjacent property owners without hampering the Metro Rapid program.

### Next Steps

- Build on the success of the Metro Rapid Demonstration Program with input from the Municipal Operators, cities, and County.
- Complete the Phase I attributes still in implementation, including expansion of the bus signal priority system outside the City of Los Angeles, and upgrading of Metro Rapid bollard gate stations to canopy gates stations where feasible.
- Implement the Phase II Metro Rapid System Expansion Program and remaining Phase II Metro Rapid attributes, including:
  - High capacity vehicles
  - Exclusive lanes/by-pass lanes
  - Multiple door boarding and alighting with off-vehicle fare collection
  - Feeder network

### METRO RAPID PHASE II

<u>Phase IIA</u>	<u>Phase IIC</u>	<u>Phase IID</u>
South Broadway Vermont Pico-Pico-Venice Florence Soto Van Nuys	Western Beverly Vernon/La Cienega Atlantic San Fernando Sepulveda	West Olympic Garvey/Chavez Manchester Crenshaw/Rossmore Torrance/Long Beach Lincoln



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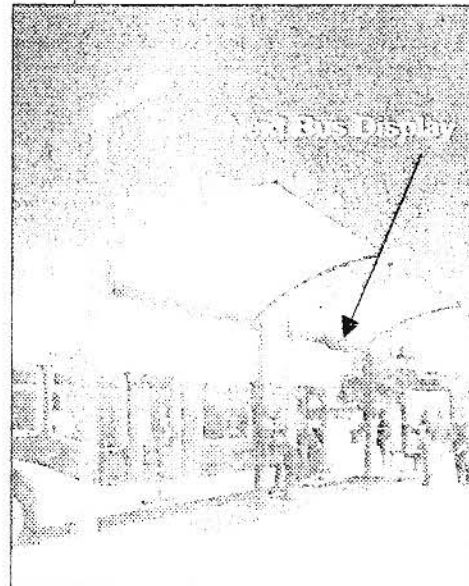


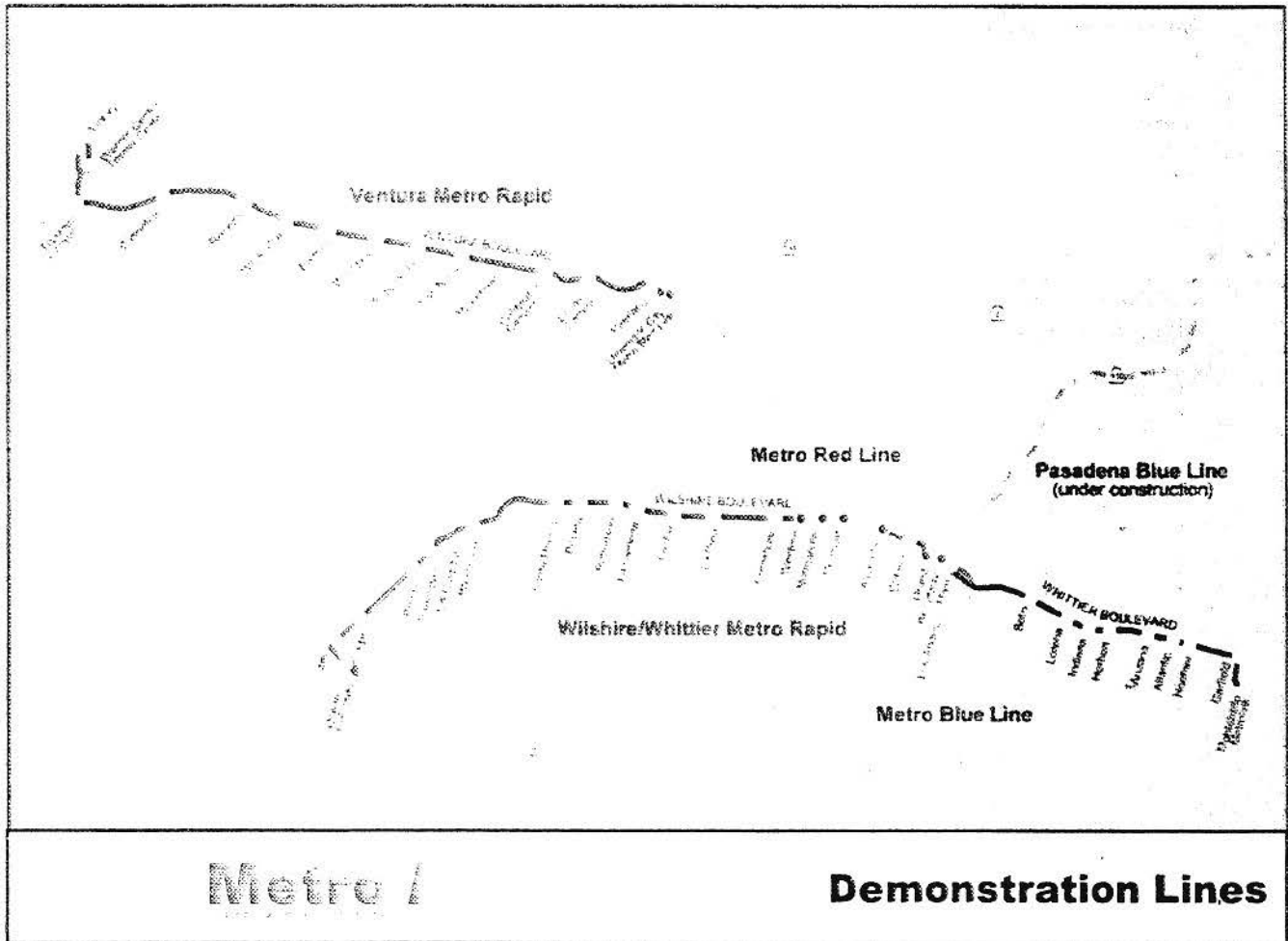
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Metro /

**Demonstration Lines**

The Metro Rapid program has been strikingly successful, even without the completed Stations. Operating speed, service quality, ridership, and customer response have all exceeded objectives, with very little or no negative impact on the rest of the system and other travel modes.

**Operating Speed, LADOT TPS, Service Quality**

Pervious communications with bus riders have indicated that MTA's existing local and limited-stop bus services have been too slow and unreliable. The Metro Rapid program sought to address these shortcomings through the introduction of service that would improve operating speeds over current local service with reduced passenger wait times and load factors within Consent Decree requirements.

**Operating Speed**

The Metro Rapid program introduced several attributes specifically to improve service operating speeds. These included: bus signal priority, level boarding/alighting with low-floor buses, headway rather than timetable-based schedules, fewer stops, far-side intersection location of stations, and joint active management of the service operation from the Transit Operations Su-

pervisors (TOS) in the field and the MTA Bus Operations Control Center (BOCC). Since the initial date of service, the Metro Rapid operation has achieved several major improvements in operating speeds:

Operating Speeds	Wilshire/Whittier (Line 720)	Ventura (Line 750)
Overall Improvement	29%	23%
Eastbound (Range)	31% (18-40%)	20% (11-29%)
Westbound (Range)	28% (21-32%)	27% (16-34%)

The City of Los Angeles conducted independent research regarding which attributes contributed to the speed improvement and found that the bus signal priority system accounted for approximately 1/3 of the improvement and the other elements accounted for the remaining 2/3 of the benefit. In support of this finding, the running time data indicates that the segments with bus signal priority operate faster than the adjacent segments, especially when ridership loads are considered. To further increase bus speeds along the Wilshire/Whittier corridor, bus signal priority should be extended to the segments in Beverly Hills, East Los Angeles, Montebello, and Santa Monica.

Metro Rapid operated faster in mixed arterial traffic than the Curitiba Express lines in exclusive lanes due to Curitiba's tighter station spacing and externally-controlled vehicle speed governors. Depending on the time-of-day and direction, Metro Rapid speeds average between 14 and 30 mph compared to Curitiba's average speed of 13.8 mph.

Several segments on both lines operated significantly more slowly due to other factors:

- Traffic congestion caused major delays for Line 750 along Ventura Boulevard between Balboa and Van Nuys (I-405 back-ups) and between Vineland and the Universal City Station; and for Line 720 through downtown Los Angeles.
- Very high ridership loads result in extended dwell times; thus, slowing operations between downtown Los Angeles and Western Avenue on Line 720. The higher capacity buses and multiple-door boarding in Phase II will reduce dwell times significantly, improving operating speeds.

In conclusion, MTA, in partnership with the City of Los Angeles Department of Transportation (LADOT), has achieved results in operating speed improvements that have been noticed and appreciated by its customers with the deployment of the Phase I Demonstration Program. A Phase II Expansion Program should build on this base and continue improving operating speeds by:

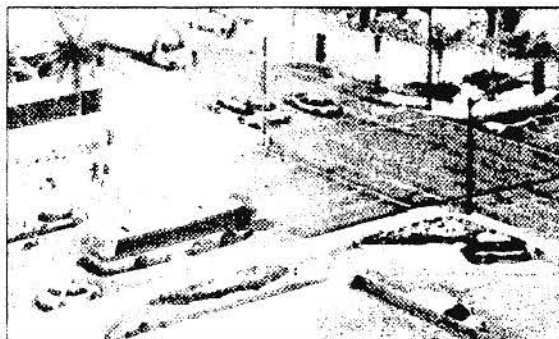
1. Complete the bus signal priority installation outside of the City of Los Angeles on demonstration Line 720 Wilshire/Whittier and establish a standard that future Metro Rapid service will be fully covered with bus signal priority.
2. Introduce exclusive bus lanes on arterials where feasible (recognizing the likelihood of future congestion); priority should be given to arterial segments with chronic, debilitating traffic congestion delay.

3. Reduce station dwell times by testing and introducing off-vehicle fare collection systems such as "proof of payment," and introducing high capacity buses to manage standees within standards and avoid gross aisle congestion delays.
4. Introduce high capacity buses to allow for operation of more capacity with less frequent service during maximum peak periods. The current westbound morning peak frequency on Wilshire/Whittier is approaching 2 minutes which allows for little traffic signal recovery between bus priority overrides and is increasing the likelihood that individual Metro Rapid buses will not receive signal priority. Discussions with LADOT indicate that 5-minute intervals are a good balance between service frequency and maximum bus signal priority availability, with 3 minutes on the lower end of desirability.

### LADOT Transit Priority System

The Transit Priority System (TPS) was designed and implemented by the City of Los Angeles Department of Transportation (LADOT) to assist MTA in implementing the Metro Rapid Demonstration Program. This program has gained nationwide attention since its debut on June 24, 2000, and has significantly improved the quality of transit operations along the two Metro Rapid corridors.

The Transit Priority System was developed to provide traffic signal priority to buses operating on heavily used transit corridors, and is an enhancement to the City's Automated Traffic Surveillance and Control (ATSAC) System. This concept was embraced by the MTA and became an integral part of its Metro Rapid program. The system has been deployed at more than 211 intersections along the two Metro Rapid corridors in Los Angeles: Ventura Boulevard (16 miles) and Wilshire/Whittier Boulevards (26 miles, 14 miles in Los Angeles). During the past nine months of operation, many transportation professionals have inquired about this innovative new system, including the Federal Transit Administration (FTA) as one of the first successes in the "Bus Rapid Transit" arena.



The TPS Project also includes control of dynamic passenger information signs at selected bus shelters along the Metro Rapid routes. These highly visible Light Emitting Diode (LED) signs inform passengers of the estimated arrival times of the "next" Metro Rapid bus. The arrival time information is computed by the system based on the actual speed of the bus and is accurate to within one minute. The sophisticated algorithm which calculates the arrival time was completely developed in-house by LADOT staff.

Detailed engineering studies have been made which not only measure the effectiveness of the project, but also its impacts on general automotive traffic. The results are very promising, with total transit travel time savings of about 25% in each corridor and a reduction in delays caused by traffic signals of 33%. Overall travel speeds for the buses have increased from 11 to 14 miles-per-hour on Wilshire Boulevard and from 15 to 19 miles-per-hour on Ventura Boulevard. The impacts to cross-street traffic are minimal, typically averaging about one second of delay per vehicle. This project has clearly demonstrated that with the correct combination of technology and innovation, a creative solution to the transportation needs in Los Angeles can be met.

## Service Quality

The Metro Rapid program was initiated to improve both operating speeds and service quality. The key elements of service quality that were considered important were reduction in bus bunching (headway ratios), average passenger wait times, and passenger standing loads. The two demonstration lines have differing degrees of success, largely depending upon the nature of passenger demand, with Line 750 Ventura showing excellent improvements in service quality while Line 720 Wilshire/Whittier still trying to manage the massive increase in ridership attracted to the new service.

- Line 720 Wilshire/Whittier – headway ratios show considerable bus bunching, especially during peak periods when the buses are very frequent. Average passenger wait times are typically less than 5 minutes with the only concern during PM peak periods, especially westbound, where wait times could exceed the typical headway. High daily ridership results in high average loads for much of the day. The passenger-perceived average loads were even higher due to the variability induced by the high headway ratios (bus bunching). On September 10, 2000, an additional 23 trips were added during peak periods with a resulting 10 percent increase in ridership within just three days indicating strong latent demand still remaining.
- Line 750 Ventura – headway ratios are excellent with almost no bus bunching, significantly better than the timepoint-based local service. Average passenger wait times are in the 4-to-6 minute range, which is excellent for service operating every 10-12 minutes. Average loads are below maximum seated levels, but are expected to continue to increase concurrent with ridership growth once the effects of the strike are shaken off.
- The companion local services on Wilshire/Whittier and Ventura have all shown improved service quality and performance due largely to the reduced local ridership loads, making the service operate artificially faster than previously. On Wilshire/Whittier, local service levels initially operated at the same levels as Metro Rapid, while on Ventura, local service ran twice as often during peak periods and the same as Metro Rapid during the remainder of the service day. As local service levels are adjusted to reflect actual local ridership, service performance should return more closely to normal.

In summary, Metro Rapid has had considerable success. But to avoid success being the undoing of Metro Rapid, MTA and LADOT need to move forward with refinements in operating policies and upgrades to the bus signal priority system, including:

1. Provide more capacity with less peak period frequency along Wilshire/Whittier. This will allow the TOS with help from the BOCC to better manage the service, improve the consistency of the bus signal priority system, and reduce station dwell times.
2. Introduce and monitor refined operating practices concurrent with additional training for the BOCC, TOS, and bus operators. These will balance manual intervention by MTA staff with automatic intervention by the LADOT signal system.

## Ridership

MTA has estimated the ridership on the two Metro Rapid corridors using both point check data and data from automated passenger counters. While the two methods return somewhat different results, there is agreement that ridership has increased dramatically on both corridors by

approximately 25-30 percent. The increase in the Wilshire/Whittier corridor appears to result from major growth in both Metro Rapid and local ridership with the percentage of riders using Metro Rapid dropping slightly from the historic limited-stop service, possibly due to (a) the wider stop spacing for Metro Rapid, (b) the old limited-stop service was only limited-stop for a portion of the route and operated in local service for long segments of the alignment, and (c) some people are transferring between the Metro Rapid and local buses along the corridor. As well, the Wilshire/Whittier Metro Rapid appears to be capacity-constrained in the morning peak period. For instance, an additional 23 trips were introduced on September 10, 2000 to alleviate this constraint resulting in an immediate increase in ridership for the overall Metro Rapid line.

**Ridership**

Total Unlinked Ridership	Wilshire/Whittier Corridor		Ventura Corridor	
	Before	After	Before	After
Local	39,700	50,000	13,500	8,100
Limited	23,800			
Metro Rapid		40,300		9,000
Total Ridership	63,500	90,300	13,500	17,100
Net Increase		26,800		3,600
% Increase		42.2%		26.7%

% Corridor Ridership			
Local	63%	55%	47%
Limited/Metro Rapid	37%	45%	53%

Passenger survey data indicate that over 1/3 of this overall increase is from non-transit users (patrons who never rode transit before), with 1/3 from current riders riding more often and 1/3 from riders of other MTA transit switching to service on these corridors. Of particular significance is that a 17-to-20 percent increase in ridership came directly from new transit travel (1/3 plus 1/3).

**Passenger Trip Lengths**

One of the major objectives of Metro Rapid was to provide more convenient travel for longer distance transit riders. From the average trip lengths by riders on the two corridors, it is clear that longer distance travelers are using the Metro Rapid services. However, it appears that Metro Rapid is not solely used by longer distance travelers, but remains similar to the previous limited-stop services with average trip lengths of approximately twice the local service. This makes the Metro Rapid more effective from a seat turnover standpoint and is not inconsistent with expectations from a similar light rail service.

**Average Passenger Trip Lengths**

Wilshire/Whittier Corridor	BEFORE		AFTER	
	Eastbound (miles)	Westbound (miles)	Eastbound (miles)	Westbound (miles)
Local Line 18	2.8	3.1	2.6	2.6
Local Line 20/21	3.2	4.4	3.3	4.2
Limited-stop Line 320	5.2	7.9		
Metro Rapid Line 720			5.8	6.0

Ventura Corridor	BEFORE		AFTER	
	Eastbound (miles)	Westbound (miles)	Eastbound (miles)	Westbound (miles)
Express Line 424/522	10.6	7.8		
Express Line 425	25.2	N/A		
Local Line 150/240			N/A	N/A
Metro Rapid 750			8.4	7.5

**Geographic Distribution of Ridership**

The geographic distribution of boardings and the average productivity per route mile for each of the Metro Rapid lines indicates significant, but not surprising differences between lines. Ventura boardings are heavily influenced by the Metro Red Line station at Universal City with relatively even, consistent generation of riders along the remainder of the route. A key objective for the Ventura Metro Rapid was for customers to utilize it as an extension of the Metro Red Line. Service is timed for both Metro Rapid and local service to the arrival and departures of trains for Hollywood and downtown Los Angeles. Passenger surveys indicate that over 24 percent of all trips on Line 750 Ventura involve the Metro Rail system compared to just 8-to-14 percent of local trips. The 1-in-4 trips linking Metro Rapid with Metro Rail is excellent and is expected to continue to grow as new riders enter the system.

Line 750 Ventura		Average Per Trip			
		Boardings	Alightings	% of Total Boardings	Boardings Per Mile
Universal City Station	Ventura Vineland	11.1	3.9	33%	17.6
Ventura Vineland	Ventura Laurel Cyn	2.3	2.0	7%	1.5
Ventura Laurel Cyn	Ventura Van Nuys	3.5	4.1	10%	1.1
Ventura Van Nuys	Ventura Balboa	5.3	5.2	16%	1.7
Ventura Balboa	Ventura Reseda	3.9	3.4	11%	1.8
Ventura Reseda	Ventura Winnetka	1.8	1.4	5%	0.9
Ventura Winnetka	Ventura Tpga Cyn	2.6	2.2	8%	1.3
Ventura Tpga Cyn	Owensmouth Oxnard	3.6	1.6	10%	1.8
Total		34.1	23.7	100%	2.0

Line 720 Wilshire/Whittier Stations		Boardings	Alightings	% of Total Boardings	% of Total Alightings
Ocean	Colorado	1,112	1,354	3%	3%
Wilshire	4th St	1,170	1,113	3%	3%
Wilshire	14th St	534	698	1%	2%
Wilshire	Bundy Dr	740	688	2%	2%
Wilshire	Barrington	834	941	2%	2%
Wilshire	VA Hosp	441	561	1%	1%
Wilshire	Westwood	2,179	2,558	5%	6%
Wilshire	Santa Monica	951	1,134	2%	3%
Wilshire	Beverly Dr	980	1,135	2%	3%
Wilshire	Robertson	790	639	2%	2%
Wilshire	La Cienega	1,207	1,165	3%	3%
Wilshire	Fairfax	1,293	1,526	3%	4%
Wilshire	La Brea	1,275	1,203	3%	3%
Wilshire	Crenshaw	805	793	2%	2%
Wilshire	Western	3,371	2,957	8%	7%
Wilshire	Normandie	2,514	2,270	6%	6%
Wilshire	Vermont	3,891	3,065	10%	8%
Wilshire	Alvarado	2,261	2,115	6%	5%
6th St	Witmer	1,256	1,061	3%	3%
5th/6th St	Grand	1,072	1,244	3%	3%
5th/6th St	Broadway	2,915	3,127	7%	8%
5th/6th St	Main	953	965	2%	2%
Whittier	Soto	1,378	1,363	3%	3%
Whittier	Lorena	899	794	2%	2%
Whittier	Indiana	603	599	1%	1%
Whittier	Herbert	642	741	2%	2%
Whittier	Arizona	769	905	2%	2%
Whittier	Atlantic	1,313	1,061	3%	3%
Whittier	Hoeffner	977	1,194	2%	3%
Garfield	Whittier	1,025	1,103	3%	3%
Montebello	Metrolink	193	271	0%	1%
Wilshire	VA Hosp	441	561	1%	1%
Total Line 720		40,343	40,343	100%	100%

The Wilshire/Whittier Metro Rapid line is less influenced by the Metro Red Line, although the segment from Western to Alvarado has the highest ridership generation of the line. Downtown Los Angeles was the next strongest ridership generator followed by Westwood.

A key expectation for the Wilshire/Whittier Metro Rapid line was that it would provide an important service link between the east and west sides through downtown Los Angeles. Analysis of both the Automated Passenger Counter (APC) ridership data and passenger survey data indicate that significant numbers of riders are making these trips using Metro Rapid. Some 35-40 percent of the on-board riders entering downtown continue between the east and west sides will



little variation during the day. Passenger survey responses indicated that approximately 41 percent of the Eastside riders travel to the Westside or Santa Monica with 24 percent having a downtown destination.

In conclusion, it appears that Metro Rapid has exceeded ridership expectations in terms of overall increased passenger use on both Metro Rapid and local buses, penetration of previous non-user markets, use by longer distance travelers, meeting the needs of persons traveling between the east and west sides of Los Angeles County, and serving as an extension of the Metro Red Line in the San Fernando Valley. It is also clear that ridership continues to grow, especially on the Wilshire/Whittier line, which appears to be capacity constrained during at least the peak periods. Growth will be further fostered by the completion of the Metro Rapid Stations along both corridors and the second phase of the marketing campaign. This will place a priority of providing significantly more capacity along the Wilshire/Whittier in a cost-effective fashion. Moreover, similar performance and market response to both Metro Rapid lines may be indicative of what to expect for Phase II line additions to the Metro Rapid network.

## **Customer Perceptions and Behavior**

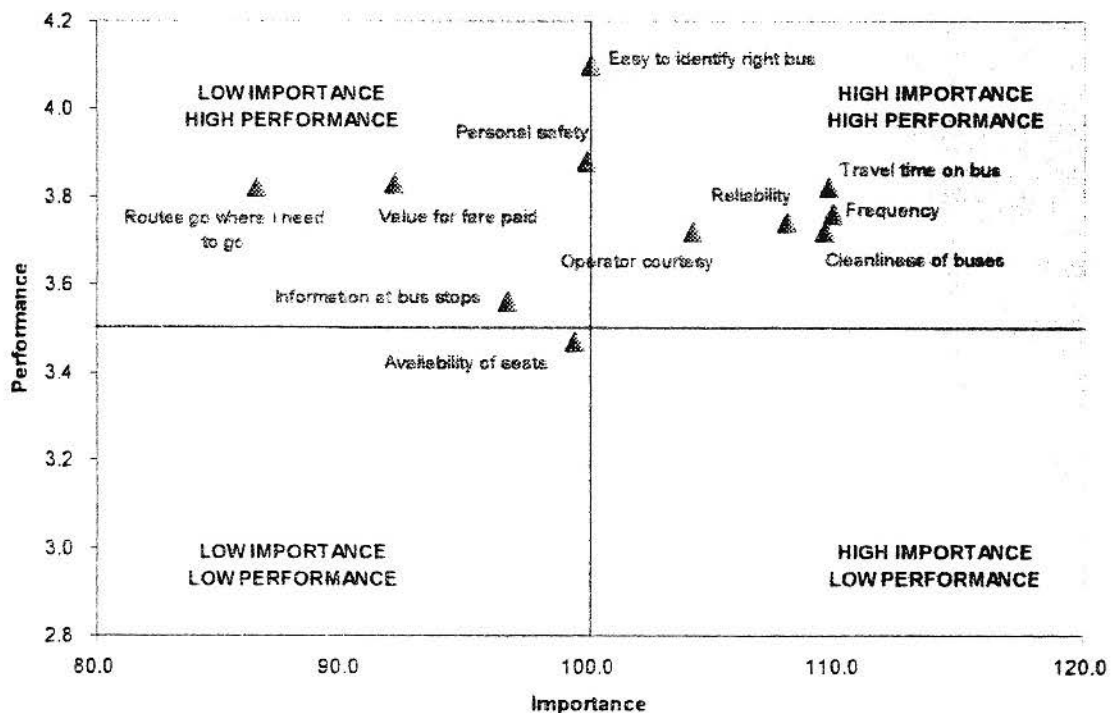
On-board questionnaires were distributed to bus riders "before" Metro Rapid in early June 2000 and "after" in September 2000 (prior to the strike) to assess rider perceptions, behavior, and profiles. The surveys asked riders to evaluate various elements of service as well as overall satisfaction, with the ultimate purpose of determining changes in customer perceptions of bus service after the introduction of Metro Rapid. Specific questions focused on rider behavior, including trip origins and destinations and frequency of bus use. Questions also obtained information on the ability to recognize Metro Rapid and perceptions of service quality. Finally, demographic questions provided a basis to assess changes in the demographic profile of Metro Rapid and local riders compared to the previous ridership.

Major findings include:

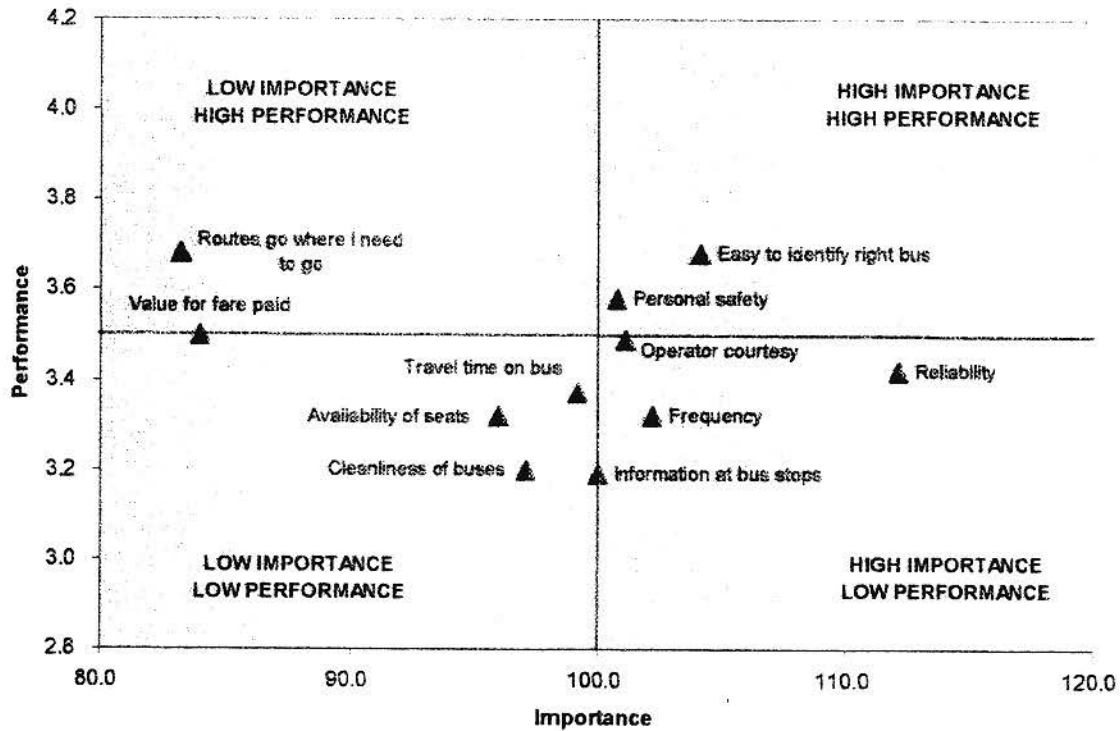
- An analysis of customer ratings and importance of all service attributes clearly shows that Metro Rapid riders perceive a quantum leap in service performance and quality. Changes of this magnitude in performance ratings are rare, particularly over a relatively short time frame (90 days). MTA has essentially raised the bar significantly in terms of service quality for its riders through the Metro Rapid Demonstration Program.
- Ratings for Metro Rapid service are higher for all attributes compared to the prior Limited-Stop service ratings. These improvements are statistically significant for all service attributes. The overall rating of MTA service increased by 0.35, from 3.48 among previous limited riders to 3.83 among Metro Rapid riders.
- Ratings for Metro Rapid service are higher for all attributes compared to the "after" Local service ratings, and all differences are statistically significant. The largest differentials are for cleanliness, travel time on the bus, and frequency of buses.
- Ratings have also increased on local bus service for most attributes, but many of the increases are not statistically significant.
- A surprising number of riders are coming from neighborhoods that are usually seen as low transit ridership areas, especially south of Ventura Boulevard on Route 750.

- Metro Rapid service is drawing new, non-traditional riders. Most Metro Rapid passengers were existing transit users, but 17% either did not make this trip previously or used a non-transit mode (most likely the automobile). The majority of both Metro Rapid and local bus riders report income levels below \$15,000 annually. However, over 13% of Metro Rapid riders have incomes above \$50,000 versus just 6 percent for local buses. Metro Rapid also has a higher percentage of male riders compared to the locals and former limited lines.
- Nearly 14% of Metro Rapid riders began using MTA services within the last three months. By comparison, only nine percent of local riders began using MTA services in this same time frame.
- Automobile availability is surprisingly similar for Metro Rapid and local bus riders. Approximately one-quarter of riders in both groups are from households with at least two cars.
- Approximately ¼ of Line 750 Ventura riders connected to the Metro Red Line to complete their journey, indicating that the Metro Rapid is serving as an extension of the rail system in the San Fernando Valley.
- A large percentage of those originating from the Eastside, on Route 720 (Wilshire/Whittier), traveled through Downtown to the Westside on the morning trips. This supported findings in previous studies that suggested a relatively large east-to-west demand in the peak hours.

**Importance vs. Performance for Service Attributes**  
**Metro Rapid**



### Importance vs. Performance for Service Attributes Local Bus After



In summary, the Metro Rapid program has demonstrated two critical elements: (1) customers perceive Metro Rapid as clearly superior to MTA's existing bus services; and (2) Metro Rapid's ability to increase transit's market share among discretionary travelers.

### Service Effectiveness and Efficiency

The original operating concept for the demonstration was to provide existing and potential customers with equal amounts of local and Metro Rapid service and allow them to choose that which best met their needs. This operating plan was implemented in June 2000. From the initial week of operations it was clear that many customers were choosing the Metro Rapid ser-

Weekday Corridor Service

Corridor	Unlinked Passengers			Passenger Miles			Peak Vehicles			Revenue Hours		
	Pre-Rapid	Post-Rapid	% Change	Pre-Rapid	Post-Rapid	% Change	Pre-Rapid	Post-Rapid	% Change	Pre-Rapid	Post-Rapid	% Change
<b>WILSHIRE-WHITTIER</b>												
Lines 16/31B	37,100			94,686			45			517		
Lines 20/21/22/323/322	31,400			167,496			77			727		
Line 1E		25,000			65,000			33			397	
Lines 20/21		25,000			93,750			42			410	
Metro Rapid 72C		40,330			237,770			71			706	
Combined Corridor	68,500	90,330	47.2%	267,180	396,520	54.7%	122	146	19.7%	1,244	1,511	21.4%
<b>VENTURA</b>												
Lines 474/425/527	15,500			174,200			37			286		
Lines 150/240		8,100			43,920			26			317	
Metro Rapid 75C		9,000			71,660			21			198	
Combined	15,500	17,100	26.7%	174,200	112,475	-19.4%	37	49	30.4%	286	616	80.9%
<b>TOTAL DEMONSTRATION</b>	77,000	107,430	39.6%	361,380	508,995	33.6%	159	195	20.6%	1,529	2,027	30.6%

vice. This led to overloading on both Metro Rapid lines initially (only the Wilshire/Whittier line continues to have under-capacity problems) and continuing underutilization on two of the three local services (i.e., Lines 20/21 and 150/240).

Overall performance (service effectiveness and efficiency) has improved on the Wilshire/Whittier corridor with the introduction of Metro Rapid with productivity up 17 percent and subsidy per passenger and passenger mile improved 18 and 24 percent, respectively.

**Weekday Corridor Performance**

Corridor	Passengers Per Revenue Hour			Subsidy per Passenger Mile			Subsidy per Passenger			Subsidy per New Passenger		
	Pre-Rapid	Post-Rapid	% Change	Pre-Rapid	Post-Rapid	% Change	Pre-Rapid	Post-Rapid	% Change	Pre-Rapid	Post-Rapid	% Change
<b>WILSHIRE-WHITTIER</b>												
Lines 16/16	62.0			(\$0.17)			(\$1.61)					
Lines 20/21/22/220/222	43.2			(\$0.21)			(\$1.05)					
Line 11		12.1			(\$0.18)			(\$0.45)				
Lines 20/21		61.0			(\$0.15)			(\$0.58)				
Metro Rapid 720		57.2			(\$0.14)			(\$0.82)				
Combined Corridor	51.0	55.7	17.0%	(\$0.20)	(\$0.15)	-24.2%	(\$1.75)	(\$0.65)	-17.8%		(\$0.32)	
<b>VENTURA</b>												
Lines 424/425/622 *	47.4			(\$0.10)			(\$0.93)					
Lines 150/240 *		25.5			(\$0.42)			(\$2.13)				
Metro Rapid 750		46.5			(\$0.15)			(\$1.20)				
Combined	47.4	55.2	50.0%	(\$0.10)	(\$0.25)	146.6%	(\$0.95)	(\$1.64)	76.3%		(\$4.30)	
<b>TOTAL DEMONSTRATION</b>	<b>50.4</b>	<b>53.0</b>	<b>5.2%</b>	<b>(\$0.16)</b>	<b>(\$0.17)</b>	<b>3.6%</b>	<b>(\$0.82)</b>	<b>(\$0.81)</b>	<b>-1.0%</b>		<b>(\$0.79)</b>	

Performance on the Ventura corridor has declined significantly despite the 27 percent increase in riders. This is principally due to the very large increase in Ventura local service which is performing at half the level of the previous express service to downtown Los Angeles. The Metro Rapid performance is tracking the previous express service that was replaced partly by the Metro Rapid and local buses and mostly by the Metro Rail Red Line extension.

The subsidy per new passenger (net revenue minus net operating cost per new passenger) is very attractive for the Wilshire/Whittier Metro Rapid service at just \$0.32, competing very effectively with the various rail options. At a subsidy of over \$4.00 per new passenger, the Ventura Metro Rapid has been less cost-effective. However, it is expected that as services on Wilshire, Whittier, and Ventura Boulevards are adjusted to reflect actual ridership, overall and individual corridor performance should continue improve significantly.

**Operating and Capital Costs**

One of the principal advantages of Metro Rapid service is that the net cost, both operating and capital, is considerably lower than other transit mode choices. It balances speedy service with higher capacity and low implementation costs.

**Operating Cost**

Overall, the annualized (12 month) marginal operating cost of the Metro Rapid demonstration service is approximately \$12.5 million with a strong likelihood that \$2-3 million of this net increase will be eliminated through refinement of the local and Metro Rapid operating schedules on the two corridors. The overall annual operating cost of Metro Rapid service averages just \$500,000 per mile.

**Operating Cost Summary**

Corridor	Annual Operating Cost			
	Pre-Rapid	Post-Rapid	Net Change	% Change
<b>WILSHIRE-WHITTIER</b>				
Lines 18/318	\$10,563,000			
Lines 20/21/22/320/322	\$14,964,000			
Line 18		\$8,099,000	(\$2,464,000)	-23.3%
Lines 20/21		\$6,574,000	(\$6,390,000)	-42.7%
Metro Rapid 720		\$16,465,000	\$16,465,000	N/A
Combined Corridor	\$25,527,000	\$33,156,000	\$7,631,000	29.9%
<b>VENTURA</b>				
Lines 424/425/522	\$6,954,000			
Lines 150/240		\$6,922,000	(\$32,000)	-0.5%
Metro Rapid 750		\$4,939,000	\$4,939,000	N/A
Combined	\$6,954,000	\$11,861,000	\$4,907,000	70.6%
<b>TOTAL DEMONSTRATION</b>	<b>\$32,481,000</b>	<b>\$45,019,000</b>	<b>\$12,538,000</b>	<b>38.6%</b>

**Capital Cost**

One of the principal objectives of the Metro Rapid program is to provide high quality rail emulation service with significantly lower capital investment. The Metro Rapid capital program involved three areas: station development, bus signal priority, and vehicle acquisition. The station program was designed, fabricated and installed at a cost of approximately \$100,000 per mile. The bus signal priority system cost was approximately \$20,000 per intersection. Buses used to operate the Metro Rapid Program were NABI 40-foot CNG low-floor vehicles from current fleet procurement orders.

**Capital Cost Summary**

Capital Element	Wilshire-Whittier		Ventura	
	Units/Miles	Cost	Units/Miles	Cost
Stations	25.7 miles	\$2,441,000	16.7 miles	\$1,590,300
Bus Signal Priority	25.7 miles	\$2,569,000	16.7 miles	\$1,674,000
<b>TOTAL DEMONSTRATION</b>		<b>\$5,010,000</b>		<b>\$3,264,300</b>
Capital Element	Total		Cost Per Mile	
	Units/Miles	Cost		
Stations	42.4 miles	\$4,031,300	\$95,000	
Bus Signal Priority	42.4 miles	\$4,243,000	\$100,000	
<b>TOTAL DEMONSTRATION</b>		<b>\$8,274,300</b>	<b>\$195,000</b>	

## Metro Rapid Phase II

The Metro Rapid Demonstration Program has been a clear success during its first 90 days of operations. Based on this success, a Phase II Expansion Program is proposed that involves two principal elements:

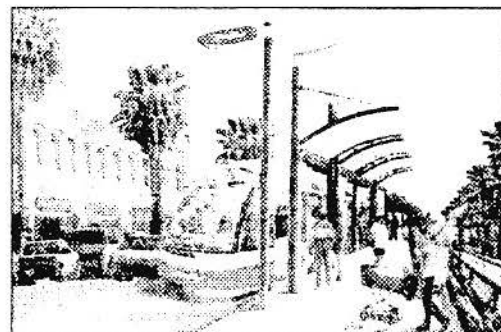
- Introduction of the remaining Curitiba model attributes (attributes 8-13).
- Expansion of the Metro Rapid network.

CURITIBA KEY ATTRIBUTES	Metro Rapid	
	Phase I Demonstration	Phase II Expanded System
1. Simple Route Layout	Yes	Yes
2. Frequent Service	Yes	Yes
3. Headway-based Schedules	Yes	Yes
4. Less Frequent Stops	Yes	Yes
5. Level Boarding and Alighting	Yes	Yes
6. Color-coded Buses and Stations	Yes	Yes
7. Bus Signal Priority	Yes	Yes
8. Exclusive Lanes	No	Yes
9. Higher Capacity Buses	No	Yes
10. Multiple Door Boarding & Alighting	No	Yes
11. Off-Vehicle Fare Payment	No	Yes
12. Feeder Network	No	Yes
13. Coordinated Land Use Planning	No	Yes

### Introduce Remaining Attributes

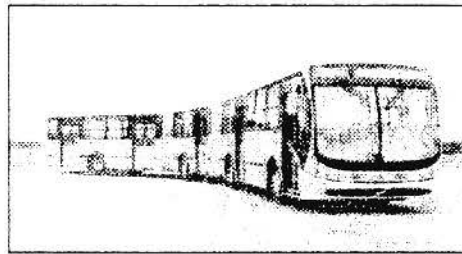
The remaining attributes are discussed below

Exclusive bus lanes – two approaches are proposed for development of exclusive bus lanes: (1) short segments where warranted by congestion delay; and (2) full-length exclusive transitways either on arterials or in separate rights-of-way. The following is illustrative of possible arterial exclusive lane options.

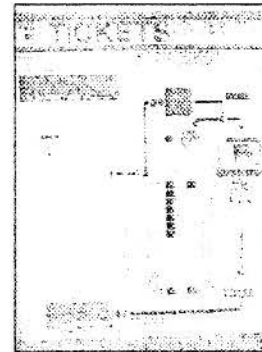


Higher capacity buses – as previously discussed, the Wilshire/Whittier Metro Rapid peak hour frequency has nearly reached 2 minutes and the service is still experiencing overcrowded conditions despite several capacity increases. There are three principal options open for MTA to operate higher capacity buses:

- 45-foot vehicles (8-12 more seats than the standard bus)
- 60-foot articulated vehicles (18-20 additional seats)
- 80-foot bi-articulated vehicles (36-40 additional seats)



Multiple door boarding and fare prepayment – multiple door boarding requires off-vehicle fare collection either through controlled access or using a barrier-free proof-of-payment system. The benefits have been long established for light and heavy rail operations and are clearly applicable to high volume Metro Rapid service (the Wilshire/Whittier Metro Rapid is Los Angeles County's third heaviest transit line after the Metro Red and Blue Lines and ahead of the Metro Green Line). MTA has adopted a barrier-free system with random inspections for the rail program. Metro Rapid has very similar needs and will likely require a similar approach, especially given the limited space along the arterial rights-of-way for Curitiba-type stations.



Feeder network – MTA's basic grid network of regional and local bus services makes development of a separate feeder network for the Metro Rapid (and Metro Rail) of less importance. In Phase II, introduction of new community-based transit services (e.g., Smart Shuttles and circulators) as well as local network restructuring will be appropriate in support of the Metro Rapid network, especially where the prevailing local network is not grid-based.

Coordinated land-use – one reason for the success of both the Wilshire/Whittier and Ventura Metro Rapid lines is their operation on corridors where land-use is coordinated with transit. Streetscapes and densities are not unlike the "structural corridors" that were developed in Curitiba for the bi-articulated red express lines. The City of Los Angeles has a new project under-

way to identify transit impacts that could become part of its redevelopment warrants, i.e., Transit Oriented Design – one element could cover coordinated land-use around Metro Rapid stations.

**Expansion of the Metro Rapid Network – Arterial Lines**

The success of the demonstration lines has provided clear indications that the Metro Rapid program as currently implemented has met with customer approval. Together with the introduction of the additional Curitiba model attributes, expansion of the Metro Rapid network is appropriate. A multi-level selection process was developed for identifying the Phase II Metro Rapid arterial lines. The first step is based on the Tier One transit criteria and includes lines that meet the following minimum requirements:

- Serve major regional corridors
- Provide key network connections for longer distance travel
- High passenger use

The second step prioritized lines meeting the above requirements based on secondary criteria that included:

- Weekday unlinked passengers
- Average passenger trip length
- Revenue operating speed
- Annual passengers per route mile
- Weekday seat utilization
- Weekday riders retained on weekends
- Weekday passengers per bus hour
- Operating ratio

The resulting candidate lines were then checked for current frequency levels (ability to support Metro Rapid frequencies), whether the corridor currently has multiple levels of regional service (e.g., express, limited-stop, local, and community), and whether it duplicates any other comparable rapid transit (generally a one mile spacing between continuous lines). Based on these findings, lines were confirmed as Metro Rapid candidates and prioritized in three sub-Phases: IIA, IIB, and IIC. The proposed Metro Rapid candidate lines for Phase II as of February 2002 are:

**METRO RAPID PHASE II**

<b>Phase IIA</b>	<b>Phase IIC</b>	<b>Phase IID</b>
South Broadway Vermont Pico-Pico-Venice Florence Solis Van Nuys	Western Beverly Vermont/La Cienega Atlantic San Fernando Sepulveda	West Olympic Garvey/Chavez Manchester Crenshaw/Rossmore Torrance/Long Beach Lincoln

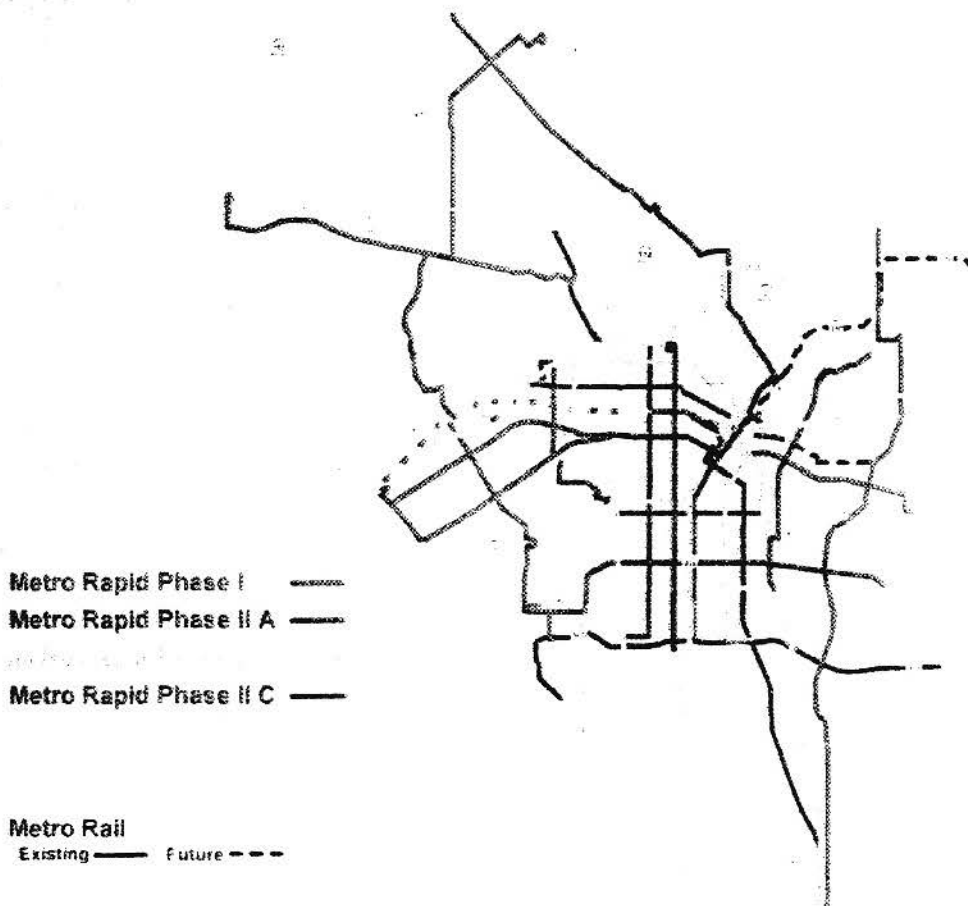
Colors denote sub-phasing on following map.



### Expansion of the Metro Rapid Network - Transitways

Metro Rapid lines are also proposed for exclusive rights-of-way, augmenting the arterial Metro Rapid lines. In some cases, lines may operate partially along transitways and arterials. The overall proposed Metro Rapid network extensively covers the core high-demand portion of the County of Los Angeles, as illustrated below.

### Metro Rapid Expansion Program



### Integration of Corporate Identity

The successful "branding" of the Metro Rapid Program as a separate service with different attributes, and the development of customer loyalty, provides an opportunity for MTA to develop distinct transit services tailored to customer needs. A draft corporate identity was developed during the Metro Rapid Demonstration Program that illustrates an effective way to define and "brand" the different services.

	Logotype	Icon	Icon In Panel
Transportation Agency			
Transit System			
Transit Modes			
Associated Agencies			

Customer Logo Design October 20, 1992

### Metro Rapid Art Program

Under the guidance of Metro Art, an artist team has created several visual enhancements to the Metro Rapid fleet interiors and select stops. These include a custom interior seat fabric and artwork for the interior spaces over the windows. The design motif is based upon symbols borrowed from historic transit passes and weaves a contemporary story played out in locations along the Metro Rapid route. The seat fabric design is visually dynamic to discourage vandalism. Concrete seating clusters with Metro Rapid "red" accents will be installed on MTA property where Metro Rapid meets Metro Rail.



## Summary of Key Recommendations

- The MTA, working with the Los Angeles County Municipal Operators and cities, should build on the success of the Metro Rapid Demonstration Program.
- MTA should complete the Phase I attributes still in implementation, including the stations, "next-bus" displays, and expansion of the bus signal priority system outside the City of Los Angeles.
- A significant increase in vehicle capacity is recommended. The short-term recommendation is to increase the number of 40-foot Metro Rapid buses assigned to the two Demonstration Corridors. However, there is a limit to the number of buses that can be cost effectively added. The Wilshire/Whittier Corridor is currently operating close to this limit. The more cost-effective long-term solution is to introduce high-capacity buses.
- Implement the Phase II Metro Rapid System Expansion Program, including both new attributes and the expansion of lines.



# Appendix A

## Metro Rapid Program

### Transit Priority System Evaluation Report

#### Introduction

The City of Los Angeles Department of Transportation (LADOT), in collaboration with the MTA, has successfully implemented an advanced Transit Priority System (TPS) project for buses along two major transit corridors in the Los Angeles Region. The TPS Project was developed by LADOT, and has received nationwide media attention. Furthermore, LADOT has received several awards for creativity and innovation from prominent organizations.

The TPS project is a critical element of the Metro Rapid Bus Demonstration Program that was jointly developed by LADOT and MTA. The initial phase of the Metro Rapid Bus was deployed on June 24, 2000, when the Metro Red Line subway was extended to the North Hollywood Stations in the San Fernando Valley. The purpose of the Metro Rapid Bus Demonstration Program is to offer rail-type frequent and high quality transit services connecting the terminus of the Red Line to major destinations in the outlying areas. The TPS project serves to improve the on-time performance of the Metro Rapid Bus by adjusting the signal timing at intersections for buses as their approach is detected. The TPS is also used to provide real-time next bus arrival information to passengers waiting at bus stations and assist bus fleet management by recording the travel time for each bus run. The Metro Rapid Bus program features limited stops and new low-floor clean-air buses.

#### Project Description

The TPS project involves adjusting timing of traffic signal on two of the most heavily traveled transit corridors in Los Angeles: Ventura Boulevard and Wilshire/Whittier Boulevards. The Ventura Boulevard Corridor, consisting of 88 signalized intersections and 16-miles of roadway, connects the Metro Red Line Station at Universal City to the Warner Center, a major commercial and business center in the West San Fernando Valley. The Wilshire/Whittier Boulevard Corridor, consisting of 123 signalized intersections and 14-miles of roadway, traverses through the central part of the Los Angeles Basin and connects East Los Angeles with the Central Business District, and the Cities of Beverly Hills and Santa Monica. Wilshire Boulevard is a prime business district with extensive commercial office buildings, museums and retail stores. Whittier Boulevard serves as a major east-west arterial in East Los Angeles and is fronted by a mixture of retail stores and residential area. These two streets are connected by the one-way street couplet of Fifth and Sixth Streets in the downtown Central Business District. The County of Los Angeles and the Cities of Beverly Hills and Santa Monica are not participants of this demonstration project, although the Metro Rapid Bus route extends 12 miles outside the City of Los Angeles.

The TPS Project also includes control of dynamic passenger information signs at selected bus shelters along the Metro Rapid Bus routes. These highly visible LED signs inform passengers of the estimated arrival times of the next Metro Rapid bus. The arrival time information is computed by the system based on the actual speed of the bus and is accurate to within one minute. LADOT staff also developed the sophisticated algorithm that calculates the arrival time.

## Project Implementation

### ATSAC and TPM System Operation

Each signalized intersection in the project area is equipped with loop detectors that serve as Automatic Vehicle Identification (AVI) sensors. These sensors embedded in the pavement receive a radio-frequency code from a small transponder installed on the underside of a vehicle. Buses equipped with unique transponders will be detected when traveling over the loop detectors. These loops are connected to a sensor unit within the traffic signal controller at each intersection, which transmits the bus identification number to the Transit Priority Manager (TPM) computer in the City's Automated Traffic Surveillance and Control (ATSAC) Center at City Hall East for tracking and schedule comparison.

Once the bus identification and location are received by the TPM, the computer makes a determination of the need for traffic signal priority. If the bus is early or ahead of the scheduled headway, no traffic signal priority treatment is provided. However, if the bus is late or beyond the scheduled headway, then the downstream traffic signal controller will provide signal priority to help the bus catch up with the scheduled headway. In addition, real-time data links from the MTA dispatch center to the ATSAC center is used to obtain the daily bus assignment for schedule comparison.

### Individual Intersection Operation

Traffic signal control at each intersection is provided by Model 2070 controllers that are equipped with a state-of-the-art software program developed by the City of Los Angeles specifically for this project. Once the Model 2070 traffic signal controller receives a request from the Transit Priority Manager, it implements one of the following four types of traffic signal priority actions depending upon the point in time when the signal controller receives the commands, relative to the background cycle.

#### Types of Priority

- **Early Green** priority is granted when a bus is approaching a red signal. The red signal is shortened to provide a green signal sooner than normal.
- **Green Extend** priority is granted when a bus is approaching a green signal that is about to change. The green signal is extended until the bus passes through the intersection.
- **Free Hold** priority is used to hold a signal green until the bus passes through the intersection during non-coordinated (free) operation.
- **Phase Call** brings up a selected transit phase that may not normally be activated. This option is typically used for queue jumper operation, or a priority left turn phase.

## **Before and After Study of Bus Travel Times and Travel Speeds**

A detailed evaluation of the Transit Priority System was undertaken in mid-September 2000, three months after the beginning of the Metro Rapid Bus service. This allowed time for bus operators, passengers and general automotive traffic to become aware of the system. The first part of the evaluation measures the effectiveness of the system in terms of overall travel time savings along the route and the reduction of time transit vehicles spent waiting at red traffic signals. The second part of the evaluation measures the impacts to general automotive traffic from the implementation of the Transit Priority System. Data for each evaluation was collected independently, and the results of these are presented below.

### Previous Bus Delay Study

In the spring of 1998, LADOT staff conducted a manual data collection program along Wilshire and Ventura Boulevards to analyze the major causes of bus delay and operating inefficiency. The findings of that study indicated that the overall bus delays can be attributed to two major factors: buses stopped for red traffic signals, and buses delayed at bus stops loading and unloading passengers. Approximately 20% of the total bus running time was spent waiting at traffic signals, and another 25% of the total bus running time was due to bus loading delays at bus stops. These combined delays represent 45% of the total bus running time, from which the traffic signals contributed 45% of the total delays, and the bus stops 55% of the total delays.

### Before and After Study Methodology

The Transit Priority System records the time and date each transponder-equipped bus passes over a loop detector in the system. This provides a complete record of each bus trip made along the Rapid Bus route. From this detailed recorded data, it is possible to determine exactly the running times of the buses. For the period September 5, 2000 through September 14, 2000, a total of 13 Rapid Buses (seven assigned to the Wilshire/Whittier Boulevard route and six assigned to the Ventura Boulevard route) were not given priority at any of the traffic signals. All of the remaining 99 Rapid Buses operated with priority. During the same time period, approximately 25 local buses, which also have transponders installed, operated over equivalent sections of the Metro Rapid Bus routes in normal revenue service. None of the local buses receive priority at any of the traffic signals along either of the routes.

Run time data was analyzed for over 1000 buses which made trips along the Rapid Bus routes during the A.M. and P.M. peak periods for two weeks on Tuesdays, Wednesdays and Thursdays. For the Wilshire/Whittier Boulevard route, this data was collected over three segments of the route and aggregated into a total value that represents the travel time in the City of Los Angeles only. The travel times through Beverly Hills are not examined in this analysis. The analysis of the Ventura Boulevard route included data from Topanga Canyon Boulevard to Vineland Avenue, where equivalent local bus service exists. Data was collected and analyzed for two peak periods in both directions along each route. The 7-9 A.M. morning peak and 4-6 P.M. evening peak trip start times represent the most congested times along these travel corridors, and have the most bus trips from which to analyze the data. The data collected in these time periods is summarized in Tables 1 and 2 of Attachment A.

### Ventura Boulevard Travel Time Analysis

Data collected along Ventura Boulevard was used to determine the amount of time saved between local buses and Rapid Buses both with and without priority. This information shows how

much of the travel time savings is due to the Transit Priority System as compared to the Rapid Buses alone.

Street	Direction	Time Period	Travel Time (minutes)			Time Savings				Benefit	
			Base Trip	Rapid		(minutes)		(percent)		MTA Share	LADOT Share
				Priority Off	Priority On	Priority Off	Priority On	Priority Off	Priority On		
Ventura Bl Topanga Canyon to Vineland (14 miles)	E/B	7-9 am	58	48	45	10	13	17%	22%	77%	23%
	E/B	4-6 pm	54	48	44	6	10	11%	19%	60%	40%
	W/B	7-9 am	57	47	43	10	14	18%	25%	71%	29%
	W/B	4-6 pm	53	45	40	8	13	15%	25%	62%	38%
	<i>Average</i>			56	47	43	9	13	15%	23%	67%

The combined effects of the Rapid Bus service and the Transit Priority System have reduced the average running times along Ventura Boulevard by 23%, of which 33% is due to TPS, and 67% due to the Rapid Buses. The average travel speed for local buses was 15 miles-per-hour.

The benefits of the Transit Priority System can be calculated by comparing the traffic signal delays both with and without the priority system activated. The following analysis was used on data collected from Ventura Boulevard:

**VENTURA BOULEVARD TRAVEL DELAY ANALYSIS**

Length:	14 miles	Selected study area
Base running time:	56 minutes	No priority local buses
Bus stop delay:	14 minutes	25% of base running time
Traffic signal delay:	11 minutes	20% of base running time
Actual travel time:	31 minutes	27 mph running speed
Savings:		Due to project
Rapid bus:	9 minutes	16% of base running time
Signal priority:	4 minutes	7% of base running time
Total savings:	13 minutes	23% of base running time
New running time:	43 minutes	Priority buses
New bus stop delay:	5 minutes	9% of base running time
New traffic signal delay:	7 minutes	13% of base running time
Bus stop delay reduction:	9 minutes	64% of base bus stop delay
Signal delay reduction:	4 minutes	36% of base signal delay

This analysis shows that a 4-minute reduction in signal delay has been obtained from the Transit Priority System on Ventura Boulevard, which is a 36% reduction in the delays caused by traffic signals along the route. The speed for the Rapid Bus increased to 20 miles-per-hour. An alternative analysis using estimated dwell times is shown in Attachment B.

Wilshire/Whittier Boulevard Travel Time Analysis

Similar analysis based on the data collected along Wilshire/Whittier Boulevards determined the amount of time saved between local buses and Rapid buses both with and without priority, and how much of the travel time savings was due to the Transit Priority System, as compared to the Rapid Buses alone.

Street	Direction	Time Period	Travel Time (minutes)			Time Savings				Benefit	
			Local Base Trip	Rapid		(minutes)		(percent)		MTA Share	LADOT Share
				Priority Off	Priority On	Priority Off	Priority On	Priority Off	Priority On		
Wilshire Bl Centinela to Comstock (3 miles)	E/B	7-9 am	16	14	13	2	3	13%	19%	67%	33%
	E/B	4-6 pm	19	16	15	3	4	16%	21%	75%	25%
	W/B	7-9 am	16	14	13	2	3	13%	19%	67%	33%
	W/B	4-6 pm	16	15	14	1	2	6%	13%	50%	50%
	Average		17	15	14	2	3	12%	18%	65%	35%
Wilshire Bl San Vicente to Valencia (6 miles)	E/B	7-9 am	29	22	19	7	10	24%	34%	70%	30%
	E/B	4-6 pm	32	28	26	4	6	13%	19%	67%	33%
	W/B	7-9 am	35	30	27	5	8	14%	23%	63%	38%
	W/B	4-6 pm	35	24	22	11	13	31%	37%	85%	15%
	Average		33	26	24	7	9	21%	28%	71%	29%
6th St / Whittier Bl Valencia to Indiana (5 miles)	E/B	7-9 am	26	18	16	8	10	31%	38%	80%	20%
	E/B	4-6 pm	26	19	17	7	9	27%	35%	78%	22%
	W/B	7-9 am	26	20	18	6	8	23%	31%	75%	25%
	W/B	4-6 pm	28	22	19	6	9	21%	32%	67%	33%
	Average		27	20	18	7	9	26%	34%	75%	25%
Wilshire / Whittier Centinela to Indiana (14 miles)	E/B	7-9 am	71	54	48	17	23	24%	32%	74%	26%
	E/B	4-6 pm	77	63	58	14	19	18%	25%	74%	26%
	W/B	7-9 am	77	64	58	13	19	17%	25%	68%	32%
	W/B	4-6 pm	79	61	55	18	24	23%	30%	75%	25%
	Average		76	61	55	16	21	20%	28%	73%	27%

The combined effects of the Rapid Bus service and the Transit Priority System have reduced the average running times along Wilshire/Whittier Boulevards by 28%, of which 27% is due to the signal priority system, and 73% due to the Rapid Buses. The average speed for local buses was 11 miles-per-hour.

