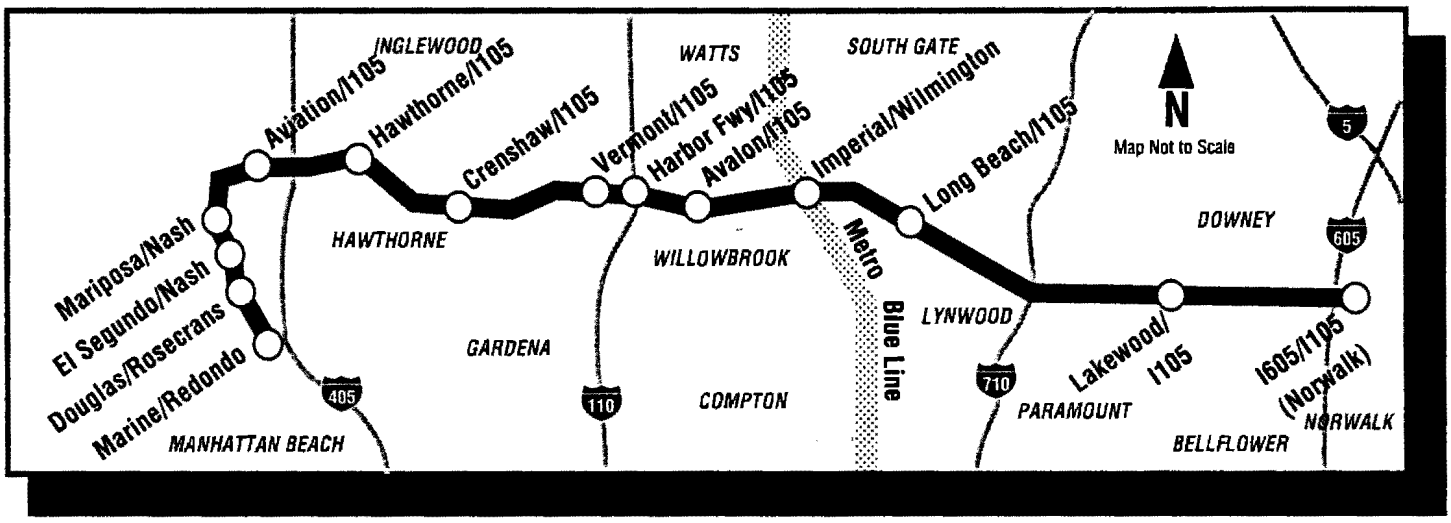
Final Bus/Rail Interface Plan for Metro Green Line



Scheduling and Operations Planning Department
MTA Operations

February, 1995

EXECUTIVE SUMMARY

MASTER BUS/RAIL INTERFACE PLAN FOR THE METRO GREEN LINE

INTRODUCTION

In July 1995, the Metro Green Line will begin revenue operation in the median of the I-105 Freeway, running from Norwalk to El Segundo. In El Segundo, the line turns south running on its own elevated guideway. This new rail line will allow passengers to travel the 20-mile route in 35 minutes. Bus and shuttle service will bring riders to and from the 14 rail stations and various points of origins and destinations.

COMMUNITY REVIEW OF PLAN

The MTA's master bus/rail interface plan has undergone a five-month period of community review, starting in mid-August 1994 and ending January 1995. During this time, staff held nine public meetings. Meetings were also held with city, county, state, federal officials, government agencies, other transit operators, businesses, and community groups representing or residing in the corridor.

Input received from the community during the extensive outreach campaign was considered and used to define the draft plan, which was subject to two formal public hearings on December 17, 1994. Additional comments made at the hearing and through January 10, 1995 were also considered and used to develop the final bus plan contained in this document.

KEY ELEMENTS OF THE PLAN

A four-step approach was used to develop the plan. Step one focused on connecting as many north-south bus lines as possible to rail stations to promote access. Similarly, step two focused on connecting as many east-west lines as possible to the rail stations. Step three suggested ways for local and municipal operators to serve the rail stations. Finally, step four identified new bus services to "feed" the rail line at key points along its route.

MASTER PLAN

The master plan, or full access plan as it is sometimes referred to, calls for up to 59 bus lines to interface with the Metro Green Line. Of this total, 46 are existing MTA lines proposed to undergo route, schedule, and/or stop modifications to better serve the rail line.

In addition to modifications to existing service, the master plan also calls for 13 new feeder routes to serve the rail line. Table 1 describes the Master Service Plan.

Relative to existing MTA service, eight lines are proposed to be extended to rail stations. Twelve others are recommended to be rerouted to rail stations. Nine more are proposed to shortened or ended at rail stations, and 17 remaining lines will serve the Green Line with their existing routes.

Relative to the new feeder routes, the proposed operation of express line S-5 was withdrawn, because the Orange County Transportation Authority indicated its willingness to modify OCTA Line 701 to provide the link between Orange County and the I-605/I-105 Freeway Station. Also S-8 was modified to provide for the operation of three separate shuttle routes in the El Segundo area instead of one, as was originally proposed.

Appendix A illustrates the bus routings in the master plan for the existing bus system. Appendix B illustrates the routings for the 13 feeder routes. Appendix C identifies service characteristics of the master plan.

IMPLEMENTATION SCHEDULE

The master plan is proposed to be implemented in stages due to cost. Phase I is funded and proposed for implementation in June 1995. The remaining elements of the master plan will be implemented upon the availability of additional operating funds.

TABLE 1

SUMMARY RECOMMENDED SERVICE PLAN
FULL ACCESS

I. LINES TO BE EXTENDED TO RAIL STATIONS (8):

LINE - 112, 119, 125, 207 (357), 252, 270 AND 560.

II. LINES TO BE REROUTED TO RAIL STATIONS (12):

LINE 45, 53, 126, 211, 215, 220, 232, 265, 439, 446(447), AND 460.

III. LINES TO BE SHORTENED OR ENDED AT RAIL STATIONS (9):

LINES 81, 115, 117, 120, 206, 209, 254, 260 AND 266.

IV. LINES TO MAINTAIN CURRENT ROUTING (17):

LINE 40(442), 48, 51, 55, 56, 60, 124, 202, 204(354), 205, 210, 225(226), 444 AND 445.

V. NEW FEEDER ROUTES TO SERVE RAIL STATION (13):

Line	Name
S-1	EL MONTE-NORWALK EXPRESS
S-2	EAST IMPERIAL
S-3	WHITTIER-NORWALK EXPRESS
S-4	CERRITOS-NORWALK EXPRESS
S-5*	HUNTINGTON BEACH EXPRESS
S-6	FULLERTON NORWALK EXPRESS
S-7	WESTCHESTER
S-8A	MARIPOSA SHUTTLE
S-8B	AVIATION STATION SHUTTLE
S-8C	MARINE STATION SHUTTLE
S-9	LAX COLLECTOR LOOP
S-10	CRENSHAW STATION SHUTTLE
S-11	HARBOR STATION SHUTTLE
S-12	LAKEWOOD BL STATION-RANCHO AMIGOS-KAISER SHUTTLE

* TO BE OPERATED BY OCTA AS LINE 701 MODIFICATION

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TABLE 2
COMPARISON OF BUS INTERFACE POTENTIAL
AT METRO GREEN LINE STATIONS

STATION	EXISTING MINIMUM ACCESS	PHASE I* INTERMEDIATE ACCESS	MASTER PLAN FULL ACCESS**
I-605/I-105	-	115, 121 125, 270, 460, S-2	115, 121, 125, 270, 460 S-1 thru S-6
LAKEWOOD	266	266, S-12	265, 266, S-12
LONG BEACH	60	60, 119	60, 112, 119, 252
IMPERIAL	55, 56, 120, 124, 202, 205, 254	55, 56, 120, 121, 124, 202, 205, 207, 254	55, 56, 120, 121, 124, 202, 205, 207, 254
AVALON	48, 51,	48, 51, 53	48, 51, 53
HARBOR	81, 444, 445, 446, 447	45, 81, 120, 207, 444, 445, 446, 447	45, 81, 120, 207, 444, 445, 446, 447, S-11
VERMONT	204-354	204, 206, 209, 354	204, 206, 209, 354
CRENSHAW	210	210	210, S-10
HAWTHORNE	40-442, 119	40, 119, 442	40, 119, 211, 215, 442
AVIATION	-	120, 439, 560, S-7, S-8B, S-9	120, 220, 439, 560, S-7, S-8B, S-9
MARIPOSA	225, 226	225, 226, 232, S-8A	225, 226, 232, S-8A
EL SEGUNDO	124	124, S-8A	124, S-8A
DOUGLAS	225, 226	125, 225, 226, S-8C	125, 225, 226, S-8C
MARINE	-	126, 215, S-8C	126, 215, S-8C

* RECOMMENDED FOR IMPLEMENTATION JUNE 1995. MS/kcwo:interfac.wq1

** BALANCE OF MASTER PLAN TO BE IMPLEMENTED AS FUNDING PERMITS.

BUS/RAIL INTERFACE PLAN FOR THE METRO GREEN LINE

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BUS/RAIL INTERFACE PLAN FOR METRO GREEN LINE

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BUS/RAIL INTERFACE PLAN FOR THE METRO GREEN LINE

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CHAPTER 1

1.0 INTRODUCTION

In July 1995, the Los Angeles County Metropolitan Transportation Authority (LACMTA) will commence operation of a new light rail line in Los Angeles County. Rail service will operate from the Norwalk area to the El Segundo area, a distance of about 20 miles.

Fourteen stations will be served along the route. Ten stations will be located along the median of the Glenn Anderson Freeway, starting at Norwalk Station in the City of Norwalk and continuing to Aviation Station near the City of El Segundo. The remaining four aerial stations will be located within the El Segundo Employment Center, ending at Marine Station.

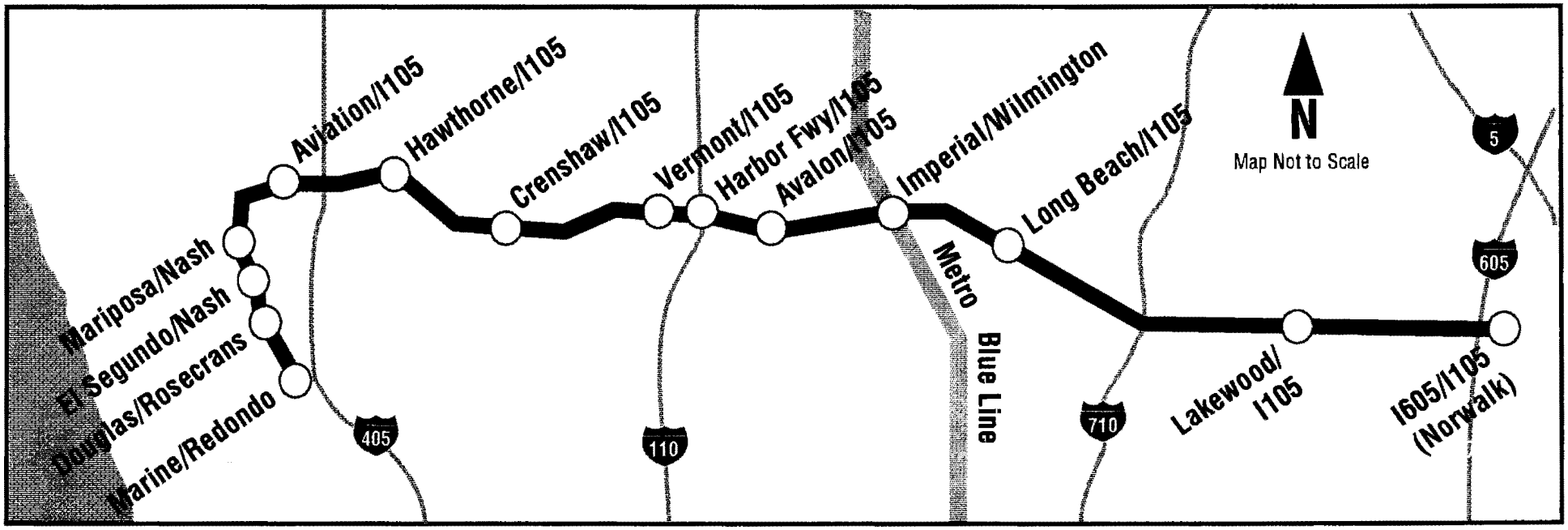
1.1 Goals and Objectives

The goal of this project is to develop a comprehensive transportation plan to ensure the bus system and new rail line are properly integrated so the public can be transported quickly and efficiently throughout the Green Line Corridor and connecting region. Specific goals and objectives used in the development of this project were originally adopted by the former RTD Board of Director's in 1989. They served to guide the development of the bus/rail interface plan for the Metro Blue Line and will guide the development of the bus/rail plan for the Metro Green Line. Table 1-1 shows the adopted Goals and Objectives.

1.2 Study Area

For purposes of discussion, the Green Line Corridor is bounded roughly by the City of Norwalk on the east, the Beach Cities on the west, Manchester Boulevard on the north and Rosecrans Boulevard on the south. Figure 1-1 illustrates the Green Line Corridor and rail alignment.

METRO GREEN LINE
Norwalk - El Segundo



Scheduling and Operations Planning Department
MTA Operations
November, 1994

TABLE 1-1
BUS/RAIL INTERFACE
GOALS AND OBJECTIVES

GOALS AND OBJECTIVES

1.0 Maximize the coordination between the MTA's bus and rail services by designing and managing them as one transit network.

1.1 Coordinate the bus and rail services to be complementary and not competitive.

1.1.1 All bus routes within one-mile of a rail station will be candidates to be rerouted to directly serve that station.

1.1.2 Competing parallel express and limited bus lines will be candidates for cancellation if the bus travel times are greater than a comparable train trip.

1.2 Develop response procedures that will efficiently provide for the operation of substitute bus service in the event of a rail disruption.

1.2.1 The MTA's Operations Control Center will manage the daily operation of both bus and rail services.

1.2.2 To the extent possible, operating bus lines, with augmented service, will be used when a bus bridge is needed.

1.3 Implement a special bus route that would duplicate the rail line and operate when the rail service is not operating, such as late night.

2.0 Maximize the use of the regional transit system within the allocated budgets.

2.1 Minimize the net transit passenger travel time within the rail corridor.

2.1.1 Encourage longer distance passenger trips to be made by rail.

.1 Operate frequent service to encourage high ridership.
.2 Maintain an adequate level of rail service at each rail station to promote ridership.

.3 Consider segmenting parallel bus service at a rail stations if a majority of the bus patrons would enjoy a travel time savings by using the rail service, and scheduling efficiencies result form the route segmentation.

.4 Consider operating expedited train service, either limited stop or express, when:

- sufficient passenger demand exists to support that service;
- the remaining local train service would maintain an acceptable level of service at the skipped stations;
- the expedited service can save an appreciable amount of passenger travel time; and
- the service can be provided within the MTA's operating budget.

2.1.2 Consider bus-to-bus timed-transfers at stations where two or more bus lines are operating half hourly service.

2.1.3 Establish bus/rail scheduled connections where bus lines operate at or less frequently than twice per hour.

.1 On bus lines operating 30 minute or less frequency, their headways will be designed to be compatible with the rail schedule.

.2 When feasible, buses will be scheduled to arrive before and depart after the train trip serves the station.

.3 Scheduled bus meets will be timed around the directional train trip that would serve the majority of bus/rail passengers.

2.1.4 Provide convenient bus access to rail stations.

.1 Crossing and parallel local bus routes will be diverted to serve rail stations when:

- the projected travel time savings for rail users is greater than the travel time loss by through riders; and
- passengers can easily and safely transfer between bus and rail services; or
- the resulting connection has a significant impact on improving regional connectivity.

.2 Maintain bus service to important passenger destinations between rail stations.

2.2 Incorporate municipal and sub-regional transit services into a coordinated regional transit network.

2.2.1 Encourage existing transit providers to extend service to nearby rail stations.

2.2.2 Encourage the establishment of coordinated schedules for all transit providers serving rail stations.

3.0 Maximize the quality and accessibility of the regional transit mobility.

3.1 Consider new short distance bus lines to provide feeder service from nearby areas that do not presently have direct transit access to rail stations.

3.2 Consider new limited stop and express bus service to areas five or more miles away from a rail station if the projected transit ridership would meet or exceed MTA service standards.

3.3 Develop and adhere to MTA rail/bus interface and performance standards.

3.3.1 The minimum frequency of rail service to every station will be 15 minutes during the daytime and every 30 minutes during nights.

3.3.2 The rail service will initially operate a minimum of 15 hours per day.

3.4 Accessibility will be maintained at all rail stations.

3.5 Crossing bus lines will be initially scheduled so that the average passenger loads at the rail stations will be 75 percent of the lines scheduled maximum load.

3.6 Parallel bus lines will be initially scheduled based upon the projected ridership deflection to the rail service.

Note: Goals & Objectives shown here were adopted by the former RTD Board of Director's in 1989 to guide the development of future bus/rail interface projects.

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CHAPTER 2

2.0 EXISTING MTA SERVICE

The MTA currently operates both fixed route bus service and rail service within the Green Line Corridor. Figure 2-1 illustrates the current north-south bus routes operated by MTA within the corridor. Figure 2-2 shows the current east-west services operated by the Authority.

2.1 Bus Service

The MTA operates 49 bus routes within the project area. These lines operate in three basic modes: local service, limited stop service, and express service. Thirty-eight bus lines or about 77% provide local service only. That is to say, they stop virtually every block to pick up and discharge passengers along their respective routes. Nine others provide express service (19%) and two lines provide limited stop service (4%).

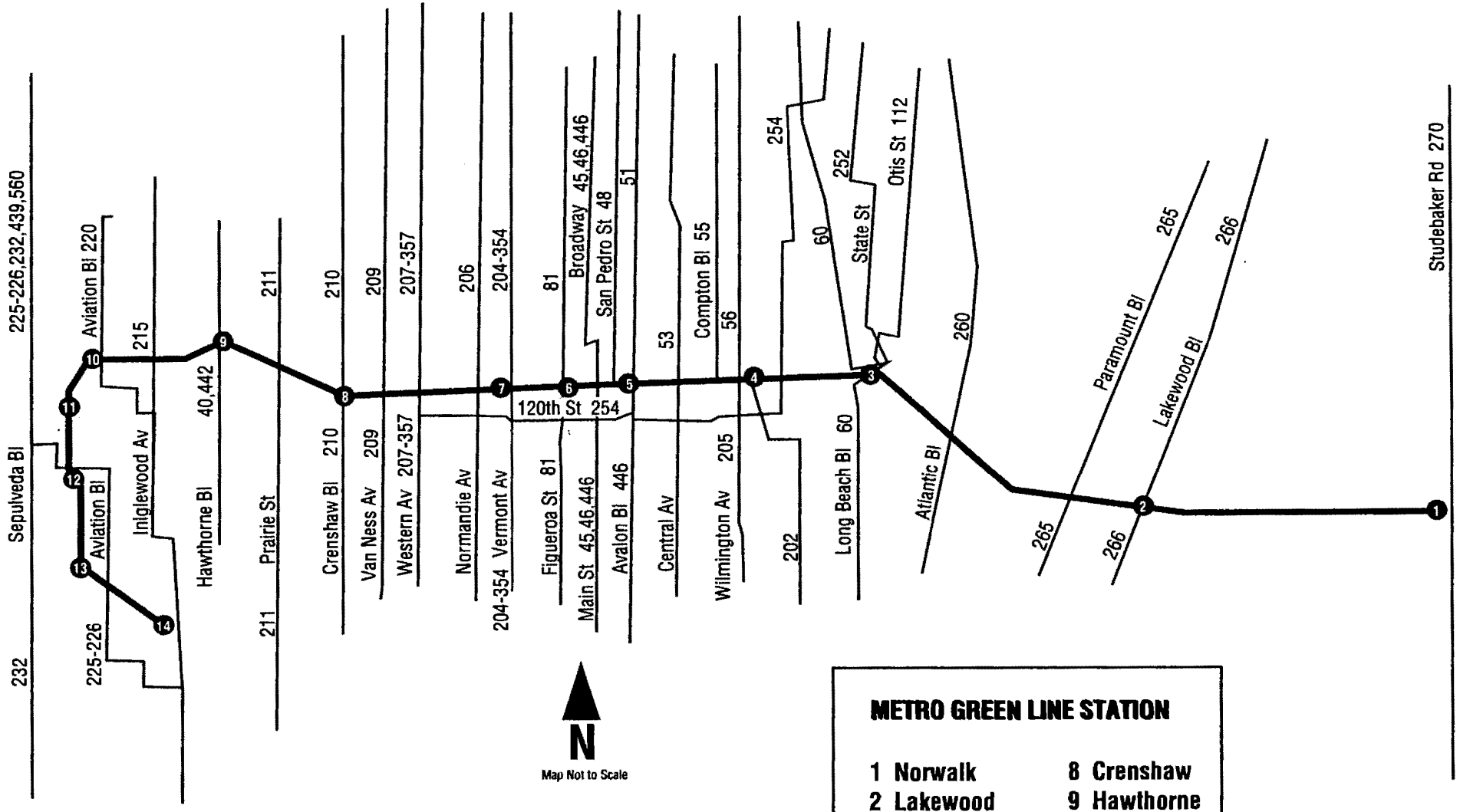
Of the 49 bus lines operating within the corridor, 40 are north-south services and the remaining nine lines are east-west services.

It is important to note the MTA does not operate any regular express or limited stop bus lines that parallel the alignment of the Metro Green Line. Local Line 120 is the only MTA service that closely approximates the rail alignment. This east-west service operates on Imperial Highway from the City of Brea in Orange County to the City of El Segundo.

Collectively, about 462,000 weekday riders, 323,000 riders on Saturday, and 216,000 riders on Sunday utilize the study lines to travel within and outside the corridor. Table 2-1 shows the study lines and their respective ridership.

NORTH-SOUTH BUS LINES OPERATING WITHIN OR NEAR GREEN LINE CORRIDOR

Figure 2-1



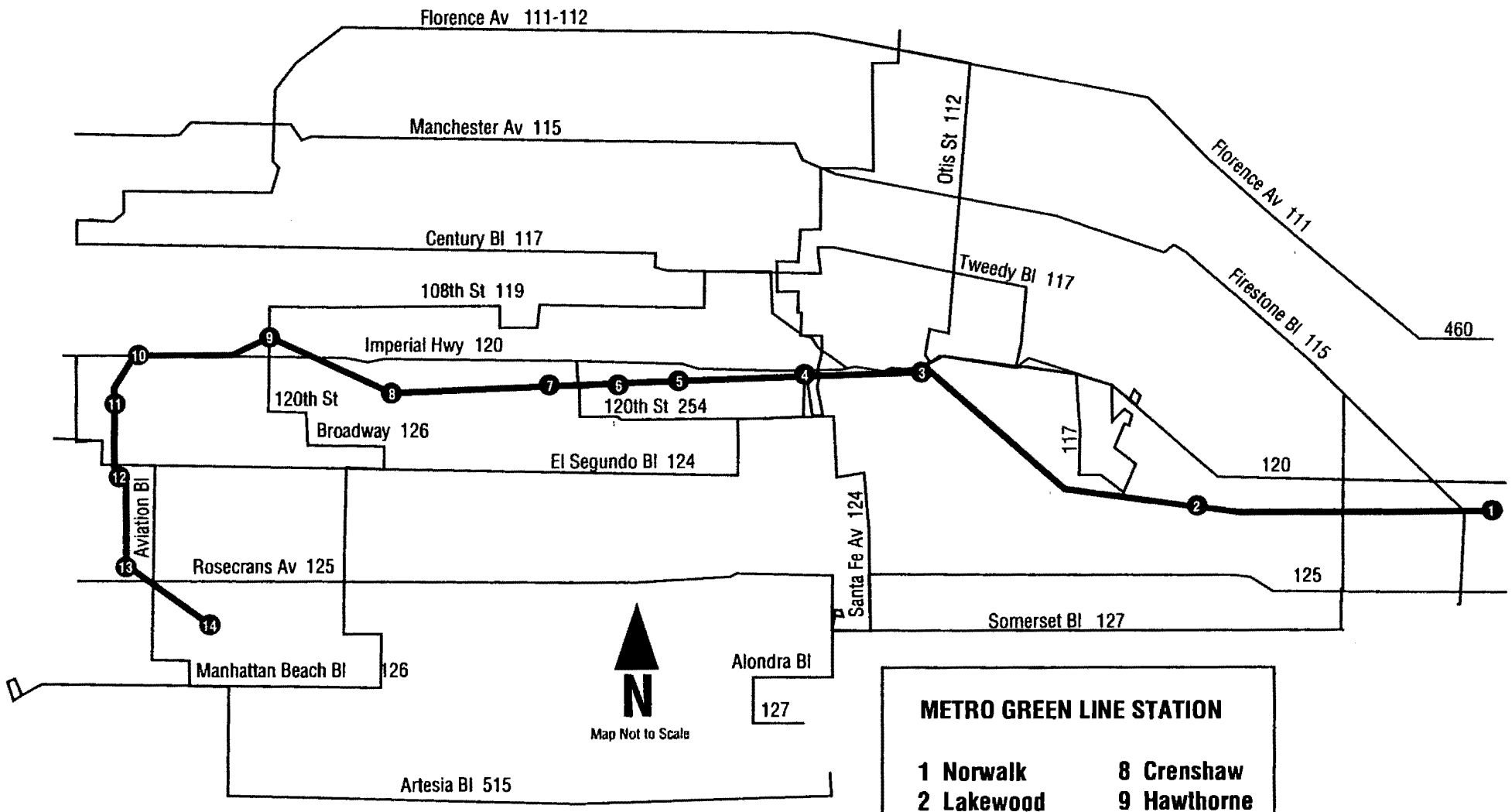
METRO GREEN LINE STATION

1 Norwalk	8 Crenshaw
2 Lakewood	9 Hawthorne
3 Long Beach Bl	10 Aviation
4 Imperial	11 Mariposa
5 Avalon	12 El Segundo
6 Harbor	13 Douglas
7 Vermont	14 Marine

Scheduling and Operations Planning
MTA Operations
September 1994

EAST-WEST BUS LINES OPERATING WITHIN OR NEAR GREEN LINE CORRIDOR

Figure 2-2



METRO GREEN LINE STATION

1 Norwalk	8 Crenshaw
2 Lakewood	9 Hawthorne
3 Long Beach Bl	10 Aviation
4 Imperial	11 Mariposa
5 Avalon	12 El Segundo
6 Harbor	13 Douglas
7 Vermont	14 Marine

Scheduling and Operations Planning
MTA Operations
September 1994

TABLE 2-1
TOTAL BOARDINGS ON STUDY LINES
OPERATING WITHIN GREEN LINE CORRIDOR

LINE #	DAILY	SATURDAY	SUNDAY
40/442	32,679	25,159	14,301
45	25,956	17,984	16,288
48	21,119	13,022	8,722
51	24,162	22,615	13,474
53	14,832	10,808	7,018
55	11,738	8,110	6,264
56	1,362	748	480
60	27,018	20,269	14,271
81	18,888	15,303	9,896
111/112	17,592	11,529	9,008
115	15,774	8,442	5,599
117	12,685	10,803	8,115
119/126	1,109	-	-
120	11,194	6,219	3,933
124	1,790	458	250
125	7,622	4,786	3,798
202	1,601	1,428	886
204/354	53,444	43,575	21,868
205	3,917	1,770	1,247
206	14,191	11,179	8,262
207/357	33,515	26,228	17,843
209	1,492	865	-
210	20,244	14,405	8,853
211/215	2,028	-	-
220	1,544	719	668
225/226	1,940	606	-
232	6,602	4,313	3,403
251/252	19,367	10,002	6,833
254	2,546	1,305	934
260	14,562	8,024	6,015
265	1,459	-	-
266	4,468	2,792	2,444
270	2,884	1,137	748
439	2,308	1,755	1,481
443	352	-	-
444	2110	1318	682
445	180	-	-
446/447	5480	2766	2368
460	2664	2358	1638
560	17556	9740	8165
TOTAL:49	**461,974**	**322,540**	**215,755**

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2.2 Rail Service

The MTA operates the Metro Blue Line within the project corridor. The Blue Line provides limited stop service between Downtown Los Angeles and Long Beach, a distance of about 22 miles. Twenty-two stations are served including four within the Green line Corridor.

Imperial Station will be the major transfer point between the Blue and Green Lines. It is located near the junction of Wilmington Avenue and Imperial Highway. The Metro Blue Line now carries about 42,000 passengers per day, operating at six-minute peak headways. The operation of more frequent service on the Blue Line may not be possible, because of the present traffic signal control system along the Washington Boulevard and Long Beach Boulevard segments. Competition for green time with crossing and turning auto traffic limits the Blue Line train speeds and minimum headway to five minutes. In addition, the capacity of the Blue Line is limited to two car trains because of the limitation of the current two-car platforms. This matter is being studied as of this writing. Options under consideration include the conversion of the two-car platform to three-car platforms.

Other options under investigation include analysis of traffic impacts in communities where crossing gates would be required to be down for an extended period of time. This condition could possibly result if less than a six-minute headway were operated on the Blue Line.

CHAPTER 3

3.0 Existing Municipal Operators

There are eight fixed route operators that currently provide within or near the Green Line Corridor. Each of these agencies operates various fixed route services with a large concentration of operators serving the LAX and El Segundo area.

3.1 TDA Fixed Route Operators:

Long Beach
Culver City Bus Lines
Santa Monica Bus Lines
Gardena Bus Lines
Torrance Transit (including MAX)
Norwalk Transit
LADOT
Orange County Transportation Authority

All of these operators provide weekday service with some providing weekend service as well. Generally, muni service operates about 20-30 minutes on weekdays for most lines with 30-60 headways operated on weekends. Table 3-1 summarizes the service characteristics of the municipal operators currently serving the Green Line Corridor.

3.2 Community Shuttles

A total of eight community based shuttle bus operators provide service within the corridor. These operations are generally funded with Proposition A and C Local Return Funds. The respective shuttle operators include the following cities:

Bell Gardens
Bell Flower
County of Los Angeles
Cudahy
Inglewood
La Mirada
Lawndale
Lynwood

Table 3-2 summarizes the existing service caracteristics of the community funded shuttles.

3.3 Other Carriers

The MTA and all transit operators in the county coordinate very closely with the County wide paratransit agency, Access Services Incorporated (ASI). ASI is the consolidated transportation services agency for the county. It is a private non-profit public benefit corporation charged with coordinating the operations of 189 public, private and non-profit paratransit providers in the county. On behalf of the 41 fixed route operators, ASI is implementing the coordinated plan to meet the paratransit requirements of the Americans with Disabilities Act of 1990 (ADA). The program is designed to provide quality service in the most cost effective manner by avoiding duplication and utilizing existing paratransit services whenever possible. Bus bay locations and drop off zones are available at all Green Line Stations to facilitate the paratransit operators. The MTA also has an agreement with ASI to provide supplemental service for passengers unable to use certain stations due to inoperative elevators.

3.4 Operator Coordination

Meetings are underway to present the draft interface plan of the MTA and to discuss the potential plans of the affected municipal operators. More detail will ensue in the coming months. The purpose of these meetings is to ensure coordination of all transit services at the rail stations. A range of options is being discussed, including opportunities for timed transfers between carriers as well as the expansion of municipal carriers to more directly access the rail line.. Potential service modifications for the municipal operators are discussed in Section 4 of this report. It is important to note that final decisions regarding route changes for each operator rests with the respective governing body of each agency.

The MTA has and maintains interagency fare and transfer agreements with all included municipal operators in the region. Similar agreements are in force between MTA and other carriers contracting with the MTA. The MTA requires all included operators to execute similar agreements among themselves as a condition of receiving local funding. Any new services contracted out by MTA will comply with this policy.

MUNICIPAL OPERATOR SERVICE PROFILE

TABLE 3-1

OPERATOR	LINE #	NAME	DAYS OF SERVICE			HEADWAY		
			DA	SA	SU	DA	SA	SU
TORRANCE	T-1	TORRANCE-LA	X	X	X	30/60	60	60
TRANSIT	T-2	TORRANCE-LA	X	X	-	60/60	60	-
	T-5	PCH-MANHATTAN BCH	X	X	-	60/60	60	-
	T-8	HAWTHORNE BL-LAX	X	X	X	20/30	30	30
MAX	2	PALOS VERDES PENINSULA	X	-	-	20	-	-
	3	SAN PEDRO-TORRANCE	X	-	-	20	-	-
CULVER CITY BUS LINES	6	SEPULVEDA BL	X	X	X	12/30	40	60
GARDENA	1	GARDENA-LA	X	X	X	15/30	35/60	35/60
MUNICIPAL BUS	2	VERMONT WESTERN	X	X	X	30/30	30	30
LINES	3	COMPTON-GARDENA-SO. BAY	X	X	X	30/30	30	30
	4	GARDENA-SO PARK-HOLLYPARK	X	X	X	30/30	60	60
LADOT	DASH	DASH WATTS	X	X	-	20	20	-
	438	HERMOSA BEACH	X	-	-	20/30*	-	-
	448	RANCHO PALOS VERDES	X	-	-	25/30*	-	-
	574	GRANADA HILLS-EL SEGUNDO	X	-	-	20/30*		
SANTA MONICA BUS LINES	3	LINCOLN BL-MONTANA	X	X	X	20	20	30/60
NORWALK BUS	1	HONDO-BELLFLOWER	X	-	-	30	-	-
LINES	2	STUDEBAKER RD	X	X	X	30/45	-	-
	3	SHOEMAKER AVE	X	X	X	30/45	-	-
OCTA	701	HUNTINGTON BEACH-LA	X	-	-	20/30*	-	-
	721	FULLERTON-LA	X	-	-	10/12*	-	-
LONG BEACH	7	ORANGE	X	X	X	20/30	30	30
TRANSIT	21	CHERRY	X	X	X	30	40	40
	22	DOWNEY AVE	X	X	X	30	40	40
	62	ATLANTIC ALONDRA	X	X	X	20/30	30	30
	91	7TH-BELLFLOWER	X	X	X	30/60	40	40
	92	7TH-WOODRUFF	X	-	-	30/60	-	-
	93	7TH-CLARK	X	-	-	60	-	-

*PEAK PERIODS ONLY

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COMMUNITY BUS SERVICES

TABLE 3-1

OPERATOR	NAME	DAYS OF SERVICE			HEADWAY		
		DA	SA	SU	DA	SA	SU
CITY OF BELL GARDENS	BEL GARDENS TOWN TROLLEY	X	X	-	20	20	-
CITY OF BELLFLOWER	THE BUS	X	X	-	30	30	-
CITY OF CUDAHY	CUDAHY AREA RAPID TRANSIT (CART)	X	X	-	60	60	-
CITY OF INGLEWOOD	I-LINE SHUTTLE	X	X	-	45	45	-
CITY OF LAWNDALE	LAWNDALE TROLLEY	X	X	X	45	45	45
CITY OF LYNWOOD	LYNWOOD TROLLEY	X	X	X	30	30	30
COUNTY OF LOS ANGELES	HAHN TROLLEY	X	X	-	30	30	-
COUNTY OF LOS ANGELES	HAHN FREE SHUTTLE	X	X	-	10	10	-

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CHAPTER 4

4.0 GOALS & OBJECTIVES: Compliance Issues/Interface Potential

This chapter assesses the bus/rail interface potential within the corridor as defined by the adopted goals and objectives.

Table 1-1 identifies the project's three fundamental goals and the specific objectives to achieve them. These goals are summarized below along with the respective objectives.

4.1 System Design and Management

Goal one seeks to maximize coordination of the bus/rail system by designing and managing them as one transit network. In addition to establishing procedures to manage the day-to-day and emergency operations of these systems, a key objective mandates that all bus routes that operate within one mile of a rail station will be candidates to be rerouted to serve the rail line. Another seeks to reduce/eliminate duplicative parallel routes.

4.1.1 Candidate Bus Lines for Interface

A review of the study corridor indicates that 49 existing MTA bus lines currently operate within the area. Of this total, all but three lines operate within one mile of a rail station. The three bus lines that fall outside of the guideline include Line 53 (Central Avenue), Line 207 (Western Avenue) and Line 260 (Atlantic Avenue). Line 53 currently operates between two station locations. Imperial Station lies about one and one-quarter mile to the east of this route and Avalon Station is located to the west about the same distance. Similarly, Line 207 currently operates between Vermont Station and Crenshaw Station. Crenshaw is about one and one-half miles to the west; Vermont Station is almost equal distance to the east. Finally, Line 260 currently operates between Lakewood Station and Long Beach

Station. The former is located over three miles to the east of Atlantic Avenue while the latter station is located about two miles west of Atlantic Avenue.

Although these three bus lines fall outside the guidelines, efforts will be made to include them in the interface if financially possible, since all are north-south services that either cross the rail line or, in the case of Line 207, would need to be extended to reach it.