The benefits of the Transit Priority System can be calculated by comparing the traffic signal delays both with and without the priority system activated. The following analysis was used on data collected from Wilshire/Whittier Boulevards:



**WILSHIRE/WHITTIER BOULEVARD TRAVEL DELAY ANALYSIS**

Length:	14 miles	Selected study area
Base running time:	76 minutes	No priority local buses
Bus stop delay:	19 minutes	25% of base running time
Traffic signal delay:	15 minutes	20% of base running time
Actual travel time:	42 minutes	20 mph running speed
Savings:		Due to project
Rapid bus:	16 minutes	21% of base running time
Signal priority:	5 minutes	7% of base running time
Total savings:	21 minutes	28% of base running time
New running time:	55 minutes	Priority buses
New bus stop delay:	3 minutes	4% of base running time
New traffic signal delay:	10 minutes	13% of base running time
Bus stop delay reduction:	16 minutes	84% of base bus stop delay
Signal delay reduction:	5 minutes	33% of base signal delay

This analysis shows that a 5-minute reduction in signal delay has been obtained from the Transit Priority System on Wilshire/Whittier Boulevards, which is 33% reduction in the delays caused by traffic signals along the route. The average travel speeds for the Rapid Bus increased to 15 miles-per-hour. An alternative analysis using estimated dwell times is shown in Attachment B.

**Summary of Findings About Travel Time Savings**

The evaluation of the results show that the combined benefits of traffic signal priority and the limited stop Rapid Bus led to a net travel time saving of 28% on Wilshire/Whittier Boulevards and 23% on Ventura Boulevard. Based on further analysis, as shown in the previous tables, the following results have been determined:

- On Ventura Boulevard, 33% of the travel time savings is due to the Transit Priority System and 67% from other components of the Metro Rapid Bus Program.
- On Wilshire/Whittier Boulevards, 27% of the savings is due to the Transit Priority System and 73% from other components of the Metro Rapid Bus Program.
- The Transit Priority System reduced the delays caused by traffic signals by 36% on Ventura Boulevard.
- The Transit Priority System reduced the delays caused by traffic signals by 33% on Wilshire/Whittier Boulevards.

### **Mixed-Flow Traffic Impact Analysis**

The second analysis involved the collection of data regarding the impacts to general automotive traffic. Data were collected at twelve selected locations along both the Ventura Boulevard and Wilshire/Whittier Boulevard routes. Using the automatic data collection capabilities of the City's ATISAC system, traffic volume, occupancy, speed, stops, queues and delay data were collected at each intersection for a two-week period. During this period, the signal priority was "enabled" and then "disabled" to effectively measure the impacts to traffic. The traffic data was collected over three two-hour periods each weekday. The data collection periods were 7-9 A.M. for the morning peak, 11 A.M. to 1 P.M. for the midday peak and 4-6 P.M. for the evening peak. Also during these times the number of cycles experiencing transit priority and the amount of green time provided was recorded.

The twelve selected locations fall into three categories of intersections. The first category is major arterial crossings, the second is secondary arterial crossings, and the third is local or collector crossings. Combinations of fully-actuated, semi-actuated and pre-timed signals were included in the study to adequately represent the typical installations along the project. A complete list of the selected intersections along with their classification and type of operation are included in Tables 2 and 4 of Attachment C.

Data for the analysis was collected over a two-week period for both the before and after conditions, providing 25 same-time-period before and after comparisons. The actual analysis was made between the two before and after days with the most similar volume data. This represents the closest traffic conditions between the before and after data. The complete data collected is shown in Tables 1 and 3 of Attachment C.

### **Summary of Findings for Mixed-Flow Traffic Impacts**

Since each of the Metro Rapid Bus routes cross the twelve selected intersections on the eastbound and westbound approaches, the data for the northbound and southbound approaches represents the effect on cross street traffic. In general, there is only a slight impact to the cross street traffic of up to two seconds increase in delay. The average from all of the twelve locations was only one second of delay per vehicle per cycle. A decrease in delay was observed on the approaches moving concurrent with the priority phases of the same amount. Although there is some variation by location and time-of-day, the results of this analysis show that the overall impacts to cross street traffic are minimal.

### **Cost Benefit**

The results of the evaluation analysis can be used to estimate the cost saving obtained from the Transit Priority System. The MTA indicates that the current system average cost of operating a bus is \$98 per hour. With a traffic signal delay reduction of 4.5 minutes per hour, this translates into a cost saving of approximately \$7.35 per hour per bus. For a bus operating along these routes for 15 hours per day, the cost saving would be approximately \$110.25 per day. Assuming 100 buses per day for an average of 300 days per calendar year in the two corridors, this translates into approximately \$3.3 million annual operating cost saving for the MTA. This saving does not include the added benefit of travel time saving to the Rapid Bus passengers.

The Transit Priority System cost almost \$3 million to install along both Ventura Boulevard and Wilshire/Whittier Boulevards, including the cost of the software development. A total of 211 signalized intersections are outfitted with the Transit Priority System, at an average intersection

cost of \$15,000 per intersection. With an anticipated project life cycle of 10 years, the relative benefits-cost ratio is more than eleven-to-one.

### Conclusions

The results of the TPS Program evaluation analysis have demonstrated significant improvements to transit operations with minimal impacts to general automotive traffic. The average saving of 25% in travel time substantially improves the quality of the overall transit system. This project has shown that a Transit Priority System can be integrated into a centralized traffic control system without significant impacts to the overall traffic network while providing significant benefits to the transit user and the transit operator.

Although the average travel time savings of 4.5 minutes may appear small, the demonstrative increase in the overall ridership along the Metro Rapid Bus lines clearly shows the effectiveness of the project. The MTA has reported a 25% increase in ridership along the Ventura Boulevard and Wilshire/Whittier Boulevard corridors with the new Rapid Bus service. This ridership increase has been attributed equally to new transit ridership, existing riders on these corridors using the new service and riders from other corridors switching to these corridors.

**ATTACHMENT A**

Table 1

**Summary of all run time data collected for the travel time analysis along  
Ventura Boulevard**

Street	Direction of Travel	Time Period	Local Buses		Metro Rapid Buses			
			Number of Samples	Travel Time (minutes)	Priority Off		Priority On	
					Number of Samples	Travel Time (minutes)	Number of Samples	Travel Time (minutes)
<b>Ventura Bl</b> <i>Topanga Canyon to Vineland</i> (14 miles)	E/B	7-9 am	38	58	19	48	76	45
	E/B	4-6 pm	46	54	23	48	109	44
	W/B	7-9 am	29	57	34	47	124	43
	W/B	4-6 pm	45	53	20	45	91	40
	<i>Total / Average</i>		158	56	96	47	400	43

Table 2

**Summary of all run time data collected for the travel time analysis along  
Wilshire/Whittier Boulevards**

Street	Direction of Travel	Time Period	Local Buses		Metro Rapid Buses			
			Number of Samples	Travel Time (minutes)	Priority Off		Priority On	
					Number of Samples	Travel Time (minutes)	Number of Samples	Travel Time (minutes)
<b>Wilshire Bl</b> <i>Centinela to Comstock</i> (3 miles)	E/B	7-9 am	11	16	12	14	134	13
	E/B	4-6 pm	6	19	18	16	190	15
	W/B	7-9 am	13	16	32	14	321	13
	W/B	4-6 pm	5	16	11	15	143	14
	<i>Total / Average</i>		35	17	73	15	788	14
<b>Wilshire Bl</b> <i>San Vicente to Valencia</i> (6 miles)	E/B	7-9 am	11	29	10	22	135	19
	E/B	4-6 pm	18	32	28	28	260	26
	W/B	7-9 am	17	35	24	30	249	27
	W/B	4-6 pm	9	35	11	24	138	22
	<i>Total / Average</i>		55	33	73	26	782	24
<b>6th St / Whittier Bl</b> <i>Valencia to Indiana</i> (5 miles)	E/B	7-9 am	20	26	8	18	136	16
	E/B	4-6 pm	22	26	23	19	258	17
	W/B	7-9 am	19	26	14	20	151	18
	W/B	4-6 pm	11	28	9	22	114	19
	<i>Total / Average</i>		72	27	54	20	659	18
<b>Wilshire / Whittier</b> <i>Centinela to Indiana</i> (14 miles)	E/B	7-9 am	<i>Combined data from segments shown above</i>	71	<i>Combined data from segments shown above</i>	54	<i>Combined data from segments shown above</i>	48
	E/B	4-6 pm		77		63	58	
	W/B	7-9 am		77		64	58	
	W/B	4-6 pm		79		61	55	
	<i>Total / Average</i>			76		61	55	

## ATTACHMENT B

## VENTURA BOULEVARD TRAVEL DELAY ANALYSIS

Length:	14 miles	Selected study area
Number of bus stops:	12	
Bus stop dwell time:	20 seconds	
Total bus stop time:	4 minutes	
Rapid bus stop savings:	9 minutes	
Base bus stop delay:	13 minutes	
Base running time:	56 minutes	
Minimum travel time:	31 minutes	27 mph average speed
Base bus stop delay:	13 minutes	23% of base running time
Traffic signal delay:	12 minutes	21% of base running time
Bus stop delay reduction:	9 minutes	69% of base bus stop delay
Signal delay reduction:	4 minutes	34% of base signal delay

The results shown above were calculated using an alternative methodology which calculates the actual delay percentages from the field measured data with an average bus stop dwell time. The results of this analysis are within 2% of the results shown in the report.

## WILSHIRE/WHITTIER BOULEVARD TRAVEL DELAY ANALYSIS

Length:	14 miles	Selected study area
Number of bus stops:	16	
Bus stop dwell time:	20 seconds	
Total bus stop time:	5 minutes	
Rapid bus stop savings:	16 minutes	
Base bus stop delay:	21 minutes	
Base running time:	76 minutes	
Minimum travel time:	42 minutes	20 mph average speed
Base bus stop delay:	21 minutes	28% of base run time
Traffic signal delay:	13 minutes	17% of base run time
Bus stop delay reduction:	16 minutes	75% of base bus stop delay
Signal delay reduction:	5 minutes	39% of base signal delay

The results shown above were calculated using an alternative methodology which calculates the actual delay percentages from the field measured data with an average bus stop dwell time. The results of this analysis are within 6% of the results shown in the report.

**ATTACHMENT C**

Table 1

**Average delay values for two days on Ventura Boulevard for all vehicles on the indicated approach in seconds per vehicle per cycle for both the before and after conditions**

Location	Measured Delay (seconds)											
	Northbound			Southbound			Eastbound			Westbound		
	Before	After	Change	Before	After	Change	Before	After	Change	Before	After	Change
Reseda Bl and Ventura Bl	38	39	+1	29	32	+3	16	15	-1	29	26	-3
	38	38	+1	31	32	+2	18	17	-1	24	23	-1
	38	39	+1	31	31	-1	22	21	-1	29	23	-7
Sepulveda Bl and Ventura Bl	22	26	+4	50	52	+2	30	28	-2	49	48	-1
	31	28	-3	33	33	0	32	31	-1	22	22	+1
	47	49	+2	33	33	0	42	42	0	30	27	-3
Van Nuys Bl and Ventura Bl	28	29	+1	35	37	+2	23	22	-1	33	29	-4
	32	34	+2	42	40	-2	19	19	0	27	24	-3
	47	43	-4	43	45	+2	23	23	-1	29	22	-7
Laurel Canyon Bl and Ventura Bl	33	33	+1	39	39	0	25	22	-3	36	35	-1
	35	35	+1	35	37	+3	27	26	-1	31	31	+1
	42	46	+4	33	36	+3	43	38	-6	41	39	-2
Tujunga Bl and Ventura Bl	0	0	0	35	35	0	10	10	+1	11	11	0
	0	0	0	34	39	+5	8	10	+2	10	12	+2
	0	0	0	38	36	-2	9	9	0	10	11	+1
Corbin Av and Ventura Bl	31	35	+4	34	34	-1	11	11	0	16	14	-2
	33	35	+2	35	35	0	16	14	-2	14	13	-1
	32	38	+7	32	31	-1	18	19	+1	13	13	+1
<b>Average Change</b>	+1			+1			-1			-2		

The three sets of numbers for each location represent the morning, midday and evening peaks.

Table 2

**Locations where the traffic impact analysis data was collected**

<u>Ventura Corridor Intersections</u>	<u>Classification</u>	<u>Type of Operation</u>
Reseda Boulevard & Ventura Boulevard	Major	Semi-actuated
Sepulveda Boulevard & Ventura Boulevard	Major	Fully-actuated
Van Nuys Boulevard & Ventura Boulevard	Secondary	Pre-timed
Laurel Canyon Boulevard & Ventura Boulevard	Major	Fully-actuated
Tujunga Boulevard & Ventura Boulevard	Local	Semi-actuated
Corbin Avenue & Ventura Boulevard	Secondary	Semi-actuated

Note: Classification refers to the cross streets only. Ventura Boulevard is a Major Highway.

Table 3

**Average delay values for two days on Wilshire/Whittier Boulevards for all vehicles on the indicated approach in seconds per vehicle per cycle for both the before and after conditions**

Location	Measured Delay (seconds)											
	Northbound			Southbound			Eastbound			Westbound		
	Before	After	Change	Before	After	Change	Before	After	Change	Before	After	Change
Veteran Av and Wilshire Bl	52	53	+1	56	58	+2	41	37	-4	34	26	-8
	53	52	-1	57	56	-1	43	41	-2	28	29	+1
	52	56	+4	77	74	-3	46	45	-1	26	26	0
La Brea Av and Wilshire Bl	21	22	+1	22	22	-1	11	11	+1	23	20	-3
	22	22	0	24	24	+1	27	26	-1	17	16	-1
	25	28	+3	22	22	0	32	30	-2	20	19	-2
Soto St and Whittier Bl	14	14	0	11	11	0	12	11	-1	12	12	0
	12	12	0	6	6	0	11	11	-1	9	9	0
	16	18	+2	8	8	0	13	12	-1	13	12	-1
Alvarado St and Wilshire Bl	21	22	+1	28	32	+4	11	11	0	16	14	-2
	24	24	0	26	27	+1	15	15	0	15	15	+1
	24	25	+1	25	29	+4	22	21	-2	13	13	-1
Rampart Av and Wilshire Bl	28	31	+3	29	32	+3	8	6	-2	16	16	0
	30	32	+2	31	30	-1	14	14	0	6	7	+1
	33	34	+1	28	28	0	22	22	0	8	8	-1
6th St and Witmer Av	35	35	0	33	33	-1	6	7	+1	10	10	0
	39	39	+1	30	31	+2	11	10	-2	11	11	0
	40	39	-1	27	29	+2	14	14	0	6	6	0
Average Change			+1			+1			-1			-1

The three sets of numbers for each location represent the morning, midday and evening peaks.

Table 4

**Locations where the traffic impact analysis data was collected**

<u>Wilshire/Whittier Corridor Intersections</u>	<u>Classification</u>	<u>Type of Operation</u>
Veteran Avenue & Wilshire Boulevard	Secondary	Semi-actuated
La Brea Avenue & Wilshire Boulevard	Major	Pre-timed
Soto Street & Whittier Boulevard	Major	Pre-timed
Alvarado Street & Wilshire Boulevard	Major	Pre-timed
Rampart Avenue & Wilshire Boulevard	Secondary	Semi-actuated
Sixth Street & Witmer Avenue	Local	Semi-actuated

Note: Classification refers to the cross streets only. Wilshire Boulevard is a Major Highway. Fifth Street, Sixth Street and Whittier Boulevard are Secondary Highways.

## Appendix B

### Metro Rapid Program

### Service Quality Analysis

#### Introduction

A fundamental objective of introducing Metro Rapid service was to improve service quality, both from a customer perception and actual measurable performance standpoint. Effective service quality can be measured by vehicle headway maintenance or spacing (delivery performance), passenger waiting times (customer experience), and overcrowding of vehicles (from both average delivery performance and customer experience).

There is a significant interrelationship between these measures and with the scheduled service. For instance, the average customer wait times will be a function of both the scheduled intervals and the effective delivery of those intervals, as well as the vehicle loading (which will greatly affect bus bunching and pass-ups). In assessing the service, these relationships will be noted.

The field data was collected by MTA in August and September 2000 during a series of point checks at strategic locations. The use of timepoint data (as opposed to onboard ride check data) is appropriate as the aim is to ascertain a snapshot of the service at particular locations. The data was at various time intervals, as headways/frequencies are different during the day. The timepoints used were Whittier/Soto, Wilshire/Western, and Wilshire La Brea on the Line 720 Wilshire-Whittier corridor; and Ventura/Reseda for the Line 750 Ventura corridor.

It is important to reiterate that the data was from August 2000 prior to the MTA strike and was just 8-10 weeks after the start of a completely new operating strategy<sup>1</sup>. More recent field checks have indicated that the Metro Rapid division line staff together with ongoing improvement in the operating schedules have continued to improve the quality of service and that the loads have continued to grow on Metro Rapid.

**Headway Ratio.** This ratio is a simple way to measure the variability of headways at a given timepoint, which measures the evenness of vehicle spacing. A headway ratio of 1.0 indicates that vehicles arrived at a stop perfectly spaced, whereas a headway ratio of 2.0 suggests that, on average, vehicles arrived in bunched pairs. In effect, the headway ratio is a measure of the extent of bunching of vehicles. Depending upon the frequency of service, bunching may have a negative effect on the effective level of service delivered to passengers. It results in an actual level of service below that scheduled and may cause overcrowding and unacceptably long passenger waits.<sup>2</sup>

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<sup>1</sup> The unique Metro Rapid operating protocols involved the first time use of traffic signal priority for buses, elimination of timepoints and use of a headway interval spacing to manage vehicles, and separate station stops from local buses.

<sup>2</sup> Even spacing is very important under most service frequency conditions. However, under extremely frequent service conditions (headways well below 5 minutes), the need to deliver evenly spaced service is unnecessary from a customer wait experience standpoint. The more important objectives under these conditions are to avoid service gaps beyond 4-5 minutes and to provide adequate capacity so that there are no pass-ups.



The results on *Ventura Boulevard* indicate low levels of bunching at Reseda Boulevard<sup>3</sup>, and this generally effective service delivery. The only bunching problems appear to be on the local services, and more so on the westbound local services. The spacing of the Metro Rapid service appears to be very consistent, indicating good headway maintenance success.

On *Wilshire Boulevard*, the results are mixed. During the midday periods in both directions, headway intervals are adequate but need improvement on both Metro Rapid and local. The average midday passenger waits are consistently less on the Metro Rapid despite operation of the same headway on both Metro Rapid and local. During the peak periods, when the Metro Rapid is operating every 2-to-2½ minutes, many times vehicles are arriving almost in pairs. The problem time and direction for Metro Rapid is westbound during the PM peak where average waits are around 8-minutes with average arrivals in more than pairs<sup>4</sup>. The local service is also experiencing similar problems, but with a shorter route the problems are less acute. While the Metro Rapid service performance looks to be on-par or slightly better during regular demand periods, there is a need to closely monitor spacing during the peak periods with the objective of keeping average wait times below 5-minutes and the measured average load and passenger average load close to one and other.

On *Whittier Boulevard*, the Metro Rapid and local services are performing similarly with both services delivering similar headway ratios. The exception is eastbound Metro Rapid where interval performance is not satisfactory during the midday with average waits of nearly 8 minutes (ideally they should be 5 minutes) and during the PM peak where almost 2½ buses are arriving together. At Soto Street, the Metro Rapid buses are already some 75 minutes into the eastbound trip; however, the line staff will need to determine why service is bunching significantly after departing the Western Station eastbound with low bunching.

There are two major impacts of higher headway ratios (or higher bunching levels). The first is significantly increased average passenger waiting times over scheduled levels. The second is loading variability, causing overcrowding and poor utilization of available capacity. These impacts are discussed further below.

**Average Wait Times.** For high-frequency transit service, average wait time would normally be half the scheduled headway, assuming passengers arrive at stops in a random manner (i.e., random walk theory). For example, on a 10-minute frequency, a passenger arriving randomly at a stop could be expected to wait, on average, for five minutes.

However, where service becomes less reliable (due to bunching), average wait times increase. This can be measured as expected average wait time, assuming random arrivals at stops by passengers. This performance measure is, in effect, one of the most powerful and descriptive measures of how effectively the service is being delivered and a good indicator of customer out-of-vehicle wait times. This is because this simply measures how long passengers have to wait for vehicles, as compared to what the schedule suggests. Average wait time is closely tied to the headway ratio – where headway ratios increase, so too will passengers' average wait times.

Another way to look at average wait time is to use it to calculate the affective level of service being delivered. Simply multiply the average wait time by two, and you have the true level of

<sup>3</sup> Note that this stop is west of the traffic congestion around the I-405 San Diego Freeway interchange – eastbound services will have not yet encountered this point.

<sup>4</sup> These conditions were present even with the lowest measured average loads of the day for Metro Rapid, but worse from a customer standpoint due to very uneven loading.

service that a passenger waiting at that stop would have seen. This can then be compared to the scheduled level of service to measure how effectively the service is being delivered.

On *Ventura Boulevard*, the average waiting times are in line with the headway ratio. They tend not to be significantly greater than scheduled average waiting times. The only exception is on the local service, westbound in the AM Peak, where average wait time is 4.3 minutes, suggesting the actual level of service delivered is 8.6 minutes, which is well below the scheduled level of service of 5-minutes.

On *Wilshire Boulevard*, the actual level of service delivered varies (sometimes significantly) from the scheduled level of service. An example is the local service on Wilshire at La Brea, eastbound in the PM Peak. The scheduled level of service is around 7 minutes. Therefore the average wait for a passenger randomly arriving at a stop should be 3.5 minutes. But instead, the average wait was over 5 minutes. The implication is that while the resources expended equal a 7-minute service, from the passengers' perspective, only an 11-12 minute service is being delivered.

Average wait times on *Wilshire Boulevard* on the Metro Rapid are also, at times, well in excess of scheduled levels. As the headway ratio suggests, the main issues appear to be PM Peak and early evening westbound, where average wait times are over eight minutes, indicating an effective service level of over 16 minutes, again well below scheduled frequencies, and midday eastbound where average waits are around 7 minutes (the scheduled wait is 5-minutes). Overall, however, it appears that the Metro Rapid service is being delivered on-par or slightly better than the local service (i.e., lower headway ratios and lower deviation from the scheduled average wait time), especially when the very high peak direction frequencies are considered.

On *Whittier Boulevard*, average wait times are much higher than scheduled eastbound, in the off-peak and PM Peak. During the off-peak on the Metro Rapid, the average wait time is nearly eight minutes, suggesting an effective level of service of 15 minutes, while the scheduled level of service is 10 minutes. In the PM Peak (again eastbound), average wait times are 4.6 minutes, indicating an effective actual service level of over nine minutes, which is nearly three times the scheduled service level.

**Patron Perceived and Measured Average Loads.** This is a measure of the variability of load distribution. Usually, where bunching occurs, some vehicles will be heavily loaded, while some will be relatively empty (particularly close-trailing vehicles). This measure weights the loads according to the actual average customer experience.

In an extreme example, where two buses operate, the first with 60 passengers, and the second with none. The average load is 30, suggesting no capacity issues. However, all passengers saw a load of 60, and therefore the passenger perception is that all buses are overcrowded. In short, this measure considers how many passengers actually experience vehicle crowding. This is also a good measure of loading variability. Loading variability is a measure of service effectiveness, as high loading variability usually means that additional resources are required to provide the necessary capacity. Patron average load experience needs to be measured against the measured average load to measure loading variability.

On *Ventura Boulevard* there is some sporadic loading variability. However, neither the true average load or patron-perceived average load are close to capacity levels, indicating, if anything, excess capacity on both the local and Metro Rapid services.

On *Wilshire Boulevard* there are examples of sufficient capacity, but variability of loading causing overcrowding problems. A good example is on the *Wilshire Metro Rapid* at *La Brea*, westbound in the PM peak. The average load is 39, indicating no real capacity issues. However, the patron-perceived average load is nearly 52. Therefore, while no average capacity problems exist, there would be a perception of significant overcrowding problems from the passengers themselves. This indicates that there is high loading variability during this time period and during the early evening in the same direction, with some very-heavily loaded buses, and some half-empty buses (almost present on the local service at the same time and direction). The likely outcome would be additional resources, yet there is clearly enough capacity on average.

On *Whittier Boulevard*, the most significant incidence of loading variability is eastbound in the PM Peak. However, the average load is 27, and the patron-perceived average load is 32 with neither a problem from a customer perception standpoint. The rest of the day, on both the local and Metro Rapid services, there do not appear to be either capacity or overcrowding issues.

Loading Summary In summary, it appears that there are capacity issues on the *Wilshire Metro Rapid* westbound throughout the day with significant problems in the AM Peak and midday periods. Eastbound capacity shortfalls are only during the PM Peak and early evening periods. The eastbound loads are evenly distributed between locals and Metro Rapid services at Western, but the Metro Rapid loads are higher at La Brea. Westbound, the Metro Rapid loads are consistently much higher than the local services.

On *Whittier Boulevard*, the only capacity issue is westbound in the AM Peak, where the average load is 46 passengers. As with the *Wilshire* corridor, locals and Metro Rapids are similarly loaded eastbound, but the Metro Rapids are averaging somewhat higher loads westbound.

On *Ventura Boulevard*, the Metro Rapid loads are higher than the locals, except during the afternoons westbound. Overall average loads suggest no capacity issues.

#### Recommendations:

1. Given the frequency levels and loads on Metro Rapid, continue with plans to introduce higher capacity vehicles on the corridor.
2. Continue to adjust scheduled frequencies and running times to reflect current conditions based on more recent point checks and TOS input.
3. Continue to campaign the bus bunching problems through the deployment of additional capacity where needed, Metro Rapid point checks and ride checks to identify delay issues, strengthen the support of the BOCC to the line TOS in early notice of bunching, and introduce the bunching assistance routines in the LADOT bus signal priority system in a test mode to ascertain the impact of reducing bus bunching on operating speed and resource requirements.<sup>5</sup>

<sup>5</sup> The issue is whether to improve out-of-vehicle wait times (bus bunching) at the expense of in-vehicle travel times (operating speed). This is not an either/or situation; the conventional wisdom is that once the average waits fall well under 5-minutes there is little customer-perceived benefit in further reductions. Thus, bus bunching actions should aim at keeping average waits well below 5-minutes, but recognize that average waits of under 3-minutes have little value in attracting additional customers or retaining current riders.

4. As detailed stop level data becomes available, consider the possibility of a short line east of downtown Los Angeles at or before Soto Street. This will add complexity to a simple line and likely strand significant numbers of patrons at the short line terminal<sup>6</sup>. Thus, it should be approached cautiously and have initial and on-going customer notification involved on a real-time basis.
5. The upcoming introduction of the "next-bus" displays will provide early notice to customers and possibly effect customer choice of local versus Metro Rapid. Customer reaction should be monitored for impact on service schedules and delivered performance.

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<sup>6</sup> MTA Headquarters Operations and Scheduling introduced a weekend shortline at the 6<sup>th</sup>/Los Angeles station that Division 7 TOS report strand up to 15 customers per trip on Saturdays and Sundays.

## Appendix C Metro Rapid Program Before and After Passenger Surveys

### Summary

The MTA and City of Los Angeles Department of Transportation (LADOT) implemented the Metro Rapid Bus Demonstration Program on June 24, 2000 in the Whittier-Wilshire and Ventura corridors.

On-board questionnaires were distributed to bus riders "before" Metro Rapid in early June 2000 and "after" in September 2000 (prior to the strike) to assess rider perceptions, behavior, and profiles. The surveys asked riders to evaluate various elements of service as well as overall satisfaction, with the ultimate purpose of determining changes in customer perceptions of bus service after the introduction of Metro Rapid. Specific questions focused on rider behavior, including trip origins and destinations and frequency of bus use. Questions also obtained information on the ability to recognize Metro Rapid and perceptions of service quality. Finally, demographic questions provided a basis to assess changes in the demographic profile of Metro Rapid and local riders compared to the previous ridership.

Major findings include:

- Ratings for Metro Rapid service are higher for all attributes compared to the prior limited-stop service ratings. These improvements are statistically significant for all service attributes. The overall rating of MTA service increased by 0.35, from 3.48 among previous limited riders to 3.83 among Metro Rapid riders. In particular, the differential between Metro Rapid and local service is much greater than the limited-stop service which was little distinguished from the local services.
- Ratings have increased on local bus service for most attributes, but many of the increases are not statistically significant.
- Ratings for Metro Rapid service are higher for all attributes compared to the "after" Local service ratings, and all differences are statistically significant. The largest differentials are for cleanliness, travel time on the bus, and frequency of buses.
- An analysis of customer ratings and importance of all service attributes clearly shows that Metro Rapid riders perceive a quantum leap in service performance and quality. Changes of this magnitude in performance ratings are rare, particularly over a relatively short time frame (90 days). MTA has essentially raised the bar significantly in terms of service quality for its riders through the Metro Rapid demonstration program.
- A large percentage of those originating from the Eastside, on Route 720 (Wilshire/Whittier), traveled through Downtown to the Westside on the morning trips. This supported findings in previous studies that suggested a relatively large east-to-west demand in the peak hours.
- A surprising number of riders are coming from neighborhoods that are usually seen as low transit ridership areas, especially south of Ventura Boulevard on Route 750.

- Some 24 percent of Line 750 Ventura riders connected to the Metro Red Line to complete their journey, indicating that the Metro Rapid is serving as an extension of the rail system in the San Fernando Valley.
- Metro Rapid service is drawing new, non-traditional riders. Most Metro Rapid passengers were existing transit users, but 20 percent either did not make this trip previously or used a non-transit mode (most likely the automobile). The majority of both Metro Rapid and local bus riders report income levels below \$15,000 annually. However, over 13 percent of Metro Rapid riders have incomes above \$50,000 (twice as many when compared to local service). Metro Rapid also has a higher percentage of male riders compared to the locals and former limited lines. As well, over 50 percent of Metro Rapid riders report using transit in order to avoid traffic or because it is more convenient, significantly more than current local riders.
- Nearly 14 percent of Metro Rapid riders began using MTA services within the last three months. By comparison, only nine percent of local riders began using MTA services in this same time frame.
- Vehicle availability is surprisingly similar for Metro Rapid and local bus riders. Approximately one-quarter of riders in both groups are from households with at least two cars.

## **Metro Rapid Program Before and After Passenger Surveys**

### **Introduction**

The Los Angeles County Metropolitan Transportation Authority (MTA) and the City of Los Angeles Department of Transportation (LADOT) implemented the Metro Rapid Bus Demonstration Program on June 24, 2000. The purpose of Metro Rapid Bus is to address the need for faster travel choices for bus riders, especially the transit-dependent. The initial Demonstration Program encompassed the Whittier-Wilshire and Ventura corridors.

Evaluation of the various components of Metro Rapid is a critical part of the demonstration process. On-board questionnaires were distributed to bus riders "before" Metro Rapid in early June 2000 and "after" in September 2000 (prior to the strike) to assess rider perceptions, behavior, and profiles. The surveys asked riders to evaluate various elements of service as well as overall satisfaction, with the ultimate purpose of determining changes in customer perceptions of bus service after the introduction of Metro Rapid. Specific questions focused on rider behavior, including trip origins and destinations and frequency of bus use. Questions also obtained information on the ability to recognize Metro Rapid and perceptions of bus cleanliness. Finally, demographic questions provided a basis to assess changes in the demographic profile of Metro Rapid and local riders compared to today's riders.

The sampling plan called for the collection of 400 completed "before" surveys on limited-stop routes and 400 completed surveys on local routes in the two Metro Rapid corridors by placing surveyors on randomly selected bus runs. In the "after" phase, 400 completed surveys were collected on Metro Rapid and 400 surveys on local routes in the two corridors. For both surveys, the sample was drawn primarily from morning bus runs of at least seven hours in length, to maximize surveyors' time; a smaller sample of afternoon/evening runs was drawn to ensure that no bias was introduced by this method. This more intensive sampling allows comparisons between Metro Rapid and local service as well as before and after comparisons. The number of surveys was selected to ensure an accuracy of  $\pm 5$  percent at the 95 percent confidence level.

### **On-Board Survey Results**

The "before" survey was conducted in June 2000, immediately prior to the Metro Rapid implementation. The "after" survey was conducted in September 2000, after the service had been in operation for a few months. For the first survey on June 13<sup>th</sup> and 14<sup>th</sup>, surveyors handed out surveys to riders as they boarded the buses. Both limited and local bus routes along the corridors where Rapid would be implemented were surveyed, and a total of 288 limited and 871 local usable questionnaires were returned. Beginning on September 12<sup>th</sup> and continuing until September 14<sup>th</sup>, surveyors handed out surveys on both Rapid lines as well as the local routes that serve the same corridors as the Rapid. The number of usable questionnaires returned for the "after" survey was 719 on Metro Rapid, and 676 on local routes. Thus, a grand total of 2,554 surveys were received and tabulated for the two survey periods.

### **Origin-Destination**

Riders were asked to give the nearest street intersection of their origins and destinations (the start of their trip, not where they boarded the bus).

- A large percentage of those originating from the Eastside, on Route 720 (Wishire/Whittier), traveled through Downtown to the Westside on the morning trips. This supported findings in previous studies that suggested a relatively large east-to-west demand in the morning peak hours.
- A surprising number of riders are coming from neighborhoods that are usually seen as low transit ridership areas, especially south of Ventura Boulevard on Route 750.

### Satisfaction With Service

Respondents were asked to rate their perception of MTA's performance for various service attributes on a scale of 1 to 5, where 1 is "very poor" and 5 is "excellent." Attributes and results are presented in Tables 1 through 4 below. Differences in ratings for each attribute were tested for significance using a statistical procedure known as a T-test of independent samples. A single asterisk in the right-hand column indicates that there is a 95 percent probability that there is a statistically significant difference in the rating, while a double asterisk notes a 99 percent probability of a significant difference.

#### *Comparisons Between Metro Rapid and Former Limited Service (Table 1)*

- Ratings for Metro Rapid bus are higher for all elements of service compared to the prior Limited Bus ratings.
- The largest increase (0.89 on a five-point scale) from the "before" survey was for the attribute "cleanliness." This is an extraordinary improvement.
- "Frequency of buses" had the next highest increase at 0.61, with "value for fare paid" and "easy to identify the right bus" third with a 0.56 change.
- The overall rating of MTA service increased by 0.35, from 3.48 among previous limited riders to 3.83 among Metro Rapid riders.
- The improvements in ratings are statistically significant for all service attributes. "Routes go where I need to go" is the only element that is not significantly different at the  $p=.01$  level.

#### *Comparisons Between Local Service Before and After Metro Rapid (Table 2)*

- Ratings have increased for all attributes except for "operator courtesy" which had a modest 0.04 decrease. This suggests a spillover effect from the positive impacts of Metro Rapid, since local service did not change appreciably.
- "Availability of seats" had the largest increase at 0.25. As passengers have flocked to Metro Rapid, there is additional capacity available on local routes.
- All the other attributes had relatively small increases, in line with the spillover hypothesis. Only "availability of seats" and "cleanliness" had statistically significant changes at the  $p=.01$  level, while ratings for only three other attributes were statistically significant at the less stringent  $p=.05$  level.



**Table 1**  
**Metro Rapid "After" and Limited "Before" Ratings**

Service Attribute	Metro Rapid Rating	Limited Rating	Difference
Frequency of Buses	3.76	3.15	+0.61**
Routes go where I need to go	3.82	3.66	+0.16*
Reliability	3.74	3.30	+0.44**
Travel time on the bus	3.82	3.42	+0.40**
Value for fare paid	3.83	3.27	+0.56**
Availability of seats	3.47	3.00	+0.47**
Cleanliness	3.72	2.83	+0.89**
Information at bus stops	3.56	3.04	+0.52**
Operator courtesy	3.72	3.50	+0.22**
Personal safety on buses	3.88	3.40	+0.48**
Easy to identify the right bus	4.10	3.54	+0.56**
Overall rating of MTA service	3.83	3.48	+0.35**

\*\* significant at p=.01 level

\* significant at p=.05 level

- The overall rating of MTA service increased by 0.09, from 3.48 to 3.57 among local riders. This change is not statistically significant.

*Comparisons Between Metro Rapid and Local Service in the "After" Phase (Table 3)*

- Ratings for Metro Rapid bus are higher for all elements of service compared to the "after" Local Bus ratings.
- The largest differential (0.52) between Metro Rapid and Local service is for "cleanliness."
- "Travel time on the bus" shows the next highest differential (0.45). In the "before" surveys, the differential in travel time ratings between the limited and local routes was only 0.13 (as shown in Table 4).
- "Frequency of buses" is third in terms of the greatest differentials between Metro Rapid and Local service (0.44). This finding regarding perceptions of frequency is surprising because, at least on Ventura Boulevard, local buses operated more frequently than Metro Rapid buses.
- The differences in ratings are statistically significant for all service attributes at the p=0.5 level, and for all attributes except "routes go where I need to go" and "availability of seats" at the p=.01 level.

**Table 2**  
**Local "After" and "Before" Ratings**

Service Attribute	Local "After" Rating	Local "Before" Rating	Difference
Frequency of Buses	3.32	3.18	+0.14*
Routes go where I need to go	3.68	3.60	+0.08
Reliability	3.42	3.29	+0.13*
Travel time on the bus	3.37	3.29	+0.08
Value for fare paid	3.50	3.37	+0.13*
Availability of seats	3.32	3.07	+0.25**
Cleanliness	3.20	2.98	+0.22**
Information at bus stops	3.19	3.10	+0.09
Operator courtesy	3.49	3.53	-0.04
Personal safety on buses	3.58	3.48	+0.10
Easy to identify the right bus	3.68	3.66	+0.02
Overall rating of MTA service	3.57	3.48	+0.09

\*\* significant at p=.01 level

\* significant at p=.05 level

**Table 3**  
**Metro Rapid and Local "After" Ratings**

Service Attribute	Metro Rapid Rating	Local "After" Rating	Difference
Frequency of Buses	3.76	3.32	+0.44**
Routes go where I need to go	3.82	3.68	+0.14*
Reliability	3.74	3.42	+0.32**
Travel time on the bus	3.82	3.37	+0.45**
Value for fare paid	3.83	3.50	+0.33**
Availability of seats	3.47	3.32	+0.15*
Cleanliness	3.72	3.20	+0.52**
Information at bus stops	3.56	3.19	+0.37**
Operator courtesy	3.72	3.49	+0.23**
Personal safety on buses	3.88	3.58	+0.30**
Easy to identify the right bus	4.10	3.68	+0.42**
Overall rating of MTA service	3.83	3.57	+0.26**

\*\* significant at p=.01 level

• significant at p=.05 level

*Comparisons Between Limited and Local Service in the "Before" Phase (Table 4)*

- The differences seen between ratings for Metro Rapid and for local buses are emphasized even further after an examination of the "before" ratings on limited and local service. As Table 4 shows, there were no statistically significant differences in passenger ratings of limited-stop and local service prior to the implementation of Metro Rapid.

**Table 4**  
**Limited and Local "Before" Ratings**

<b>Service Attribute</b>	<b>Limited Rating</b>	<b>Local "Before" Rating</b>	<b>Difference</b>
Frequency of Buses	3.15	3.18	-0.03
Routes go where I need to go	3.66	3.60	+0.06
Reliability	3.30	3.29	+0.01
Travel time on the bus	3.42	3.29	+0.13
Value for fare paid	3.27	3.37	-0.10
Availability of seats	3.00	3.07	-0.07
Cleanliness	2.83	2.98	-0.15
Information at bus stops	3.04	3.10	-0.06
Operator courtesy	3.50	3.53	-0.03
Personal safety on buses	3.40	3.48	-0.08
Easy to identify the right bus	3.54	3.66	-0.12
Overall rating of MTA service	3.48	3.48	+0.00

\*\* significant at p=.01 level

\* significant at p=.05 level

**Detailed Analysis of Service Attribute Ratings by Riders**

Data collected on the before and after on-board surveys provide a wealth of information related to customer perceptions of MTA service attributes. In designing service improvements, MTA staff needs to know not only the customer ratings on individual service attributes but also the importance of each attribute in terms of overall satisfaction. The previous section focused on customer ratings; in this section, we consider the ratings together with the relative importance of each service attribute.

The simplest way to measure importance is to ask the customer to rate each element on a scale of 1 to 5, similar to the performance ratings. The drawback of this method is that it lengthens both the survey instrument and time needed to complete the survey, which in turn could diminish the response rate. An alternate technique to measure the importance of each service attribute is to derive importance by examining the relationship of each attribute to overall satisfaction.

The Bay Area Rapid Transit District in Oakland, CA has developed a practical methodology to derive the importance of individual service attributes.<sup>1</sup> The methodology uses bivariate correlation analysis to estimate the importance of each service attribute. Specifically, Pearson correlation coefficients are calculated between the performance rating of each service attribute and the overall MTA service rating. While there is a degree of intercorrelation among the service attributes, the Pearson correlation coefficients can be used to measure the relative importance of each attribute. Importance is derived by calculating the ratio between the correlation coefficient for each attribute and the median correlation coefficient. An index score of 100 is assigned to the median correlation coefficient. Service attributes with a score above 100 are more correlated with overall satisfaction (as measured by the overall MTA rating), while service attributes with a score below 100 are less correlated.

Table 5 shows the Pearson correlation coefficient and the importance score for each service attribute for the before survey, the Metro Rapid after survey, and the Local after survey. Before limited stop and local services are analyzed together, based upon findings in Table 4 that there were no significant differences in passenger ratings of the two services.

The derived importance ratings are reasonably consistent across all service types. Frequency and reliability rate highly in terms of importance, while convenience ("Routes go where I need to go"), availability of seats and value for fare paid are relatively less important. Before and Metro Rapid After riders attach a high level of importance to travel time, but this attribute is less important to Local After riders, who are using a slower service. Metro Rapid After riders view cleanliness as important (and may have been attracted to Metro Rapid service by the new buses with a distinctive appearance), while Local After riders rate the ease of identifying the right bus as relatively important.

Performance and importance can be related through scatter diagrams, with derived importance on the x-axis and performance ratings on the y-axis. The scatter diagram is divided into quadrants, with an importance score of 100 and a performance rating of 3.5 (midway between "fair" and "good") serving as the dividing lines.

Items in the upper right hand quadrant represent important attributes with high performance ratings. These are things that the transit agency does well that are important to riders. The agency should take whatever actions are required to ensure continued high performance ratings on these attributes.

Items in the upper left hand quadrant receive high marks in terms of performance but are relatively unimportant to riders. Often, attributes in this quadrant receive lower importance ratings from passengers precisely because the agency does a good job in these areas. Riders, like everyone else, tend to take areas in which their needs are met for granted. This suggests that the transit agency needs to continue to monitor service delivery in these areas to ensure high performance, but that these elements of service are not top priorities for improvements.

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<sup>1</sup> Aaron Weinstein, "Customer Satisfaction Among Transit Riders – How Do Customers Rank the Relative Importance of Various Service Attributes?" Presented at the 79<sup>th</sup> Annual Meeting of the Transportation Research Board and scheduled for publication in an upcoming **Transportation Research Record**.

**Table 5**  
**Importance of Service Attributes**

Service Attribute	Before		Local After		Metro Rapid After	
	Pearson Corr. Coeff.	Importance Index	Pearson Corr. Coeff.	Importance Index	Pearson Corr. Coeff.	Importance Index
Frequency of Buses	0.596	106.62	0.644	102.22	0.655	109.90
Routes go where I need to go	0.471	84.26	0.524	83.17	0.516	86.58
Reliability	0.641	114.67	0.706	112.06	0.644	108.05
Travel time on the bus	0.630	112.70	0.625	99.21	0.654	109.73
Value for fare paid	0.532	95.17	0.529	83.97	0.549	92.11
Availability of seats	0.513	91.77	0.605	96.03	0.592	99.33
Cleanliness	0.544	97.32	0.612	97.14	0.653	109.56
Information at bus stops	0.572	102.33	0.630	100.00	0.576	96.64
Operator courtesy	0.547	97.85	0.637	101.11	0.621	104.19
Personal safety on buses	0.581	103.94	0.635	100.79	0.595	99.83
Easy to identify the right bus	0.559	100.00	0.656	104.13	0.596	100.00

Items in the lower left hand quadrant are relatively unimportant to riders and relatively low-scoring in terms of agency performance. While performance levels are relatively low for these attributes, these are not strong candidates for improvement due to their low levels of importance to riders.

Items in the lower right hand quadrant are key priorities for the transit agency. Riders consider these attributes important, but current performance ratings are less than desired.

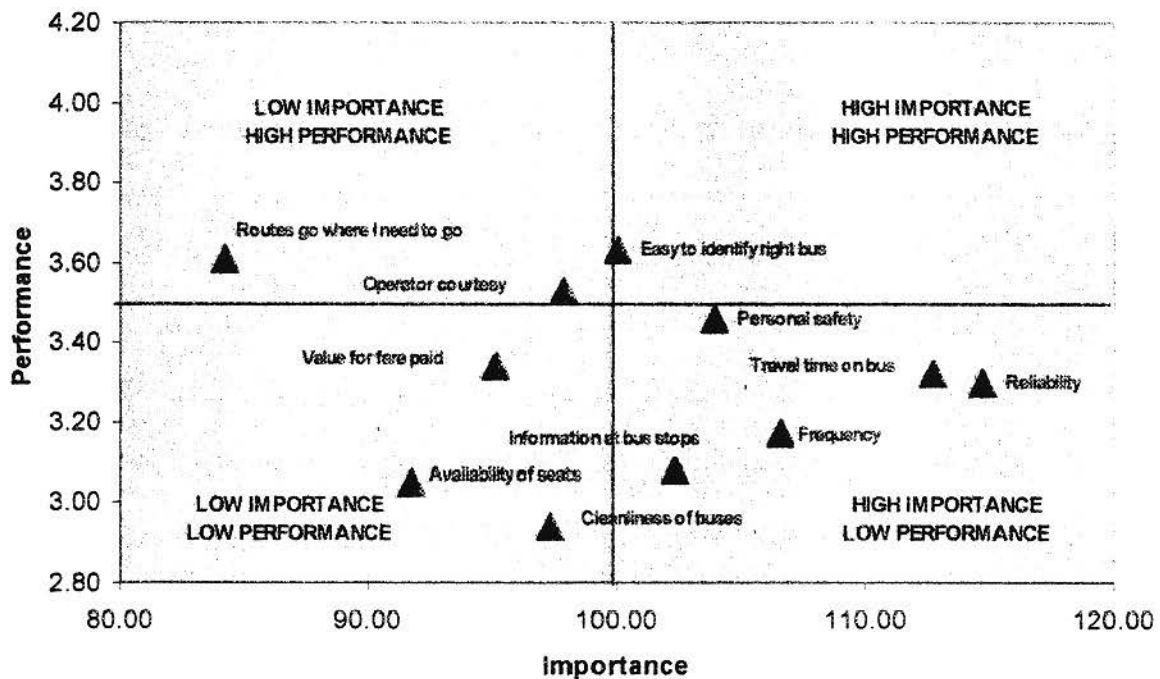
Figures 1, 2, and 3 are scatter diagrams that relate importance and performance for Before, Local After, and Metro Rapid After riders and services, respectively. Figure 1 shows the results of the Before survey. No service attributes fall into the high importance/high performance quadrant (although Easy to identify the right bus is on the median for importance). Low-importance attributes are split in terms of performance ratings, with two in the upper left hand quadrant and three in the lower left hand quadrant. There are several attributes in the lower right hand quadrant, representing important service elements that need improvement: Information at bus stops, Frequency, Reliability, Travel time on the bus, and Personal safety. The Before quadrant analysis depicts the situation facing MTA and its Board when it made the decision to move forward with the Metro Rapid demonstration program.

Figure 2 presents the quadrant analysis for Local service after the implementation of the Metro Rapid program. Of the five priority items in the lower right hand quadrant on the Before chart, only two remain in the same quadrant. Frequency and Reliability are major service attributes, but Personal safety is now in the upper right hand quadrant, while Information at bus stops and Travel time on the bus are less important now to local riders (those who value Travel time highly

are presumably riding Metro Rapid). Operator courtesy is now in the high importance/low performance quadrant, although just barely (its performance rating is a shade below 3.5), and Information at bus stops is on the median line for importance. Overall, however, the situation is improved for Local bus riders today compared to the Before survey.

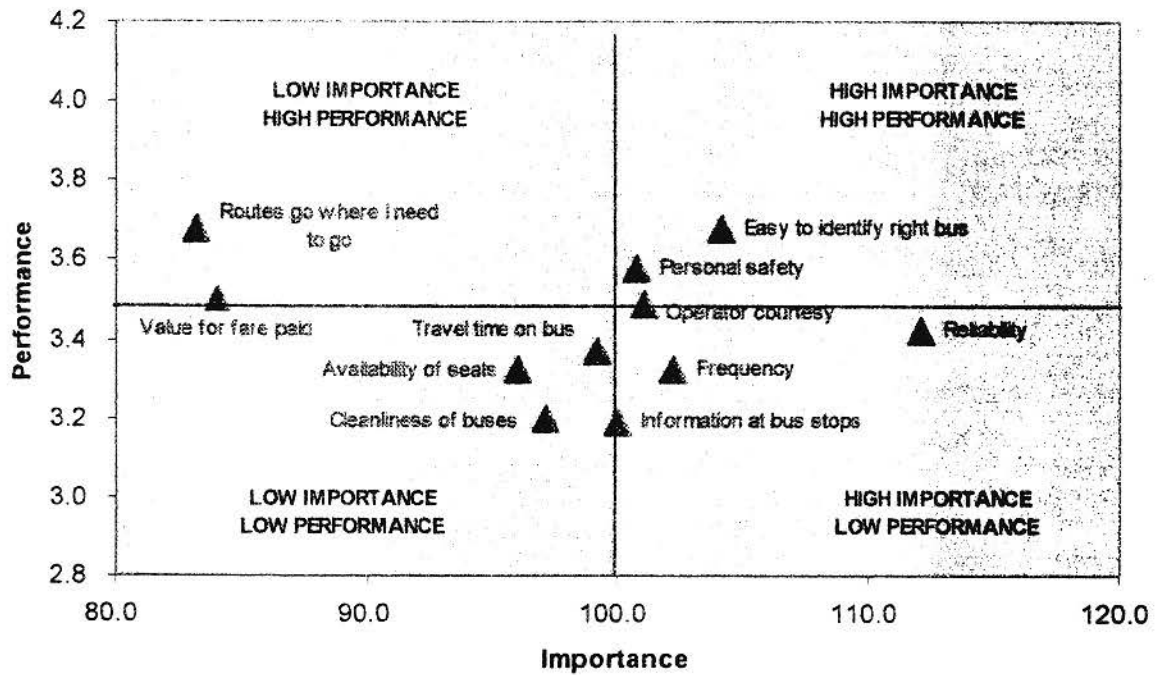
The dramatic change in perception of MTA performance has occurred among Metro Rapid riders, as shown in Figure 3. Reliability, Frequency, Travel time, Cleanliness, and Operator

**Figure 1**  
**Importance vs. Performance for Service Attributes**  
**Local and Limited-Stop Before**

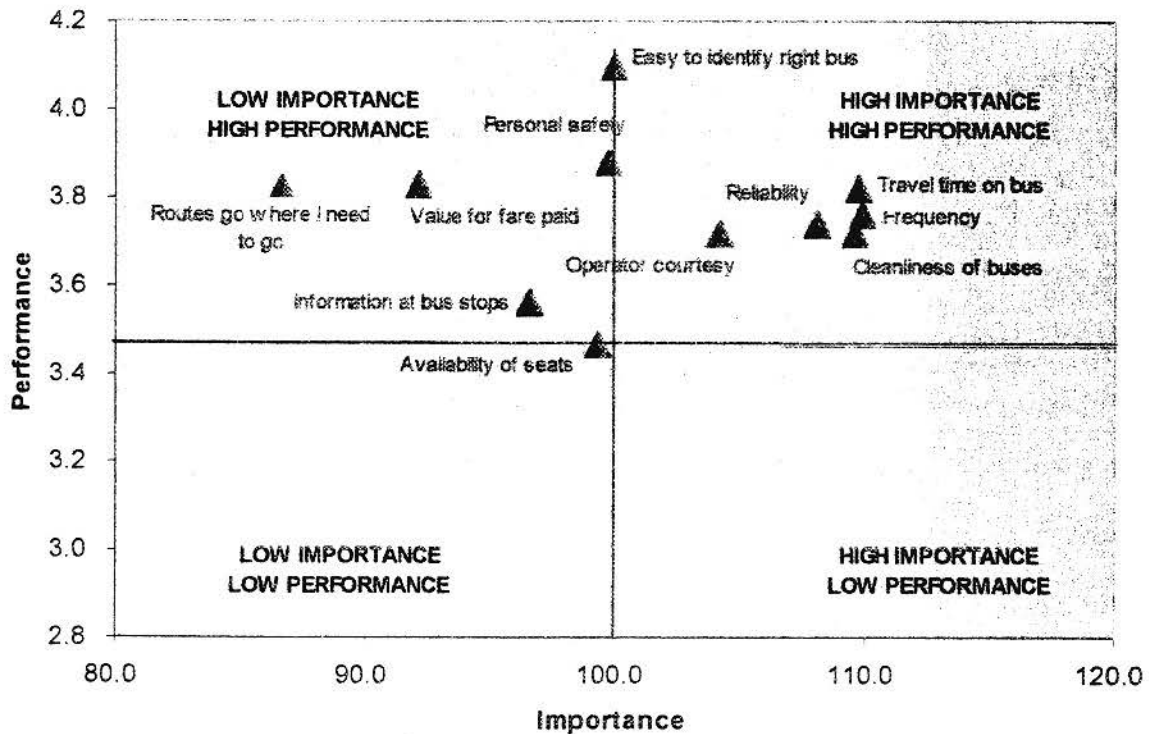


Courtesy all fall into the upper right hand quadrant representing high levels of importance and performance. Only one service attribute, Availability of seats, has a performance rating below the cutoff mark of 3.5, and this attribute is judged relatively unimportant by Metro Rapid riders. In sharp contrast to the other figures, there are no service attributes in the lower right hand quadrant in Figure 3.

**Figure 2**  
**Importance vs. Performance for Service Attributes**  
**Local Bus After**



**Figure 3**  
**Importance vs. Performance for Service Attributes**  
**Metro Rapid**



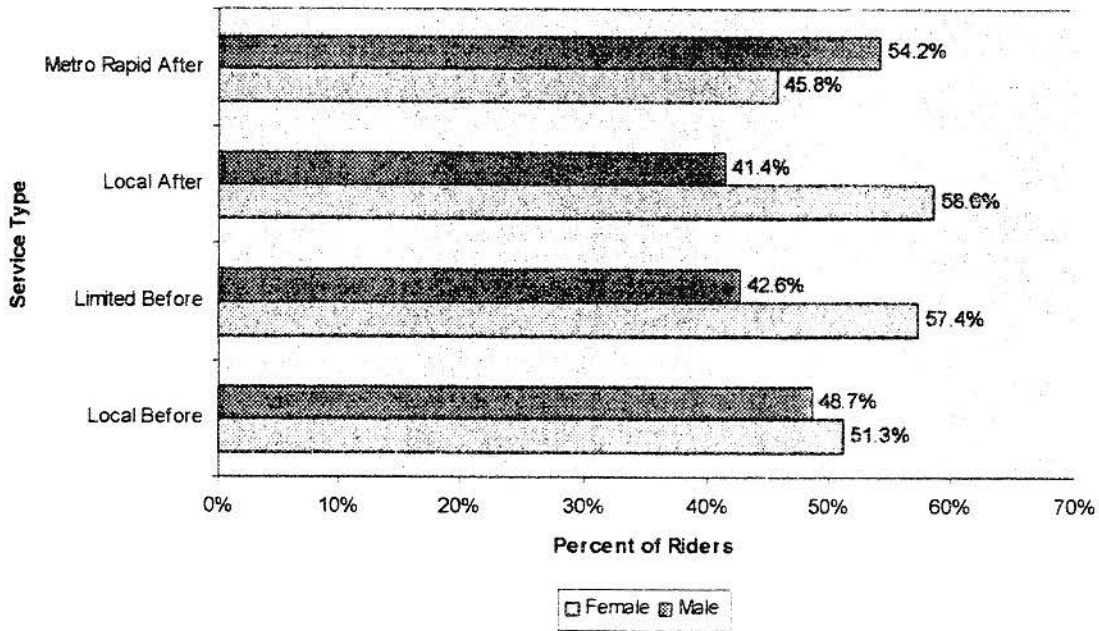
Taken together, the quadrant analyses clearly show that Metro Rapid riders perceive a quantum leap in service performance. Changes of this magnitude in performance ratings are rare, particularly over a relatively short time frame. MTA has essentially raised the bar in terms of service quality for its riders through the Metro Rapid demonstration program.

**Demographics**

Riders were asked certain questions to ascertain their age, ethnic origin, sex, income, and vehicle availability. The most interesting findings include:

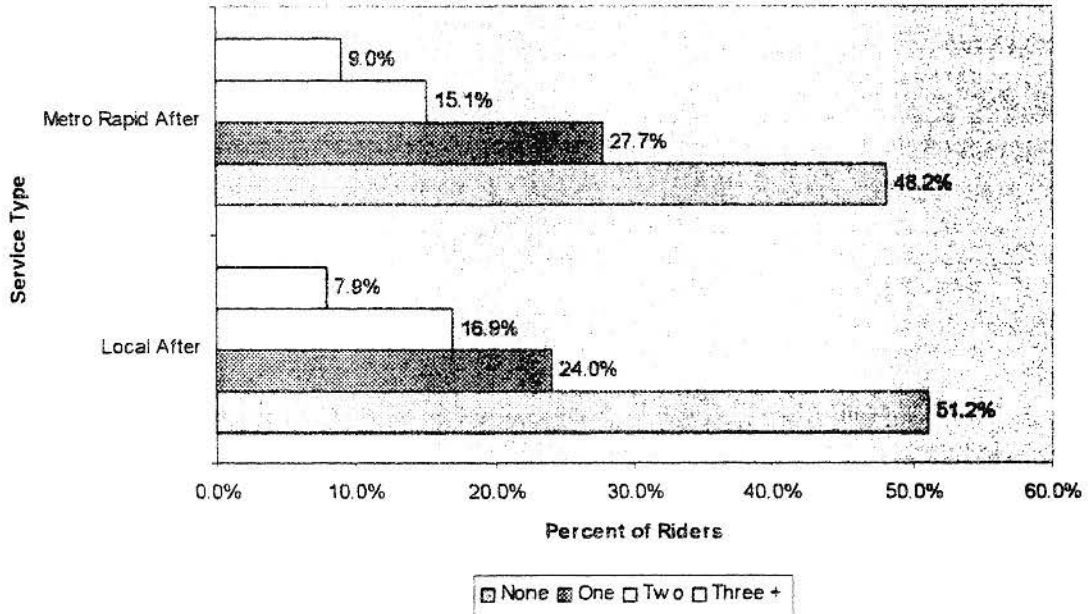
- Metro Rapid has a higher percentage of male riders (54.2 percent) compared to the locals (41.4 percent) and former limited lines (42.6 percent), suggesting that the new service is drawing new, non-traditional riders (see Figure 4).
- Vehicle availability is surprisingly similar for Metro Rapid and local bus riders (Figure 5). Approximately one-quarter of riders in both groups are from households with at least two cars.
- The majority of Metro Rapid and local bus riders report income levels below \$15,000 annually (Figure 6). However, 13.1 percent of Metro Rapid riders have incomes above \$50,000.

**Figure 4  
Gender of MTA Riders**

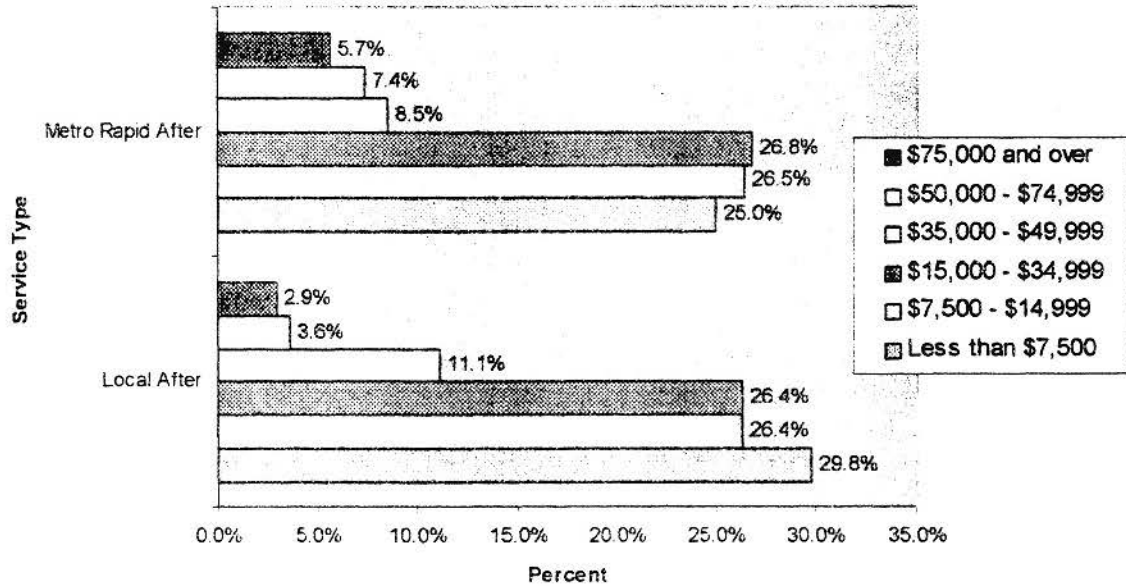




**Figure 5**  
Vehicle Availability of MTA Riders



**Figure 6**  
Income of Riders



### Previous Mode of Travel

The "After" survey on Metro Rapid asked riders for their previous mode of travel. Table 5 shows the results, with results broken down by Metro Rapid line.

- As expected, most Metro Rapid passengers are former transit users.
- However, 10.8 percent of Metro Rapid riders did not make this trip previously, and another 9.5 percent used a non-transit mode (most likely the automobile). Many of these new riders are new to transit.

**Table 5**  
**Previous Mode of Travel for Metro Rapid Riders**

Previous Mode	Line 720 (Wilshire-Whittier)	Line 750 (Ventura)	Metro Rapid Total
Bus	63.0%	60.0%	61.1%
Rail	2.5%	7.6%	5.7%
Bus and Rail	14.4%	12.1%	12.9%
Did not make trip	11.5%	10.4%	10.8%
Other non-transit mode	8.6%	9.9%	9.5%

Table 6 presents responses regarding the history of transit use.

- Nearly 14 percent of Metro Rapid riders began using MTA services within the last three months (since the start of Metro Rapid and the Metro Red Line extension to the SFV). By comparison, only nine percent of local riders began using MTA services in this same time frame.

**Table 6**  
**Length of Time Using MTA Services**

Length of Time	Line 720 (Wilshire-Whittier)	Line 750 (Ventura)	Metro Rapid Total	Local Bus Total
0-3 months	11.8%	15.1%	13.9%	9.0%
3-6 months	4.9%	7.0%	6.2%	7.7%
6-12 months	10.6%	10.3%	10.4%	14.4%
1 to 5 years	26.9%	22.8%	24.4%	26.4%
Over 5 years	45.7%	44.7%	45.1%	42.6%

A summary of responses to all questions concerning rider demographics and usage patterns is contained in the appendix.

**SURVEY INSTRUMENT AND TABLES OF RESPONSE**

# METROPOLITAN TRANSPORTATION AUTHORITY (MTA) RIDER SURVEY

## Before Survey

**DEAR BUS RIDER:** Please take a minute to fill this out and help us plan for your transit needs. Place the survey in the collection box as you exit the bus, or hand it to the person who gave it to you.

1. Why are you riding the bus today? (Check all that apply)

- 1 \_\_\_ Avoid traffic      2 \_\_\_ No other way to go  
 3 \_\_\_ Less expensive   4 \_\_\_ Parking problems  
 5 \_\_\_ More convenient   6 \_\_\_ Other \_\_\_\_\_

5. How did you pay for your fare on this bus?

- 1 \_\_\_ Cash      2 \_\_\_ Transfer      3 \_\_\_ Token  
 4 \_\_\_ Weekly Pass      5 \_\_\_ Monthly Pass

2. What is the main purpose of your trip today?

- 1 \_\_\_ Work      2 \_\_\_ Shopping      3 \_\_\_ School  
 4 \_\_\_ Medical   5 \_\_\_ Visit/Personal   6 \_\_\_ Other

6. What will you do when you get off this bus?

- 1 \_\_\_ Transfer to Line # \_\_\_\_\_  
 2 \_\_\_ Walk      3 \_\_\_ Drive      4 \_\_\_ Get a ride  
 5 \_\_\_ Bicycle      6 \_\_\_ Other

3. How did you get to the bus stop for this bus?

- 1 \_\_\_ Transferred from Line # \_\_\_\_\_  
 2 \_\_\_ Walked      3 \_\_\_ Drove      4 \_\_\_ Got a ride  
 5 \_\_\_ Bicycle      6 \_\_\_ Other

7. Where are you going to? (the end of your trip, not where you get off this bus)

- \_\_\_\_\_ & \_\_\_\_\_  
 (nearest street intersection)

4. Where are you coming from? (the start of your trip, not where you got on this bus)

- \_\_\_\_\_ & \_\_\_\_\_  
 (nearest street intersection)

8. How would you make this trip if not by bus?

- 1 \_\_\_ Drive      2 \_\_\_ Walk      3 \_\_\_ Bike      4 \_\_\_ Taxi  
 5 \_\_\_ Get a ride   6 \_\_\_ Wouldn't make trip

9. Please rate MTA's performance on the following elements of bus service on a 1-5 scale, with 1 being very poor and 5 being excellent:

	Very Poor	Poor	Fair	Good	Excellent
1 Frequency of buses (how often they run)	1	2	3	4	5
2 Routes go where I need to go	1	2	3	4	5
3 Reliability	1	2	3	4	5
4 Travel time on the bus	1	2	3	4	5
5 Value for fare paid	1	2	3	4	5
6 Availability of seats	1	2	3	4	5
7 Cleanliness	1	2	3	4	5
8 Information at bus stops	1	2	3	4	5
9 Operator courtesy	1	2	3	4	5
10 Personal safety on buses	1	2	3	4	5
11 Easy to identify the right bus	1	2	3	4	5
12 Overall rating of MTA service	1	2	3	4	5

Finally, for statistical purposes, tell us a little about yourself. All replies are confidential.

10. How often do you ride the bus?

- 1 \_\_\_ 5+ days per week      2 \_\_\_ 3-4 days per week  
 3 \_\_\_ 1-2 days per wk      4 \_\_\_ Less than once a wk

14. Your ethnic origin is...

- 1 \_\_\_ Afr. Am./Black      2 \_\_\_ White      3 \_\_\_ Hispanic  
 4 \_\_\_ Asian/Pacific Islander      5 \_\_\_ Other

11. How long have you been using MTA service?

- 1 \_\_\_ Less than 6 mos      2 \_\_\_ 6 months to 1 year  
 3 \_\_\_ More than 1 year

15. How many working motor vehicles are available in your household?

- 1 \_\_\_ None      2 \_\_\_ One      3 \_\_\_ Two      4 \_\_\_ Three+

12. Your age is...

- 1 \_\_\_ 17 years or under      2 \_\_\_ 18 to 44 years  
 3 \_\_\_ 45 to 64 years      4 \_\_\_ 65 years or more

16. Your total annual household income is..

- 1 \_\_\_ Less than \$7,500      4 \_\_\_ \$35,000-\$49,999  
 2 \_\_\_ \$7,500-\$14,999      5 \_\_\_ \$50,000-\$74,999  
 3 \_\_\_ \$15,000-\$34,999      6 \_\_\_ \$75,000 and over

13. You are:      1 \_\_\_ Female      2 \_\_\_ Male

Any Other Comments? \_\_\_\_\_

THANK YOU FOR YOUR PARTICIPATION.

# METROPOLITAN TRANSPORTATION AUTHORITY (MTA) RIDER SURVEY

## Metro Rapid After

**DEAR METRO RAPID RIDER:** Please take a minute to fill this out and help us evaluate our service. Place the survey in the collection box as you exit the bus, or hand it to the person who gave it to you.

1. Why are you riding the bus today? (Check all that apply)
 

1 ___ Avoid traffic	2 ___ No other way to go
3 ___ Less expensive	4 ___ Parking problems
5 ___ More convenient	6 ___ Other _____
  
2. What is the main purpose of your trip today?
 

1 ___ Work	2 ___ Shopping	3 ___ School
4 ___ Medical	5 ___ Visit/Personal	6 ___ Other
  
3. How did you get to the bus stop for this bus?
 

1 ___ Transferred from Bus Line # _____		
2 ___ Transferred from Rail	3 ___ Walked	
4 ___ Drove	5 ___ Got a ride	6 ___ Bicycle
7 ___ Other		
  
4. How did you pay for your fare on this bus?
 

1 ___ Cash	2 ___ Transfer	3 ___ Token
4 ___ Weekly Pass	5 ___ Monthly Pass	
6 ___ Half-Monthly Pass		
  
5. Where are you coming from? (the start of your trip, not where you got on this bus)
 

\_\_\_\_\_ & \_\_\_\_\_  
(nearest street intersection)
  
6. What will you do when you get off this bus?
 

1 ___ Transfer to Bus Line # _____	4 ___ Drive
2 ___ Transfer to Rail	3 ___ Walk
5 ___ Get a ride	6 ___ Bicycle
7 ___ Other	
  
7. Where are you going to? (the end of your trip, not where you get off this bus)
 

\_\_\_\_\_ & \_\_\_\_\_  
(nearest street intersection)
  
8. How did you make this trip before Metro Rapid?
 

1 ___ Bus	2 ___ Rail	3 ___ Bus and Rail
4 ___ Did not make trip	5 ___ Other	
  
- 8a. If you answered "Bus" or "Bus and Rail" on Question 8, what bus line or lines did you use previously?
 

Line # \_\_\_\_\_
  
- 8b. Has your travel time changed with Metro Rapid?
 

1 ___ More than 15 minutes faster	4 ___ 1-5 minutes faster
2 ___ 11-15 minutes faster	5 ___ About the same
3 ___ 6-10 minutes faster	6 ___ Slower

9. Please rate MTA's performance on the following elements of bus service on a 1-5 scale, with 1 being very poor and 5 being excellent:

	Very Poor	Poor	Fair	Good	Excellent
1 Frequency of buses (how often they run)	1	2	3	4	5
2 Routes go where I need to go	1	2	3	4	5
3 Reliability	1	2	3	4	5
4 Travel time on the bus	1	2	3	4	5
5 Value for fare paid	1	2	3	4	5
6 Availability of seats	1	2	3	4	5
7 Cleanliness	1	2	3	4	5
8 Information at bus stops	1	2	3	4	5
9 Operator courtesy	1	2	3	4	5
10 Personal safety on buses	1	2	3	4	5
11 Easy to identify the right bus	1	2	3	4	5
12 Overall rating of MTA service	1	2	3	4	5

Finally, for statistical purposes, tell us a little about yourself. All replies are confidential.

10. How often do you ride the bus?
 

1 ___ 5+ days per week	2 ___ 3-4 days per week	4 ___ Asian/Pacific Islander	5 ___ Other
3 ___ 1-2 days per wk	4 ___ Less than once a wk		
  
11. How long have you been using MTA service?
 

1 ___ Less than 3 mos.	2 ___ 3 to 6 months
3 ___ 6 mos. to 1 year	4 ___ 1 to 5 years
5 ___ More than 5 years	
  
12. Your age is...
 

1 ___ 17 years or under	2 ___ 18 to 44 years
3 ___ 45 to 64 years	4 ___ 65 years or more
  
13. You are: 1 \_\_\_ Female 2 \_\_\_ Male
14. Your ethnic origin is...
 

1 ___ Afr. Am./Black	2 ___ White	3 ___ Hispanic
----------------------	-------------	----------------
  
15. How many working motor vehicles are available in your household?
 

1 ___ None	2 ___ One	3 ___ Two	4 ___ Three+
------------	-----------	-----------	--------------
  
16. Your total annual household income is...
 

1 ___ Less than \$7,500	4 ___ \$35,000-\$49,999
2 ___ \$7,500-\$14,999	5 ___ \$50,000-\$74,999
3 ___ \$15,000-\$34,999	6 ___ \$75,000 and over

# METROPOLITAN TRANSPORTATION AUTHORITY (MTA) RIDER SURVEY

Local After

**DEAR LOCAL BUS RIDER:** Please take a minute to fill this out and help us evaluate our service. Place the survey in the collection box as you exit the bus, or hand it to the person who gave it to you.

1. Why are you riding the bus today? (Check all that apply)
  - 1 \_\_\_ Avoid traffic      2 \_\_\_ No other way to go
  - 3 \_\_\_ Less expensive   4 \_\_\_ Parking problems
  - 5 \_\_\_ More convenient   6 \_\_\_ Other \_\_\_\_\_
2. What is the main purpose of your trip today?
  - 1 \_\_\_ Work    2 \_\_\_ Shopping    3 \_\_\_ School
  - 4 \_\_\_ Medical   5 \_\_\_ Visit/Personal   6 \_\_\_ Other
3. How did you get to the bus stop for this bus?
  - 1 \_\_\_ Transferred from Bus Line # \_\_\_\_\_
  - 2 \_\_\_ Transferred from Rail      3 \_\_\_ Walked
  - 4 \_\_\_ Drove      5 \_\_\_ Got a ride   6 \_\_\_ Bicycle
  - 7 \_\_\_ Other
4. How did you pay for your fare on this bus?
  - 1 \_\_\_ Cash      2 \_\_\_ Transfer    3 \_\_\_ Token
  - 4 \_\_\_ Weekly Pass      5 \_\_\_ Monthly Pass
  - 6 \_\_\_ Half-Monthly Pass
5. Where are you coming from? (the start of your trip, not where you got on this bus)
 

\_\_\_\_\_ & \_\_\_\_\_  
(nearest street intersection)
6. What will you do when you get off this bus?
  - 1 \_\_\_ Transfer to Bus Line # \_\_\_\_\_
  - 2 \_\_\_ Transfer to Rail      3 \_\_\_ Walk      4 \_\_\_ Drive
  - 5 \_\_\_ Get a ride      6 \_\_\_ Bicycle    7 \_\_\_ \_\_\_\_\_
  - Other \_\_\_\_\_
7. Where are you going to? (the end of your trip, not where you get off this bus)
 

\_\_\_\_\_ & \_\_\_\_\_  
(nearest street intersection)
8. Why are you not using Metro Rapid for this trip?
  - 1 \_\_\_ Metro Rapid stop is too far to walk
  - 2 \_\_\_ I just catch the next bus
  - 3 \_\_\_ Local bus is less crowded
  - 4 \_\_\_ Don't know enough about Metro Rapid
9. Please rate MTA's performance on the following elements of bus service on a 1-5 scale, with 1 being very poor and 5 being excellent:

	Very Poor	Poor	Fair	Good	Excellent
1 Frequency of buses (how often they run)	1	2	3	4	5
2 Routes go where I need to go	1	2	3	4	5
3 Reliability	1	2	3	4	5
4 Travel time on the bus	1	2	3	4	5
5 Value for fare paid	1	2	3	4	5
6 Availability of seats	1	2	3	4	5
7 Cleanliness	1	2	3	4	5
8 Information at bus stops	1	2	3	4	5
9 Operator courtesy	1	2	3	4	5
10 Personal safety on buses	1	2	3	4	5
11 Easy to identify the right bus	1	2	3	4	5
12 Overall rating of MTA service	1	2	3	4	5

Finally, for statistical purposes, tell us a little about yourself. All replies are confidential.

10. How often do you ride the bus?
  - 1 \_\_\_ 5+ days per week    2 \_\_\_ 3-4 days per week
  - 3 \_\_\_ 1-2 days per wk    4 \_\_\_ Less than once a wk
11. How long have you been using MTA service?
  - 1 \_\_\_ Less than 3 mos.    2 \_\_\_ 3 to 6 months
  - 3 \_\_\_ 6 mos. to 1 year    4 \_\_\_ 1 to 5 years
  - 5 \_\_\_ More than 5 years
12. Your age is...
  - 1 \_\_\_ 17 years or under    2 \_\_\_ 18 to 44 years
  - 3 \_\_\_ 45 to 64 years      4 \_\_\_ 65 years or more
13. You are:      1 \_\_\_ Female      2 \_\_\_ Male
14. Your ethnic origin is...
  - 1 \_\_\_ Afr. Am./Black    2 \_\_\_ White    3 \_\_\_ Hispanic
  - 4 \_\_\_ Asian/Pacific Islander    5 \_\_\_ Other
15. How many working motor vehicles are available in your household?
  - 1 \_\_\_ None    2 \_\_\_ One    3 \_\_\_ Two    4 \_\_\_ Three+
16. Your total annual household income is..
  - 1 \_\_\_ Less than \$7,500      4 \_\_\_ \$35,000-\$49,999
  - 2 \_\_\_ \$7,500-\$14,999      5 \_\_\_ \$50,000-\$74,999
  - 3 \_\_\_ \$15,000-34,999      6 \_\_\_ \$75,000 and over

**THANK YOU FOR YOUR PARTICIPATION.**

**Table A-1 Reasons for Using Transit**

	Local Before		Limited Before		Local After		Metro Rapid After	
	#	Percent	#	Percent	#	Percent	#	Percent
Avoid traffic	123	14.1%	29	10.1%	90	13.3%	145	20.2%
No other way to go	462	53.0%	141	49.0%	396	58.6%	332	46.2%
Less expensive	194	22.3%	45	15.6%	120	17.8%	154	21.4%
Parking problems	64	7.3%	21	7.3%	39	5.8%	40	5.6%
More convenient	200	23.0%	68	23.6%	139	20.6%	221	30.7%
Other	79	9.1%	27	9.4%	58	8.6%	55	7.6%
	1,122		331		842		947	

**Table A-2 Trip Purpose**

	Local Before		Limited Before		Local After		Metro Rapid After	
	#	Percent	#	Percent	#	Percent	#	Percent
Work	520	61.7%	175	63.6%	443	67.6%	528	75.4%
Shopping	61	7.2%	23	8.4%	41	6.3%	35	5.0%
School	79	9.4%	37	13.5%	88	13.4%	62	8.9%
Medical	59	7.0%	13	4.7%	28	4.3%	23	3.3%
Visit/Personal	59	7.0%	11	4.0%	33	5.0%	29	4.1%
Other	65	7.7%	16	5.8%	22	3.4%	23	3.3%
Total	843	100.0%	275	100.0%	655	100.0%	700	100.0%

**Table A-3 Access to Bus Stop**

	Local Before		Limited Before		Local After		Metro Rapid After	
	#	Percent	#	Percent	#	Percent	#	Percent
Transferred from Bus	315	38.3%	82	30.6%	190	29.0%	260	37.6%
Transferred from Rail					69	10.5%	116	16.8%
Walked	432	52.5%	160	59.7%	319	48.7%	232	33.6%
Drove	15	1.8%	2	0.7%	7	1.1%	34	4.9%
Got a ride	35	4.3%	9	3.4%	40	6.1%	38	5.5%
Bicycle	2	0.2%	3	1.1%	7	1.1%	8	1.2%
Other	24	2.9%	12	4.5%	23	3.5%	3	0.4%
Total	823		268	100.0%	655	100.0%	691	100.0%

Table A-4 Fare Payment Method

	Local Before		Limited Before		Local After		Metro Rapid After	
	#	Percent	#	Percent	#	Percent	#	Percent
Cash	223	27.1%	71	26.5%	146	22.5%	130	18.8%
Transfer	60	7.3%	15	5.6%	57	8.8%	75	10.9%
Token	124	15.0%	47	17.5%	110	16.9%	94	13.6%
Weekly Pass	104	12.6%	36	13.4%	83	12.8%	103	14.9%
Monthly Pass	260	31.6%	75	28.0%	210	32.3%	227	32.9%
Half-Monthly Pass/Other	53	6.4%	24	9.0%	44	6.8%	62	9.0%
Total	824	100.0%	268	100.0%	650	100.0%	691	100.0%

Table A-5 Egress from Bus Stop

	Local Before		Limited Before		Local After		Metro Rapid After	
	#	Percent	#	Percent	#	Percent	#	Percent
Transfer to Bus	264	33.2%	79	31.2%	166	27.7%	235	35.9%
Transfer to Rail					55	9.2%	118	18.0%
Walk	446	56.1%	147	58.1%	297	49.5%	260	39.7%
Drive	11	1.4%	2	0.8%	9	1.5%	6	0.9%
Get a ride	26	3.3%	10	4.0%	35	5.8%	18	2.7%
Bicycle	9	1.1%	1	0.4%	4	0.7%	7	1.1%
Other	39	4.9%	14	5.5%	34	5.7%	11	1.7%
Total	795	100.0%	253	100.0%	600	100.0%	655	100.0%

Table A-6 Frequency of Bus Use

	Local Before		Limited Before		Local After		Metro Rapid After	
	#	Percent	#	Percent	#	Percent	#	Percent
5+ days per week	574	72.1%	191	71.5%	489	77.6%	511	77.0%
3-4 days per week	126	15.8%	47	17.6%	81	12.9%	95	14.3%
1-2 days per week	50	6.3%	19	7.1%	37	5.9%	37	5.6%
Less than once a week	46	5.8%	10	3.7%	23	3.7%	21	3.2%
Total	796	100.0%	267	100.0%	630	100.0%	664	100.0%

Table A-7 Length of Time Using MTA Services

	Local Before		Limited Before		Local After		Metro Rapid After	
	#	Percent	#	Percent	#	Percent	#	Percent
Less than 3 months					55	9.0%	92	13.9%
3 to 6 months					47	7.7%	41	6.2%
Less than 6 months	111	14.5%	41	16.1%	102	16.7%	133	20.1%
6 months to 1 year	111	14.5%	39	15.3%	88	14.4%	69	10.4%
More than 1 year	541	70.9%	175	68.6%	421	69.0%	459	69.5%
1 to 5 years					161	26.4%	161	24.4%
More than 5 years					260	42.6%	298	45.1%
Total	763	100.0%	255	100.0%	611	100.0%	661	100.0%



Table A-8 Age

	Local Before		Limited Before		Local After		Metro Rapid After	
	#	Percent	#	Percent	#	Percent	#	Percent
17 years or under	47	6.0%	24	9.1%	49	8.0%	33	5.0%
18 to 44 years	472	60.4%	163	62.0%	351	57.5%	417	63.4%
45 to 64 years	201	25.7%	69	26.2%	175	28.7%	178	27.1%
65 years or more	61	7.8%	7	2.7%	35	5.7%	30	4.6%
Total	781	100.0%	263	100.0%	610	100.0%	658	100.0%

Table A-9 Gender

	Local Before		Limited Before		Local After		Metro Rapid After	
	#	Percent	#	Percent	#	Percent	#	Percent
Female	368	51.3%	135	57.4%	283	58.6%	213	45.8%
Male	349	48.7%	100	42.6%	200	41.4%	252	54.2%
Total	717	100.0%	235	100.0%	483	100.0%	465	100.0%

Table A-10 Ethnic Origin

	Local Before		Limited Before		Local After		Metro Rapid After	
	#	Percent	#	Percent	#	Percent	#	Percent
African-American/Black	115	15.2%	36	14.1%	97	15.8%	84	13.0%
White	162	21.3%	35	13.7%	100	16.3%	137	21.2%
Hispanic	384	50.6%	159	62.1%	321	52.4%	349	54.1%
Asian/Pacific Islander	61	8.0%	18	7.0%	70	11.4%	54	8.4%
Other	37	4.9%	8	3.1%	25	4.1%	21	3.3%
Total	759	100.0%	256	100.0%	613	100.0%	645	100.0%

Table A-11 Vehicle Availability

	Local Before		Limited Before		Local After		Metro Rapid After	
	#	Percent	#	Percent	#	Percent	#	Percent
None	360	47.7%	106	42.7%	297	51.2%	306	48.2%
One	231	30.6%	83	33.5%	139	24.0%	176	27.7%
Two	119	15.8%	40	16.1%	98	16.9%	96	15.1%
Three +	45	6.0%	19	7.7%	46	7.9%	57	9.0%
Total	755	100.0%	248	100.0%	580	100.0%	635	100.0%

Table A-12 Household Income

	Local Before		Limited Before		Local After		Metro Rapid After	
	#	Percent	#	Percent	#	Percent	#	Percent
Less than \$7,500	212	31.4%	58	25.9%	167	29.8%	153	25.0%
\$7,500 - \$14,999	173	25.6%	73	32.6%	148	26.4%	162	26.5%
\$15,000 - \$34,999	148	21.9%	59	26.3%	148	26.4%	164	26.8%
\$35,000 - \$49,999	86	12.7%	19	8.5%	62	11.1%	52	8.5%
\$50,000 - \$74,999	34	5.0%	9	4.0%	20	3.6%	45	7.4%
\$75,000 and over	23	3.4%	6	2.7%	16	2.9%	35	5.7%
Total	676	100.0%	224	100.0%	561	100.0%	611	100.0%

Table A-13 Alternate Mode (Before Only)

	Local Before		Limited Before	
	#	Percent	#	Percent
Drive	146	20.2%	46	19.3%
Walk	112	15.5%	34	14.3%
Bicycle	34	4.7%	12	5.0%
Taxi	53	7.3%	11	4.6%
Get a ride	195	26.9%	73	30.7%
Would not make trip	184	25.4%	62	26.1%
Total	724	100.0%	238	100.0%

Table A-14 Prior Mode (Metro Rapid Only)

	Metro Rapid After	
	#	Percent
Bus	407	61.1%
Rail	38	5.7%
Bus and Rail	86	12.9%
Did not make trip	72	10.8%
Other	63	9.5%
Total	666	100.0%

Table A-15 Perceived Travel Time Change  
(Metro Rapid Only)

	Metro Rapid After	
	#	Percent
15 minutes or more faster	313	50.2%
11-15 minutes faster	105	16.9%
6-10 minutes faster	76	12.2%
1-5 minutes faster	30	4.8%
About the same	66	10.6%
Slower	33	5.3%
Total	623	100.0%

**Table A-16 Reasons for Not Using Metro Rapid  
(Local Only)**

	<b>Local After</b>	
	<b>#</b>	<b>Percent</b>
Too far to walk	258	41.4%
I just catch the next bus	161	25.8%
Local bus is less crowded	43	6.9%
Don't know enough	99	15.9%
Total	561	100.0%

**EXHIBIT XXII**

**CITY OF LOS ANGELES  
"STREET SMART" PROGRAM**



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**Office of Mayor James K. Hahn**

200 North Spring Street, Room 300

Los Angeles, CA 90012

[www.lacity.org](http://www.lacity.org)

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**FOR IMMEDIATE RELEASE**

October 4, 2004

**MAYOR HAHN UNVEILS TRAFFIC ACTION PLAN TO REDUCE  
CONGESTION ON THE ROADS**

**LOS ANGELES** – Mayor Jim Hahn today rolled out his new Street Smart traffic reduction program which will ease congestion on 35 of the city's busiest streets and save drivers more than eight million hours a year.

"We all know that traffic is a problem in Los Angeles, so we're doing everything that we can to improve the city's busiest streets," Mayor Hahn said as he stood at the busy intersection of Victory Boulevard and Sepulveda Boulevard. "The truth is that there is no silver bullet that will fix traffic congestion in this city. The best way to address the city's traffic problems is through a strategic plan and a series of efforts made over a period of time and that is exactly what we are doing here today."

The Street Smart roads carry large amounts of rush hour traffic, serve as alternates to the freeway and provide access to critical facilities, including major hospitals and ports. Every day, between 30,000 and 80,000 vehicles travel on each Street Smart roads in Los Angeles. Victory Boulevard, where Mayor Hahn announced the program, is the first Street Smart road to have been retimed.

The Street Smart roads will receive at least one of four special adjustments:

- Aggressive enforcement of "no parking" rules during rush hour (saves drivers 17,000 hours a day);
- Retiming of traffic signals to eliminate bottlenecks and improve progression (saves drivers 15,000 hours a day);
- Traffic officers at difficult intersections or during special events (saves drivers 1,000 hours a day); and
- Left-turn arrows to be added at selected intersections (saves drivers 500 hours a day).

These improvements will help Los Angeles residents save time, money and gas. The changes in the first year alone will save 8,000 daily gallons of fuel and reduce pollutants by 7.5 tons a day. These changes will save Los Angeles drivers 8,375,000 vehicle hours a year.

The 35 Street Smart roads are:

- Alameda Street
- Alvarado Street
- Balboa Boulevard
- Cahuenga boulevard West
- Colorado Boulevard
- Devonshire Street
- Figueroa Street
- Gaffey Street
- Glendale Boulevard
- Grand Avenue
- Highland Avenue
- Hoover Street
- La Brea Avenue
- La Cienega Boulevard
- Lankershim Boulevard
- Lincoln Boulevard
- Manchester Avenue
- Mission Road
- Olympic Boulevard
- Pacific Coast Highway
- Roscoe Boulevard
- San Fernando Road
- Santa Monica Boulevard
- Sepulveda Boulevard
- Slauson Avenue
- Sunset Boulevard
- Tampa Avenue
- Topanga Canyon Boulevard
- Valley Boulevard
- Van Nuys Boulevard
- Venice Boulevard
- Ventura Boulevard
- Victory Boulevard
- Western Avenue
- Wilshire Boulevard

Mayor Hahn will preview his other Traffic Action Plan improvements which will be rolled out over the next few months. These include:

- Goods movement summit, which will develop a strategy for businesses to make deliveries without disrupting traffic;
- Neighborhood photo radar speed deterrent, a new technology that will deter speeding in neighborhoods while freeing up officers to be deployed to where they can be more useful;
- Real-time motorist information, in which information from Caltrans will be integrated into the Department of Transportation system so that information will be more accurate, with real-time information eventually available to drivers on cell phones, in-vehicle navigation or other mobile devices;
- Regional traffic management coordination, to connect Los Angeles' Automated Traffic Surveillance and Control (ATSAC) system to all regional and local agencies in Los Angeles County.

###

## Los Angeles; Hahn Unveils Plan to Speed Traffic Flow; Stoplights on 35 L.A. streets will be reset in a move he predicts will save drivers 8.4 million hours a year. Victory Boulevard is to be first.; [HOME EDITION]

Sharon Bernstein. Los Angeles Times. Los Angeles, Calif.: Oct 5, 2004. pg. B.3

Full Text (505 words)

(Copyright (c) 2004 Los Angeles Times)

Faced with worsening congestion on Los Angeles freeways and surface streets, transportation planners say they will try to make traffic flow faster across the city's most important arterial roads.

Under a plan announced by Mayor James K. Hahn on Monday, synchronized stoplights on 35 major streets would be reset so that traffic on those streets would have priority. Among them are Sepulveda Boulevard, Olympic Boulevard and Western Avenue.

"These are the key streets that a motorist would rely on as an alternative to the freeway," said John Fisher, assistant director of the Los Angeles Department of Transportation.

The city will reset the signals on nine streets this year and the remaining signals over the next several years as resources become available, he said.

The city also will assign traffic officers to key intersections on several of the streets and aggressively enforce parking laws in order to keep vehicles from blocking lanes during rush hour.

Existing plans to install left-turn arrows at several intersections will stay in place, but recalibrating the signals on the 35 streets will have priority.

The city has not committed new funds to the traffic-reduction project, which Hahn has dubbed "Street Smart."

The mayor predicted that the measures would save motorists a combined 8.4 million hours each year.

"The best way to address the city's traffic problems is through a strategic plan and a series of efforts made over a period of time," Hahn said in a prepared statement.

"We're doing everything that we can to improve the city's busiest streets."

Hahn said lights on Victory Boulevard in the San Fernando Valley would be the first to be reset.

But a spokesman for Bob Hertzberg, who is running for mayor against Hahn, said that funding for synchronized traffic lights and other improvements along Victory Boulevard had been authorized by the state when Hertzberg served the San Fernando Valley as speaker of the California Assembly.

Hahn was city attorney of Los Angeles at the time, Matt Szabo said.

"You'd think that when the mayor tries to look active by claiming credit for other people's work that at least he'd pick someone who isn't running against him," Szabo said in an e-mail.

Hahn spokeswoman Sahar Moridani said that although it's true that some of the work was funded by earlier state grants, the new plan would take the synchronization a step further, coordinating traffic throughout the city to ease congestion.

\*



(Begin Text of Infobox)

Affected streets

\*

The following streets have been identified as part of the anti- congestion plan:

\*

Alameda Street

Alvarado Street

Balboa Boulevard

Cahuenga Boulevard West

Colorado Boulevard

Devonshire Street

Figueroa Street

Gaffey Street

Glendale Boulevard

Grand Avenue

Highland Avenue

Hoover Street

La Brea Avenue

La Cienega Boulevard

Lankershim Boulevard

Lincoln Boulevard

Manchester Avenue

Mission Road

Olympic Boulevard

Pacific Coast Highway

Roscoe Boulevard

San Fernando Road

Santa Monica Boulevard

Sepulveda Boulevard

Slauson Avenue

Sunset Boulevard

Tampa Avenue

Topanga Canyon Boulevard

Valley Boulevard

Van Nuys Boulevard

Venice Boulevard

Ventura Boulevard

Victory Boulevard

Western Avenue

Wilshire Boulevard

Credit: Times Staff Writer

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"These are the key streets that a motorist would rely on as an alternative to the freeway," said John Fisher, assistant director of the Los Angeles Department of Transportation.

The city will reset the signals on nine streets this year and the remaining signals over the next several years as resources become available, he said.

The city also will assign traffic officers to key intersections on several of the streets and aggressively enforce parking laws in order to keep vehicles from blocking lanes during rush hour.

Existing plans to install left-turn arrows at several intersections will stay in place, but recalibrating the signals on the 35 streets will have priority.

The city has not committed new funds to the traffic-reduction project, which Hahn has dubbed "Street Smart."

The mayor predicted that the measures would save motorists a combined 8.4 million hours each year.

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But a spokesman for Bob Hertzberg, who is running for mayor against Hahn, said that funding for synchronized traffic lights and other improvements along Victory Boulevard had been authorized by the state when Hertzberg served the San Fernando Valley as speaker of the California Assembly.

Hahn was city attorney of Los Angeles at the time, Matt Szabo said.

"You'd think that when the mayor tries to look active by claiming credit for other people's work that at least he'd pick someone who isn't running against him," Szabo said in an e-mail.

Hahn spokeswoman Sahar Moridani said that although it's true that some of the work was funded by earlier state grants, the new plan would take the synchronization a step further, coordinating traffic throughout the city to ease congestion.

\*

(Begin Text of Infobox)

Affected streets

\*

The following streets have been identified as part of the anti- congestion plan:

\*

Alameda Street

Alvarado Street

Balboa Boulevard

Cahuenga Boulevard West

Colorado Boulevard

Devonshire Street

Figueroa Street

Gaffey Street

Glendale Boulevard

Grand Avenue

Highland Avenue

Hoover Street

La Brea Avenue

La Cienega Boulevard

Lankershim Boulevard

Lincoln Boulevard

Manchester Avenue

Mission Road

Olympic Boulevard

Pacific Coast Highway

Roscoe Boulevard

San Fernando Road

Santa Monica Boulevard

Sepulveda Boulevard

Slauson Avenue

Sunset Boulevard

Tampa Avenue

Topanga Canyon Boulevard

Valley Boulevard

Van Nuys Boulevard

Venice Boulevard

Ventura Boulevard

Victory Boulevard

Western Avenue

Wilshire Boulevard

Credit: Times Staff Writer

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**EXHIBIT XXIII**

**LOS ANGELES COUNTY METROPOLITAN  
TRANSPORTATION AUTHORITY  
SELECTED LIMITED STOP  
BUS ROUTE SCHEDULES**



# Metro Bus and Rail Timetables

## Metro Bus Lines 302 - 394

(PDF Format, [Acrobat Reader plugin](#) required)

Line Number	Line Name	Effective Date
<a href="#">302</a>	Sunset Blvd. Limited	6/27/04
<a href="#">304</a>	Santa Monica Boulevard - Limited	6/27/04
<a href="#">305</a>	West Hollywood - Rosa Parks (Imperial/Wilmington) Station - Limited	6/27/04
<a href="#">312</a>	New Limited Service - Hollywood, La Brea Avenue, Downtown Inglewood, Hawthorne	6/27/04
<a href="#">315</a>	LAX/Manchester Blvd./Firestone Blvd. Limited	6/27/04
<a href="#">316</a>	West 3rd Street	6/27/04
<a href="#">328</a>	West Olympic Blvd. Limited	2/1/04
<a href="#">333</a>	Venice Blvd. Limited	6/27/04
<a href="#">340</a>	Union Station/Patsaouras Transit Plaza/Inglewood/Hawthorne/South Bay Galleria Transit Center	6/27/04
<a href="#">350</a>	Long Beach Bl./Soto St./Avenue 26 - Limited	6/27/04
<a href="#">352</a>	West 7th St./San Pedro St./Avalon Blvd./Compton Blvd.	6/27/04
<a href="#">357</a>	Western Ave. Limited	6/27/04
<a href="#">358</a>	Limited Service - Slauson Avenue, Marina Del Rey, Pico Rivera	6/27/04
<a href="#">360</a>	Long Beach Bl./Pacific Bl./Santa Fe Ave./Patsaouras Transit Plaza/Union Station	6/27/04
<a href="#">361</a>	Atlantic Bl./Fair Oaks Ave. - Limited Stop Service	6/27/04
<a href="#">362</a>	Hawaiian Gardens/Cerritos/Norwalk/Santa Fe Springs/Los Angeles Limited	6/27/04
<a href="#">366</a>	W. Eight St. - Limited Service - Operates weekdays only	6/27/04
<a href="#">370</a>	LA/El Monte via Garvey Av.	6/27/04
<a href="#">376</a>	Valley Bl. via Main St./El Monte Bus Station	
<a href="#">380</a>	Hollywood/Glendale/Pasadena/Pasadena City College via Yosemite Dr.	6/27/04
<a href="#">381</a>	Figueroa St.	2/1/04
<a href="#">394</a>	San Fernando Rd. Limited Sylmar/San Fernando Metrolink Station	6/27/04

**Timetables are subject to change without notice.**

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[Metro Trip Planner](#) | [Click here to return to metro.net home](#)





# LINE 2

## SATURDAY SCHEDULE

No Service operated via Line 302 on Saturday

# WESTBOUND

LOS ANGELES				HOLLYWOOD		BEVERLY HILLS	WESTWOOD	PACIFIC PALISADES	CASTELLAMARE
Broadway & Venice	Sunset & Echo Park	Sunset & Vermont	Sunset & Western	Sunset & La Brea	Sunset & Fairfax	Sunset & Beverly	Le Conte & Westwood	Sunset & Capri	Pacific Coast Hwy & Sunset
....	538A	549A	554A	604A	607A	618A	629A	644A	703A
548A	559	609	614	624	627	638	649	704	723
600	619	629	634	644	647	658	710	725	745
613	632	643	649	659	703	714	726	....	....
623	643	654	700	710	714	725	737	794	813
634	664	705	711	721	725	736	748	....	....
645	705	716	722	732	736	747	769	....	....
656	716	727	733	743	747	758	810	827	846
707	727	738	744	754	758	809	821	....	....
718	738	749	755	805	809	820	832	849	906
730	750	801	807	817	821	832	844	....	....
740	800	812	818	828	832	844	856	913	932
750	811	824	830	840	845	857	909	....	....
802	823	836	842	852	857	909	921	....	....
814	835	848	854	904	909	921	933	....	....
826	847	900	906	916	921	933	945	....	....
838	859	912	918	928	933	945	957	....	....
849	910	923	930	940	945	957	1009	1026	1045
859	922	935	942	952	957	1009	1021	....	....
910	933	947	954	1004	1009	1021	1033	....	....
920	943	959	1006	1017	1022	1034	1046	1103	1124
932	955	1011	1018	1029	1034	1046	1058	....	....
944	1007	1023	1030	1041	1046	1058	1110	....	....
956	1019	1035	1042	1053	1058	1110	1122	1139	1159
1008	1031	1047	1054	1105	1110	1122	1134	....	....
1020	1043	1059	1106	1117	1122	1134	1146	....	....
1032	1055	1111	1118	1129	1134	1146	1158	1215P	1236P
1044	1107	1123	1130	1141	1146	1158	1210P	....	....
1056	1119	1135	1142	1153	1158	1210P	1222	....	....
1108	1131	1147	1154	1205P	1210P	1222	1234	1251	112
1120	1143	1159	1206P	1217	1222	1234	1246	....	....
1132	1155	1211P	1218	1229	1234	1246	1257	....	....
1144	1208P	1223	1230	1241	1247	1259	111	128	148
1156	1220	1235	1242	1253	1259	111	123	....	....
1207P	1232	1247	1254	105	111	123	135	....	....
1219	1244	1259	106	117	123	135	147	204	225
1231	1256	111	118	129	135	147	159	....	....
1243	108	123	130	141	147	159	211	....	....
1255	120	135	142	153	159	211	223	240	301
107	132	147	154	165	211	223	236	....	....
119	144	159	206	217	223	236	248	....	....
131	156	211	218	229	235	248	300	317	336
143	208	223	230	241	247	259	307	....	....
155	220	235	242	253	259	312	324	....	....
207	232	247	254	265	311	324	336	....	....
219	244	259	266	277	323	336	348	....	....
231	256	311	318	329	335	348	400	....	....
243	308	323	330	341	347	400	412	428	446
255	320	335	342	353	359	412	424	....	....
307	332	347	354	405	411	424	436	....	....
319	344	359	406	417	423	436	448	504	522
331	356	411	418	429	435	448	500	....	....
343	408	423	430	441	447	500	512	....	....
355	420	435	442	453	459	512	524	540	558
407	432	447	454	505	510	523	535	....	....
421	445	500	506	517	522	535	546	....	....
434	458	513	519	530	535	548	559	....	....
448	512	527	533	544	549	602	613	629	647
503	527	541	547	558	603	616	627	....	....
520	542	555	601	612	617	630	640	....	....
535	557	610	616	627	632	646	655	....	....
590	612	625	631	642	647	700	710	724	741
606	627	640	646	657	702	715	726	....	....
621	642	655	701	712	717	730	740	....	....
636	657	710	716	727	732	745	755	809	826
651	712	725	731	742	747	800	810	....	....
707	727	740	746	756	801	812	822	....	....
723	742	755	801	811	816	827	837	852	908
744	803	815	821	831	836	847	857	....	....
810	828	839	845	855	859	909	919	934	949
837	855	906	912	922	925	938	946	....	....
903	929	939	935	945	948	959	1009	1023	1038
925	942	952	957	1007	1010	1021	1030	....	....
945	1002	1012	1017	1025	1029	1040	1049	....	....
1016	1035	1045	1050	1059	@1102	....	....	....	....
1051	1108	1118	1123	1132	1135	1145	>1155	....	....
1128	1142	1151	1156	1205A	@1208A	....	....	....	....
1154	1208A	1217A	1222A	1231	1234	1245A	>1254A	....	....
1228A	1242	1251	1256	185	@ 188	....	....	....	....
128	142	151	156	265	@ 208	....	....	....	....

- @ — Continues to Santa Monica & San Vicente arriving approximately eight minutes after time shown.
- > — Terminates at Church Lane & Sunset eight minutes after time shown.
- \* — Originates at Cesar E. Chavez and Broadway five to seven minutes before time shown.
- % — Continues west on Sunset to Pacific Coast Hwy. Does not serve Temescal Canyon.

**Boxed trips are also contained on Late Night portion of timetable**

**LINE 2**

**SUNDAY AND HOLIDAY SCHEDULE**

Sunday schedule will be operated on New Year's Day, Memorial Day, Independence Day, Labor Day, Thanksgiving Day and Christmas Day.  
No Service Operated via Line 302 on Sundays and Holidays shown Above.

**EASTBOUND**

CASTELLAMARE Pacific Coast Hwy & Sunset	Sunset & Tennessee Canyon	PACIFIC PALISADES Sunset & Capri	WESTWOOD Le Conte & Westwood	BEVERLY HILLS		HOLLYWOOD Sunset & Western	LOS ANGELES Venice & Broadway	
				Sunset & Fairfax	Sunset & Beverly			
500A	507A	544A	590A	610A	620A	622A	627A	700A
502	503	549	595	705	625	623	787	734
504	505	551	597	707	627	625	733	682
506	507	553	599	709	629	627	735	684
508	509	555	601	711	631	629	737	686
510	511	557	603	713	633	631	739	688
512	513	559	605	715	635	633	741	690
514	515	561	607	717	637	635	743	692
516	517	563	609	719	639	637	745	694
518	519	565	611	721	641	639	747	696
520	521	567	613	723	643	641	749	698
522	523	569	615	725	645	643	751	700
524	525	571	617	727	647	645	753	702
526	527	573	619	729	649	647	755	704
528	529	575	621	731	651	649	757	706
530	531	577	623	733	653	651	759	708
532	533	579	625	735	655	653	761	710
534	535	581	627	737	657	655	763	712
536	537	583	629	739	659	657	765	714
538	539	585	631	741	661	659	767	716
540	541	587	633	743	663	661	769	718
542	543	589	635	745	665	663	771	720
544	545	591	637	747	667	665	773	722
546	547	593	639	749	669	667	775	724
548	549	595	641	751	671	669	777	726
550	551	597	643	753	673	671	779	728
552	553	599	645	755	675	673	781	730
554	555	601	647	757	677	675	783	732
556	557	603	649	759	679	677	785	734
558	559	605	651	761	681	679	787	736
560	561	607	653	763	683	681	789	738
562	563	609	655	765	685	683	791	740
564	565	611	657	767	687	685	793	742
566	567	613	659	769	689	687	795	744
568	569	615	661	771	691	689	797	746
570	571	617	663	773	693	691	799	748
572	573	619	665	775	695	693	801	750
574	575	621	667	777	697	695	803	752
576	577	623	669	779	699	697	805	754
578	579	625	671	781	701	699	807	756
580	581	627	673	783	703	701	809	758
582	583	629	675	785	705	703	811	760
584	585	631	677	787	707	705	813	762
586	587	633	679	789	709	707	815	764
588	589	635	681	791	711	709	817	766
590	591	637	683	793	713	711	819	768
592	593	639	685	795	715	713	821	770
594	595	641	687	797	717	715	823	772
596	597	643	689	799	719	717	825	774
598	599	645	691	801	721	719	827	776
600	601	647	693	803	723	721	829	778
602	603	649	695	805	725	723	831	780
604	605	651	697	807	727	725	833	782
606	607	653	699	809	729	727	835	784
608	609	655	701	811	731	729	837	786
610	611	657	703	813	733	731	839	788
612	613	659	705	815	735	733	841	790
614	615	661	707	817	737	735	843	792
616	617	663	709	819	739	737	845	794
618	619	665	711	821	741	739	847	796
620	621	667	713	823	743	741	849	798
622	623	669	715	825	745	743	851	800
624	625	671	717	827	747	745	853	802
626	627	673	719	829	749	747	855	804
628	629	675	721	831	751	749	857	806
630	631	677	723	833	753	751	859	808
632	633	679	725	835	755	753	861	810
634	635	681	727	837	757	755	863	812
636	637	683	729	839	759	757	865	814
638	639	685	731	841	761	759	867	816
640	641	687	733	843	763	761	869	818
642	643	689	735	845	765	763	871	820
644	645	691	737	847	767	765	873	822
646	647	693	739	849	769	767	875	824
648	649	695	741	851	771	769	877	826
650	651	697	743	853	773	771	879	828
652	653	699	745	855	775	773	881	830
654	655	701	747	857	777	775	883	832
656	657	703	749	859	779	777	885	834
658	659	705	751	861	781	779	887	836
660	661	707	753	863	783	781	889	838
662	663	709	755	865	785	783	891	840
664	665	711	757	867	787	785	893	842
666	667	713	759	869	789	787	895	844
668	669	715	761	871	791	789	897	846
670	671	717	763	873	793	791	899	848
672	673	719	765	875	795	793	901	850
674	675	721	767	877	797	795	903	852
676	677	723	769	879	799	797	905	854
678	679	725	771	881	801	799	907	856
680	681	727	773	883	803	801	909	858
682	683	729	775	885	805	803	911	860
684	685	731	777	887	807	805	913	862
686	687	733	779	889	809	807	915	864
688	689	735	781	891	811	809	917	866
690	691	737	783	893	813	811	919	868
692	693	739	785	895	815	813	921	870
694	695	741	787	897	817	815	923	872
696	697	743	789	899	819	817	925	874
698	699	745	791	901	821	819	927	876
700	701	747	793	903	823	821	929	878
702	703	749	795	905	825	823	931	880
704	705	751	797	907	827	825	933	882
706	707	753	799	909	829	827	935	884
708	709	755	801	911	831	829	937	886
710	711	757	803	913	833	831	939	888
712	713	759	805	915	835	833	941	890
714	715	761	807	917	837	835	943	892
716	717	763	809	919	839	837	945	894
718	719	765	811	921	841	839	947	896
720	721	767	813	923	843	841	949	898
722	723	769	815	925	845	843	951	900
724	725	771	817	927	847	845	953	902
726	727	773	819	929	849	847	955	904
728	729	775	821	931	851	849	957	906
730	731	777	823	933	853	851	959	908
732	733	779	825	935	855	853	961	910
734	735	781	827	937	857	855	963	912
736	737	783	829	939	859	857	965	914
738	739	785	831	941	861	859	967	916
740	741	787	833	943	863	861	969	918
742	743	789	835	945	865	863	971	920
744	745	791	837	947	867	865	973	922
746	747	793	839	949	869	867	975	924
748	749	795	841	951	871	869	977	926
750	751	797	843	953	873	871	979	928
752	753	799	845	955	875	873	981	930
754	755	801	847	957	877	875	983	932
756	757	803	849	959	879	877	985	934
758	759	805	851	961	881	879	987	936
760	761	807	853	963	883	881	989	938
762	763	809	855	965	885	883	991	940
764	765	811	857	967	887	885	993	942
766	767	813	859	969	889	887	995	944
768	769	815	861	971	891	889	997	946
770	771	817	863	973	893	891	999	948
772	773	819	865	975	895	893	1001	950
774	775	821	867	977	897	895	1003	952
776	777	823	869	979	899	897	1005	954
778	779	825	871	981	901	899	1007	956
780	781	827	873	983	903	901	1009	958
782	783	829	875	985	905	903	1011	960
784	785	831	877	987	907	905	1013	962
786	787	833	879	989	909	907	1015	964
788	789	835	881	991	911	909	1017	966
790	791	837	883	993	913	911	1019	968
792	793	839	885	995	915	913	1021	970
794	795	841	887	997	917	915	1023	972
796	797	843	889	999	919	917	1025	974
798	799	845	891	1001	921	919	1027	976
800	801	847	893	1003	923	921	1029	978
802	803	849	895	1005	925	923	1031	980
804	805	851	897	1007	927	925	1033	982
806	807	853	899	1009	929	927	1035	984
808	809	855	901	1011	931	929		

# LINES 2-217 Combination

SUNDAY LATE NIGHT/OWL SERVICE

# EASTBOUND

<u>LOS ANGELES</u>		<u>WEST HOLLYWOOD</u>		<u>HOLLYWOOD</u>			<u>DOWNTOWN LOS ANGELES</u>	
West Los Angeles Transit Center	Fairfax & San Vicente	Fairfax & Santa Monica	Hollywood & La Brea	Hollywood & Vine	Hollywood & Western	Sunset & Vermont	Venice & Broadway	
....	....	....	TRIP ORIGINATES AS LINE 2			955P	THEN VIA LINE 2 TO:	1017P
919P	926P	937P	944P	952P	957P	1002	THEN VIA LINE 2 TO:	1024
....	....	....	TRIP ORIGINATES AS LINE 2			1019	THEN VIA LINE 2 TO:	1041
947	954	1004	1010	1018	1023	1028	THEN VIA LINE 2 TO:	1050
....	....	....	TRIP ORIGINATES AS LINE 2			1045	THEN VIA LINE 2 TO:	1107
1019	1026	1036	1042	1050	1055	1100	THEN VIA LINE 2 TO:	1121
....	....	....	TRIP ORIGINATES AS LINE 2			1115	THEN VIA LINE 2 TO:	1136
1055	1102	1110	1115	1123	1128	1132	THEN VIA LINE 2 TO:	1152
....	....	....	TRIP ORIGINATES AS LINE 2			1146	THEN VIA LINE 2 TO:	1206A
1135	1142	1150	1155	1203A	1208A	1212A	THEN VIA LINE 2 TO:	1231
....	....	....	TRIP ORIGINATES AS LINE 2			1213	THEN VIA LINE 2 TO:	1232
1151	1158	1206A	1211A	1219	1222	1228	THEN VIA LINE 2 TO:	1248
....	....	....	TRIP ORIGINATES AS LINE 2			1255	THEN VIA LINE 2 TO:	115
104A	111A	119	124	129	132	136	THEN VIA LINE 2 TO:	156
....	....	....	TRIP ORIGINATES AS LINE 2			155	THEN VIA LINE 2 TO:	214
204	211	219	224	229	232	236	THEN VIA LINE 2 TO:	256
304	311	319	324	329	332	336	THEN VIA LINE 2 TO:	356

# LINES 2-217 Combination

SUNDAY LATE NIGHT/OWL SERVICE

# WESTBOUND

<u>DOWNTOWN LOS ANGELES</u>		<u>ECHO PARK</u>	<u>HOLLYWOOD</u>		<u>WEST HOLLYWOOD</u>	<u>LOS ANGELES</u>	
Broadway & Venice	Sunset & Echo Park	Vermont & Sunset	Hollywood & Vine	Hollywood & La Brea	Fairfax & Santa Monica	Fairfax & San Vicente	West Los Angeles Transit Center
959P	1015P	1025P	TRIP CONTINUES VIA LINE 2		....	....	....
%1004	1020	1030	THEN VIA LINE 217 TO		1040P	1048P	1053P
1035	1051	1101	THEN VIA LINE 217 TO		1111	1119	1124
1052	1108	1118	TRIP CONTINUES VIA LINE 2		....	....	....
%1104	1120	1130	THEN VIA LINE 217 TO		1140	1148	1153
1129	1142	1151	TRIP CONTINUES VIA LINE 2		....	....	....
1155	1208A	1217A	TRIP CONTINUES VIA LINE 2		....	....	....
%1204A	1217	1226	THEN VIA LINE 217 TO		1234A	1240A	1245A
1229	1242	1251	TRIP CONTINUES VIA LINE 2		....	....	....
% 104	117	126	THEN VIA LINE 217 TO		134	140	145
129	142	151	TRIP CONTINUES VIA LINE 2		....	....	....
% 204	217	226	THEN VIA LINE 217 TO		234	240	245
% 304	317	326	THEN VIA LINE 217 TO		334	340	345
% 404	417	426	THEN VIA LINE 217 TO		434	440	445

% ——— Waits at Broadway and 7th St. for transfer connections.



**LINE 2-302**

**MONDAY THROUGH FRIDAY SCHEDULE**

Sunday schedule will be operated on New Year's Day, Memorial Day, Independence Day, Labor Day, Thanksgiving Day and Christmas Day.