4.1.2 Parallel Express and Limited Bus Lines

A second objective in achieving optimal system design is to eliminate parallel express and limited stop services that duplicate the rail alignment. Such services are candidates to be canceled if comparable bus travel times are greater than a comparable train trip.

A review of the rail corridor indicates the MTA does not operate any regular express or limited stop bus lines that parallel the rail route. In fact, the closest parallel express route is experimental Line 515 (Blue Line Transfer). Line 515 operates from the Artesia Blue Line Station to El Segundo primarily along Artesia Boulevard. Although the route is generally located about two miles outside the project boundary and four miles from the rail route, it does operate near several Green Line Stations in the El Segundo area.

Line 515 is a special project funded with a federal clean air grant. Service began in August 1993 and is scheduled to run through June 1995. It provides weekday, peak hour, express service from the Metro Blue Line to the El Segundo Employment Center. Service operates inbound to El Segundo in the morning hours and outbound from there in the afternoons. Its continued operation beyond the experimental period is contingent upon

extended federal funding or a commitment by the MTA to incorporate it into regular service.

4.1.3 Parallel Local Bus Lines

Although MTA operates no express or limited stop lines that parallel the rail alignment, seven MTA local bus lines currently parallel to some degree parts of the rail route. The affected bus lines are shown in Table 4-1. They include: Line 117 (Century-Tweedy-Rancho Amigos Hospital), Line 119 (108th Street), Line 120 (Imperial Hwy.), Line 124 (El Segundo Boulevard), Line 125 (Rosecrans Avenue), Line 126 (Yukon Avenue), and Line 254 (120th Street-Gage Avenue-Lorena Street).

Line 117 operates north of the rail line about one mile or more from most rail stations. No boardings occur within one-half mile of the rail line. Average passenger trip length is about three miles. Peak load points for this service are located at the City Bus Center and at the 103rd Street Blue Line Station.

Line 119 operates north of the rail line. It parallels the rail route for about nine miles. It is important to note, however, that the average trip length for passengers of this line is slightly more than 2.6 miles with 14% or 182 boardings occurring within one-half mile of the rail line. Peak load point is at the 103rd Street Blue Line Station.

Line 120 operates closest to the rail line, paralleling most of the alignment between Norwalk and El Segundo. Although this line operates close to the rail line, average trip length for Line 120 riders is only 4.1 miles, about one-fifth the length of the rail route. Although trip lengths are relatively short, about 60% of the total boardings on this line now occur within one-half mile of a rail station. This equates to about 6,500 boardings daily out of nearly 11,000 total boardings. The peak load point for

this line is near the Harbor Transitway Station.

Local line 124 is another parallel route. This service operates about one mile south of the rail line. It parallels the rail line basically between Aviation Station and Avalon Station, a distance of about seven miles. Passenger data for this line indicate that about 21% or 328 daily boardings now occur within one-half mile of the rail stations. Average trip length is about three and one-half miles. Peak load points for this line occur at Hawthorne Boulevard and at the Imperial Blue Line.

Line 125 also parallels the rail route. This local service operates on Rosecrans Avenue south of the rail line and shadows it from the El Segundo area to Norwalk. Although most stations are about three miles away, this gap narrows near the west and east terminals to less than one mile. Average passenger trip length is currently 3.7 miles with slightly more than 1% or 91 boardings occurring within one half mile of a rail station. The peak load point for this line is at the Compton Transit Center.

Both Lines 126 and 254 parallel small segments of the rail line. Line 254, for example, basically parallels the rail between Imperial Station and Vermont Station, a distance of about four miles. The distance ranges between one quarter to one-half mile. Average trip length on this line is slightly more than three miles. About 16% or 400 boardings occur within one-half mile of a rail station. Peak load point for this service is north of the rail corridor.

Line 126 parallels the rail route between Hawthorne Boulevard and Crenshaw Boulevard, a distance of about one and one-half miles. It operates within one-half mile of a rail station. The peak load point for this line is Manhattan Beach Boulevard and Inglewood Avenue. Average trip length is 2.6 miles.

TABLE 4-1
PARALLEL MTA BUS LINES OPERATING
WITHIN GREEN LINE CORRIDOR

LINE	PEAK LOAD POINT	AVG TRIP LENGTH	NUMBER OF BOARDINGS 1/2 ML. GREEN LINE	% TOTAL BOARDING
120	HARBOR TRANSITWAY	4.18	6587	59.9%
117	CITY BUS CNTR & 103RD BLUE LINE STATION	3.05	NONE	NONE
119-126	103RD BLUE LINE STATION (119) MANHATTAN/VALLEY (126)	2.65	182	14.2%
124	EL SEGUNDO/HAWTHORNE AND IMPERIAL BLUE LINE	3.47	328	20.8%
125	COMP TRANSIT CNTR	3.79	91	1.2%
254	EAST LA	3.26	415	16.2%
		TOTAL:	7603	

NOTE: TOTAL AFFECTED BOARDINGS ARE THOSE NOW OCCURRING WITHIN 1/2 MILE OF A GREEN LINE STATION. IF ALL OF THESE RIDERS WALKED TO THE GREEN LINE, THEN THE PERCENTAGE SHOWN WOULD BE THE AMOUNT OF RIDERS LOST FROM THE BUS LINE.

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It is important to note that although the adopted goal for system design does not require local parallel lines to be canceled or radically restructured, they are included here as possible candidates to be rerouted to promote access to the rail line, a requirement of the next goal.

Line 120, in particular, should be considered for restructuring given the high number of boardings (60%) occurring close to the rail line. The restructuring of this line should include the realignment of the route to serve one or more stations. Truncating the route should also be considered to possibly include the establishment of two or more routes.

4.2 System Efficiency

Goal Two seeks to maximize efficiency of the bus/rail system within allocated resources. To achieve this goal, two principle objectives have been identified.

4.2.1 Minimize Net Travel Time Within Rail Corridor

To minimize passenger travel time, the bus system must be structured in such a way as to provide convenient access to the rail stations. Opportunities for bus-to-bus timed transfers must be considered. Connections between bus and rail must be provided. Local service between stations must be assured. Service levels on the bus and rail system must be adequate to minimize wait time and promote ridership.

4.2.1.1 Station Access Potential

Currently, 23 of 49 candidate bus lines operate by or near rail station sites. Hence, immediate and direct access is provided by about 47% of the existing MTA bus service operating within the Metro Green Line Corridor. The affected lines include: 40, 48, 51, 55, 56, 60, 81, 120, 124, 202, 204, 205, 210, 225, 226, 266, 354, 442, 443, 444, 445, 446 and 447. All of these lines

provide local service except for Line 354, (which provides limited stop service on Line 204) and the four hundred series lines which provide express service.

Analysis of the schedules for the remaining 26 candidate routes indicates that five additional bus lines can be modified to serve the rail stations at minimal cost. These particular lines include: 112, 119, 126, 265 and 439. The schedules for these lines can be adjusted to serve the rail line with only a small increase in mileage costs. No additional equipment would be required.

The remaining 21 candidate bus lines can also be altered to serve the rail line, however, additional resources (equipment hours and miles) would be required to do so.

4.2.1.2 Major Transfer Points

The Imperial Blue Line Station serves as the connection point between the Metro Blue Line and Metro Green Line. Frequent service on both rail lines would ensure minimal wait time for transferring passengers. This station should also provide a significant bus interface to transport passengers to and from the trains.

Harbor Station will also serve as a major connection point. The Harbor Transitway will begin to serve this station in August 1996, according to the most recent forecast. It is proposed that the Transitway link the El Monte Busway and Harbor Freeway together to enable high speed express travel between El Monte and Torrance. Preliminary Metro Green Line bus interface plans call for MTA local Lines 45, 119, 120 and 254 to be rerouted to serve this station. Additional detail on the Transitway is available in an MTA draft report entitled, Dual Hub High Occupancy Vehicle Transitway. This report is

only conceptual at this time and has not been approved by the MTA Board of Directors.

Aviation Station is expected to serve as a third major connection point since it will essentially serve as the west terminal for the Green Line. A significant bus interface would be needed at this station to ensure connections with Lot B, C, LAX and the El Segundo Employment Center.

Norwalk Station is the fourth major connection point. This station will serve as the eastern terminus of the Green Line. A significant bus interface would be needed here also to facilitate connecting lines serving outlying communities.

4.2.2 Municipal Operator Integration

The second primary objective in achieving the service efficiency goal is to coordinate and incorporate municipal and sub-regional transit service into the interface plan. This would be accomplished through operator meetings designed to ensure coordination of services at affected rail stations. Other options to be considered include the potential of municipal carriers extending their routes to better access the rail line.

4.2.2.1 Potential Municipal Interface

There are several municipal operators and sub-regional operators whose services currently operate by or near the rail line. While meetings are now underway to discuss the interface potential of each operator, some preliminary ideas presented here are under discussion.

Both the cities of Gardena and Torrance operate express service from their areas into downtown Los Angeles. Once the Harbor Transitway is opened in 1996, their routes would essentially duplicate the MTA Dual Hub operation noted earlier. These

services should be considered for truncation at Harbor Station to provide interface with both the Metro Green line and the Harbor Transitway. As noted earlier, the Dual Hub Report is only a draft staff report and has yet to be endorsed by the MTA Board of Directors.

Long Beach Transit has proposed to extend its route 22, 92, and 93 to Lakewood Station. In addition, they have proposed to extend route 172 to Norwalk Station. One new route is also proposed to serve Norwalk Station. These proposals would essentially tie the Long Beach services into the eastern portion of the Green Line. In doing so, some minor duplication of MTA routes 124, 127, 130, 266, 270, 275 and 462 would occur. MTA staff supports the modifications to LBPT lines.

Orange County Transit Authority currently operates east of Norwalk Station. Both express Line 701 and 721 are potential services to be diverted to Norwalk Station.

Other possible interface connections include Gardena Transit serving Crenshaw, Vermont and Harbor Stations; Torrance Transit serving Harbor and Crenshaw Stations; Norwalk Transit serving Norwalk Station and possibly Lakewood Station; LADOT serving Aviation Station. Additional ideas will be discussed with these and other operators.

4.3 Maximize Service Quality and Accessibility

Goal Three of the interface plan seeks to ensure service quality through performance management and monitoring. In addition, this goal seeks to establish new feeder routes, both short and long distance, to maximize accessibility to the rail.

4.3.1 Performance Potential

The first objective to achieve service quality is to have in place, a system to monitor the efficiency of all services. This tool would establish standards for minimum service frequency, loading standards, spacing of service. The MTA's Board adopted Consolidated Transit Service Policies will be utilized as a guide to maintaining service quality on the interface lines.

4.3.2 Improved Accessibility Potential

The second objective to achieve maximum service quality and accessibility is to identify service voids and unmet needs. A review of the existing services in the corridor indicates the need for new feeder routes at the east terminal, Norwalk Station. Both short distance and long distance express routes are necessary to link this station with outlying communities in the San Gabriel Valley, Pomona Valley and Orange County areas.

Another potential service option that was identified, but not recommended concerns the operation of a new express route via the newly opened Glenn Anderson Freeway. Line 515 (BLT) could, for example, operate along the freeway rather than Artesia Boulevard to access the El Segundo area. Although it is feasible to reroute this service along the route suggested, it would directly compete with the Metro Green Line and conflict with Goal One. Hence, it should not be pursued at this time.

Improved bus access is also suggested for Aviation Station, the de facto west terminal of the Metro Green Line. As envisioned, a circulation route could be operated to transport Green Line riders throughout the El Segundo Employment area, LAX, Lot B and Lot C. A prototype of this service has been in operation since January 1994. Funded under the same program as the Line 515 (BLT), service operates today from the City Bus Center near Lot C, southward to the El Segundo area and northward to the

Westchester area. This routing may be modified in time for the opening of the rail line to directly serve Aviation Station. In fact, the terminals for the El Segundo Shuttle (Line 622) and for the Westchester Shuttle (Line 623) could be relocated from the City Bus Center to Aviation Station. This idea is being investigated as part of the LAX Ground Access Study. Also under consideration is the establishment of a dedicated shuttle to operate between Aviation Station and the LAX Terminal.

4.4 Potential Operational Savings

There is little operational savings to be realized within the Green Line Corridor. No express or limited bus lines, for example, directly parallel the alignment of the rail line. Hence, little savings can be realized through the cancellation of duplicated services. In addition, the few local lines that parallel the rail service somewhat operate relatively infrequent service, and average trip lengths are relatively short, ranging only between 2.6 and 4.1 miles.

Some potential operating savings may result through the truncation of selected MTA bus routes at or near the rail line. Several MTA bus routes, for example, either duplicate minor portions of other carrier routes or operate sufficiently close to them to qualify as possible candidate services to be restructured. Where possible to do so, MTA may be able to eliminate this duplication by cutting back its routes and having another carrier assume operation over the affected route segments.

This concept could lead to the establishment of transit centers at the Green Line stations, thereby, facilitating system efficiency, the adopted MTA goal to coordinate and incorporate Municipal and sub-regional operators into the interface plan.

The MTA lines that currently duplicate portions of other carrier

routes are shown in Table 4-2. These services include Lines 60 (Long Beach Boulevard), 81 (Figueroa Street), 204 (Vermont Avenue), 206 (Normandie Avenue), 209 (Van Ness Avenue), 210 (Crenshaw Boulevard), 260 (Atlantic Avenue), 266 (Lakewood Boulevard) and 270 (Monrovia-El Monte-Cerritos).

As shown in the table, productivity on the route segments is generally good. Should they be turned over to other operators, a forced transfer would likely be required for most riders in order for them to continue travel north or south of the rail line.

The number of weekday passengers potentially impacted by this concept ranges from about 200 on Line 209 to nearly 2000 on Line 210. The overall median impact is estimated to be about 450 passengers on weekdays. The impact to weekend ridership on these lines is predictably lower than weekday totals. The median passenger impact on Saturday is estimated to be about 350 on average. On Sundays, the median impact is estimated to be about 250 passengers.

In each of the restructuring concepts identified above, the potential savings to the MTA, measured in terms of buses and vehicle hours, would be redeployed to other lines in the corridor to enable them to access the rail line. Failure to redeploy these resources would mean an overall decrease in the interface of the bus and rail service since many existing bus services could not be rerouted without incurring additional costs.

4.5 Patronage Potential

Current ridership projections for the Metro Green Line is estimated to be about 18,000 riders per day. This is a first year (1995) estimate using the MTA Model (1993). This latest estimated was revised downward from an earlier projection of 25,000 riders per day for year one. The revision was necessary to reflect the

TABLE 4-2

POTENTIAL ROUTE SEGMENTS TO BE ASSUMED BY OTHER OPERATORS

			AFFECTED PASSENGERS		PSNGR REV	REV	SUGGESTED
LINE #	DAY	SEGMENT	ON	OFF	HOURS	HOURS	OPERATOR
60	DA	LONG BEACH BL	799	742	25.7	31	LONG BEACH SOUTH
	SA	BETWEEN	765	745	33.2	23	OF WILLOW ST.
	SU	WILLOW ST & LBCBD	776	753	32.3	24	
81	DA	FIGUEROA ST	438	496	24.3	18	TORRANCE #1 SOUTH
	SA	BETWEEN IMPERIAL	252	237	21.0	12	OF GREEN LINE
	SU	HWY & ROSECRANS	163	212	14.8	11	
204	DA	VERMONT AV	446	484	55.7	8	GARDENA SOUTH OF
	SA	BETWEEN IMPERIAL	399	350	57.0	7	GREEN LINE
	SU	& ROSECRANS	253	211	63.2	4	
206	DA	NORMANDIE	600	720	30.0	20	GARDENA SOUTH OF
	SA	BETWEEN	489	524	34.9	14	GREEN LINE
	SU	IMPERIAL &	228	264	19.0	12	
		ROSECRANS					
209	DA	VAN NESS AV	223	214	31.8	7	TORRANCE SOUTH OF
	SA	BETWEEN IMPERIAL &	67	61	13.4	5	GREEN LINE
	SU	ROSECRANS	n/a	n/a		n/a	
210	DA	CRENSHAW BL	1880	2077	35.4	53	TORRANCE
	SA	BETWEEN 120TH ST	1267	1265	43.6	29	SOUTH OF GREENLINE
	SU	& S. BAY GALLERIA	791	871	33.5	26	
260	DA	ATLANTIC AV	528	476	66.0	8	LONG BEACH SOUTH
	SA	BETWEEN ARTESIA &	307	336	51.1	6	OF ARTESIA
	SU	WARDLOW STA	251	227	41.8	6	
266	DA	LAKEWOOD BL	255	293	12.7	20	LONG BEACH SOUTH
	SA	SOUTH OF DEL	163	166	9.0	18	OF LAKEWOOD MALL
	SU	AMO BL	131	110	9.3	14	
270	DA	END AT	348	355	29.0	12	LONG BEACH SOUTH
	SA	NORWALK STATION	n/a	n/a	-	n/a	NORWALK STATION
	SU		n/a	n/a	-	n/a	VIA STUDEBAKER RD
TOTAL	DA	-	5517	5857	31.1	177	-
	SA	-	3709	3684	32.5	114	-
	SU	-	2593	2648	26.7	97	-

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continuing effects of the recession on Southern California and, in particular, the El Segundo area.

Ridership on the background bus system is currently about 400,000 weekday riders. Estimates of projected growth on the background bus system are being developed as of this writing.

CHAPTER 5

5.0 SERVICE ALTERNATIVES

A total of three service scenarios were developed for this study. Each of these service options is discussed below.

5.1 Scenario 1 - Status Quo Option (Minimum Access)

Scenario 1 is the "do nothing" option. Under this scenario, the MTA would not make any schedule or route modifications within the Green Line Corridor. The existing bus system would comprise the interface plan. Figure 5-1 shows the potential interface with this option.

A total of 23 MTA bus lines currently operate by Green Line Stations. Table 5-1 shows the respective lines that would provide the interface. Of these lines, all but two are north-south services: Line 124 (El Segundo Boulevard) and Line 120 (Imperial Highway) are east-west lines.

Sixteen of the 23 lines provide local bus service. Line 354 augments local service on Line 204 (Vermont) and provides limited stop service during the rush hours. Similarly, Express line 442 (Broadway) augments local service on Line 40-42 during the rush hours. Lines 443, 444, 445, 446 and 447 are all express lines that operate on the Harbor Freeway and connect Downtown Los Angeles with various points in the South Bay area.

5.2 Scenario 2 - Intermediate Access Scenario

Scenario 2 involves 49 bus lines. The respective bus lines include the 23 identified in Scenario 1. In addition, 22 bus routes have been added to this option. The added routes include: Lines 45, 112, 115, 119, 125, 126, 206, 207, 209, 211, 215, 220, 232, 252, 254, 260, 265, 270, 357, 439, 460 and 560. Four new feeder routes are also part of this package. Table 5-2 shows the respective bus lines in this package. Figure 5-2 illustrates the

proposed routings.

Unlike Scenario 1, this scenario seeks to enhance the potential interface by restructuring bus service in the corridor. Eight lines previously identified in Table 4-2 are proposed to have portions of their routes taken over by other operators. These include lines 60, 81, 204, 206, 209, 260, 266 and 270. In addition, Lines 120 and 254 are proposed to be shortened. Line 120, for example, will be divided into two routes, each of which will serve various stations. Collectively, this restructuring plan would produce a pool of savings that would be redeployed to other lines to enable them to access the rail line.

The estimated annual cost of this alternative is projected to be approximately $3.2 million. Adjusted for revenue receipts, the net cost of this option is about $2.5 million. This cost includes the operation of four new feeder services, namely Study Lines 2 (Norwalk-Brea-La Mirada Shuttle), 7(Westchester Shuttle), 8 (El Segundo Shuttle), and 9 (LAX-Collector Shuttle). Study Lines 7, 8, 9 are shuttles that would operate from Aviation Station to various points within the LAX area, including the Central Airport Terminal, Westchester and the El Segundo Employment Center. Study Line 2 would operate from Norwalk Station to the Brea Mall-La Mirada Mall, including Biola University.

5.3 Scenario 3 - Full Access Option

A total of 59 bus lines comprise this interface. This total includes the 49 bus lines identified in Scenario 2, plus existing local Lines 53 and 117 are added to the package. In addition, eight new feeder routes would also be included with this option. Five of the eight new feeder routes are proposed to link outlying communities in Orange County, Pomona Valley, and the San Gabriel Valley with the Green Line at Norwalk Station. These particular

feeder routes would provide peak hour express service on weekdays only. The three remaining feeder routes would provide local shuttle services from Crenshaw, Harbor and Lakewood Stations to communities surrounding these stations. This option is estimated to cost about $6.5 million annually. Adjusted for farebox revenues, the net increase in annual operating cost is estimated at $5.0 million.

Table 5-3 identifies the respective bus lines comprising this alternative. Figure 5-3 illustrates the proposed interface with this option.

METRO GREEN LINE – Bus/Rail Interface
Scenario 1: Status Quo

Figure 5-1

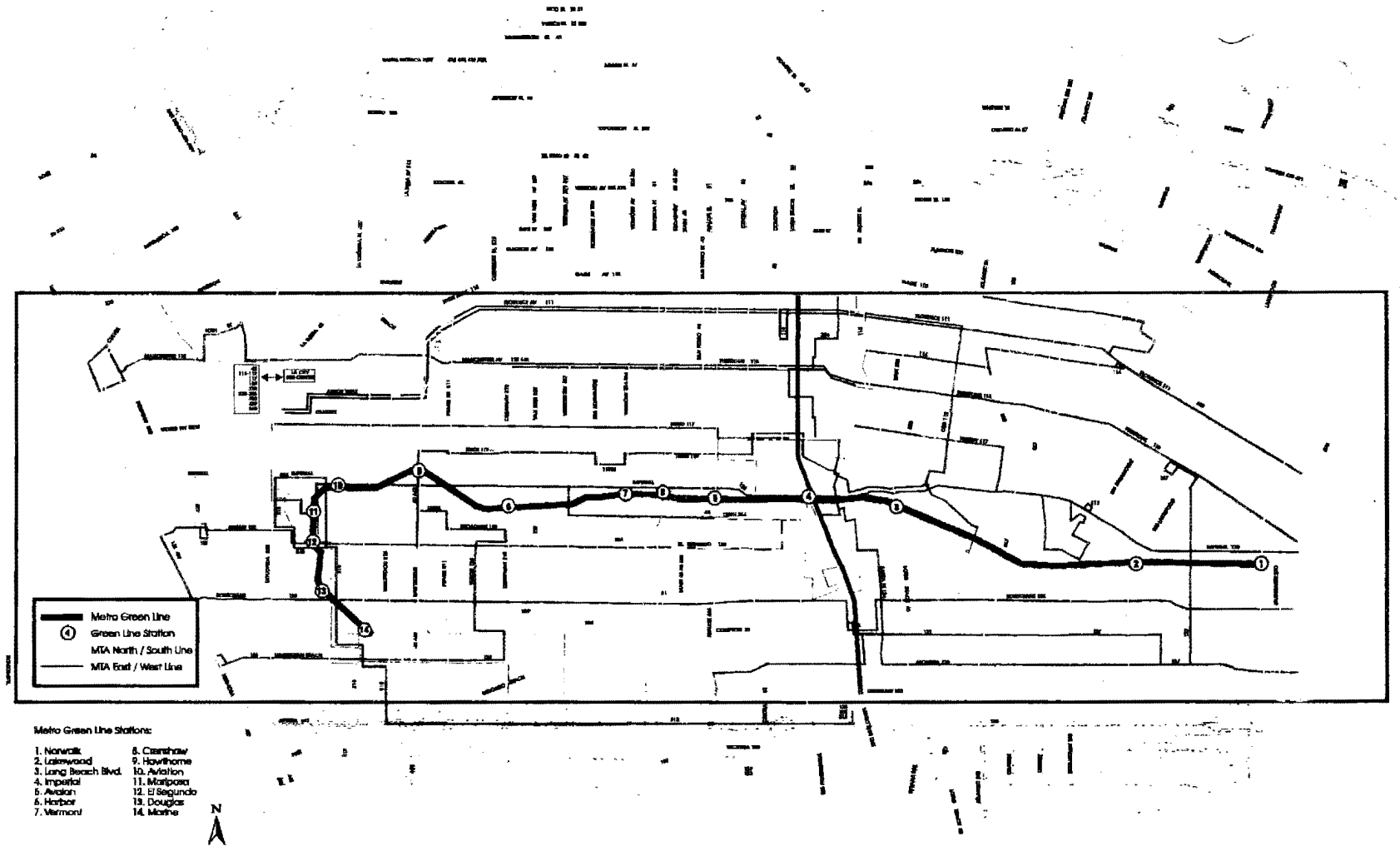

TABLE 5-1

EQUIPMENT REQUIREMENTS FOR GREEN LINE INTERFACE

ALTERNATIVE 1 - STATUS QUO (MINIMUM ACCESS)

LINE #	LINE NAME	A.M. BASE CRNT.	P.M. BASE CRNT.	OWL CRNT.	SAT BASE CRNT.	SUN BASE CRNT.
	NORTH/SOUTH OPERATION					
*40/442	HAWTHORNE BLVD.-LOS ANGELES COUNTY JAIL LOS ANGELES-WESTCHESTER-LAX	47	27	49	2	29	20
45	BROADWAY-MERCURY AVE.	36	17	29	2	17	17
*48	MAPLE AVE.-S. MAIN ST.	26	15	31	2	15	11
*51	SAN PEDRO ST.-AVALON BLVD.-COMPTON BLVD.	39	18	36	2	25	16
53	CENTRAL AVE	20	10	20	1	9	9
*55	LOS ANGELES-COMPTON AVE.	19	10	16	2	10	10
*56	IMPERIAL STATION-LOS ANGELES	3	3	3	0	3	2
*60	LONG BEACH BLVD.-SANTA FE AVE.	45	26	48	3	28	21
*81	FIGUEROA ST.	27	14	27	0	16	11
*202	WILLOWBROOK-COMPTON-WILMINGTON	4	4	4	0	3	3
*204/354	VERMONT AVE.	37	29	34	4	25	21
*205	SAN PEDRO-WILLOWBROOK	8	8	8	0	5	4
206	NORMANDIE AVE.	16	10	16	0	9	8
207/357	WESTERN AVE.	24	17	25	2	18	14
209	VAN NESS-ARLINGTON AVE.	4	3	4	0	2	-
*210	VINE ST.-CRENSHAW BLVD.	20	13	21	0	12	11
211/215	PRAIRIE AVE./INGLEWOOD AVE.-REDONDO BCH. -DEL AMO C	6	4	7	0	-	-
220	ROBERTSON BLVD.-CULVER BLVD.-LAX	4	3	4	0	3	3
*225/226	AVIATION BLVD.-PALOS VERDES PENNINSULA	10	6	10	0	6	-
232	LONG BEACH LAX	12	7	11	0	7	7
251/252	CALIFORNIA AVE.-SOTO ST.-HUNTINGTON DR.	22	14	25	2	12	8
254	120TH ST.-HUNTINGTON PARK-LORENA ST.	6	4	6	0	4	4
260	WARDLOW STA-PASADENA-ALTADENA	17	13	19	0	13	12
265	PARAMOUNT BLVD.-PICO RIVERA	4	4	5	0	-	-
*266	LAKEWOOD BLVD.-ROSEMEAD BLVD.	6	6	6	0	7	6
270	MONROVIA-EL MONTE-CERRITOS	6	5	7	0	3	3
439	LOS ANGELES-LAX-REDONDO BEACH EXPRESS	10	7	10	0	7	7
*443	LA-N.TORRANCE-REDONDO BCH.-PALOS VERDES	4	-	5	-	-	-
*444	LA-W.TRNCE-ROLLING HLS-RANCHO PALOS VERD	9	4	8	-	7	4
*445	LA-ALPINE VILLAGE-SAN PEDRO	5	-	4	-	-	-
*446/447	LA-CARSON-WILMINGTON-S.PEDRO	13	9	14	2	8	8
460	LA-NORWALK-DISNEYLAND	11	10	13	0	9	9
560	LAX-SAN DIEGO FWY-VAN NUYS BL	19	18	24	-	14	12

TABLE 5-1

EQUIPMENT REQUIREMENTS FOR GREEN LINE INTERFACE

ALTERNATIVE 1 - STATUS QUO (MINIMUM ACCESS)

LINE #	LINE NAME	A.M. BASE CRNT.	P.M. BASE CRNT.	OWL CRNT.	SAT BASE CRNT.	SUN BASE CRNT.
	SUBTOTAL	539	338	549	24	326	261
	EAST/WEST OPERATION						
111/112	FLORENCE AVE.-OTIS ST.	16	13	20	1	13	13
115	MANCHESTER AV-FIRESTONE BL	24	12	24	0	12	8
117	CENTURY-TWEEDY-RANCHO AMIGOS HOSP	11	9	13	0	10	8
119/126	108TH ST.-FERNWOOD AVE.	4	4	4	0	-	-
*120	IMPERIAL HIGHWAY	14	9	15	0	8	6
*124	EL SEGUNDO BLVD.-SANTA FE AVE.	7	5	6	0	2	2
125	ROSECRANS AVE.	12	8	12	0	8	7
	SUBTOTAL	88	60	94	1	53	44
	GRAND TOTAL	627	398	643	25	379	305

* Direct access to rail station

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METRO GREEN LINE – Bus/Rail Interface
Scenario 2: Intermediate Access

Figure 5-2

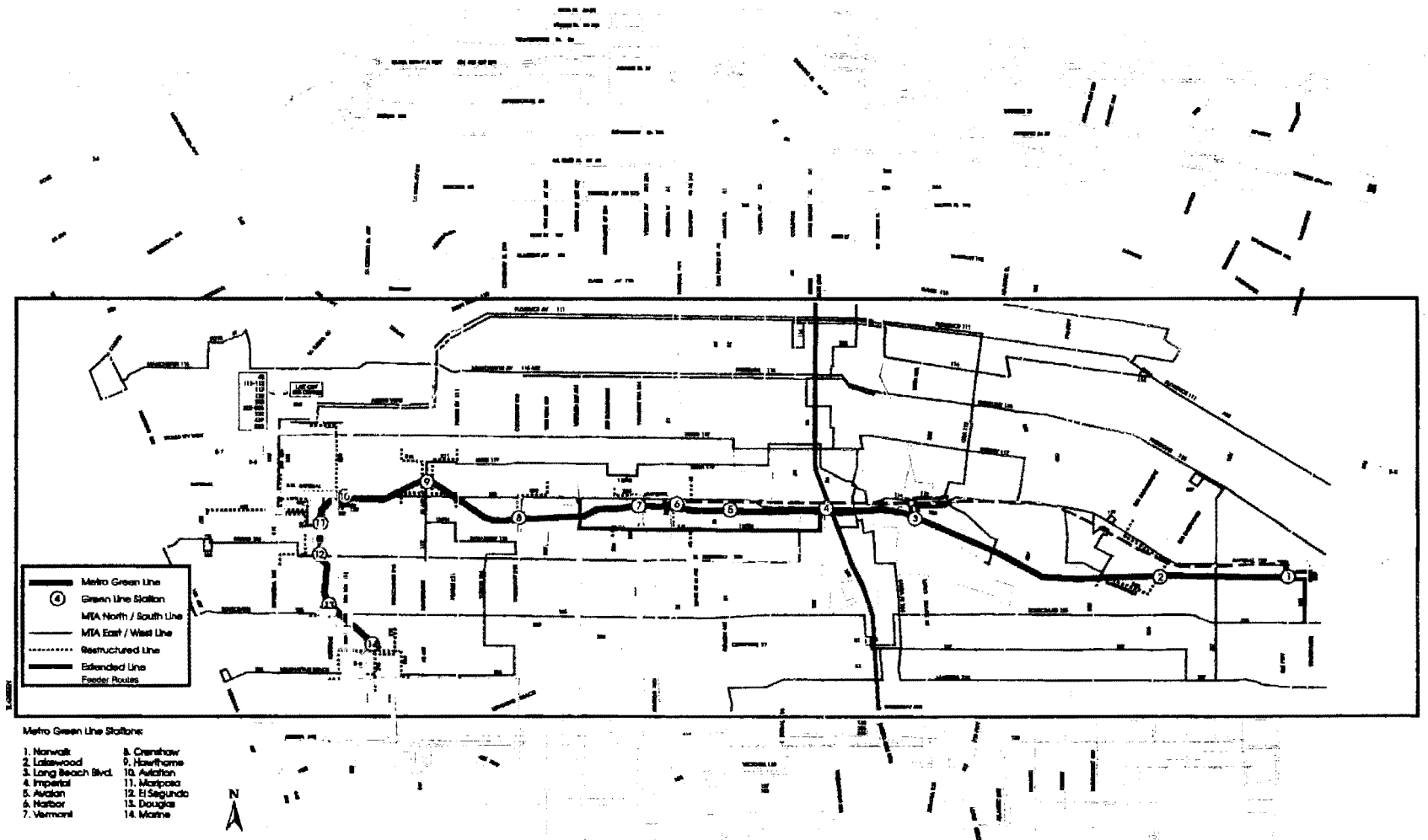

TABLE 5-2

EQUIPMENT REQUIREMENTS FOR GREEN LINE INTERFACE

SCENARIO 2 - INTERMEDIATE ACCESS

		DAILY								SATURDAY		SUNDAY	
		A.M.		BASE		P.M.		OWL		BASE		BASE	
LINE #	LINE NAME	CRNT.	PROP.	CRNT.	PROP.	CRNT.	PROP.	CRNT.	PROP.	CRNT.	PROP.	CRNT.	PROP.
	NORTH/SOUTH OPERATION												
*40/442	HAWTHORNE BLVD.-LOS ANGELES COUNTY JAIL LOS ANGELES-WESTCHESTER-LAX	47	47	27	27	49	49	2	2	29	29	20	20
@45	BROADWAY-MERCURY AVE.	36	37	17	18	29	30	2	2	17	18	17	18
*48	MAPLE AVE.-S. MAIN ST.	26	26	15	15	31	31	2	2	15	15	11	11
*51	SAN PEDRO ST.-AVALON BLVD.-COMPTON BLVD.	39	39	18	18	36	36	2	2	25	25	16	16
53	CENTRAL AVE	20	20	10	10	20	20	1	1	9	9	9	9
*55	LOS ANGELES-COMPTON AVE.	19	19	10	10	16	16	2	2	10	10	10	10
*56	IMPERIAL STATION-LOS ANGELES	3	3	3	3	3	3	0	0	3	3	2	2
@60	LONG BEACH BLVD.-SANTA FE AVE.	45	41	26	25	48	45	3	3	28	25	21	20
@81	FIGUEROA ST.	27	26	14	13	27	26	0	0	16	15	11	10
*202	WILLOWBROOK-COMPTON-WILMINGTON	4	4	4	4	4	4	0	0	3	3	3	3
@204/354	VERMONT AVE.	37	38	29	30	34	35	4	4	25	26	21	22
*205	SAN PEDRO-WILLOWBROOK	8	7	8	7	8	7	0	0	5	5	4	4
@206	NORMANDIE AVE.	16	16	10	10	16	16	0	0	9	9	8	8
@207/@357	WESTERN AVE.	24	25	17	18	25	26	2	2	18	19	14	15
@209	VAN NESS-ARLINGTON AVE.	4	3	3	3	4	3	0	0	2	2	-	-
*210	VINE ST.-CRENSHAW BLVD.	20	20	13	13	21	21	0	0	12	12	11	11
@211/@215	PRAIRIE AVE./INGLEWOOD AVE.-REDONDO BCH. -DEL AMO C	6	7	4	5	7	8	0	0	-		-	
@220	ROBERTSON BLVD.-CULVER BLVD.-LAX	4	5	3	4	4	5	0	0	3	3	3	4
*225/226	AVIATION BLVD.-PALOS VERDES PENNINSULA	10	10	6	6	10	10	0	0	6	6	-	-
@232	LONG BEACH LAX	12	13	7	8	11	12	0	0	7	7	7	7
251/@252	CALIFORNIA AVE.-SOTO ST.-HUNTINGTON DR.	22	22	14	14	25	25	2	2	12	12	8	8
@254	120TH ST.-HUNTINGTON PARK-LORENA ST.	6	5	4	3	6	5	0	0	4	4	4	3
@260	WARDLOW STA-PASADENA-ALTADENA	17	16	13	12	19	18	0	0	13	12	12	11
@265	PARAMOUNT BLVD.-PICO RIVERA	4	4	4	4	5	5	0	0	-	-	-	-