**EASTBOUND**

ROUTE	CASTELLAMARE		PACIFIC PALISADES		WESTWOOD	BEVERLY HILLS	HOLLYWOOD		LOS ANGELES		
	Pacific Coast Hwy & Sunset	Sunset & Temescal Canyon	Sunset & Capri	Le Conte & Westwood	Sunset & Beverly	Sunset & Fairfax	Sunset & La Brea	Sunset & Western	Sunset & Vermont	Venice & Broadway	
2	....	....	....	....	....	....	\$ 507A	511A	508A	504A	502A
2	....	....	....	....	....	....	\$ 504	508	507	504	500
2	....	....	....	....	....	....	\$ 505	509	508	505	502
2	....	....	....	....	....	....	\$ 506	510	509	506	503
2	....	....	....	....	....	....	\$ 507	511	510	507	504
2	....	....	....	505A	509A	....	\$ 512	516	515	512	509
2	....	....	....	....	....	....	\$ 513	517	516	513	510
2	....	....	....	506A	510A	....	517	521	520	517	514
2	....	....	....	507	511	....	518	522	521	518	515
2	....	....	....	508	512	....	519	523	522	519	516
2	....	....	....	509	513	....	520	524	523	520	517
2	....	....	....	....	....	....	\$ 521	525	524	521	518
2	....	....	....	....	....	....	\$ 522	526	525	522	519
2	....	....	....	....	....	....	\$ 523	527	526	523	520
2	....	....	....	....	....	....	\$ 524	528	527	524	521
2	....	....	....	....	....	....	\$ 525	529	528	525	522
2	....	....	....	....	....	....	\$ 526	530	529	526	523
2	....	....	....	....	....	....	\$ 527	531	530	527	524
2	....	....	....	....	....	....	\$ 528	532	531	528	525
2	....	....	....	....	....	....	\$ 529	533	532	529	526
2	....	....	....	....	....	....	\$ 530	534	533	530	527
2	....	....	....	....	....	....	\$ 531	535	534	531	528
2	....	....	....	....	....	....	\$ 532	536	535	532	529
2	....	....	....	....	....	....	\$ 533	537	536	533	530
2	....	....	....	....	....	....	\$ 534	538	537	534	531
2	....	....	....	....	....	....	\$ 535	539	538	535	532
2	....	....	....	....	....	....	\$ 536	540	539	536	533
2	....	....	....	....	....	....	\$ 537	541	540	537	534
2	....	....	....	....	....	....	\$ 538	542	541	538	535
2	....	....	....	....	....	....	\$ 539	543	542	539	536
2	....	....	....	....	....	....	\$ 540	544	543	540	537
2	....	....	....	....	....	....	\$ 541	545	544	541	538
2	....	....	....	....	....	....	\$ 542	546	545	542	539
2	....	....	....	....	....	....	\$ 543	547	546	543	540
2	....	....	....	....	....	....	\$ 544	548	547	544	541
2	....	....	....	....	....	....	\$ 545	549	548	545	542
2	....	....	....	....	....	....	\$ 546	550	549	546	543
2	....	....	....	....	....	....	\$ 547	551	550	547	544
2	....	....	....	....	....	....	\$ 548	552	551	548	545
2	....	....	....	....	....	....	\$ 549	553	552	549	546
2	....	....	....	....	....	....	\$ 550	554	553	550	547
2	....	....	....	....	....	....	\$ 551	555	554	551	548
2	....	....	....	....	....	....	\$ 552	556	555	552	549
2	....	....	....	....	....	....	\$ 553	557	556	553	550
2	....	....	....	....	....	....	\$ 554	558	557	554	551
2	....	....	....	....	....	....	\$ 555	559	558	555	552
2	....	....	....	....	....	....	\$ 556	560	559	556	553
2	....	....	....	....	....	....	\$ 557	561	560	557	554
2	....	....	....	....	....	....	\$ 558	562	561	558	555
2	....	....	....	....	....	....	\$ 559	563	562	559	556
2	....	....	....	....	....	....	\$ 560	564	563	560	557
2	....	....	....	....	....	....	\$ 561	565	564	561	558
2	....	....	....	....	....	....	\$ 562	566	565	562	559
2	....	....	....	....	....	....	\$ 563	567	566	563	560
2	....	....	....	....	....	....	\$ 564	568	567	564	561
2	....	....	....	....	....	....	\$ 565	569	568	565	562
2	....	....	....	....	....	....	\$ 566	570	569	566	563
2	....	....	....	....	....	....	\$ 567	571	570	567	564
2	....	....	....	....	....	....	\$ 568	572	571	568	565
2	....	....	....	....	....	....	\$ 569	573	572	569	566
2	....	....	....	....	....	....	\$ 570	574	573	570	567
2	....	....	....	....	....	....	\$ 571	575	574	571	568
2	....	....	....	....	....	....	\$ 572	576	575	572	569
2	....	....	....	....	....	....	\$ 573	577	576	573	570
2	....	....	....	....	....	....	\$ 574	578	577	574	571
2	....	....	....	....	....	....	\$ 575	579	578	575	572
2	....	....	....	....	....	....	\$ 576	580	579	576	573
2	....	....	....	....	....	....	\$ 577	581	580	577	574
2	....	....	....	....	....	....	\$ 578	582	581	578	575
2	....	....	....	....	....	....	\$ 579	583	582	579	576
2	....	....	....	....	....	....	\$ 580	584	583	580	577
2	....	....	....	....	....	....	\$ 581	585	584	581	578
2	....	....	....	....	....	....	\$ 582	586	585	582	579
2	....	....	....	....	....	....	\$ 583	587	586	583	580
2	....	....	....	....	....	....	\$ 584	588	587	584	581
2	....	....	....	....	....	....	\$ 585	589	588	585	582
2	....	....	....	....	....	....	\$ 586	590	589	586	583
2	....	....	....	....	....	....	\$ 587	591	590	587	584
2	....	....	....	....	....	....	\$ 588	592	591	588	585
2	....	....	....	....	....	....	\$ 589	593	592	589	586
2	....	....	....	....	....	....	\$ 590	594	593	590	587
2	....	....	....	....	....	....	\$ 591	595	594	591	588
2	....	....	....	....	....	....	\$ 592	596	595	592	589
2	....	....	....	....	....	....	\$ 593	597	596	593	590
2	....	....	....	....	....	....	\$ 594	598	597	594	591
2	....	....	....	....	....	....	\$ 595	599	598	595	592
2	....	....	....	....	....	....	\$ 596	600	599	596	593
2	....	....	....	....	....	....	\$ 597	601	600	597	594
2	....	....	....	....	....	....	\$ 598	602	601	598	595
2	....	....	....	....	....	....	\$ 599	603	602	599	596
2	....	....	....	....	....	....	\$ 600	604	603	600	597
2	....	....	....	....	....	....	\$ 601	605	604	601	598
2	....	....	....	....	....	....	\$ 602	606	605	602	599
2	....	....	....	....	....	....	\$ 603	607	606	603	600
2	....	....	....	....	....	....	\$ 604	608	607	604	601
2	....	....	....	....	....	....	\$ 605	609	608	605	602
2	....	....	....	....	....	....	\$ 606	610	609	606	603
2	....	....	....	....	....	....	\$ 607	611	610	607	604
2	....	....	....	....	....	....	\$ 608	612	611	608	605
2	....	....	....	....	....	....	\$ 609	613	612	609	606
2	....	....	....	....	....	....	\$ 610	614	613	610	607
2	....	....	....	....	....	....	\$ 611	615	614	611	608
2	....	....	....	....	....	....	\$ 612	616	615	612	609
2	....	....	....	....	....	....	\$ 613	617	616	613	610
2	....	....	....	....	....	....	\$ 614	618	617	614	611
2	....	....	....	....	....	....	\$ 615	619	618	615	612
2	....	....	....	....	....	....	\$ 616	620	619	616	613
2	....	....	....	....	....	....	\$ 617	621	620	617	614
2	....	....	....	....	....	....	\$ 618	622	621	618	615
2	....	....	....	....	....	....	\$ 619	623	622	619	616
2	....	....	....	....	....	....	\$ 620	624	623	620	617
2	....	....	....	....	....	....	\$ 621	625	624	621	618
2	....	....	....	....	....	....	\$ 622	626	625	622	619
2	....	....	....	....	....	....	\$ 623	627	626	623	620
2	....	....	....	....	....	....	\$ 624	628	627	624	621
2	....	....	....	....	....	....	\$ 625	629	628	625	622
2	....	....	....	....	....	....	\$ 626	630	629	626	623
2	....	....	....	....	....	....	\$ 627	631	630	627	624
2	....	....	....	....	....	....	\$ 628	632	631	628	625
2	....	....	....	....	....	....	\$ 629	633	632	629	626
2	....	....	....	....	....	....	\$ 630	634	633	630	627
2	....	....	....	....	....	....	\$ 631	635	634	631	628
2	....	....	....	....	....	....	\$ 632	636	635	632	629
2	....	....	....	....	....	....	\$ 633	637	636	633	630
2	....	....	....	....	....	....	\$ 634	638	637	634	631
2	....	....	....	....	....	....	\$ 635	639	638	635	632
2	....	....	....	....	....	....	\$ 636	640	639	636	633
2	....	....	....	....	....	....	\$ 637	641	640	637	634
2	....	....	....	....	....	....	\$ 638	642	641	638	635
2	....	....	....	....	....	....	\$ 639	643	642	639	636
2	....	....	....	....	....	....	\$ 640	644	643	640	637
2	....	....	....	....	....	....	\$ 641	645	644	641	638
2	....	....	....	....	....	....	\$ 642	646	645	642	639
2	....	....	....	....	....	....	\$ 643	647	646	643	640
2	....	....	....	....	....	....	\$ 644	648	647	644	641
2											

<b>CASTELLAM- MARE</b>		<b>PACIFIC PALISADES</b>		<b>WESTWOOD</b>		<b>BEVERLY HILLS</b>		<b>HOLLY- WOOD</b>		<b>LOS ANGELES</b>	
Pacific Coast Hwy & Sunset	Sunset & Temescal Canyon	Sunset & Capri	Le Conte & Westwood	Sunset & Beverly	Sunset & Fairfax	Sunset & La Brea	Sunset & Western	Sunset & Vermont	Venice & Broadway		
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
.....	.....	.....	852A	882A	\$ 552A	555A	603A	607A	630A	.....	.....
.....	.....	.....	.....	.....	612	615	622	622	622	.....	.....
.....	.....	.....	622	632	\$ 627	630	636	642	642	.....	.....
.....	.....	.....	.....	.....	642	645	653	658	658	.....	.....
.....	.....	.....	.....	.....	\$ 657	700	702	713	713	.....	.....
.....	.....	.....	851	762	712	715	723	723	723	.....	.....
835A	841A	848A	783	714	724	727	735	740	740	.....	.....
.....	.....	.....	712	723	733	737	747	752	752	.....	.....
.....	.....	.....	723	734	744	748	759	805	805	.....	.....
.....	.....	.....	735	748	758	809	811	817	822	.....	.....
710	725	732	747	768	808	812	823	829	835	.....	.....
.....	.....	.....	759	810	824	838	841	841	841	.....	.....
.....	.....	.....	811	822	832	846	847	853	853	.....	.....
789	801	806	823	834	844	848	859	865	865	.....	.....
.....	.....	.....	834	845	855	859	911	917	922	.....	.....
813	819	827	843	854	864	866	911	923	929	.....	.....
.....	.....	.....	855	866	876	923	935	941	941	.....	.....
837	843	851	867	878	889	935	947	947	947	.....	.....
.....	.....	.....	891	902	912	947	959	1005	1005	.....	.....
891	907	915	931	942	954	959	1011	1017	1017	.....	.....
.....	.....	.....	943	954	964	1006	1023	1029	1035	.....	.....
925	932	940	956	1006	1018	1023	1035	1041	1041	.....	.....
.....	.....	.....	1006	1018	1030	1042	1047	1059	1065	.....	.....
.....	.....	.....	1020	1030	1042	1054	1059	1117	1117	.....	.....
1006	1006	1015	1031	1041	1054	1059	1117	1117	1117	.....	.....
.....	.....	.....	1042	1053	1106	1123	1123	1139	1139	.....	.....
.....	.....	.....	1053	1105	1116	1123	1135	1142	1142	.....	.....
1034	1040	1049	1106	1117	1129	1142	1147	1169	1169	.....	.....
.....	.....	.....	1117	1129	1142	1154	1159	1218	1218	.....	.....
.....	.....	.....	1129	1141	1154	1159	1211	1211	1211	.....	.....
1110	1116	1125	1141	1153	1206P	1211	1223	1230	1230	.....	.....
.....	.....	.....	1153	1205P	1216	1223	1235	1242	1242	.....	.....
.....	.....	.....	1205P	1217	1230	1235	1247	1254	1254	.....	.....
1143	1160	1158	1216	1225	1241	1246	1259	106	106	.....	.....
.....	.....	.....	1225	1239	1252	1258	111	118	118	.....	.....
.....	.....	.....	1239	1250	1260	1268	110	123	123	.....	.....
1216P	1223P	1231P	1250	102	116	122	136	142	142	.....	.....
.....	.....	.....	102	114	125	134	147	154	154	.....	.....
.....	.....	.....	114	125	140	148	159	206	206	.....	.....
1252	1258	187	126	133	152	158	211	218	218	.....	.....
.....	.....	.....	133	149	169	174	223	230	230	.....	.....
.....	.....	.....	149	162	182	216	222	238	242	.....	.....
128	135	143	162	174	214	229	234	247	254	.....	.....
.....	.....	.....	174	187	225	240	245	259	265	.....	.....
.....	.....	.....	187	200	238	252	258	311	318	.....	.....
204	211	219	200	239	250	304	310	323	330	.....	.....
.....	.....	.....	239	259	302	316	322	336	342	.....	.....
.....	.....	.....	259	302	314	323	334	347	354	.....	.....
240	247	255	314	325	340	345	359	406	406	.....	.....
.....	.....	.....	325	337	352	358	411	417	417	.....	.....
.....	.....	.....	337	349	384	410	423	429	429	.....	.....
316	322	330	349	401	416	422	435	441	441	.....	.....
.....	.....	.....	401	413	428	434	447	453	453	.....	.....
.....	.....	.....	413	425	440	445	459	465	465	.....	.....
351	358	366	425	437	452	458	511	517	517	.....	.....
.....	.....	.....	437	451	463	468	523	529	529	.....	.....
.....	.....	.....	451	463	478	483	535	541	541	.....	.....
430	437	445	463	478	489	495	547	553	553	.....	.....
.....	.....	.....	478	491	503	508	547	559	565	.....	.....
.....	.....	.....	491	503	517	522	571	577	577	.....	.....
506	513	521	503	517	532	538	591	597	597	.....	.....
.....	.....	.....	517	531	545	550	603	609	609	.....	.....
.....	.....	.....	531	545	560	565	615	621	621	.....	.....
546	553	561	545	560	575	580	633	639	639	.....	.....
.....	.....	.....	560	575	590	595	645	651	651	.....	.....
.....	.....	.....	575	590	605	610	663	669	669	.....	.....
618	625	633	590	605	620	625	677	683	683	.....	.....
.....	.....	.....	605	620	635	640	691	697	697	.....	.....
659	706	712	620	635	650	655	707	713	713	.....	.....
.....	.....	.....	635	650	665	670	719	725	725	.....	.....
.....	.....	.....	650	665	680	685	731	737	737	.....	.....
802	808	815	665	680	695	700	753	759	759	.....	.....
.....	.....	.....	680	695	710	715	765	771	771	.....	.....
.....	.....	.....	695	710	725	730	777	783	783	.....	.....
849	855	861	710	725	740	745	797	803	803	.....	.....
819	824	830	725	740	755	760	811	817	817	.....	.....
.....	.....	.....	740	755	770	775	823	829	829	.....	.....
.....	.....	.....	755	770	785	790	835	841	841	.....	.....
.....	.....	.....	770	785	800	805	847	853	853	.....	.....
.....	.....	.....	785	800	815	820	859	865	865	.....	.....
.....	.....	.....	800	815	830	835	869	875	875	.....	.....
.....	.....	.....	815	830	845	850	881	887	887	.....	.....
.....	.....	.....	830	845	860	865	893	899	899	.....	.....
.....	.....	.....	845	860	875	880	905	911	911	.....	.....
.....	.....	.....	860	875	890	895	917	923	923	.....	.....
.....	.....	.....	875	890	905	910	929	935	935	.....	.....
.....	.....	.....	890	905	920	925	937	943	943	.....	.....
.....	.....	.....	905	920	935	940	949	955	955	.....	.....
.....	.....	.....	920	935	950	955	963	969	969	.....	.....
.....	.....	.....	935	950	965	970	977	983	983	.....	.....
.....	.....	.....	950	965	980	985	993	999	999	.....	.....
.....	.....	.....	965	980	995	1000	1007	1013	1013	.....	.....
.....	.....	.....	980	995	1010	1015	1023	1029	1029	.....	.....
.....	.....	.....	995	1010	1025	1030	1037	1043	1043	.....	.....
.....	.....	.....	1010	1025	1040	1045	1053	1059	1059	.....	.....
.....	.....	.....	1025	1040	1055	1060	1067	1073	1073	.....	.....
.....	.....	.....	1040	1055	1070	1075	1083	1089	1089	.....	.....
.....	.....	.....	1055	1070	1085	1090	1097	1103	1103	.....	.....
.....	.....	.....	1070	1085	1100	1105	1113	1119	1119	.....	.....
.....	.....	.....	1085	1100	1115	1120	1127	1133	1133	.....	.....
.....	.....	.....	1100	1115	1130	1135	1143	1149	1149	.....	.....
.....	.....	.....	1115	1130	1145	1150	1157	1163	1163	.....	.....
.....	.....	.....	1130	1145	1160	1165	1173	1179	1179	.....	.....
.....	.....	.....	1145	1160	1175	1180	1187	1193	1193	.....	.....
.....	.....	.....	1160	1175	1190	1195	1203	1209	1209	.....	.....
.....	.....	.....	1175	1190	1205	1210	1217	1223	1223	.....	.....
.....	.....	.....	1190	1205	1220	1225	1233	1239	1239	.....	.....
.....	.....	.....	1205	1220	1235	1240	1247	1253	1253	.....	.....
.....	.....	.....	1220	1235	1250	1255	1263	1269	1269	.....	.....
.....	.....	.....	1235	1250	1265	1270	1277	1283	1283	.....	.....
.....	.....	.....	1250	1265	1280	1285	1293	1299	1299	.....	.....
.....	.....	.....	1265	1280	1295	1300	1307	1313	1313	.....	.....
.....	.....	.....	1280	1295	1310	1315	1323	1329	1329	.....	.....
.....	.....	.....	1295	1310	1325	1330	1337	1343	1343	.....	.....
.....	.....	.....	1310	1325	1340	1345	1353	1359	1359	.....	.....
.....	.....	.....	1325	1340	1355	1360	1367	1373	1373	.....	.....
.....	.....	.....	1340	1355	1370	1375	1383	1389	1389	.....	.....
.....	.....	.....	1355	1370	1385	1390	1397	1403	1403	.....	.....
.....	.....	.....	1370	1385	1400	1405	1413	1419	1419	.....	.....
.....	.....	.....	1385	1400	1415	1420	1427	1433	1433	.....	.....
.....	.....	.....	1400	1415	1430	1435	1443	1449	1449	.....	.....
.....	.....	.....	1415	1430	1445	1450	1457	1463	1463	.....	.....
.....	.....	.....	1430	1445	1460	1465	1473	1479	1479	.....	.....
.....	.....	.....	1445	1460	1475	1480	1487	1493	1493	.....	.....
.....	.....	.....	1460	1475							

# LINES 4-304

## MONDAY THROUGH FRIDAY SCHEDULE

6/27/04

All service on this timetable is accessible to the disabled.

### EASTBOUND

Sunday schedule will be operated on New Year's Day, Memorial Day, Independence Day, Labor Day, Thanksgiving Day and Christmas Day.

### WESTBOUND

RT	4-304	SANTA MONICA 2nd & Santa Monica	Santa Monica & Westwood (Note 1)	WEST HOLLYWOOD Santa Monica & San Vicente	Santa Monica & Fairfax	Santa Monica & Western	Santa Monica & Vermont	ECHO PARK Sunset & Echo Park	Cesar E. Chavez & Vignes	LOS ANGELES Venice & Broadway	RT	4-304	LOS ANGELES Venice & Broadway	Vignes & Cesar E. Chavez	ECHO PARK Sunset & Echo Park	Santa Monica & Vermont	Santa Monica & Western	Santa Monica & Fairfax	WEST HOLLYWOOD Santa Monica & San Vicente	Santa Monica & Westwood (Note 2)	SANTA MONICA 2nd & Santa Monica
4	4	350A	407A	419A	425A	434A	438A	449A	.....	459A	4	4	414A	.....	430A	440A	445A	457A	502A	514A	531A
4	4	.....	.....	436	442	451	455	505	.....	521	4	4	435	.....	451	501	506	519	524	535	553
4	4	423	448	452	458	510	515	525	.....	541	4	4	450	.....	506	516	521	534	539	553	610
4	4	.....	.....	511	517	528	534	544	.....	608	4	4	504	.....	520	530	536	548	553	607	626
4	4	484	511	524	530	542	547	557	.....	613	4	4	513	.....	530	540	545	558	563	617	636
4	4	.....	.....	534	540	552	557	567	.....	623	4	4	519	.....	537	547	553	566	571	626	.....
4	4	612	529	542	548	602	607	617	.....	634	4	4	526	.....	544	554	560	573	578	633	651
4	4	522	539	552	558	612	617	628	.....	645	304	4	547A	552	561	566	577	587	622	635	654
4	4	531	548	601	607	621	626	637	.....	654	4	4	536	.....	553	564	571	584	629	644	.....
304	4	541	558	610	615	626	630	640	646A	.....	304	4	543	553	560	573	578	629	644	694	704
4	4	541	558	611	617	631	636	647	.....	704	4	4	543	.....	562	573	581	636	641	657	.....
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4	4	.....	606	619	625	639	644	655	.....	712	4	4	556	.....	613	625	632	646	652	708	.....
304	4	567	614	626	631	642	646	656	702	.....	304	4	556	615	623	633	638	650	655	710	730
4	4	.....	612	625	631	645	650	701	.....	719	4	4	559	.....	624	636	643	657	703	719	.....
304	4	602	620	632	637	648	652	702	708	.....	304	4	566	624	632	642	647	700	705	721	741
4	4	.....	618	631	637	651	656	707	.....	724	4	4	563	.....	631	643	650	706	712	728	.....
304	4	607	626	638	643	654	658	708	714	.....	304	4	569	630	638	648	653	708	711	727	747
4	4	.....	624	637	643	657	702	713	.....	730	4	4	576	.....	637	649	656	712	718	734	.....
304	4	611	631	643	648	659	703	713	719	.....	304	4	576	636	644	654	659	712	717	733	753
4	4	.....	639	643	649	703	708	719	.....	737	4	4	582	646	657	704	720	726	744	.....	.....
304	4	617	638	650	655	706	710	720	726	.....	304	4	589	641	650	700	705	718	723	739	759
4	4	.....	635	640	654	709	714	725	.....	743	4	4	590	649	701	708	724	730	749	.....	.....
304	4	623	645	657	702	713	717	727	733	.....	304	4	597	647	656	706	711	724	729	745	805
4	4	.....	642	655	701	716	722	733	.....	751	4	4	604	655	707	714	730	735	755	.....	.....
304	4	628	651	703	708	719	723	733	739	.....	304	4	611	652	701	712	717	730	735	751	811
4	4	.....	648	701	707	722	728	739	.....	757	4	4	618	659	700	715	720	736	742	801	.....
304	4	633	656	709	714	725	729	739	746	.....	304	4	625	650	707	718	723	736	741	757	817
4	4	.....	654	708	714	729	735	746	.....	804	4	4	632	656	708	719	726	742	748	807	.....
304	4	641	704	717	722	733	737	748	755	.....	304	4	639	663	713	724	729	742	747	803	823
4	4	.....	700	714	721	737	743	754	.....	812	4	4	646	670	712	726	732	748	754	813	.....
304	4	649	712	725	730	741	746	757	804	.....	304	4	653	670	719	730	735	748	753	809	829
4	4	.....	709	723	730	746	752	803	.....	821	4	4	660	677	718	731	738	754	800	810	.....
304	4	657	720	733	738	750	755	806	813	.....	304	4	667	676	725	736	741	754	759	815	836
4	4	.....	720	734	741	757	803	814	.....	832	4	4	674	685	724	737	744	800	805	825	836
304	4	670	730	744	750	803	808	819	826	.....	304	4	681	692	731	742	747	800	805	821	842
4	4	.....	732	747	754	810	816	827	.....	843	4	4	688	699	730	743	750	806	812	831	.....
304	4	720	744	758	804	817	822	833	840	.....	304	4	695	706	737	748	753	806	811	828	849
4	4	.....	744	801	808	824	830	841	.....	859	4	4	702	713	734	747	754	810	816	836	.....
304	4	724	758	812	818	831	836	847	854	.....	304	4	709	721	740	751	756	809	814	832	853
4	4	.....	758	816	822	838	844	855	.....	913	4	4	716	728	739	752	759	815	821	841	.....
304	4	748	812	826	832	845	850	901	908	.....	304	4	723	735	746	757	762	816	821	840	901
4	4	.....	811	828	836	852	858	909	.....	927	4	4	730	742	745	758	765	822	828	848	.....
304	4	801	825	840	846	859	864	915	922	.....	304	4	737	749	753	764	770	822	828	847	908
4	4	.....	823	842	850	866	872	923	.....	941	4	4	744	756	759	770	776	829	836	856	.....
304	4	816	840	855	861	914	919	930	937	.....	304	4	751	763	766	777	783	836	843	864	915
4	4	.....	839	858	866	922	928	939	.....	967	4	4	758	770	773	784	790	843	849	903	.....
304	4	831	856	911	917	930	935	946	953	.....	304	4	765	777	780	791	797	850	857	909	921
4	4	.....	855	914	922	938	944	955	.....	1013	4	4	772	784	787	798	804	857	864	916	.....
304	4	847	812	827	833	846	851	902	1000	.....	304	4	779	791	794	805	811	864	871	923	927
4	4	.....	911	930	938	954	1000	1011	.....	1020	4	4	786	798	801	812	818	871	878	930	.....
304	4	903	928	943	949	1002	1007	1018	1025	.....	304	4	793	805	808	819	825	878	885	937	939
4	4	.....	927	946	954	1010	1016	1026	.....	1046	4	4	800	812	815	826	832	885	892	922	.....
304	4	919	944	959	1005	1016	1023	1034	1041	.....	304	4	807	819	822	833	839	892	899	916	939
4	4	.....	943	1002	1010	1026	1032	1044	.....	1102	4	4	814	826	829	840	846	899	906	926	.....
304	4	935	1000	1015	1021	1034	1039	1050	1057	.....	304	4	821	833	836	847	853	906	913	925	948
4	4	.....	959	1017	1025	1042	1048	1100	.....	1119	4	4	828	840	843	854	860	913	920	934	.....
304	4	951	1016	1031	1037	1050	1055	1106	1113	.....	304	4	835	847	850	861	867	920	927	931	952
4	4	.....	1014	1033	1041	1058	1104	1116	.....	1134	4	4	842	854	857	868	874	927	934	942	.....
304	4	1007	1032	1047	1053	1106	1111	1122	1129	.....	304	4	849	861	864	875	881	934	941	945	.....
4	4	.....	1025	1047	1055	1114	1120	1132	.....	1150	4	4	856	868	871	882	888	941	948	952	.....
304	4	1023	1048	1103	1109	1122	1127	1138	1146	.....	304	4	863	875	878	889	895	948	955	959	.....
4	4	.....	1044	1103	1111	1130	1136	1149	.....	1207P	4	4	870	882	885	896	902	955	962	966	.....
304	4	1039	1104	1119	1125	1138	1143	1154	1201P	.....	304	4	877	889	892	903	909	962	969	973	.....
4	4	.....	1109	1119	1127	1146	1152	1205P	.....	1223	4	4	884	896	899	910	916	969	976	980	.....
304	4	1055	1121	1135	1141	1154	1159	1210	1217	.....	304	4	891	903	906	917	923	976	983	987	.....
4	4	.....	1115	1139	1143	1202P	1208P	1221	.....	1230	4	4	898	910	913	924	930	983	990	994	.....
304	4	1111	1137	1151	1157	1210	1215	1226	1233	.....	304	4	905	9							

304	4	226	248	256	315	321	334	352	4	1243	1257	104	122	120	148	...			
304	4	208	236	255	302	319	324	335	342	1243	1253	105	110	122	128	147	212		
304	4	235	256	304	323	329	342	400	4	1225	1258	104	111	129	136	155	...		
304	4	239	300	309	331	337	358	406	304	1281	101	113	118	130	136	155	228		
304	4	216	244	303	310	327	332	343	356	4	1240	105	110	126	144	151	210	...	
304	4	247	308	317	330	345	358	416	304	107	117	129	134	146	152	211	236	...	
304	4	223	252	311	318	335	340	351	358	4	1256	121	135	142	200	207	226	...	
304	4	254	316	325	347	353	408	422	304	123	133	145	158	202	208	227	252	...	
304	4	231	300	319	326	343	348	359	406	4	112	137	151	158	216	222	242	...	
304	4	301	323	332	354	408	413	431	304	138	149	201	206	218	224	243	308	...	
304	4	230	306	327	334	351	356	407	414	4	126	153	207	214	232	239	257	...	
304	4	310	332	341	403	409	422	440	304	165	205	217	222	234	240	259	323	...	
304	4	246	318	335	342	359	404	415	422	4	144	208	223	230	248	255	313	...	
304	4	318	340	348	411	417	430	448	304	211	221	233	238	250	256	315	339	...	
304	4	254	324	343	350	407	412	423	438	4	200	225	239	245	304	311	328	...	
304	4	326	348	357	419	425	438	464	304	226	236	248	253	305	311	330	354	...	
304	4	302	332	351	358	419	420	431	438	4	215	240	254	300	319	325	343	...	
304	4	334	356	405	427	433	446	464	304	239	248	301	305	318	324	341	405	...	
304	4	309	340	359	406	423	428	439	446	4	226	232	306	312	338	337	386	...	
304	4	342	404	413	435	441	454	464	512	304	251	301	313	318	330	335	361	416	...
304	4	310	349	408	415	431	436	447	454	4	230	304	318	324	342	349	407	...	
304	4	356	412	421	443	449	502	502	620	304	303	313	325	330	346	351	407	431	...
304	4	359	416	423	439	444	455	502	620	4	250	316	330	336	354	401	419	...	
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304	4	333	404	424	431	447	452	503	510	4	302	328	342	348	406	413	431	...	
304	4	406	428	437	459	505	510	510	636	304	325	335	348	354	418	415	431	455	...
304	4	412	432	439	455	500	511	518	518	4	314	340	354	400	418	425	443	...	
304	4	414	436	445	507	513	526	526	641	304	337	347	400	406	422	427	443	507	...
304	4	420	440	447	503	509	519	526	526	4	326	352	406	412	430	437	455	...	
304	4	420	442	451	513	518	532	532	650	304	349	359	412	418	434	439	455	519	...
304	4	427	447	454	510	515	528	533	633	4	338	404	418	424	442	449	507	...	
304	4	426	446	457	519	525	538	538	663	304	401	411	424	430	446	451	507	531	...
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304	4	439	459	466	522	527	539	546	646	4	402	428	442	448	504	513	531	...	
304	4	438	460	469	531	537	550	550	695	304	427	437	449	454	510	515	531	564	...
304	4	446	465	472	528	533	545	552	622	4	414	440	454	500	518	525	543	...	
304	4	448	468	477	539	545	558	558	616	304	427	447	459	464	520	525	541	604	...
304	4	432	452	461	519	525	538	545	599	4	422	448	462	468	524	533	551	...	
304	4	454	516	525	547	553	605	605	621	304	445	455	507	512	528	533	549	512	...
304	4	501	520	527	543	548	600	607	607	4	432	456	512	518	535	543	601	...	
304	4	503	524	533	555	561	614	614	629	304	457	507	519	524	540	545	601	624	...
304	4	509	528	535	551	556	608	615	615	4	444	510	524	530	546	555	613	...	
304	4	512	533	542	603	609	622	622	637	304	500	519	531	536	552	557	613	636	...
304	4	517	536	543	559	564	616	623	623	4	466	522	538	542	590	607	626	...	
304	4	521	542	551	611	617	630	630	645	304	521	531	543	548	604	608	625	648	...
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304	4	531	551	558	615	629	632	638	638	4	519	545	559	605	623	638	648	...	
304	4	536	556	567	627	633	646	646	702	304	543	553	605	610	626	631	647	709	...
304	4	538	559	568	623	628	639	645	645	4	529	555	569	615	633	640	658	...	
304	4	544	565	574	635	641	654	654	709	304	553	563	615	620	633	638	654	719	...
304	4	547	567	574	631	636	648	651	651	4	541	567	571	621	644	650	706	...	
304	4	552	574	583	643	648	702	702	717	304	588	598	627	632	646	650	705	725	...
304	4	557	577	584	639	643	692	692	726	4	553	618	632	638	655	701	717	...	
304	4	602	624	633	692	696	711	711	726	304	618	628	639	644	657	702	717	737	...
304	4	605	625	632	647	651	700	706	706	4	607	632	645	651	708	714	730	...	
304	4	618	638	647	657	701	710	718	718	304	634	643	654	659	710	715	729	748	...
304	4	615	636	644	705	706	721	721	736	4	624	640	702	708	723	729	745	803	...
304	4	625	648	656	710	714	723	729	729	304	653	702	713	718	729	734	748	808	...
304	4	634	653	708	717	722	735	735	749	4	646	709	722	728	742	748	804	...	
304	4	643	702	709	724	728	737	743	743	304	714	722	733	738	749	754	808	826	...
304	4	648	707	714	731	736	747	747	800	4	709	731	743	748	801	807	822	840	...
304	4	667	716	723	738	742	751	757	757	304	735	743	754	759	810	815	828	845	...
304	4	706	723	730	746	751	802	802	816	4	733	763	805	810	823	828	842	...	
304	4	714	733	740	755	759	808	814	814	4	744	805	817	822	835	841	854	911	...
304	4	728	745	752	807	812	823	823	836	4	759	818	829	834	847	853	866	923	...
304	4	740	757	804	819	824	835	835	848	4	814	832	843	848	858	865	878	935	...
304	4	782	809	816	831	836	847	847	900	4	829	846	857	862	913	919	931	947	...
304	4	742	804	821	826	843	848	859	859	4	843	860	911	916	927	933	945	1001	...
304	4	756	817	834	841	855	890	911	924	4	856	915	920	931	942	948	1000	1016	...
304	4	809	831	847	854	907	912	922	926	4	906	925	935	940	951	957	1009	1025	...
304	4	821	843	859	865	919	924	934	947	4	821	835	845	850	901	907	1019	1035	...
304	4	855	811	916	931	936	946	946	959	4	936	950	1000	1005	1016	1022	1034	1050	...
304	4	907	923	930	943	948	959	959	1011	4	951	1005	1019	1020	1031	1037	1049	1104	...
304	4	919	935	942	955	1000	1008	1008	1023	4	1059	1020	1030	1035	1046	1052	1104	1119	...
304	4	931	947	954	1007	1012	1021	1021	1034	4	1021	1035	1045	1050	1101	1107	1119	1133	...
304	4	945	1002	1008	1020	1024	1033	1033	1049	4	1039	1050	1100	1104	1115	1120	1132	1146	...
304	4	959	1014	1020	1032	1036	1045	1045	1059	4	1051	1103	1114	1118	1129	1134	1146	1160	...
304	4	952	1011	1025	1044	1048	1057												



# LINES 4-304 EASTBOUND

## SATURDAY SCHEDULE

# WESTBOUND

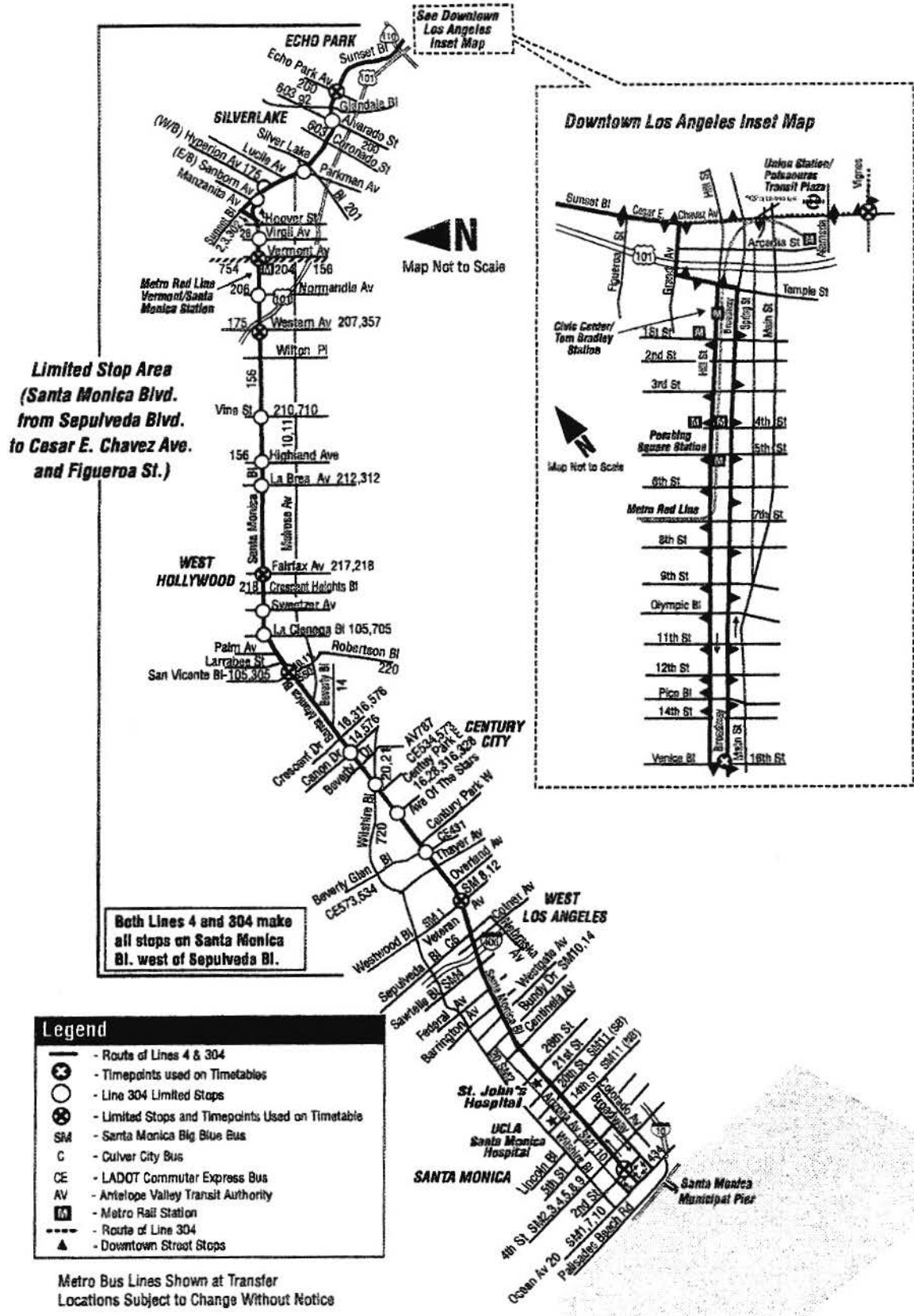
LINE	STOP	400A	421A	432A	437A	448A	453A	501A	513A	440A	458A	502A	506A	517A	522A	534A	548A
SANTA MONICA 2nd & Santa Monica	4	400A	421A	432A	437A	448A	453A	501A	513A	440A	458A	502A	506A	517A	522A	534A	548A
	4	440	455	466	511	523	527	535	547	4	500	522	531	536	548	548	558
SANTA MONICA & WESTWOOD (W-1)	4	485	510	521	526	536	542	550	562	4	523	537	546	551	563	568	572
	4	530	549	551	556	566	572	580	592	4	539	552	561	569	576	582	586
PESQUERA Santa Monica & San Vicente	4	525	549	551	556	566	572	580	592	4	533	547	556	561	563	568	572
	4	540	564	566	571	581	587	595	607	4	537	550	559	564	566	571	575
SANTA MONICA & WESTWOOD	4	540	564	566	571	581	587	595	607	4	540	554	563	568	570	575	579
	4	560	584	586	591	601	607	615	627	4	544	557	566	571	573	578	582
SANTA MONICA & WESTWOOD	4	560	584	586	591	601	607	615	627	4	544	557	566	571	573	578	582
	4	580	604	606	611	621	627	635	647	4	548	561	570	575	577	582	586
SANTA MONICA & WESTWOOD	4	580	604	606	611	621	627	635	647	4	552	565	574	579	581	586	590
	4	600	624	626	631	641	647	655	667	4	556	569	578	583	585	590	594
SANTA MONICA & WESTWOOD	4	600	624	626	631	641	647	655	667	4	560	573	582	587	589	594	598
	4	620	644	646	651	661	667	675	687	4	564	577	586	591	593	598	602
SANTA MONICA & WESTWOOD	4	620	644	646	651	661	667	675	687	4	568	581	590	595	597	602	606
	4	640	664	666	671	681	687	695	707	4	572	585	594	599	601	606	610
SANTA MONICA & WESTWOOD	4	640	664	666	671	681	687	695	707	4	576	589	598	603	605	610	614
	4	660	684	686	691	701	707	715	727	4	580	593	602	607	609	614	618
SANTA MONICA & WESTWOOD	4	660	684	686	691	701	707	715	727	4	584	597	606	611	613	618	622
	4	680	704	706	711	721	727	735	747	4	588	601	610	615	617	622	626
SANTA MONICA & WESTWOOD	4	680	704	706	711	721	727	735	747	4	592	605	614	619	621	626	630
	4	700	724	726	731	741	747	755	767	4	596	609	618	623	625	630	634
SANTA MONICA & WESTWOOD	4	700	724	726	731	741	747	755	767	4	600	613	622	627	629	634	638
	4	720	744	746	751	761	767	775	787	4	604	617	626	631	633	638	642
SANTA MONICA & WESTWOOD	4	720	744	746	751	761	767	775	787	4	608	621	630	635	637	642	646
	4	740	764	766	771	781	787	795	807	4	612	625	634	639	641	646	650
SANTA MONICA & WESTWOOD	4	740	764	766	771	781	787	795	807	4	616	629	638	643	645	650	654
	4	760	784	786	791	801	807	815	827	4	620	633	642	647	649	654	658
SANTA MONICA & WESTWOOD	4	760	784	786	791	801	807	815	827	4	624	637	646	651	653	658	662
	4	780	804	806	811	821	827	835	847	4	628	641	650	655	657	662	666
SANTA MONICA & WESTWOOD	4	780	804	806	811	821	827	835	847	4	632	645	654	659	661	666	670
	4	800	824	826	831	841	847	855	867	4	636	649	658	663	665	670	674
SANTA MONICA & WESTWOOD	4	800	824	826	831	841	847	855	867	4	640	653	662	667	669	674	678
	4	820	844	846	851	861	867	875	887	4	644	657	666	671	673	678	682
SANTA MONICA & WESTWOOD	4	820	844	846	851	861	867	875	887	4	648	661	670	675	677	682	686
	4	840	864	866	871	881	887	895	907	4	652	665	674	679	681	686	690
SANTA MONICA & WESTWOOD	4	840	864	866	871	881	887	895	907	4	656	669	678	683	685	690	694
	4	860	884	886	891	901	907	915	927	4	660	673	682	687	689	694	698
SANTA MONICA & WESTWOOD	4	860	884	886	891	901	907	915	927	4	664	677	686	691	693	698	702
	4	880	904	906	911	921	927	935	947	4	668	681	690	695	697	702	706
SANTA MONICA & WESTWOOD	4	880	904	906	911	921	927	935	947	4	672	685	694	699	701	706	710
	4	900	924	926	931	941	947	955	967	4	676	689	698	703	705	710	714
SANTA MONICA & WESTWOOD	4	900	924	926	931	941	947	955	967	4	680	693	702	707	709	714	718
	4	920	944	946	951	961	967	975	987	4	684	697	706	711	713	718	722
SANTA MONICA & WESTWOOD	4	920	944	946	951	961	967	975	987	4	688	701	710	715	717	722	726
	4	940	964	966	971	981	987	995	1007	4	692	705	714	719	721	726	730
SANTA MONICA & WESTWOOD	4	940	964	966	971	981	987	995	1007	4	696	709	718	723	725	730	734
	4	960	984	986	991	1001	1007	1015	1027	4	700	713	722	727	729	734	738
SANTA MONICA & WESTWOOD	4	960	984	986	991	1001	1007	1015	1027	4	704	717	726	731	733	738	742
	4	980	1004	1006	1011	1021	1027	1035	1047	4	708	721	730	735	737	742	746
SANTA MONICA & WESTWOOD	4	980	1004	1006	1011	1021	1027	1035	1047	4	712	725	734	739	741	746	750
	4	1000	1024	1026	1031	1041	1047	1055	1067	4	716	729	738	743	745	750	754
SANTA MONICA & WESTWOOD	4	1000	1024	1026	1031	1041	1047	1055	1067	4	720	733	742	747	749	754	758
	4	1020	1044	1046	1051	1061	1067	1075	1087	4	724	737	746	751	753	758	762
SANTA MONICA & WESTWOOD	4	1020	1044	1046	1051	1061	1067	1075	1087	4	728	741	750	755	757	762	766
	4	1040	1064	1066	1071	1081	1087	1095	1107	4	732	745	754	759	761	766	770
SANTA MONICA & WESTWOOD	4	1040	1064	1066	1071	1081	1087	1095	1107	4	736	749	758	763	765	770	774
	4	1060	1084	1086	1091	1101	1107	1115	1127	4	740	753	762	767	769	774	778
SANTA MONICA & WESTWOOD	4	1060	1084	1086	1091	1101	1107	1115	1127	4	744	757	766	771	773	778	782
	4	1080	1104	1106	1111	1121	1127	1135	1147	4	748	761	770	775	777	782	786
SANTA MONICA & WESTWOOD	4	1080	1104	1106	1111	1121	1127	1135	1147	4	752	765	774	779	781	786	790
	4	1100	1124	1126	1131	1141	1147	1155	1167	4	756	769	778	783	785	790	794
SANTA MONICA & WESTWOOD	4	1100	1124	1126	1131	1141	1147	1155	1167	4	760	773	782	787	789	794	798
	4	1120	1144	1146	1151	1161	1167	1175	1187	4	764	777	786	791	793	798	802
SANTA MONICA & WESTWOOD	4	1120	1144	1146	1151	1161	1167	1175	1187	4	768	781	790	795	797	802	806
	4	1140	1164	1166	1171	1181	1187	1195	1207	4	772	785	794	799	801	806	810
SANTA MONICA & WESTWOOD	4	1140	1164	1166	1171	1181	1187	1195	1207	4	776	789	798	803	805	810	814
	4	1160	1184	1186	1191	1201	1207	1215	1227	4	780	793	802	807	809	814	818
SANTA MONICA & WESTWOOD	4	1160	1184	1186	1191	1201	1207	1215	1227	4	784	797	806	811	813	818	822
	4	1180	1204	1206	1211	1221	1227	1235	1247	4	788	801	810	815	817	822	826
SANTA MONICA & WESTWOOD	4	1180	1204	1206	1211	1221	1227	1235	1247	4	792	805	814	819	821	826	830
	4	1200	1224	1226	1231	1241	1247	1255	1267</								

**LINES 4-304 EASTBOUND**

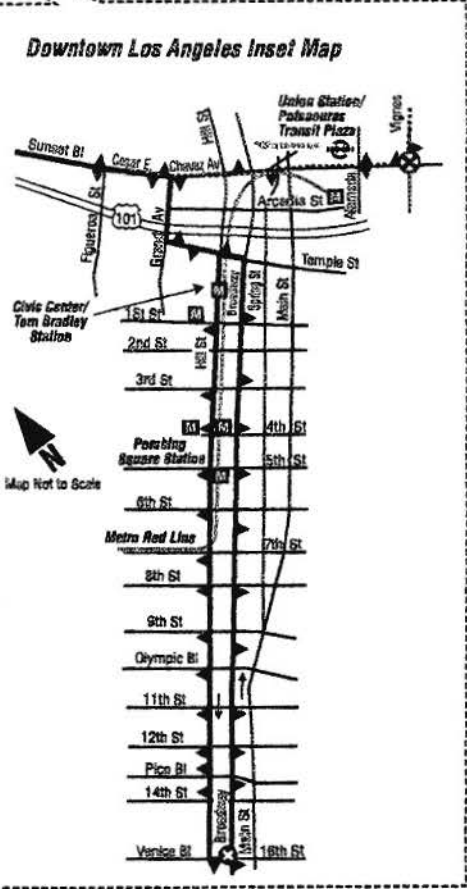
Sunday schedule will be operated on New Year's Day, Memorial Day, Independence Day, Labor Day, Thanksgiving Day and Christmas Day.

**WESTBOUND**

LN	ST	CS	CR	LN	ST	CS	CR											
	SANTA MONICA 2nd & Santa Monica				LOS ANGELES Venice & Broadway													
	Santa Monica & Westwood (Note 1)				Vigars & Cesar E. Chavez													
	WEST HOLLYWOOD Santa Monica & San Vicente				ECHO PARK Sunset & Echo Park													
	Santa Monica & Fairfax				Santa Monica & Vermont													
	Santa Monica & Western				Santa Monica & Western													
	Santa Monica & Vermont				ECHO PARK Sunset & Echo Park													
	Cesar E. Chavez & Vigars				LOS ANGELES Venice & Broadway													
					Vigars & Cesar E. Chavez													
					ECHO PARK Sunset & Echo Park													
					Santa Monica & Vermont													
					Santa Monica & Western													
					Santa Monica & Fairfax													
					WEST HOLLYWOOD Santa Monica & San Vicente													
					Santa Monica & Westwood (Note 2)													
					SANTA MONICA 2nd & Santa Monica													
4	408A	429A	436A	441A	453A	457A	505A	517A	4	438A	452A	600A	604A	616A	620A	632A	646A	
4	438	455	606	611	623	627	636	647	4	603	619	629	634	645	650	663	679	629
4	508	625	638	641	653	657	667	679	4	623	639	649	654	666	671	684	641	641
4	535	653	667	612	623	627	637	651	4	644	659	669	674	683	688	701	644	701
4	605	623	637	642	653	657	667	681	4	603	619	629	634	646	651	664	621	664
4	636	653	707	712	723	727	737	751	4	626	645	655	660	672	677	690	626	690
4	659	717	731	736	747	751	801	815	4	638	653	703	708	720	725	738	638	738
304	725	743	756	801	810	814	823	838A	4	652	706	718	723	735	742	755	706	755
4	737	765	809	815	826	830	841	856	304	713	721	736	734	745	749	809	713	809
304	753	813	826	831	840	844	853	868	4	713	739	740	745	758	804	817	713	804
4	819	833	839	850	854	855	865	879	304	734	742	752	756	807	811	822	734	811
4	813	833	846	851	900	904	913	928	4	735	792	802	807	829	826	839	813	826
4	838	852	858	910	915	926	931	949	304	756	804	814	819	829	833	844	838	844
304	833	853	906	911	920	924	933	949	4	765	814	824	829	842	846	901	833	846
4	856	912	916	930	935	946	951	1000	304	818	826	836	840	851	855	907	856	907
4	852	913	926	931	940	944	953	1000	4	817	836	846	851	864	910	923	852	910
4	918	932	938	950	955	1006	1011	1020	304	838	846	857	901	912	916	926	918	926
304	911	933	945	951	1000	1004	1013	1020	4	835	864	906	911	924	930	944	911	930
4	934	948	955	1008	1013	1024	1024	1038A	304	857	905	917	921	932	936	948	934	948
304	922A	944A	958A	1033A	1018A	1019A	1028A	1039A	4	855	914	926	931	944	950	1004	922	950
Then Line 4 service operates approximately every 18 minutes between Santa Monica & Westwood to Venice & Broadway. Line 304 service operates approximately every 15 minutes between 2nd & Santa Monica to Vigars & Cesar Chavez until...								Then Line 4 service operates approximately every 18 minutes between Venice & Broadway to Santa Monica & Westwood. Line 304 service operates approximately every 15 minutes between Vigars & Cesar Chavez to 2nd & Santa Monica until...										
304	148P	218P	228P	231P	245P	250P	307P	324P	304	917	925	937	941	952	956	1008	917	1008
4	205	228	236	252	257	269	307P	324P	4	915	934	946	951	1004	1010	1024	915	1024
304	201	226	241	248	305	315	322	336	304	936	944	956	1000	1011	1015	1027	936	1046
4	224	243	251	307	312	324	336	353	4	932	951	1003	1008	1021	1027	1041	932	1041
304	216	240	256	261	315	320	330	337	304	950A	1000	1012	1016	1027	1031	1043	950A	1102A
4	239	259	269	308	322	327	339	353	4	948A	1007A	1019A	1022A	1037A	1043A	1057A	948A	1057A
304	231	255	311	316	330	335	345	352	Then Line 4 service operates approximately every 18 minutes between Venice & Broadway to Santa Monica & Westwood. Line 304 service operates approximately every 15 minutes between Vigars & Cesar Chavez to 2nd & Santa Monica until...									
4	254	313	321	337	342	354	408	408	4	159P	222P	225P	241P	257P	303P	319P	159P	319P
304	246	310	320	331	345	350	408	407	304	221P	231	244	249	302	307	320	246	320
4	309	328	338	352	357	409	423	423	4	215	238	251	257	312	318	333	309	333
304	301	325	341	346	400	405	415	422	304	236	246	259	304	317	322	335	301	335
4	325	343	351	407	412	424	438	438	4	230	253	266	312	327	333	348	325	348
304	316	345	358	401	415	420	430	437	304	251	301	314	319	332	337	350	316	407
4	339	358	405	422	427	439	453	453	4	245	298	321	327	342	348	403	339	403
304	331	355	411	416	430	435	445	452	304	305	315	328	333	346	351	404	331	421
4	354	413	421	437	442	454	468	468	4	300	323	326	342	357	403	418	354	418
304	348	410	426	431	445	450	500	507	304	321	331	344	349	402	407	420	348	437
4	428	436	452	457	509	515	523	523	4	316	338	351	357	412	418	433	428	433
304	401	425	441	448	506	505	515	522	304	335	348	359	404	417	422	435	401	452
4	424	443	451	507	512	524	538	538	4	331	353	406	412	427	433	448	424	452
304	416	440	456	501	515	520	530	537	304	351	401	414	419	432	437	450	416	507
4	439	458	506	522	527	539	553	553	4	346	406	421	427	442	448	503	439	503
304	431	455	511	516	530	535	545	552	304	405	415	428	433	446	451	504	431	504
4	454	513	521	537	542	554	608	608	4	401	423	436	442	457	503	518	454	518
304	447	511	527	532	546	551	600	606	304	421	431	444	449	502	507	520	447	520
4	510	529	537	553	558	609	622	622	4	416	438	451	457	512	518	533	510	533
304	502	526	542	547	561	565	614	620	304	436	446	459	504	517	522	535	502	535
4	527	545	552	608	613	624	637	640	4	431	453	506	512	527	533	548	527	548
304	519	543	566	591	615	618	628	634	304	451	501	514	519	532	537	550	519	550
4	543	559	606	622	627	638	660	660	4	448	508	521	527	542	548	603	543	603
304	535	558	611	616	629	633	642	648	304	608	616	628	633	646	651	664	535	664
4	558	614	621	637	642	653	706	706	4	601	623	635	641	655	661	676	558	676
304	530	613	625	630	644	648	657	783	304	521	539	542	547	606	602	614	530	631
4	613	629	636	652	657	708	720	720	4	518	537	549	554	607	613	628	613	628
304	605	628	641	645	659	703	712	716	304	537	546	558	562	613	617	629	605	646
4	629	645	652	707	712	722	735	735	4	531	552	604	609	622	626	643	629	643
304	622	645	660	702	714	718	727	733	304	548	569	610	614	625	629	641	622	650
4	648	702	708	722	727	737	750	750	4	547	567	619	624	637	643	658	648	658
304	638	701	714	719	730	734	743	749	304	607	615	627	631	642	648	658	638	716
4	703	719	725	739	744	754	807	807	4	601	621	633	636	651	657	712	703	712
304	657	720	733	737	749	753	802	808	304	618	626	638	642	653	657	709	657	726
4	702	725	741	747	801	806	816	823	4	615	635	647	652	704	710	723	702	723
4	714	73																



Map Not to Scale



See Downtown Los Angeles Inset Map

CENTURY CITY

WEST LOS ANGELES

SANTA MONICA

Santa Monica Municipal Pier

# LINE 212 MONDAY THROUGH FRIDAY SCHEDULE

# NORTHBOUND

Sunday schedule will be operated on New Year's Day, Memorial Day, Independence Day, Labor Day, Thanksgiving Day and Christmas Day.

Route	HAWTHORNE	INGLEWOOD			BALDWIN HILLS				HOLLYWOOD		
	Hawthorne/ I-105 Station	Prairie & Century	Hilcrest & Nutwood	Manches- ter & Market	La Brea & Slauson	La Brea & Rodeo	La Brea & Pico	La Brea & Wilshire	La Brea & Melrose	La Brea & Sunset	Hollywood/ Vine Station
212	....	....	442A	443A	450A	458A	505A	509A	513A	517A	524A
212	....	....	506	507	514	522	529	533	538	542	550
212	....	....	521	522	530	538	547	551	556	560	568
212	....	....	533	534	542	551	600	605	611	615	623
212	....	....	543	544	552	601	610	615	621	625	633
212	....	....	552	553	601	610	619	624	630	636	645
212	551A	556A	....	602	610	619	628	634	641	647	656
212	....	....	607	608	616	625	635	641	648	654	703
312	806	612	....	620	627	635	644	649	653	657	705
212	....	....	619	620	628	639	650	656	703	709	718
312	616	622	....	630	639	647	656	701	705	709	717
212	....	....	629	630	640	651	702	708	715	721	730
312	628	634	....	642	651	659	708	713	717	721	729
212	....	....	641	642	652	703	714	720	727	733	744
312	641	646	....	654	703	711	720	725	729	733	741
212	....	....	653	654	704	715	725	732	739	745	756
312	653	658	....	706	715	723	732	737	741	745	753
212	....	....	705	706	716	727	738	744	751	757	808
312	705	710	....	718	727	735	744	749	753	757	806
212	....	....	....	....	....	739	750	756	803	809	820
312	717	722	....	730	738	747	756	801	807	811	821
212	....	....	729	730	740	751	802	808	815	821	832
312	729	734	....	742	751	759	808	813	819	823	833
212	....	....	....	....	....	803	814	820	827	833	844
312	740	745	....	753	802	811	820	825	831	835	845
212	....	....	753	754	804	815	826	832	839	845	856
312	752	757	....	805	814	823	832	837	843	847	857
212	....	....	....	....	....	829	840	846	853	859	910
312	808	813	....	821	830	839	848	853	859	903	913
212	....	....	823	824	834	845	856	902	909	915	926
212	818	823	....	831	841	852	903	909	916	922	933
212	....	....	....	....	....	901	912	918	925	931	942
212	837	842	....	850	900	910	921	927	934	940	951
212	....	....	858	859	909	919	930	936	943	949	1000
212	855	900	....	908	918	928	939	945	952	958	1009
212	....	....	917	919	928	938	949	955	1002	1008	1019
212	817	923	....	931	941	951	1002	1008	1015	1021	1032
212	....	....	943	944	954	1004	1015	1021	1028	1034	1046
212	944	950	....	958	1008	1018	1029	1035	1043	1049	1101
212	....	....	1013	1014	1024	1034	1044	1050	1058	1104	1116
212	1015	1021	....	1029	1039	1049	1059	1105	1113	1119	1131
212	....	....	1043	1044	1054	1104	1114	1120	1128	1134	1146
212	1045	1051	....	1059	1109	1119	1129	1135	1143	1149	1201P
212	....	....	1113	1114	1124	1134	1144	1150	1158	1205P	1217
212	1115	1121	....	1129	1139	1149	1159	1207P	1215P	1222	1234
212	....	....	1143	1144	1154	1204P	1214P	1222	1230	1237	1249
212	1144	1150	....	1158	1209P	1219	1229	1237	1245	1252	104
212	....	....	1212P	1213P	1224	1234	1244	1252	100	107	119
212	1214P	1220P	....	1228	1239	1249	1259	107	115	122	134
212	....	....	1242	1243	1254	104	114	122	130	137	149
212	1244	1250	....	1258	109	119	129	135	144	151	203
212	....	....	112	113	124	134	144	150	159	206	218
212	113	119	....	127	138	149	159	205	214	221	233
212	....	....	141	142	153	204	214	220	229	236	248
212	144	150	....	157	208	219	229	235	244	251	303
212	....	....	211	212	223	234	244	250	259	306	318
212	213	219	....	226	237	248	258	304	313	320	332
212	....	....	238	239	250	301	311	317	326	333	345
212	236	242	....	249	300	311	321	327	336	343	355
212	....	....	258	259	310	321	331	337	346	353	405
212	255	301	....	309	320	331	341	347	356	403	415
212	....	....	319	320	331	342	352	358	407	415	427
212	318	324	....	332	343	354	404	410	419	427	439
212	....	....	342	343	354	405	416	422	431	439	451
212	342	348	....	356	406	417	428	434	443	451	503
212	....	....	407	408	418	429	440	446	455	503	515
212	406	412	....	420	430	441	452	458	507	515	527
212	....	....	431	432	442	453	504	510	519	527	539
212	430	436	....	444	454	505	516	522	531	539	551
212	....	....	455	456	508	517	528	534	543	551	603
212	457	503	....	511	521	532	543	549	558	606	618
212	515	521	....	529	539	550	601	607	616	623	635
212	534	540	....	548	558	609	620	626	634	642	654
212	553	559	....	607	617	628	639	645	653	701	711
212	614	620	....	628	638	649	700	706	714	722	732
212	637	643	....	651	701	712	723	729	736	742	751
212	708	714	....	721	731	739	748	754	801	807	816
212	739	744	....	751	800	808	817	823	830	834	843
212	808	813	....	820	829	837	846	850	855	859	908
212	839	844	....	851	900	908	917	921	926	930	937
212	....	....	954	955	1002	1010	1016	1020	1024	1028	1035
212	....	....	1054	1055	1102	1110	1116	1120	1124	1128	1135
212	....	....	1154	1155	1202A	1210A	1216A	1220A	1224A	1228A	1235A
212	....	....	1254A	1255A	102	110	116	120	124	128	135

# LINE 212 MONDAY THROUGH FRIDAY SCHEDULE

# SOUTHBOUND

6/27/04

Sunday schedule will be operated on New Year's Day, Memorial Day, Independence Day, Labor Day, Thanksgiving Day and Christmas Day.