TABLE 5-2

EQUIPMENT REQUIREMENTS FOR GREEN LINE INTERFACE

SCENARIO 2 - INTERMEDIATE ACCESS

		DAILY								SATURDAY		SUNDAY	
		A.M.		BASE		P.M.		OWL		BASE		BASE	
LINE #	LINE NAME	CRNT.	PROP.	CRNT.	PROP.	CRNT.	PROP.	CRNT.	PROP.	CRNT.	PROP.	CRNT.	PROP.
@266	LAKEWOOD BLVD.-ROSEMEAD BLVD.	6	5	6	5	6	5	0	0	7	5	6	5
@270	MONROVIA-EL MONTE-CERRITOS	6	5	5	4	7	6	0	0	3	4	3	4
@439	LOS ANGELES-LAX-REDONDO BEACH EXPRESS	10	10	7	7	10	10	0	0	7	7	7	7
*443	LA-N.TORRANCE-REDONDO BCH.-PALOS VERDES	4	4	-	-	5	5	-	-	-	-	-	-
*444	LA-W.TRNCE-ROLLING HLS-RANCHO PALOS VERD	9	9	4	4	8	8	-	-	7	7	4	4
*445	LA-ALPINE VILLAGE-SAN PEDRO	5	5	-	-	4	4	-	-	-	-	-	-
*446/447	LA-CARSON-WILMINGTON-S.PEDRO	13	13	9	9	14	14	2	2	8	8	8	8
@460	LA-NORWALK-DISNEYLAND	11	12	10	11	13	14	0	-	9	10	9	10
@560	LAX-SAN DIEGO FWY-VAN NUYS BL	19	21	18	18	24	25	-	-	14	15	12	12
	SUBTOTAL	539	537	338	338	549	547	24	24	326	325	261	262
	EAST/WEST OPERATION												
111/@112	FLORENCE AVE.-OTIS ST.	16	16	13	13	20	20	1	1	13	13	13	13
@115	MANCHESTER AV-FIRESTONE BL	24	25	12	13	24	25	0		12	12	8	8
117	CENTURY-TWEEDY-RANCHO AMIGOS HOSP	11	11	9	9	13	13	0	0	10	10	8	8
@119/@126	108TH ST.-FERNWOOD AVE.	4	4	4	4	4	4	0	0	-	-	-	-
@120	IMPERIAL HIGHWAY	14	14	9	9	15	15	0	0	8	8	6	6
*124	EL SEGUNDO BLVD.-SANTA FE AVE.	7	7	5	5	6	6	0	0	2	2	2	2
@125	ROSECRANS AVE.	12	13	8	9	12	13	0	0	8	9	7	8
	SUBTOTAL	88	90	60	62	94	96	1	1	53	54	44	45
	GRAND TOTAL	627	627	398	400	643	643	25	25	379	379	305	307
	DIFFERENCE FROM STATUS QUO		0		2		0		0		0		2

TABLE 5-2

EQUIPMENT REQUIREMENTS FOR GREEN LINE INTERFACE

SCENARIO 2 - INTERMEDIATE ACCESS

		DAILY								SATURDAY		SUNDAY	
		A.M.		BASE		P.M.		OWL		BASE		BASE	
LINE #	LINE NAME	CRNT.	PROP.	CRNT.	PROP.	CRNT.	PROP.	CRNT.	PROP.	CRNT.	PROP.	CRNT.	PROP.
	NEW FEEDER ROUTES#												
@S-2	NORWALK-BREA SHUTTLE	-	2	-	2	-	2	-	-	-	2	-	2
@S-7	WESTCHESTER SHUTTLE	-	6	-		-	6	-	-	-	-	-	-
@S-8	EL SEGUNDO SHUTTLE	-	6	-		-	6	-	-	-	-	-	-
@S-9	LAX COLLECTOR SHUTTLE	-	4	-	4	-	4	-	-	-	4	-	4
	TOTAL	0	18	0	6	0	18	0	0	0	6	0	6

* Direct access to rail station (Status Quo Routings)

@ New access to rail station under this option

New service subject to available funding

MS/kcwo:scene2.wq1

METRO GREEN LINE – Bus/Rail Interface
Scenario 3: Full Access

Figure 5-3

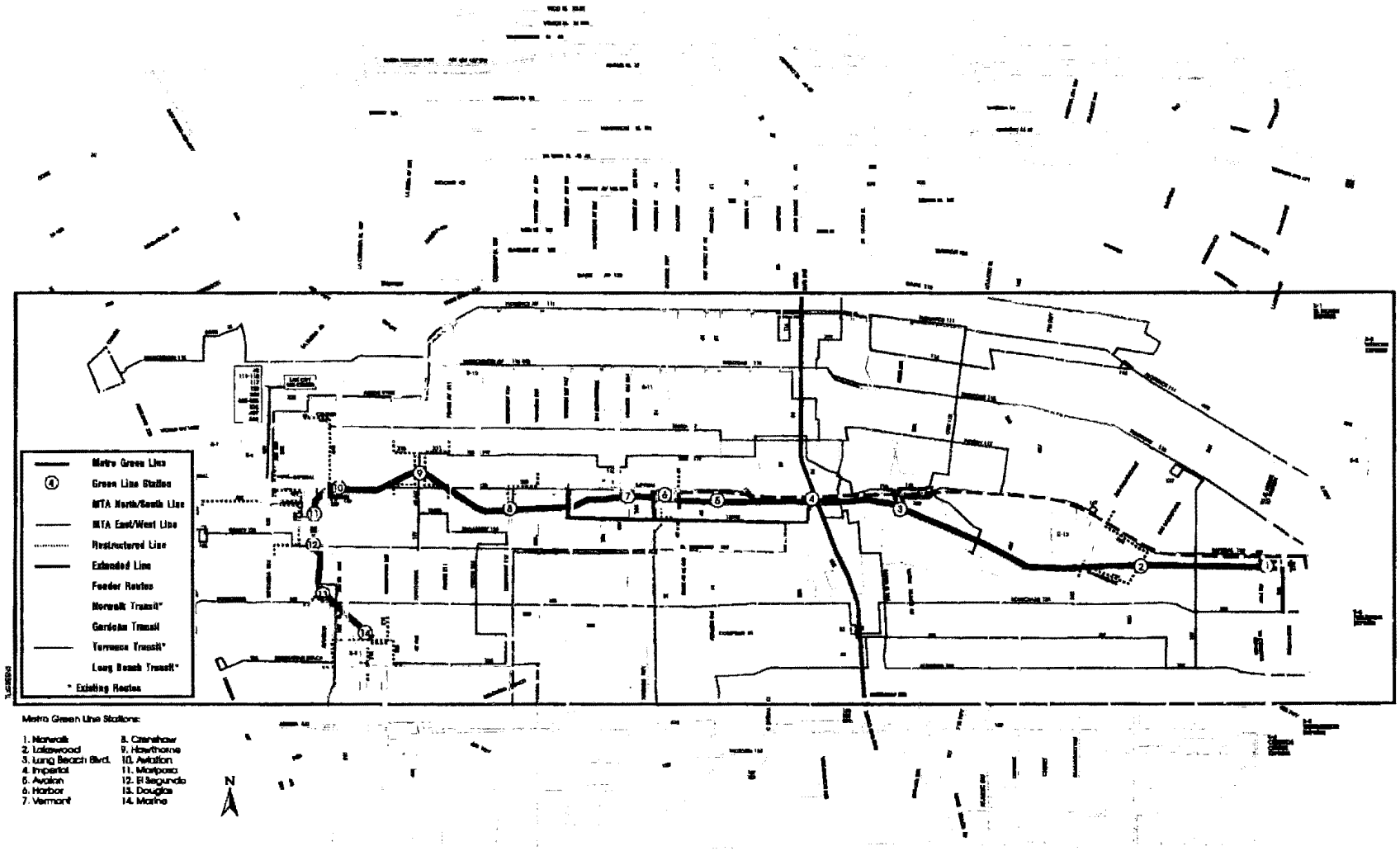

TABLE 5-3

EQUIPMENT REQUIREMENTS FOR GREEN LINE INTERFACE

SCENARIO 3 - FULL ACCESS

		DAILY								SATURDAY		SUNDAY	
		A.M.		BASE		P.M.		OWL		BASE		BASE	
LINE #	LINE NAME	CRNT.	PROP.	CRNT.	PROP.	CRNT.	PROP.	CRNT.	PROP.	CRNT.	PROP.	CRNT.	PROP.
	NORTH/SOUTH OPERATION												
*40/442	HAWTHORNE BLVD.-LOS ANGELES COUNTY JAIL LOS ANGELES-WESTCHESTER-LAX	47	47	27	27	49	49	2	2	29	29	20	20
@45	BROADWAY-MERCURY AVE.	36	37	17	18	29	30	2	2	17	18	17	18
*48	MAPLE AVE.-S. MAIN ST.	26	26	15	15	31	31	2	2	15	15	11	11
*51	SAN PEDRO ST.-AVALON BLVD.-COMPTON BLVD.	39	39	18	18	36	36	2	2	25	25	16	16
53	CENTRAL AVE	20	20	10	10	20	20	1	1	9	9	9	9
*55	LOS ANGELES-COMPTON AVE.	19	19	10	10	16	16	2	2	10	10	10	10
*56	IMPERIAL STATION-LOS ANGELES	3	3	3	3	3	3	0	0	3	3	2	2
@60	LONG BEACH BLVD.-SANTA FE AVE.	45	41	26	25	48	45	3	3	28	25	21	20
@81	FIGUEROA ST.	27	26	14	13	27	26	0	0	16	15	11	10
*202	WILLOWBROOK-COMPTON-WILMINGTON	4	4	4	4	4	4	0	0	3	3	3	3
@204/354	VERMONT AVE.	37	38	29	30	34	35	4	4	25	26	21	22
*205	SAN PEDRO-WILLOWBROOK	8	7	8	7	8	7	0	0	5	5	4	4
@206	NORMANDIE AVE.	16	16	10	10	16	16	0	0	9	9	8	8
@207/@357	WESTERN AVE.	24	25	17	18	25	26	2	2	18	19	14	15
@209	VAN NESS-ARLINGTON AVE.	4	3	3	3	4	3	0	0	2	2	-	-
*210	VINE ST.-CRENSHAW BLVD.	20	20	13	13	21	21	0	0	12	12	11	11
@211/@215	PRAIRIE AVE./INGLEWOOD AVE.-REDONDO BCH. -DEL AMO C	6	7	4	5	7	8	0	0	-		-	
@220	ROBERTSON BLVD.-CULVER BLVD.-LAX	4	5	3	4	4	5	0	0	3	3	3	4
*225/226	AVIATION BLVD.-PALOS VERDES PENNINSULA	10	10	6	6	10	10	0	0	6	6	-	-
@232	LONG BEACH LAX	12	13	7	8	11	12	0	0	7	7	7	7
251/@252	CALIFORNIA AVE.-SOTO ST.-HUNTINGTON DR.	22	22	14	14	25	25	2	2	12	12	8	8
@254	120TH ST.-HUNTINGTON PARK-LORENA ST.	6	5	4	3	6	5	0	0	4	4	4	3
@260	WARDLOW STA-PASADENA-ALTADENA	17	16	13	12	19	18	0	0	13	12	12	11
@265	PARAMOUNT BLVD.-PICO RIVERA	4	4	4	4	5	5	0	0	-	-	-	-

TABLE 5-3

EQUIPMENT REQUIREMENTS FOR GREEN LINE INTERFACE

SCENARIO 3 - FULL ACCESS

		DAILY								SATURDAY		SUNDAY	
		A.M.		BASE		P.M.		OWL		BASE		BASE	
LINE #	LINE NAME	CRNT.	PROP.	CRNT.	PROP.	CRNT.	PROP.	CRNT.	PROP.	CRNT.	PROP.	CRNT.	PROP.
@266	LAKEWOOD BLVD.-ROSEMEAD BLVD.	6	5	6	5	6	5	0	0	7	5	6	5
@270	MONROVIA-EL MONTE-CERRITOS	6	5	5	4	7	6	0	0	3	4	3	4
@439	LOS ANGELES-LAX-REDONDO BEACH EXPRESS	10	10	7	7	10	10	0	0	7	7	7	7
*443	LA-N.TORRANCE-REDONDO BCH.-PALOS VERDES	4	4	-	-	5	5	-	-	-	-	-	-
*444	LA-W.TRNCE-ROLLING HLS-RANCHO PALOS VERD	9	9	4	4	8	8	-	-	7	7	4	4
*445	LA-ALPINE VILLAGE-SAN PEDRO	5	5	-	-	4	4	-	-	-	-	-	-
*446/447	LA-CARSON-WILMINGTON-S.PEDRO	13	13	9	9	14	14	2	2	8	8	8	8
@460	LA-NORWALK-DISNEYLAND	11	12	10	11	13	14	0	-	9	10	9	10
@560	LAX-SAN DIEGO FWY-VAN NUYS BL	19	21	18	18	24	25	-	-	14	15	12	12
	SUBTOTAL	539	537	338	338	549	547	24	24	326	325	261	262
	EAST/WEST OPERATION												
111/@112	FLORENCE AVE.-OTIS ST.	16	16	13	13	20	20	1	1	13	13	13	13
@115	MANCHESTER AV-FIRESTONE BL	24	25	12	13	24	25	0		12	12	8	8
117	CENTURY-TWEEDY-RANCHO AMIGOS HOSP	11	11	9	9	13	13	0	0	10	10	8	8
@119/@126	108TH ST.-FERNWOOD AVE.	4	4	4	4	4	4	0	0	-	-	-	-
@120	IMPERIAL HIGHWAY	14	14	9	9	15	15	0	0	8	8	6	6
*124	EL SEGUNDO BLVD.-SANTA FE AVE.	7	7	5	5	6	6	0	0	2	2	2	2
@125	ROSECRANS AVE.	12	13	8	9	12	13	0	0	8	9	7	8
	SUBTOTAL	88	90	60	62	94	96	1	1	53	54	44	45
	GRAND TOTAL	627	627	398	400	643	643	25	25	379	379	305	307
	DIFFERENCE FROM STATUS QUO		0		2		0		0		0		2

TABLE 5-3

EQUIPMENT REQUIREMENTS FOR GREEN LINE INTERFACE

SCENARIO 3 - FULL ACCESS

		DAILY								SATURDAY		SUNDAY	
		A.M.		BASE		P.M.		OWL		BASE		BASE	
LINE #	LINE NAME	CRNT.	PROP.	CRNT.	PROP.	CRNT.	PROP.	CRNT.	PROP.	CRNT.	PROP.	CRNT.	PROP.
	NEW FEEDER ROUTES#												
@S-1	EL MONTE EXPRESS	-	6	-	-	-	6	-	-	-	-	-	-
@S-2	NORWALK-BREA SHUTTLE	-	2	-	2	-	2	-	-	-	2	-	2
@S-3	NORWALK-WHITTIER EXPRESS	-	6	-	-	-	6	-	-	-	-	-	-
@S-4	NORWALK-CERRITOS EXPRESS	-	3	-	-	-	3	-	-	-	-	-	-
@S-5	NORWALK-WESTMINSTER	-	8	-	-	-	8	-	-	-	-	-	-
@S-6	NORWALK-FULLERTON EXPRESS	-	5	-	-	-	5	-	-	-	-	-	-
@S-7	WESTCHESTER SHUTTLE	-	6	-	-	-	6	-	-	-	-	-	-
@S-8	EL SEGUNDO SHUTTLE	-	6	-	-	-	6	-	-	-	-	-	-
@S-9	LAX COLLECTOR SHUTTLE	-	4	-	4	-	4	-	-	-	4	-	4
@S-10	CRENSHAW STATION SHUTTLE	-	1	-	1	-	1	-	-	-	-	-	-
@S-11	HARBOR STATION SHUTTLE	-	1	-	1	-	1	-	-	-	-	-	-
@S-12	LAKEWOOD-LOS AMIGOS HOSPITAL SHUTTLE	-	1	-	1	-	1	-	-	-	1	-	1
	TOTAL	0	49	0	9	0	49	0	0	0	7	0	7

* Direct access to rail station (Status Quo Routings)

@ New access to rail station under this option

New feeder service subject to available funding

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CHAPTER 6

6.0 EVALUATION OF ALTERNATIVES

The evaluation of the three service scenarios were based on the goals and objectives for this project. Table 6-1 shows the selected evaluation categories. Each alternative was judged on its ability to meet the three criteria listed. Seven measures were developed to gage the compliance of each option.

6.1 Summary of Evaluation

Table 6-2 summarizes the findings of the evaluation. Collectively, Scenario 2, Intermediate Access Option, ranked favorably against the other alternatives. This scenario is recommended to be implemented as the first step leading to the Full Access Plan outlined in Scenario 3.

6.1.1 System Coordination

Like Scenario 3 (Full Access Option), Scenario 2 provided maximum system coordination by ensuring bus interface at all 14 Green Line stations. The status quo option, by contrast, ranked the poorest in this category by serving only 11 stations, none of which were terminal stations.

In terms of municipal operator participation, Scenario 2 and 3 both propose to roughly double the current level of interface that would otherwise be provided by the Status Quo Scenario. Both options call for up to 21 or more municipal bus lines to serve the rail line to promote system connectivity.

System connectivity is further enhanced by Scenarios 2 and 3 since both concepts propose to establish new feeder routes to promote additional growth on the rail system. Scenario 2 proposes to establish four new local feeder routes; Scenario 3, by contrast, proposes to establish up to 12 new services, including five express and seven local routes. The Status Quo

Option fails to consider future growth and system connectivity.

6.1.2 Direct Access

Scenario 2 also compared well against the other alternatives in maximizing patron access to the rail line. In this category, both Scenario 2 and 3 provided direct bus access to a rail station for most riders. Up to 86% of existing riders would have direct access under Scenario 2. Almost 90% would have access under Scenario 3. This equates to about 395,000 and 410,000 weekday riders, respectively. By contrast, the status quo option would serve only 53% or 244,000 existing riders, about half those riding in the corridor today.

Scenario 2 and Scenario 3 also provided for two or more bus lines at 13 of 14 Green Line stations seven days a week. By contrast, the status quo option would provide access at only 9 of 14 stations. Options 2 and 3 would also result in all 14 Green Line stations being served by two or more bus lines. The Status Quo Option would provide this level of access at only 7 of 14 stations. Table 6-3 compares the potential interface under each service alternative.

6.1.3 Operating Cost

The final evaluation measure considered operating cost. The costs of the three interface alternatives range from a zero increase in operating expenses (Status Quo) up to about $5.0 million annually for Scenario 3 (Full Access Option). Between these costs is Scenario 2 (Intermediate Access Option) estimated to cost about $2.5 million annually.

Modifications to the existing bus system for both Options 2 and 3 would cost about $250,000 annually under either plan. The cost of the 12 feeder routes under Scenario 3 (Full Access) would add an additional $4.7 million to the net cost of this

option. A more modest cost is proposed under Scenario 2 (Intermediate Access), where only four feeders would operate at a $2.3 million net increase in operating expenses.

Scenarios 2 and 3 are more efficient than the status quo since both require existing service to be restructured. Through this process, savings are made and reinvested in other modifications to enhance access to the rail stations. Hence, 45 or more existing bus lines have a role in both alternatives. The status scenario, by contrast, would involve only 23 bus lines and result in no restructuring.

Scenario 2 (Intermediate Access) is recommended as the preferred interface option at this time. It calls for the operation of four feeder routes in addition to the modification of up to 45 existing bus routes. Should the MTA have an opportunity to expand service in the future, it is suggested that additional consideration be given to implementing the remaining improvements called for in Scenario 3 - (Full Access Option). The implementation and operation of the eight additional feeder routes would further improve the system capability to attract new riders. This should be pursued at the earliest opportunity.

TABLE 6-1

EVALUATION CATEGORIES

CRITERIA	MEASURES
Efficiency	• Total Operating Cost
System Coordination	• Maximum Stations Served • New Service • Municipal Operator Participation
Direct Passenger Access to Stations	• Total Passengers • Seven-Day Service • Two or more Bus Lines

TABLE 6-2

SUMMARY OF EVALUATION OF SERVICE ALTERNATIVES

EVALUATION MEASURES	OPTION 1 STATUS QUO	OPTION 2 INTERMEDIATE ACCESS	OPTION 3 FULL ACCESS
TOTAL PSGRS DIRECT ACCESS DAILY (461,974)	243,686* (52.7%)	395,137 (85.5%)	409,969 (88.7%)
MAXIMUM STATIONS SERVED	11	14	14
STATIONS SERVE BY TWO OR MORE BUS LINES	7	14	14
STATIONS WITH BUS INTERFACE SEVEN DAYS A WEEK	9	13	13
MUNICIPAL OPERATOR PARTICIPATION #	10	21	21+
NEW SERVICE	0	4	12
ANNUAL COST OF SERVICE	BASELINE	+2,500,000**	+4,975,000**

* - DIRECT ACCESS PROVIDED BY EXISTING ROUTES.
** - $250,000 TO MODIFY EXISTING SERVICE ONLY.
# - ROUTES WITH DIRECT ACCESS TO RAIL LINES.

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TABLE 6-3
COMPARISON OF BUS INTERFACE POTENTIAL
AT METRO GREEN LINE STATIONS

STATION	OPTION 1: STATUS QUO MINIMUM ACCESS	OPTION 2: INTERMEDIATE ACCESS	OPTION 3: FULL ACCESS
NORWALK	-	115, 121 125, 270, 460, S-2	115, 121, 125, 270, 460 S-1 thru S-6
LAKEWOOD	266	265, 266	265, 266, S-12
LONG BEACH	60	60, 112, 119, 252	60, 112, 119, 252
IMPERIAL	55, 56, 120, 124, 202, 205, 254	55, 56, 120, 124, 202, 205, 207, 254	55, 56, 120, 124, 202, 205, 207, 254
AVALON	48, 51,	48, 51,	48, 51, 53
HARBOR	81, 443, 444, 445 446, 447	81, 45, 120, 121, 443, 444, 445, 446, 447	81, 45, 120, 121, 443, 444, 445, 446, 447, S-11
VERMONT	204-354	204, 206, 354	204, 206, 354
CRENSHAW	210	209, 210	209, 210, S-10
HAWTHORNE	40-442, 119	40, 119, 211, 215, 442	40, 119, 211, 215, 442
AVIATION	*	120, 220, 439, 560, S-7 thru S-9	120, 220, 439, 560, S-7 thru S-9
MARIPOSA	225, 226	225, 226, 232, S-8	225, 226, 232, S-8
EL SEGUNDO	124	124, 232, S-8	124, 232, S-8
DOUGLAS	225, 226	125, 225, 226, S-8	125, 225, 226, S-8
MARINE	-	126, 215, S-8	126, 215, S-8

* Experimental Lines 622 (El Segundo Shuttle) and 623 (Westchester Shuttle) commenced operation on January 1994. They are being investigated, as of this writing, as potential interface lines to serve Aviation Station as part of the LAX Ground Access Study. The purpose of the study is to ensure access between Aviation Station, Lots B, C, LAX and the El Segundo Employment Center. They are referenced here as study lines S-7 and S-8. Line S-9 is also shown and is proposed to serve Aviation Station and the airport terminal area.

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CHAPTER 7

7.0 RECOMMENDED ALTERNATIVE

Scenario 3 (Full Access Scenario) is the service plan proposed to undergo public review. This alternative involves mostly minor adjustments to 47 existing bus services. It also calls for the operation of up to 12 new feeder bus lines. This plan contains all of the modifications called for in Scenario 2. The specific proposals for the Full Access Plan follows:

7.1 Extended Routes

The seven bus lines listed in Table 7-1 are proposed to be extended in order to better serve the Green Line. Each line is proposed to operate its regular route as it does today, but at some point it will be diverted to a rail station. This diversion constitutes the route extension, which is proposed to become part of the regular route.

In conjunction with these route extensions, all will undergo bus stop adjustments at the rail stations. Schedule adjustments are also proposed for some services.

7.2 Restructured Routes

The bus lines identified in Table 7-2 are proposed to be restructured. The realignment of these services would result in a portion of the current route being abandoned in favor of a new route to serve the rail station. Some abandoned segments are proposed to be replaced by other operators.

A total of 23 lines are proposed to be restructured. Nineteen of these lines are north-south services. The remaining four

are east-west lines.

7.3 Existing Routes

The 17 bus lines shown in Table 7-3 currently operate by or near the Green Line Stations. These particular services are proposed to retain their present routings since they operate sufficiently close and provide immediate access to the rail line.

The service modifications proposed for these services involve mostly bus stop adjustments at the rail stations as well as some minor headway adjustments to better serve the affected stations. Schedule adjustments, for example, will be implemented to some services to promote better access to the Green Line and connecting bus lines.

Also shown in this section is the Metro Blue Line which will connect with the Green Line at Imperial Station. Peak hour headway adjustments are being considered for this service.

7.4 New Feeder Routes

Table 7-4 identifies the 12 new feeder routes that are recommended to be included in the Master Plan. The operation of these feeders is subject to the availability of adequate funding.

New feeder lines S2, S7, S8, and S9 are proposed to be operated as part of Scenario 2-Intermediate Access Option. They are proposed to provide shuttle service from Aviation Station and

Norwalk Station. The Aviation Station shuttles (S7, S8, S9) are proposed to operate about every 12-15 minutes. The Norwalk Station shuttle is proposed to operate about every 45 minutes.

The remaining eight feeder routes are proposed to be operated under the Full Access Option-Scenario 3. Their implementation and operation would complete the master interface plan. Five feeders are proposed to operate about every 20 minutes during the weekday, rush hours. These are express lines that would link Norwalk Station with outlying communities to the east. The remaining three feeders are local shuttles proposed to link Crenshaw Station, Harbor Station and Lakewood Station with the surrounding community adjacent to those stations. Thirty-minute headways are recommended for the three shuttle services.

TABLE 7-1

ROUTE EXTENSIONS TO METRO GREEN LINE STATIONS

LINE	LINE NAME	PROPOSED CHANGE
112	Florence Ave.-Otis St.	Extend route to Long Beach Station via Long Beach Bl.
119	108th St.-Fernwood Ave.	Extend route to Long Beach Station via Imperial Hwy., Long Beach Bl.
125	Rosecrans Avenue	Extend route to Douglas Station and Norwalk Station.
207-357	Western Avenue	Extend route to Imperial Station, via Western Ave., 120th St., Wilmington, Imperial Hwy.
252	California Ave.-Soto St.-Huntington Dr.	Extend route to Long Beach Bl. Station via Imperial Hwy., Long Beach Bl.
560	LAX-San Diego Fwy.-Van Nuys Bl Exp	Extend route from City Bus Center to Aviation Station.

TABLE 7-2

RESTRUCTURED LINES

LINE	LINE NAME	PROPOSED CHANGE
45	Broadway	Reroute to Harbor Station via Imperial Hwy., Figueroa, 117th; establish required stops.
53	Central Ave.	Reroute to Avalon Station via Central, Imperial Hwy., Avalon Bl., 117th St. and Central.
60	Long Beach Bl.-Santa Fe Av	End at Willow Station (Blue Line). Long Beach Transit to operate route south of Willow St.
81	Figueroa St.	End route at Vermont Station. Replacement service south of Green Line may be provided by Torrance Transit.
115	Manchester Bl.	Reroute to Norwalk Station via Studebaker Rd., Imperial Hwy., Hoxie Ave., then regular route.
117	Century Bl-Tweedy Bl-Rancho Los Amigos	Reroute direct to Rancho Los Amigos Hospital. Replacement service south of hospital to be provided by new feeder shuttle S-12.
120	Imperial Hwy.	Route to be broken into two segments; reroute to serve Aviation, Harbor, and Norwalk Stations. Service east of Bloomfield Ave. to be provided by new study line S-2. Service between Harbor Station and Bloomfield Ave. to be provided by new Line 121. Current route from city bus center to Harbor Station to retain current Line 120 number. Service levels to be adjusted.
126	Yukon Ave.-Manhattan Beach	Reroute to Marine Station; establish required stops.

TABLE 7-2

RESTRUCTURED LINES

LINE	LINE NAME	PROPOSED CHANGE
204	(354) Vermont Ave.	End at Vermont Station. Replacement service south of station to be provided by Gardena Bus lines.
206	Normandie Ave.	End route at Vermont Station via Imperial Hwy., Vermont Ave., 120th St.; establish required stops. Replacement service south of 120th St. may be provided by Gardena bus lines.
209	Van Ness Ave-Arlington Ave.	Reroute and end service at Crenshaw Station. Replacement service south of Imperial Hwy. to Gardena may be provided by Gardena Bus Lines.
211	Prairie Ave.	Reroute to Hawthorne Station via Imperial Hwy. Lennox Bl. Crenshaw Bl.
215	Inglewood Ave.	Reroute to Marine Station and Hawthorne Station.
220	Robertson Bl-Culver Bl-LAX	Reroute to Aviation Station via Century and Aviation Bls.
232	Anaheim St.-LAX	Reroute to Mariposa and El Segundo Stations via El Segundo Bl., Nash St., Mariposa Ave.
254	120th St.-Huntington Park-Lorena St.	End route at Imperial Station. Replacement service west of station to be provided by extension of Line 207 (Western Ave.)
260	Atlantic Ave.	Reroute service to end at Artesia Blue Line Station. Replacement service south of Artesia Bl. may be provided by Long Beach Transit.

TABLE 7-2

RESTRUCTURED LINES

LINE	LINE NAME	PROPOSED CHANGE
265	Paramount Bl.-Pico Rivera	Reroute to Lakewood Station via Gardendale St., Lakewood Bl., Imperial Hwy.; establish required bus stops.
266	Lakewood Bl-Rosemead Bl	End southbound route at Lakewood Mall. Service south to Long Beach may be replaced by Long Beach Transit.
270	Monrovia-El Monte-Whittier-Santa Fe-Springs-Norwalk-Cerritos	Reroute to Norwalk Station. Service south of Norwalk Station to Cerritos Mall may be provided by Long Beach Transit.
439	Los Angeles-Redondo Bch.-LAX	Reroute to Aviation Station via Imperial Hwy., Aviation Bl., 116th, Century Bl., Airport Bl., 96th St., to City Bus Center and regular route.
460	LA-Norwalk-Disneyland Exp.	Reroute to Norwalk Station via Imperial Hwy., Hoxie Ave. to Station.

TABLE 7-3

CURRENT LINES OPERATING BY OR NEAR METRO GREEN LINE STATIONS

LINE	LINE NAME	PROPOSED CHANGE
40	Hawthorne Bl.-Los Angeles	Bus stop adjustments at Hawthorne Station.
48	Maple Ave.-So. Main St.	Bus stop adjustments at Avalon Station.
51	San Pedro St.-Avalon Bl. -Compton Bl.	Bus stop adjustments at Avalon Station.
55	LA-Compton Ave. -Imperial Station	No changes required at Imperial Station.
56	LA-Wilmington Ave. -Imperial Station	No changes required at Imperial Station.
124	El Segundo Bl. -Santa Fe Ave.	Bus stop adjustments at El Segundo Station.
202	Willowbrook-Compton -Wilmington	No changes required at Imperial Station.
205	Willowbrook-Harbor City -San Pedro	No changes required at Imperial Station.
210	Vine St.-Crenshaw Bl.	Bus stop adjustments at Crenshaw Station.
225	Aviation Bl. -Palos Verdes Penninsula	Bus stop adjustments at Mariposa and Douglas Stations.
226	Aviation Bl. -Palos Verdes Dr. West	Bus stop adjustments at Mariposa and Douglas Stations.
442	LA-Hawthorne Express	Bus Stop adjustments at Hawthorne Station.
443	LA-N.Torrance-Redondo Bch.- Palos Verdes	Bus Stop adjustments at Harbor Station.
444	LA-W.Torrance-Rolling Hills- Rancho Palos Verdes	Bus Stop adjustments at Harbor Station.
445	LA-Alpine Village-San Pedro	Bus Stop adjustments at Harbor Station.

TABLE 7-3 (con't)

CURRENT LINES OPERATING BY OR NEAR METRO GREEN LINE STATIONS

LINE	LINE NAME	PROPOSED CHANGE
446	LA-Carson-Wilmington-San Pedro	Bus Stop adjustments at Harbor Station.
447	LA-Carson-Wilmington-San Pedro-7th St.	Bus Stop adjustments at Harbor Station.
801	Metro Blue Line	Service frequency changes may be required (Imperial Sta. served).

TABLE 7-4
SUMMARY FEEDER LINE SERVICE

S-1 NORWALK-EL MONTE STATION EXPRESS

One-way Route Miles:	15 miles
Headway:	20 minutes
Number of Buses:	6
Hours of Operation:	6 - 9AM and 3 - 6PM
Days of Operation:	Monday through Friday

S-2 NORWALK-LA MIRADA-BREA SHUTTLE

One-way Route Miles:	18.8 miles
Headway:	45 minutes
Number of Buses:	2
Hours of Operation:	6AM - 10PM
Days of Operation:	Seven days a week

S-3 NORWALK-WHITTIER EXPRESS

One-way Route Miles:	14 miles
Headway:	20 minutes
Number of Buses:	6
Hours of Operation:	6 - 9AM and 3 - 6PM
Days of Operation:	Monday through Friday

S-4 NORWALK-LOS CERRITOS CENTER EXPRESS

One-way Route Miles:	7 miles
Headway:	20 minutes
Number of Buses:	3
Hours of Operation:	6 - 9AM and 3 - 6PM
Days of Operation:	Monday through Friday

S-5 NORWALK-WESTMINSTER EXPRESS

One-way Route Miles:	21 miles
Headway:	20 minutes
Number of Buses:	8
Hours of Operation:	6 - 9AM and 3 - 6PM
Days of Operation:	Monday through Friday

S-6 NORWALK-FULLERTON EXPRESS

One-way Route Miles:	13 miles (via 605 Freeway) (10 miles (via 5 Freeway)
Headway:	20 minutes
Number of Buses:	5 (605 Freeway) [4 (5 Freeway)]
Hours of Operation:	6 - 9AM and 3 - 6PM
Days of Operation:	Monday through Friday

TABLE 7-4
SUMMARY FEEDER LINE SERVICE (con't)

S-7 WESTCHESTER SHUTTLE

One-way Route Miles:	9 miles
Headway:	15 minutes
Number of Buses:	6
Hours of Operation:	6:00 - 9AM and 3 - 6PM
Days of Operation:	Monday through Friday

S-8 EL SEGUNDO SHUTTLE

One-way Route Miles:	6.7 miles
Headway:	12 minutes
Number of Buses:	6
Hours of Operation:	6 - 9AM and 3 - 6PM
Days of Operation:	Monday through Friday

S-9 LAX COLLECTOR LOOP

One-way Route Miles:	2.9 miles
Headway:	12 minutes
Number of Buses:	4
Hours of Operation:	6 - 10PM
Days of Operation:	Seven days a week

S-10 CRENSHAW STATION SHUTTLE

One-way Route Miles:	5.0 miles
Headway:	30 minutes
Number of Buses:	1
Hours of Operation:	6AM - 6PM
Days of Operation:	Monday through Friday

S-11 HARBOR STATION SHUTTLE

One-way Route Miles:	7.0 miles
Headway:	30 minutes
Number of Buses:	1
Hours of Operation:	6AM - 6PM
Days of Operation:	Monday through Friday

S-12 LAKEWOOD BL STATION-RANCHO LOS AMIGOS HOSPITAL SHUTTLE

One-way Route Miles:	5.7 miles
Headway:	30 minutes
Number of Buses:	1
Hours of Operation:	6AM - 6PM
Days of Operation:	Seven days a week

CHAPTER 8

8.0 COMMUNITY REVIEW PROCESS

Staff will host a series of meetings this Fall to gather community input on the plan. The public meetings are proposed to occur in October and November year and will be followed by a formal public hearing in December. Comments received during the course of these meetings will be taken into account and appropriate changes will be made to the plan. A final plan is proposed to be submitted to the Board of Directors for approval in January or February 1995. Table 8-1 shows the project timetable.

8.1 Public Meetings/Hearings

Five public meetings have been held within the Green Line Corridor to date. Additional meetings are proposed to be held in November and December. Two public hearings are proposed for December, subject to formal approval by the MTA Board of Directors.

8.2 Agency Meetings

MTA staff have met with various governmental bodies to ensure interagency coordination. The Department of Transportation and Department of Airports for the City of Los Angeles, Caltrans and the County Road Department have been contacted to date. They will continue to be involved with the review of the plan.

8.3 Municipal Operators

Meetings have been held with each of the eight fixed route operators. The purpose of these meetings was to present the MTA bus/rail interface plan and to review plans of the other affected operators. These meetings are designed to ensure coordination of services at affected rail stations. Timed transfers will be considered.

Additional meetings with each affected operator will continue in the weeks and months ahead to share information on the MTA plan,

TABLE 8-1
METRO GREEN LINE BUS/RAIL INTERFACE

Project Timetable

MONTH	TASK
August 1994	**Bus/Rail Interface Plan Development** ▪ Refinement of Preliminary Service Alternatives ▪ Internal Review of Preliminary Plan ▪ Additional Input From Municipal Operators
September	**Review Preliminary Plan** ▪ Status Report to Board of Directors ▪ Coordination with Municipal Operators ▪ Additional Internal Review
October	**Community Input** ▪ Public Review (5 meetings) ▪ Review by local, state, federal officials ▪ Agency Review ▪ City Review ▪ Municipal operator review
November	**Review Revised Plan** ▪ Revised plan developed ▪ Status Report to Board ▪ Establish Public Hearing Date (December) **Community Input** ▪ Public Review ▪ Municipal operator review ▪ Agency Review ▪ Review by local, state, federal officials ▪ City Review
December	**Formal Public Hearings (December 17)** ▪ Downey City Council Chambers ▪ Inglewood Library Lecture Hall
January 1995	**Board Action** ▪ Adoption of Final Bus/Rail Interface Plan
February-May	**Implementation Steps** ▪ Schedule Building ▪ Coordination with Municipal Operators ▪ Public Relations ▪ Marketing
June	**Implementation of Bus/Rail Plan**

as well as to receive additional input from the operators about their plans.

Affected operators to be contacted include:

- Long Beach Transit
- Santa Monica Bus Lines
- Gardena Transit
- Torrance Transit (MAX)
- Norwalk Transit
- Culver City Bus Lines
- LADOT
- OCTA

8.4 Jurisdictional Meetings

Eighteen cities including county areas of Los Angeles are located within the Green Line Corridor. Group meetings are proposed to be held with these cities to present the plan and receive input. Follow-up meetings with individual cities would also occur if necessary to provide further clarification of the draft service plan.

The group meetings are proposed to include "natural neighbors". For example, meetings with mid-cities representatives will be comprised of cities that are located within a common area. The Harbor Freeway will serve as the dividing point. Cities west of the freeway will form the South Bay forum. Cities east of the freeway will form the second meeting group.

The respective jurisdictions to be contacted include the following:

Affected Jurisdiction

Bell Flower	Los Angeles, City
Compton	Los Angeles, County
Downey	Lynwood
El Segundo	Manhattan Beach
Gardena	Norwalk
Hawthorne	Paramount
Inglewood	Redondo Beach
Lawndale	South Gate
Long Beach	Torrance

8.5 Initial Findings and Recommendations

The initial community response to the draft bus/rail plan for the Metro Green Line was cordial. Most respondents are anxious for the startup of the rail service, and for additional opportunities to review and participate in the development of the bus integration plan.

Input from municipal operators have been generally favorable, however, there is concern that they may not be able to assume the MTA discontinued route segments within their current budgets. Discussions are centering on possible restructuring service as a means to achieve the desired goal.

A number of suggested improvements to the draft plan were proposed by the community. Staff has looked into all of these issues to assess their impact on ridership and resources. Table 8-2 lists those modifications to be incorporated into the Revised Bus/Rail Plan. These changes can be implemented at minimal if any cost.

Table 8-3 shows more complex modifications that were suggested by the community. These are undergoing further study to assess their actual impacts. These findings will be included and addressed in the next phase of community input on the plan.

TABLE 8-2

Modifications incorporated into Revised Bus/Rail Interface Plan:

- The routings for study Lines S-1, S-3, S-4, S-5 and S-6 were modified in the Norwalk area to enter I-105-I-605 Station (Norwalk) via Hoxie Avenue;
- The proposed routings for existing Lines 115, 125, 270, and 460 were also modified in that city to enter the station via Hoxie Avenue;
- Study Lines 7 and 8 were modified to consider alternative routings for both lines in the El Segundo - Westchester areas. The addition of mid-day service is also under consideration;
- Study Line S-2 was modified to consider alternative routing via Biola University, La Mirada;
- The proposed route of Line 439 was modified to serve Aviation Station in lieu of Mariposa Station;
- Line 53 was rerouted to serve Avalon Station.

TABLE 8-3

Modifications pending additional analysis to be reconsidered during the second phase of public review:

- Line 126 - Reroute in Manhattan Beach area.
- Line 215 - Reroute in Redondo Beach; consider limited stop service.
- Line 220 - Alternative route via Imperial Hwy. enroute to Aviation Station.
- Line 121 - Reroute to Lakewood Station.
- Line 266 - Reroute in both the Downey and Bellflower areas.
- Line 232 - Consider limited stop service in South Bay enroute to Green Line.
- New line fom Green Line to Redondo Beach Pier - Village area, and LAX terminal. Hermosa Beach routing to be considered. Priority for peak hour service, consideration of seven-day a week also.
- Possible reroute for Lines 225, 226, 232, 439, S-8 on Nash-Douglas Street (future street changes).
- Study Line 8 - Possible extension to South Bay Galleria; seven-day a week service.
- Study Line 9 - Possible operation of route by Los Angeles Department Airports.

CHAPTER 9

9.0 FINAL BUS/RAIL INTERFACE PLAN

This chapter outlines the last phases of the public review process leading to the adoption of the final bus/rail integration plan.

9.1 Findings of the December 17, 1994 Public Hearing

The bus/rail interface plan was the subject of a formal public hearing on December 17, 1994. Two hearings were held in all. The first hearing was held in the City of Inglewood the morning of that day. A second hearing was held later that afternoon in the City of Downey. Comments received from the public during the official comment period were taken into account by staff and forwarded to the MTA Board of Directors for consideration. The official comment period for the hearing process began on November 17, 1994 and lasted until January 10, 1995. Comments on the plan were received at the hearings as well as through the mail.

In general, nearly 80% of the public comments received on the bus/rail plan supported it outright or did so with minor revisions. The culmination of the formal public hearings marked the end of a five month period of community review. During this period, the MTA held nine public meetings as well as numerous meeting with city, county, state, and federal officials, government agencies, businesses and community groups representing or residing in the corridor. Additional meetings were also held with affected municipal operators within the corridor to keep them informed of the changes planned or pending to help ensure coordination of services at the rail stations.

All operators expressed interest in serving the Green Line to the fullest extent possible.

Torrance, Gardena, Norwalk, and the Orange County Transportation Authority will likely serve the rail line either with one or more existing routes or will do so through minor modifications.

The operators all lack funds to provide a more aggressive plan. Santa Monica and Culver City have indicated they will not serve the rail for this reason. Long Beach Transit, which had planned to do so, has announced they lack additional resources to fund their plan.

9.2 Recommended Revisions To Final Plan

Based on the comments received during this period, the bus/rail plan was recommended to undergo a number of modifications to address suggestions from the community.. The revisions are arranged by type of change. Lines 125, 207 and 560 were recommended to undergo revisions to their original routes to addresss concerns from the community. Lines 115, 126, 220, 232 and 460 were also recommended to undergo revisions to better serve the rail line. Also recommended for change were the original proposals affecting Lines 60, 120, 204, 209, 270, 443 and 446. The remaining revisions affected Study Lines 2, 5, 7, 8, 10, 11, and 12. Table 9-1 shows the revisions that were recommended and subsequently approved by the Board

9.3 Adopted Bus/Rail Interface Plan

The Board of Directors adopted the bus/rail interface plan for the Metro Green Line in February 1994. The Full Access plan was approved, as modified, to be implemented over time as funding and other issues could be resolved. Implementation of the first element or phase of the plan was approved for June 1994. This particular phase was described earlier as the intermediate access plan.

The MTA's full access plan was estimated to cost approximately $6.4 million annually. This cost included $4.8 million to operate all the feeder routes and $1.6 to fund improvements to existing services. An additional cost to fund improvements to the municipal operators systems was estimated at $8 million. The intermediate plan was cost neutral for the existing system; the feeder routes were estimated to cost about $ 2.7 million annually. These were funded with federal dollars. Exhibit 9-1 is the formal report submitted to the Board of Directors.

TABLE 9-1

RECOMMENDED REVISIONS TO MASTER BUS/RAIL INTERFACE PLAN FOR METRO GREEN LINE.

The following information identifies staff's recommended revisions to selected proposals contained within the current draft bus/rail interface plan for the Metro Green Line. Other proposals in the plan not shown here are recommended to be implemented without modification.

I. BUS LINES TO BE EXTENDED TO RAIL STATIONS

Line	Recommended Revisions:
125	Modify route to and from I-605/I-105 Freeway Station to use I-605 freeway in lieu of Studebaker Rd.
207(357)	Modify route to also serve Harbor Transitway/I-105 Station enroute to Imperial/Wilmington Station.
560	Modify route to Aviation Station to use Airport Bl. in lieu of Vicksburg Ave.

II. LINES TO BE REROUTED TO RAIL STATIONS

Line	Recommended Revisions:
115	Modify route to end at I-605/I-105 Freeway Station in lieu of Norwalk Plaza.
126	Modify route to Marine Station to use Redondo Ave. in lieu of Aviation Bl.
220	Modify route from City Bus Center to Aviation Station to use Aviation Bl. in lieu of Sepulveda Bl.
232	Modify route to Mariposa Station to use Grand Ave. in lieu of El Segundo Bl; delete direct service to El Segundo Station.
460	Modify route to I-605/I-105 Freeway Station to use Imperial Hwy - Studebaker Rd; delete portion of freeway route on I-5 freeway.

TABLE 9-1 (cont'd)

III. LINES TO BE SHORTENED OR ENDED AT RAIL STATIONS

Line	Recommended Revisions:
60	Withdraw proposal to end all service south of Willow Station (Blue Line). Augment existing shortline at Artesia Bl. and operate selected trips to LBCBD, 24 hrs, seven days a week.
120	Modify proposal to join Lines 120/121 at Imperial/Wilmington Station rather than at Harbor Transitway/I-105 Station. Line 120 to also serve Aviation/I-105 Station and Harbor Transit Way/I-105 Station. Line 121 to serve I-605/I-105 Freeway Station and Metrolink Station at Norwalk.
204(354)	Withdraw proposal to end service at 117th St. Retain current route to 122nd St.
209	Modify route to serve Vermont/I-105 Station in lieu of Crenshaw/I-105 Station.
270	Modify proposal to retain service to Cerritos Mall. Reroute line to serve I-605/I-105 Freeway Station.

IV. LINES TO MAINTAIN CURRENT ROUTES TO RAIL STATIONS

Line	Recommended Revisions:
443	Service cancelled January 1995 as part of FY 1995 Service Economies.
446	Modify proposal to serve Harbor Transitway/I-105 Station via Figueroa St; enter I-110 Freeway at Imperial Hwy.

TABLE 9-1 (cont'd)

V. NEW FEEDER LINES TO SERVE RAIL STATIONS

Line	Recommended Revisions:
S-2	Modify route to serve La Mirada Bl; end at Beach Bl; operate 30-minute service; delete Brea Mall leg in accordance with service economies proposed for Line 120.
S-5	Withdraw proposal. OCTA to modify Line 701 to serve I605/I105 Freeway Station.
S-7	Modify route to Aviation Station to include South Pershing Dr., Imperial Hwy; operate bi-directional service.
S-8	Modify proposal. Three separate routes recommended to be operated (S8A, S8B, S8C) in El Segundo Employment area. Service to operate one direction, peak hours, weekdays, 12-minute headways.
S-10	Modify route to serve Centinela Hospital and Daniel Freeman Hospital enroute to Crenshaw Station.
S-11	Operate as flexible destination shuttle rather than conventional fixed route service.
S-12	Modify route to serve Kaiser Hospital in Bellflower. Operate as flexable destination shuttle rather than conventional fixed route service.

EXHIBIT 9-1

Los Angeles County
Metropolitan
Transportation
Authority

818 West Seventh Street
Suite 300
Los Angeles, CA 90017

213.972.6000

Mailing Address:
P.O. Box 194
Los Angeles, CA 90053

February 23, 1995

TO: OPERATIONS COMMITTEE
PLANNING AND PROGRAMMING COMMITTEE

THROUGH: Franklin E. White Arthur T. Leahy

FROM: Arthur T. Leahy/Judith A. Wilson for JAW

SUBJECT: Adoption of the Final Metro Green Line Bus/Rail Interface Plan and Implementation of Phase I For June 1995

Recommendation

It is recommended that the Board:

- Adopt the Final Metro Green Line Bus/Rail Interface Plan (Attachment A) as the masterplan for Metro Green Line corridor bus service.

- Approve implementation of Phase I- Intermediate Access of the Plan for the June 25, 1995 shake-up (major schedule change) (Attachment B).

Alternatives Considered

There are two alternatives to the recommendation. The first alternative would be to implement the entire Metro Green Line Bus/Rail Interface masterplan this June. This is not recommended due to funding constraints. The second alternative is to implement lower levels of service than the Intermediate Access Plan. This is also not recommended as adequate bus access to the Metro Green Line would not be provided.

Impact on Budget

The full Metro Green Line Bus/Rail Interface masterplan, if implemented in its entirety, is estimated to cost an additional $6.4 million annually. Approximately $4.8 million or 75% of the added cost can be attributed to the operation of the 13 new feeder service routes specified in the Plan. The remaining $1.6 million represents costs accrued in diverting existing MTA bus lines to access Metro Green Line stations. In addition, upwards of $8 million in additional municipal operator costs

have been identified to implement the full access scenario.

The recommended Intermediate Access Plan is cost neutral scenario for MTA regular service. This is accomplished by rerouting of MTA lines resulting in cost increases on some lines that is offset by cost savings on other lines. The Intermediate Access Plan also provides for the initiation of seven new feeder services, for an annual cost of $2.7 million. The source of funding for these services is Congestion Mitigation and Air Quality Improvement (CMAQ) funds reprogrammed from the MTA FY 94/95 allocation. CMAQ will provide for 88.53% of operations funds, the remaining 11.47% local match will need to be allocated from the MTA operations budget. Use of CMAQ funds is limited to the first two years of operations and can only fund new service. After this period, a more permanent source of funding must be identified.

The CMAQ allocation is sufficient to fund seven study lines including the LAX/Aviation station study line. Staff is negotiating with the Los Angeles Department of Airports (LADOA) to operate this line. LADOA has the opportunity to accumulate a significant number of Congestion Management Program credits if they chose to fund and operate this line. These credits can be applied to debits accrued through construction of major projects such as the airport expansion program. If LADOA agrees to fund the LAX/Aviation station study line, additional feeder services will be funded from the full access scenario.

Staff is also negotiating with the City of Inglewood to fund and operate the Crenshaw station study line. Again, CMP credits can be applied towards offsetting major development impacts if the City choses to fund this line. The Crenshaw Station study line is in the full access scenario.

Additional funding for municipal operator participation has not been identified. Culver City Bus Lines and Santa Monica Bus Lines have declined to serve the Metro Green Line Aviation Station due to lack of funds. Long Beach Transit, Torrance Transit, Norwalk Transit, LADOT, and Gardena Municipal Bus Lines have also downsized Metro Green Line service plans with a few exceptions. These operators have requested MTA financial assistance for further implementation of the Intermediate Access scenario. Staff will continue to try and identify potential sources of funding to assist further plan implementation.

Unlike the Metro Red and Blue Lines, the Metro Green Line was not built in a major bus corridor where replacement of duplicative bus service was possible. No bus lines, or substantial line segments will be canceled as a result of Metro Green Line service. The only existing bus line that duplicates the Metro Green Line for any significant

distance is Line 120 (Imperial Highway - LAX Bus Center/Brea Mall). This line will be segmented and truncated to serve local trips, and to encourage people making longer trips to use the Metro Green Line.

Background

In November 1994, a notice of proposed changes to MTA bus service to serve the Metro Green Line corridor was published. During this period, MTA staff from Operations Planning, South Bay and Southeast Area Teams, met with all of the impacted or interested municipal operators, community groups, chambers of commerce, user groups (TMAs, rideshare coordinators) business groups, employer associations, elected officials, and city staff, to gather input on the service proposal concepts in the draft Metro Green Line Bus/Rail Interface Plan. As a result of these meetings, a revised draft was prepared. A public hearing on the revised draft was held on December 17, 1994. Findings from this hearing were approved by the Board of Directors at the February, 1995 Board meeting. The Notice of Public Hearing is attached as Exhibit 1 and changes recommended through the public review process are included as Exhibit 2.

Discussion

A four step approach was a key element to the development of the Metro Green Line Bus/Rail Interface Plan. Step one focused on connecting as many north-south bus lines as possible to Metro Green Line stations. Step two focused on connecting as many east-west lines to stations. The third step identified ways for local and municipal operators to access the stations. Step four identified new services needed to "feed" the rail line at key points along the alignment.

The results of this process were divided into five categories of service proposals presented for public comment. These categories included:

1. Bus lines extended to rail stations
2. Lines to be rerouted to stations
3. Bus lines to be shortened or ended at stations
4. Lines that maintain current routing to stations; and
5. New feeder lines to serve stations.

Exhibit 2 to the report describes the service modifications to the five categories as a result of the public input. Over one-third of the draft Plan was modified to reflect

community input.

The recommended modifications will provide for direct access to Kaiser Hospital in Bellflower, and Centinela and Daniel Freeman Hospitals in Inglewood. Extensive modifications have been incorporated into the feeder lines for the LAX and El Segundo employment area. The El Segundo changes are a direct result of incorporating service recommendations from the recently completed El Segundo Employers Association (ESEA) Green Line Circulator Study. Suggested revisions also incorporated into the Intermediate Access Plan include the retention of service originally proposed to be discontinued or transferred to another operator.

Attachment B summarizes the recommended Intermediate Access service changes for the MTA and details the service changes to be undertaken by other operators. Significant among the efforts to be provided by other operators is the assumption of Study Line 5 (Orange County to the I-605/I-105 Station) by rerouting Orange County Transit Authority (OCTA) Line 701.

Conclusion

This report provides recommendations that allow for the essential service modifications to be placed into effect with the June 25, 1995 shake-up and July Metro Green Line revenue operations start-up. The adoption of the masterplan will provide a blueprint for the gradual implementation of a full access scenario as funding becomes available.

Attachments:

Prepared by:

Jon Hillmer, Manager
Operations Planning

Karen Heit, Director
South Bay Area Team.

CHAPTER 10

10.0 RAIL STATION DESIGN AND ACCESS

This chapter discusses the methodology employed to design rail stations to be served by the Metro Green Line.

10.1 Design Criteria

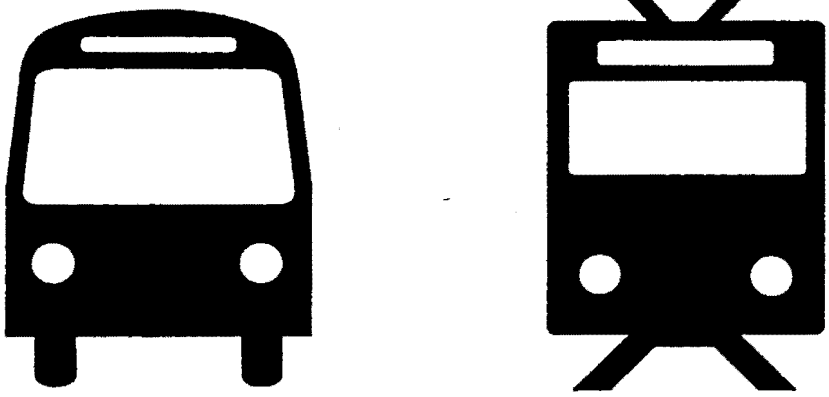
The design of the system was based on criteria developed for the Long Beach-Los Angeles Blue Line, and updated elderly and handicapped access requirements. The system conforms to provisions of the State of California Regulations for the Accomodation of the Disabled in Public Accommodations. The design criteria and sample station designs are not included in this document, but they are available for public inspection at the office of the MTA.

10.2 Discussion

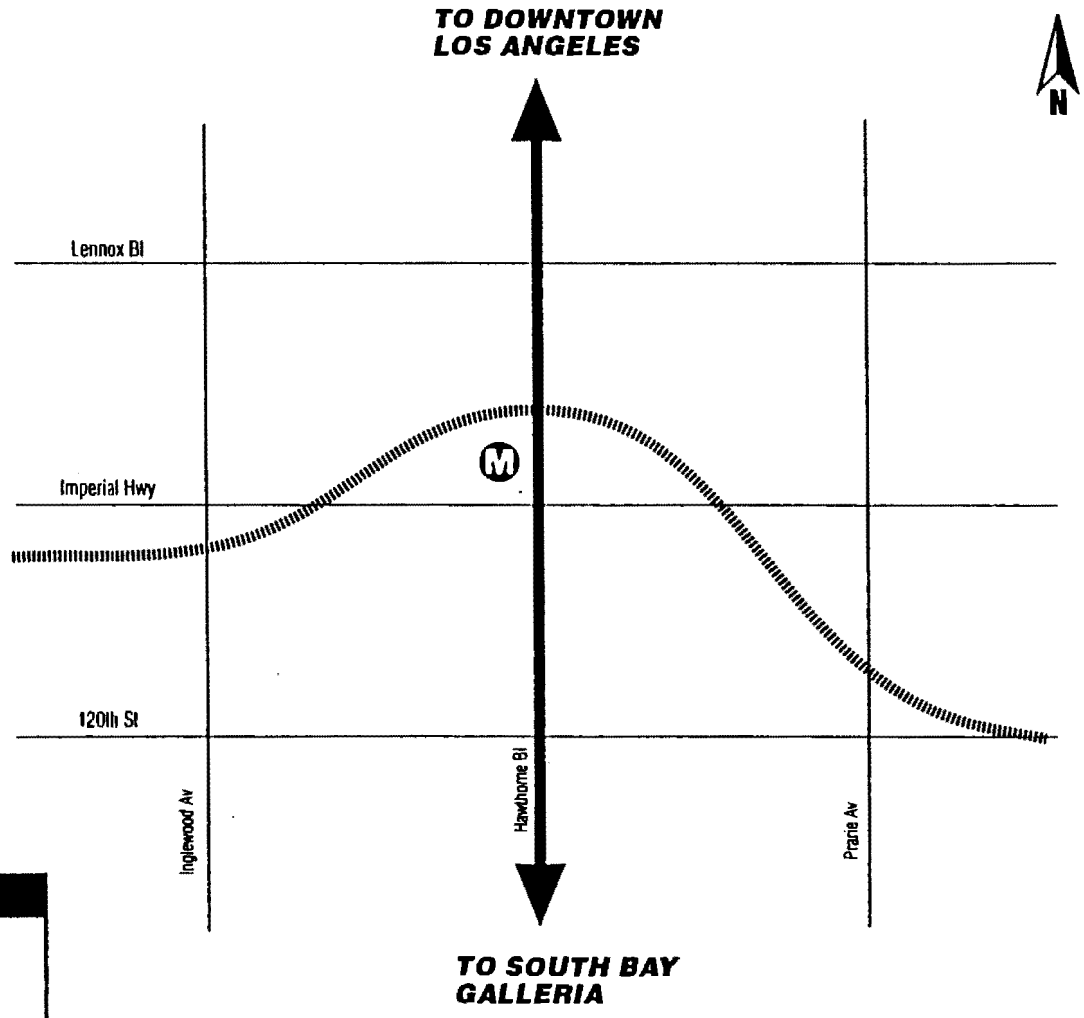
The Green Line system provides facilities that allow all persons to arrive and enter without intervention or assistance by others. Important system and emergency information are presented not only visually, but also by touch or sound. In stations, special access measures include: elevators, push buttons, and intercoms at a level within reach of wheelchair patrons. Station platforms are level to the trains floor. Stations are also free of gates or turnstiles which allow for safe and fast boarding. Ticket machines are at wheelchair level. Handicapped parking, curbs, and ramps are provided to facilitate access to the stations.