Route	HOLLYWOOD						BALDWIN HILLS	INGLEWOOD			HAWTHORNE
	Hollywood/Vine Station	La Brea & Sunset	La Brea & Melrose	La Brea & Wilshire	La Brea & Pico	La Brea & Rodeo	La Brea & Stauson	Manchester & Market	Hillcrest & Hurwood	Prairie & Century	Hawthorne/I-105 Station
212	443A	451A	455A	500A	504A	510A	518A	....	525A	....	....
212	512	521	525	530	534	542	551	....	556	....	....
212	537	549	553	559	603	611	620	....	627	....	....
212	557	609	613	619	623	631	640	647A	....	652A	658A
212	614	626	630	636	640	648	657	....	704	....	....
212	629	641	645	651	655	704	713	723	....	729	736
212	643	656	659	706	712	722	731	....	738	....	....
212	655	707	713	720	726	736	746	756	....	802	809
212	709	721	727	734	740	750	800	....	807	....	....
212	720	732	738	746	752	802	812	822	....	828	835
212	731	744	750	758	804	814	824	....	831	....	....
212	743	756	802	810	816	826	836	846	....	852	859
212	755	808	814	822	828	838	848	....	855	....	....
212	809	822	828	836	842	852	802	912	....	918	925
212	823	836	842	850	856	906	916	....	923	....	....
212	838	851	857	905	911	921	931	941	....	947	954
212	853	906	912	920	926	936	946	....	953	....	....
212	908	921	927	935	941	951	1001	1011	....	1017	1024
212	922	936	942	950	956	1006	1016	....	1023	....	....
212	937	951	957	1005	1011	1021	1031	1040	....	1046	1052
212	952	1006	1012	1020	1026	1036	1046	....	1052	....	....
212	1007	1021	1027	1035	1041	1051	1100	1109	....	1116	1122
212	1022	1036	1042	1050	1056	1106	1115	....	1122	....	....
212	1037	1051	1057	1105	1111	1121	1130	1139	....	1146	1152
212	1052	1106	1112	1120	1126	1136	1145	....	1152	....	....
212	1107	1121	1127	1135	1141	1151	1159	1209P	....	1216P	1224P
212	1122	1136	1142	1150	1156	1206P	1215P	....	1222P	....	....
212	1137	1151	1157	1205P	1211P	1221	1230	1239	....	1246	1254
212	1161	1206P	1212P	1220	1226	1236	1245	....	1252	....	....
212	1206P	1220	1227	1235	1241	1251	1300	1309	....	1316	1324
212	1221	1235	1242	1250	1256	1306	1315	....	1322	....	....
212	1235	1249	1256	1305	1311	1321	1330	1340	....	1346	1353
212	1250	1304	1311	1320	1326	1337	1347	....	1354	....	....
212	1304	1318	1325	1334	1340	1352	1402	1412	....	1418	1425
212	1318	1332	1339	1348	1354	1406	1415	....	1422	....	....
212	1332	1346	1353	1402	1408	1420	1430	1440	....	1446	1453
212	1346	1360	1367	1376	1382	1394	1404	....	1410	....	....
212	1360	1374	1381	1390	1396	1408	1418	1428	....	1434	1441
212	1374	1388	1395	1404	1410	1422	1432	....	1438	....	....
212	1388	1402	1409	1418	1424	1436	1446	....	1452	....	....
212	1402	1416	1423	1432	1438	1450	1460	1470	....	1476	1483
212	1416	1430	1437	1446	1452	1464	1474	....	1480	....	....
212	1430	1444	1451	1460	1466	1478	1488	1498	....	1504	1511
212	1444	1458	1465	1474	1480	1492	1502	....	1508	....	....
212	1458	1472	1479	1488	1494	1506	1516	....	1522	....	....
212	1472	1486	1493	1502	1508	1520	1530	....	1536	....	....
212	1486	1500	1507	1516	1522	1534	1544	....	1550	....	....
212	1500	1514	1521	1530	1536	1548	1558	....	1564	....	....
212	1514	1528	1535	1544	1550	1562	1572	....	1578	....	....
212	1528	1542	1549	1558	1564	1576	1586	....	1592	....	....
212	1542	1556	1563	1572	1578	1590	1600	....	1606	....	....
212	1556	1570	1577	1586	1592	1604	1614	....	1620	....	....
212	1570	1584	1591	1600	1606	1618	1628	....	1634	....	....
212	1584	1598	1605	1614	1620	1632	1642	....	1648	....	....
212	1598	1612	1619	1628	1634	1646	1656	....	1662	....	....
212	1612	1626	1633	1642	1648	1660	1670	....	1676	....	....
212	1626	1640	1647	1656	1662	1674	1684	....	1690	....	....
212	1640	1654	1661	1670	1676	1688	1698	....	1704	....	....
212	1654	1668	1675	1684	1690	1702	1712	....	1718	....	....
212	1668	1682	1689	1698	1704	1716	1726	....	1732	....	....
212	1682	1696	1703	1712	1718	1730	1740	....	1746	....	....
212	1696	1710	1717	1726	1732	1744	1754	....	1760	....	....
212	1710	1724	1731	1740	1746	1758	1768	....	1774	....	....
212	1724	1738	1745	1754	1760	1772	1782	....	1788	....	....
212	1738	1752	1759	1768	1774	1786	1796	....	1802	....	....
212	1752	1766	1773	1782	1788	1800	1810	....	1816	....	....
212	1766	1780	1787	1796	1802	1814	1824	....	1830	....	....
212	1780	1794	1801	1810	1816	1828	1838	....	1844	....	....
212	1794	1808	1815	1824	1830	1842	1852	....	1858	....	....
212	1808	1822	1829	1838	1844	1856	1866	....	1872	....	....
212	1822	1836	1843	1852	1858	1870	1880	....	1886	....	....
212	1836	1850	1857	1866	1872	1884	1894	....	1900	....	....
212	1850	1864	1871	1880	1886	1898	1908	....	1914	....	....
212	1864	1878	1885	1894	1900	1912	1922	....	1928	....	....
212	1878	1892	1899	1908	1914	1926	1936	....	1942	....	....
212	1892	1906	1913	1922	1928	1940	1950	....	1956	....	....
212	1906	1920	1927	1936	1942	1954	1964	....	1970	....	....
212	1920	1934	1941	1950	1956	1968	1978	....	1984	....	....
212	1934	1948	1955	1964	1970	1982	1992	....	1998	....	....
212	1948	1962	1969	1978	1984	1996	2006	....	2012	....	....
212	1962	1976	1983	1992	1998	2010	2020	....	2026	....	....
212	1976	1990	1997	2006	2012	2024	2034	....	2040	....	....
212	1990	2004	2011	2020	2026	2038	2048	....	2054	....	....
212	2004	2018	2025	2034	2040	2052	2062	....	2068	....	....
212	2018	2032	2039	2048	2054	2066	2076	....	2082	....	....
212	2032	2046	2053	2062	2068	2080	2090	....	2096	....	....
212	2046	2060	2067	2076	2082	2094	2104	....	2110	....	....
212	2060	2074	2081	2090	2096	2108	2118	....	2124	....	....
212	2074	2088	2095	2104	2110	2122	2132	....	2138	....	....
212	2088	2102	2109	2118	2124	2136	2146	....	2152	....	....
212	2102	2116	2123	2132	2138	2150	2160	....	2166	....	....
212	2116	2130	2137	2146	2152	2164	2174	....	2180	....	....
212	2130	2144	2151	2160	2166	2178	2188	....	2194	....	....
212	2144	2158	2165	2174	2180	2192	2202	....	2208	....	....
212	2158	2172	2179	2188	2194	2206	2216	....	2222	....	....
212	2172	2186	2193	2202	2208	2220	2230	....	2236	....	....
212	2186	2200	2207	2216	2222	2234	2244	....	2250	....	....
212	2200	2214	2221	2230	2236	2248	2258	....	2264	....	....
212	2214	2228	2235	2244	2250	2262	2272	....	2278	....	....
212	2228	2242	2249	2258	2264	2276	2286	....	2292	....	....
212	2242	2256	2263	2272	2278	2290	2300	....	2306	....	....
212	2256	2270	2277	2286	2292	2304	2314	....	2320	....	....
212	2270	2284	2291	2300	2306	2318	2328	....	2334	....	....
212	2284	2298	2305	2314	2320	2332	2342	....	2348	....	....
212	2298	2312	2319	2328	2334	2346	2356	....	2362	....	....
212	2312	2326	2333	2342	2348	2360	2370	....	2376	....	....
212	2326	2340	2347	2356	2362	2374	2384	....	2390	....	....
212	2340	2354	2361	2370	2376	2388	2398	....	2404	....	....
212	2354	2368	2375	2384	2390	2402	2412	....	2418	....	....
212	2368	2382	2389	2398	2404	2416	2426	....	2432	....	....
212	2382	2396	2403	2412	2418	2430	2440	....	2446	....	....
212	2396	2410	2417	2426	2432	2444	2454	....	2460	....	....
212	2410	2424	2431	2440	2446	2458	2468	....	2474	....	....
212	2424	2438	2445	2454	2460	2472	2482	....	2488	....	....
212	2438	2452	2459	2468	2474	2486	2496	....	2502	....	....
212	2452	2466	2473	2482	2488	2500	2510	....	2516	....	....

# SATURDAY SCHEDULE

No Service Provided via 312 on Saturdays

# NORTHBOUND

<b>HAWTHORNE</b>	<b>INGLEWOOD</b>			<b>BALDWIN HILLS</b>			<b>HOLLYWOOD</b>			
<b>Hawthorne/ I-105 Station</b>	<b>Prairie &amp; Century</b>	<b>Hillcrest &amp; Nutwood</b>	<b>Manchester &amp; Market</b>	<b>La Brea &amp; Slauson</b>	<b>La Brea &amp; Rodeo</b>	<b>La Brea &amp; Pico</b>	<b>La Brea &amp; Wilshire</b>	<b>La Brea &amp; Melrose</b>	<b>La Brea &amp; Sunset</b>	<b>Hollywood/ Vine Station</b>
....	....	538A	541A	546A	554A	600A	604A	608A	612A	619A
....	....	608	611	616	624	630	634	638	642	649
....	....	637	640	645	653	700	704	710	714	722
655A	701A	....	707	714	722	730	734	740	744	752
724	730	....	736	743	751	759	803	809	813	821
749	755	....	801	808	816	824	828	834	838	846
809	815	....	821	828	836	844	848	854	858	906
826	832	....	838	846	854	902	906	913	917	925
843	849	....	855	903	911	919	923	930	934	942
857	903	....	909	918	926	934	938	945	949	957
912	918	....	924	933	941	949	953	1000	1005	1013
930	936	....	942	951	959	1007	1013	1020	1025	1033
950	956	....	1002	1011	1019	1027	1033	1040	1045	1053
1010	1016	....	1022	1031	1039	1047	1053	1100	1105	1113
1030	1036	....	1042	1051	1059	1107	1113	1120	1125	1133
1050	1056	....	1102	1111	1119	1127	1133	1140	1145	1153
1110	1116	....	1122	1131	1139	1147	1153	1159	1205P	1215P
1130	1136	....	1142	1151	1159	1207P	1213P	1220P	1225	1235
1148	1154	....	1159	1209P	1219P	1227	1233	1240	1245	1255
1208P	1214P	....	1220P	1229	1239	1247	1253	100	105	115
1224	1230	....	1236	1245	1255	104	110	117	122	132
1238	1244	....	1250	1259	109	119	125	132	137	149
1253	1259	....	105	114	124	134	139	146	151	203
109	115	....	121	130	139	149	154	201	206	218
124	130	....	136	145	154	204	209	216	221	233
139	145	....	151	200	209	219	224	231	236	248
154	200	....	206	215	224	234	239	246	251	303
209	215	....	221	230	239	249	254	301	306	318
225	231	....	237	246	255	304	309	316	321	333
241	247	....	253	302	311	319	324	331	336	348
256	302	....	308	317	326	334	339	346	351	403
311	317	....	323	332	341	349	354	401	406	418
326	332	....	338	347	356	404	409	416	421	433
341	347	....	353	402	411	419	424	431	436	448
356	402	....	408	417	426	434	439	446	451	503
411	417	....	423	432	441	449	454	501	506	518
430	436	....	442	451	459	507	512	519	524	536
450	456	....	502	511	519	527	532	539	544	556
510	516	....	522	531	539	547	552	559	604	616
532	538	....	544	553	601	609	614	621	626	638
556	602	....	608	617	625	633	638	645	650	702
621	627	....	633	642	650	658	703	710	715	727
648	654	....	700	709	717	725	730	737	742	753
718	724	....	730	739	747	755	759	804	809	818
750	756	....	802	809	817	825	829	834	839	848
822	828	....	834	841	849	855	859	903	907	914
856	901	....	906	911	919	925	929	933	937	944
....	....	954	957	1002	1010	1016	1020	1024	1028	1035
....	....	1054	1057	1102	1110	1116	1120	1124	1128	1135
....	....	1154	1157	1202A	1210A	1216A	1220A	1224A	1228A	1235A
....	....	1254A	1257A	102	110	116	120	124	128	135

# SATURDAY SCHEDULE

# SOUTHBOUND

HOLLYWOOD						BALDWIN HILLS	INGLEWOOD			HAWTHORNE
Hollywood/ Vine Station	La Brea & Sunset	La Brea & Melrose	La Brea & Wilshire	La Brea & Pico	La Brea & Rodeo	La Brea & Slauson	Manchester & Market	Hillcrest & Nutwood	Prairie & Century	Hawthorne/ I-105 Station
531A	539A	544A	549A	553A	559A	606A	612A	....	616A	621A
612	620	625	630	634	640	647	653	....	657	702
642	650	655	700	704	711	720	726	....	731	737
709	719	724	730	734	741	750	756	....	801	807
739	749	754	800	804	811	820	826	....	831	837
809	819	824	830	834	841	850	857	....	902	908
837	849	854	900	904	912	921	928	....	934	940
906	918	924	930	935	943	953	1000	....	1006	1012
933	945	951	957	1002	1010	1020	1027	....	1033	1039
957	1009	1015	1021	1026	1034	1044	1051	....	1057	1103
1017	1029	1035	1041	1046	1054	1104	1111	....	1117	1123
1037	1049	1055	1101	1106	1114	1124	1132	....	1138	1144
1057	1109	1115	1121	1126	1134	1144	1152	....	1158	1204P
1115	1128	1134	1141	1146	1154	1204P	1212P	....	1218P	1224
1135	1148	1154	1201P	1206P	1214P	1224	1232	....	1238	1244
1154	1207P	1213P	1221	1226	1234	1244	1252	....	1258	104
1212P	1227	1233	1241	1246	1254	104	112	....	118	124
1230	1247	1253	101	106	114	124	132	....	138	144
1250	107	113	121	126	134	144	152	....	158	204
110	127	133	141	146	154	204	212	....	218	224
127	144	150	159	204	212	222	230	....	236	242
144	159	205	214	219	227	237	245	....	251	257
159	214	220	229	234	242	252	300	....	306	312
214	229	235	244	249	257	307	315	....	321	327
228	243	249	258	303	311	321	329	....	335	341
241	256	302	311	316	324	334	341	....	347	353
254	309	315	324	329	337	346	353	....	359	405
307	322	328	336	341	349	358	405	....	411	417
320	335	341	349	354	402	411	418	....	424	430
333	348	354	402	407	415	424	431	....	437	443
347	402	408	416	421	429	438	445	....	451	457
401	416	422	430	435	443	452	459	....	505	511
418	431	437	445	450	458	507	514	....	520	526
431	446	452	500	505	513	522	529	....	535	541
446	501	507	515	520	528	537	544	....	550	556
501	516	522	530	535	543	552	559	....	605	611
518	533	539	545	550	558	607	614	....	620	626
533	548	554	600	605	613	622	629	....	635	641
548	603	609	615	620	628	637	644	....	650	656
605	620	626	632	637	645	654	701	....	707	713
626	640	646	652	657	705	714	721	....	727	733
648	702	708	714	719	727	736	743	....	749	755
712	726	732	738	743	751	759	805	....	811	817
737	751	756	802	807	814	822	828	....	834	840
804	816	821	827	832	839	847	853	....	859	905
829	841	846	852	857	903	910	916	....	922	928
901	912	917	922	926	932	939	....	945	....	....
932	943	948	952	956	1002	1009	....	1015	....	....
1008	1016	1020	1024	1028	1034	1041	....	1047	....	....
1058	1106	1110	1114	1118	1124	1131	....	1137	....	....
1158	1206A	1210A	1214A	1218A	1224A	1231A	....	1237A	....	....
1258A	106	110	114	118	124	131	....	137	....	....
158	206	210	214	218	224	231	....	237	....	....

# SUNDAY AND HOLIDAY SCHEDULE

# NORTHBOUND

No Service Provided via 312 on Sundays and Holidays  
 Sunday and holiday schedule will be operated on New Year's Day, Memorial Day,  
 Independence Day, Labor Day, Thanksgiving Day and Christmas Day.

<b>HAWTHORNE</b>	<b>INGLEWOOD</b>			<b>BALDWIN HILLS</b>			<b>HOLLYWOOD</b>			
<b>Hawthorne/ I-105 Station</b>	<b>Prairie &amp; Century</b>	<b>Hillcrest &amp; Nutwood</b>	<b>Manchester &amp; Market</b>	<b>La Brea &amp; Slauson</b>	<b>La Brea &amp; Rodeo</b>	<b>La Brea &amp; Pico</b>	<b>La Brea &amp; Wilshire</b>	<b>La Brea &amp; Melrose</b>	<b>La Brea &amp; Sunset</b>	<b>Hollywood/ Vine Station</b>
....	....	537A	540A	545A	553A	559A	603A	608A	612A	620A
....	....	619	622	627	636	642	646	651	655	703
647A	653A	....	659	705	714	722	726	732	736	744
726	732	....	738	744	753	801	805	811	815	824
801	807	....	813	820	829	837	841	847	851	900
831	837	....	843	850	859	907	911	917	921	930
859	905	....	911	920	929	937	941	947	951	1000
929	935	....	941	950	959	1007	1011	1017	1021	1030
959	1005	....	1011	1020	1029	1037	1041	1047	1051	1100
1028	1034	....	1040	1049	1058	1107	1111	1118	1124	1135
1058	1104	....	1110	1119	1128	1137	1141	1148	1154	1205P
1128	1134	....	1140	1149	1158	1207P	1211P	1218P	1224P	1235
1158	1204P	....	1210P	1219P	1228P	1237	1241	1248	1254	105
1228P	1234	....	1240	1249	1258	107	111	118	124	135
1258	104	....	110	119	128	137	141	148	154	205
128	134	....	140	149	158	207	211	218	224	235
158	204	....	210	219	228	237	241	248	254	305
228	234	....	240	249	258	307	311	318	324	335
258	304	....	310	319	328	337	341	348	354	405
328	334	....	340	349	358	407	411	418	424	435
358	404	....	410	419	428	437	441	448	454	505
430	436	....	442	451	500	507	511	518	524	535
501	507	....	513	521	530	537	541	548	554	605
531	537	....	543	551	600	607	611	618	624	635
610	616	....	622	630	638	645	649	656	702	713
655	701	....	707	714	722	729	733	739	745	756
745	751	....	757	804	812	818	822	827	832	841
846	852	....	857	902	910	916	920	924	928	935
....	....	954	957	1002	1010	1016	1020	1024	1028	1035
....	....	1054	1057	1102	1110	1116	1120	1124	1128	1135
....	....	1154	1157	1202A	1210A	1216A	1220A	1224A	1228A	1235A
....	....	1254A	1257A	102	110	116	120	124	128	135



# SUNDAY AND HOLIDAY SCHEDULE

# SOUTHBOUND

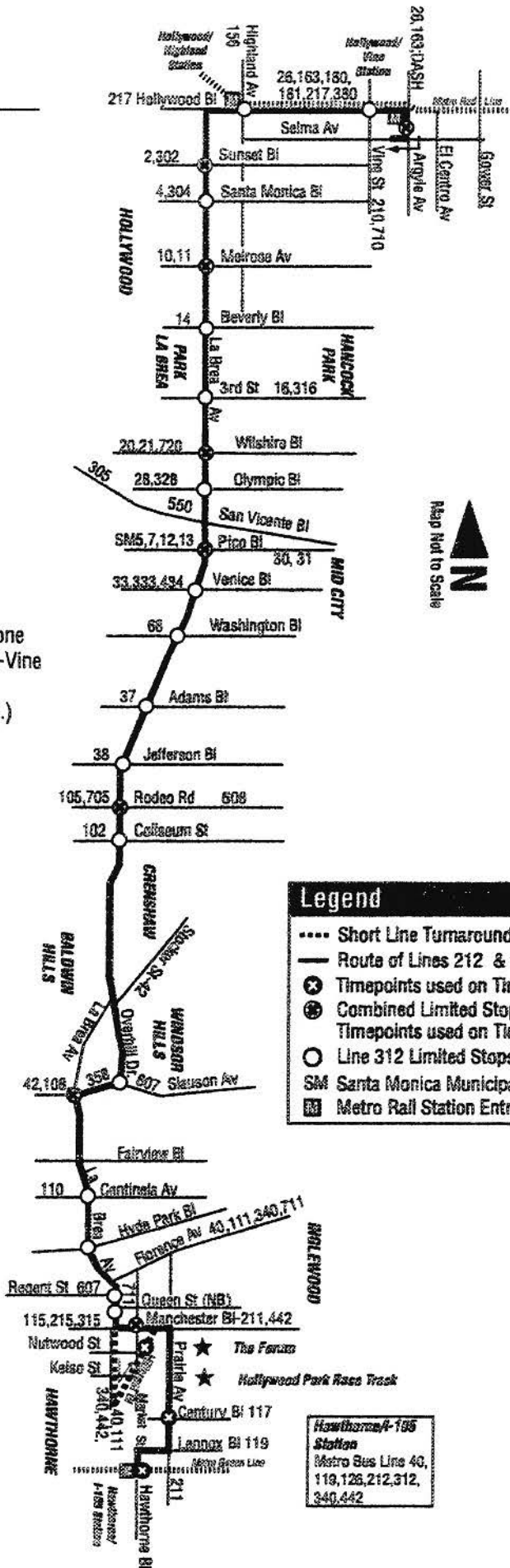
No Service Provided via 312 on Sundays and Holidays  
 Sunday and holiday schedule will be operated on New Year's Day, Memorial Day,  
 Independence Day, Labor Day, Thanksgiving Day and Christmas Day.

HOLLYWOOD					BALDWIN HILLS		INGLEWOOD		HAWTHORNE	
Hollywood/ Vine Station	La Brea & Sunset	La Brea & Melrose	La Brea & Wilshire	La Brea & Pico	La Brea & Rodeo	La Brea & Slauson	Manchester & Market	Hillcrest & Nutwood	Prairie & Century	Hawthorne/ I-105 Station
541A	550A	554A	559A	603A	609A	618A	626A	....	630A	636A
631	642	646	651	655	701	710	718	....	723	729
719	730	734	739	743	750	759	807	....	812	818
756	807	811	816	820	827	836	844	....	849	855
832	843	847	852	856	903	912	920	....	925	931
857	909	915	922	926	933	942	950	....	955	1001
926	939	945	952	956	1003	1012	1020	....	1025	1031
955	1009	1015	1022	1027	1034	1043	1051	....	1056	1102
1024	1039	1045	1052	1057	1104	1113	1121	....	1126	1132
1054	1109	1115	1122	1127	1134	1143	1151	....	1156	1202
1124	1139	1145	1152	1157	1204P	1213P	1221P	....	1226P	1232P
1154	1209P	1215P	1222P	1227P	1234	1243	1251	....	1256	102
1224P	1239	1245	1252	1257	104	113	121	....	126	132
1254	109	115	122	127	134	143	151	....	156	202
124	139	145	152	157	204	213	221	....	226	232
154	209	215	222	227	234	243	251	....	256	302
224	239	245	252	257	304	313	321	....	326	332
254	309	315	322	327	334	343	351	....	356	402
324	339	345	352	357	404	413	421	....	426	432
354	409	415	422	427	434	443	451	....	456	502
424	439	445	452	457	504	513	521	....	526	532
454	509	515	522	527	534	543	551	....	556	602
524	539	545	552	557	604	613	621	....	626	632
554	609	615	622	627	634	643	651	....	656	702
624	639	645	652	657	704	712	719	....	724	730
656	709	715	722	727	734	742	749	....	754	800
730	743	749	756	801	807	814	821	....	826	832
815	826	831	836	840	846	853	900	....	905	911
857	908	913	918	922	928	935	....	941	....	....
958	1006	1010	1014	1018	1024	1031	....	1037	....	....
1058	1106	1110	1114	1118	1124	1131	....	1137	....	....
1158	1206A	1210A	1214A	1218A	1224A	1231A	....	1237A	....	....
1258A	106	110	114	118	124	131	....	137	....	....
158	206	210	214	218	224	231	....	237	....	....

Limited Stop Zone  
(From Hollywood-Vine  
Station to  
Manchester Bl.)

Eastern Bus Lines Stations at Transfer Locations  
Subject to Change Without Notice

0311700212



**Legend**

- .... Short Line Turnaround loop
- Route of Lines 212 & 312
- ⊗ Timepoints used on Timetable
- ⊕ Combined Limited Stops and Timepoints used on Timetable
- Line 312 Limited Stops
- SM Santa Monica Municipal Bus Lines
- Ⓜ Metro Rail Station Entrances

**Hawthorne-195  
Station**  
Metro Bus Line 40,  
119, 126, 212, 312,  
340, 442

# LINES 115-315

## MONDAY THROUGH FRIDAY SCHEDULE

No service provided via Line 315 on Saturday, Sundays and Holidays.  
Sunday schedule will be operated on New Year's Day, Memorial Day, Independence Day, Labor Day, Thanksgiving Day and Christmas Day.

# EASTBOUND

ROUTE	PLAYA DEL REY		WESTCHESTER		INGLEWOOD			SOUTH GATE			DOWNEY		NORWALK I-605/I-105 Station
	Pacific & Culver	Manches-ter & Pershing	80th & Emerson	LAX City Bus Center	Manchester & Sepulveda	Manchester & Market	Manchester & Van Ness	Manchester & Broadway	Firestone Blue Line Station	Firestone & Atlantic	Firestone & Garfield	Firestone & Lakewood	
115	....	....	....	....	....	....	442A	459A	456A	503A	....	....	
115	....	....	....	....	....	....	519	519	525	539	543A	559A	
115	....	....	....	....	....	....	535	545	552	607	611	618	
115	....	....	....	....	....	....	556	566	605	613	629	640	
115	....	....	....	....	....	....	596	596	613	622	648	649	
315	....	....	....	802A	906	916	621	629	635	649	663	709	788
115	....	....	....	....	910	921	628	637	646	703	....	....	....
915	....	....	....	....	917	929	636	644	650	704	....	....	....
115	897A	610A	618A	....	922	934	641	652	701	718	722	731	740
315	....	....	....	....	932	945	651	659	706	729	....	....	....
115	....	....	....	....	938	948	656	664	710	733	....	....	....
315	....	....	....	....	960	969	705	714	721	735	739	748	787
115	836	839	847	....	951	963	711	722	731	746	....	....	....
315	....	....	....	....	959	974	720	729	736	750	....	....	....
115	....	....	....	....	966	978	726	737	746	763	....	....	....
315	....	....	....	....	979	993	735	744	751	766	807	816	825
115	796	799	717	....	719	729	735	744	751	806	809	818	827
315	....	....	....	....	721	733	741	752	801	818	822	831	840
115	....	....	....	....	729	744	750	759	805	818	822	831	....
315	....	....	....	....	739	748	756	807	816	833	....	....	....
115	....	....	....	....	744	759	766	814	820	833	837	846	856
315	756	739	747	....	761	803	811	822	831	847	851	860	....
115	....	....	....	....	803	814	821	829	835	848	852	861	911
315	....	....	....	....	805	819	826	837	846	861	865	876	925
115	806	809	817	....	821	833	841	852	901	916	920	930	940
315	....	....	....	....	836	848	856	867	918	931	935	945	955
115	835	838	847	....	851	863	871	882	931	946	950	1000	1010
315	....	....	....	....	866	878	886	897	946	961	965	1015	1025
115	865	868	877	....	891	903	911	922	971	986	990	1041	1051
315	....	....	....	....	906	918	926	937	986	1001	1005	1055	1065
115	895	898	907	....	921	933	941	952	1001	1016	1021	1071	1081
315	....	....	....	....	936	948	956	967	1016	1032	1036	1086	1096
115	935	938	947	....	961	973	981	992	1041	1057	1061	1111	1121
315	....	....	....	....	1004	1017	1025	1036	1086	1102	1106	1156	1166
115	1002	1005	1014	....	1018	1031	1039	1050	1099	1116	1120	1170	1180
315	....	....	....	....	1032	1045	1053	1064	1113	1130	1134	1184	1194
115	1030	1033	1042	....	1046	1059	1067	1078	1127	1144	1148	1198	1208
315	....	....	....	....	1101	1114	1122	1133	1182	1199	1204	1254	1264
115	....	....	....	....	1116	1129	1137	1148	1197	1214	1218	1268	1278
315	....	....	....	....	1131	1144	1152	1203	1212	1229	1234	1284	1294
115	1129	1132	1141	....	1145	1158	1206	1217	1229	1243	1248	1298	1308
315	....	....	....	....	1157	1210	1218	1229	1238	1255	1260	1310	1320
115	....	....	....	....	1202	1212	1223	1231	1280	1297	1302	1352	1362
315	....	....	....	....	1221	1234	1242	1253	1302	1319	1324	1374	1384
115	....	....	....	....	1233	1246	1254	1265	1314	1331	1336	1386	1396
315	1229P	1232P	1241P	....	1245	1258	1267	1278	1327	1344	1349	1399	1409
115	....	....	....	....	1260	1273	1281	1292	1341	1358	1363	1413	1423
315	....	....	....	....	1275	1288	1296	1307	1356	1373	1378	1428	1438
115	....	....	....	....	1290	1303	1311	1322	1371	1388	1393	1443	1453
315	....	....	....	....	1305	1318	1326	1337	1386	1403	1408	1458	1468
115	....	....	....	....	1320	1333	1341	1352	1401	1418	1423	1473	1483
315	....	....	....	....	1335	1348	1356	1367	1416	1433	1438	1488	1498
115	....	....	....	....	1350	1363	1371	1382	1431	1448	1453	1503	1513
315	....	....	....	....	1365	1378	1386	1397	1446	1463	1468	1518	1528
115	....	....	....	....	1380	1393	1401	1412	1461	1478	1483	1533	1543
315	....	....	....	....	1395	1408	1416	1427	1476	1493	1498	1548	1558
115	....	....	....	....	1410	1423	1431	1442	1491	1508	1513	1563	1573
315	....	....	....	....	1425	1438	1446	1457	1506	1523	1528	1578	1588
115	....	....	....	....	1440	1453	1461	1472	1521	1538	1543	1593	1603
315	....	....	....	....	1455	1468	1476	1487	1536	1553	1558	1608	1618
115	....	....	....	....	1470	1483	1491	1502	1551	1568	1573	1623	1633
315	....	....	....	....	1485	1498	1506	1517	1566	1583	1588	1638	1648
115	....	....	....	....	1500	1513	1521	1532	1581	1598	1603	1653	1663
315	....	....	....	....	1515	1528	1536	1547	1596	1613	1618	1668	1678
115	....	....	....	....	1530	1543	1551	1562	1611	1628	1633	1683	1693
315	....	....	....	....	1545	1558	1566	1577	1626	1643	1648	1698	1708
115	....	....	....	....	1560	1573	1581	1592	1641	1658	1663	1713	1723
315	....	....	....	....	1575	1588	1596	1607	1656	1673	1678	1728	1738
115	....	....	....	....	1590	1603	1611	1622	1671	1688	1693	1743	1753
315	....	....	....	....	1605	1618	1626	1637	1686	1703	1708	1758	1768
115	....	....	....	....	1620	1633	1641	1652	1701	1718	1723	1773	1783
315	....	....	....	....	1635	1648	1656	1667	1716	1733	1738	1788	1798
115	....	....	....	....	1650	1663	1671	1682	1731	1748	1753	1803	1813
315	....	....	....	....	1665	1678	1686	1697	1746	1763	1768	1818	1828
115	....	....	....	....	1680	1693	1701	1712	1761	1778	1783	1833	1843
315	....	....	....	....	1695	1708	1716	1727	1776	1793	1798	1848	1858
115	....	....	....	....	1710	1723	1731	1742	1791	1808	1813	1863	1873
315	....	....	....	....	1725	1738	1746	1757	1806	1823	1828	1878	1888
115	....	....	....	....	1740	1753	1761	1772	1821	1838	1843	1893	1903
315	....	....	....	....	1755	1768	1776	1787	1836	1853	1858	1908	1918
115	....	....	....	....	1770	1783	1791	1802	1851	1868	1873	1923	1933
315	....	....	....	....	1785	1798	1806	1817	1866	1883	1888	1938	1948
115	....	....	....	....	1800	1813	1821	1832	1881	1898	1903	1953	1963
315	....	....	....	....	1815	1828	1836	1847	1896	1913	1918	1968	1978
115	....	....	....	....	1830	1843	1851	1862	1911	1928	1933	1983	1993
315	....	....	....	....	1845	1858	1866	1877	1926	1943	1948	1998	2008
115	....	....	....	....	1860	1873	1881	1892	1941	1958	1963	2013	2023
315	....	....	....	....	1875	1888	1896	1907	1956	1973	1978	2028	2038
115	....	....	....	....	1890	1903	1911	1922	1971	1988	1993	2043	2053
315	....	....	....	....	1905	1918	1926	1937	1986	2003	2008	2058	2068
115	....	....	....	....	1920	1933	1941	1952	2001	2018	2023	2073	2083
315	....	....	....	....	1935	1948	1956	1967	2016	2033	2038	2088	2098
115	....	....	....	....	1950	1963	1971	1982	2031	2048	2053	2103	2113
315	....	....	....	....	1965	1978	1986	1997	2046	2063	2068	2118	2128
115	....	....	....	....	1980	1993	2001	2012	2061	2078	2083	2133	2143
315	....	....	....	....	1995	2008	2016	2027	2076	2093	2098	2148	2158
115	....	....	....	....	2010	2023	2031	2042	2091	2108	2113	2163	2173
315	....	....	....	....	2025	2038	2046	2057	2106	2123	2128	2178	2188
115	....	....	....	....	2040	2053	2061	2072	2121	2138	2143	2193	2203
315	....	....	....	....	2055	2068	2076	2087	2136	2153	2158	2208	2218
115	....	....	....	....	2070	2083	2091	2102	2151	2168	2173	2223	2233
315	....	....	....	....	2085	2098	2106	2117	2166	2183	2188	2238	2248
115	....	....	....	....	2100	2113	2121	2132	2181	2198	2203	2253	2263

# LINES 115-315

MONDAY THROUGH FRIDAY SCHEDULE

# WESTBOUND

R O U T E	NORWALK		DOWNEY		SOUTH GATE		Firestone Blue Line Station (Note 1)	INGLEWOOD			WESTCHESTER		PLAYA DEL REY		
	I-605/I-105 Station	Lakewood	& Garfield	& Atlantic	Firestone & Atlantic	Firestone & Atlantic		Manchester & Broadway	Manchester & Van Ness	Manchester & Market	Manchester & Sepulveda	LAX City Bus Center	80th & Emerson	Manchester & Pershing	Manchester & Pershing
115	....	....	....	....	491A	503A	518A	620A	625A	634A	....	837A	547A	551A	
116	....	....	....	....	521	533	549	559	555	564	....	687	517	521	
315	820A	830A	838A	842	854	866	882	892	815	827	631A	....	....	....	
116	837	847	858	858	872	879	895	829	837	848	....	862	....	....	
315	....	....	....	....	811	825	831	848	846	858	702	....	....	....	
116	....	....	....	....	814	829	836	846	854	862	....	708	710	726	
116	....	....	....	....	814	829	836	846	854	862	....	708	710	726	
116	808	816	824	827	841	847	856	782	782	718	718	724	....	....	
116	....	....	....	....	829	844	851	781	789	721	....	724	....	....	
116	....	....	....	....	830	837	847	787	715	727	....	730	....	....	
116	....	....	....	....	833	839	848	788	718	730	....	732	....	....	
315	....	....	....	....	841	855	861	781	716	728	733	....	....	....	
116	....	....	....	....	841	855	861	781	716	728	733	....	....	....	
116	828	838	838	842	858	868	708	716	724	736	....	739	749	784	
116	....	....	....	....	842	858	868	708	716	724	736	....	739	749	784
116	....	....	....	....	842	858	868	708	716	724	736	....	739	749	784
116	....	....	....	....	848	864	872	712	722	730	742	....	....	....	....
315	....	....	....	....	856	868	876	716	726	731	744	748	....	....	....
116	....	....	....	....	857	873	881	721	731	738	751	....	....	....	....
116	....	....	....	....	857	873	881	721	731	738	751	....	....	....	....
315	846	857	866	870	888	898	732	741	747	758	804	....	....	....	....
116	....	....	....	....	873	888	898	747	755	807	....	811	821	826	....
116	....	....	....	....	873	888	898	747	755	807	....	811	821	826	....
116	....	....	....	....	873	888	898	747	755	807	....	811	821	826	....
315	....	....	....	....	878	893	903	752	762	814	....	....	....	....	....
116	....	....	....	....	878	893	903	752	762	814	....	....	....	....	....
116	....	....	....	....	878	893	903	752	762	814	....	....	....	....	....
315	....	....	....	....	881	897	907	755	765	817	....	....	....	....	....
116	....	....	....	....	881	897	907	755	765	817	....	....	....	....	....
116	....	....	....	....	881	897	907	755	765	817	....	....	....	....	....
116	802	814	823	827	843	851	861	801	808	820	....	824	834	838	....
116	817	829	838	842	858	866	876	816	823	835	....	....	....	....	....
116	833	845	854	858	874	882	892	832	839	851	....	....	....	....	....
116	849	861	870	874	890	898	908	848	855	867	....	....	....	....	....
116	865	877	886	890	906	914	924	864	871	883	....	....	....	....	....
116	881	893	902	906	922	930	940	880	887	899	....	....	....	....	....
116	897	909	918	922	938	946	956	896	903	915	....	....	....	....	....
116	913	925	934	938	954	962	972	912	919	931	....	....	....	....	....
116	929	941	950	954	970	978	988	928	935	947	....	....	....	....	....
116	945	957	966	970	986	994	1004	944	951	963	....	....	....	....	....
116	961	973	982	986	1002	1010	1020	960	967	979	....	....	....	....	....
116	977	989	998	1002	1018	1026	1036	976	983	995	....	....	....	....	....
116	993	1005	1014	1018	1034	1042	1052	992	999	1011	....	....	....	....	....
116	1009	1021	1030	1034	1050	1058	1068	1008	1015	1027	....	....	....	....	....
116	1025	1037	1046	1050	1066	1074	1084	1024	1031	1043	....	....	....	....	....
116	1041	1053	1062	1066	1082	1090	1100	1040	1047	1059	....	....	....	....	....
116	1057	1069	1078	1082	1100	1108	1118	1056	1063	1075	....	....	....	....	....
116	1073	1085	1094	1098	1116	1124	1134	1072	1079	1091	....	....	....	....	....
116	1089	1101	1110	1114	1132	1140	1150	1088	1095	1107	....	....	....	....	....
116	1105	1117	1126	1130	1148	1156	1166	1104	1111	1123	....	....	....	....	....
116	1121	1133	1142	1146	1164	1172	1182	1120	1127	1139	....	....	....	....	....
116	1137	1149	1158	1162	1180	1188	1198	1128	1135	1147	....	....	....	....	....
116	1153	1165	1174	1178	1196	1204	1214	1134	1141	1153	....	....	....	....	....
116	1169	1181	1190	1194	1212	1220	1230	1150	1157	1169	....	....	....	....	....
116	1185	1197	1206	1210	1228	1236	1246	1166	1173	1185	....	....	....	....	....
116	1201	1213	1222	1226	1244	1252	1262	1182	1189	1201	....	....	....	....	....
116	1217	1229	1238	1242	1260	1268	1278	1198	1205	1217	....	....	....	....	....
116	1233	1245	1254	1258	1276	1284	1294	1214	1221	1233	....	....	....	....	....
116	1249	1261	1270	1274	1292	1300	1310	1230	1237	1249	....	....	....	....	....
116	1265	1277	1286	1290	1308	1316	1326	1246	1253	1265	....	....	....	....	....
116	1281	1293	1302	1306	1324	1332	1342	1262	1269	1281	....	....	....	....	....
116	1297	1309	1318	1322	1340	1348	1358	1278	1285	1297	....	....	....	....	....
116	1313	1325	1334	1338	1356	1364	1374	1294	1301	1313	....	....	....	....	....
116	1329	1341	1350	1354	1372	1380	1390	1310	1317	1329	....	....	....	....	....
116	1345	1357	1366	1370	1388	1396	1406	1326	1333	1345	....	....	....	....	....
116	1361	1373	1382	1386	1404	1412	1422	1342	1349	1361	....	....	....	....	....
116	1377	1389	1398	1402	1420	1428	1438	1358	1365	1377	....	....	....	....	....
116	1393	1405	1414	1418	1436	1444	1454	1374	1381	1393	....	....	....	....	....
116	1409	1421	1430	1434	1452	1460	1470	1390	1397	1409	....	....	....	....	....
116	1425	1437	1446	1450	1468	1476	1486	1406	1413	1425	....	....	....	....	....
116	1441	1453	1462	1466	1484	1492	1502	1422	1429	1441	....	....	....	....	....
116	1457	1469	1478	1482	1500	1508	1518	1438	1445	1457	....	....	....	....	....
116	1473	1485	1494	1498	1516	1524	1534	1454	1461	1473	....	....	....	....	....
116	1489	1501	1510	1514	1532	1540	1550	1470	1477	1489	....	....	....	....	....
116	1505	1517	1526	1530	1548	1556	1566	1486	1493	1505	....	....	....	....	....
116	1521	1533	1542	1546	1564	1572	1582	1502	1509	1521	....	....	....	....	....
116	1537	1549	1558	1562	1580	1588	1598	1518	1525	1537	....	....	....	....	....
116	1553	1565	1574	1578	1596	1604	1614	1534	1541	1553	....	....	....	....	....
116	1569	1581	1590	1594	1612	1620	1630	1550	1557	1569	....	....	....	....	....
116	1585	1597	1606	1610	1628	1636	1646	1566	1573	1585	....	....	....	....	....
116	1601	1613	1622	1626	1644	1652	1662	1582	1589	1601	....	....	....	....	....
116	1617	1629	1638	1642	1660	1668	1678	1600	1607	1619	....	....	....	....	....
116	1633	1645	1654	1658	1676	1684	1694	1616	1623	1635	....	....	....	....	....
116	1649	1661	1670	1674	1692	1700	1710	1632	1639	1651	....	....	....	....	....
116	1665	1677	1686	1690	1708	1716	1726	1648	1655	1667	....	....	....	....	....
116	1681	1693	1702	1706	1724	1732	1742	1664	1671	1683	....	....	....	....	....
116	1697	1709	1718	1722	1740	1748	1758	1680	1687	1699	....	....	....	....	....
116	1713	1725	1734	1738	1756	1764	1774	1696	1703	1715	....	....	....	....	....
116	1729	1741	1750	1754	1772	1780	1790	1712	1719	1731	....	....	....	....	....
116	1745	1757	1766	1770	1788	1796	1806	1728	1735	1747	....	....	....	....	....
116	1761	1773	1782	1786	1804	1812	1822	1744	1751	1763	....	....	....	....	....
116	1777	1789	1798	1802	1820	1828	1838	1760	1767	1779	....	....	....	....	....
116	1793	1805	1814	1818	1836	1844	1854	1776	1783	1795	....	....	....	....	....
116	1809	1821	1830	1834	1852	1									

# LINE 115

## SATURDAY SCHEDULE

### EASTBOUND

6/27/04

No service provided via Line 315 on Saturday, Sundays and Holidays.  
 Sunday schedule will be operated on New Year's Day, Memorial Day,  
 Independence Day, Labor Day, Thanksgiving Day and Christmas Day.

PLAYA DEL REY		WESTCHESTER		INGLEWOOD			SOUTH GATE		DOWNNEY	BORWALK	
Pacific & Culver	Manchester & Pershing	89th & Emerson	Manchester & Sepulveda	Manchester & Market	Manchester & Van Ness	Manchester & Broadway	Firestone Blue Line Station	Firestone & Atlantic	Firestone & Garfield	Firestone & Lakewood	I-605/I-105 Station
.....	.....	.....	.....	.....	447A	458A	509A	512A	526A	527A	.....
.....	.....	.....	.....	.....	530	538	544	555	563	566	574
.....	.....	.....	.....	.....	512	520	522	542	546	554	564
.....	.....	.....	.....	.....	552	558	562	572	578	584	592
.....	.....	.....	.....	.....	714	721	726	732	738	744	752
.....	.....	.....	.....	.....	745	752	757	763	768	774	782
.....	.....	.....	.....	.....	800	807	812	818	824	830	838
.....	.....	.....	.....	.....	825	832	837	843	849	855	862
.....	.....	.....	.....	.....	839	847	852	858	864	870	878
.....	.....	.....	.....	.....	859	867	872	878	884	890	898
.....	.....	.....	.....	.....	919	927	932	938	944	950	958
.....	.....	.....	.....	.....	936	944	949	955	961	967	975
.....	.....	.....	.....	.....	959	967	972	978	984	990	998
.....	.....	.....	.....	.....	1010	1018	1023	1029	1035	1041	1049
.....	.....	.....	.....	.....	1024	1032	1037	1043	1049	1055	1063
.....	.....	.....	.....	.....	1040	1048	1053	1059	1065	1071	1079
.....	.....	.....	.....	.....	1053	1061	1066	1072	1078	1084	1092
.....	.....	.....	.....	.....	1067	1075	1080	1086	1092	1098	1106
.....	.....	.....	.....	.....	1081	1089	1094	1100	1106	1112	1120
.....	.....	.....	.....	.....	1095	1103	1108	1114	1120	1126	1134
.....	.....	.....	.....	.....	1107	1115	1120	1126	1132	1138	1146
.....	.....	.....	.....	.....	1121	1129	1134	1140	1146	1152	1160
.....	.....	.....	.....	.....	1135	1143	1148	1154	1160	1166	1174
.....	.....	.....	.....	.....	1149	1157	1162	1168	1174	1180	1188
.....	.....	.....	.....	.....	1163	1171	1176	1182	1188	1194	1202
.....	.....	.....	.....	.....	1177	1185	1190	1196	1202	1208	1216
.....	.....	.....	.....	.....	1191	1199	1204	1210	1216	1222	1230
.....	.....	.....	.....	.....	1205	1213	1218	1224	1230	1236	1244
.....	.....	.....	.....	.....	1219	1227	1232	1238	1244	1250	1258
.....	.....	.....	.....	.....	1233	1241	1246	1252	1258	1264	1272
.....	.....	.....	.....	.....	1247	1255	1260	1266	1272	1278	1286
.....	.....	.....	.....	.....	1261	1269	1274	1280	1286	1292	1300
.....	.....	.....	.....	.....	1275	1283	1288	1294	1300	1306	1314
.....	.....	.....	.....	.....	1289	1297	1302	1308	1314	1320	1328
.....	.....	.....	.....	.....	1303	1311	1316	1322	1328	1334	1342
.....	.....	.....	.....	.....	1317	1325	1330	1336	1342	1348	1356
.....	.....	.....	.....	.....	1331	1339	1344	1350	1356	1362	1370
.....	.....	.....	.....	.....	1345	1353	1358	1364	1370	1376	1384
.....	.....	.....	.....	.....	1359	1367	1372	1378	1384	1390	1398
.....	.....	.....	.....	.....	1373	1381	1386	1392	1398	1404	1412
.....	.....	.....	.....	.....	1387	1395	1400	1406	1412	1418	1426
.....	.....	.....	.....	.....	1401	1409	1414	1420	1426	1432	1440
.....	.....	.....	.....	.....	1415	1423	1428	1434	1440	1446	1454
.....	.....	.....	.....	.....	1429	1437	1442	1448	1454	1460	1468
.....	.....	.....	.....	.....	1443	1451	1456	1462	1468	1474	1482
.....	.....	.....	.....	.....	1457	1465	1470	1476	1482	1488	1496
.....	.....	.....	.....	.....	1471	1479	1484	1490	1496	1502	1510
.....	.....	.....	.....	.....	1485	1493	1498	1504	1510	1516	1524
.....	.....	.....	.....	.....	1499	1507	1512	1518	1524	1530	1538
.....	.....	.....	.....	.....	1513	1521	1526	1532	1538	1544	1552
.....	.....	.....	.....	.....	1527	1535	1540	1546	1552	1558	1566
.....	.....	.....	.....	.....	1541	1549	1554	1560	1566	1572	1580
.....	.....	.....	.....	.....	1555	1563	1568	1574	1580	1586	1594
.....	.....	.....	.....	.....	1569	1577	1582	1588	1594	1600	1608
.....	.....	.....	.....	.....	1583	1591	1596	1602	1608	1614	1622
.....	.....	.....	.....	.....	1597	1605	1610	1616	1622	1628	1636
.....	.....	.....	.....	.....	1611	1619	1624	1630	1636	1642	1650
.....	.....	.....	.....	.....	1625	1633	1638	1644	1650	1656	1664
.....	.....	.....	.....	.....	1639	1647	1652	1658	1664	1670	1678
.....	.....	.....	.....	.....	1653	1661	1666	1672	1678	1684	1692
.....	.....	.....	.....	.....	1667	1675	1680	1686	1692	1698	1706
.....	.....	.....	.....	.....	1681	1689	1694	1700	1706	1712	1720
.....	.....	.....	.....	.....	1695	1703	1708	1714	1720	1726	1734
.....	.....	.....	.....	.....	1709	1717	1722	1728	1734	1740	1748
.....	.....	.....	.....	.....	1723	1731	1736	1742	1748	1754	1762
.....	.....	.....	.....	.....	1737	1745	1750	1756	1762	1768	1776
.....	.....	.....	.....	.....	1751	1759	1764	1770	1776	1782	1790
.....	.....	.....	.....	.....	1765	1773	1778	1784	1790	1796	1804
.....	.....	.....	.....	.....	1779	1787	1792	1798	1804	1810	1818
.....	.....	.....	.....	.....	1793	1801	1806	1812	1818	1824	1832
.....	.....	.....	.....	.....	1807	1815	1820	1826	1832	1838	1846
.....	.....	.....	.....	.....	1821	1829	1834	1840	1846	1852	1860
.....	.....	.....	.....	.....	1835	1843	1848	1854	1860	1866	1874
.....	.....	.....	.....	.....	1849	1857	1862	1868	1874	1880	1888
.....	.....	.....	.....	.....	1863	1871	1876	1882	1888	1894	1902
.....	.....	.....	.....	.....	1877	1885	1890	1896	1902	1908	1916
.....	.....	.....	.....	.....	1891	1899	1904	1910	1916	1922	1930
.....	.....	.....	.....	.....	1905	1913	1918	1924	1930	1936	1944
.....	.....	.....	.....	.....	1919	1927	1932	1938	1944	1950	1958
.....	.....	.....	.....	.....	1933	1941	1946	1952	1958	1964	1972
.....	.....	.....	.....	.....	1947	1955	1960	1966	1972	1978	1986
.....	.....	.....	.....	.....	1961	1969	1974	1980	1986	1992	2000
.....	.....	.....	.....	.....	1975	1983	1988	1994	2000	2006	2014
.....	.....	.....	.....	.....	1989	1997	2002	2008	2014	2020	2028
.....	.....	.....	.....	.....	2003	2011	2016	2022	2028	2034	2042
.....	.....	.....	.....	.....	2017	2025	2030	2036	2042	2048	2056
.....	.....	.....	.....	.....	2031	2039	2044	2050	2056	2062	2070
.....	.....	.....	.....	.....	2045	2053	2058	2064	2070	2076	2084
.....	.....	.....	.....	.....	2059	2067	2072	2078	2084	2090	2098
.....	.....	.....	.....	.....	2073	2081	2086	2092	2098	2104	2112
.....	.....	.....	.....	.....	2087	2095	2100	2106	2112	2118	2126
.....	.....	.....	.....	.....	2101	2109	2114	2120	2126	2132	2140
.....	.....	.....	.....	.....	2115	2123	2128	2134	2140	2146	2154
.....	.....	.....	.....	.....	2129	2137	2142	2148	2154	2160	2168
.....	.....	.....	.....	.....	2143	2151	2156	2162	2168	2174	2182
.....	.....	.....	.....	.....	2157	2165	2170	2176	2182	2188	2196
.....	.....	.....	.....	.....	2171	2179	2184	2190	2196	2202	2210
.....	.....	.....	.....	.....	2185	2193	2198	2204	2210	2216	2224
.....	.....	.....	.....	.....	2199	2207	2212	2218	2224	2230	2238
.....	.....	.....	.....	.....	2213	2221	2226	2232	2238	2244	2252
.....	.....	.....	.....	.....	2227	2235	2240	2246	2252	2258	2266
.....	.....	.....	.....	.....	2241	2249	2254	2260	2266	2272	2280
.....	.....	.....	.....	.....	2255	2263	2268	2274	2280	2286	2294
.....	.....	.....	.....	.....	2269	2277	2282	2288	2294	2300	2308
.....	.....	.....	.....	.....	2283	2291	2296	2302	2308	2314	2322
.....	.....	.....	.....	.....	2297	2305	2310	2316	2322	2328	2336
.....	.....	.....	.....	.....	2311	2319	2324	2330	2336	2342	2350
.....	.....	.....	.....	.....	2325	2333	2338	2344	2350	2356	2364
.....	.....	.....	.....	.....	2339	2347	2352	2358	2364	2370	2378
.....	.....	.....	.....	.....	2353	2361	2366	2372	2378	2384	2392
.....	.....	.....	.....	.....	2367	2375	2380	2386	2392	2398	2406
.....	.....	.....	.....	.....	2381	2389	2394	2400	2406	2412	2420
.....	.....	.....	.....	.....	2395	2403	2408	2414	2420	2426	2434
.....	.....	.....	.....	.....	2409	2417	2422	2428	2434	2440	2448
.....	.....	.....	.....	.....	2423	2431	2436	2442	2448	2454	2462
.....	.....	.....	.....	.....	2437	2445	2450	2456	2462	2468	2476
.....	.....	.....	.....	.....	2451	2459	2464	2470	2476	2482	2490
.....	.....	.....	.....	.....	2465	2473	2478	2484	2490	2496	2504
.....	.....	.....	.....	.....	2479	2487	2492	2498	2504	2510	2518
.....	.....	.....	.....	.....	2493	2501	2506	2512	2518	2524	2532
.....	.....	.....	.....	.....	2507	2515	2520	2526	2532	2538	2546
.....	.....	.....	.....	.....	2521	2529	2534	2540	2546	2552	

**LINE 115**

**SUNDAY AND HOLIDAY SCHEDULE**

**EASTBOUND**

PLAYA DEL REY		WESTCHESTER		INGLEWOOD			SOUTH GATE		DOWNEY	NORWALK	
Pacific & Culver	Manchester & Pershing	30th & Emerson	Manchester & Sepulveda	Manchester & Market	Manchester & Van Ness	Manchester & Broadway	Firestone Blue Line Station	Firestone & Atlantic	Firestone & Garfield	Firestone & Lakewood	i-605/I-105 Station
602A	604A	611A	644A	652A	658A	607A	614A	626A	629A	635A	642A
632	634	641	644	652	658	637	644	656	658	705	712
702	704	711	714	722	728	707	714	726	728	735	742
732	734	741	744	752	758	737	744	756	758	805	812
801	803	810	813	821	828	807	814	826	828	837	845
828	831	838	841	851	858	837	844	856	858	901	915
901	901	908	911	921	928	907	914	926	928	931	945
941	944	951	954	964	972	951	958	970	972	981	985
1001	1004	1011	1014	1024	1031	1010	1017	1029	1031	1040	1045
1041	1044	1051	1054	1064	1071	1050	1057	1069	1071	1080	1085
1120	1123	1130	1134	1144	1151	1130	1137	1149	1151	1160	1165
1159	1202P	1209P	1213P	1223P	1230	1209	1216	1228	1230	1240	1245
1238P	1241	1248	1252	1262	1269	1248	1255	1267	1269	1278	1283
118	121	128	132	143	150	129	136	148	150	160	165
158	201	208	212	223	230	209	216	228	230	240	245
238	241	248	252	263	270	249	256	268	270	280	285
318	321	328	332	343	350	329	336	348	350	360	365
358	401	408	412	423	430	409	416	428	430	440	445
438	441	448	452	463	470	449	456	468	470	480	485
518	522	531	535	545	552	531	538	550	552	562	567
618	613	622	626	636	643	622	629	641	643	652	657
702	705	714	718	728	735	714	721	733	735	744	749
802	805	814	818	828	835	814	821	833	835	844	849
837	840	849	853	863	870	849	856	868	870	880	885
920	923	930	934	944	951	930	937	949	951	960	965
1000	1003	1010	1014	1024	1031	1010	1017	1029	1031	1040	1045
1100	1103	1110	1114	1124	1131	1110	1117	1129	1131	1140	1145

**LINE 115**

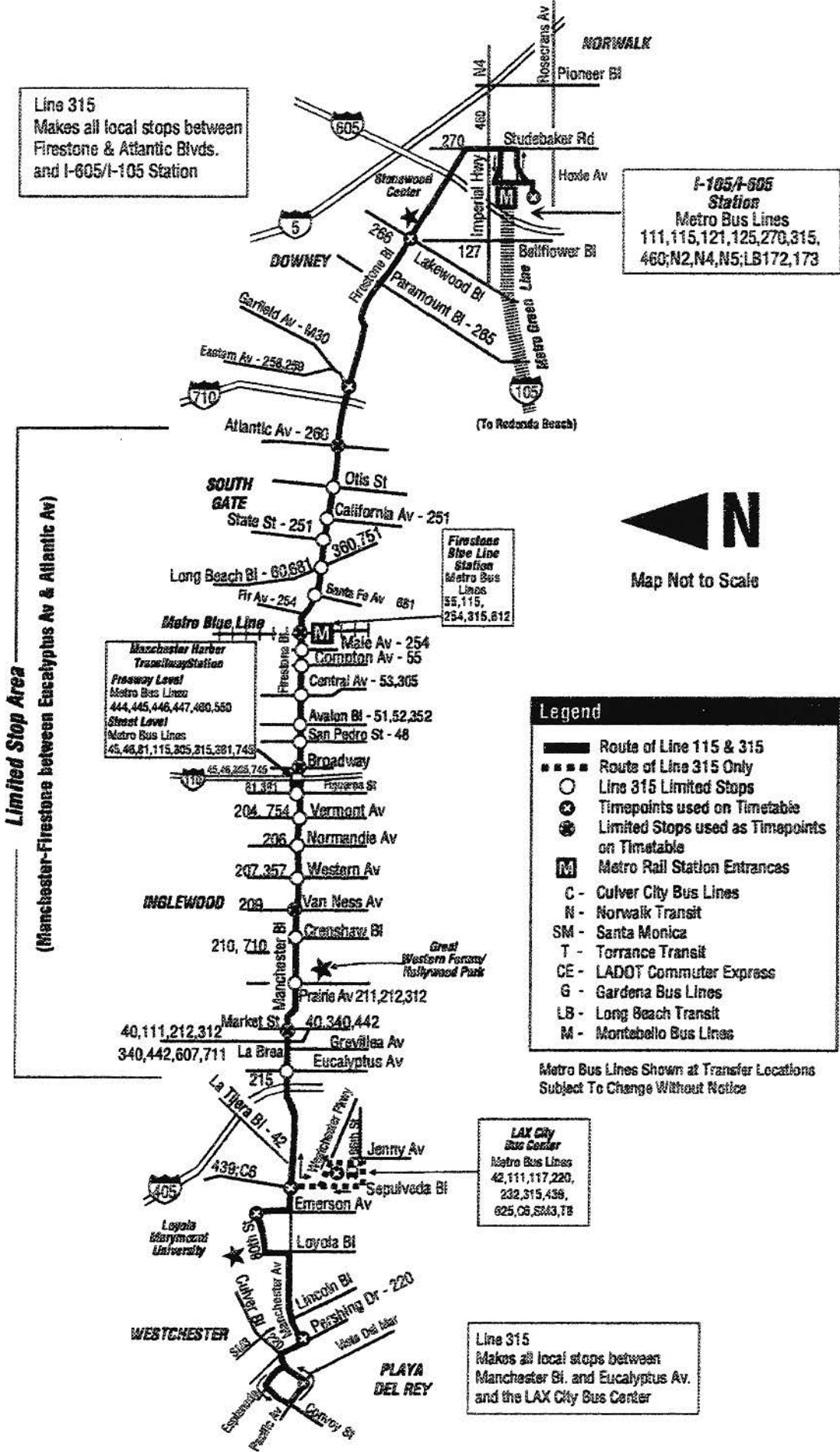
**SUNDAY AND HOLIDAY SCHEDULE**

**WESTBOUND**

NORWALK	DOWNEY	SOUTH GATE		INGLEWOOD			WESTCHESTER		PLAYA DEL REY		
i-605/I-105 Station	Firestone & Lakewood	Firestone & Garfield	Firestone & Atlantic	Firestone Blue Line Station	Manchester & Broadway	Manchester & Van Ness	Manchester & Market	Manchester & Sepulveda	30th & Emerson	Manchester & Pershing	Pacific & Culver
600A	609A	617A	620A	632A	637A	644A	649A	658A	601A	608A	613A
656	706	714	647	657	664	671	678	687	631	638	643
726	736	744	647	657	664	671	678	687	631	638	643
756	806	814	647	657	664	671	678	687	631	638	643
826	836	844	647	657	664	671	678	687	631	638	643
856	906	914	647	657	664	671	678	687	631	638	643
933	943	951	647	657	664	671	678	687	631	638	643
1013	1023	1031	647	657	664	671	678	687	631	638	643
1053	1103	1111	647	657	664	671	678	687	631	638	643
1113	1123	1131	647	657	664	671	678	687	631	638	643
1133	1143	1151	647	657	664	671	678	687	631	638	643
1152	1203P	1211P	647	657	664	671	678	687	631	638	643
1212P	1223	1231	647	657	664	671	678	687	631	638	643
1232	1243	1251	647	657	664	671	678	687	631	638	643
1252	133	141	647	657	664	671	678	687	631	638	643
112	123	131	647	657	664	671	678	687	631	638	643
132	143	151	647	657	664	671	678	687	631	638	643
152	203	211	647	657	664	671	678	687	631	638	643
212	223	231	647	657	664	671	678	687	631	638	643
232	243	251	647	657	664	671	678	687	631	638	643
252	303	311	647	657	664	671	678	687	631	638	643
312	323	331	647	657	664	671	678	687	631	638	643
334	345	353	647	657	664	671	678	687	631	638	643
353	404	413	647	657	664	671	678	687	631	638	643
413	424	433	647	657	664	671	678	687	631	638	643
433	444	453	647	657	664	671	678	687	631	638	643
453	504	513	647	657	664	671	678	687	631	638	643
515	526	535	647	657	664	671	678	687	631	638	643
537	548	557	647	657	664	671	678	687	631	638	643
609	611	619	647	657	664	671	678	687	631	638	643
624	635	643	647	657	664	671	678	687	631	638	643
649	709	708	647	657	664	671	678	687	631	638	643
714	725	733	647	657	664	671	678	687	631	638	643
744	755	803	647	657	664	671	678	687	631	638	643
806	817	825	647	657	664	671	678	687	631	638	643
901	911	919	647	657	664	671	678	687	631	638	643
949	959	1007	647	657	664	671	678	687	631	638	643
1048	1058	1107	647	657	664	671	678	687	631	638	643

Line 315  
Makes all local stops between  
Firestone & Atlantic Blvds.  
and I-605/I-105 Station

**I-105/I-605  
Station**  
Metro Bus Lines  
111,115,121,125,270,315,  
460;N2,N4,N5;LB172,173



Limited Stop Area  
(Manchester-Firestone between Eucalyptus Av & Atlantic Av)

**N**  
Map Not to Scale

**Legend**

- Routes of Line 115 & 315
- Routes of Line 315 Only
- Line 315 Limited Stops
- ⊗ Timepoints used on Timetable
- ⊙ Limited Stops used as Timepoints on Timetable
- M Metro Rail Station Entrances
- C - Culver City Bus Lines
- N - Norwalk Transit
- SM - Santa Monica
- T - Torrance Transit
- CE - LADOT Commuter Express
- G - Gardena Bus Lines
- LB - Long Beach Transit
- M - Montebello Bus Lines

Metro Bus Lines Shown at Transfer Locations  
Subject To Change Without Notice

**LAX City  
Bus Center**  
Metro Bus Lines  
42,111,117,220,  
232,315,439,  
625,C6,SMA3,78

Line 315  
Makes all local stops between  
Manchester Bi. and Eucalyptus Av.  
and the LAX City Bus Center

# LINE 16-316

## MONDAY THROUGH FRIDAY SCHEDULE

♿ All service on this timetable is accessible to the disabled.