APPENDIX A

Recommended Service Plan:
Present and Proposed Routings



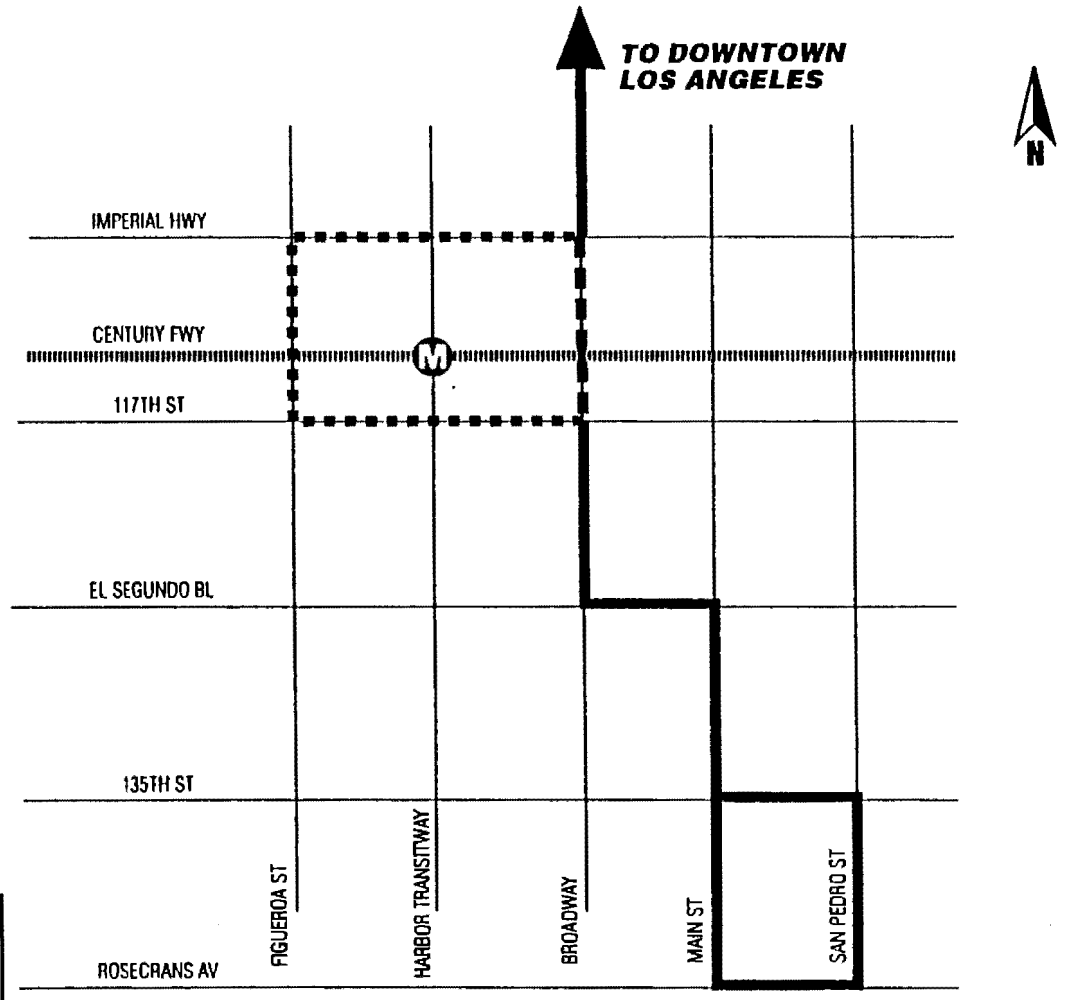
Line 40, 442 to Hawthorne/I105 Station



LEGEND

- EXISTING ROUTE OF LINE 40, 442
- GREEN LINE ROUTE
- STATION

Line 45 to Harbor Transitway/I105 Station



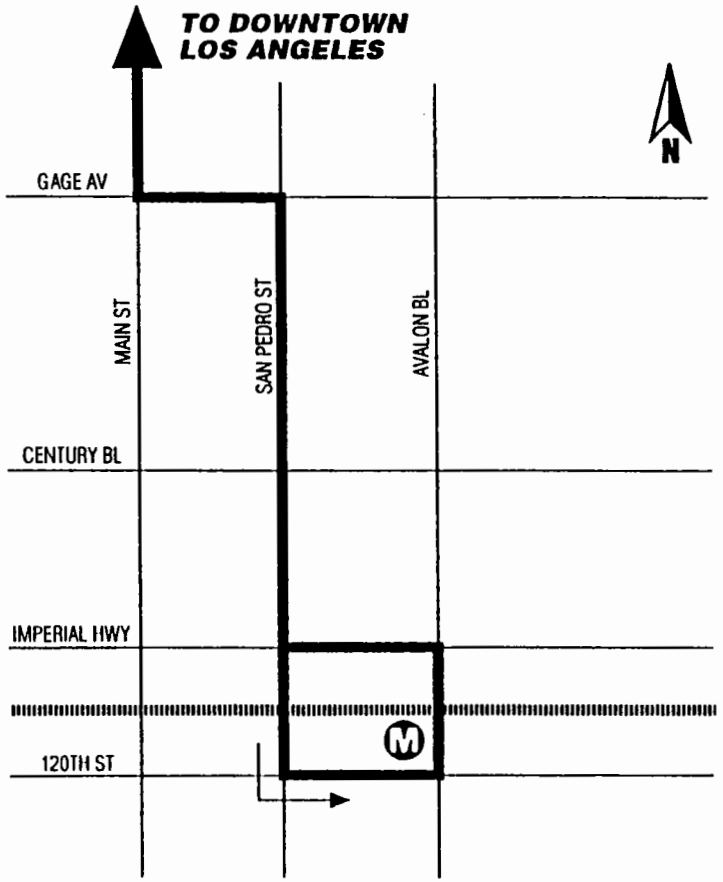
LEGEND

- GREEN LINE ROUTE
- ROUTE OF LINE 45
- DELETED PORTION OF ROUTE
- REROUTED
- STATION

Scheduling & C · Planning February 1995

OP-009 2/95

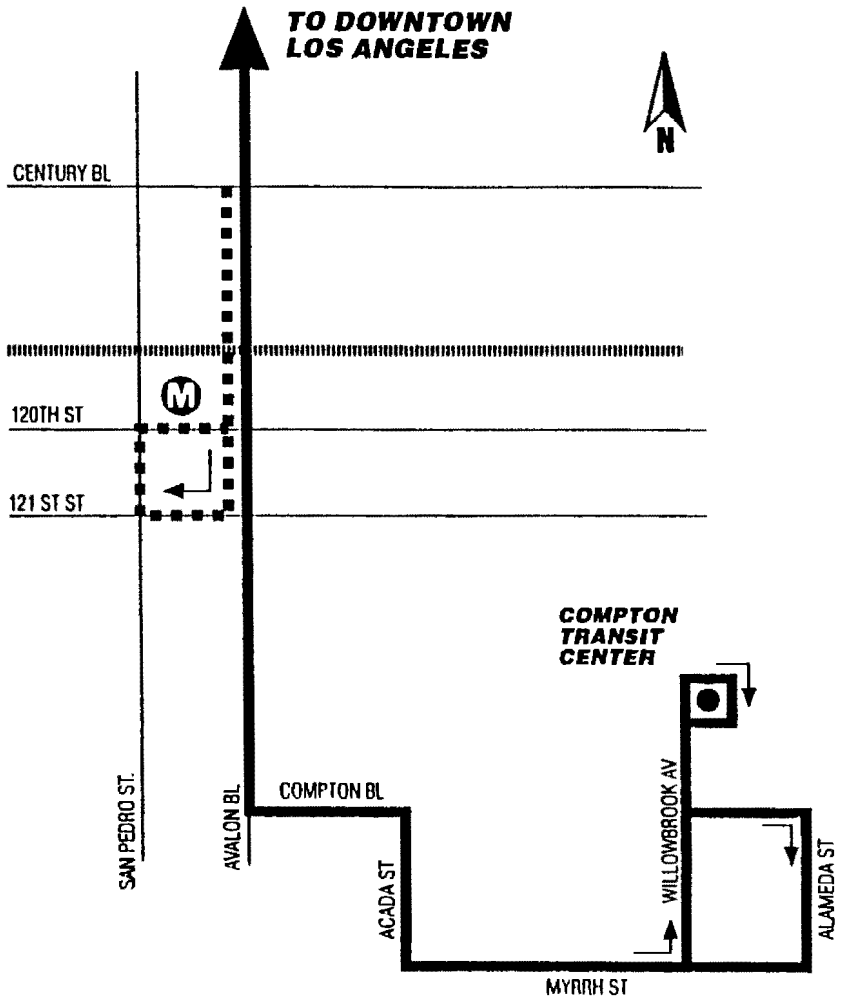
Line 48 to Avalon/I105 Station



LEGEND

- GREEN LINE ROUTE
- EXISTING ROUTE OF LINE 48
- STATION

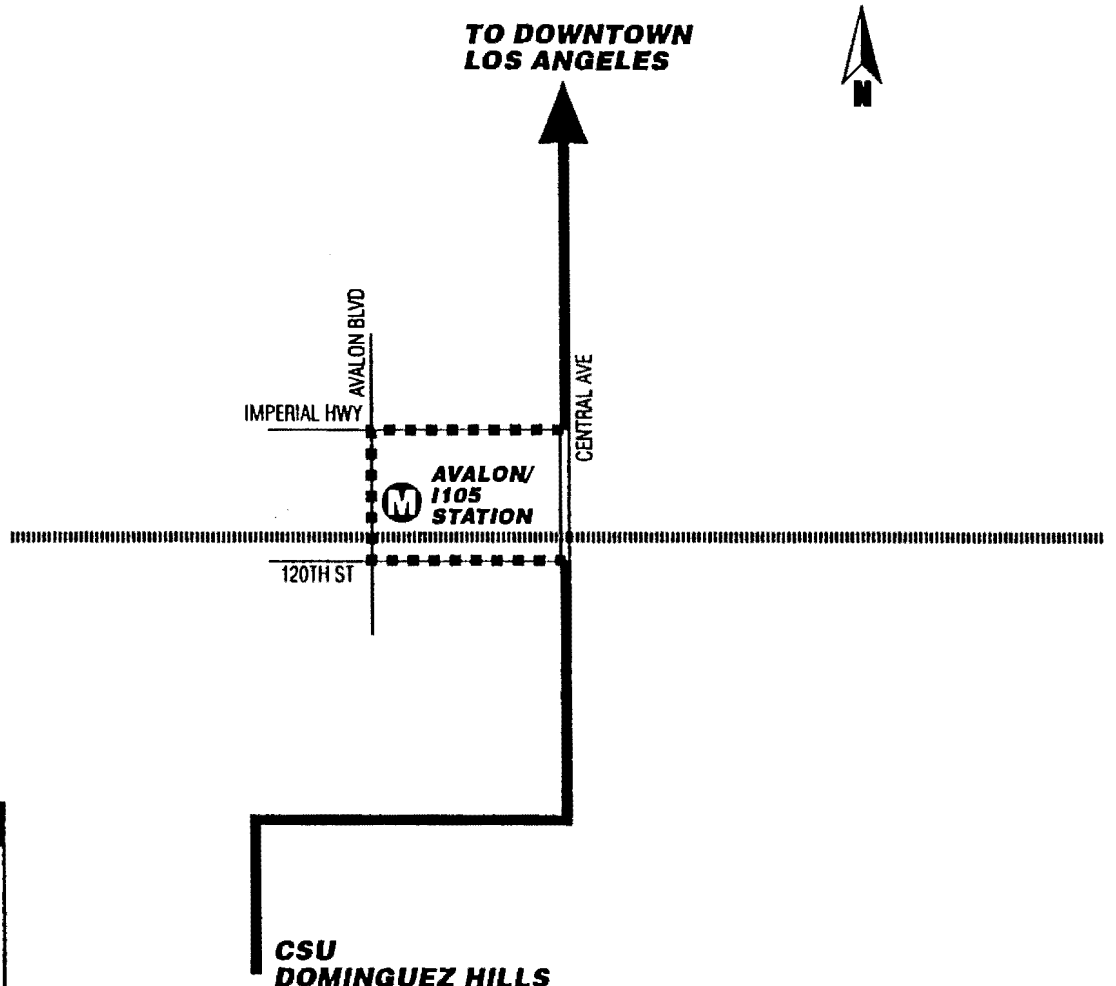
Line 51 to Avalon/I105 Station



LEGEND

- GREEN LINE ROUTE
- EXISTING ROUTE OF LINE 51
- SHORTLINE EXTENSION AND PROPOSED TURNAROUND LOOP
- STATION

Line 53 Rerouted to Avalon/I105 Station

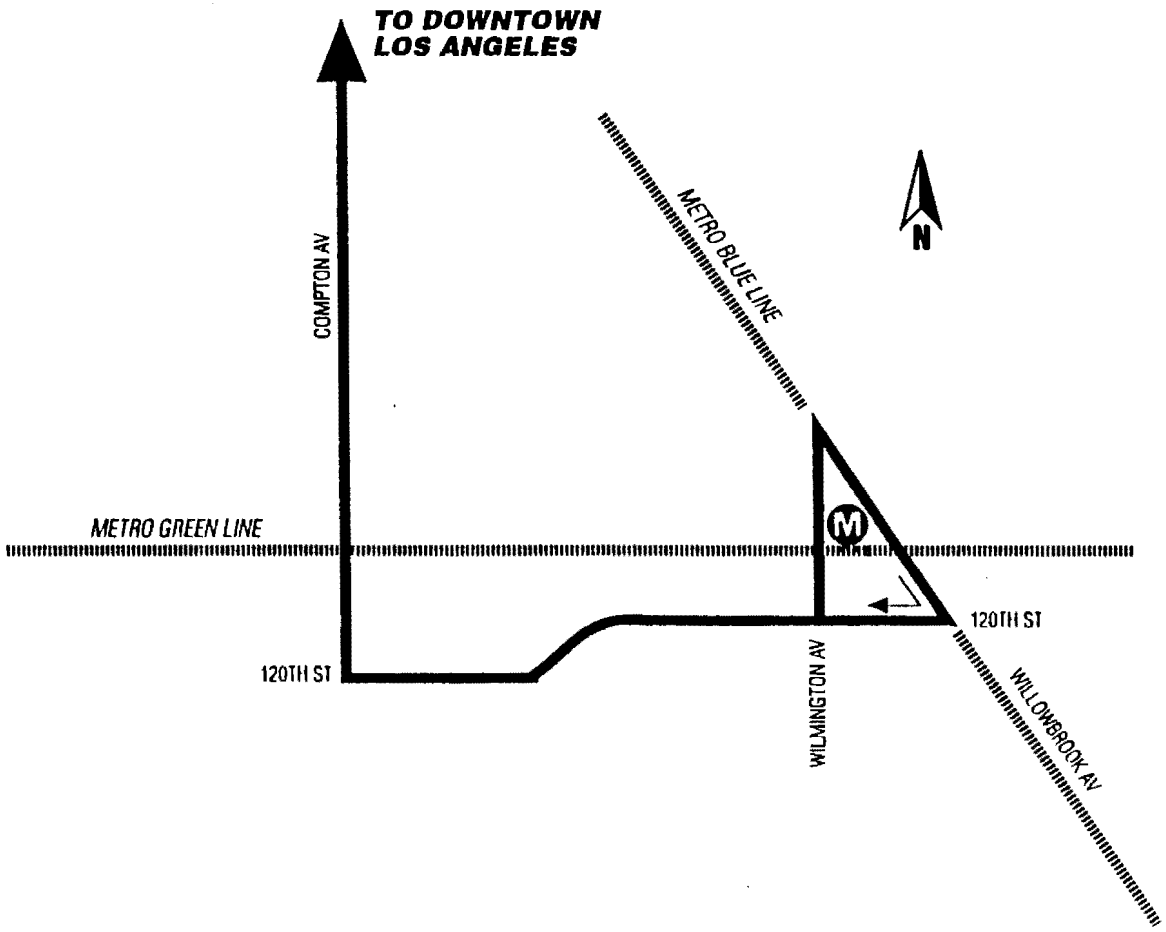


LEGEND

- GREEN LINE ROUTE
- ROUTE OF LINE 53
- DISCONTINUED SEGMENT
- REROUTED SEGMENT
- STATION

OP-009 2/95

Line 55 to Imperial/Wilmington Station



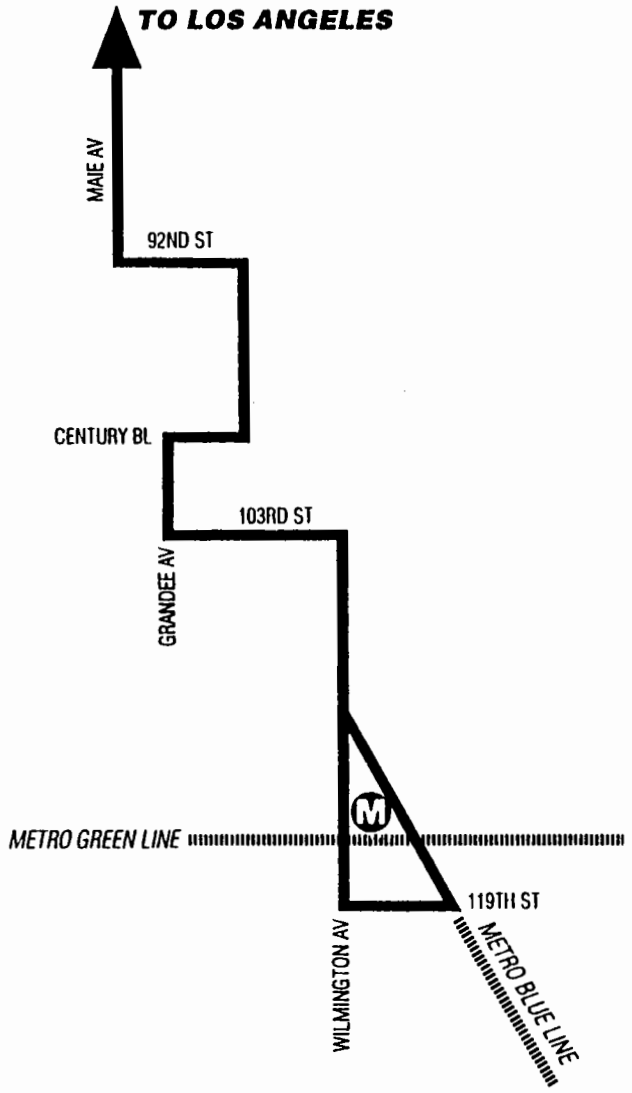
LEGEND

- METRO RAIL
- EXISTING LINE 55
- STATION

Scheduling & C · Planning February 1995

OP-009 2/95

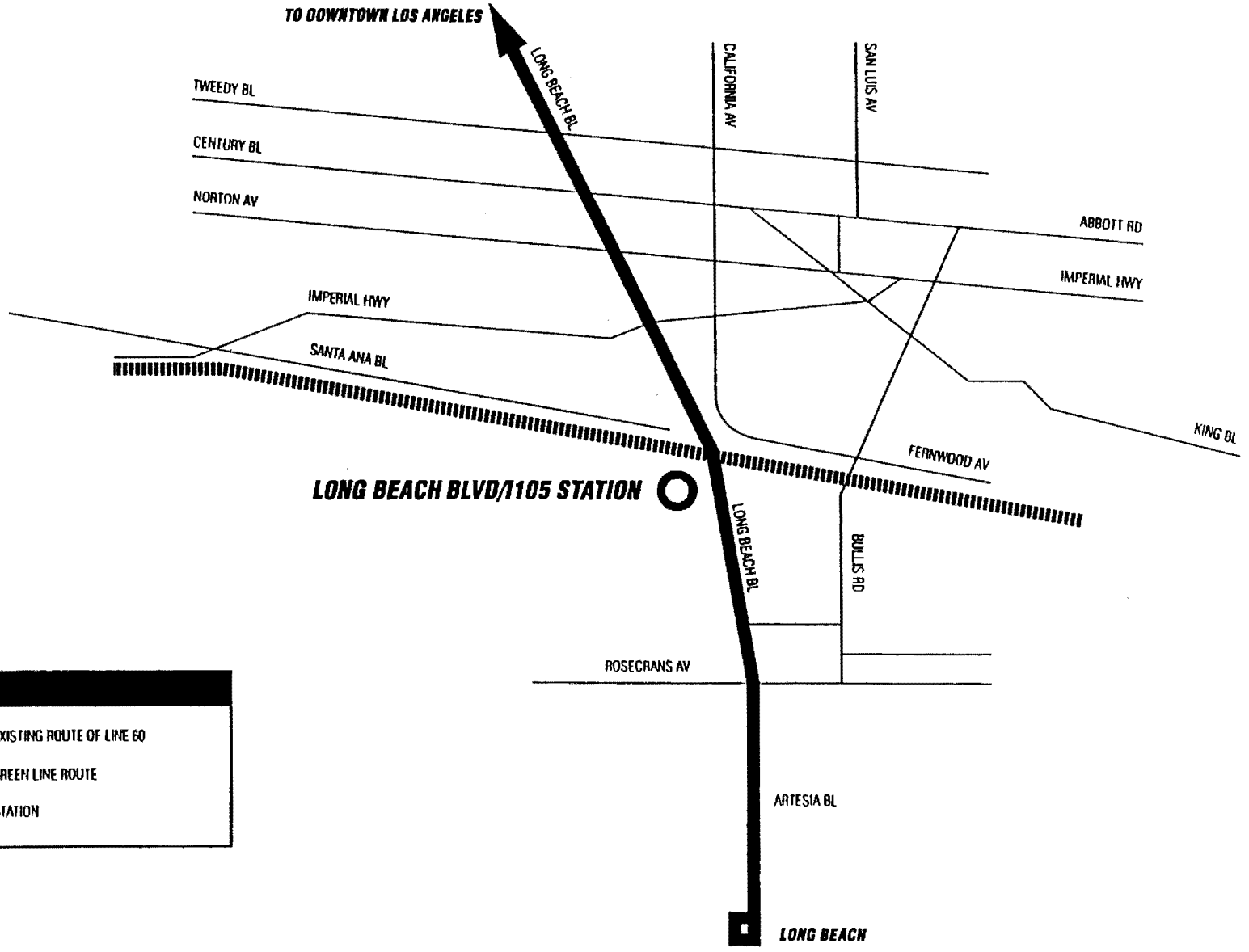
Line 56 Imperial/Wilmington Station



LEGEND

- METRO RAIL
- EXISTING LINE 56
- STATION

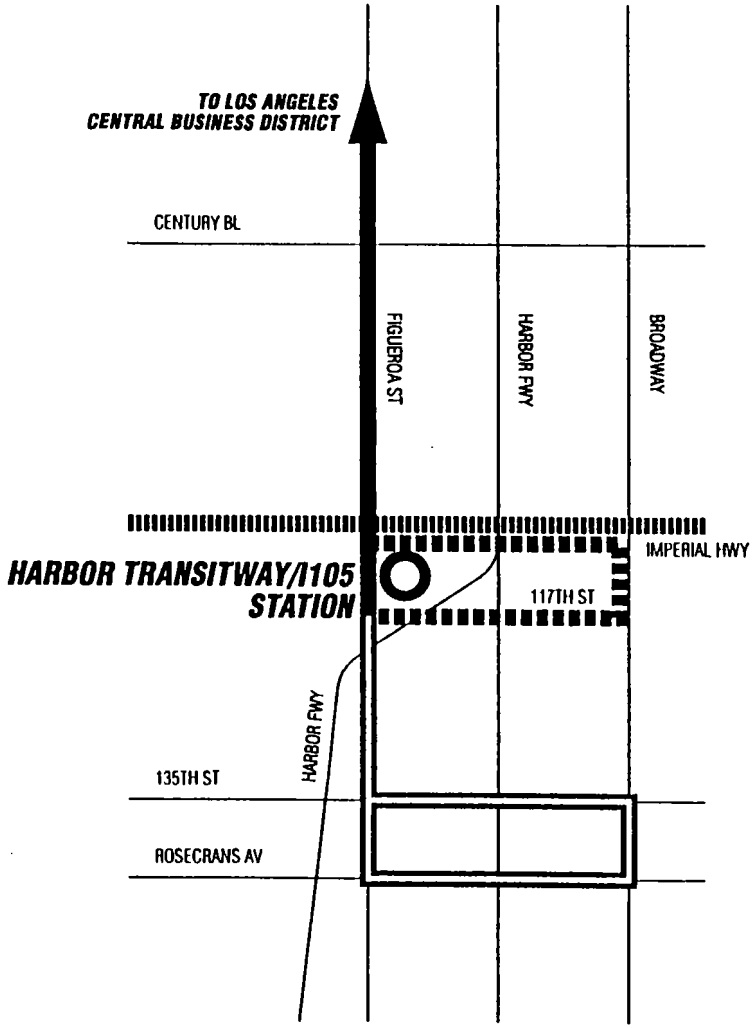
Line 60 to short line at Artesia Blvd & continue selected trips to Long Beach Loop



Scheduling & Or · Planning February 1995

OP-009 7/95

Line 81 to End at Harbor Transitway/I105 Station



LEGEND

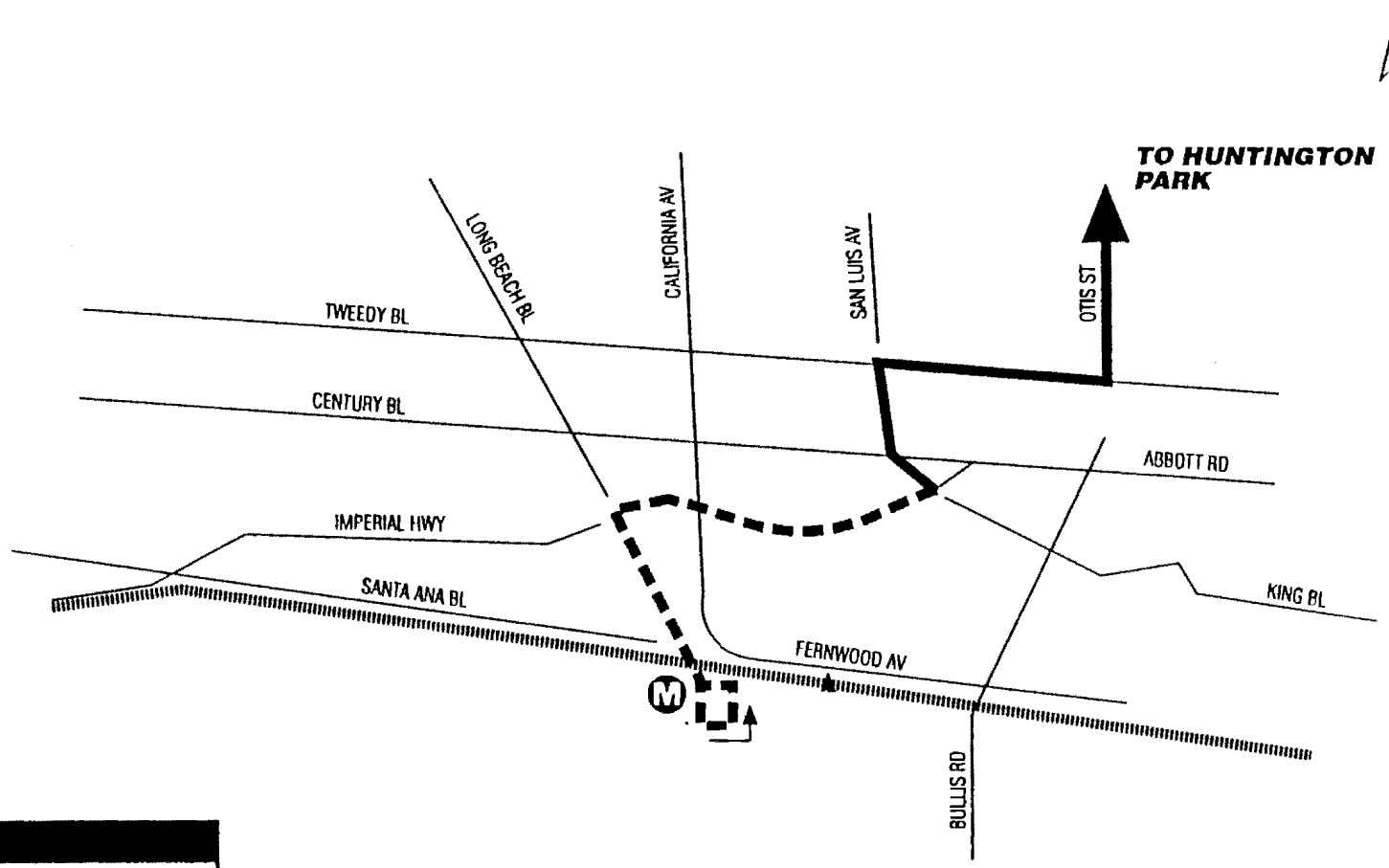
- EXISTING ROUTE OF LINE 81
- DISCONTINUED SEGMENT OF ROUTE 81
- TURNAROUND LOOP
- GREEN LINE ROUTE
- STATION

N

Scheduling & Operations Planning February 1995

OP-009 2/95

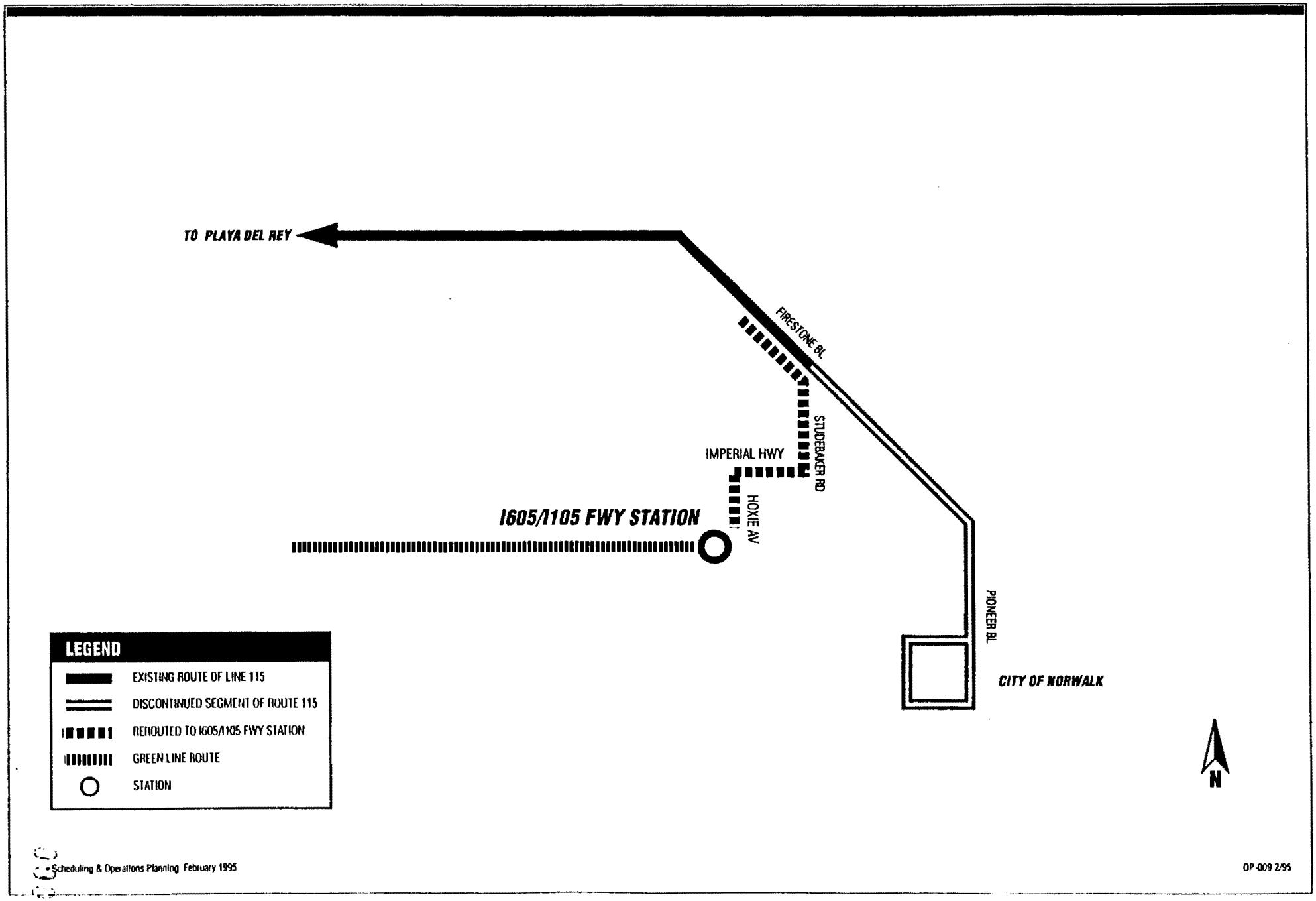
Line 112 Extended to Long Beach Blvd./I105 Station



Scheduling & Or · Planning February 1995

OP-009 2/95

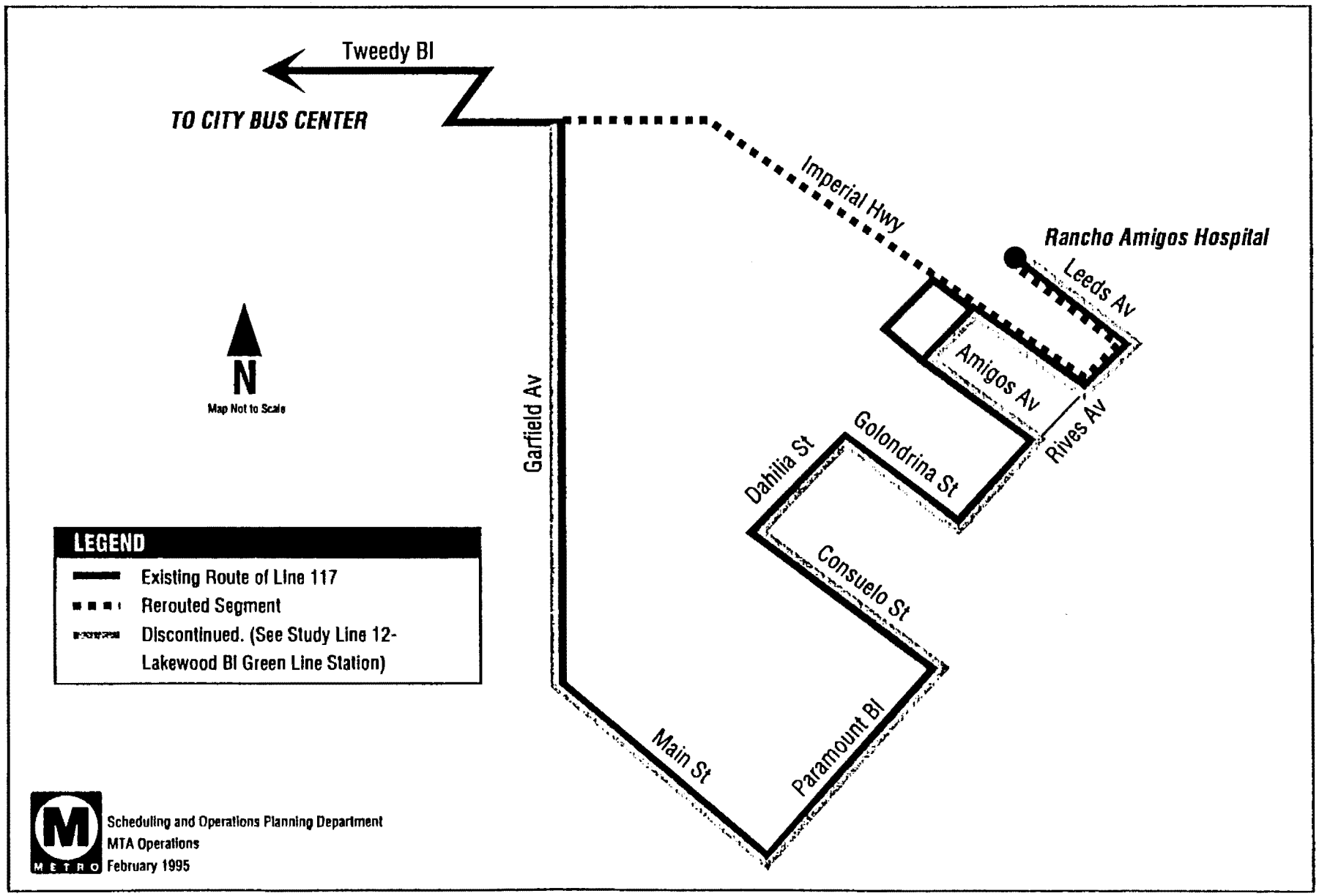
Line 115 Rerouted to I605/I105 Fwy Station



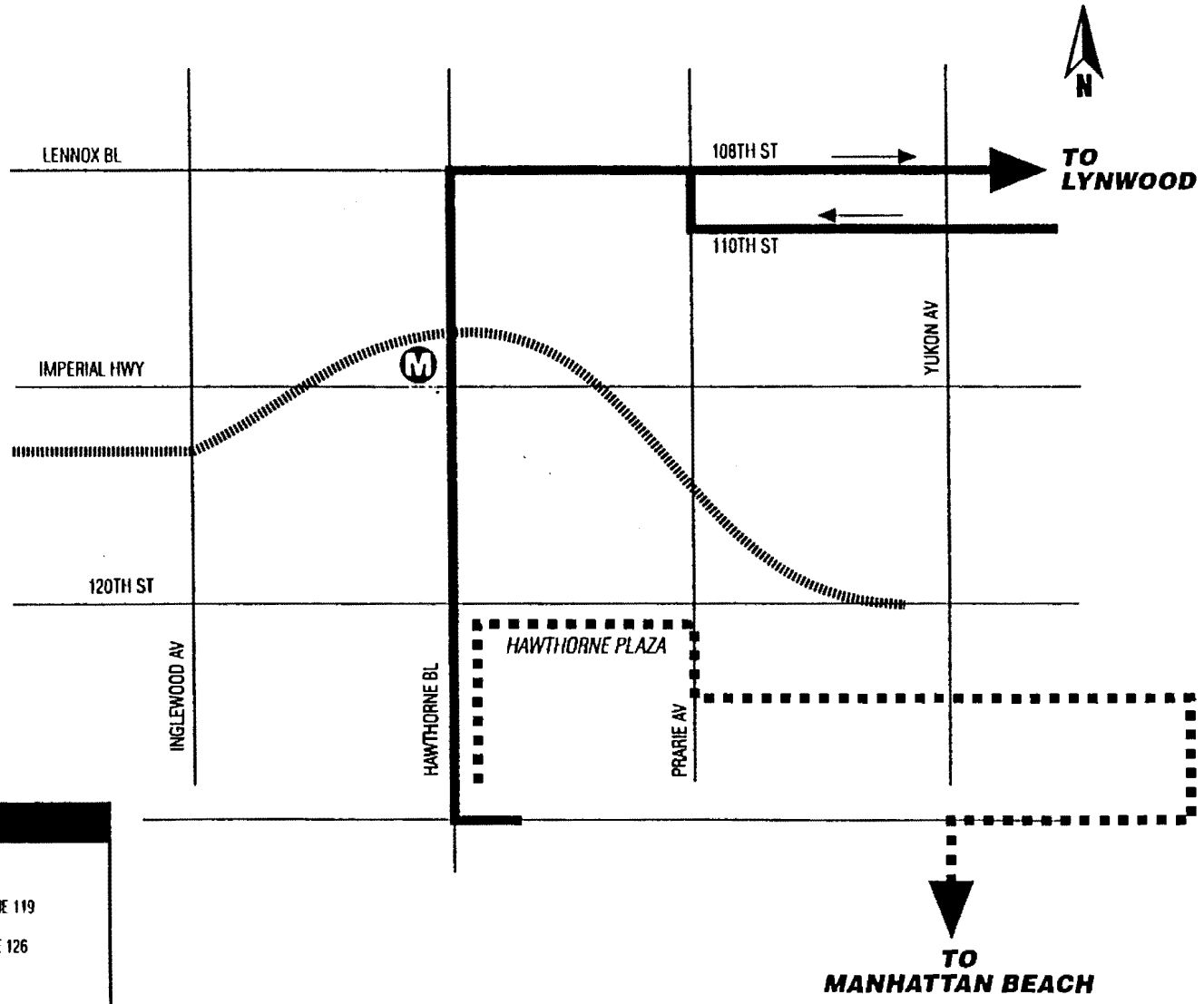
Scheduling & Operations Planning February 1995

OP-009 2/95

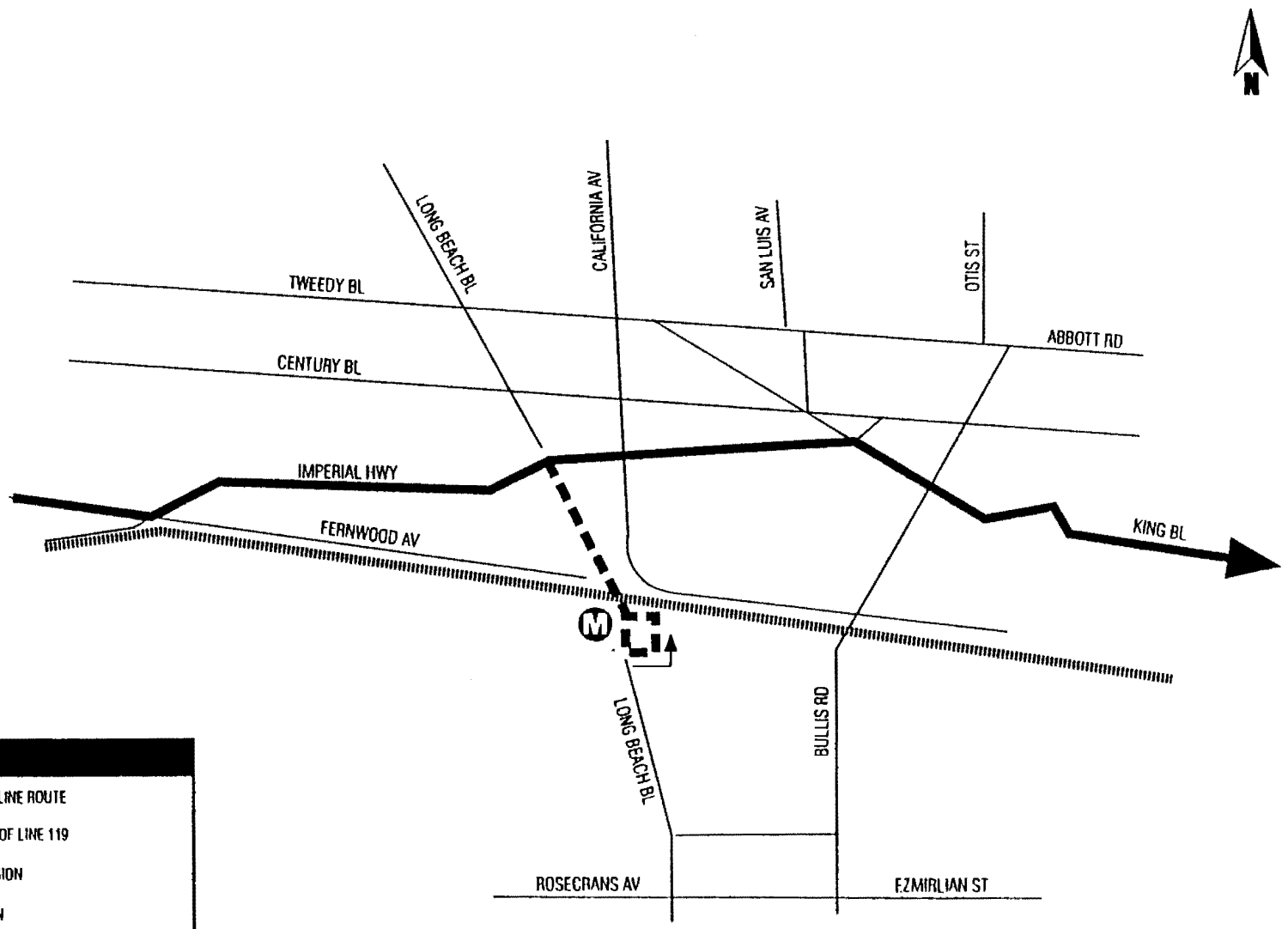
Line 117 Rerouted to Directly Serve Rancho Los Amigos Hospital



Line 119/126 to Hawthorne/I105 Station



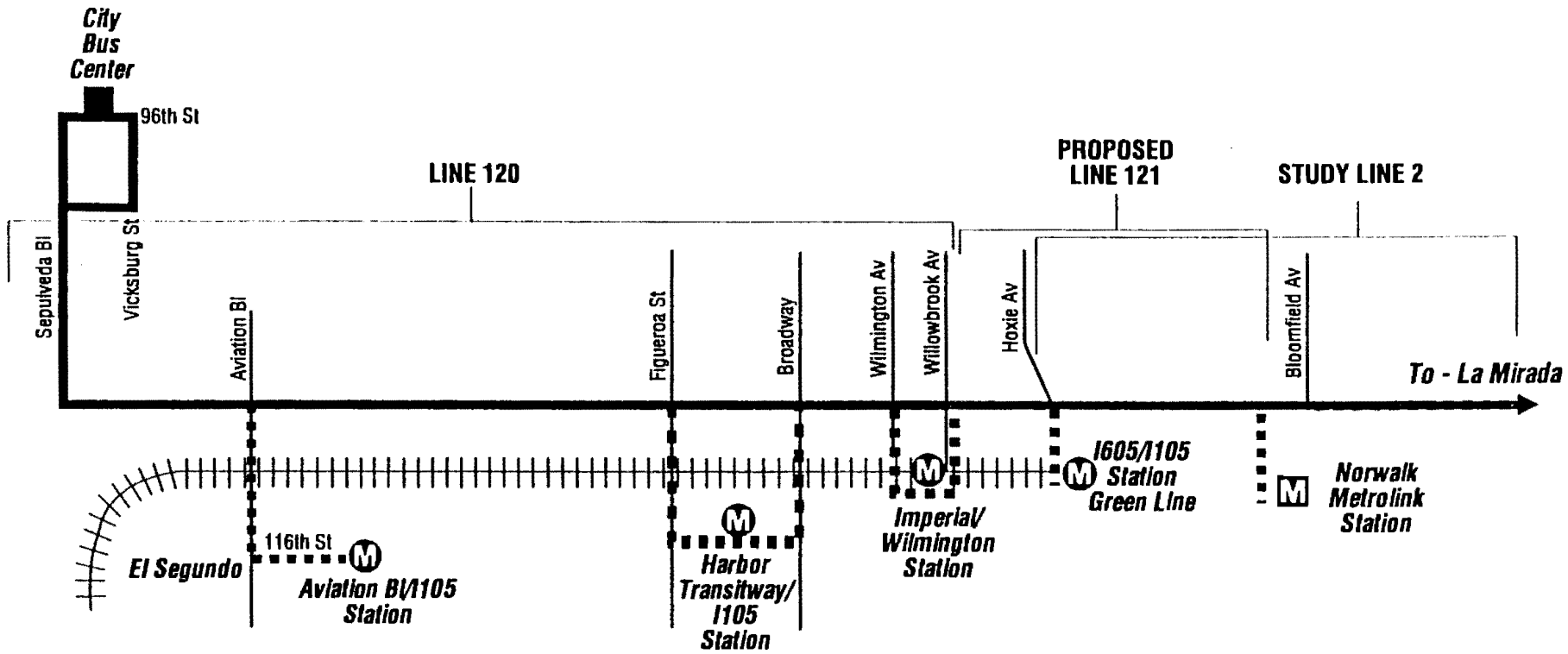
Line 119 Extended to Long Beach Blvd./I105 Station



Scheduling & Operations Planning February 1995

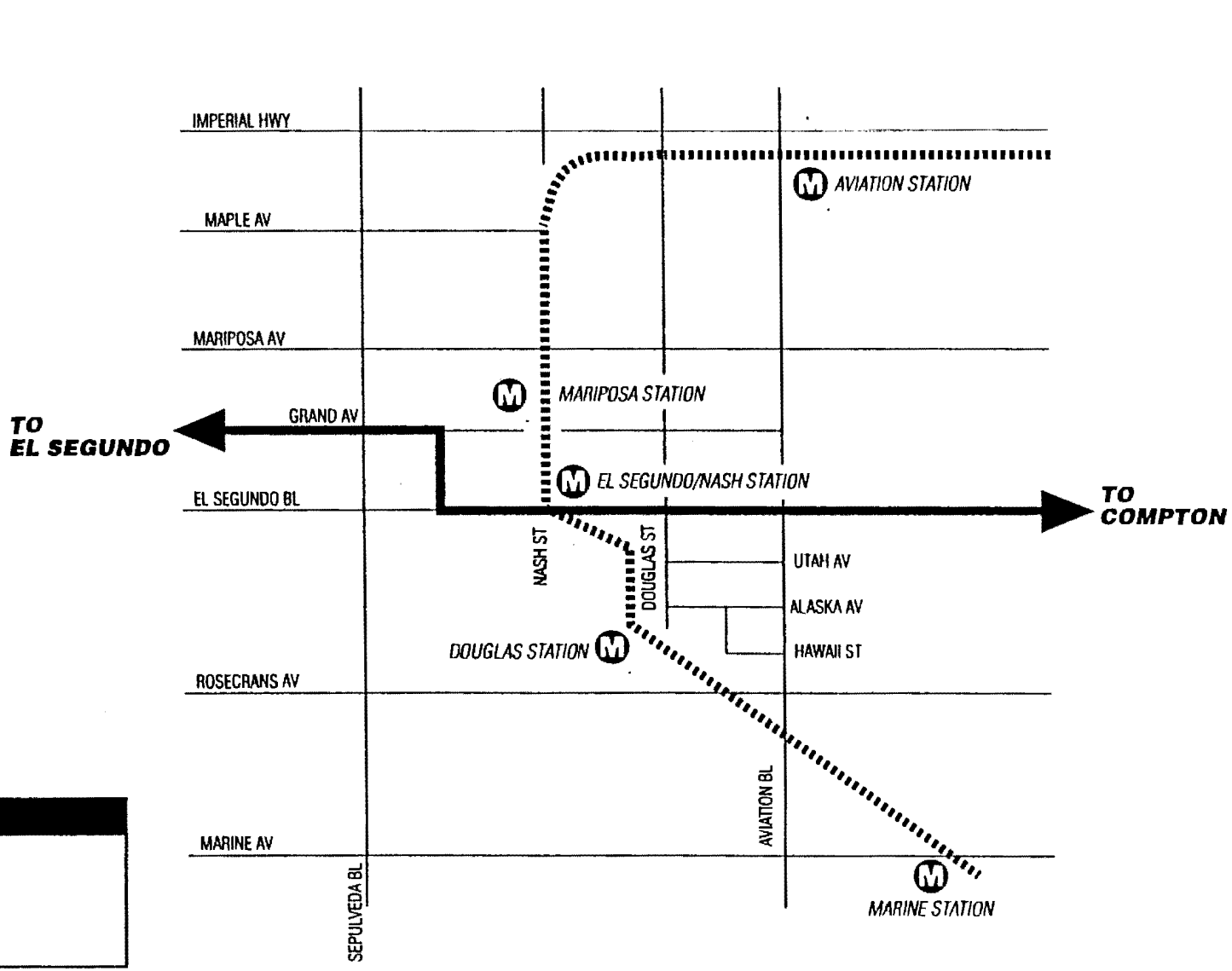
OP-009 2/95

Line 120 to be Restructured



MTA Operations
February 1995

Line 124 Serves El Segundo/Nash Station with Existing Route



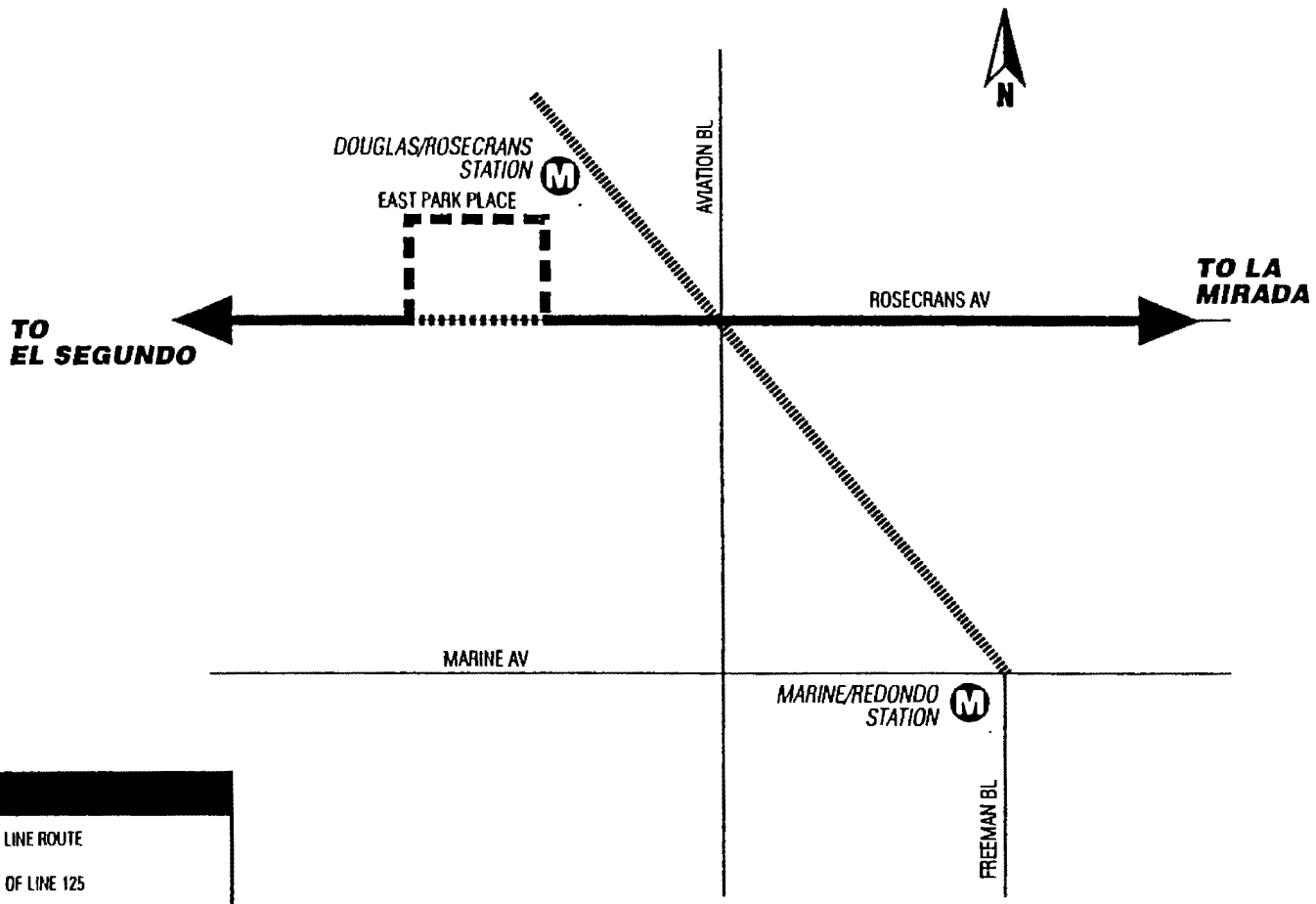
LEGEND

- GREEN LINE ROUTE
- ROUTE OF LINE 124
- STATION

Scheduling & Or · Planning February 1995

OP-009 2/95

Line 125 Rerouted to Douglas/Rosecrans Station



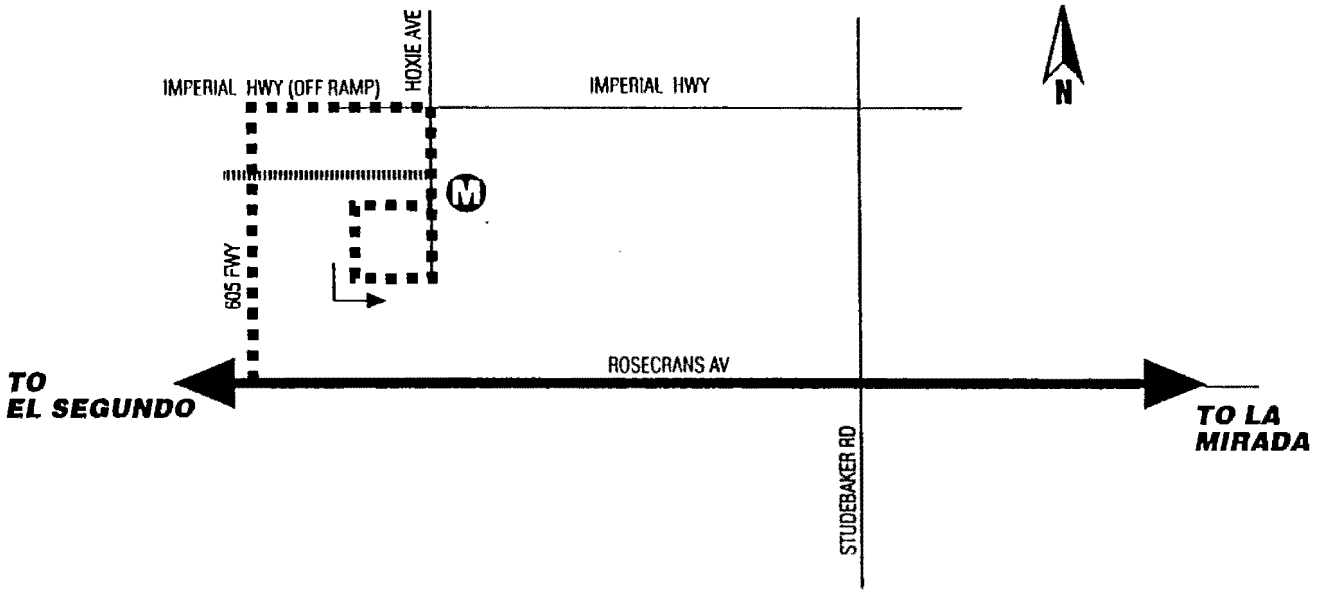
LEGEND

- GREEN LINE ROUTE
- ROUTE OF LINE 125
- REROUTE
- DELETED
- STATION

Scheduling & Operations Planning February 1994

OP-009 2/95

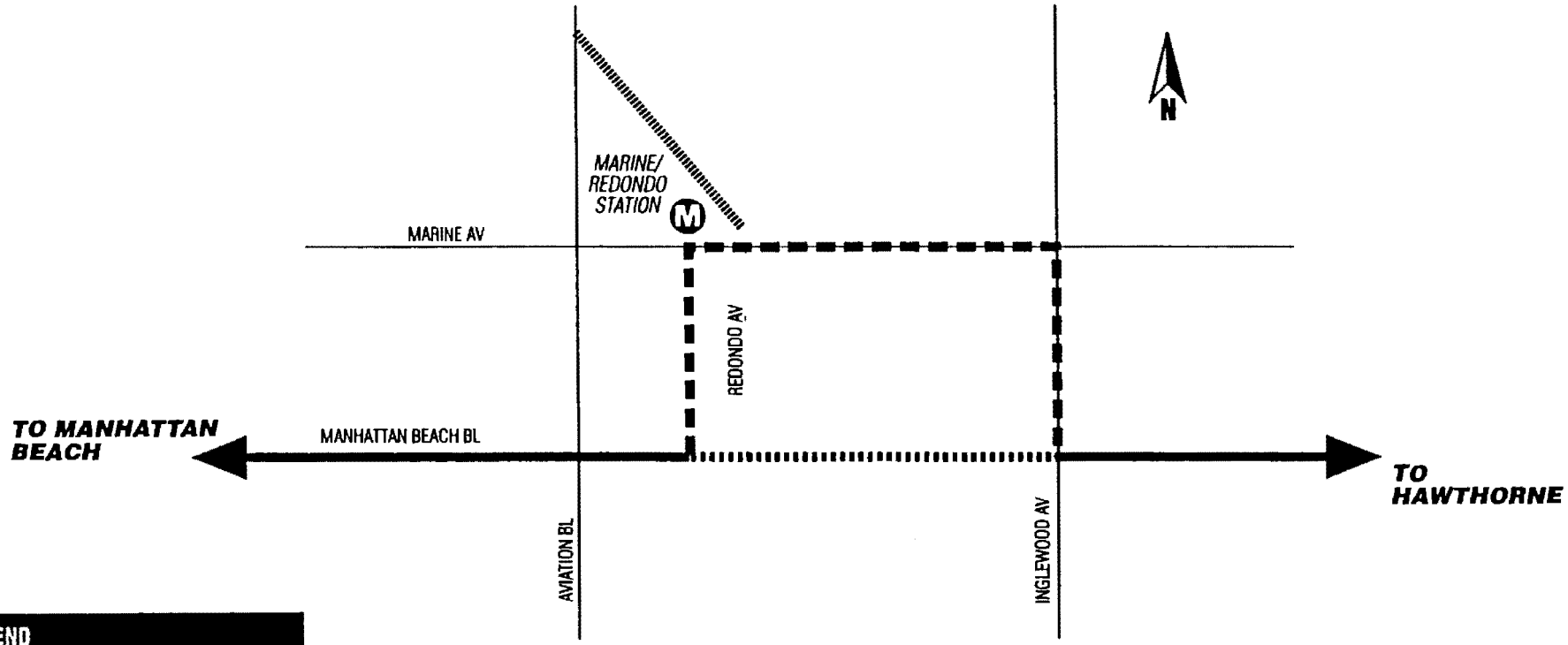
Line 125 to I605/I105 Station



LEGEND

- GREEN LINE ROUTE
- ROUTE OF LINE 125
- EXTENSION OF LINE 125
- STATION

Line 126 Rerouted to Marine/Redondo Station



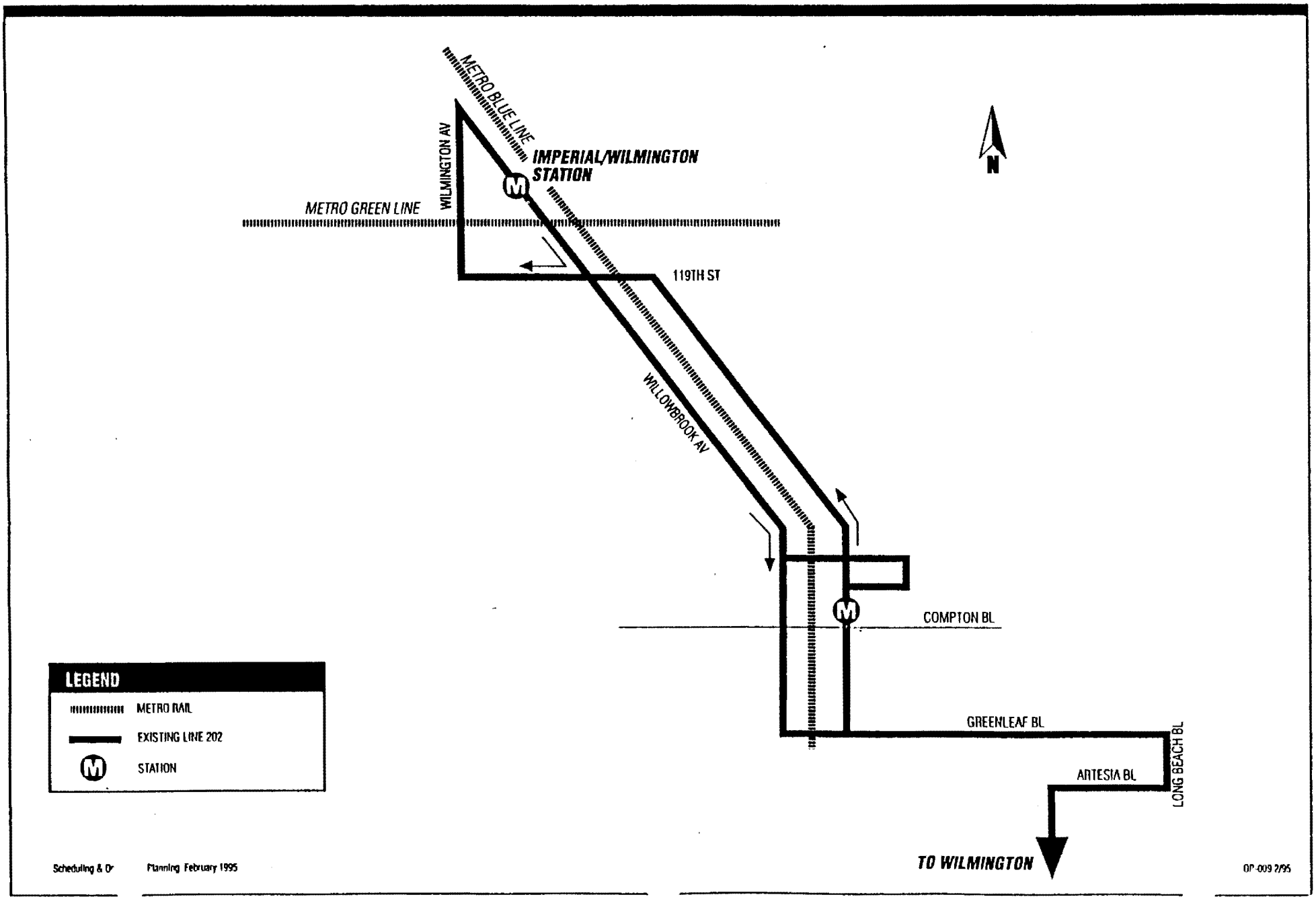
LEGEND

- GREEN LINE ROUTE
- ROUTE OF LINE 126
- DELETED PORTION OF ROUTE
- REROUTE
- STATION (Terminal)

Scheduling & Operations Planning February 1995

OP-009 2/95

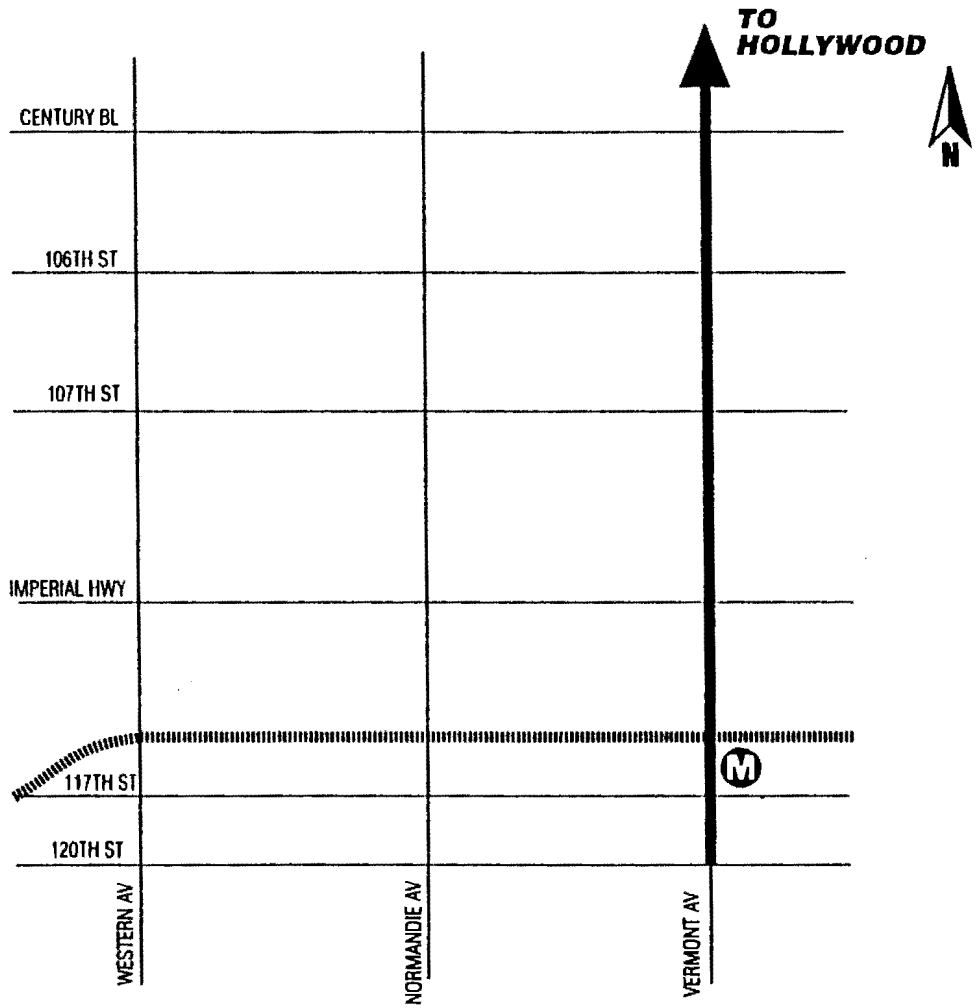
Line 202 to Imperial/Wilmington Station



Scheduling & Or Planning February 1995

OP-009 2/95

Line 204 Serves Vermont/I105 Station with Existing Route



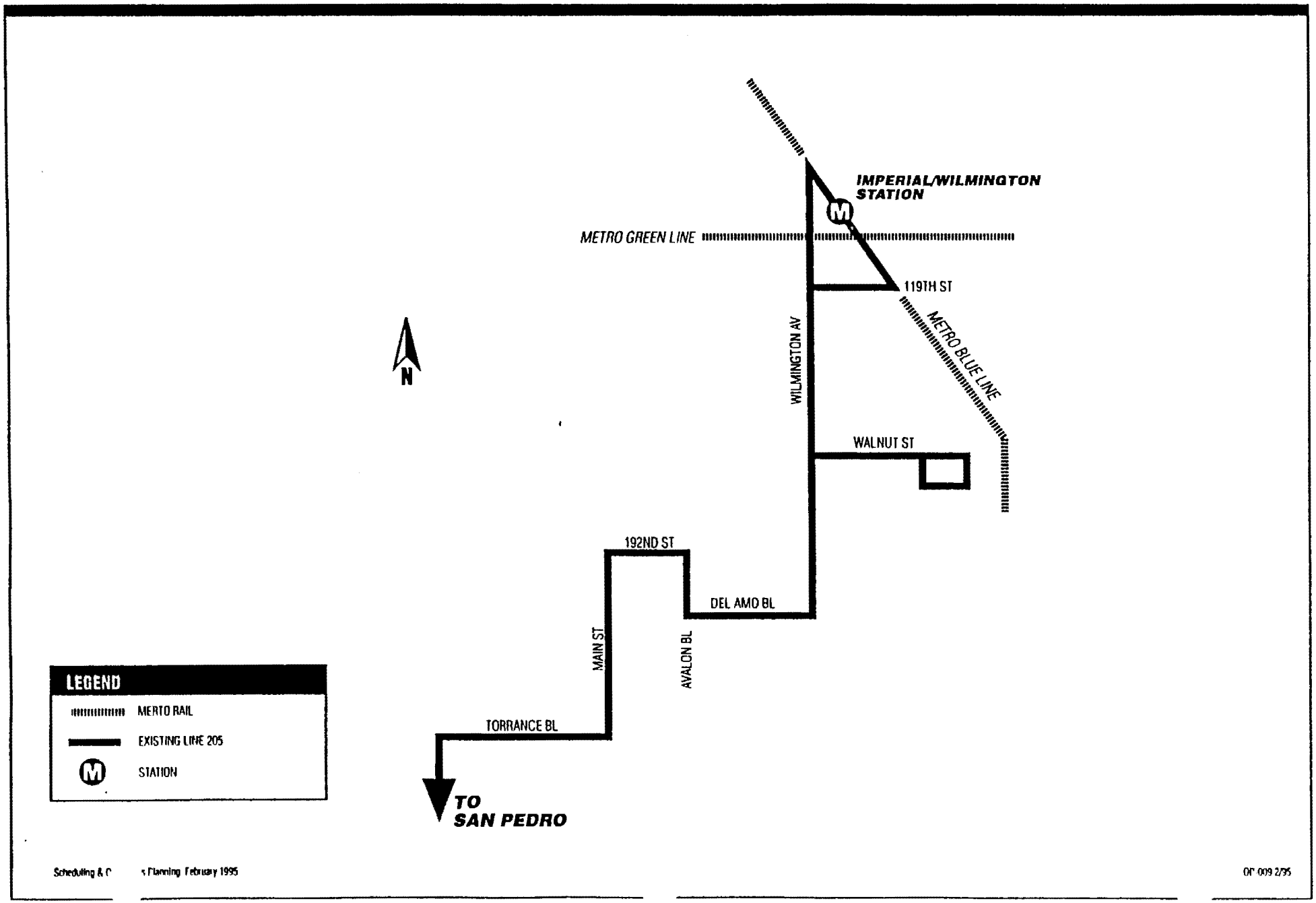
LEGEND

- GREEN LINE ROUTE
- EXISTING ROUTE OF LINE 204
- STATION (Terminal)

Scheduling & Operations Planning February 1995

OP-009 2/95

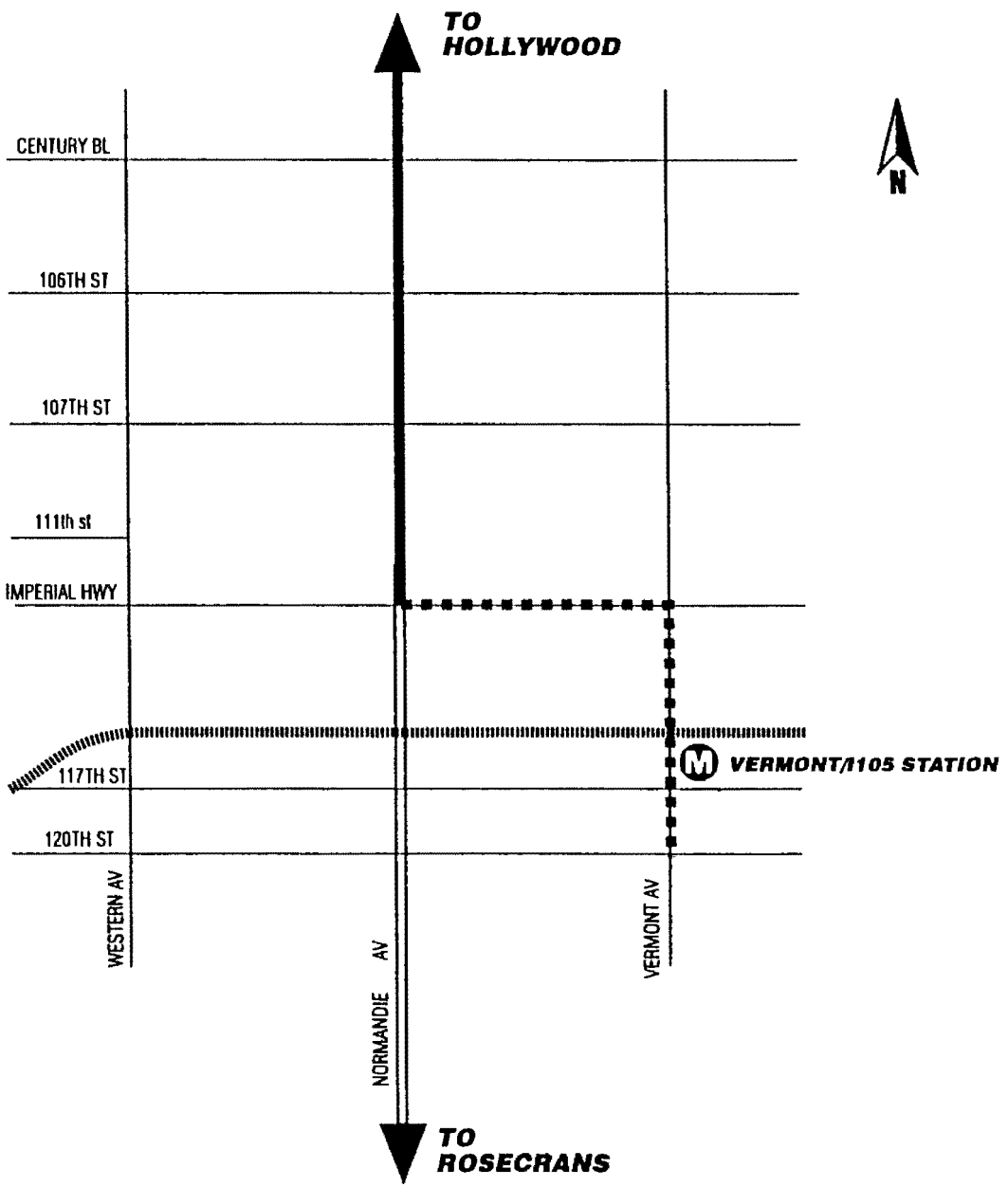
Line 205 to Imperial/Wilmington Station



Scheduling & C s Planning February 1995

OP 009 2/95

Line 206 Rerouted to Vermont/I105 Station



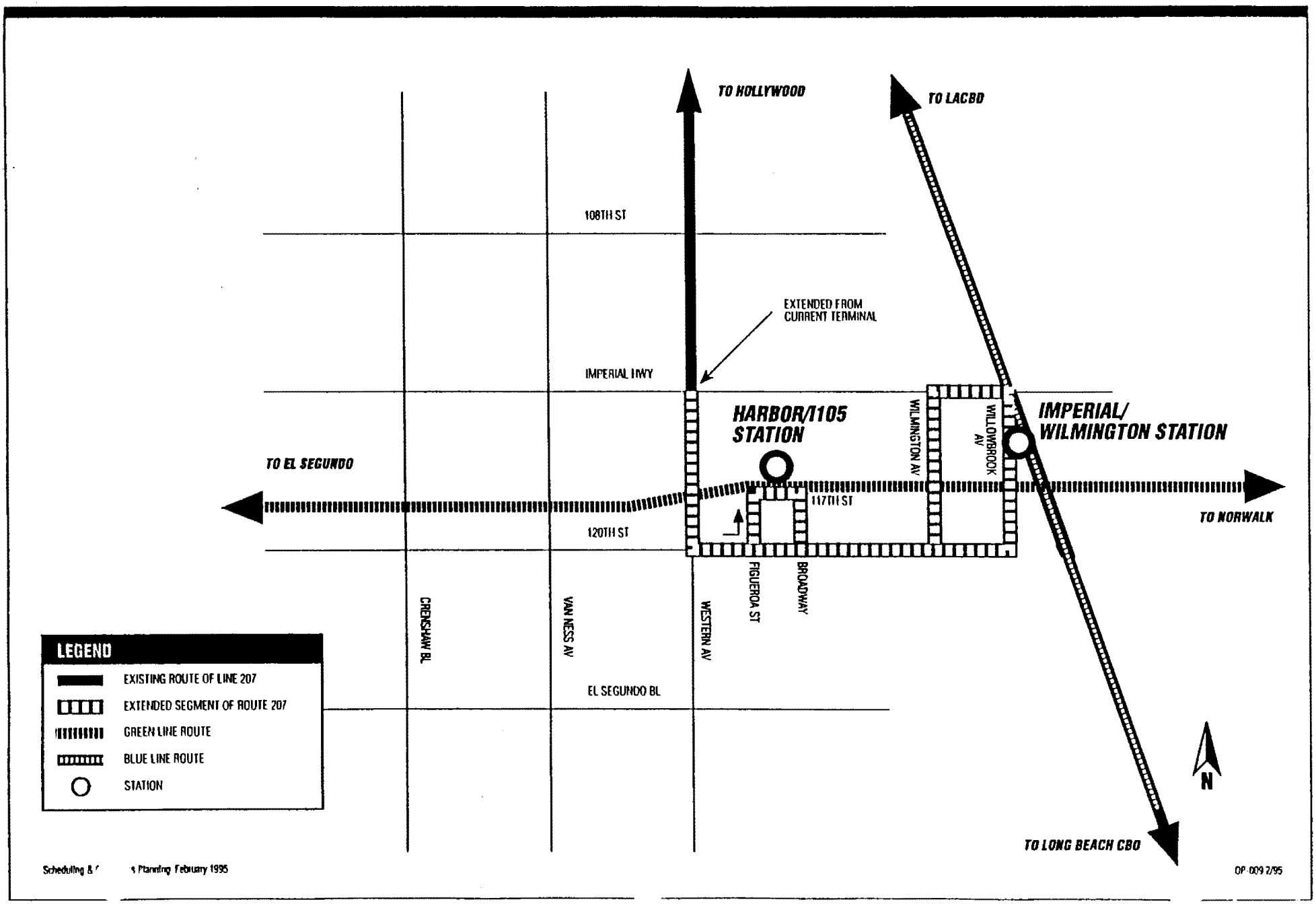
LEGEND

- EXISTING LINE 206
- DISCONTINUED SEGMENT OF ROUTE 206
- REROUTE
- GREEN LINE ROUTE
- STATION

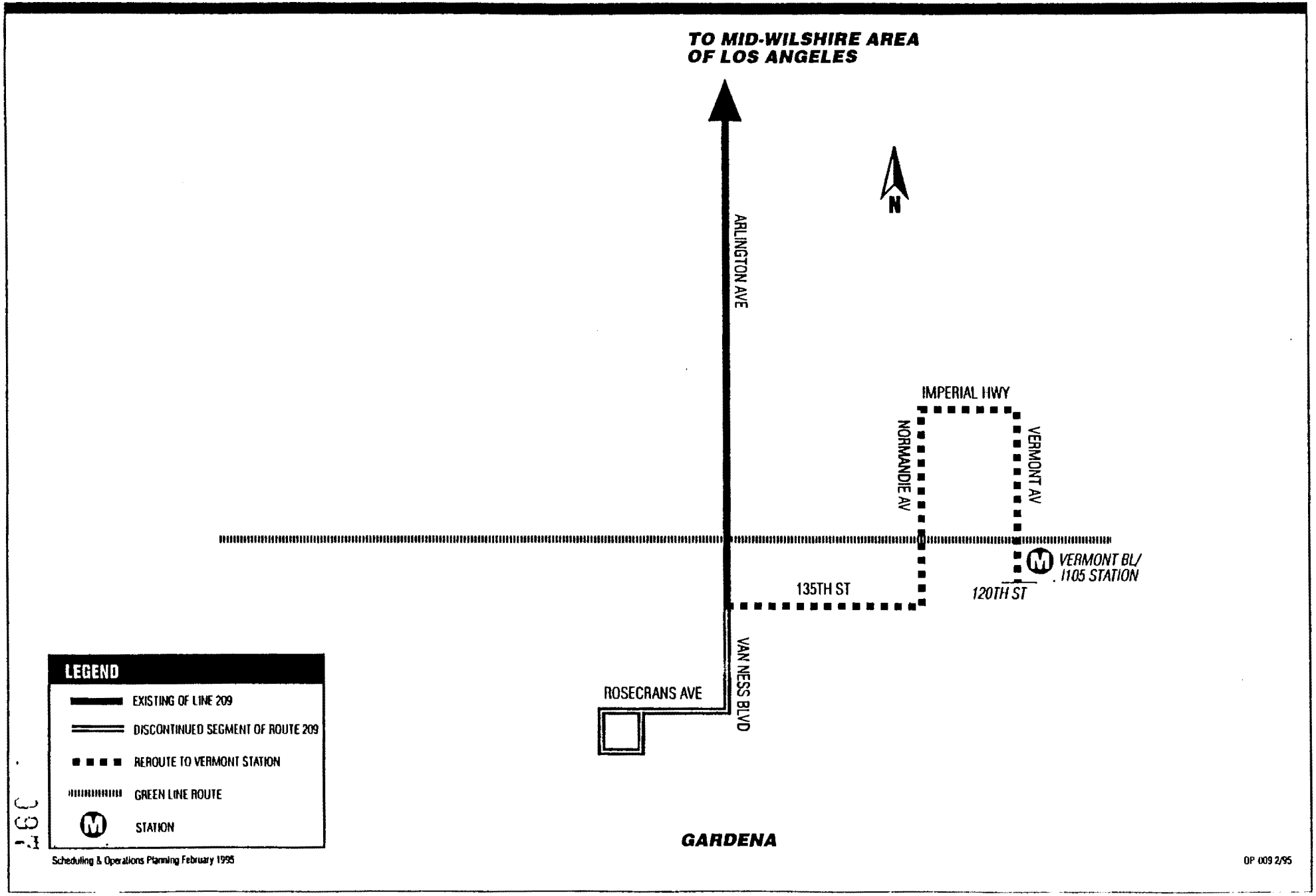
Scheduling & Operations Planning February 1995

OP-009 2/95

Line 207 Extended Harbor/I105 & Imperial/Wilmington Stations



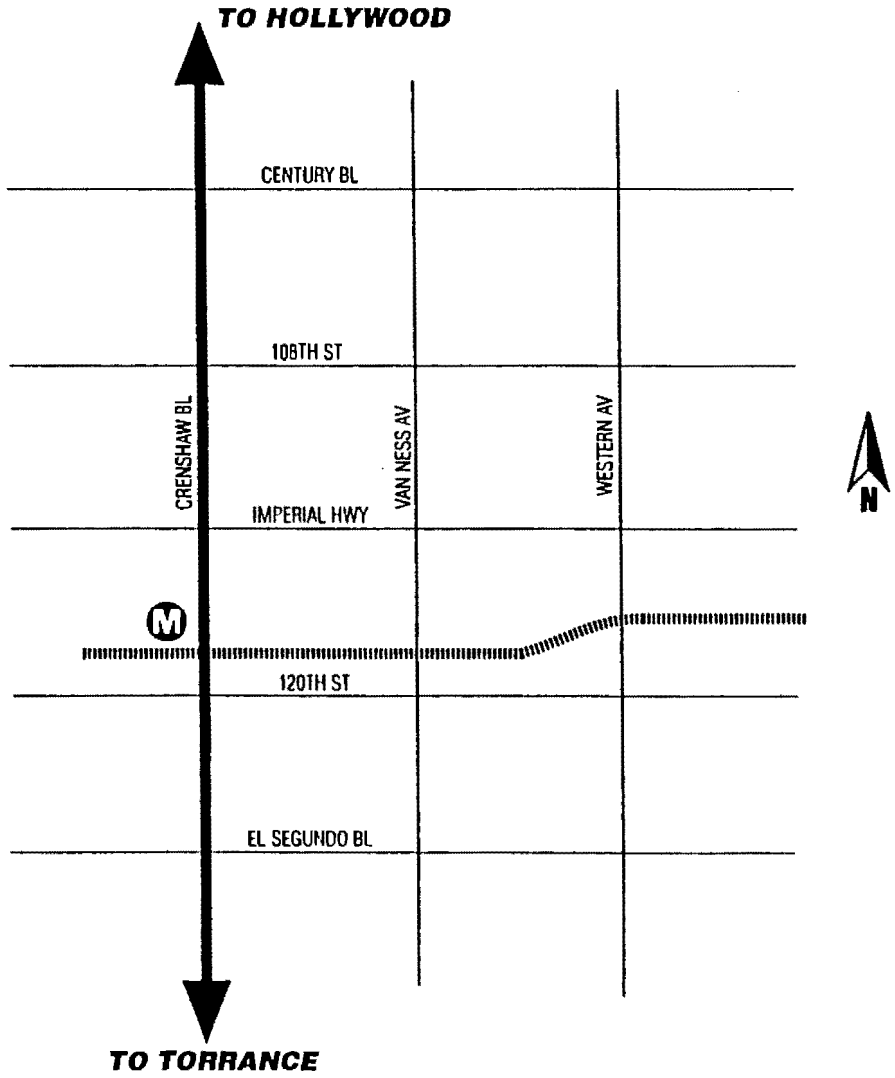
Line 209 Rerouted to Vermont Av/I105 Station