Sunday schedule will be operated on New Year's Day, Memorial Day, Independence Day, Labor Day, Thanksgiving Day and Christmas Day.

### EASTBOUND

### WESTBOUND

R o u t e	BEVERLY HILLS		HANCOCK PARK		WESTLAKE				DOWNTOWN LOS ANGELES			R o u t e	DOWNTOWN LOS ANGELES		WESTLAKE			HANCOCK PARK		BEVERLY HILLS	
	Century City (Note 1)	Santa Monica & Canon	George Burns & 3rd	3rd & Lo Brea	3rd & Western	3rd & Vermont	3rd & Alvarado	6th & St. Pauli (Note 2)	6th & Central	6th & Central (Note 3)	6th & St. Pauli		3rd & Alvarado	3rd & Vermont	3rd & Western	3rd & Lo Brea	George Burns & 3rd	Santa Monica & Canon	Century City (Note 4)		
16	....	....	424A	431A	438A	442A	448A	454A	504A	16	405A	416A	421A	426A	430A	435A	442A	447A	454A		
16	....	....	440	447	454	458	504	510	520	16	440	451	456	501	505	510	517	522	529		
16	....	....	452	459	506	510	518	522	532	16	510	521	526	531	535	540	547	552	559		
16	462A	459A	....	510	517	521	527	533	543	16	536	541	546	551	555	600	609	615	622		
16	....	....	513	520	527	531	537	543	553	16	548	559	565	612	618	624	633	639	646		
16	512	519	....	530	537	541	547	553	604	16	557	609	616	622	626	634	643	649	656		
16	....	....	530	537	544	548	554	600	611	316	607	619	624	629	634	640	649	656	706		
16	....	....	535	542	549	553	559	606	617	16	612	625	632	639	645	652	701	...	...		
16	....	....	539	546	553	557	604	611	622	16	617	630	637	644	650	657	706	713	722		
16	....	....	542	549	556	600	607	614	625	316	625	638	643	648	653	700	711	...	...		
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316	627	634	....	647	654	659	703	708	710	316	821	835	840	845	850	858	909	917	927		
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16	....	....	....	....	712	718	725	739	...	316	....	910	922	927	932	940	951	...	...		
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16	....	....	403	417	426	431	438	463	....	316	537	551	557	602	607	615	628	....	....	....
316	352	403	....	....	424	432	437	442	447	459	16	....	542	559	606	612	620	633	....	....
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16	....	....	436	450	458	504	511	526	....	16	550	604	613	620	625	634	647	....	....	....
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16	....	....	465	499	507	513	520	526	540	....	16	....	602	619	626	632	640	653	....	....
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16	....	....	493	507	516	521	528	543	....	316	605	619	625	630	635	643	656	....	....	....
16	439	450	....	....	511	519	525	532	547	....	16	....	611	629	635	641	649	702	....	....
16	....	....	500	514	522	528	535	550	....	16	....	614	631	638	644	652	704	....	....	....
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16	....	....	509	522	530	536	543	558	....	16	615	629	638	645	651	659	710	....	....	....
316	408	509	....	....	530	538	543	548	553	605	16	619	633	642	649	655	703	712	719	728
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16	....	....	519	533																

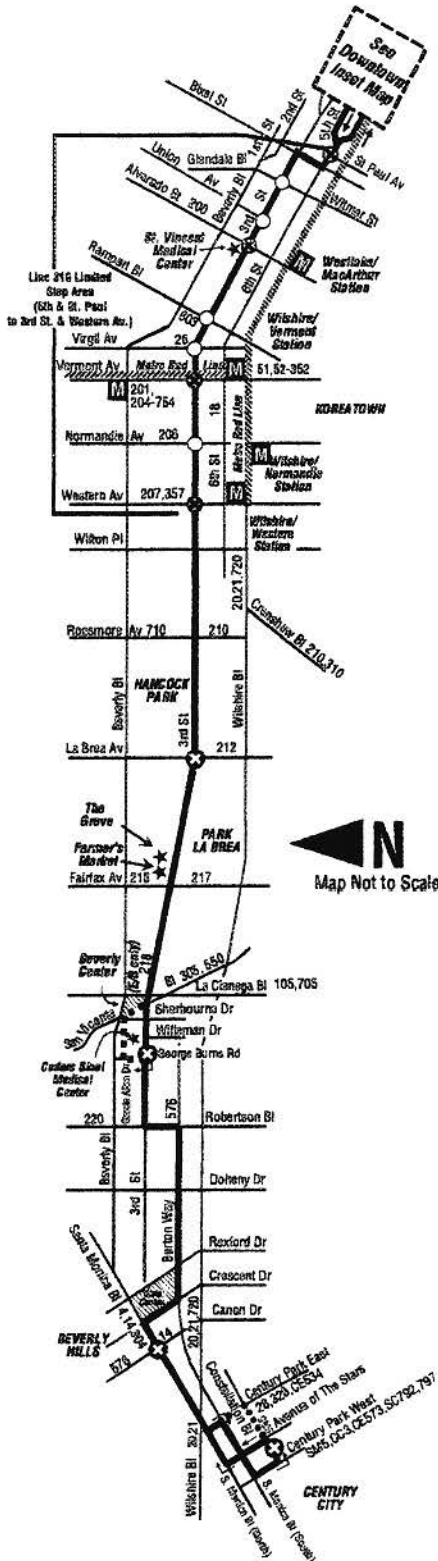


**EASTBOUND**

Independence Day, Labor Day, Thanksgiving Day And Christmas Day.  
Line 316 does not operate on Sundays or Holidays listed above.

**WESTBOUND**

Century City (Note 1)	BEVERLY HILLS		HANCOCK PARK		WESTLAKE			DOWNTOWN LOS ANGELES			DOWNTOWN LOS ANGELES			HANCOCK PARK			BEVERLY HILLS		Century City (Note 4)
	Santa Monica & Canon	George Burns & 3rd	3rd & La Brea	3rd & Western	3rd & Vermont	3rd & Alvarado	3rd & St. Paul (Note 2)	6th & Central	6th & Central	St. Paul (Note 3)	3rd & Alvarado	3rd & Vermont	3rd & Western	3rd & La Brea	George Burns & 3rd	Santa Monica & Canon			
453A	808A	808A	810A	816A	820A	828A	838A	484A	413A	417A	421A	424A	429A	435A	.....	.....			
536	843	849	853	858	863	872	881	444	453	457	461	464	469	476	.....	.....			
618	818	824	826	833	839	848	857	414	423	427	431	434	439	446	.....	.....			
819A	826A	838	844	848	853	859	869	544	553	557	561	565	571	576	.....	.....			
.....	846	856	862	867	873	879	889	611	621	625	631	635	641	647	654	700			
881	890	910	917	922	928	934	944	641	651	655	661	665	671	676	711	717	724	730	
.....	717	726	732	737	743	749	800	701	711	716	721	726	731	737	744	750	.....	.....	
721	720	740	747	752	758	764	815	721	731	736	741	746	751	756	.....	.....	.....	.....	
.....	747	756	762	767	773	779	830	741	751	756	761	766	771	776	810	819	827	834	
746	753	806	814	819	825	831	842	755	766	771	776	781	786	821	827	835	.....	.....	
.....	818	826	831	837	843	854	.....	810	822	827	832	837	843	853	859	866	868	868	
808	816	829	837	842	848	854	866	829	839	843	848	853	859	867	.....	.....	.....	.....	
.....	832	840	848	853	859	865	876	841	853	858	864	869	875	822	830	837	837	837	
829	837	850	858	863	870	876	887	855	867	873	879	884	890	824	830	839	.....	.....	
.....	852	861	869	874	881	887	898	870	882	888	894	899	905	828	834	843	843	843	
880	888	912	920	925	932	938	949	821	833	839	845	850	856	860	866	870	.....	.....	
.....	925	933	941	946	953	959	1008	832	844	850	856	860	866	870	876	880	880	880	
921	929	943	951	956	963	969	1010	842	854	860	866	870	876	880	886	890	890	890	
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.....	1011	1021	1029	1035	1042	1048	1081	880	892	898	904	909	915	920	926	930	930	930	
.....	1020	1030	1038	1044	1051	1057	1091	890	902	908	914	919	924	930	936	940	940	940	
1016	1023	1039	1047	1053	1060	1067	1101	900	912	918	924	929	935	940	946	950	950	950	
.....	1037	1048	1055	1102	1109	1116	1128	910	922	928	934	939	945	950	956	960	960	960	
1033	1041	1067	1105	1111	1118	1125	1137	.....	1114	1130	1136	1142	1149	1158	.....	.....	.....	.....	
.....	1054	1106	1114	1120	1127	1134	1147	1120	1133	1140	1146	1152	1159	1200P	1210P	1221	1221	1221	
.....	1103	1115	1123	1129	1136	1143	1151	.....	1133	1149	1156	1201P	1209P	1220	1230	1230	1230	1230	
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.....	1121	1133	1141	1147	1154	1201P	1215	1147	1159	1207P	1213	1219	1226	1233	1240	1247	1254	1261	
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.....	1147	1159	1207P	1213	1220	1227	1241	1214	1227	1234	1240	1247	1254	1262	1270	1277	1284	1291	
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1196	1205P	1215	1223	1229	1236	1243	1257	1231	1245	1252	1259	1266	1273	1281	1288	1295	1302	1309	
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505	515	534	542	549	556	563	615	249	263	270	277	284	291	298	305	312	319	326	
.....	529	542	550	557	564	571	623	251	265	272	279	286	293	300	307	314	321	328	
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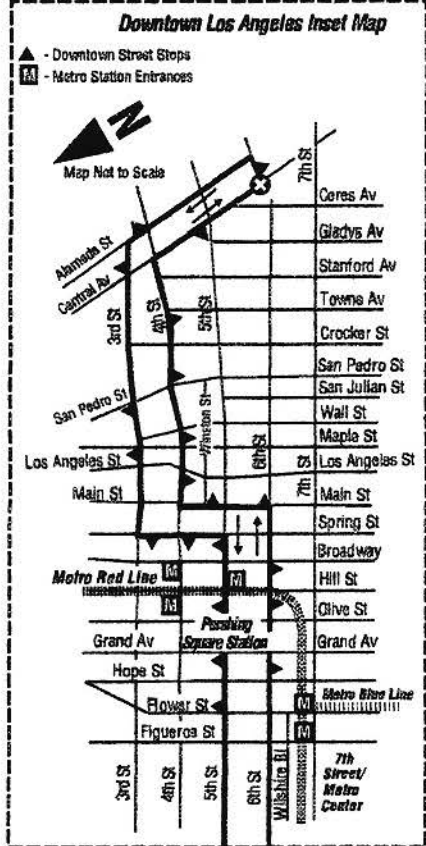


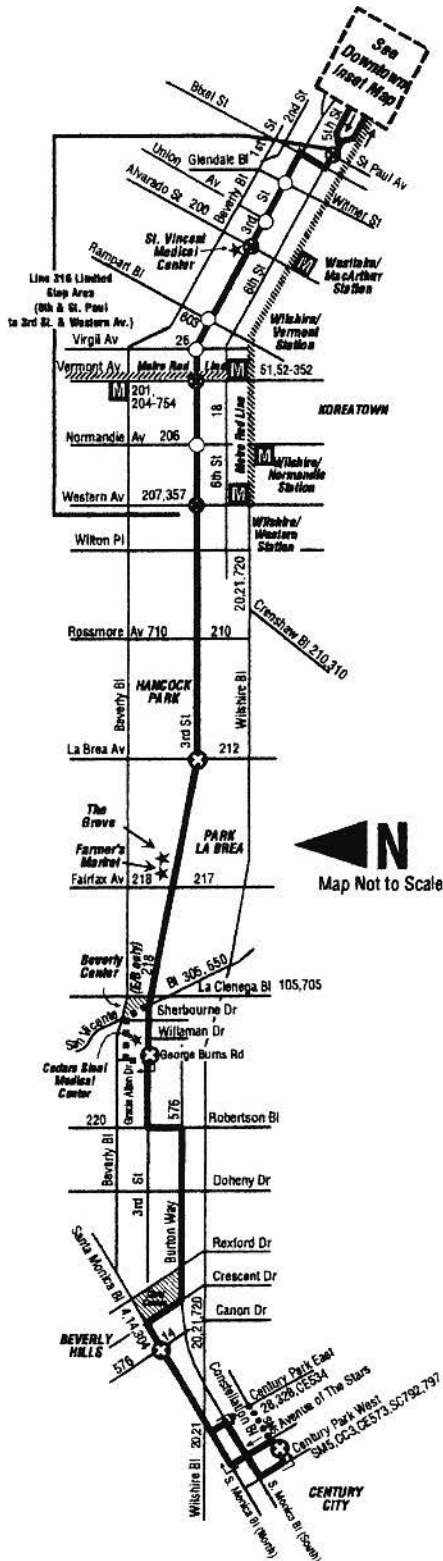
Line 316 has limited stops between 6th & St. Paul and 3rd & Western only.  
Line 316 services all stops otherwise.

### Legend

- - Route of Line 16-316
- ⋮⋮⋮ - Short Line Touraround Loop
- ⊗ - Timepoints used on Timetable
- ⊙ - Limited Stops and Timepoints
- - Limited Stops
- M - Metro Red Line Station Entrances
- CE - LADOT Commuter Express
- CC - Culver City Bus
- SM - Santa Monica Big Blue Bus
- SC - Santa Clarita Transit
- ⋯ - Late night/early morning loop (10pm - 7am)

Metro Bus Lines Shown at Transfer Locations  
Subject to Change Without Notice





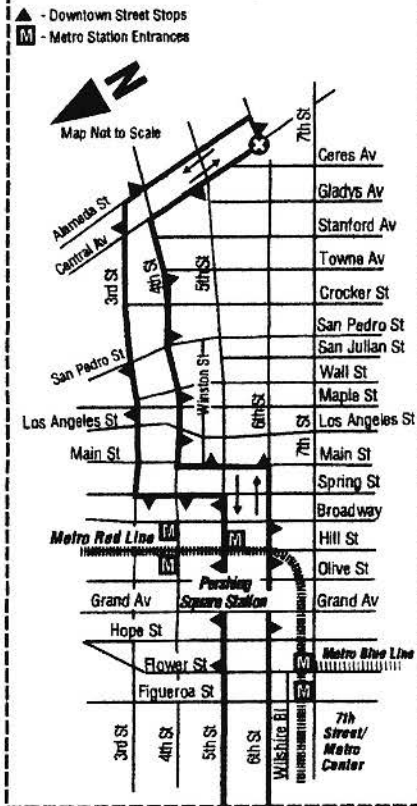
Line 316 has limited stops between 6th & St. Paul and 3rd & Western only.  
Line 316 services all stops otherwise.

**Legend**

- - Route of Line 16-316
- - Short Line Touraround Loop
- ⊗ - Timepoints used on Timetable
- ⊙ - Limited Stops and Timepoints
- - Limited Stops
- M - Metro Red Line Station Entrances
- CE - LADOT Commuter Express
- CC - Culver City Bus
- SM - Santa Monica Big Blue Bus
- SC - Santa Clarita Transit
- - Late night/early morning loop (10pm - 7am)

Metro Bus Lines Shown at Transfer Locations  
Subject to Change Without Notice

**Downtown Los Angeles Inset Map**



**EXHIBIT XXIV**

**MTA, METRO ORANGE LINE  
AUGUST 2004 MONTHLY PROJECT STATUS  
REPORT, SEPTEMBER 23, 2004**

**METRO ORANGE LINE  
AUGUST 2004 MONTHLY PROJECT STATUS REPORT**

**MTA**

A. Alva	99-16-09
D. Armijo	81-01-01
W. Bernsdorf	99-21-03
P. Blackiston	99-16-03
B. Boudreau	99-17-01
D. Brown	99-17-11
J. Brown	99-17-09
W. Brown	99-16-09
R. Brumbaugh	99-24-01
L. Bybee	99-25-15
M. Caldwell	99-24-01
J. Catoe	99-25-02
J. De La Loza	99-22-07
T. Eng	99-10-07
M. Flores	99-21-03
G. Francis	99-11-02
B. Guillemet	99-17-01
L. Harmon	99-16-09
C. Inge	99-22-01
C. Kalu	99-10-07
J. Kawai	99-25-01
J. Kinsel	99-09-04
R. Krishna	99-16-02
D. Longley	99-18-01
G. Lowe	99-23-03
V. Marshall	99-13-08
K. Michel	99-22-09
C. Mitchell	99-12-01
W. Moore	99-17-10
D. Mori	99-17-05
H. Patel	99-16-03
M. Polscheit	99-24-01
N. Racine	99-17-11
K. Sanchez	99-22-05
M. Smith	99-21-02
C. Smouse	99-17-01
R. Snoble	99-25-01
Q. Sumabat	99-16-09
R. Thorpe	99-17-05
C. Aguayo (RMC)	99-PL-05
Library	99-15-01

**IPO**

S. Moini  
M. Van Gessel  
G. Warren

**OIG**

D. Greer 81-5-1

**Board of Supervisors**

S. Bricker  
M. Castillo

**CALTRANS**

L. Wright  
R. Wong

**Div. of Mass Transportation**

D. Jackson  
C. Ruiz

**CTC**

R. Chung



**Metro**

Metropolitan Transportation Authority

One Gateway Plaza  
Los Angeles, CA 90012-2952

213.922.2000 Tel  
metro.net

September 23, 2004

**TO:** DISTRIBUTION

**FROM:** ROGER F. DAMES  
DEPUTY EXECUTIVE OFFICER/PROJECT MANAGER

**SUBJECT:** METRO ORANGE LINE  
AUGUST 2004 MONTHLY PROJECT STATUS REPORT

Enclosed herewith is the August 2004 Monthly Project Status Report. This report contains the Los Angeles County Metropolitan Transportation Authority's representation of the Metro Orange Line project status for the period ending August 27, 2004.

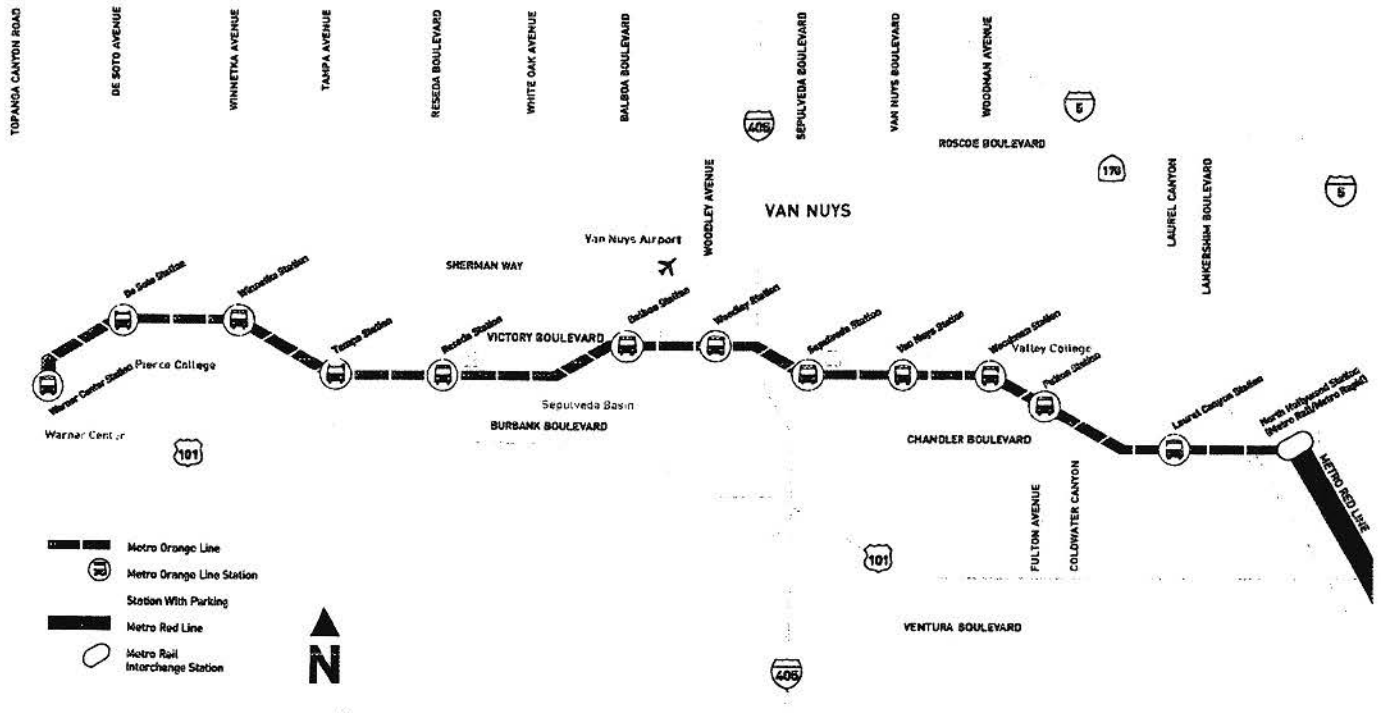
If you have any questions regarding this report or its supporting information, please contact Bill Brown, Project Control Manager at (213) 922-7340.

RD:CS  
Enclosure



# Metro Orange Line

## August 2004



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## PROJECT OVERVIEW

*The Metro Orange Line Project consists of buses operating in exclusive lanes within an approximate thirteen (13) mile stretch on LACMTA right-of-way (ROW) and one (1) mile of mixed flow operation within public streets. Terminal stations are located near the North Hollywood Metro Red Line Subway Station and the planned Warner Center Transit Hub. The Orange Line will have roughly one stop per mile located at major cross streets. Low floor CNG-powered articulated vehicles will be given signal priority at grade and at cross streets, which will reduce end to end travel times between the thirteen (13) stations. With the exception of the Warner Center Transit Hub, all stations will provide platforms for east bound and west bound travel. Warner Center Transit Hub is currently being planned by the City of Los Angeles and will include bus stops for loading/unloading of passengers and layover space on Owensmouth Avenue. Canopies will be provided at all stations. Station equipment and amenities will include ticket vending machines, stand alone validators, benches, bike racks, map case(s), signage, public telephones, closed circuit television cameras and a public address system. Variable message signs will provide real time information on bus arrival times at the respective station. In addition to the existing 915 spaces at the North Hollywood Metro Red Line Subway Station and the 150 parking spaces at the Balboa Park and Ride, the Orange Line will provide approximately 3,240 new parking spaces for the park and ride station locations. Other related project scope includes modifications to an existing Metro bus division, vehicle procurement and implementation of the Universal Fare System (UFS).*

This month the construction effort was stopped by the suspension of work issued to the C0675 Design/Build Contractor due to the California Court of Appeal issuing a temporary stay of the Project on August 2, 2004. The Contractor submitted a Schedule Update that reflects a five-month delay to the Contractor's Contract Substantial Completion Milestone date of June 16, 2005. Based on the forecast delay by the Contractor, the August 2005 Revenue Operations Date appears to be in jeopardy. The MTA has requested a recovery plan from the Contractor. The Contractor's design percent complete is 97.9 % and construction physical percent complete is 37.1%.

To date, the expenditures for the busway portion of the Orange Line are \$118.4 million or 35.9% of the \$329.5 million Original Budget. The expenditures for the bikeway portion are \$1.3 million or 12.8% of the \$10.6 million Current Budget.

All real estate new acquisitions have been acquired and turned over to the C0675 Design/Build Contractor. The number of leases to be terminated for the project is 101 with 99 available to the Contract C0675 Design/Build Contractor. The remaining two leases have been permitted to remain at this time and are under review for final disposition. There is no impact to the Project.

Other Projects providing equipment for the Orange Line Project remain on schedule. Project staff continues to meet with appropriate MTA staff to discuss status of other related projects (managed by other MTA departments) to identify any schedule risks that may result in impact to the Contract C0675 Contract Milestones or to the Orange Line Project Revenue Operation Date. These projects being monitored are Articulated Vehicle Procurement, Advanced Traffic Management System (ATMS), and Universal Fare System (UFS).

## MANAGEMENT ISSUES

**Concern No. 1:** Citizens Organized for Smart Transit (COST) has filed a lawsuit contesting the validity of the Environmental Impact Report of the Metro Orange Line.

**Status/Action** The trial was held on December 20, 2002 and the judge ruled in favor of the MTA. On July 19, 2004 the California Court of Appeal reversed the December 2002 decision of the Los Angeles Superior Court, which had rejected a challenge to the Environmental Impact Report (EIR) for the Orange Line. The Court of Appeal rejected each of the grounds except one. The Court found that the MTA should have studied the possibility of multiple east-west Rapid Bus lines in the San Fernando Valley as an alternative to the Orange Line, and that the failure to do so renders the EIR invalid. The Court of Appeal decision did not enjoin further construction on the Project. On July 30, 2004, the Superior Court denied COST request for Stay of Project citing lack of jurisdiction. On August 2, 2004 the California Court of Appeal issued a temporary stay and the MTA on August 3, 2004, issued a suspension of work to the C0675 Design/Build Contractor. After the temporary stay expired on August 19, 2004, the MTA lifted the suspension of work to the C0675 Design/Build Contractor on August 26, 2004. The MTA filed an appeal to the California Supreme Court regarding the validity of the Project's EIR. The MTA has commenced additional studies of Rapid Bus on east-west streets as requested by the Court of Appeal.

**Concern No. 2:** Park-and-Ride site at Metro Orange Line's western terminus in Warner Center.

**Status/Action** The western terminus at the Warner Center Transit Hub does not currently include parking for Orange Line Project patrons. In February 2004, the MTA Board approved proceeding with negotiations to purchase the Boeing site identified, as the MTA Board preferred option for a park-and-ride site. MTA staff continues to develop a "construction only" procurement package for the park-and-ride scope of work, which includes extending the busway to the new station at the park-and-ride location. As requested by LADOT, LABOE and Councilman Zine's office, the MTA has tentatively agreed to include the widening of Canoga Avenue as part of the Project provided that the City pays the cost of construction. Subject to City Council approval, the widening, which is included in the latest zoning plan, may be funded as part of the Warner Center Specific Fund. Staff continues to prepare an Addendum/Modified Initial Study for the development of a satellite surface park-and-ride lot on MTA-owned property just north of the Boeing property to augment parking to be provided at the Boeing site. MTA staff will request adoption by the MTA Board of the satellite EIR in the near future.

## MANAGEMENT ISSUES

### **Concern No. 3:** Traffic Index (TI) for the busway pavement design

**Status/Action** MTA technical staff determined that the pavement thickness proposed by the C0675 Contractor for Asphalt Concrete (AC) paved segments of the busway is not sufficient to ensure a twenty (20) year design service life under axle loads anticipated from the articulated buses proposed for use on the facility. To rectify this situation, the MTA has issued change orders to the C0675 Design/Build Contractor to modify the pavement design. These changes will ensure the desired design service life, enable MTA Operations staff to budget for maintenance activities and costs, and ensure satisfactory busway service quality. A Contract Modification has been negotiated with the C0675 Design/Build Contractor, approved by the MTA Board and is waiting to be signed by the Contractor.

### **Concern No. 4:** C0675 Design/Build Contractor Schedule Performance

**Status/Action** The C0675 Design/Build Contractor this month submitted a schedule update that forecasts construction progress is five months behind schedule leading to the Contractor's Contract Substantial Completion Milestone date of June 2005. This delay forecast includes a three month forecast delay reported by the Contractor this period due to the Court of Appeal temporary stay of Project on August 2, 2004, which caused the MTA to suspend the Contractor's scope of work. The Contractor's reasons for the additional three-month forecast delay are the inclusion of a 23-day suspension of work period plus schedule ripple effects caused by the stopping of critical station and systems equipment procurements. This schedule is under review by the MTA. The August 2005 Revenue Operations Date appears to be in jeopardy. MTA has requested a recovery plan from the Contractor,

### **Concern No. 5:** Contract No. C0675 Design/Build contaminated soils removal

**Status/Action** There were at least 10 stockpiles of contaminated/non-hazardous soils that were identified for export during this reporting period. However, no soil export was performed because of the California Court of Appeal stay regarding work at the Metro Orange Line. The stay was lifted on August 26 and soils export resumed on August 30. Soils still to be generated will be the result of grading, swale cuts, berm construction and other related construction activities. It is expected that the production rate for soil export of contaminated soil will continue to decrease as newly generated soils are expected to be cleaner than previous excess soils. Contaminated/non-hazardous soil removal activities will remain an integral part of this Project until all grading and landscaping operations are completed.

## MANAGEMENT ISSUES

### Concern No. 6: Soil Contamination and Potential Impact on Project Landscape

**Status/Action** MTA is still in the middle of negotiating with the Contractor on the viability of implementing a three phase landscaping process to ensure plant survivability. The three phases include: (1) sampling and analysis for soil suitability initially at 500-foot sections, then at 100-foot sub-sections; (2) applying appropriate soil amendments prior to planting; (3) soil removal and replacement or plant replacement after landscaping. The first phase will be executed to determine the specific locations where soil amendments will be necessary. Soils agronomic parameters as well as pot culture testing will be performed on collected soils from each sampling phase (500-foot then 100-foot sections). Soils amendments will then be applied to those specific 100-foot subsections that are determined to be problematic. The amendments range from the addition of essential nutrients to replacing up to ¼ of the total volume of soil to be placed inside the plant pit. Once the plants are established, criteria will be set to determine landscaping survivability. Unsuccessful plantings will either be replaced with new plants or soils replaced. Final protocol and additional details will be developed in time for the next reporting period.

### Concern No. 7: Warner Center Transit Hub

**Status/Action** The City of Los Angeles started construction of the Warner Center Transit Hub (WCTH) in May 2004. An October 1, 2004 access date for the C0675 Design/Build Contractor, SOJV, to perform work related to the busway terminal area was included in the bid documents based on original input from the City of Los Angeles. At this time, full access may not be available to SOJV as the City of Los Angeles contractor(s) may still be working in the area. However, LADOT has agreed to place the 7-footings necessary for the MTA C0675 portion of the busway platform. Therefore, it is not necessary for the C0675 Contractor to perform any work at the WCTH until after the LADOT contractor completes its work in November 2004. The C0675 Contractor access to the WCTH is anticipated to be January 18, 2005 (after the LADOT's "Construction Moratorium" during the holidays) to perform electrical, signage, and miscellaneous work to complete the busway platform. MTA, SOJV and the City of Los Angeles will work together to assure that the Warner Center Transit Hub can be constructed to support the Project's Revenue Operation date of August 2005.

### Concern No. 8: Federal Funding for Orange Line Landscape Enhancement

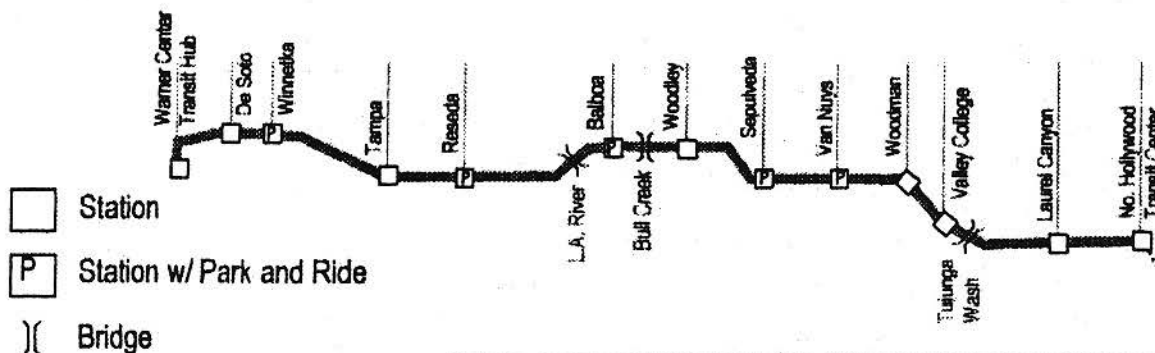
**Status/Action** MTA is pursuing additional Federal Funding for Project landscaping enhancements. The Federal Transit Administration (FTA) has completed its review of MTA's request for a Letter of No Prejudice as a result of this review. MTA may proceed to incur costs for the landscape enhancements without prejudice to possible future Federal participation. Congress has not passed a funding bill consequently this source of funding is not being relied on.

## PROJECT SCOPE

The Metro Orange Line includes a busway, which will be 26 feet wide in most locations consisting of one 13-foot travel lane in each direction. The 26 foot wide busway will be located within the LACMTA Right Of Way (ROW), which is generally 100 feet wide in most locations. Within the ROW, landscaping, fencing, and soundwalls, will be provided in accordance with the Final EIR requirements. Concurrent with busway and stations a Bikeway will be constructed. The Bikeway will include a pedestrian path.

Along the ROW, there are approximately 32 street crossings and three pedestrian crossings, which will require some modifications. Traffic signals will be required where the busway crosses streets and at designated pedestrian crossings.

Systems included in the project are variable message signs, Closed Circuit TV, Public Address, Passenger Assistance Telephones, Public Phones, Fiber Optic Cable Transmission and a Universal Fare System. Other related project scope includes Bus Division No. 8 modifications and procurement of twenty-two 60-foot long articulated buses. Lastly, all the systems will be managed from the Bus Operations Control Center, which will be located on the 6<sup>th</sup> floor of the LACMTA Gateway Plaza Headquarters.



**Warner Center Transit Hub**, an LADOT project, is located at the western terminus of the Orange Line. The D/B contractor (*Contract C0675*) will only install all underground utilities and system equipment at the station.

**Three bridges** will be replaced for the Orange Line as follows: 1) Bull Creek Bridge, 2) Tujunga Wash Bridge and the 3) Los Angeles River Bridge.

The largest of these bridges is the Los Angeles River Bridge located in the north end of the Sepulveda Basin. To reduce schedule exposure, MTA designed this bridge to 100%. The new Los Angeles River Bridge was completed in December 2003.

**Recycled Water Pipeline**, the Los Angeles Department of Water and Power has requested the LACMTA to not proceed with the Recycled Water Pipeline. Only short sections of the Pipeline will be completed at Bull Creek and Tujunga Wash Bridges in addition to the Pipeline already completed at the Los Angeles River Bridge.

**Thirteen Stations** will be completed for the Orange Line with locations from east to west identified as follows: 1) No. Hollywood Transit Center, 2) Laurel Canyon, 3) Valley College, 4) Woodman, 5) Van Nuys, 6) Sepulveda, 7) Woodley, 8) Balboa Blvd, 9) Reseda Blvd, 10) Tampa Ave, 11) Winnetka 12) De Soto and 13) Warner Center Transit Hub. The stations enumerated in bold text above indicate the locations for the Park and Ride facilities. Park and ride facilities will be included in 5 stations and will total approximately 4,305 parking spaces for the anticipated customers, which includes the 915 existing spaces at the NH MRL subway station and the 150 spaces at the Balboa park and ride. The D/B contractor (*Contract C0675*) will build all the stations except for the Warner Center Transit Hub.

**KEY MILESTONE SCHEDULE SIX-MONTH LOOK AHEAD**

	Milestone Date	Aug-04	Sep-04	Oct-04	Nov-04	Dec-04	Jan-05
C0675 - Station (Canopy) Design 100% - Issue for Construction (W.C. Station)	8/20/04A	<input type="checkbox"/>					
C0675: Irrigation 100% Design Segment 1 - Issue for Construction	8/11/04A	<input type="checkbox"/>					
C0675: Soundwall Segment 3 & 4 100% Design - Issue for Construction	8/27/04A	<input type="checkbox"/>					
(Forecast) C0675: Landscape 100% Design - Issue for Construction	9/1/04*		<input type="checkbox"/>				
(Forecast) C0675: Sepulveda Park & Ride 100% Design - IFC	9/1/04*		<input type="checkbox"/>				
(Forecast) C0675: Bus & Maint. Yard - Crane/Catwalk 100% Design - Issue for Construction	9/4/04*		<input type="checkbox"/>				
(Forecast) C0675: Intersection Group 6 100% Design - Issue for Construction	9/11/04*		<input type="checkbox"/>				
(Forecast) C0675: Systems Communications Design 100% - Issue for Construction	9/11/04*		<input type="checkbox"/>				
(Forecast) C0675: Woodman Avenue: Open Intersection to Traffic	9/15/04*		<input type="checkbox"/>				
(Forecast) C0675: Irrigation 100% Design Segment 2 - Issue for Construction	9/17/04*		<input type="checkbox"/>				
(Forecast) C0675: Intersection Group 7 100% Design - Issue for Construction	10/6/04*			<input type="checkbox"/>			
(Forecast) C0675: Irrigation 100% Design Segment 3 - Issue for Construction	10/8/04*			<input type="checkbox"/>			
(Forecast) C0675: Tampa Avenue: Open Intersection to Traffic	10/13/04*			<input type="checkbox"/>			
(Forecast) C0675: De Soto Avenue: Open Intersection to Traffic	10/21/04*			<input type="checkbox"/>			
(Forecast) C0675: Corbin Avenue: Open Intersection to Traffic	11/10/04*				<input type="checkbox"/>		
(Forecast) C0675: Wilbur Avenue: Open Intersection to Traffic	11/11/04*				<input type="checkbox"/>		
(Forecast) C0675: White Oak Avenue: Open Intersection to Traffic	12/23/04*					<input type="checkbox"/>	
(Forecast) C0675: Tyrone Avenue: Open Intersection to Traffic	1/26/05*						<input type="checkbox"/>

 MTA Staff	 P.E. Design Consultants	 Metro	 MTA Board Action
 Other Agencies	 Contractor	 *	New Date



SUMMARY SCHEDULE

Metro Orange Line  
Level 0 Project Schedule - Status for August 2004

Project Milestones	FY 2002			FY 2003			FY 2004			FY 2005			FY 2006																	
	J	A	S	O	N	D	J	F	M	A	M	J	J	A	S	O	N	D	J	F	M	A	M	J	J	A	S	O	N	D
<b>Procurement</b>	<p>MTA Board Adopts EIR                      ◊ Invitation for Bids - C0675 DB Contractor                      ◊ Notice To Proceed Issued to C0678 Contractor                      ◊ Begin Construction C0678 L.A. River Bridge                      ◊ Complete Construction at L.A. River Bridge                      ◊ California Transportation Commission Funding Resolution                      ◊ Award C0675 DB Contract                      ◊ Notice to Proceed C0675 DB Contractor                      Aug 2, 2004 - Court of Appeals Temporary Stay of the Project                      ◊ Forecast C0675 MSF 4 Substantial Completion                      ◊ Planned ROO</p>																													
<b>Design / Build Contract - C0675</b>	<p>Contract C0675 DB Bid Process                      ◊ Recommendation to MTA CEO for Contract C0675 Award                      ◊ Calif Transportation Commission - Notice of Funding Suspension                      C0675 Award Delay ◊ C0675 DB Contract Bid Validity date</p>																													
<b>Third Party / Vehicles / Systems / I-405</b>	<p>Master Cooperative Agreements (MCA) Approvals                      Articulated Vehicle Procurement/Fabrication Process                      Delivery Articulated Bus #1: Initial Testing                      UFS Equipment Option                      UFS Equipment Cabin                      Delivery Articulated Bus #22</p>																													
<b>Real Estate</b>	<p>ATMS Equipment                      Call Trans I-405 Construction                      Lease Extensions                      Property Acquisition                      Lease Terminations                      Parcel College Parcel Acq Due Date</p>																													
<b>Preliminary Engineering</b>	<p>STV 40% Design</p>																													
<b>Design / Build Contract - C0675</b>	<p>Mobilization / Final Design / Submittals                      Demolition / Hazard Removal                      Busway, Earthwork / Contaminated Soils / Storm Drains / Paving / Landscaping / Fencing                      Intersections                      Park and Ride Lots                      Station Construction                      Systems Installation                      Systems Integration Testing                      MTA Comm Testing                      Purchased/Pm Rev Ops                      Design Support During Construction                      Bridges                      Step and Pedestrian Path</p>																													
<b>Canoga Ave Park &amp; Ride Station and Busway Extension</b>	<p>PROJECT TEMPORARY SUSPENSION AND REMOBILIZATION PERIOD</p> <p>Start Negotiations for Boeing Parcel Acquisition                      Engineering - Procurement                      Bid Evaluation                      Board Adopts EIR Addendums                      Advise Contract C0739                      Contract C0739 Award                      Construction Park and Ride Station                      Canoga Ave Widening                      Construction Monitoring</p>																													

## SCHEDULE NARRATIVE

On August 2, 2004, the California Court of Appeal issued a temporary stay and the MTA on August 3, 2004, issued a suspension of work to the C0675 Design/Build Contractor. The MTA lifted the suspension of work to the C0675 Contractor on August 26, 2004.

The C0675 Design/Build Contractor submitted a schedule update that reflects a five-month delay to the Contractor's Contract Substantial Completion Milestone date of June 16, 2005 (now at 158 days negative float). Based on the forecast delay by the Contractor, the August 2005 Revenue Operations Date appears to be in jeopardy. The MTA has requested a recovery plan from the Contractor.

The schedule update is now showing the fabrication and installation of station canopies, installation of communications equipment at stations and the testing of all systems as the most critical path. The completion of Sepulveda Park and Ride and landscaping along the busway are the secondary critical path. In addition, systems design is near the secondary critical path.

Minimal construction work was accomplished during the period. After a remobilization of field staff the Contractor plans to start back on busway, intersection, bikeway and other construction activities in September.

**PROJECT COST STATUS**

PROJECT 800112 - METRO ORANGE LINE (BUSWAY)

\$ in Millions

COST SUMMARY

Description	Original Budget	Current Budget	Previous Forecast	Current Forecast	Forecast Variance	Commitments	Expenditures
Guideways	124.2	124.2	124.3	125.8	1.5	115.1	66.5
Yards & Shops	1.2	1.2	1.3	1.3	0.0	1.1	0.1
Systems/Equipment	12.7	12.7	12.0	10.2	(1.8)	8.6	1.8
Stations	30.4	30.4	30.3	32.1	1.8	30.4	3.5
Vehicles & Buses	17.5	17.5	15.7	15.7	0.0	0.0	0.0
Special Conditions	24.2	24.2	33.5	34.5	1.0	24.7	12.0
Right-of-Way	24.9	24.9	19.3	19.3	0.0	17.2	7.4
Professional Services	45.7	45.7	44.6	45.9	1.3	37.7	26.5
Proposed Park-and-Ride Facility	16.5	16.5	20.8	20.8	0.0	9.0	0.6
Contingency	32.2	32.2	27.7	23.9	(3.8)	0.0	0.0
Project Revenue	0.0	0.0	0.0	0.0	0.0	0.0	0.0
<b>TOTAL</b>	<b>329.5</b>	<b>329.5</b>	<b>329.5</b>	<b>329.5</b>	<b>0.0</b>	<b>243.8</b>	<b>118.4</b>

Expenditures are cumulative through July 2004.

Note: The Commitment value for the Special Conditions cost element is higher than the Original Budget this period. The Original Budget requires an update to reflect changing project conditions at the element level. Staff is currently preparing a budget change recommendation to re-allocate costs to address work scope revisions. The Total Project Budget of \$329.5 million will remain unchanged.

**PROJECT COST ANALYSIS**

The Original Budget of the Metro Orange Line, which includes an allowance of \$16.5 million for a proposed park-and-ride facility at the Western Terminus of the Orange Line, was adopted in February 2003 for a value of \$329.5 million.

**Current Budget:** The Current Budget remains unchanged this period.

**Current Forecast :** The Total Project forecast remains the same at \$329.5 million for the August period. However, within the Cost Elements there are projected cost increases of \$3.8 million that Project staff incorporated this month as follows: \$1.6 million as a result of initial anticipated cost impact due to the California Court of Appeal stay of Project issued on August 2, 2004. (Additional costs are anticipated and will be forecast in the future); \$1.1 million to revise the projected amount for waste handling services and the increase in professional services for preparation of revised EIR study directed by the California Court of Appeal; and \$1.1 million to reflect additional legal cost exposure associated with the COST lawsuit and other cases. The individual Cost Element forecast increase was offset by a corresponding reduction in Project Contingency and leaves \$23.9 million of available unallocated funds to cover unknown but anticipated changes.

**Commitments:** The commitments increased \$17.9 million primarily due to the following: \$3.5 million for Design/Build Contract C0675 executed changes; \$2.8 million for Environmental Services Contract amendments to reflect additional contaminated soil remediation and preparation of revised EIR study; \$3.1 million for work authorization issued to the City of Los Angeles pursuant to the Master Cooperative Agreements to provide engineering, technical services and ancillary supplies; and \$8.5 million for adoption of FY05 Agency budget. The \$243.8 million in commitments to date represents 74% of the Current Budget.

**Expenditures:** Expenditures are cumulative through period ending July 2004. The expenditures increased \$0.9 million this period primarily due to Professional Services and Agency costs. Construction expenditures are not included as they were incorporated last period as part of the MTA's fiscal year end accrual process. The \$118.4 million in expenditures to date represents 35.9% of the Current Budget.

### PROJECT COST STATUS

PROJECT 800114 - METRO ORANGE LINE (BIKEWAY)  
 COST SUMMARY

\$ in Millions

Description	Original Budget	Current Budget	Previous Forecast	Current Forecast	Forecast Variance	Commitments	Expenditures
Guideways	5.8	8.0	8.0	7.9	(0.1)	5.6	0.8
Special Conditions	0.2	0.7	0.7	0.6	(0.1)	0.6	0.3
Professional Services	1.3	1.5	1.5	1.5	0.0	0.8	0.2
Contingency	0.8	0.4	0.4	0.6	0.2	0.0	0.0
<b>TOTAL</b>	<b>8.1</b>	<b>10.6</b>	<b>10.6</b>	<b>10.6</b>	<b>0.0</b>	<b>7.0</b>	<b>1.3</b>

Expenditures are cumulative through July 2004.

### PROJECT COST ANALYSIS

The same C0675 Design/Build Contractor as the Metro Orange Line Busway will construct the Metro Orange Line Bikeway Project. Construction activities for the Orange Line Bikeway are expected to occur concurrent with the construction effort of the Orange Line. The Orange Line Bikeway Project is segregated from the base scope of the Orange Line Project due to differences in funding sources. The Original Budget of the Metro Orange Line Bikeway Project was adopted in February 2003 for a value of \$8.1 million.

**Current Budget**

The Current Budget reflects an increase in the life of project budget approved by the MTA Board in July 2004 to accommodate the bikeway enhancements and incorporates the usage of all grant funding available to the Project. The Current Budget remains unchanged this period.

**Current Forecast**

The Total Project Forecast remains the same at \$10.6 million for the August period. However, within the Cost Elements there was a decrease of \$0.2 million during this period to reflect line item adjustments. The forecast decrease was offset by a corresponding increase to the forecast Project Contingency.

**Commitments**

The commitments increased \$0.8 million due to the following: \$0.5 million for Design/Build Contract C0675 executed changes and \$0.3 for adoption of FY05 Agency budget. The \$7.0 million in commitments to date represents 66.2% of the Current Budget.

**Expenditures**

Expenditures are cumulative through period ending July 2004 and remains unchanged. The \$1.3 million in expenditures to date represents 12.8% of the Current Budget.

## PROJECT COST STATUS

### PROJECT 800116 - METRO ORANGE LINE LADWP RECYCLED WATER PIPELINE

\$ in Millions

#### COST SUMMARY

Description	Current Estimate	Previous Forecast	Current Forecast	Forecast Variance	Commitments	Expenditures
Guideways	3.8	1.5	1.5	0.0	1.5	1.2
Special Conditions	0.0	0.0	0.0	0.0	0.0	0.0
Right-of-Way	0.0	0.0	0.0	0.0	0.0	0.0
Professional Services	1.2	1.8	1.8	0.0	0.9	0.8
Project Reimbursement	0.0	(3.3)	(3.3)	0.0	(1.7)	(1.7)
<b>TOTAL</b>	<b>5.0</b>	<b>0.0</b>	<b>0.0</b>	<b>0.0</b>	<b>0.7</b>	<b>0.3</b>

(1) Expenditures are cumulative through July 2004.

(2) Current Estimate based on September 2003 MTA Board action. Initial \$5.0 million authorized to further develop scope of work and life of project costs.

## PROJECT COST ANALYSIS

On September 16, 2003, the Los Angeles Department of Water and Power (LADWP) Board of Commissioners approved a \$5.0 million budget under an existing Master Cooperative Agreement with MTA for partial funding for schedule-critical portions of the LADWP Recycled Water Pipeline. Subsequently, on September 25, 2003, the MTA Board approved a \$5.0 million initial budget for Project No. 800116 authorizing the issuance of Change Orders in the amount not to exceed \$2.5 million to the C0675 Design/Build Contractor for initial funding of design and construction of the LADWP Recycled Water Pipeline. Consequently, MTA and LADWP have determined that the LADWP Recycled Water Pipeline will not be incorporated into the Metro Orange Line Project and all work associated with the Recycled Water Pipeline should be terminated except for competing work related to incorporating a pipeline in the two bridges (Tujunga Wash and Bull Creek Bridges).

#### **Current Forecast**

The MTA Board adopted the project on the condition that LADWP reimburse MTA for all costs associated with design, construction and administration of the Recycled Water Pipeline Project. The MTA is proceeding with authorized scope and has billed for and received reimbursement from LADWP for the Pipeline scope of work. Cost Forecast remained the same this period.

#### **Commitments**

The commitments decreased this period to reflect the de-obligation of encumbrances for Construction Management Support Services Contract due to completion of LADWP workscope.

#### **Expenditures**

Expenditures are cumulative through period ending July 2004 and remains unchanged.

## FINANCIAL/GRANT STATUS

### Project 800112 – Metro Orange Line (Busway Only)

AUGUST 2004		STATUS OF FUNDS BY SOURCE							
\$ in millions									
SOURCE	(A) ORIGINAL BUDGET	(B) TOTAL FUNDS ANTICIPATED	(C) TOTAL FUNDS AVAILABLE	(D) (D/B) COMMITMENTS		(E) (E/B) EXPENDITURES		(F) (F/B) BILLED to FUNDING SOURCE	
				\$	%	\$	%	\$	%
FEDERAL RSTP	17.5	17.5							
STATE TCRP	47.0	47.0	47.0	47.0	100%	32.1	68%	32.1	68%
STATE STIP	0.3	0.3	0.3	0.3	100%	0.3	100%	0.3	100%
PROPOSITION C	166.7	166.7		166.7	100%	60.8	37%	60.8	37%
PROP C (STIP REPLACEMENT)	98.0	98.0		29.8					
UNBILLED ACCRUALS			25.2			25.2			
<b>TOTAL</b>	<b>329.5</b>	<b>329.5</b>	<b>72.5</b>	<b>243.8</b>	<b>74.0%</b>	<b>118.4</b>	<b>36.0%</b>	<b>93.2</b>	<b>28%</b>

(1) Based on August 2003 Adopted Short Range Transportation Plan  
 NOTE: Expenditures are cumulative through July 2004.

## STATUS OF FUNDS ANTICIPATED

**STATE TCRP:** Cumulative to date, \$47 million of State TCRP funds are available for draw down. The California Transportation Commission (CTC) allocated \$12.3 million in January 2001 and \$34.7 million in June 2002. At the June 25, 2003 CTC Meeting, the CTC approved the transfer of TCRP funds remaining in preliminary engineering to be used for final design efforts. At the October 2003 CTC Meeting, the CTC approved MTA's request for an AB 1335 (Letter of No Prejudice) for \$98 million of TCRP funds should they become available.

**STATE STIP:** Due to the suspension of the TCRP program, MTA processed a STIP amendment to secure \$98 million of STIP substitute funding to replace TCRP funds previously committed to the project. On April 3, 2003, the CTC approved the MTA's request for the STIP amendment.

**FINANCIAL/GRANT STATUS**

**Project 800114 – Metro Orange Line Bikeway Project**

AUGUST 2004

STATUS OF FUNDS BY SOURCE

in \$ millions

SOURCE	(A)	(B)	(C)	(D)	(DB)	(E)	(EB)	(F)	(FB)
	CURRENT BUDGET	TOTAL FUNDS ANTICIPATED	TOTAL FUNDS AVAILABLE	COMMITMENTS \$	%	EXPENDITURES \$	%	BILLED to FUNDING SOURCE \$	%
TEA (FED)	6.0	6.0	6.0	4.0	66%	0.9	15%	0.9	15%
TEA-21 (FED)	1.8	1.8	1.7	1.2	66%		0%		0%
STIP (FED)	0.5	0.5	0.5	0.3					
CITY OF LA	2.4	2.4	2.4	1.6	66%	0.2	7%	0.2	7%
UNBILLED ACTUALS						0.2			
<b>TOTAL</b>	<b>10.6</b>	<b>10.6</b>	<b>10.6</b>	<b>7.0</b>	<b>66.0%</b>	<b>1.3</b>	<b>13.0%</b>	<b>1.1</b>	<b>10%</b>

NOTE: Expenditures are cumulative through July 2004.

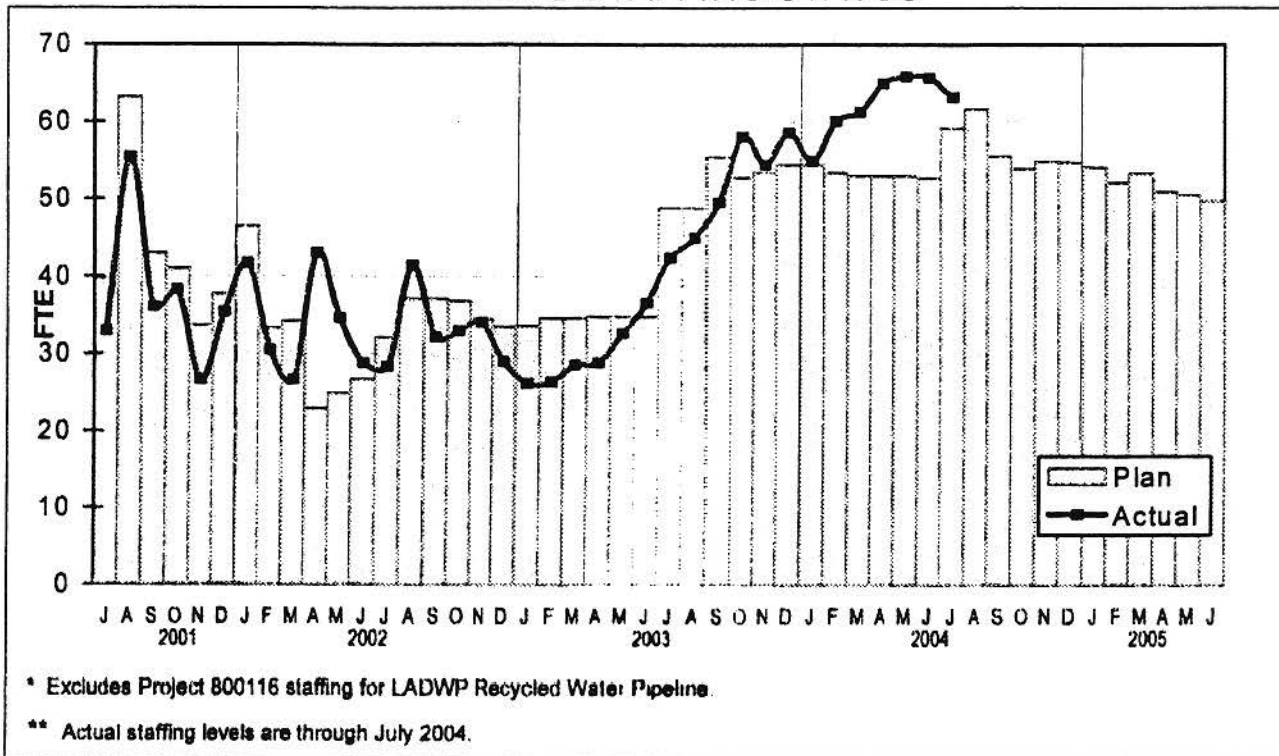
**STATUS OF FUNDS ANTICIPATED**

**FEDERAL FUNDS:** The transfer of Federal Funds from the Federal Highway Administration to the FTA has been completed. On May 29, 2003, MTA submitted grant application #CA-90-X970-03 to the FTA for a total amount of \$8,174,226. The FTA grant was executed on August 27, 2003 and is now available for drawdown.

**CITY OF LA:** The funding agreement for the local match between MTA and the City of Los Angeles was reviewed by the MTA and sent back to the City of Los Angeles for execution. The funding agreement was executed on April 24, 2003 and is now available for drawdown.