Scheduling & Operations Planning February 1995

OP 009 2/95

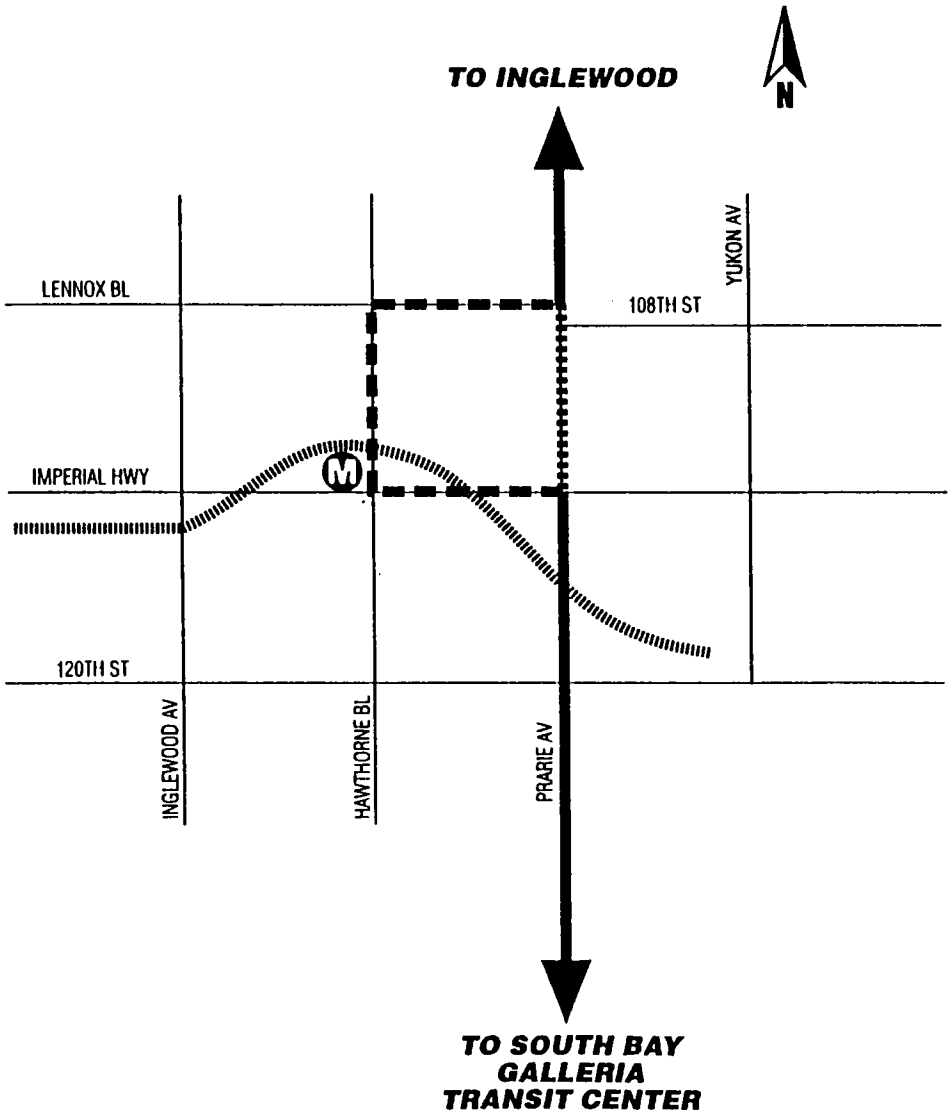
Line 210 to Crenshaw/I105 Station



LEGEND

- GREEN LINE ROUTE
- ROUTE OF LINE 210
- STATION

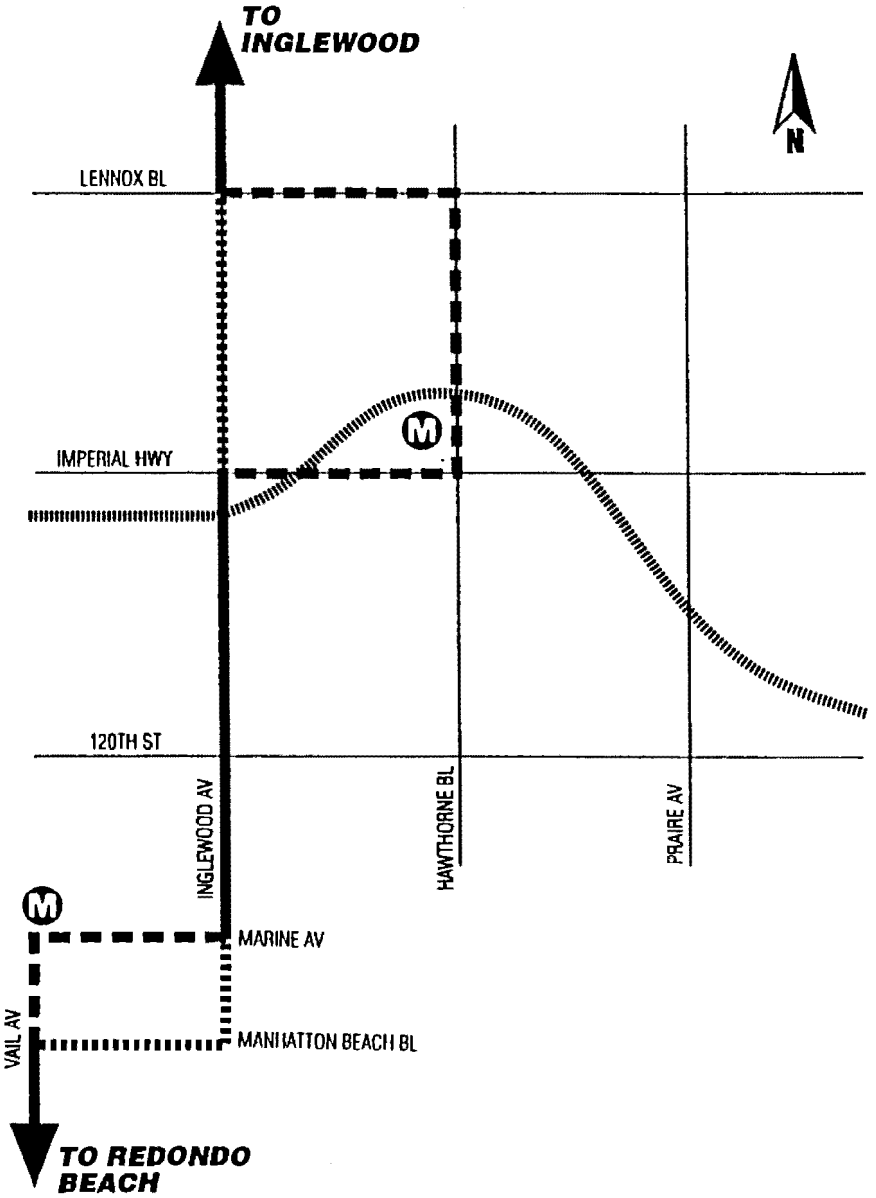
Line 211 Rerouted to Hawthorne/I105 Station



LEGEND

- GREEN LINE ROUTE
- ROUTE OF LINE 211
- DELETED PORTION OF ROUTE
- REROUTE
- STATION

Line 215 Route to Hawthorne/I105 Station and Marine/Rosecrans Station



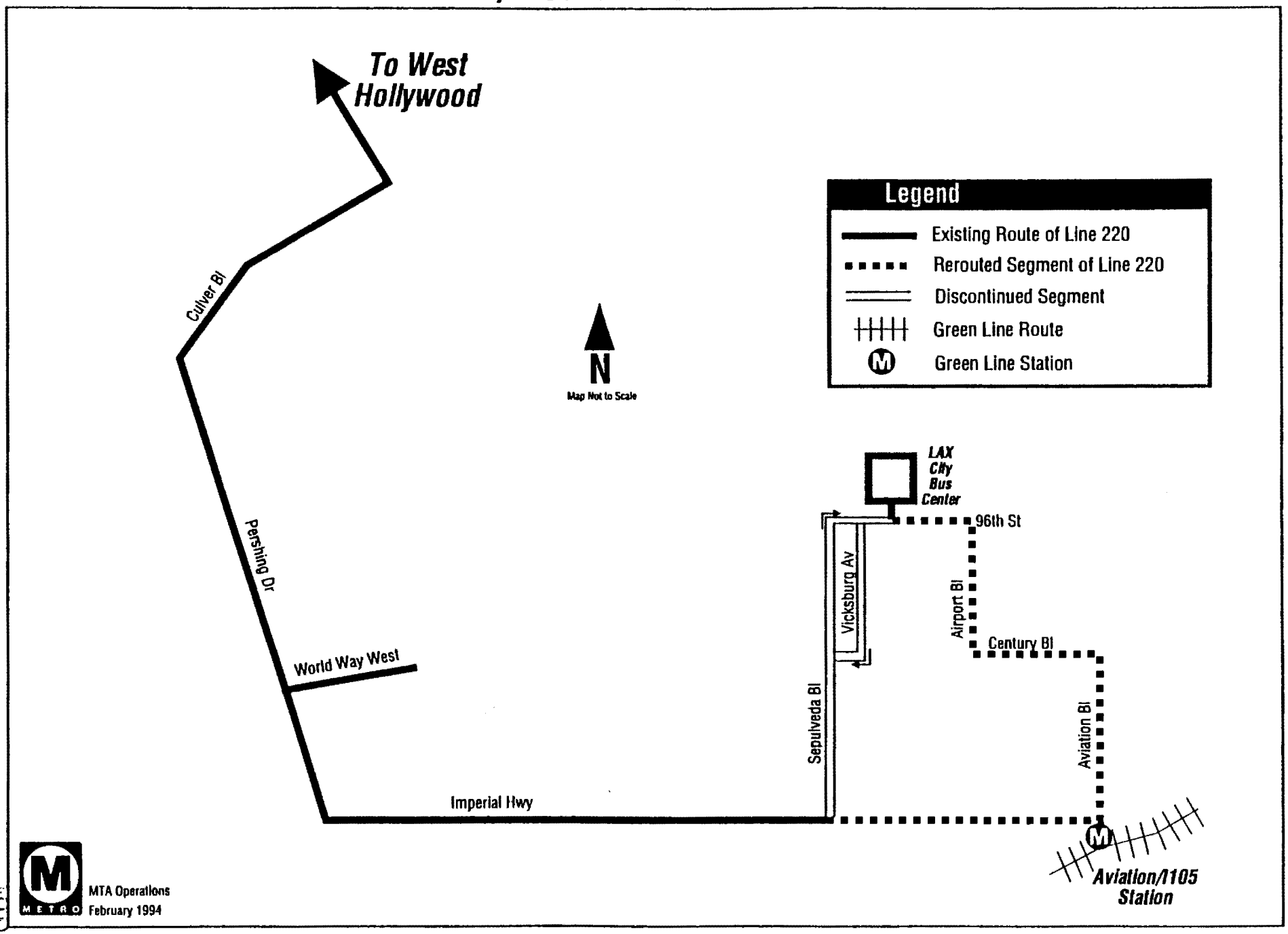
LEGEND

- GREEN LINE ROUTE
- ROUTE OF LINE 215
- DELETED PORTION OF ROUTE
- REROUTE
- STATION

Scheduling & Or[illegible] Planning February 1995

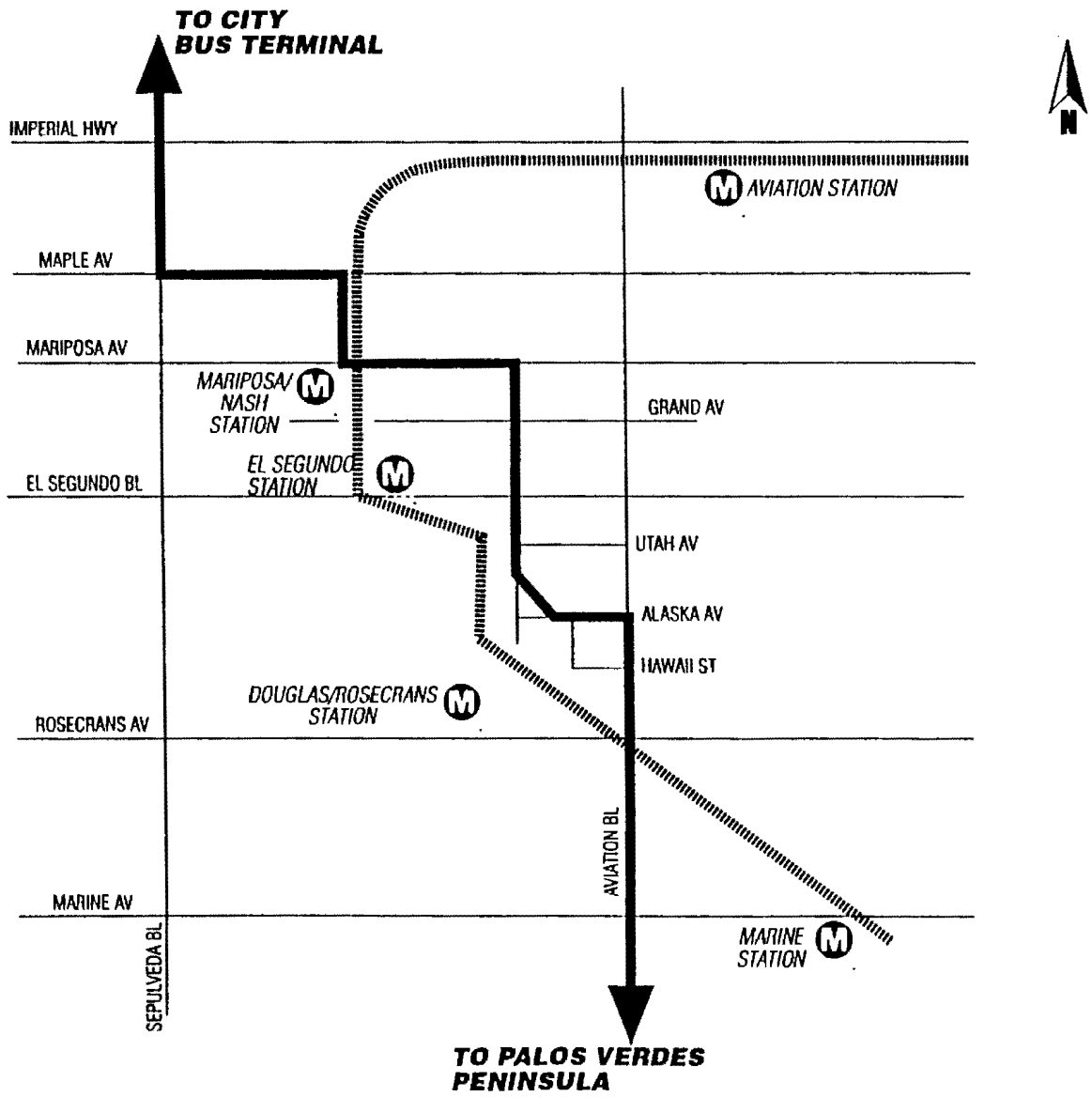
OP-009 2/95

Line 220 Rerouted to Aviation/I105 Station



MTA Operations
February 1994

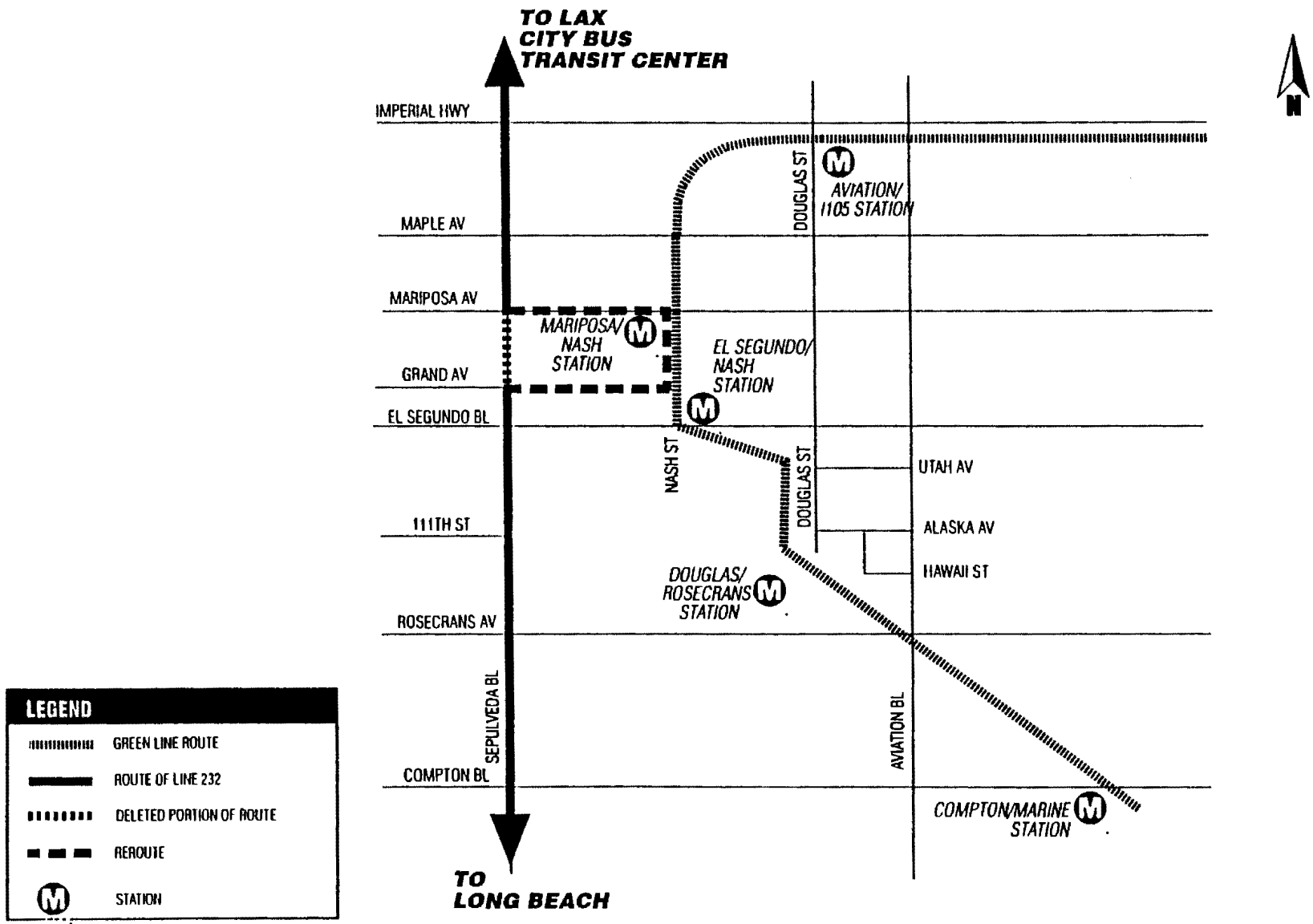
Line 225/226 Serves Mariposa/Nash and Douglas/Rosecrans Stations with Existing Route



LEGEND

- GREEN LINE ROUTE
- ROUTE OF LINE 225-226
- STATION

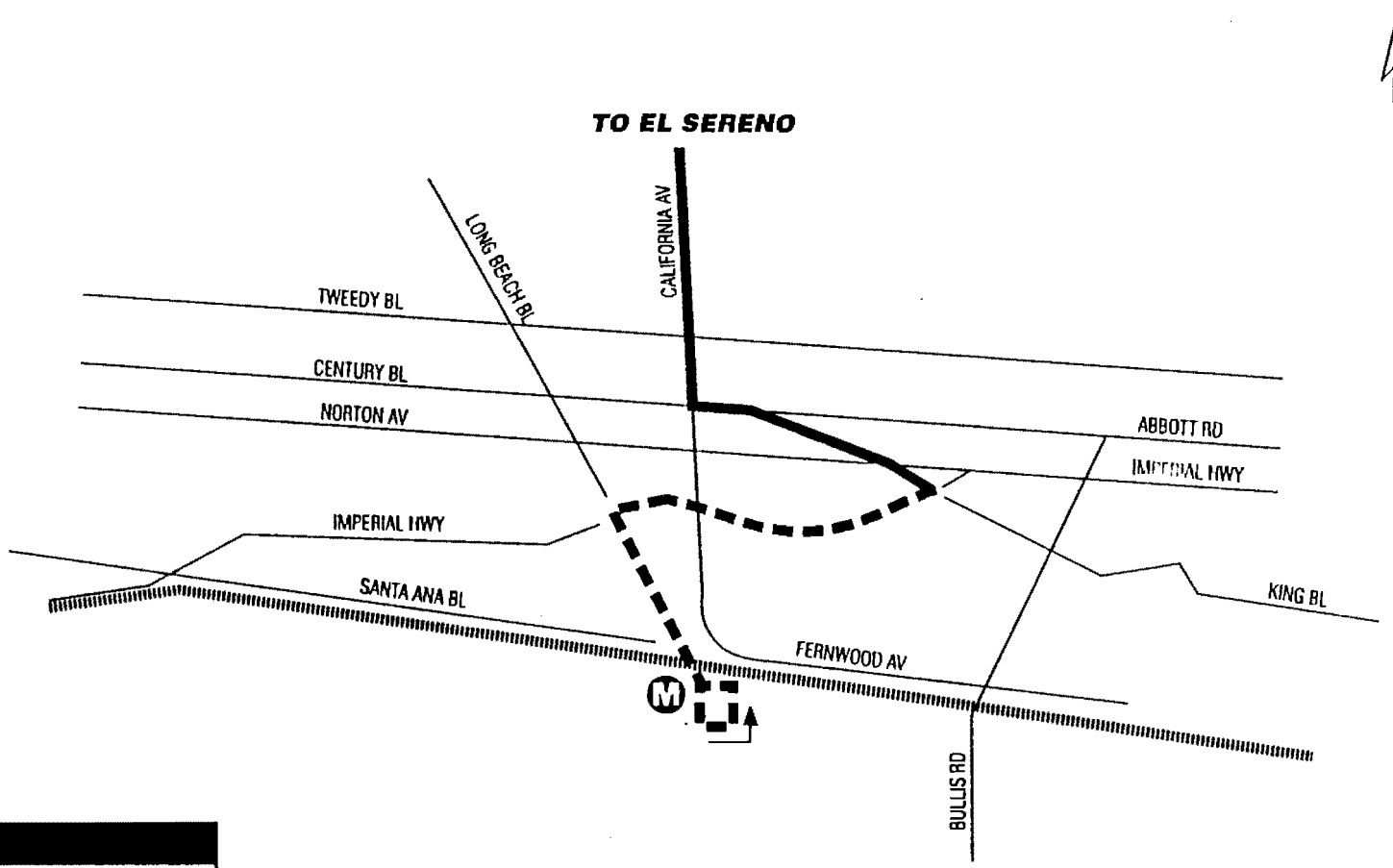
Line 232 Rerouted to Mariposa/Nash Station



Scheduling & Operations Planning February 1995

OP-009 2/95

Line 252 Extended to Long Beach Blvd./I105 Station



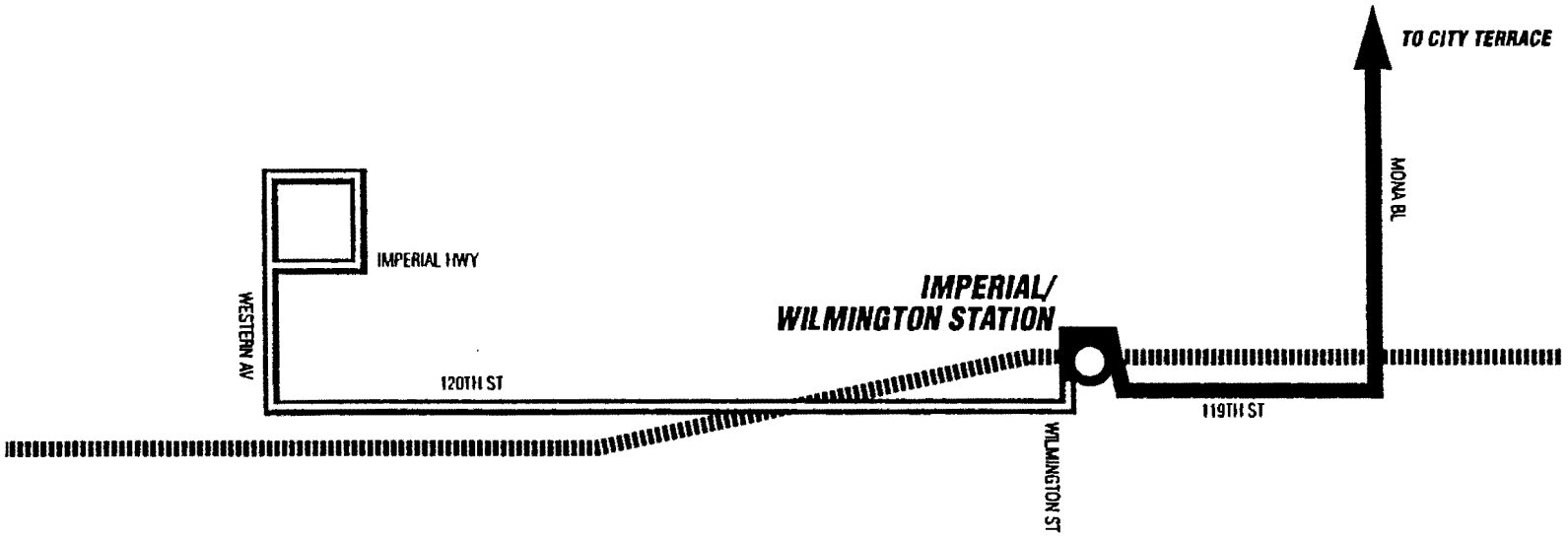
LEGEND

- GREEN LINE ROUTE
- ROUTE OF LINE 252
- EXTENSION
- STATION

Scheduling & C[illegible]s Planning February 1995

OP 009 2/95

Line 254 to End at Imperial/Wilmington Station

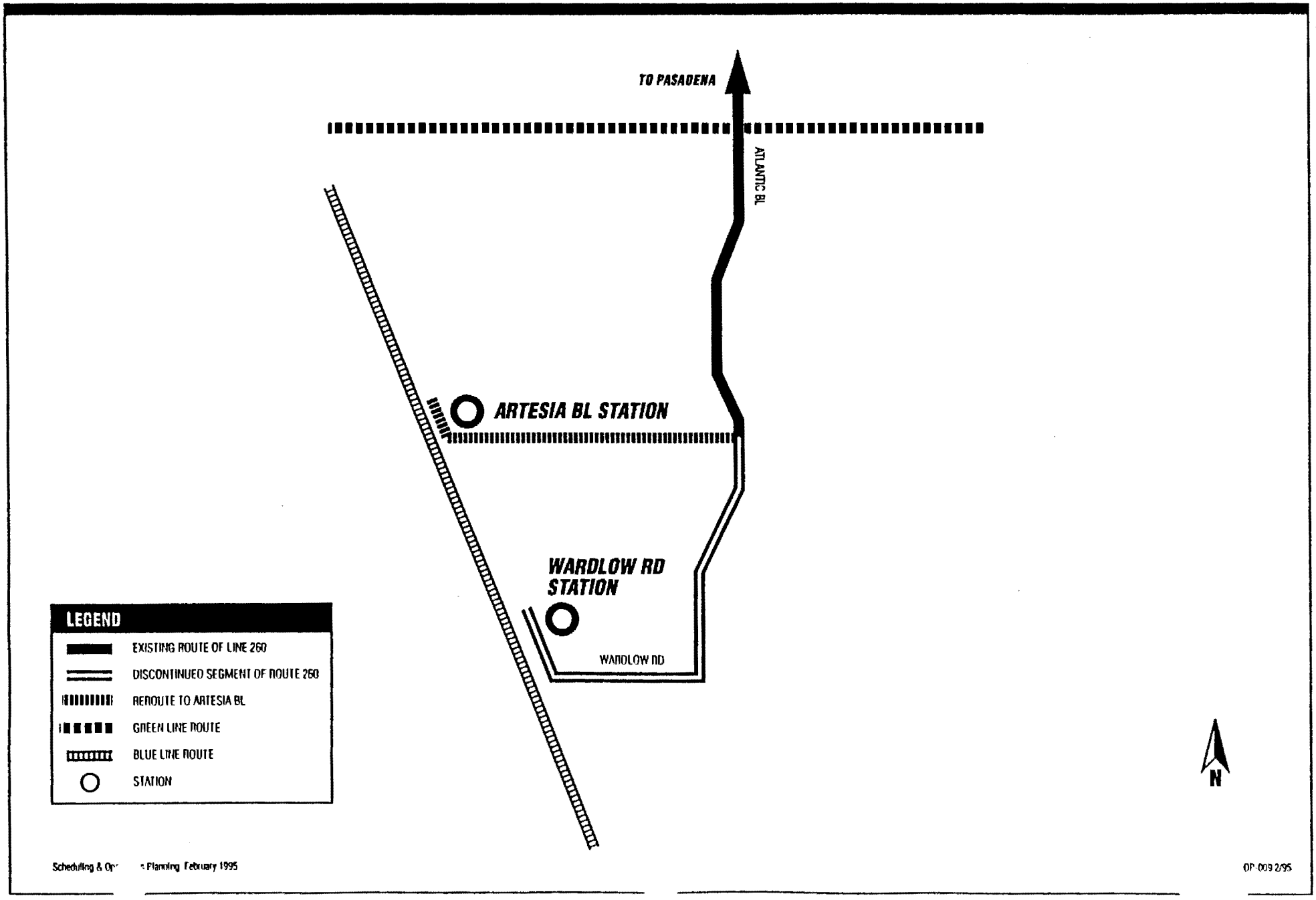


LEGEND

- EXISTING ROUTE OF LINE 254
- DISCONTINUED SEGMENT OF ROUTE 254, TO BE ASSUMED BY LINE 207
- GREEN LINE ROUTE
- STATION

N

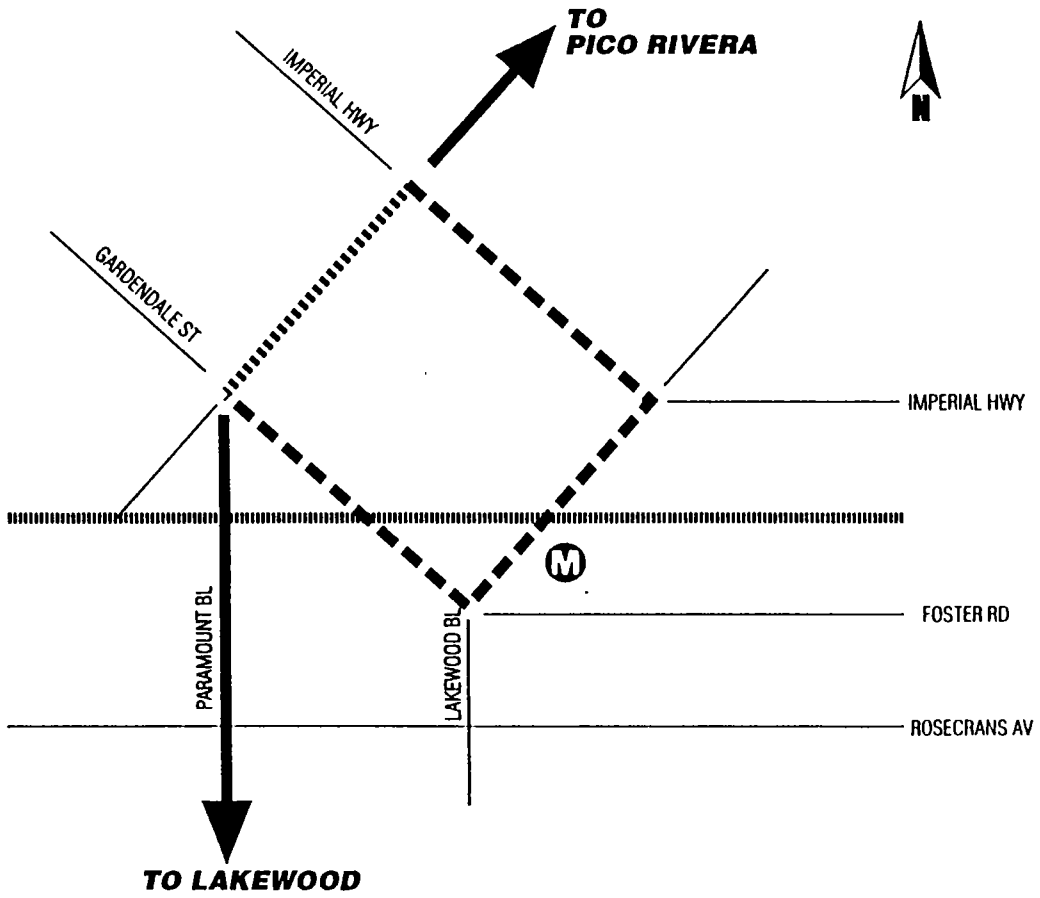
Line 260 Rerouted to Artesia Boulevard Blue Line Station