### STAFFING STATUS \*

#### TOTAL STAFFING STATUS

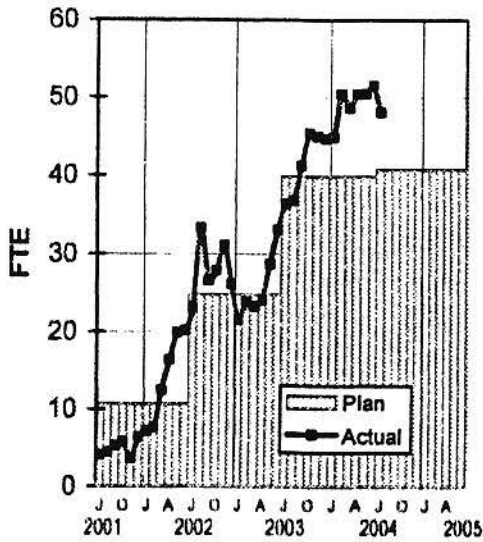


For the month of July 2004, the major total staffing plan was four (4) FTE's over plan. This continued a negative trend the last six months. The increase is due to higher than anticipated plan need for Engineering and Procurement Department staff associated with design submittal review and processing change notices, change orders, contract modifications, and claims.



### STAFFING STATUS

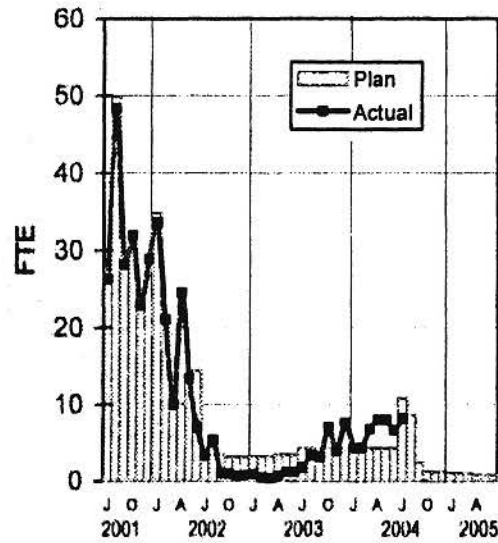
AGENCY STAFFING



Project staffing was higher than plan the last ten months due to increased work load for Engineering and Procurement Departments associated with design submittal review and potential changes.

\* Actual staffing levels are through July 2004.

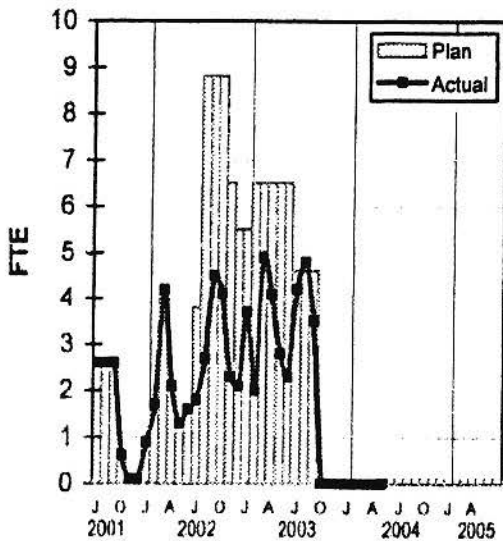
DESIGN CONSULTANT



July 2002 through December 2002 represents Bid Support Phase only. January 2003 through July 2005 represents Design Support During Construction. The planned effort from July 2004 through September 2004 is for design of proposed Canoga Station and busway extension.

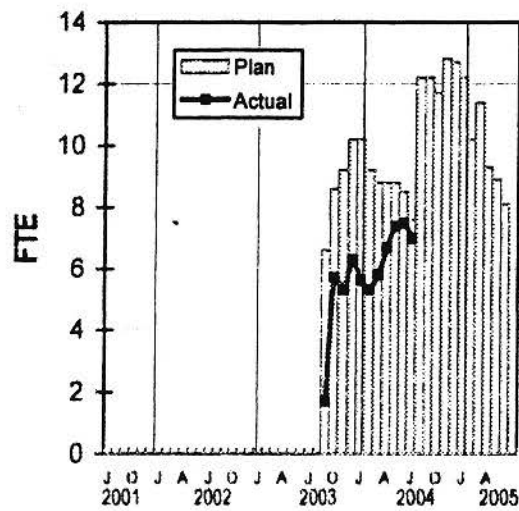
\* Actual staffing levels are through July 2004.

PROJECT MANAGEMENT ASSISTANCE



No additional actuals are planned after September 30, 2003 due to contract completion.

CONSTRUCTION MANAGEMENT SUPPORT SERVICES CONSULTANT



\* Contract NTP was issued September 15, 2003. Actual staffing levels are through July 2004. Consultant staffing is lower than plan due to Contract C0675 Design/Build design delays which impacted the start of peak construction requiring management support services.

## REAL ESTATE STATUS

- The number of leases to be terminated for the project is 101 with 99 available to the C0675 Design/Build Contractor. The following two parcels were scheduled to be available to the C0675 Contractor on July 1, 2003 and have been permitted to remain either partially or completely as noted below without impacting the Project (Parcels 1502 and 1503 still require a design review).
  1. Parcel 1502 Allegheny Properties (required for construction of Sepulveda Park-and-Ride). The lease on a portion of this parcel is being extended on a month-to-month basis pending design review at the tenant's request to retain a portion of the lease area.
  2. Parcel 1503 Chesapeake Properties (required for construction of Sepulveda Park-and-Ride). A small portion of the lease on the western edge of this parcel is being extended on a month-to-month basis pending review at the tenant's request to retain a portion of the lease area.
  
- Under New Acquisitions, nine parcels were originally required and certified as full takes. However, one parcel (Parcel 1813) was decertified as not required for the Project. All eight parcels have been acquired. Parcel 301 with Pierce College (required for construction of Winnetka Park-and-Ride) was vacated on August 17, 2004 for the C0675 Design/Build Contractor's use. This is 17 calendar days later than the date committed to the C0675 Design/Build Contractor (Special Provisions-25, Site Access Dates). However, according to the Contractor's current schedule update there is sufficient total float so as not to impact any critical path construction activities.

### REAL ESTATE STATUS

#### REAL ESTATE STATUS - LEASES

	Total Number	Received Courtesy Letters	Received Relocation Plan Letter	Recvd 90 Day Termination Notice	Unlawful Detainer Action	Relocation Completed	Available for Demolition	Available for Construction
Leases	101	101	101	101	25	58	97	99

#### REAL ESTATE STATUS - NEW ACQUISITIONS

Contract	No. of Parcels	Certified		Just Comp Approved		Offers Made*		Agreements Signed		Condemnation		Parcels Available		Parcels projected to be unavailable by need date
		Plan	Actual	Plan	Actual	Plan	Actual	Plan	Actual	Plan	Actual	Plan	Actual	
<b>TOTAL</b>	8	8	8	8	8	8	8	8	8	2	2	8	8	0

The parcels will be purchased by MTA Real Estate.

\* Offers made contingent to MTA Board approval.

## ENVIRONMENTAL STATUS

- Boeing prepared a demolition schedule to remove existing pavement and building on the site at proposed Canoga Station and Park and Ride.
- Suspended the removal, transport and disposal of additional heavy metals impacted soils at various locations along the right-of-way due to Court stay of Project.
- Daily air monitoring was suspended due to the Court stay of Project.
- MTA completed a study regarding Strategy for Compliance with SCAQMD District Rules 402 and 403.
- Prepared a preliminary cost estimate to mitigate impacted soils at the proposed Canoga Park and Ride Station.

## COMMUNITY RELATIONS STATUS

- Notified residents, elected officials and the media about court-ordered suspension of construction.
- Provided information to residents interested in supporting the Orange line Project.
- Addressed concerns and mitigated impacts to businesses caused by construction and intensified by the suspension.

## QUALITY ASSURANCE STATUS

- All MTA Quality Action Requests (QARs) have been closed.
- One Washington Group QAR was closed. Accepted corrective actions on seven additional QARs were accepted but remain open pending verification of implementation.
- Eight SOJV QARs have been closed. The corrective actions on four QARs were accepted but remain open pending verification of corrective action.

**QUALITY ACTION REQUEST STATUS**

QM Surveillance #	QAR #	Description	Due Date	Status	Comments
S2003-412	001	Design review issues- 100% Demolition Plan	8/14/03	<b>CLOSED</b>	
S2003-412	002	Constructability issues - 100% Demolition Plan	8/14/03	<b>CLOSED</b>	
S2003-416	001	Design review issues - 60% Group I Intersection Design Package	9/8/03	<b>CLOSED</b>	
S2003-418	001	Design review issues - 85% Segment 1 Busway Design Package	9/11/03	<b>CLOSED</b>	
S2003-451	001	Design review issues - 85% Group I Intersection Design Package	9/31/03 12/1/03 12/8/03	<b>CLOSED</b>	
S2003-455	001	Design review issues - 100% Busway Segment	11/3/03 12/8/03 1/16/04	<b>CLOSED</b>	
S2003-463	001	Design review issues - 100% Landscaping & Irrigation Design	11/21/03 12/1/03 12/8/03	<b>CLOSED</b>	
S2003-466	001	Design Change Control - 100% Bridge Specification	12/2/03 12/24/03	<b>CLOSED</b>	
S2003-468	001	Quality Assurance Document Submittals	12/4/03 12/24/03	<b>CLOSED</b>	
S2003-470	001	Surveillance of SOJV audit of Richard Chong - Subcontractor	12/29/03 12/23/03	<b>CLOSED</b>	

Metro Orange Line  
Monthly Project Status Report

August 2004

QM Surveillance #	QAR #	Description	Due Date	Status	Comments
A04-01	A04-001-001	SOJV NCR Control System	2/23/04	<b>CLOSED</b>	
S2004-022	001	QA/QC Personnel not Approved	3/12/04	<b>CLOSED</b>	
S2004-023	001	Nonconforming activities – Intersection Mason and Victory	3/12/04	<b>CLOSED</b>	
S2004-049	001	SOJV Concrete Records for Bull Creek and Tujunga Wash Bridges	5/7/04 5/17/04	<b>CLOSED</b>	
A2004-03	008 thru 015	WGI Design Control	5/19/04	<b>Received on 5/25/04</b>	<b>Responses to QARs 8-10 and 12-15 are acceptable. A follow-up review will be scheduled to determine effective corrective action. Response to QAR 11 was rejected and a re-submittal by July 16, 2004 has been requested</b>
A2004-03	016 thru 027	SOJV Construction Activities	5/28/04 6/14/04	<b>Received on 6/1/04</b>	<b>Responses to QARs 16-22 and 24-27 are acceptable and a follow-up review will be scheduled to determine effective corrective action. Response to QAR 23 is rejected and a re-submittal by July 16, 2004 has been requested.</b>

### SAFETY STATUS

- Participated in weekly progress meetings with Construction Management to discuss safety related issues and construction schedule for Contract C0675 Design/Build project.
- Monitored work activities for traffic control and pedestrian access.

### SAFETY STATISTICS

Contract Number	Contractor	Work Hours	Cases			Days						Incident Rates					
			Total Recordable Cases	Cases with days away from work, job transfer, or restriction			Days away from work			Days of job transfer or restriction			Total Days Lost	Total Recordable Cases	Cases with Days Away	Restricted or Transferred Only	Total Days Lost
				Total	Days Away	Restricted or Transferred Only	Current	Carry Over	Total	Current	Carry Over	Total					
<b>Project To Date</b>																	
C0675	SO, JV (Design)	115,882	0	0	0	0	0	0	0	0	0	0	0	0.0	0.0	0.0	0.0
C0675	SO, JV (Build)	270,945	12	8	4	4	132	72	204	112	0	112	165	8.9	5.9	3.0	121.8
C0675	SO, JV (composite)	386,827	12	8	4	4	132	72	204	112	0	112	165	6.2	4.1	2.1	85.3
C0678	Brutocp	15,247	1	0	0	0	0	0	0	0	0	0	0	13.1	0.0	0.0	0.0
C0739		0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.0	0.0	0.0
	<b>Subtotals</b>	<b>402,074</b>	<b>13</b>	<b>8</b>	<b>4</b>	<b>4</b>	<b>132</b>	<b>72</b>	<b>204</b>	<b>112</b>	<b>0</b>	<b>112</b>	<b>165</b>	<b>6.5</b>	<b>4.0</b>	<b>2.0</b>	<b>82.1</b>
	MTA Const. Mgmt	41,807	0	0	0	0	0	0	0	0	0	0	0	0.0	0.0	0.0	0.0
	<b>Totals</b>	<b>443,881</b>	<b>13</b>	<b>8</b>	<b>4</b>	<b>4</b>	<b>132</b>	<b>72</b>	<b>204</b>	<b>112</b>	<b>0</b>	<b>112</b>	<b>165</b>	<b>5.9</b>	<b>3.8</b>	<b>1.8</b>	<b>74.3</b>

### ART DEVELOPMENT STATUS

- Met with landscape artist Jud Fine and landscape architect Warren Arrata to finalize the plan for the extension of the Orange Line to the proposed Canoga Station.
- Met with SOJV Contractor and subcontractor Metallion to finalize the design of the art panel frame and attachment system for 23 enamel panels to be installed on Metro Orange Line Station platforms.
- Submitted comments to 100% design submittal for artist designed benches and plaza amenities to be incorporated into select plaza locations.

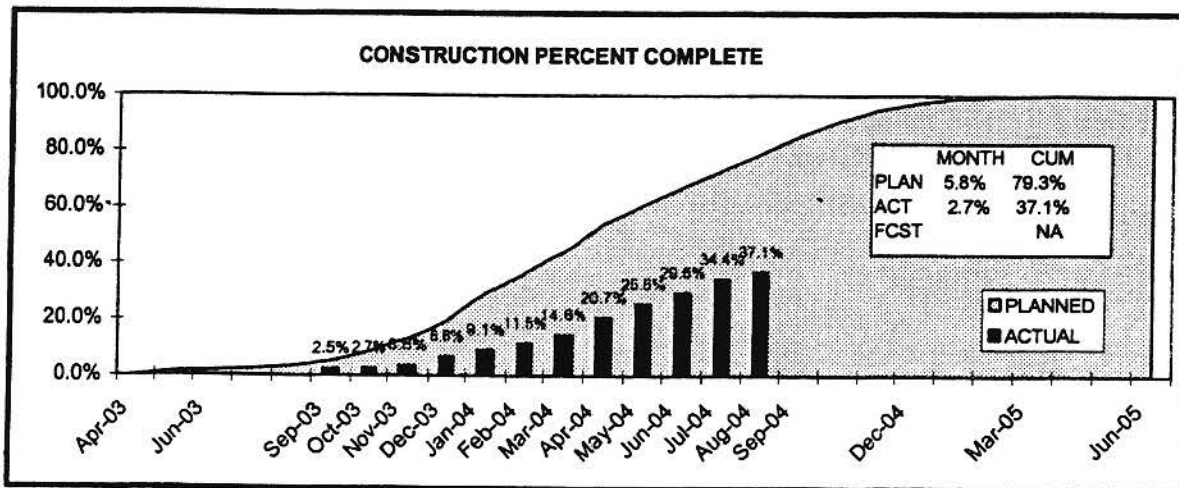
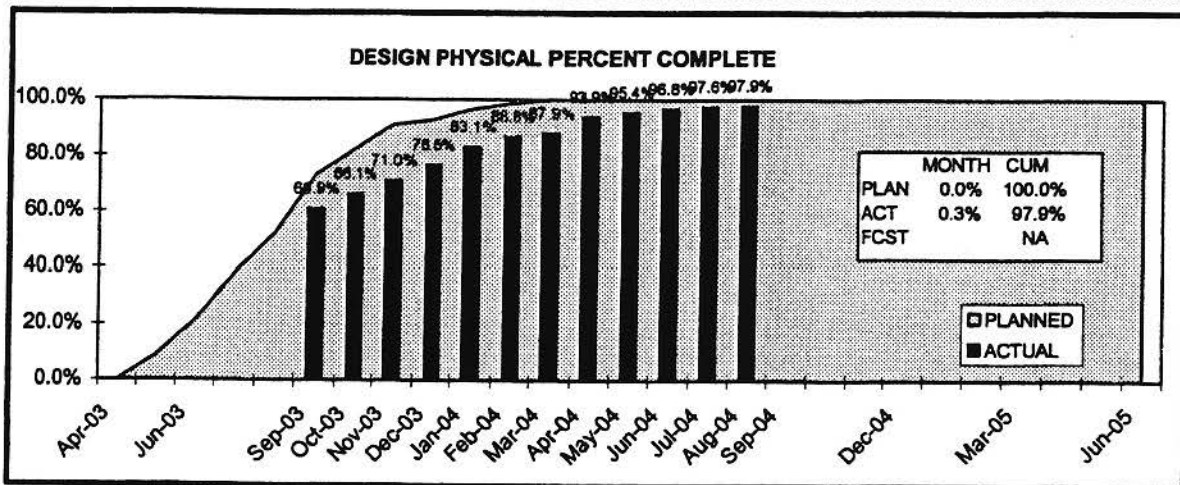
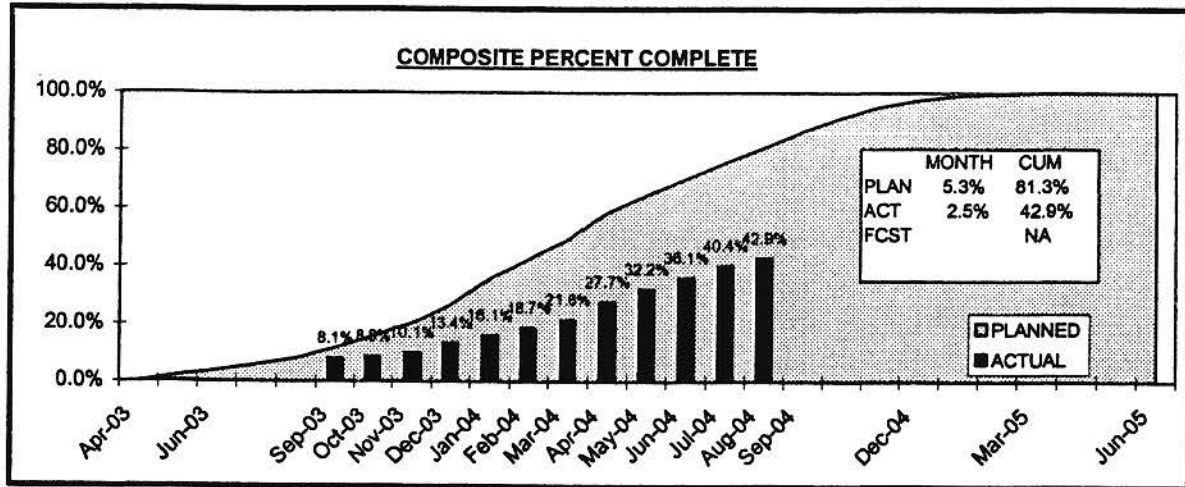
## CONTRACT CONSTRUCTION STATUS

<p><b>Description: Design/Build</b>  <b>Contractor: Shimmick Construction Co., Inc./</b>  <b>Obayashi Corp, A Joint Venture</b></p>	<p><b>Contract No.: C0675</b>  <b>Status as of: August 31, 2004</b></p>																																				
<p><b>Progress/Work Completed:</b>          Minimal progress experienced this month due to a suspension of work (see below "areas of concern").</p> <ul style="list-style-type: none"> <li>• Submitted Div. 8 Crane &amp; Catwalk design - 100% submittal.</li> <li>• Submitted Warner Center Station design - AFC submittal.</li> <li>• Submitted Intersection Group 6 design - 100% submittal.</li> <li>• Completed review Intersection Group 7 design - 85% submittal.</li> <li>• Completed review Bikeway Seg. 3 design - 100% submittal.</li> <li>• Completed asphalt paving at Sepulveda Intersection.</li> <li>• Completed Busway rough grading between Sepulveda and Hazeltine.</li> <li>• Completed work necessary to insure public safety during the suspension of work.</li> </ul> <p><b>Areas of Concern:</b></p> <ul style="list-style-type: none"> <li>• The Contractor's August 2004 schedule submittal shows all Milestones behind schedule. Contractor mitigated one month of delay in a three month period - from May 2004 to July 2004. This mitigation has been offset by the delay caused by the suspension of work this period. MTA has requested a recovery plan from the Contractor.</li> <li>• The Right-of-Way is contaminated with heavy metals, pesticides and herbicides. Soil and air testing has been completed. The contaminated soil has been isolated and removed in advance of the Contractor's required construction need date. The MTA and specialty consultants are implementing a long term soil remediation plan.</li> <li>• Landscaping - Due to the unanticipated arsenic found within the MTA right of way, plant survival may not meet Contractual requirements. The MTA has determined that additional arsenic and herbicide testing is necessary to identify those areas where soil additive amendments may be necessary to assure plant survivability. The MTA is in the process of issuing a change order to the Contractor for implementation of a testing and soil amendment program.</li> <li>• Suspension of Work - On August 3, 2004 the MTA issued to the Contractor an order of suspension. This originated from a California Court of Appeal directive to stay from carrying out the Orange Line on behalf of the Appellant group Citizens Organized for Smart Transit. The order of suspension was rescinded on August 26, 2004. The MTA and the Contractor are assessing schedule impacts from a gradual build up of resources from the Contractor and its Subcontractors. Mitigation measures will be required to maintain the Orange Line Revenue Operation Date.</li> </ul>	<p><b>Major Activities (In Progress):</b></p> <ul style="list-style-type: none"> <li>• Submittal Reviews are ongoing. Major submittals include:             <ol style="list-style-type: none"> <li>1. Warner Center Canopy design - AFC submittal.</li> <li>2. Intersection Group 6 design - 100% submittal.</li> <li>3. Div. 8 Crane &amp; Catwalk design - 100% submittal.</li> </ol> </li> <li>• Started retaining walls under the I-405 freeway.</li> <li>• Continue with Intersection Groups 2 and 3 construction.</li> <li>• Continue storm drainage installation west of Sepulveda Blvd.</li> <li>• Continue fabrication of communication equipment for Stations.</li> <li>• Started fabrication of soundwalls panels and pilasters.</li> </ul> <p><b>Major Activities Next Period:</b></p> <ul style="list-style-type: none"> <li>• Start Intersection Group 4 construction.</li> <li>• Complete Busway Segments 2 and 3 storm drain installation.</li> <li>• Continue curb/gutter and paving along Busway Segment 2.</li> <li>• Continue retaining wall construction under the I-405 freeway.</li> <li>• Complete Busway Segment 2 rough grading.</li> <li>• Continue Station Work on the east end of the alignment.</li> <li>• Continue Park &amp; Ride rough and fine grading work.</li> <li>• Submit Intersection Group 6 design - AFC submittal.</li> <li>• Submit Intersection Group 7 design - 100% submittal.</li> <li>• Submit Division 8 Crane/Catwalk design - AFC submittal.</li> <li>• Submit Communication design - AFC submittal.</li> <li>• Submit Bikeway Segment 3 design - AFC submittal.</li> </ul>																																				
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\* Includes Options E.2, E.3, E.4, E.5, E.6 (exercised after award) and E.8



### CONTRACT C0675 PHYSICAL PERCENT COMPLETE

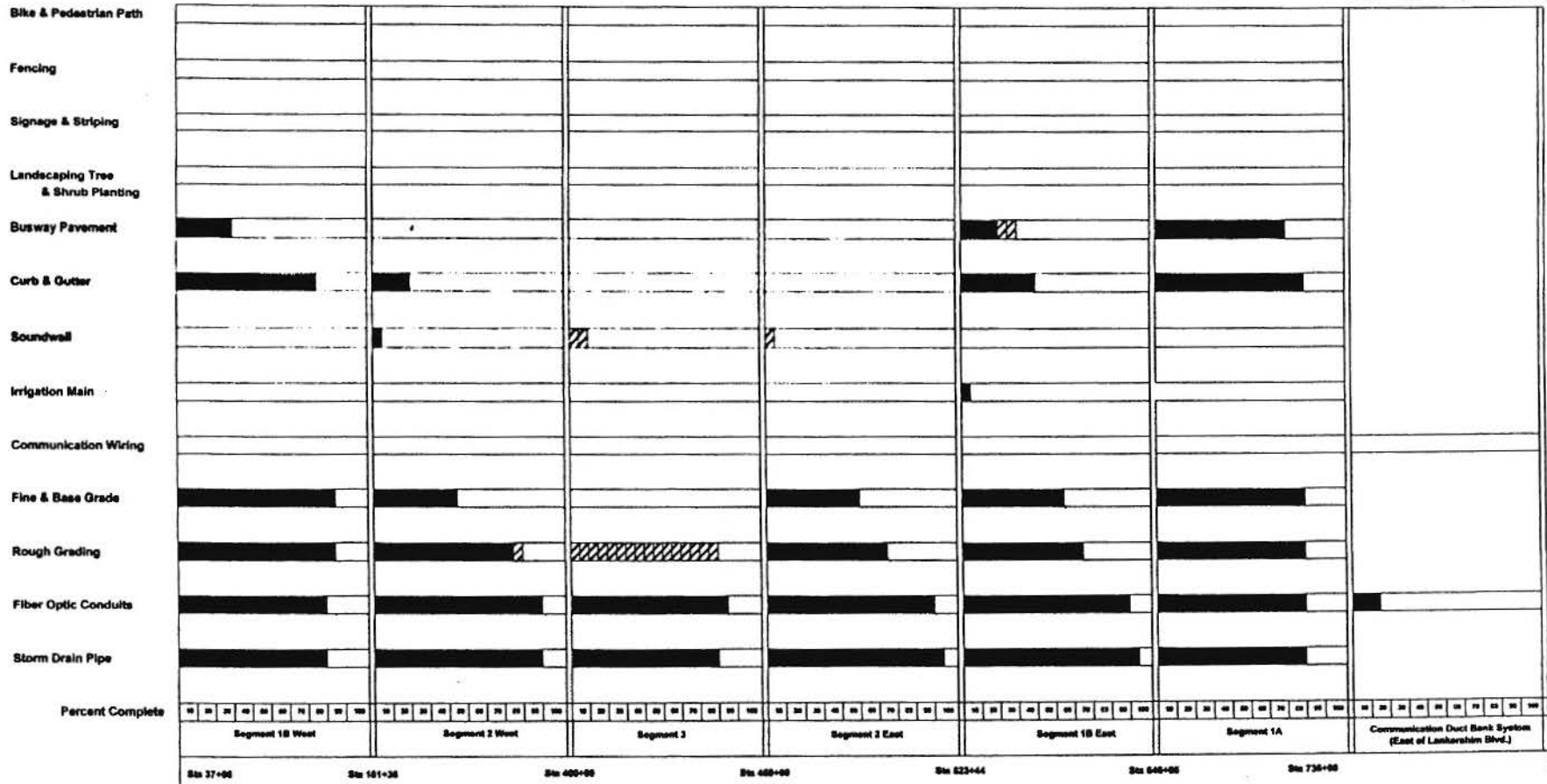


\* Plan is based on approved Contract C0675 Baseline Schedule

**Metro Orange Line Project - Busway Segments  
Station 37+08 to Station 735+08/Communication Duct Bank System  
Summary - Busway Segment Percent Complete**

Progress As Of: 27-Aug-04

24

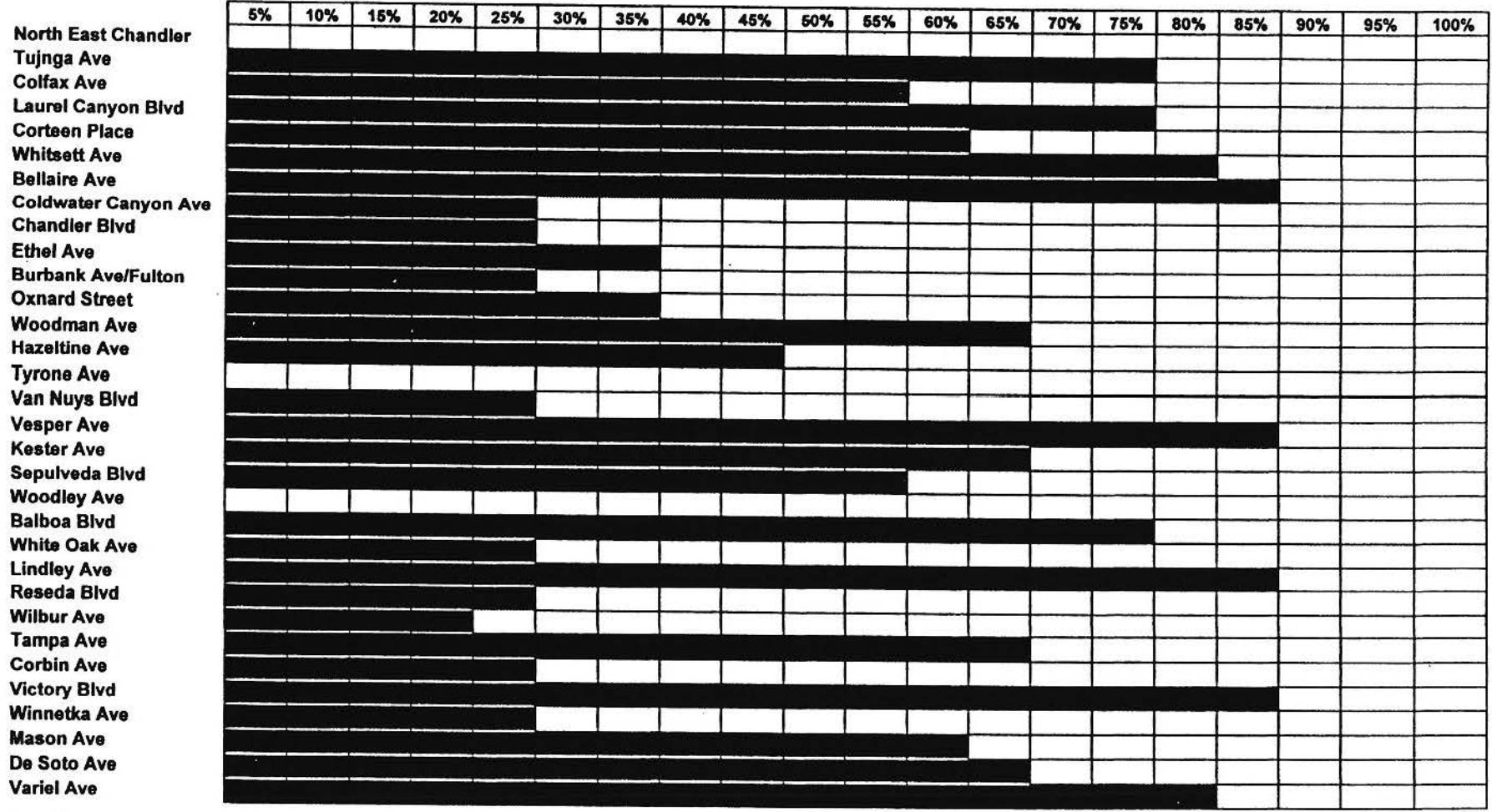




Actual This Period  
 Cumulative Prior Period

NOTE: STATIONING NOT TO SCALE

Metro Orange Line Project - Intersections  
Summary - Percent Complete

Progress as of: 27-Aug-2004



 Actual This Period  
 Cumulative Prior Period

## CHRONOLOGY OF EVENTS

May 15, 2001	The MTA released the draft environmental study of a proposed 14-mile Bus Rapid Transit (BRT).
July 26, 2001	The MTA Board of Directors adopted the 14-mile Bus Rapidway system, also called a "busway," as the locally preferred alternative for the San Fernando Valley Metro Rapidway Corridor.
February 14, 2002	The MTA issued the final environmental report for the 14-mile Bus Rapid Transit.
February 28, 2002	The MTA Board voted to certify the final environmental report for the Bus Rapid Transit system and approved a solicitation for a Design/Build delivery system for the Project. The action paved the way for the project's final design phase.
June 28, 2002	The MTA completed the Preliminary Engineering and Design Development efforts. The Design/Build Invitation for Bid package for Contract No. C0675 was assembled and advertised.
July 12, 2002	The MTA issued Addendum No. 1 for Contract No. C0675.
July 19-22, 2002	The MTA conducted job walks for potential bidders providing the opportunity to view current project conditions.
July 25, 2002	The MTA issued Addendum No. 2 for Contract No. C0675.
August 23, 2002	The MTA completed final design of the Los Angeles River Bridge. The final design was completed to mitigate possible construction and schedule risks associated with a limited dry season construction restriction within the river channel.
August 28, 2002	San Fernando Valley Metro Rapidway Project held its first Community Transit meeting. The meeting, held in a relatively informal style, included planners, schedule makers, and schedule checkers from the sector office. The meeting's format included plenty of time for attendees to speak to the planners and schedulers about specific issues with specific lines or stops.
August 29, 2002	The MTA issued Addendum No. 3 for Contract No. C0675. This included the option for constructing the Los Angeles River Bridge.
August 29, 2002	Contract No. EN069. CH2M Hill Constructors, Inc., started demolition of the Los Angeles River Bridge
September 9, 2002	Two bidders submitted technical bids, first step of the two-step bid process for Contract C0675.
September 11, 2002	The MTA advertised Contract No. C0676 Los Angeles River Bridge.
September 19, 2002	Substantial completion of the Los Angeles River Bridge demolition.
October 31, 2002	The MTA issued Notice of Technical Acceptance to two Contract No. C0675 bidders, Shimmick-Obayashi, a Joint Venture and Granite-Brutoco, a Joint Venture.

## CHRONOLOGY OF EVENTS

November 2002	Addendums No. 4, 5, and 6 were issued for Contract No. C0675 to clarify issues identified during the technical evaluation phase.
December 2, 2002	Received price bids from the two contractors for Contract No. C0675 Design/Build.
December 5, 2002	MTA received a single bid for Contract No. C0676 Los Angeles River Bridge.
December 5, 2002	MTA opened two price bids for Contract No. C0675 Design/Build for design and construction.
December 17, 2002	Notice of Intent to Award Contract No. C0675 sent to both contractors.
December 17, 2002	The California Transportation Commission (CTC) issued letter deferring "Traffic Congestion Relief Program" (TCRP) funds until its meeting on February 27, 2003. This resulted in the suspension of Contract No. C0675 contract award pending further notification of funding status from the CTC.
December 20, 2002	A trial was held to hear the lawsuit brought by the Citizens Organized for Smart Transit (COST) opposed to the Project. The judge ruled in favor of MTA.
December 23, 2002	Los Angeles Department of Water and Power (LADWP) agrees to reimburse MTA for actual costs incurred to review and update Los Angeles River Bridge design to incorporate a future reclaimed waterline.
December 27, 2002	A Notice to Award was issued to Brutoco Engineering and Construction Corporation for Contract No. C0676 Los Angeles River Bridge.
January 17, 2003	MTA held groundbreaking ceremony for Contract No. C0676.
January 17, 2003	CTC held workshop to discuss funding issues.
January 28, 2003	Notice to Proceed was issued to Brutoco Engineering and Construction Corporation for construction of the new Los Angeles River Bridge. The decision to award a separate contract instead of exercising option in Contract No. C0675 Design/Build allowed critical work to commence during the first dry construction period starting April 15, 2003.
February 27, 2003	CTC put the project funding issue on the April 3, 2003 CTC meeting.
February 27, 2003	The MTA Board adopted the Project Budget and Schedule. The Project Revenue Operations Date calculated as full Notice to Proceed for Contract No. C0675 Design/Build plus 27 months contingent upon resolution of CTC funding issues. A budget of \$329.5 million was adopted for the busway and \$8.1 million was adopted for the bikeway.
April 3, 2003	CTC approved funding plan for the San Fernando Valley Metro Rapidway Project.
April 3, 2003	MTA awarded Contract No. C0675 to Shimmick Construction Co./Obayashi Corporation, a Joint Venture for the design and construction of the San Fernando Valley Metro Rapidway. Total value of the Contract was \$150.4 million.

## CHRONOLOGY OF EVENTS

April 24, 2003	MTA Board adopted San Fernando Valley Metro Rapidway Project as the official name of the Project.
May 2, 2003	Notice to Proceed (NTP) was issued to Shimmick Construction Co., Inc./Obayashi Corporation, a Joint Venture for Contract No. C0675.
May 20, 2003	The LADWP Board of Commissioners certified the Mitigated Negative Declarations for the West Valley Water Recycling Project (known as the Recycled Water Pipeline Project).
July 9, 2003	MTA and Contractor staff complete move into an Integrated Project Management Office for Contract No. C0675.
September 15, 2003	NTP was issued to Carter & Burgess for Contract MC067 Construction Management Services.
September 16, 2003	The LADWP Board of Commissioners approved a \$5.0 million budget under an existing Master Cooperative Agreement with MTA for partial funding for schedule-critical portions of the LADWP Recycled Water Pipeline Project.
September 25, 2003	The MTA Board approved a \$5,000,000 initial budget and authorized the issuance of change orders in the amount not to exceed \$2,500,000 to the C0675 Contractor for initial funding of design and construction of the LADWP Recycled Water Pipeline.
October 15, 2003	C0676 Contractor completed on time all in-channel work required to meet contract milestone date planned for October 15, 2003.
November 6, 2003	C0675 Contractor began first excavation and installation of drainage pipe at the east end of the Rapidway on Chandler Boulevard between Laurel Canyon and Coldwater Canyon.
November 17, 2003/ November 20, 2003	Held two of four planned community meetings in the San Fernando Valley to collect feedback on proposed landscape plans for the Rapidway.
November 21, 2003	First temporary lane closure at Laurel Canyon Intersection for installation of drainage pipe across intersection.
December 1, 2003	Successful completion of Contract C0676 Los Angeles River Bridge, Brutoco Engineering and Construction Corporation, two weeks ahead of schedule and under budget.
December 3, 2003/ December 6, 2003	Held remaining two of four planned community meetings in the San Fernando Valley to collect feedback on proposed landscape plans for the Rapidway.
January 14, 2004	LADWP advised MTA to not proceed with the Recycled Water Pipeline Project and finish current authorized scope of work.
January 22, 2004	MTA Board of Directors approved changing name of project to Metro Orange Line.
January 22, 2004	Suspension of work issued to C0675 Design/Build Contractor at westside of busway between De Soto Avenue and Corbin Avenue due to presence of contaminated soil.

## CHRONOLOGY OF EVENTS

January 29, 2004	Suspension of work issued for C0675 Design/Build Contractor at east end of busway east of Colfax/Chandler intersection due to presence of contaminated soil.
February 4, 2004	Removed suspension of work issued to C0675 Design/Build Contractor at westside of busway between De Soto Avenue and Corbin Avenue due to presence of contaminated soil.
February 11, 2004	Removed suspension of work issued to C0675 Design/Build Contractor at east end of busway east of Colfax/Chandler intersection due to presence of contaminated soil.
February 11, 2004/ February 16, 2004	First weekend full street closure at Balboa Blvd./Victory Blvd. for construction of new intersection including demolition, paving, signage and striping.
March 24, 2004	First asphalt busway paving on Chandler Boulevard between Colfax and Laurel Canyon Boulevard (Segment 1A).
March 22, 2004	LADWP issued notice to cease and desist construction activities at west end of Project due to C0675 Design/Build Contractor striking and damaging an LADWP underground 230,000 volt line.
April 2, 2004	LADWP lifts cease and desist notice issued March 22, 2004 with conditions.
May 27, 2004	MTA Board approved property acquisitions for new Warner Center Park and Ride facility pending resolution of environmental issues.
July 19, 2004	The California Court of Appeal reversed the December 2002 decision of the Los Angeles Superior Court, which had rejected a challenge to the Environmental Impact Report (EIR) for the Orange Line. The Court of Appeal rejected each of the grounds except one. The court found that the MTA should have studied the possibility of multiple east-west Rapid Bus lines in the San Fernando Valley as an alternative to the Orange Line, and the failure to do so renders the EIR invalid. The Court of Appeal decision did not enjoin further construction on the Project.
July 20, 2004	Start of first station construction at Laurel Canyon Station with C0675 Design/Build Contractor beginning drilling and placement of CIDH piles.
July 22, 2004	The MTA Board of Directors approved an increase in the Current Budget for the Bikeway portion (Project 800114) of the Orange Line, from \$8.1 million to \$10.6 million.
July 30, 2004	Superior Court denies COST request for Stay of Project citing lack of jurisdiction. COST states it will go to California Court of Appeal.
July 30, 2004	MTA filed a petition for rehearing of July 19, 2004 action with California Court of Appeal.
August 2, 2004	California Court of Appeal issues a temporary stay halting construction of the Orange Line Project.

## CHRONOLOGY OF EVENTS

- |                 |  |
|-----------------|--|
| August 3, 2004  | MTA issued a suspension of work to the C0675 Design/Build Contractor due to the temporary stay of the Project by the California Court of Appeal.                                     |
| August 19, 2004 | The temporary stay issued by the California Court of Appeal on August 2, 2004 expired. The California Court of Appeal denied MTA's request for rehearing on the validity of the EIR. |
| August 26, 2004 | The suspension of work to C0675 Design/Build Contractor was lifted and work resumed.   |
| August 26, 2004 | MTA filed an appeal to the California Supreme Court regarding validity of the Project's EIR.   |



## PROJECT PHOTOS



Low floor CNG-powered articulated vehicle manufactured by North American Bus Industries (NABI) at NABI's facility in Anniston, Alabama.

## PROJECT PHOTOS



Installation of the cast in drilled hole piling system at Laurel Canyon Station



SOJV subcontractor Romero started rough grading, Phase 3 of intersection work at De Soto Avenue.

### PROJECT PHOTOS



SOJV subcontractor Rainbow continuing installation of storm drain culvert near Mason Avenue.

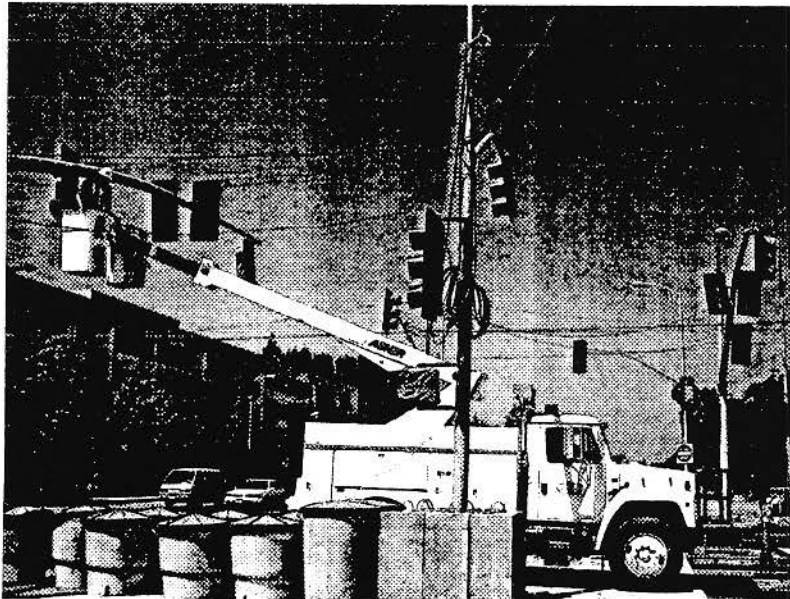


SOJV subcontractor Western Paving continuing paving near western end of Project.

### PROJECT PHOTOS



SOJV subcontractor Rainbow installing storm drain pipe near Balboa Blvd.



SOJV subcontractor Moore Electric continues installing traffic/light poles at Whitsett Avenue.

## PROJECT PHOTOS

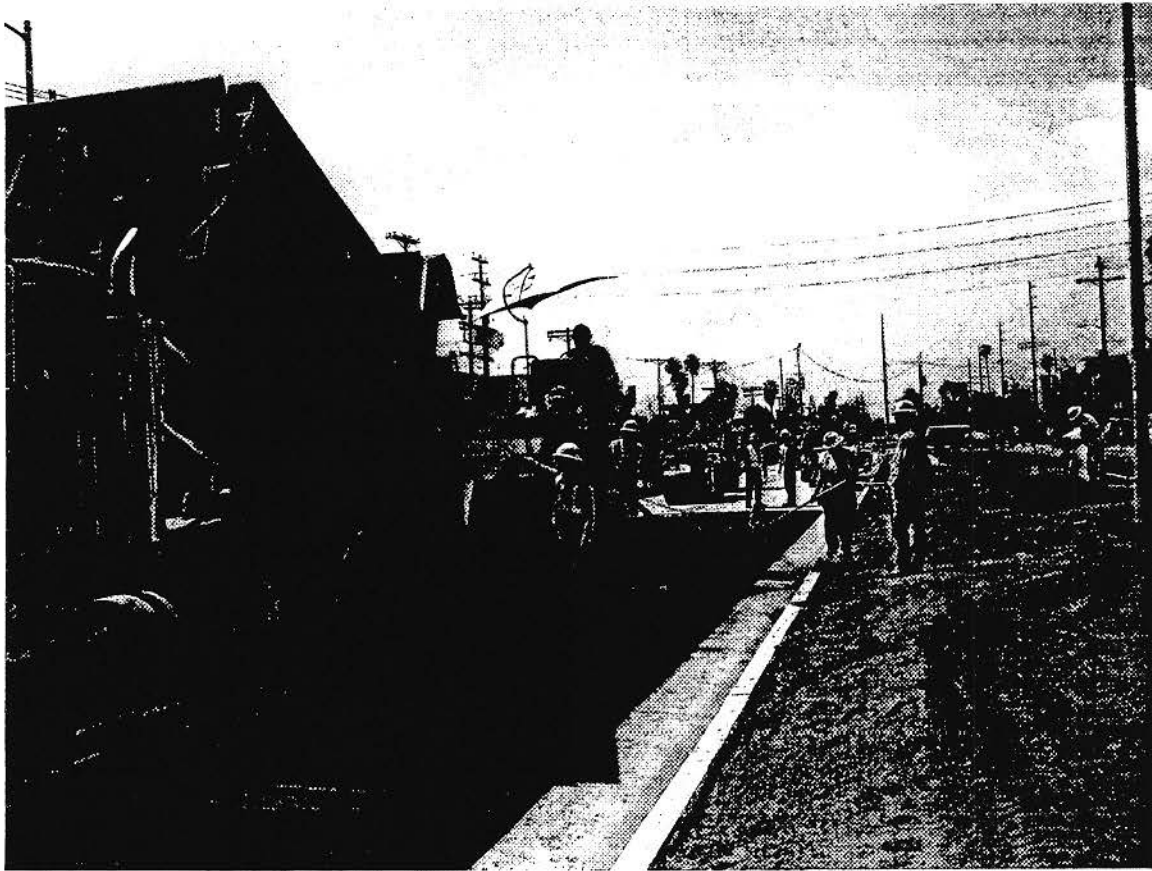


First course of asphalt looking west toward De Soto Avenue.



Placement of crushed miscellaneous base material.

## PROJECT PHOTOS



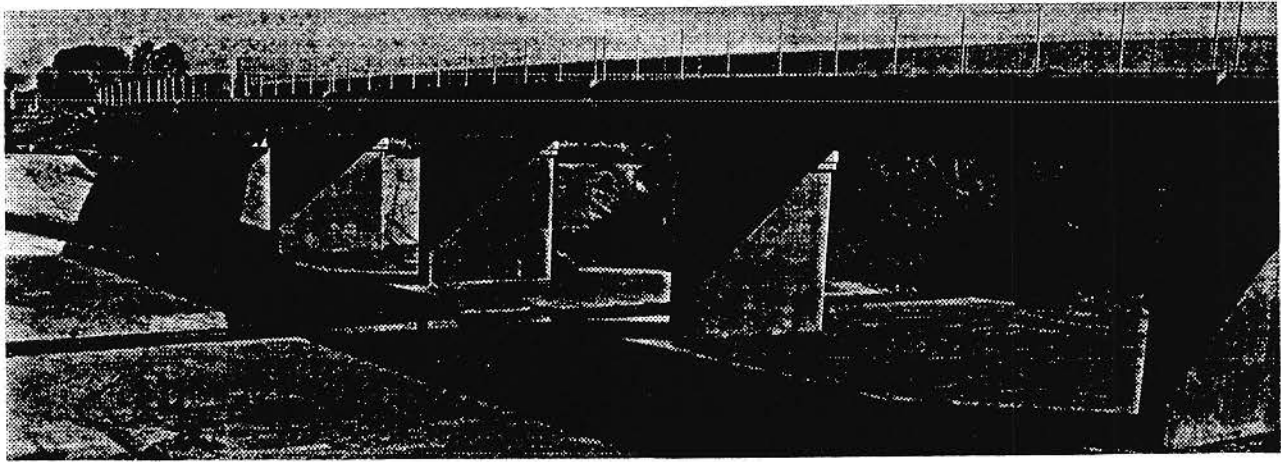
Paving operation along Chandler Boulevard.

## PROJECT PHOTOS



Paving operation along Chandler Boulevard.

## PROJECT PHOTOS



Contract C0676 Los Angeles River Bridge Contractor completed bridge (December 2003).



## APPENDIX

### COST AND BUDGET TERMINOLOGY

#### Cost Descriptions

**ORIGINAL BUDGET** The Original Project Budget as established by Metropolitan Transportation Authority (MTA) Board of Directors at the time it authorizes Construction Project Management Division to commence full design and construction of the project (Project Adoption).

**CURRENT BUDGET** The Original Budget plus all budget amendments approved by formal MTA action. Also referred to as Approved Budget.

**COMMITMENTS** The total of actual contract awards, executed change orders or amendments, approved work orders of Master Cooperative Agreements, offers accepted for purchase of real estate, and other MTA actions which have been spent or result in the obligation of specific expenditures at a future time.

**INCURRED COST** The total value of work performed to date of services received, and acquired materials or properties.

**EXPENDITURES** The total dollar amount of funds expended by MTA for contractor or consultant invoices, third party invoices, staff salaries, real estate and other expenses that is reported in MTA's Financial Information System (FIS).

**CURRENT FORECAST** The best estimate of the final cost of the project when all checks have been issued and the project is closed out. Current Forecast is composed of actual costs incurred to date, the best estimate of work remaining, and a current risk assessment for each budgeted cost item.

#### Cost Element Descriptions

**CONSTRUCTION** Includes construction and procurement contracts. Costs associated with Guideways, Yards and Shops, Systems/Equipment, Stations and Buses.

**SPECIAL CONDITIONS** Includes work by outside agencies and utilities in design coordination, review, and relocation of utilities through Master Cooperative Agreements, environmental mitigation and compliance, insurance programs, safety program, art program, testing, start-up, and pre-revenue operations.

**RIGHT-OF-WAY** Includes purchase cost of parcels, easements, right-of-entry permits, escrow fees, contracted real estate appraisals and tenant relocation.

**PROFESSIONAL SERVICES** Includes design engineering, project management assistance, construction management support services, legal counsel, agency staff costs, and other specialty consultants.

**PROPOSED PARK-AND-RIDE FACILITY** Proposed park-and-ride facility at the Western Terminus of the Orange Line.

**CONTINGENCY** A fund established at the beginning of a project to provide for anticipated but unknown additional costs that may arise during the course of the project.

**PROJECT REVENUE** Includes all revenue receivable to the MTA as a direct result of project activities. This includes cost sharing of construction items, insurance premium rebates, and the like.

## APPENDIX

### LIST OF ACRONYMS

AFE	Authorization For Expenditure
BRT	Bus Rapid Transit (No longer valid see MRT instead)
CADD	Computer Aided Drafting and Design
CALTRANS	California Department of Transportation
CD	Calendar Day
CDFG	California Department of Fish and Game
CM	Construction Manager
CMAC	Congestion Mitigation Air Quality
CN	Change Notice
CO	Change Order
COE	Corps of Engineers
CPM	Critical Path Method
CPUC	California Public Utilities Code
CR	Camera Ready
CTC	California Transportation Commission
CUD	Contract Unit Description
D/B	Design/Build
D/B/B	Design/Bid/Build
DD	Design Development
DOT	Department of Transportation
DTSC	Department of Toxic Substances Control
DWP	Department of Water and Power
EIR	Environmental Impact Report
EIS	Environmental Impact Statement
EPBM	Earth Pressure Balance Machine
FAR	Federal Acquisition Regulation
FD	Final Design
FEIR	Final Environmental Impact Report
FIS	Financial Information System
FTE	Full Time Equivalent
GDSR	Geotechnical Design Summary Report
IFB	Invitation for Bid
IPO	Integrated Project Office
JV	Joint Venture
LA	Los Angeles
LABOE	Los Angeles Bureau of Engineering
LACFCDD	Los Angeles County Flood Control District
LACMTA	Los Angeles County Metropolitan Transportation Authority
LADOT	Los Angeles Department of Transportation

**APPENDIX**  
**LIST OF ACRONYMS (Continued)**

LADPW	Los Angeles Department of Public Works
LADWP	Los Angeles Department of Water and Power
LAUSD	Los Angeles Unified School District
LNTF	Limited Notice To Proceed
LONP	Letter Of No Prejudice
LRTP	Long Range Transportation Plan
MIS	Major Investment Study
MPSR	Monthly Project Status Report
MR	Metro Rapidway
MRT	Metro Rapid Transitway (replaces BRT used prior to December 2002)
MTA	Metropolitan Transportation Authority
N/A	Not Applicable
NEPA	National Environmental Protection Act
NTE	Not to Exceed
NTP	Notice To Proceed
OCIP	Owner-Controlled Insurance Program
P3	Primavera Project Planner® (scheduling software)
PC	Project Control
PE	Preliminary Engineering
PEER	Permit Engineering Evaluation Report
PIP	Project Implementation Plan
PM	Project Manager
PMA	Project Management Assistance
PMIP	Project Management Implementation Plan
PMOC	Project Management Oversight Consultant
PMP	Project Management Plan (manual)
P&P	Policies & Procedures
PR	Project Report
PSR	Project Study Report
PUC	Public Utilities Commission
QA	Quality Assurance
QAR	Quality Assurance Report
QC	Quality Control
QPSR	Quarterly Project Status Report
RAC	Review Advisory Committee
RAG	Rail Activation Group
RFC	Request For Change
RFP	Request For Proposal
ROD	Record Of Decision
ROD	Revenue Operations Date
ROM	Rough Order of Magnitude

**APPENDIX**  
**LIST OF ACRONYMS (Continued)**

ROW	Right-Of-Way
RWQCB	Regional Water Quality Control Board
SCE	Southern California Edison
SCRRA	Southern California Regional Rail Authority
SFV	San Fernando Valley
SHA	State Highway Account
SHPO	State Historic Preservation Office
SIT	System Integration Testing
SOJV	Shimmick Obayashi Joint Venture
SOV	Schedule Of Value
SOW	Statement Of Work
SP	Special Provision
STIP	State Transportation Improvement Program
STP	Surface Transportation Program
STV	STV Incorporated
TBD	To Be Determined
TCRP	Traffic Congestion Relief Program
TRACS	Transit Automatic Control System
UFS	Universal Fare System
USDOT	U.S. Department Of Transportation
VE	Value Engineering
WBS	Work Breakdown Structure
WGI	Washington Group, Incorporated
WP	Work Package

**EXHIBIT XXV**

**COMPARISON OF CAPITAL AND OPERATING  
AND MAINTENANCE COSTS OF ALTERNATIVES**

**LOS ANGELES COUNTY METROPOLITAN TRANSPORTATION AUTHORITY  
 SAN FERNANDO VALLEY EAST-WEST TRANSIT CORRIDOR  
 DRAFT REVISED FINAL ENVIRONMENTAL IMPACT REPORT  
 COMPARISON OF BUS CAPITAL COSTS OF ALTERNATIVES**

(Dollars in Millions, Except Where Otherwise Noted)

	TSM		Full BRT		RB-3	RB-5	RB-Network	Notes
	1999 \$'s	2001 \$'s	1999 \$'s	2001 \$'s	2001 \$'s	2001 \$'s	2001 \$'s	
Bus Costs	\$20.0	\$20.0	\$64.1	\$68.0	\$35.2-49.0	\$38.0-52.8	\$58.3-78.7	1
Number of Buses	38	38	68	68	64-89	69-96	106-143	2
Cost/Bus (Thousands)	<u>\$526</u>	<u>\$526</u>	<u>\$942</u>	<u>\$1,000</u>	<u>\$550</u>	<u>\$550</u>	<u>\$550</u>	
Total Number of Buses	38	38	68	68	64-89	69-96	106-143	2
Less: TSM Buses	<u>(38)</u>	<u>(38)</u>	<u>(38)</u>	<u>(38)</u>	<u>(38)</u>	<u>(38)</u>	<u>(38)</u>	2, 3
BRT/Rapid Bus Buses		<u>0</u>		<u>30</u>	<u>26-51</u>	<u>31-58</u>	<u>68-105</u>	

**LOS ANGELES COUNTY METROPOLITAN TRANSPORTATION AUTHORITY  
SAN FERNANDO VALLEY EAST-WEST TRANSIT CORRIDOR  
DRAFT REVISED FINAL ENVIRONMENTAL IMPACT REPORT  
COMPARISON OF BUS CAPITAL COSTS OF ALTERNATIVES**

**Notes**

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1

TSM -- FEIR, page 6-11 for 1999 dollars. 2001 Dollar cost is calculated from FEIR, page 6-13, where "Full BRT" costs are shown as \$283.3 million in 1999 dollars and \$300.5 million for the "Lower-Bound" range end, and inflation factor of 6.07% for the two-year period. (Due to rounding, calculations of this inflation factor from other FEIR data will produce slightly different inflation factors.) Full BRT -- FEIR, page 6-12 for 1999 dollars, FEIR, page 6-13 for 2001 dollars. (Note that page 6-13 shows 1999 dollar cost at \$283.3 million, a difference of \$1.0 million.) Rapid Bus Alternatives -- DRFEIR, page 8-6-5.

2 TSM -- FEIR, page 6-11 -- all Standard (40-foot) buses.

Full BRT -- FEIR, page 2-72, Upper Bound -- 61 Single-Articulated Buses + 7 Standard Buses. Note that the Single-Articulated Buses assumed in the FEIR were CNG/Electric or CNG/Hybrids, while MTA actually purchased "straight" CNG Single Articulated Buses for opening year use at \$632,914 per vehicle. (Source: MTA Press Release, "MTA Moves Forward with the Purchase of 200 high-capacity Buses and a Major Design/Build Contract for the San Fernando Valley Metro Rapid Transitway," April 3, 2003) Also, rather than the 68 buses projected for 2020 operations, MTA is allotting 22 of these 200 buses to the Orange Line for initial operations. (Source: MTA Press Release, "Metro Raises Technology Bar with Super-Sized *Metro Liner*; Bus Prototype Unveiled Today in North Hollywood," October 15, 2004)

3

There is a disconnect in the assumptions for the Orange Line bus counts and the allocation of vehicles and costs between Orange Line service and TSM and other service. Part of the problem is that there will be some bus lines that operate on both the Orange Line BRT guideway and surface streets, which causes an allocation problem for the buses utilized on these routes (FEIR, Section 2-3.3.3 Bus Routing Plan, page 2-27 and Figure 2-8: Bus Routing Plan, page 2-30, which have routes on Reseda Blvd. and from Thousand Oaks joining the BRT for part of their routes).

Another problem is that the Orange Line Alternative is that it includes: (1) all TSM service improvements, and (2) Improved service on eight major North-South streets (FEIR, Section 2-3.3 Bus Routing Plan, page 2-31). While the number of buses required for the TSM service is known as 38 (Note 4), there is no explicit detailing of the number of buses that would be required to operate the additional North-South service over and above the TSM service.

Finally, the TSM service is to be operated with standard 40-foot buses (while there is not an explicit statement to this effect in the FEIR, given that the TSM is basically an increase in service frequencies on existing bus routes that are now operated with standard 40-foot buses and that operating standard 40-foot and articulated 60-foot buses on the same route is not a common transit operating practice, and considering the capital costs per vehicle calculated in the main schedule, it is clear that the TSM buses will be standard 40-footers), and 38 buses will be required for the TSM service (Note 4), while only seven 40-footers are included in the Orange Line bus procurement plan (Note 4).

Note that the Orange Line North-South service, over and above that in the TSM Alternative, would appear to require more vehicles than the seven standard 40-foot buses included in the Orange Line bus procurement plan (Note 4). It would not appear possible to increase service on eight bus lines with only seven additional buses.

**LOS ANGELES COUNTY METROPOLITAN TRANSPORTATION AUTHORITY  
DRAFT REVISED RINAL ENVIRONMENTAL IMPACT REPORT --  
SAN FERNANDO VALLEY EAST-WEST TRANSIT CORRIDOR  
COMPARISON OF TSM AND RB-3 TRANSIT OPERATING STATISTICS**

LINE FAMILY/Line Name	Line No.	Data from MTA Model Runs					Calculated Values				
		Peak Vehicles	VHT	VMT	Boardings	Passenger Miles	Boarding/ Hour	Average Passenger Load	VMT/ VHT	Average Trip Length	Passenger Miles/ Peak Veh
<b>TRANSPORTATION SYSTEM MANAGEMENT (TSM) ALTERNATIVE</b>											
VICTORY Vcir/Film-Brbnk/Mtrl	164	10	168	2,455	8,018	25,307	47.7	10.3	14.6	3.2	2,531
VANOWEN Vcir/Gilm-Brbnk/Mtrl	165	30	322	5,040	18,823	86,724	58.5	17.2	15.7	4.6	2,891
SHERMAN WAY Omg/Hlywd-Medcenter	163	36	364	6,090	27,445	103,799	75.4	17.0	16.7	3.8	2,883
Medcenter-Vine/Stra	163	0	56	895	2,673	7,031	47.7	10.1	12.4	2.6	N/A
SHERMAN WAY TOTALS		36	420	6,785	30,118	110,830	71.7	18.3	16.2	3.7	3,079
TSM ALTERNATIVE TOTALS		76	910	14,280	56,959	222,861	62.6	15.6	15.7	3.9	2,932
<b>RB-3 ALTERNATIVE</b>											
VICTORY Vcir/Film-Brbnk/Mtrl	164	10	168	2,455	3,367	13,639	20.0	5.6	14.6	4.1	1,364
Victory Limited WCTC	364	11	161	2,002	0	0	N/A	N/A	12.4	N/A	N/A
Victory (RB)	783	9	203	3,201	13,300	72,318	65.5	22.6	15.8	5.4	8,035
VICTORY TOTALS		30	532	7,658	16,667	85,957	31.3	11.2	14.4	5.2	2,865
VANOWEN Vcir/Gilm-Brbnk/Mtrl	165	30	322	5,040	19,327	82,877	60.0	16.4	15.7	4.3	2,763
Vanowen (RB)	782	10	210	3,472	5,226	20,055	24.9	5.8	16.5	3.8	2,006
VANOWEN TOTALS		40	532	8,512	24,553	102,932	46.2	12.1	16.0	4.2	2,573
SHERMAN WAY Omg/Hlywd-Medcenter	163	36	364	6,090	24,014	90,108	66.0	14.8	16.7	3.8	2,503
Medcenter-Vine/Stra	163	0	56	895	780	1,963	13.9	2.8	12.4	2.5	N/A
Sherman Way (RB)	781	10	224	3,785	10,866	53,988	48.5	14.3	16.9	5.0	5,399
SHERMAN WAY TOTALS		46	644	10,570	35,660	146,059	55.4	13.8	16.4	4.1	3,175
RB-3 ALTERNATIVE TOTALS		116	1,708	26,740	76,880	334,948	45.0	12.5	15.7	4.4	2,887



**EXHIBIT XXVI**

***MIAMI HERALD* ARTICLES  
RE SOUTH MIAMI BUSWAY**


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## Miami Herald, The (FL)

June 9, 1997

**Section:** Local

**Edition:** Final

**Page:** 1B

**Memo:** COMMUTING / EYE ON THE ROAD

### COMPLAINT SPELLS TROUBLE FOR BUSWAY

*ALFONSO CHARDY, Herald Staff Writer*

Hailed originally as a tool to fight traffic congestion, the South Dade **Busway** has become a headache for state and county transportation authorities.

Not only has the **busway** worsened traffic on some cross streets, it has become an accident machine of sorts, with 12 crashes since its completion in January.

Add another controversy to the list: The federal government is investigating whether the **busway** violates the landmark Americans with Disabilities Act.

South Dade resident Denny Wood filed a complaint with the U.S. Department of Transportation, which referred it to the civil rights offices of the Federal Transit Administration and the Federal Highway Administration.

Wood's complaint "alleges numerous instances of inaccessible sidewalks, bus stops and lack of curb ramps along U.S. 1," according to a U.S. DOT document.

The **busway** runs alongside South Dixie Highway, which is U.S. 1, between Cutler Ridge and the Dadeland South Metrorail station.

Wood's complaint, filed in November before the **busway** opened, alleges that **busway** stops make it more difficult for commuters with disabilities to use the facility or reach businesses along South Dixie Highway. The reason: **Busway** stops are far from cross streets.

As for South Dixie, Wood also claims that the county has allowed jitneys to operate without requiring them to be accessible to the disabled.

"This service was instituted after ADA was enacted and should be required by the county to comply with ADA," Wood wrote.

Long a champion of causes for the disabled, Wood has gradually emerged as the **busway's** most vocal critic.

His complaint has a broader purpose: to bring about a radical modification of the **busway** or to shut it down.

"I consider the **busway** a public safety hazard," Wood said last week.

Wood keeps close tabs on the **busway**, often learning first about accidents and tipping off the media.

As of early last week, eight crashes involving **busway** buses and private vehicles were acknowledged by the Metro-Dade Transit Agency.

But on Friday, Wood sent The Herald a transit agency document listing four other crashes that had not been previously reported.

Both the Florida Department of Transportation, which built the **busway**, and the transit agency, which runs the **busway**, are preparing official responses to Wood's complaint.

Kimberly Coleman, a spokeswoman for the state transportation agency in Dade County, said a thorough review of the route is being conducted.

The transit agency, meanwhile, has responded to Wood's allegation about the jitneys, saying the agency bears no responsibility since they're operated by a private company.

Arthur Andrew Lopez, director of the Federal Transit Administration's office of civil rights, wrote to Wood on May 22 noting that his office only has jurisdiction over public, not private, operators of public transportation.

But Lopez said he would forward the jitney complaint to the Justice Department "for further analysis."

Meanwhile, the U.S. DOT civil rights offices are pressing ahead with their investigation of Wood's other allegations.

It may be months before their findings are ready.

In a telephone interview last week, Ed Colby, the transit agency director, addressed some of the allegations.

"The **busway** is in compliance with accessibility," Colby said. "The question is the access to the **busway** from U.S. 1."

Colby also acknowledged that U.S. 1 may lack some curb cuts for wheelchair access, but noted that they are being built gradually.

"The county's Public Works Department and the state Department of Transportation, we're all working together to develop a response and, I believe, take care of any deficiencies."

#### TRAFFIC TIE-UP OF THE WEEK

\* South Dixie Highway: The road will be closed at Southwest 320th, 328th and 344th streets from

6 a.m. today through 7 p.m. Friday for road work.

#### OTHER PLACES TO AVOID

\* Biscayne Boulevard: One southbound lane will be closed at 78th Street weekdays between 9 a.m. and 3:30 p.m. today through June 23 for sewer work.

\* Bird Road Toll Plaza: Northbound and southbound motorists on the Homestead Extension of Florida's Turnpike in Dade will face nighttime and nonpeak single-lane closures from north of Miller Drive (Southwest 56th Street) to south of Bird Road (Southwest 40th Street). Two lanes will remain open. The closure is part of an ongoing project to replace and expand the toll plaza.

\* Southwest 57th Avenue bridge: One northbound lane will be closed on the Southwest 57th Avenue bridge over the Coral Gables canal near Southwest 42nd Street from 2 to 3 p.m. Thursday for paint inspection.

\* Southwest 107th Avenue: Two northbound and two southbound lanes will be closed at Southwest 40th Street weeknights from 9 p.m. to 6 a.m. today through June 27 for water main work. Also, one northbound lane will be closed just south of Southwest 72nd Street weeknights between 10 p.m. and 5 a.m. through June 20 for the same purpose.

\* State Road 826: Closures this week in the ongoing Palmetto Expressway reconstruction project include the ramps from eastbound Kendall Drive to northbound Palmetto through Thursday; the ramps from northbound Palmetto to westbound Kendall intermittently between 7:30 a.m. and 3:30 p.m. through Thursday; the northbound ramp from South Dixie Highway to Kendall from 10 p.m. today to 5:30 a.m. Tuesday; eastbound Kendall beneath the Palmetto from 10 p.m. to 5:30 a.m. Wednesday and again from 10 p.m. Wednesday to 5:30 a.m. Thursday; and westbound Kendall beneath the Palmetto from 10 p.m. Thursday to 5:30 a.m. Friday and from 10 p.m. Friday to 5:30 a.m. Saturday.

#### TRAFFIC TIP

\* Monroe County: One northbound lane will be closed on the Shark Channel bridge on U.S. 1 between mile markers 11 and 12 today through Thursday between 8:30 a.m. and 3 p.m. for bridge inspection.

\* West Palm Beach: Northbound and southbound motorists in the West Palm Beach area will be merged to one lane intermittently for about one mile approaching the PGA Boulevard overpass through the summer, while workers replace the bridge over Florida's Turnpike.

#### WHAT'S NEW:

\* Bike Blockades: Under Florida law, bicycles are vehicles, and a bicyclist must obey all traffic controls, signals and laws. There are exceptions. Bicyclists can ride on sidewalks or ride two abreast in a lane of traffic. But residents of Key Biscayne and Coconut Grove have called with increasing frequency to complain that droves of bicyclists violate the two-abreast rule. Often, these callers say, dozens of bicyclists block entire lanes of traffic on the Rickenbacker Causeway and some roads in Coconut Grove, forcing motor vehicles to crawl behind.

\* Stiff Fines: Florida Gov. Lawton Chiles today is scheduled to sign into law a bill directing that a significant portion of the fines for driving or boating under the influence of alcohol be used for brain and spinal cord injury rehabilitation and research. Chiles is scheduled to sign the bill at 3:30 p.m. at the University of Miami/Jackson Memorial Medical Center.

cutlines

ALFONSO CHARDY / Herald Staff CROWDED LANES: Bicyclists, limited by Florida law to riding two abreast in a traffic lane, span one side of Crandon Boulevard in Key Biscayne last week. See WHAT'S NEW below.

**Illustration:**photo: Bicyclists in Key West (A)

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## Miami Herald, The (FL)

June 12, 1997

**Section:** Local

**Edition:** Final

**Page:** 1B

**Memo:** See microfilm for diagram THE SOURCE OF CONFUSION

### BUSWAY CHANGES MAY REDUCE ACCIDENTS

*ALFONSO CHARDY Herald Staff Writer*

Responding to a string of crashes on the South Dade **busway**, managers are modifying the way the special road for buses operates.

At intersections along the southern leg of the **busway**, buses -- which now have green-light priority -- will have to stop. Also, more visible signs will go up warning motorists about the **busway**.

The changes will begin today and continue through next week at cross-streets from Southwest 168th Street south to Marlin Drive. That move likely will slow down the bus commute, a key selling point of the **busway**. But transit managers say the minor delays will be outweighed by increased safety.

At least 13 crashes involving buses and private vehicles have occurred along that stretch since the **busway** was completed in January. Also, this is the part where the **busway** no longer runs parallel to South Dixie Highway, as it does north of 168th Street.

Most of the crashes, which have left 55 people slightly injured, have been caused by motorists running red lights while crossing the **busway**.

Some of the drivers told police they were not used to traffic signals at the **busway**, which was built along the path of an abandoned railroad track.

"The changes will provide more visibility to the intersections so people don't run the red light," said Yvonne McCormack, a Florida Department of Transportation spokeswoman.

Managers cited three specific adjustments:

\* Traffic signals at intersections between 168th Street and Marlin Drive will be modified to lessen the potential for collisions.

Currently, the east-west traffic signals at the **busway** and South Dixie are not synchronized. That means a driver heading east may encounter a red light at the **busway**, but see a green light a few blocks down the road at South Dixie -- and drive through the **busway** intersection.

That happens because under-the-road sensors trigger green lights for **busway** vehicles and red for cross-street vehicles. Meanwhile, the lights along South Dixie are on different cycles.

By next week, both signals will be coordinated. If the South Dixie signal facing a cross-street is green, the east-west signal at the **busway** also will be green -- forcing buses to stop for crossing vehicles, not the other way around.

\* Some of the sensors that trip signals as buses approach are being disconnected so lights can be coordinated with South Dixie.

\* Big, yellow, diamond-shaped signs warning of traffic signals at the **busway** will be installed over the next few days at cross-street approaches. Other warnings that may be similar to railroad crossing signs will go up at the same approaches over the next four to six weeks.

The Florida Highway Patrol, which enforces traffic laws along the **busway**, welcomed the changes.

"Anything that gets the attention of the drivers and forewarns them about the **busway** is going to greatly reduce the number of crashes," said Lt. Ernesto Duarte, an FHP spokesman in Dade County.

Some **busway** critics were glad to hear of the changes, but said they were not enough.

"Synchronizing lights on the **busway** and South Dixie is a very good idea," said Denny Wood, a South Dade resident and outspoken **busway** critic. "But more needs to be done."

Among his ideas: Build "washboard grooves" on **busway** intersections to alert crossing drivers "that there is something different just ahead."

Other critics were not mollified. Alan Stanley, an attorney who lives in South Dade and often speaks out against the **busway**, had one solution:

"What they should do is close the damn thing down."

**Illustration: diagram: THE SOURCE OF CONFUSION**

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## Miami Herald, The (FL)

June 14, 1997

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Page: 2B

### BUSWAY PRIORITY FACES TEMPORARY RED LIGHT

*ALFONSO CHARDY Herald Staff Writer*

One day after Metro-Dade transit managers protested about proposed changes to the South Dade **Busway**, the Florida Department of Transportation said Friday the plan — intended to stop a rash of accidents — will not be permanent.

The most important change disclosed Wednesday: Buses will no longer have green-light priority and instead will have to stop for red lights at intersections along the southern leg of the special road for buses.

But state transportation agency officials said Friday this change would be temporary. Buses will once again have green-light priority in a few weeks, once special traffic lights are installed on South Dixie Highway designed to lessen driver confusion.

Since the **Busway** was completed in January, 13 crashes between buses and private vehicles have left 55 people slightly injured.

Most of the crashes have been caused by motorists running red lights while crossing the **Busway**. Some said they were not used to signals at the **Busway**, built along an abandoned train track, and focused instead on signals at South Dixie Highway a few feet to the east.

The transportation department's position that green-light priority for buses had been suspended, not canceled, followed an unusual statement Thursday by the Metro-Dade Transit Agency.

The state transportation department built and maintains the **Busway**. The county transit agency runs the buses on it.

The transit agency objected to the changes, saying it would slow the bus commute — a key selling point of the **Busway**. It opened to much fanfare Feb. 3 as a way to speed commuters to Metrorail and downtown faster than private vehicles on South Dixie Highway.

"Key to its success," the agency said, referring to the **Busway**, "is special traffic signals which allow buses to speedily transport commuters along this dedicated bus lane."



Changing the **Busway** signals should be a last resort, the agency wrote.

Manny Palmeiro, a transit agency marketing manager, said a better alternative would be increased police presence at cross-streets to ticket drivers running **Busway** red lights.

But for now, the decision to suspend green-light priority for buses stands until other changes take place to lessen the potential for bus-car collisions.

Rory Santana, a senior transportation department official, said the proposed changes were always intended to be temporary -- but that point didn't get across because of a "miscommunication."

Another key piece of information was not disclosed earlier: Special traffic lights will replace current ones on South Dixie Highway along the stretch where the crashes have occurred from Southwest 168th Street south to Marlin Drive.

Displays on the new signals can be adjusted by computer so that the green and red cannot be seen until drivers get close.

The purpose is to lessen confusion for eastbound drivers crossing the **Busway**, many of whom claim that they overlook the **Busway** signals because they're focusing on the signal at South Dixie.

Similar lights are already in operation at other South Dixie intersections near the **Busway** north of 168th Street. Commuters who use those cross-streets say they are confused by the displays, which appear dim until drivers are at the correct angle and distance.

Santana said that when the new lights are installed, under-the-pavement sensors -- now being deactivated -- will be reconnected so buses can once again trigger green lights on the **Busway** south of 168th Street.

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## Miami Herald, The (FL)

September 22, 1997

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Memo: THE ROADS OF OUR FUTURE; 2nd of 2 parts

### CRASHES ESCALATE NEAR THE BUSWAY ROUTE IS NOW MORE CONGESTED

ALFONSO CHARDY *Herald Staff Writer*

In addition to the surge of car-and-bus collisions that marred the South Dade **busway** when it opened last February, the **busway** has spawned a second spate of accidents, this time on its periphery, Florida Highway Patrol crash records show.

There were at least 121 crashes between the **busway's** inauguration Feb. 3 and April 9, the last available day of crash records when The Herald began its review.

In three similar time periods before the **busway** opened, the number of crashes in the same area was lower: 71 from Nov. 29, 1996, through Feb. 2, 1997; 46 between Sept. 1 and Nov. 28, 1996; and 96 from Feb. 1 through April 1, 1996.

Unlike the car-and-bus collisions, most of which took place at the **busway's** southernmost intersections, these accidents are taking place among private vehicles on South Dixie Highway and some surrounding residential streets.

The findings raise new questions about the \$21 million facility, which runs for 8.2 miles largely alongside South Dixie Highway from the Dadeland South Metrorail Station near Dadeland Mall to Southwest 112th Avenue near Cutler Ridge Mall.

"The **busway** has caused more congestion on U.S. 1," said Florida Highway Patrol spokesman Lt. Ernesto Duarte. "We see more stopping and going and more rear-end collisions and reckless driving. We see more people, more congestion and, therefore, more crashes."

#### **Busway** defended

The Florida Department of Transportation, which built the **busway**, acknowledged an increase in accidents along South Dixie Highway and back streets since the **busway** opened.

But Jose Abreu, the local transportation department chief, said the crashes are the result of a general increase in traffic -- not the **busway**.

"We have seen an increase in traffic from 20 to 90 percent in some intersections," Abreu said.

Since Hurricane Andrew in 1992, the number of people living south of Kendall Drive indeed has increased, according to Metro-Dade planning figures. But the bulk of those people already were living in South Dade when the **busway** opened earlier this year -- about the same time many motorists began complaining about traffic backups.

The reason for the increase in accidents: drivers either trying to dodge long lines of vehicles waiting for traffic lights to change at **busway** intersections or not noticing that a vehicle in front of them has abruptly stopped for a **busway** light.

The South Dade **Busway**, meant to speed commuters to Metrorail on express buses, actually delivers a faster commute than driving for South Dade residents who work in downtown Miami. **Busway** commuters can save between 5 and 10 minutes at peak travel times over drivers.

#### Problems at the outset

But from the start, the **busway** has had problems. Within the first six months of operation, at least 55 people were injured slightly in 13 crashes between buses and private vehicles at some intersections, particularly between Southwest 168th Street and Marlin Drive.

Motorists said they were confused by the newly installed traffic signals at those intersections, which flashed red for east-west commuters to give nonstop preference to buses traveling north and south.

Those accidents ended after traffic engineers installed safety devices that slow down buses and raise the visibility of **busway** traffic lights for regular motorists.

The Herald reviewed FHP accident records in response to several South Dade commuters who complained of more accidents since the **busway** opened.

"It's a mess," said Neal Hamel, owner of the Hamel School at 8000 SW Killian Dr. near the Killian **busway** intersection. During weekday rush hours, it is one of the most congested areas along the **busway**.

"We had one rear-ending soon after the **busway** opened and there's lots and lots more screeching of tires, people yelling at each other and people driving the wrong way just to get away from the **busway**," Hamel said.

#### The frustration factor

Drivers sometimes run red lights on the **busway** or at U.S. 1 out of frustration.

In April, Devora Rankow was driving south on U.S. 1 when a car heading east on Coral Reef Drive suddenly cut her off.

"She was impatient," Rankow said, recalling the crash, which happened just a few feet away from the **busway**.

A significant number of the accidents occurred during rush hours when traffic is heavy on side

streets and along South Dixie – particularly on westbound turn lanes where drivers must wait for a green light to get across the **busway**.

At some intersections, turns on red have been prohibited for vehicles heading west from South Dixie Highway or south onto South Dixie Highway from side streets.

Pattern seen

The typical fender-bender follows the pattern of this accident on March 29, when two vehicles traveling south on U.S. 1 collided at Southwest 160th Street.

Both cars were turning west onto 160th Street. According to the FHP accident report, the first vehicle started to make a right turn but stopped abruptly when the driver realized that right turns are prohibited.

The second car didn't stop on time and rear-ended the first vehicle.

**Busway** engineers are working on some solutions designed to ease the traffic backups on the side streets that bisect the **busway**.

One solution is either to modify or eliminate the current no-turn-on-red restrictions. Road engineers are already experimenting with this.

Two weeks ago, workers modified the restriction for eastbound drivers on Southwest 160th Street turning south onto U.S. 1. A right-turn signal was installed that allows drivers to cross the **busway** even when eastbound traffic is still waiting for a green light.

If the experiment works, engineers plan to replicate it at the 104th, 136th and 152nd street intersections.

No turns on red will still be prohibited for southbound motorists on U.S. 1 turning west across the **busway**.

ALONG THE **BUSWAY** THERE HAVE BEEN MORE CRASHES ALONG SOUTH DIXIE HIGHWAY BETWEEN CUTLER RIDGE AND DADELAND, WHERE THE **BUSWAY** OPERATES, SINCE THE ROAD FOR BUSES BEGAN OPERATING FEBRUARY 3. IN THREE ROUGHLY 60-DAY PERIODS PRIOR TO ITS OPENING, THE NUMBER OF CRASHES WAS LOWER. THIS STORY WAS PRODUCED ON THE MACINTOSH GRAPHICS SYSTEM AND COULD NOT BE INCLUDED IN THIS TEXT LIBRARY DATABASE. PLEASE REFER TO MICROFILM FOR THIS DATE.

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## Miami Herald, The (FL)

March 16, 1998

**Section:** Local

**Edition:** Final

**Page:** 1B

**Memo:** EYE ON THE ROAD

### BUSWAY WOES BEING SOLVED BUT MAN'S COMPLAINT TARGETS ROUTE'S FACILITIES FOR DISABLED

*ALFONSO CHARDY, Herald Staff Writer*

One year after the South Miami-Dade **Busway** opened for business, traffic engineers have managed to solve many of the problems associated with the controversial road for buses.

The almost daily crashes between buses and private vehicles that plagued the **Busway's** early months of operation are a thing of the past and the buses that run on the two-lane highway are carrying more riders than originally projected. Also, the frequent complaints from driving commuters about congestion on side streets, aimed at the **Busway**, have subsided even if the congestion itself persists.

Danny Alvarez, the Miami-Dade Transit Agency director, said complaints now focus on crowded buses. Alvarez said transit managers plan to replace some of the small buses on a key route from Florida City to the Dadeland South Metrorail station with regular buses by April 19.

Alvarez also had good news for driving commuters who long have complained about the remaining county buses and private jitneys on South Dixie Highway. Alvarez says he's considering the possibility of switching all bus and jitney traffic to the **Busway**, a move that would surely improve traffic on South Dixie.

So, for all intents and purposes, the **Busway** alongside South Dixie appears to be a success.

However, a closer examination shows that the **Busway** is far from trouble-free.

County auditors are investigating the Miami-Dade Transit Agency's unit that operates some of the buses that serve the **Busway**.

The investigation began after some unit workers approached Miami-Dade County Mayor Alex Penelas and told his office about their suspicions that some drivers and managers were illegally collecting excessive overtime, tampering with timecards and ignoring federal bus safety

procedures.

Also, the federal government is going forward with an investigation into a complaint from a disabled commuter who alleges that the **Busway** and nearby South Dixie Highway violate provisions of the Americans with Disabilities Act, ADA.

The complaint, filed in 1996 by Denny Wood, a South Miami-Dade commuter and resident, alleges that the transit corridor that includes the **Busway** does not serve the disabled community well because some intersections lack wheelchair curb cuts and some existing curb cuts are inadequate.

To determine if Wood's complaint was valid, the Florida Department of Transportation asked a consultant to study the **Busway** corridor between Southwest 112th Avenue and Datran Boulevard, a distance of about eight miles.

#### Support for complaint

The report, still in draft form, bolsters Wood's complaint. It found scores of pedestrian ramps either missing or deficient.

A chart specifically lists 53 pedestrian ramps missing at South Dixie Highway or **Busway** intersections and 175 existing pedestrian ramps deficient.

"These deficiencies include texture, inadequate landing pads, misalignment with crosswalks, and narrow or rough access to street," the study said.

Yvonne McCormack-Lyons, a DOT spokeswoman in Miami-Dade County, said workers are building some curb cuts on South Dixie Highway now, but that the construction is part of a separate project.

DOT officials, she added, are reviewing the consultant's report and plan to act on its recommendations soon.

#### 'Updating facilities'

McCormack-Lyons also said that since 1990, when Congress passed ADA, DOT has "been updating facilities" to conform with the legislation.

"As projects come on line we incorporate the ADA requirements," she said. "Our goal is that all state highways are 100 percent accessible."

As part of that process, she said, DOT plans to commission a second study to extend ADA requirements on South Dixie all the way to Florida City.

Meanwhile, Wood says the first consultant's report vindicates his complaint.

"Why all that stuff was built incorrectly is hard to believe," Wood said. "It's just incredible that all of the curbs had to be taken out and redone correctly."

Besides missing or deficient curb cuts, the consultant who prepared the report also found problems with some bus stops.

#### Trouble at bus stops

The report says that 12 bus stops along South Dixie Highway, also known as U.S. 1, were found to be inaccessible.

"This means that there is not a continuous sidewalk connecting the bus stops along U.S. 1 or that the bus stops along U.S. 1 are not accessible from the **Busway**," the report said.

It added that the majority of inaccessible bus stops were on the west side of U.S. 1, the side closest to the **Busway**.

The lack of a connection between **Busway** stops and South Dixie Highway is perhaps one of the most glaring oversights in the view of the disabled community.

Even before the **Busway** opened last February, disabled activists had wondered how they were supposed to get to and from the **Busway** stops.

#### Locations of stops

On the **Busway**, stops are not located at all intersections. Many of them are mid-block. People who wish to get to South Dixie Highway have to walk to an intersection and then turn onto the main road.

The report went on to recommend either the construction of a sidewalk linking the four bus stops to the nearest intersection or the relocation of the bus stops to make them accessible.

Meanwhile, DOT is pressing ahead with plans to extend the **Busway**.

Current plans calls for building the \$26 million extension in three stages.

Construction of the first stage is expected to begin next year from Southwest 112th Avenue, near the Cutler Ridge Mall, south to Southwest 264th Street.

If you have any questions or comments, please call me at (305) 376-3435.

#### cutlines

JEFFERY A. SALTER / Herald Staff **DIFFICULT ACCESS:** Denny Wood checks out a corner with no curb cuts to provide easy transit for disabled riders and pedestrians.

**Illustration:**photo: Denny Wood (A)

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## Miami Herald, The (FL)

December 9, 1999

Section: Local

Edition: Final

Page: 4B

### POLICE OFFICER, 27, DIES AFTER SOUTH DADE CAR-BUS CRASH

ARNOLD MARKOWITZ, [amarkowitz@herald.com](mailto:amarkowitz@herald.com)

A police family drew together in mourning Wednesday when Officer Roberto Calderon died of injuries suffered in a Tuesday night collision between his patrol car and a bus. Calderon, 27, left a wife, a 5-year-old son and a year-old daughter.

Calderon's wife, Jessica, is the daughter of South Miami City Commissioner Ann Bass and Franklin "Sam" Bass - also a Miami-Dade County police officer - who was 27 when he shot five times by a burglar. Bass eventually recovered.

He worked at the same Cutler Ridge station as the son-in-law he lost Wednesday.

"She is totally, totally torn up," South Miami Mayor Julio Robaina said after talking with Ann Bass, Calderon's mother-in-law. "She was able to speak with me for a couple of moments this morning, then broke up. She just started crying."

Police said Calderon was driving the patrol car when it collided with a county bus Tuesday at 11:27 p.m. It happened where the South Dade **Busway** crosses Hibiscus Street in Perrine.

The police car was on the **busway**. The bus, Route 52, was on Hibiscus. It had just made a right turn off South Dixie Highway, about a block east of the parallel **busway**.

Police said Calderon and his patrol partner, Edgar Perez, 34, were wearing seat belts, which might have saved Perez. He was released from Jackson Memorial Hospital at 3 p.m. Wednesday.

The seat belt was no help to Calderon: The bus hit the police car on his side, practically folding it in two. Tire tracks on the pavement indicate the bus dragged the car from the middle of the intersection to the southwest corner.

"A 30-ton bus is going to win in a situation like that," Police spokesman Ed Munn said.



A Miami-Dade Transit Agency report says the police should have stopped on the **busway** for a red light because bus driver Gerry Goodine had a green light and the right of way on Hibiscus. Munn said police haven't reached any conclusions.

The police car's speed was not known Wednesday, and it wasn't clear if its emergency lights or siren were on or off.

"Traffic homicide's going to take a day or two to calculate all those things, based on formulas they use," Munn said. "They take measurements and study the impact points."

The **busway** was built to speed commuters on their way, avoiding heavy traffic a block away on South Dixie. But it's also used by all sorts of official vehicles - police cars, ambulances, fire engines - even when they are not rushing to emergencies.

Calderon and Perez apparently were not on an emergency run when they crashed Tuesday night. Munn said dispatch records were being examined to determine their destination.

It wasn't known Wednesday how fast Calderon was driving or whether the emergency lights were flashing as the police car moved south along the **busway**.

Bus driver Goodine, 39, was released from Deering Hospital after treatment for dizziness and headaches. He couldn't remember the crash, Transit Agency spokesman Manny Palmeiro said, reading from an agency supervisor's report:

"He says he was going west on Hibiscus Street when suddenly he saw a flash, and the next thing he knew he was awakening. The impact must have knocked him out for a while."

Two passengers said the driver did have a green light on Hibiscus and the light was red for the police car on the **busway**.

**Illustration:**photo: Roberto Calderon (a)

CALDERON

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## Miami Herald, The (FL)

February 29, 2000

Section: Local

Edition: Final

Page: 2B

### 3-VEHICLE CRASH INJURES 18 PEOPLE

*DRAEGER MARTINEZ, drmartinez@herald.com*

A trucker driving an 18-wheeler Monday allegedly ran a red light in South Dade, causing a three-vehicle accident that injured 18 people. None of the victims were critically injured, Florida Highway Patrol officers said.

"We had a hell of a wreck," said FHP trooper Don Jones, who led an investigation into the crash. It occurred shortly before 1 p.m. at the intersection of the Miami-Dade **Busway** next to U.S. 1 and Southwest 186th Street, also called Quail Roost Drive, Jones said.

The truck was heading east on 186th Street and allegedly ran a red light as a Miami-Dade Transit bus had entered the **busway** intersection heading north. Long, curving skid marks leading into the intersection showed the drivers tried to stop.

But the two massive vehicles collided, with the truck's cab hitting the front-left corner of the bus, and the cargo container jackknifing around to strike the bus' midsection, Jones said.

The impact pushed the bus into a late-model Chevrolet Corvette stopped at the light waiting to drive west, he said. The truck driver, bus driver Angel Maresma and 14 bus passengers, and a driver and passenger from the Corvette were taken to Homestead, Baptist and Deering hospitals for treatment.

"I saw them take the bodies away, and one of them had a broken arm with the bone poking out of the skin," said Michael Richardson, who ran to the scene after hearing the wreck two blocks away.

Jones said the truck driver, Raidel Perez, 26, of Hialeah, admitted after the accident that he ran the red light, and Perez would be cited for the wreck.

Perez, a driver for Ace Transportation Inc. in Miami, had just finished delivering a load of towels to a nearby Levitz Furniture store, said company dispatcher Zenen Vigo. He said that Perez had been employed by the company for two years with no previous incidents.

Florida driving records show that Perez has been convicted on three traffic tickets since 1997. He received tickets for defective equipment and lacking proof of insurance from a stop on May 29,

1997, and he was cited as a passenger for holding an open alcoholic beverage container on 6, 1999.

**Illustration:**photo: Paramedics remove one of the injured people (a)

LESZEK ZUJWODA/FOR THE HERALD VIOLENT COLLISION: Paramedics remove one of 18 injured people after a three-vehicle crash involving an 18-wheeler, a Chevrolet Corvette and a county transit bus, left, near U.S. 1 and Southwest 186th Street. None of the victims were critically injured.

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## Miami Herald, The (FL)

March 2, 2000

Section: Local

Edition: Final

Page: 4B

Memo: AROUND SOUTH-FLORIDA

### SOUTH MIAMI-DADE BUS DRIVER BLAMED FOR FATAL CRASH

*Herald Staff*

The driver of a bus in a fatal collision with a police car has been blamed for the accident - which the Miami-Dade Transit Agency originally blamed on county Officer Roberto Calderon, who was killed in the crash.

The accident happened late at night last Dec. 7 where Hibiscus Street and the South Dade **Busway** intersect in Perrine. Officer Calderon, 27, was driving south on the **busway**, where emergency vehicles are permitted. The Route 52 bus, driven by Gerry Goodine, 39, had just turned off South Dixie Highway and was going west on Hibiscus.

While crossing the **busway**, it hit the police car and Calderon was killed instantly. His partner, Officer Edgar Perez, was injured.

Goodine, 39, blacked out and could not remember the collision. According to a preliminary report by Transit Agency investigators, bus passengers said the traffic light was green for the bus and red for the police.

Wednesday, the bus driver was cited for running a red light and causing a fatal accident - the result of an intensive investigation by police, the Transit Agency and an independent engineer, Neil Freeman.

As a result, Goodine was relieved of duty with pay, pending the outcome of an internal investigation by Transit, county spokeswoman Rhonda Barnett said.

MIAMI

Judge orders boy's return to Jordan

While Maria Eugenia Pereira led a protest outside family court in Miami, pleading to keep her 2-year-old son in the United States, the local judge overseeing the case signed an order that will send the boy back to Jordan and his father's custody.

Puerto Rican-born Pereira said she left Jordan in June 1999 with her son Khalil to escape from the abuse she said was inflicted by her husband, Ibrahim Shanti.

Circuit Court Judge Henry Harnage, who was denounced by about 20 demonstrators who picketed the court building, confirmed in writing the oral ruling he made Feb. 24, when he determined that the boy's homeland is Jordan. He also said Pereira did not provide proof of her allegations that Shanti mistreated her physically and mentally during their four years of marriage.

The boy must be turned over to his father March 10, Harnage said.

Anti-drug crusader gets new liver

Tyrone K. Backers, executive director of the Community Crusade Against Drugs of South Florida, was moved out of intensive care Wednesday after a successful liver transplant.

Backers, 47, underwent surgery at Jackson Memorial Hospital on Saturday. He was hospitalized at Cedars Medical Center on Feb. 20 after complaining of flu-like symptoms. Doctors determined that he needed a new liver. He was moved to Jackson for the operation.

IRS to hold Problem Solving Day

To answer questions and assist taxpayers in filing their taxes this season, the Internal Revenue Service's downtown Miami office will hold an IRS Problem Solving Day today.

The downtown office will take appointments for service from 7:30 a.m. to 6 p.m. at 51 SW First Ave.

Miami area residents who would like an appointment can call 954-423-7684. For those who can't attend the session, the Taxpayer Advocate's line is available at 1-877-777-4778.

MIAMI BEACH

Mayor's Ball raises nearly \$550,000

The third annual Mayor's Ball at the Fontainebleau Hilton on Saturday raised nearly \$550,000 for the United Way, the organization announced Tuesday.

The black-tie event was hosted by Miami-Dade Mayor Alex Penelas and his wife Lillian. Honorary chairs were: lobbyist Chris Korge and his wife, Irene; lobbyist Jorge Luis Lopez and his wife, Mercy Rodriguez; developer Michael Adler and his wife, Judy; and First Union Vice President Peter Roulhac and his wife, Vicki.

CAROL CITY

Elementary school's bookshelves are bare

A new library at Carol City Elementary is missing one important component: books.

The school's PTA said in a press release that bookshelves at the new library "stand 80 to 90 percent empty." The group is holding an emergency meeting at 7 p.m. today in the school library to develop a strategy for getting books into the library.

Miami-Dade County Public Schools spokesman Henry Fraind is looking into the matter.

"Dr. Fraind is researching information regarding the lack of books in Carol City Elementary's school library," an assistant said on a reporter's voice mail Tuesday. "Time did not allow for adequate research to be done today."

For information on the meeting, call PTA President Shirley Garland or Vice President Linda Lawal at 305-621-0509.

PALM BEACH

Defrauder must turn over millions

Jack Hasson, a high society Palm Beach jeweler convicted last month for bilking \$80 million from his well-to-do clients, must fork over millions of dollars in assets - including accounts he had in Paris and interest he had in a ski lodge in Breckenridge, Colo.

Hasson was convicted Feb. 25 on six charges including wire fraud, money-laundering, obstruction of justice and conspiracy. On Wednesday, a federal jury returned a forfeiture verdict that forced him to give up \$40 million, plus \$6 million in lawyer's accounts and interest in a ranch in Jupiter and a ski lodge in Breckenridge.

They also froze \$20 million held in a Paris account - the first time fraud proceeds have been frozen in France at the request of the U.S. government.

Hasson was convicted for defrauding his clients of \$80 million, then laundering \$32 million of the fraud proceeds through Uruguay, Paris and the Bahamas. He also is accused of trying to coerce and bribe witnesses.

Hasson faces a maximum penalty of 45 years in prison and a \$100 million fine.

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## Miami Herald, The (FL)

May 26, 2000

Section: Local

Edition: Final

Page: 3B

### POLICE CARS COLLIDE, THREE OFFICERS HURT

*DRAEGER MARTINEZ, drmartinez@herald.com*

Three Miami-Dade Police officers were seriously injured Thursday morning when their cars collided on the South Dade **Busway** in Perrine as they responded to an emergency call.

The crash happened at about 11:05 a.m. at the intersection of Southwest 174th Street and the South Dade **Busway**, police spokesman detective Ed Munn said. Officer Sonya Haught, 40, was driving east on 174th when her car crashed into a vehicle carrying officers Wilbur Graham, 36, and Derrick Love, 37, headed south on the **busway**.

"There was a big boom," said eyewitness Dawn Goods, who was waiting at a bus stop about a block from the crash site. "Then [Graham and Love's] car was pushed into the signal light."

Graham and Love's car was crushed on both sides, requiring paramedics to use the Jaws of Life to free them. Both officers were taken to Jackson Memorial Hospital's Ryder Trauma Center, while Haught was taken to nearby Deering Hospital.

Thursday night, Graham and Love were listed in serious condition, and Haught was in stable condition.

The officers, all assigned to Station 4 in Cutler Ridge, were responding to an emergency call about a man waving a gun in the 9900



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## Miami Herald, The (FL)

July 13, 2000

Section: Neighbors WE

Edition: Final

Page: 17W

Memo: KENDALL

### AFTER ACCIDENT, OFFICERS REMINDED TO DRIVE SAFELY

KARL ROSS, [kross@herald.com](mailto:kross@herald.com)

Rudolph Pagan, the Kendall District patrol officer seriously injured last week in a car wreck, has his fellow officers thinking about their own mortality these days.

Officers at the Kendall station said superiors had been warning them at meetings about the need to drive safely. Police squad cars had been involved in a spate of crashes - along the South Dade **Busway** in particular - in which police officers were at fault.

Pagan, a fixture at the station for nearly 20 years, was considered a cautious driver.

"We've been talking to people about driving in the **busway**, about how we need to drive better," said one shift supervisor, who asked his name not be published. "And here's a guy driving 30 miles an hour as he's minding his own business, and a car comes along at 60 or 70 miles per hour and hits him."

The collision took place July 5, under perfect road conditions, along Southwest 97th Avenue in front of the Kendall Branch Library. At 1:50 p.m. Jorge Medina, 17, swerved into the wrong lane at high speed and slammed into Pagan's vehicle, police said.

Miller said police officers, on average, are involved in a traffic accident every 28,000 miles. He said one-third of those crashes result in death or serious injury. "That's almost as many as the number of officers who die in hostile situations" such as shootings or stabbings, Miller said.

Pagan, 60, suffered extensive trauma and was airlifted to Jackson Memorial Hospital in critical condition. Among his injuries were three broken ribs, a cracked pelvis, fractured sternum and a bruised aorta. He is expected to recover, but with difficulty.

"It's going to be a long battle," said Sgt. David Meagher, Pagan's commanding officer. "Even when he gets out, he's going to need a lot of therapy."



Meagher, who has been monitoring Pagan's condition, said the patrolman's foremost concerns are returning to the job.

Meagher called Pagan "an extremely reliable employee" who fills in for him as acting sergeant on a regular basis. He said Pagan had not moved higher up the department hierarchy because he likes being on the street.

The most sadly ironic aspect of the accident, officers said, is that Pagan had just overcome an even bigger adversary - cancer. Sgt. Linda Simms, also of the Kendall station, said she and Pagan often compared notes about their cancer treatment.

"The only thing we ever talked about is how you look at life after cancer," said Simms, whose thyroid cancer is in remission. "I don't know how to explain it. You know, you just don't let things bother you as much as before - you're just glad to be here."

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## Miami Herald, The (FL)

November 1, 2000

Section: Local

Edition: Final

Page: 1B

Memo: See

### MAN DIES IN CRASH

ANA ACLE AND TYLER BRIDGES, [aacle@herald.com](mailto:aacle@herald.com)

A 25-year-old man died and his great-uncle remained in critical condition Tuesday after their Isuzu Rodeo collided with a Miami-Dade County bus along the South Dade **Busway**, where 182 people have been hurt in 31 1/2 years.

The men turned west onto Killian Drive from U.S. 1 at 8:35 a.m. and drove in front of the large bus, traveling northbound on the **busway**.

Although it appears neither of the drivers was speeding, the collision sent the Rodeo into the bushes and shattered several windows of the No. 7056 bus driven by Gerrod Baker, 38.

Reinier Varela, 25, of Opa-locka died at the scene. His great-uncle, Osvaldo Garcia, 72, of Hialeah, remained in critical but stable condition after suffering head injuries and being airlifted to Jackson Memorial Hospital's Ryder Trauma Center.

Ten of the 22 bus passengers were transported to area hospitals. State troopers closed the westbound portion of the intersection for several hours until they completed gathering their evidence.

"The impact was strong," said bus passenger Mabel Zaldana. "I held on to a steel bar, but most people fell on the floor and screamed, windows shattered on top of us. I cried when I saw that driver of the other car died."

The death is the latest in a series of collisions since the **busway** opened in 1997. Sixty-four accidents have been recorded on the **busway** since its inception through Sept. 30 of this year, county records show.

Fatalities are not tallied in the statistics.

The **busway** intersections with Marlin Road and Southwest 186th Street lead with 16 each in the

number of accidents.

In most instances, a motorist didn't pay attention to traffic signals, which critics say are too confusing along the **busway**.

Transportation engineers tinkered with the traffic signals in 1998 after a series of accidents, and officials insist that it reduced the number of accidents. But statistics show that the number of accidents increased from 12 in 1998 to 29 in 1999 before dropping to seven so far this year.

State and county transportation officials blame the accidents on human error and say they can't do much to prevent them.

"The problem is really one of public education," said Danny Alvarez, director of the Miami-Dade Transit Agency. "People are ignoring signals along the **busway**."

#### STEEP PRICE TAG

Alvarez said he would like county officials to examine the possibility of creating overpasses or underpasses at the major **busway** intersections. But that proposal comes with a steep price tag - about \$10 million per intersection for up to 16 intersections.

That isn't feasible, said Jose Abreu, the Florida Department of Transportation's top local official.

"If we do that, why not just extend Metrorail?" Abreu said.

The **busway** was the cheaper alternative to extending Metrorail to South Dade. Plans are in the works to extend the **busway** to Florida City.

Abreu said his agency was already planning to upgrade U.S. 1 and can make improvements to the **busway** where it intersects the highway. Those improvements would mostly consist of putting U.S. 1 and the **busway** on a level plane - the **busway** is generally a few inches higher - to make it easier for drivers on the **busway** and U.S. 1 to see one another.

The drivers likely didn't see each other in Tuesday's fatality. Florida Highway Patrol Lt. Ernesto Duarte said homicide detectives still are investigating the accident and won't say if anyone was to blame but that it appears speed was not a factor.

#### POSSIBLE TURN

It's possible that Varela turned right on a red arrow after stopping. Along the **busway**, most intersections - including the one at Killian - prohibit right turns on red.

Witnesses said Varela stopped at U.S. 1 when the arrow was red. It's possible that the rest of the southbound traffic on U.S. 1 received a green light to go and Varela took that as a signal that he, too, could turn, police said.

The Rodeo was struck by the bus on the driver's door, and the bus was hit on the front right side. Miami-Dade Fire Rescue had to break a window on the Rodeo with a hammer to remove Garcia, Zaldana said.

She and others on the bus told police their driver had the right of way.

A check on both drivers' records does not reveal a history of careless driving. Varela's only ticket

was in 1998 for unlawful speeding. Baker has received 12 tickets since 1990 but none since 1994. It's not clear what kind of vehicle he was driving.

Among the most serious of Baker's tickets: driving with unsafe conditions/improper equipment in 1992, speeding and failing to obey a traffic signal, both in 1994. Herald researcher Elisabeth Donovan contributed to this report.

**Recent busway collisions**

Tuesday's collision is the latest in a series of incidents on the **busway**. County records list 64 accidents on the **busway** since it opened in 1997 (that figure is through Sept. 30 of this year). The most recent:

\*In December, Miami-Dade Police Officer Roberto Calderon died at Hibiscus Street after colliding with a county bus.

\*In February, an 18-wheeler collided with a county bus at Southwest 186th Street, sending the bus into a third vehicle and injuring 18 people.

\*In May, three Miami-Dade Police officers in two cruisers collided and were seriously injured at Southwest 174th Street as they responded to an emergency call.

**Illustration:** color photo: Police walk around the accident scene (a), A state trooper walks in the foreground, with the wrecked Isuzu Rodeo, and the victim's covered body, in the rear (a)

PHOTOS BY PATRICK FARRELL/HERALD STAFF RESTRICTED: Tuesday's collision resulted in 10 of the 22 bus passengers being transported to area hospitals. State troopers closed a portion of the intersection for several hours until they completed gathering their evidence.

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## Miami Herald, The (FL)

November 2, 2000

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Page: 1B

### BUSWAY SAFETY MEASURES ORDERED DRIVER TRAINING, STUDY PROMISED

*LUISA YANEZ, lyanez@herald.com*

Concerned about deadly crashes on the South Dade **Busway**, the county's transit director on Wednesday ordered bus drivers to slow down as they approach traffic intersections.

At the same time, he promised a review of 64 previous crashes to determine whether more changes are needed to prevent tragedies like the one Tuesday in which a 25-year-old motorist was killed.

The measures - along with plans for a public awareness campaign and more training for **busway** drivers - were announced by Danny Alvarez, head of the Miami-Dade Transit Agency. In the wake of the accident, he called an emergency meeting of department heads, assistant directors and chiefs to brainstorm on actions to take.

"We are super concerned for the safety of our passengers, motorists and drivers," said Manny Palmeiro, transit spokesman. "The department is taking action to address any problems that may exist with the **busway**."

Reducing the speed of the buses, for now, will reduce the chances of fatalities.

"If there's an impact, it won't be as hard," Alvarez said. "Buses are 30,000 pounds of steel."

Here's what the transit agency said it will do:

- \* Hire an outside consultant to analyze the cause of all accidents on the **busway** since it opened 1997.
- \* Give bus drivers a mandate to slow down to 15 mph at intersections, site of most collisions. The current speed limit is 45 mph. They will also receive new training.
- \* Launch a public awareness campaign.

Since the eight-mile stretch opened, 182 people have been injured in collisions on the **busway**. Some 13,000 passengers ride the **busway** daily, which extends from the Dadeland North Metrorail station to Southwest 211th Street.

Tuesday's crash killed Reiner Varela, 25, of Opa-locka at the intersection of U.S. 1 and Southwest 122nd Street. His great-uncle, Osvaldo Garcia, 72, remains hospitalized. Ten bus passengers were also treated and released.

Varela's was the second fatality on the **busway** in a year. In December, Miami-Dade Police Officer Roberto Calderon was killed when his cruiser collided with a bus at U.S. 1 and Hibiscus Street.

On Wednesday, the Florida Highway Patrol said its investigation was incomplete, but it appeared that Varela made a right turn on a red light, which is not allowed from U.S. 1 along the **busway**. He drove into the path of a southbound bus driven by Gerrod Baker, 38, of Miami.

Sixteen of the **busway's** 65 accidents occurred in its first year, prompting engineers to tinker with traffic signals.

Officials said the number of accidents have decreased. Collisions increased from 12 in 1998 to 29 in 1999. So far this year, there have only been eight accidents.

Herald staff writer Tyler Bridges contributed to this report.

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## Miami Herald, The (FL)

November 11, 2000

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### COUNTY SETTLES BUSWAY CLAIMS OFFICER'S FAMILY TO GET \$2.3 MILLION

TYLER BRIDGES, [tbridges@herald.com](mailto:tbridges@herald.com)

Miami-Dade County has agreed to pay \$2.35 million to settle claims from accidents on the 33-month-old South Dade **Busway**, the site of a collision that killed a 25-year-old man last week.

Nearly all of the money to be paid by the county will go to the family of Roberto Calderon, a Miami-Dade Police officer who was killed in December 1999 when a bus ran a red light at Hibiscus Street and rammed his cruiser. Calderon's family is scheduled to collect \$2.3 million, said Tom Pennekamp, the family's attorney.

The county has paid \$54,750 to settle seven other lawsuits filed by people injured in **busway** accidents, according to county records.

In all, 16 lawsuits have been filed since the **busway** opened in February 1997. Through Sept. 30 this year, there had been 64 accidents injuring 182 people.

Another accident occurred Oct. 31 when 25-year-old Reinier Varela of Opa-locka died and his great-uncle was badly injured. Their Isuzu Rodeo collided with a county bus at Killian Drive.

In most **busway** accidents, the car drivers have been at fault, particularly by making illegal right turns into the path of approaching buses.

But critics say that the two-lane **busway**, which extends 8.3 miles between Cutler Ridge and the Dadeland South Metrorail station, has confusing signs and traffic signals that make accidents inevitable.

County officials have acknowledged problems but say they have carried out changes to make **busway** safer. In the wake of the Varela accident, they are requiring buses to slow to 15 mph as they pass through intersections.

The **busway** takes about 13,000 commuters off a busy stretch of roadway each day, said Manny Palmeiro, a Miami-Dade Transit Agency spokesman.

n the accident involving Calderon, a bus crashed into his cruiser as he was driving on the  
busway, which is open to police cars, ambulances and fire engines.

The bus driver, Gerry Goodine, was fired after an investigation found he was at fault. The  
investigation also determined that Goodine was carrying an unlicensed firearm and had lied on  
his application when he said he had never been convicted of a felony during the preceding five  
years, a county investigative report shows. Goodine had pleaded guilty to grand theft and dealing  
in stolen property.

The county has paid Calderon's family \$200,000, the maximum allowed under law, and is  
seeking the state Legislature's approval through a "claims bill" to pay the remaining \$2.1 million.

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## Miami Herald, The (FL)

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### STEER BLAME FROM BUS DRIVER

ROBERT L. STEINBACK, *Herald Columnist*

Former Miami-Dade County bus driver Gerry Goodine was acquitted Monday of driving his bus through a red light and causing a collision that claimed the life of a county police officer 16 months ago - raising the troubling question of whether Goodine's career and reputation were sacrificed to ease the suffering of the officer's family.

Goodine, driving his Route 52 bus westbound on Hibiscus Street in Perrine on Dec. 7, 1999, collided with a police cruiser traveling south on the South Dade **Busway**, driven by Miami-Dade Police Officer Roberto Calderón. The **busway** is open to police and emergency vehicles.

Calderón, 27, was killed instantly.

The county agreed last fall to pay Calderón's family \$2.3 million, based largely on the belief that Goodine was responsible for the accident.

Goodine, who was fired after eight years on the job, faced a single charge of running a red light resulting in a fatality, a traffic infraction with a maximum penalty of \$500, community service and loss of his driver's license - but no jail time.

County Judge Rosa Figarola's not-guilty verdict is the second vindication for Goodine: A hearing examiner who reviewed Goodine's firing ruled in March that she could not ascribe blame for the accident to Goodine because both he and the officer had ample opportunity to avoid the crash.

"It was a tragic situation as far as the police officer losing his life. I dearly regret that," Goodine, 40, told me. "But from the time of the accident to this minute as we speak right now, I knew I didn't cause that accident."

Tom Pennekamp Jr., the attorney representing Calderón's widow and two children, told me the verdict doesn't change his certainty that Goodine was at fault.

"The fact that a man is found innocent at a trial doesn't mean he didn't do it," Pennekamp said.

Despite the outcomes of the termination hearing and trial, Assistant County Attorney Ron



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## The Miami Herald

October 11, 2001

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Memo: U.S. 1 CORRIDOR

### BUSWAY TO EXTEND SOUTH TO FLA. CITY

ADRIANA CORDOVI, [acordovi@herald.com](mailto:acordovi@herald.com)

Come spring 2004, bus passengers should be able to ride from Dadeland Station to Florida City on South Dade's **busway**.

The Miami-Dade Transit Agency has plans to extend the

**busway** 11 1/2 miles south from its current end at U.S. 1 and Southwest 200th Street in Cutler Ridge.

The new terminal point would be at U.S. 1 and Southwest 344th Street in Florida City.

"Our purpose is to reach cities like Homestead and Florida City," said Isabel Padron, project manager for the **busway** extension.

The **busway** - which runs down U.S. 1 - operates in the same way as a train because it has its own traffic lane, keeping buses off U.S. 1.

"We also use larger buses to make the service faster," said Patrice Rosemond, chief of the office of public involvement for the Miami-Dade Transit Agency.

And since it began operating in February 1997, more passengers have been attracted to riding the bus.

Miami-Dade Transit Agency's records show that before the **busway** began, a daily average of 8,126 passengers used the two routes along U.S. 1 during the week and 2,118 used it during the weekend.

Now, an average of 7,718 people use the four routes on the **busway** daily and 9,361 ride it on weekends.

Rosemond says they hope that trend will continue.

The extension, which will cost \$64 million - \$2 million coming from the state and the rest from the federal government - features park-and-ride facilities where riders can leave their cars in parking lots near the bus stations.

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## The Miami Herald

February 3, 2002

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Memo: SOUTH DADE

### COUNTY, STATE HOPE TO AVOID ROAD SNARLS

ADRIANA CORDOVI, [acordovi@herald.com](mailto:acordovi@herald.com)

Hoping to keep clogged roads and driver complaints to a minimum, Miami-Dade County and the Florida Department of Transportation have teamed up to work back-to-back on three projects on U.S. 1 in South Dade.

Those projects, collectively named the U.S. 1 Corridor Projects, include Miami-Dade Water and Sewer Department improvements, extension of the **busway** and reconstruction of the highway.

The Miami-Dade Transit Office of Public Involvement is holding regular meetings to keep South Miami-Dade residents informed of progress.

The third meeting happened Tuesday at South Dade Government Center, 10710 SW 211th St., with a turnout of about 25 residents.

"Because this is a long-term construction, we felt it was important to keep the public informed during the construction," said Patrice Rosemond, chief of the public involvement office.

The county's water and sewer improvements, a \$9.2 million project that began in September, is expected to be completed by late March.

That's when work will begin on the highway's reconstruction and the **busway** extension.

All construction should be completed in 2004, Rosemond says.

Frank Calderon, spokesman for Miami-Dade Water and Sewer, said this time around residents were not as curious about the department's project.

Rosemond says that's because that project is already underway and people are more concerned with what lies ahead.

"They're looking at the impact of the other projects now," she said.

The water and sewer project includes the installation of new water and sewer lines along U.S. 1 between Southwest 200th and 232nd streets and from Southwest 264th to 268th streets.

Single-family homes in the area won't be required to hook up to the new lines unless there's a problem with their septic tanks.

But businesses and any building larger than a duplex, such as an apartment building, must be connected.

The Miami-Dade Transit Agency plans to extend the **busway** 11 1/2 miles south from its current end at Southwest 200th Street to Southwest 344th Street in Florida City.

The \$64 million extension, with \$2 million coming from the state and the rest from the federal government, also includes two community urban centers - one in Goulds and another in Naranja - that will feature shopping, offices and apartments.

The U.S. 1 reconstruction will be between Southwest 232nd and 264th streets and includes repaving traffic lanes, building sidewalks, installing new signals and lights, and adding landscaping.

As a way to keep traffic flowing, the Florida Department of Transportation has scheduled construction work on the highway from 9 a.m. to 3 p.m. and from 9 p.m. to 5 a.m.

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Bernstein told me that the settlement with Calder n's survivors in November was a wise particularly in view of what was known at the time: Investigations by the Miami-Dade Police Department and the Miami-Dade Transit Agency both concluded that Goodine was at fault in the accident.

  There was a very high potential for a multimillion-dollar verdict,   Bernstein said.   We feel that was a very good settlement for the county.  

Under state law, the county is directly liable for \$200,000 of the settlement, which it has paid. balance will be provided if a claims bill now working its way through the state Legislature is approved.

Goodine feels that in the rush to make sure the Calder n family was compensated, both the police department and the transit agency discounted evidence to support his case - including two passengers on the bus who said the light facing the bus was green - and questions about two expert reconstructions of the accident.

Goodine also claims that county officials exaggerated two other allegations - that he lied on his job application to conceal a felony record and that he brought a gun onto the bus - to strengthen the case against him.

He refutes both charges. Regarding the felony case, adjudication was withheld on the 1989 charge that he wrote a \$300 bad check, meaning he was not obligated to disclose it on his job application. The hearing officer concurred.

Goodine said he found the gun on the bus, and was going to turn it in when he completed his route - until the collision intervened. The hearing officer disagreed, and upheld Goodine's firing on that basis.

The accident case turned heavily on a scientific reconstruction of the collision based on three sources of information: a   black box  -type data recorder carried by county buses, collision analysis to determine the speed of vehicles at the point of impact and the automated traffic light system known as an   upstream loop.  

The black box revealed that Goodine's bus was traveling at 27.5 mph westbound on Hibiscus Street at the point of the collision. It also showed that Goodine had not applied his brakes.

The county's expert computed Calder n's speed at 48.8 mph. Goodine's expert estimated 56.8 mph.

The lights on the South Dade **Busway** are triggered by sensors.

The key question debated at Goodine's trial: Given Calder n's speed, would the red light facing him have turned to green by the time he reached the intersection?

Attorney Pennekamp and county officials say reconstructions of the accident proved the light would have been green.

  The physics and the math proved that [Goodine] ran the light,   Pennekamp said.

But Goodine's attorney Phil Goldstein disagrees, describing a design quirk of the upstream loop system.

The sensor won't start the change sequence unless the light facing the driver has been red for at least 30 seconds, Goldstein told me.

"We think that when the police officer passed over the upstream loop, he thought it would turn green in five seconds, and it didn't," Goldstein said.

By my reckoning of the case, another obvious conclusion can be drawn. Regardless of which driver had which light at the moment of impact, bus driver Goodine was approaching a light that had been green which was about to cycle through yellow to red. Officer Calder n was approaching a light that was red, but about to turn green.

It's a lot easier to understand a bus moving toward a green or yellow light at 28 mph than a car moving toward a red light at 47 mph.

Why was Calder n, a professional driver, flying toward a red light at such a high rate of speed? That's not prudent by any standard.

The county's decision to settle the case may be understandable given the data county attorneys had at the time.

However, the results of trial - and, it seems, common sense - argue strongly that Gerry Goodine shouldn't shoulder the blame for a tragic and unfortunate accident.

**Illustration:** color photo: Gerry Goodine (a)

**MICHAEL STRADER MARKO/FOR THE HERALD ACQUITTED:** Former Miami-Dade County bus driver Gerry Goodine.

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## The Miami Herald

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Memo:SOUTH DADE

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# Busway Local