Scheduling & Op · Planning February 1995

OP-009 2/95

Line 265 Rerouted to Lakewood Bl/I105 Station



LEGEND

- GREEN LINE ROUTE
- ROUTE OF LINE 265
- DELETED PORTION OF ROUTE
- REROUTE
- STATION

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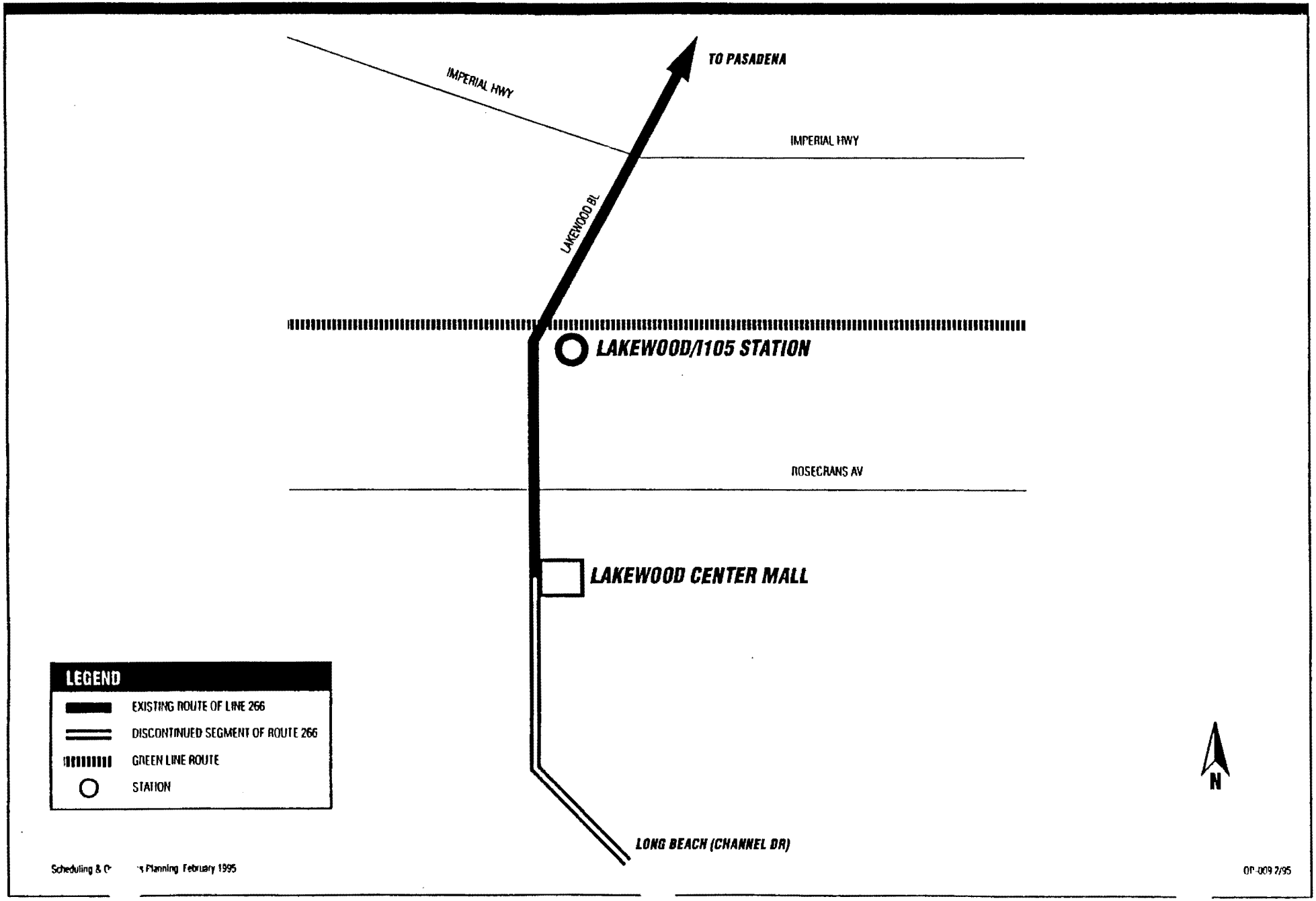
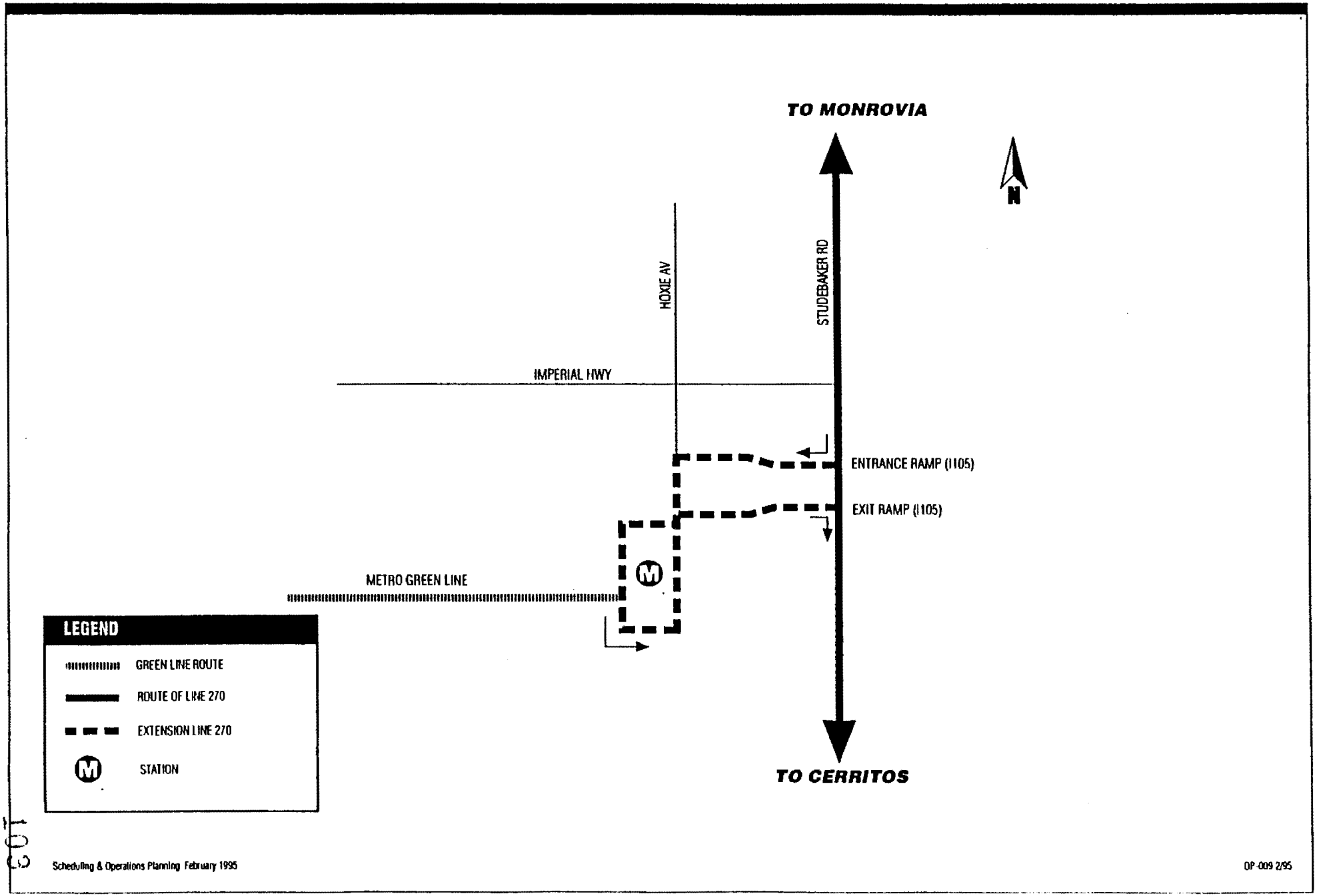
Line 266 to Serve Lakewood BL/I105 Station and End at Lakewood Mall



Scheduling & C[illegible]s Planning February 1995

OP-009 2/95

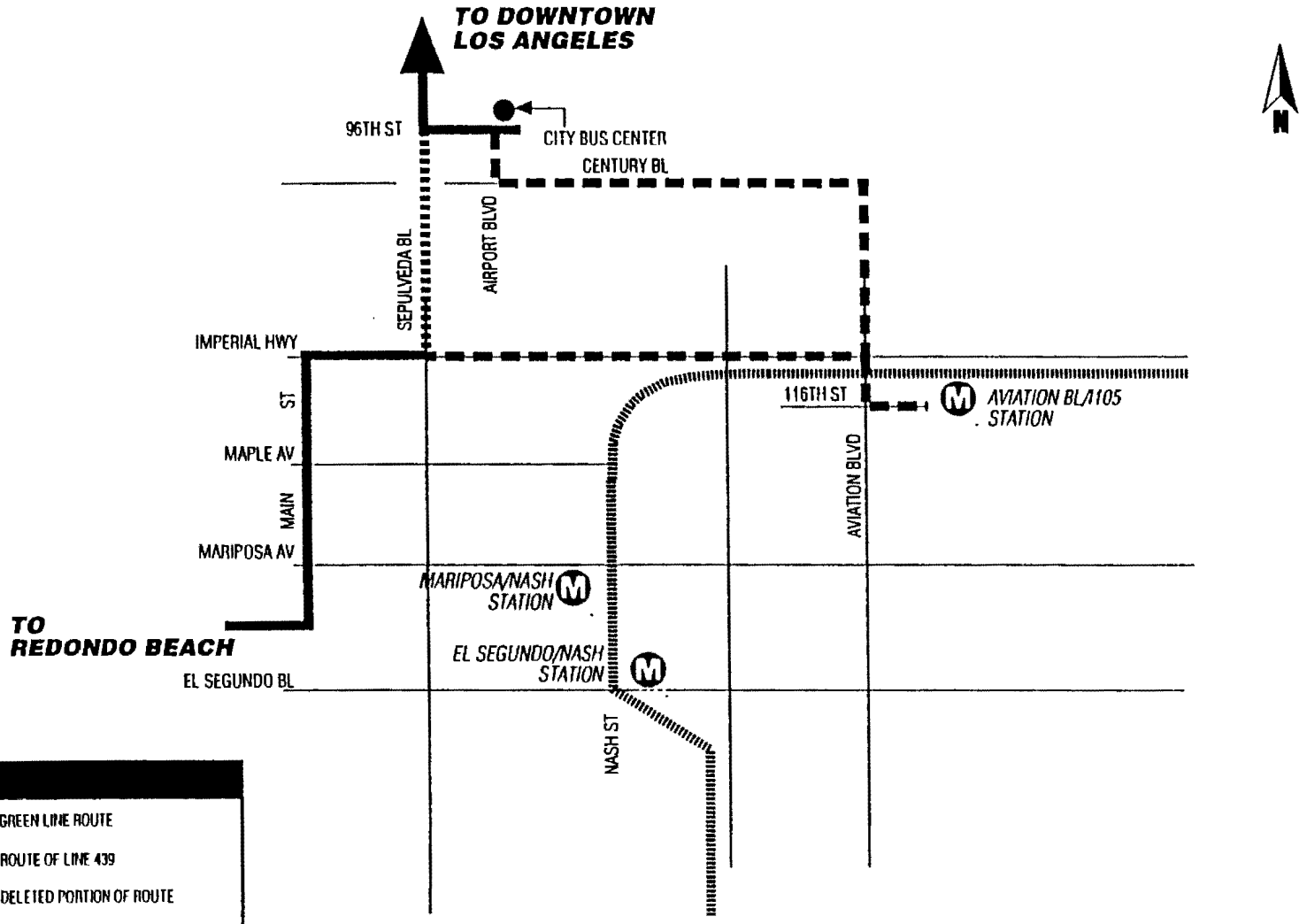
Line 270 Extended to I605/I105 Fwy Station



Scheduling & Operations Planning February 1995

OP-009 2/95

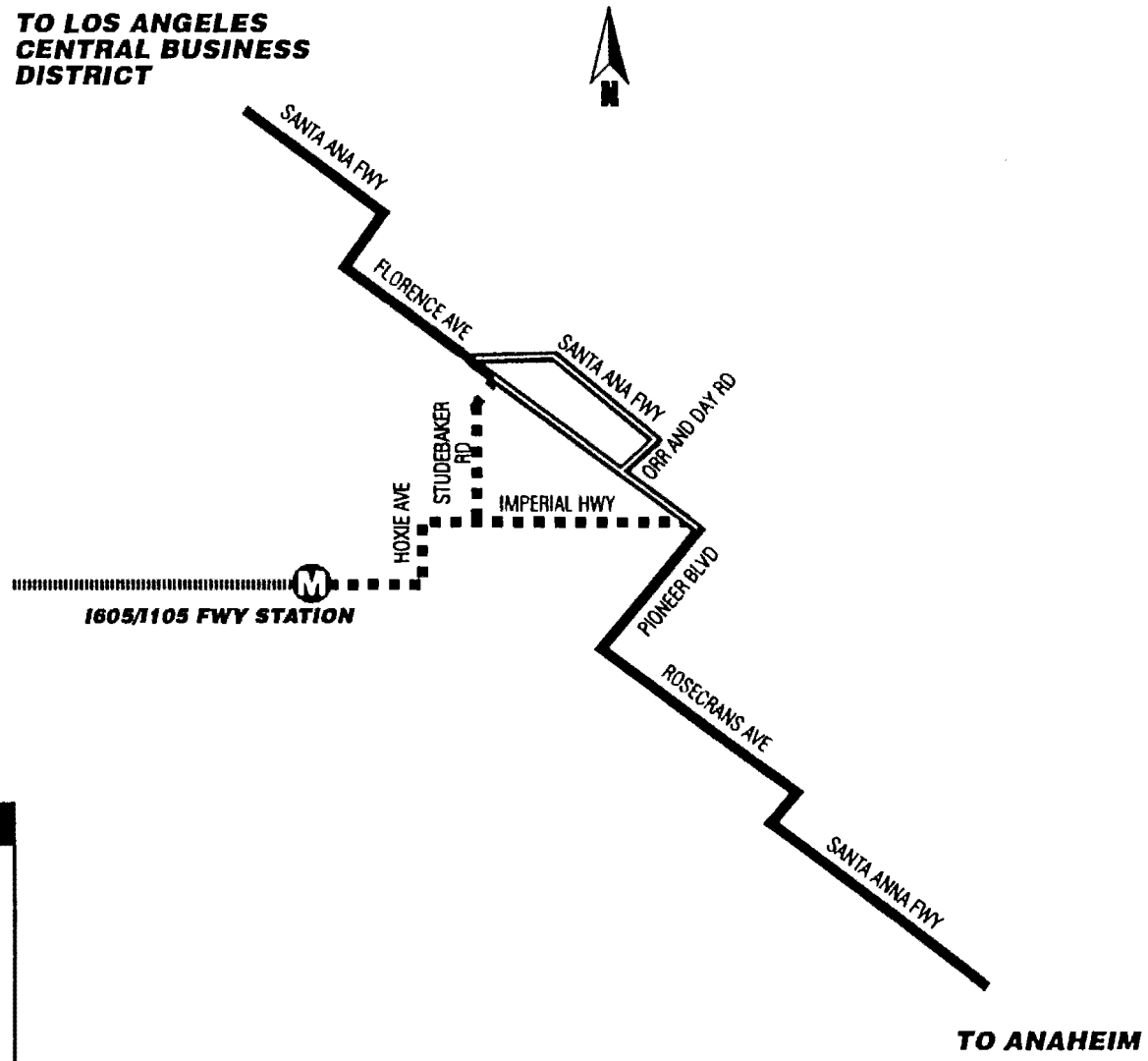
Line 439 Rerouted to Aviation Bl/I105 Station



Scheduling & Or ns Planning February 1995

OP-009 2/95

Line 460 Rerouted to I605/I105 Fwy Station



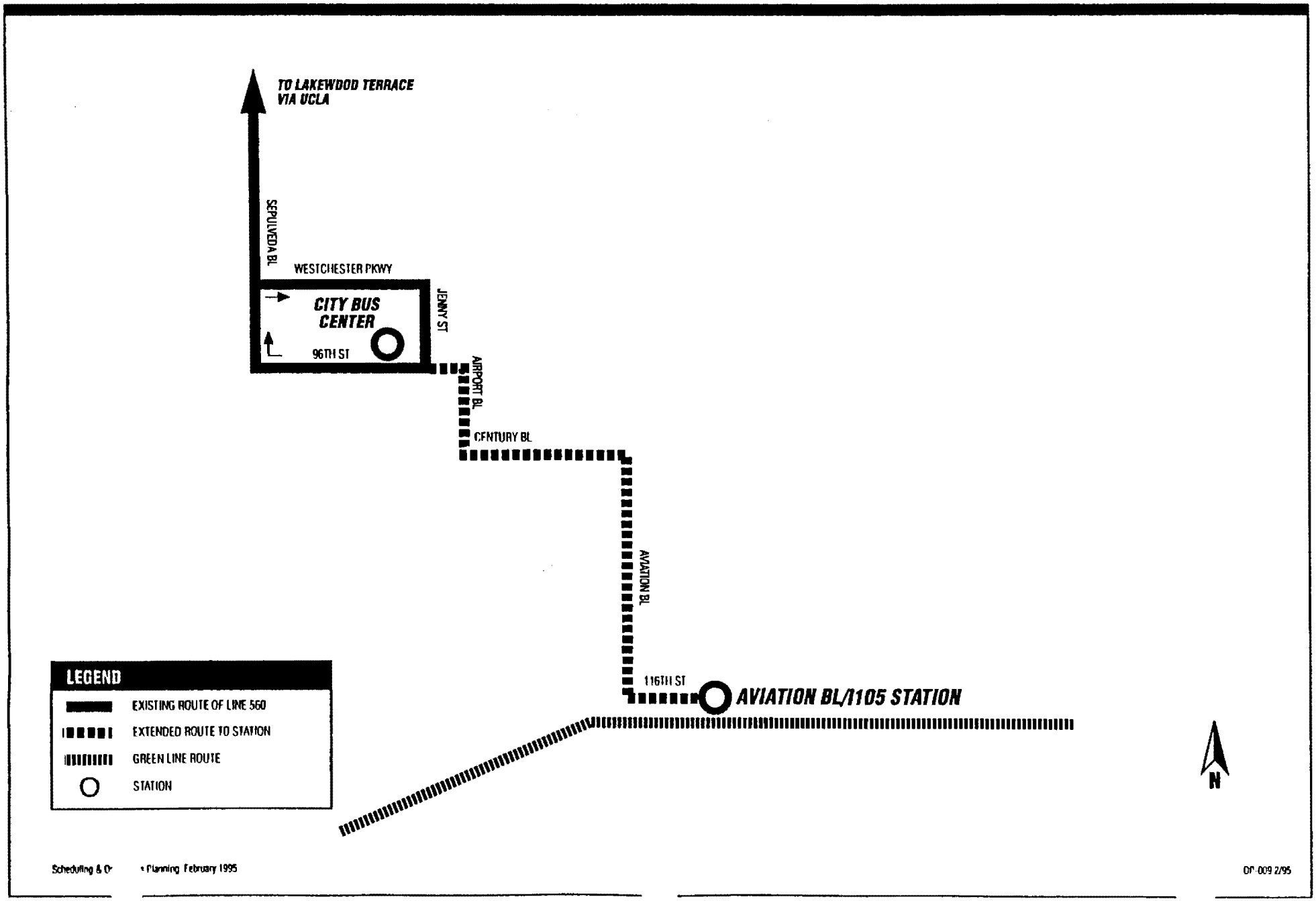
LEGEND

- GREEN LINE ROUTE
- EXISTING ROUTE OF LINE 460
- DISCONTINUED SEGMENT
- REROUTE TO I605/I105 FWY STATION
- STATION

Scheduling & Operations Planning February 1995

OP-009 2/95

Line 560 Extended to Aviation Bl/I105 Station



Scheduling & Or · Planning February 1995

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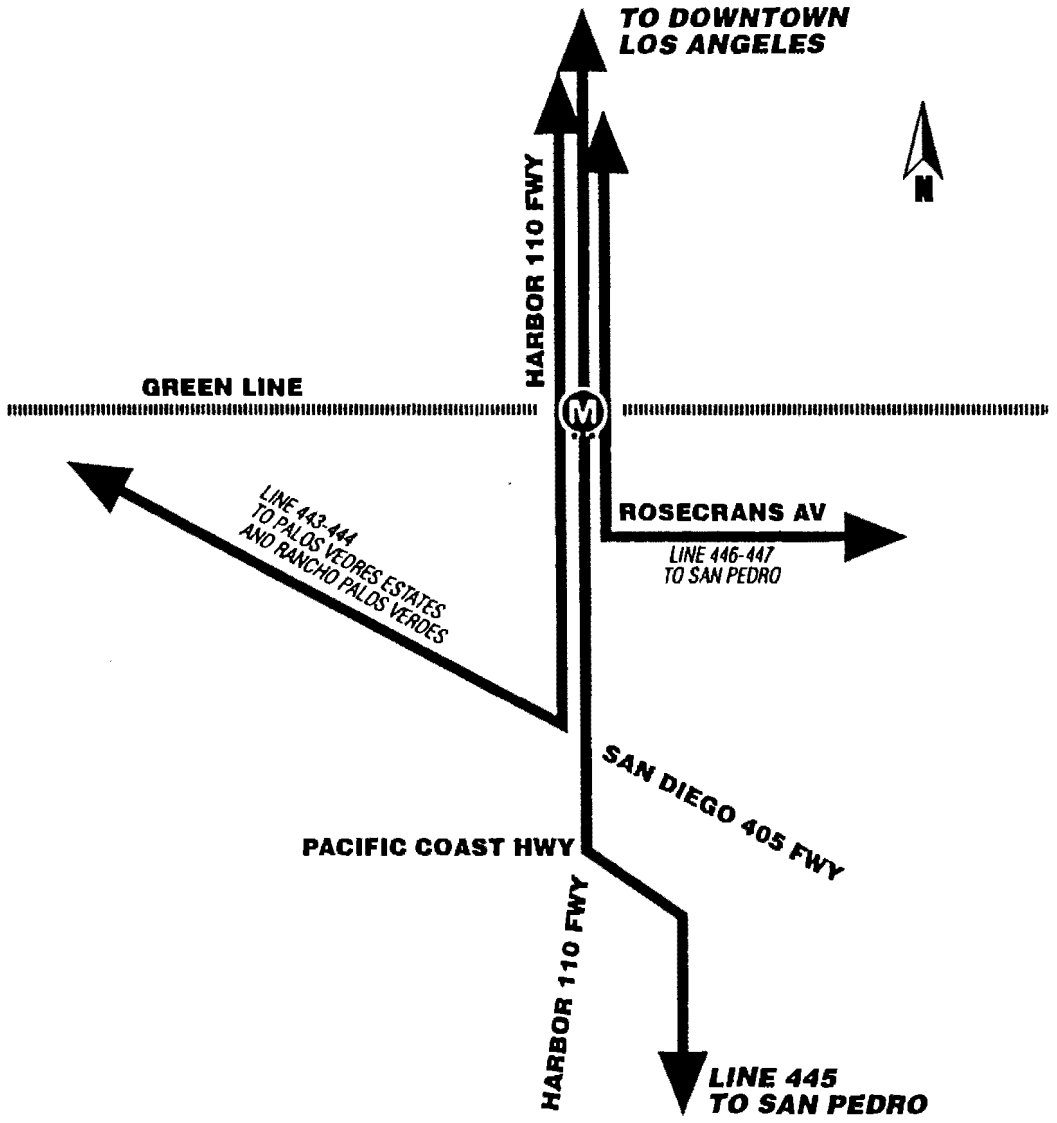
Existing Service to Harbor Transitway/I105 Station



STATION

Scheduling & Operations Planning February 1995

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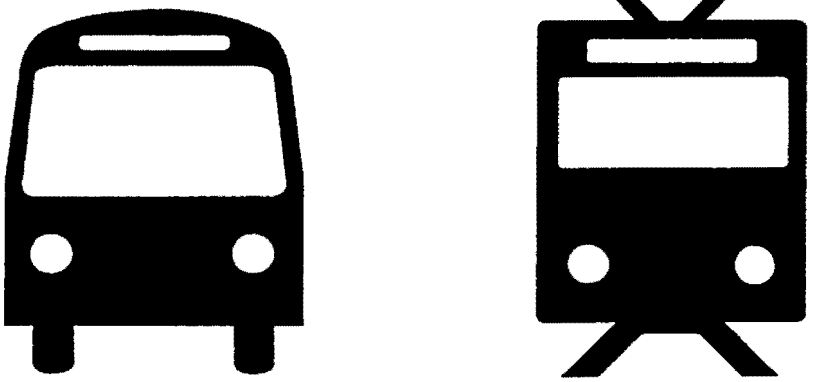
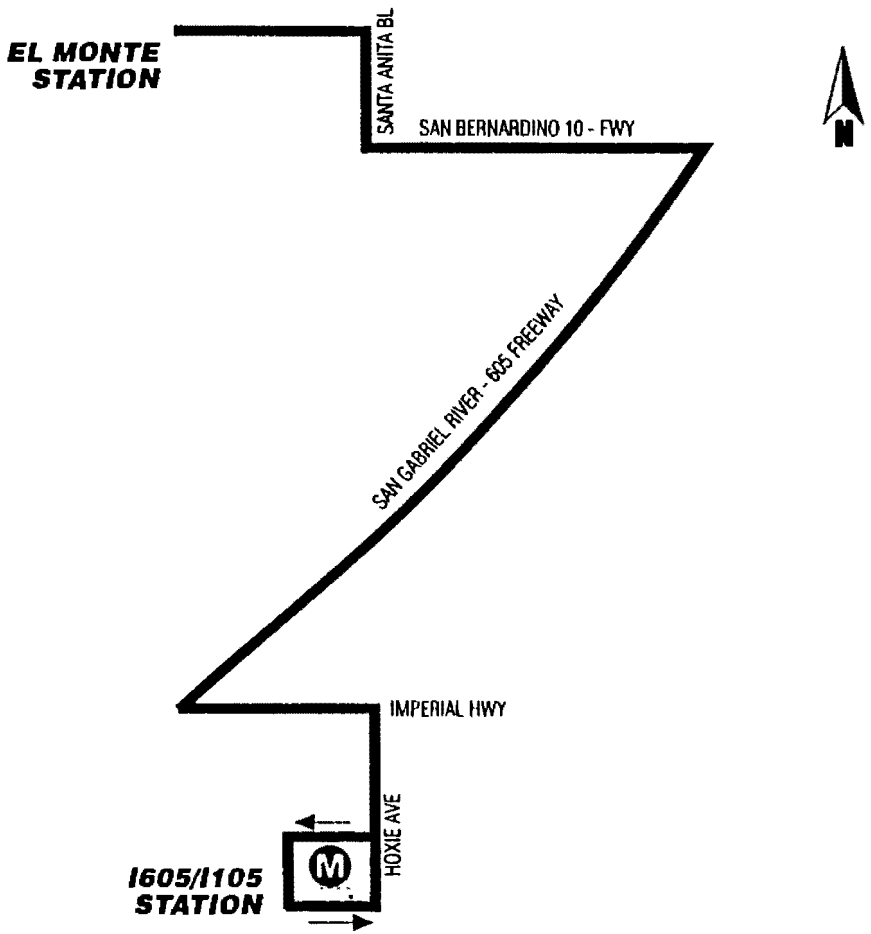
APPENDIX B

Recommended Service Plan:
Feeder Bus Operations



El Monte Station Express - Study Line 1



Scheduling & Operations Planning February 1995

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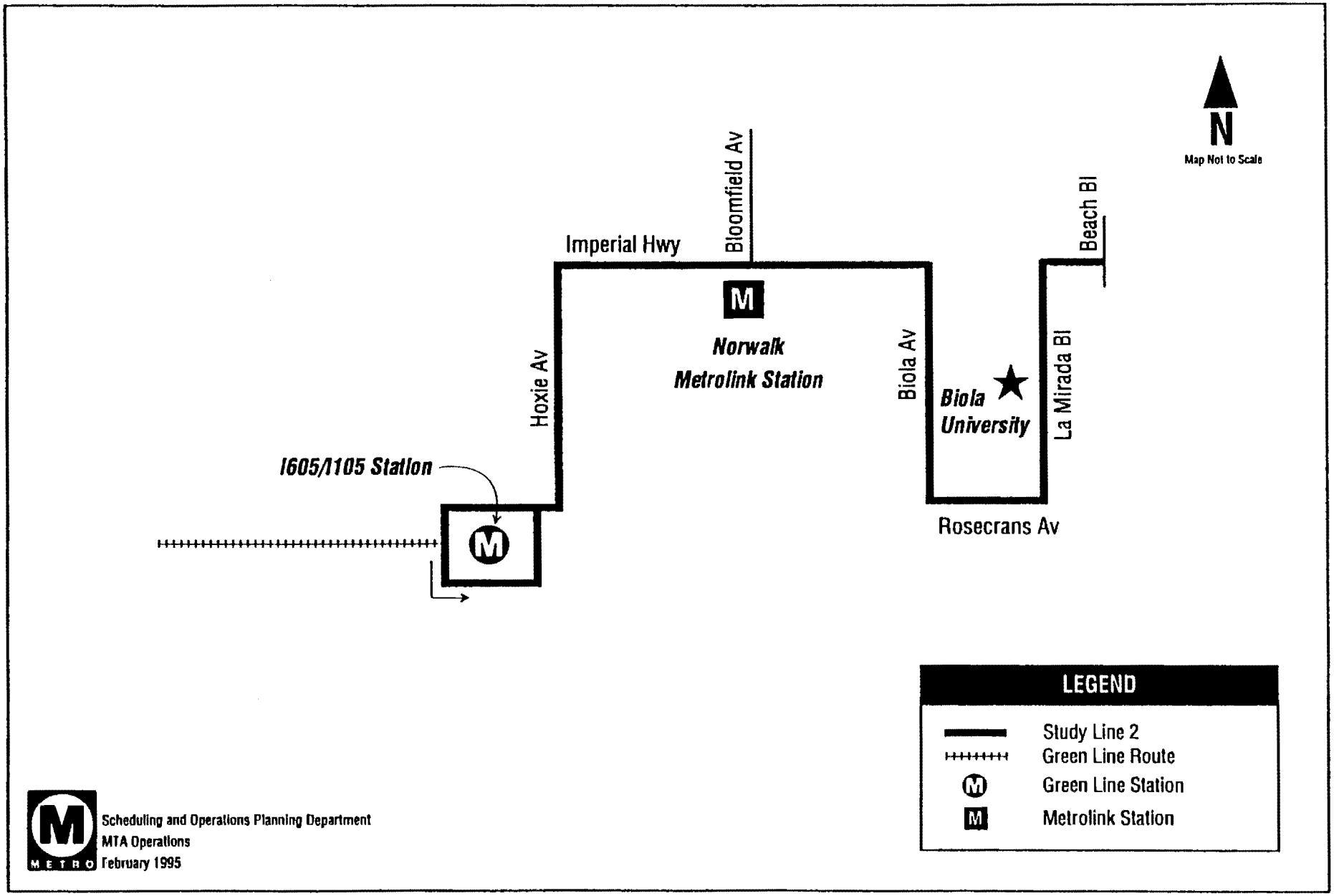
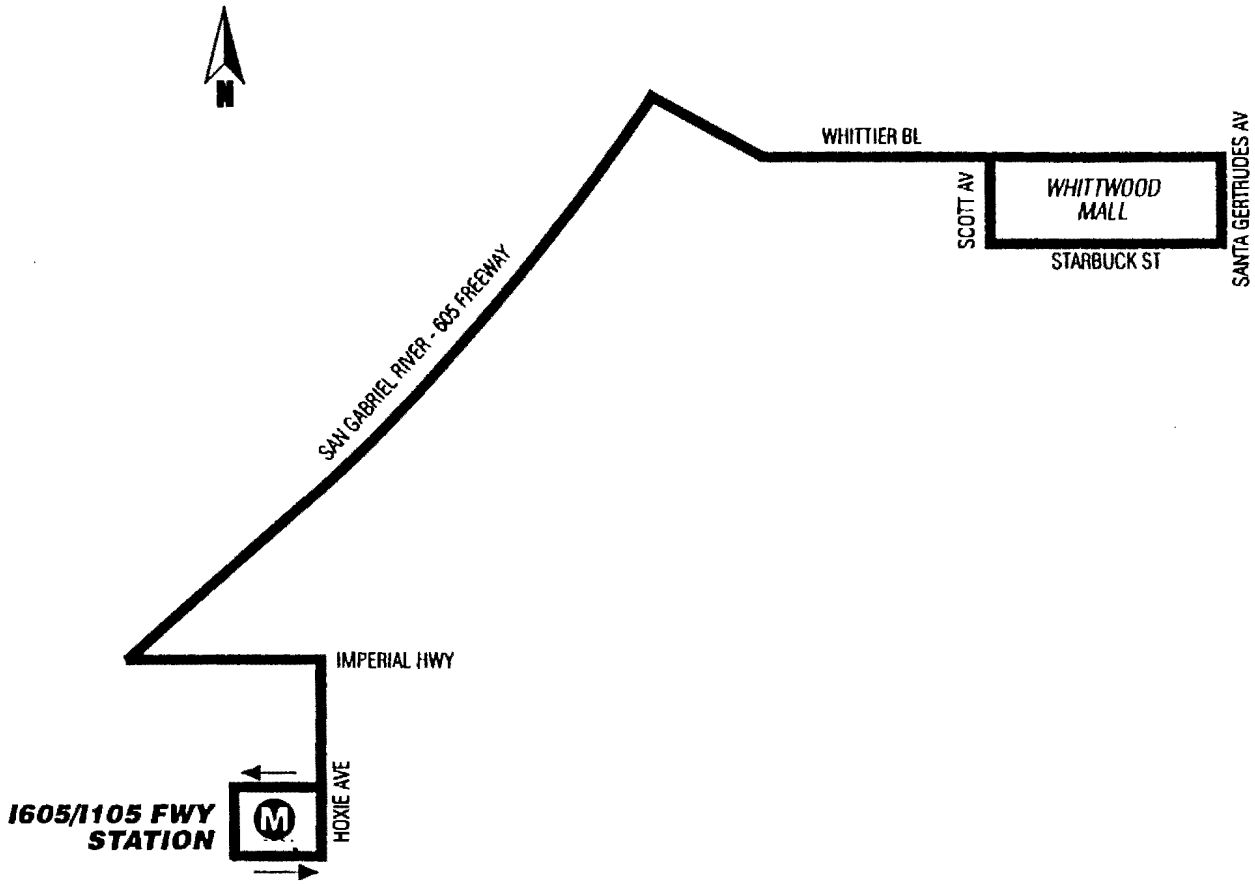
Norwalk - La Mirada Shuttle Study Line 2



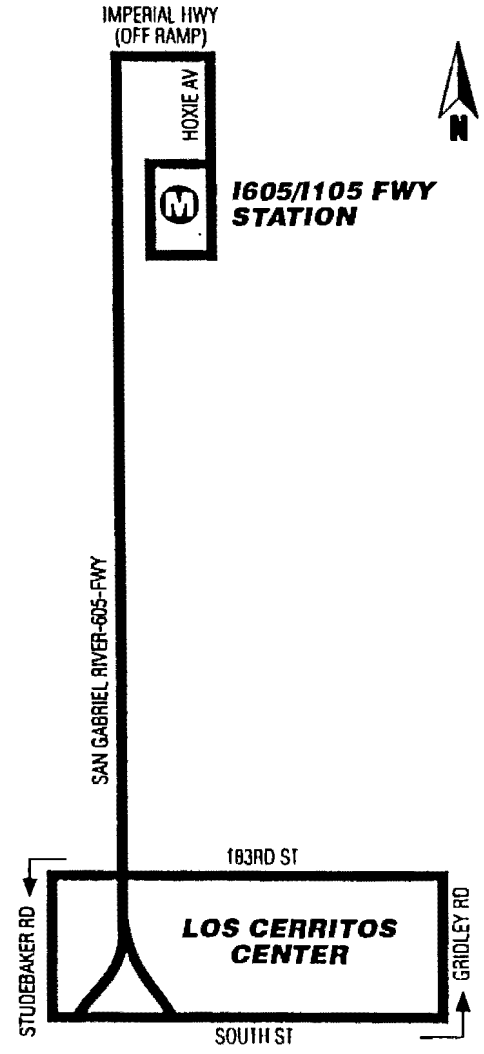
Whittier Express - Study Line 3



Scheduling & Operations Planning February 1995

OP-009 2/95

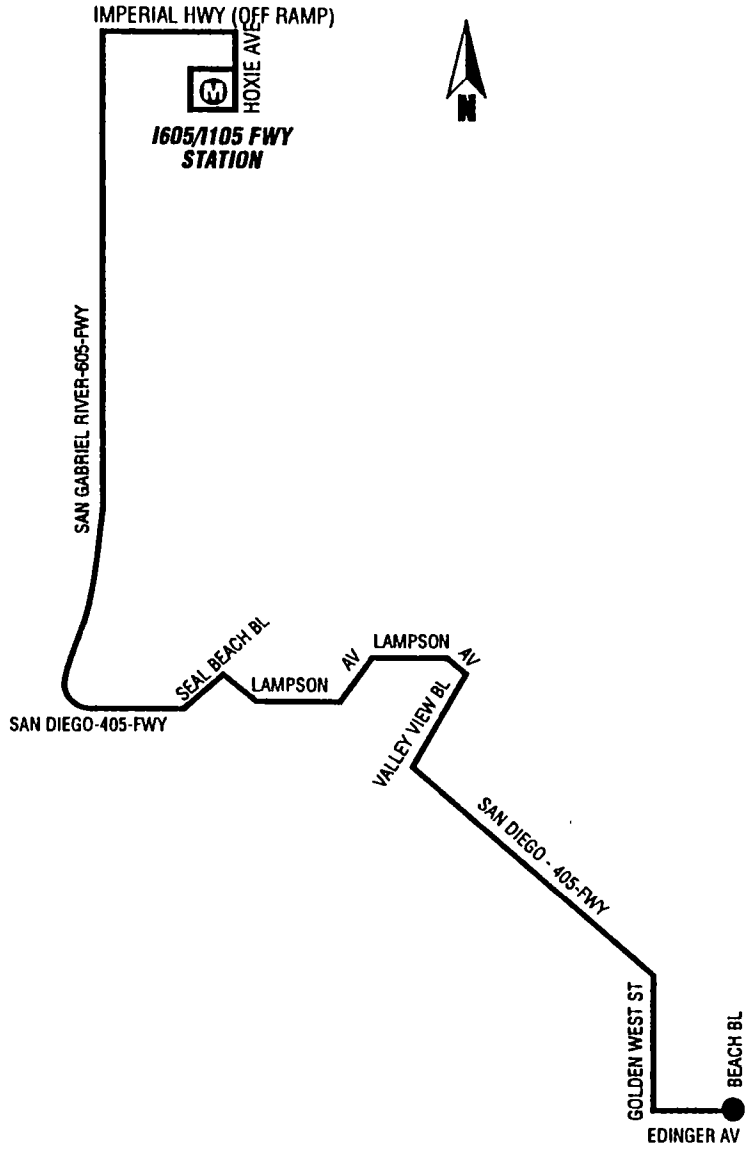
Los Cerritos Center Express - Study Line 4



Scheduling & Op... - Planning February 1995

OP-009 2/95

Westminister Express - Study Line 5



Scheduling & Operations Planning February 1995

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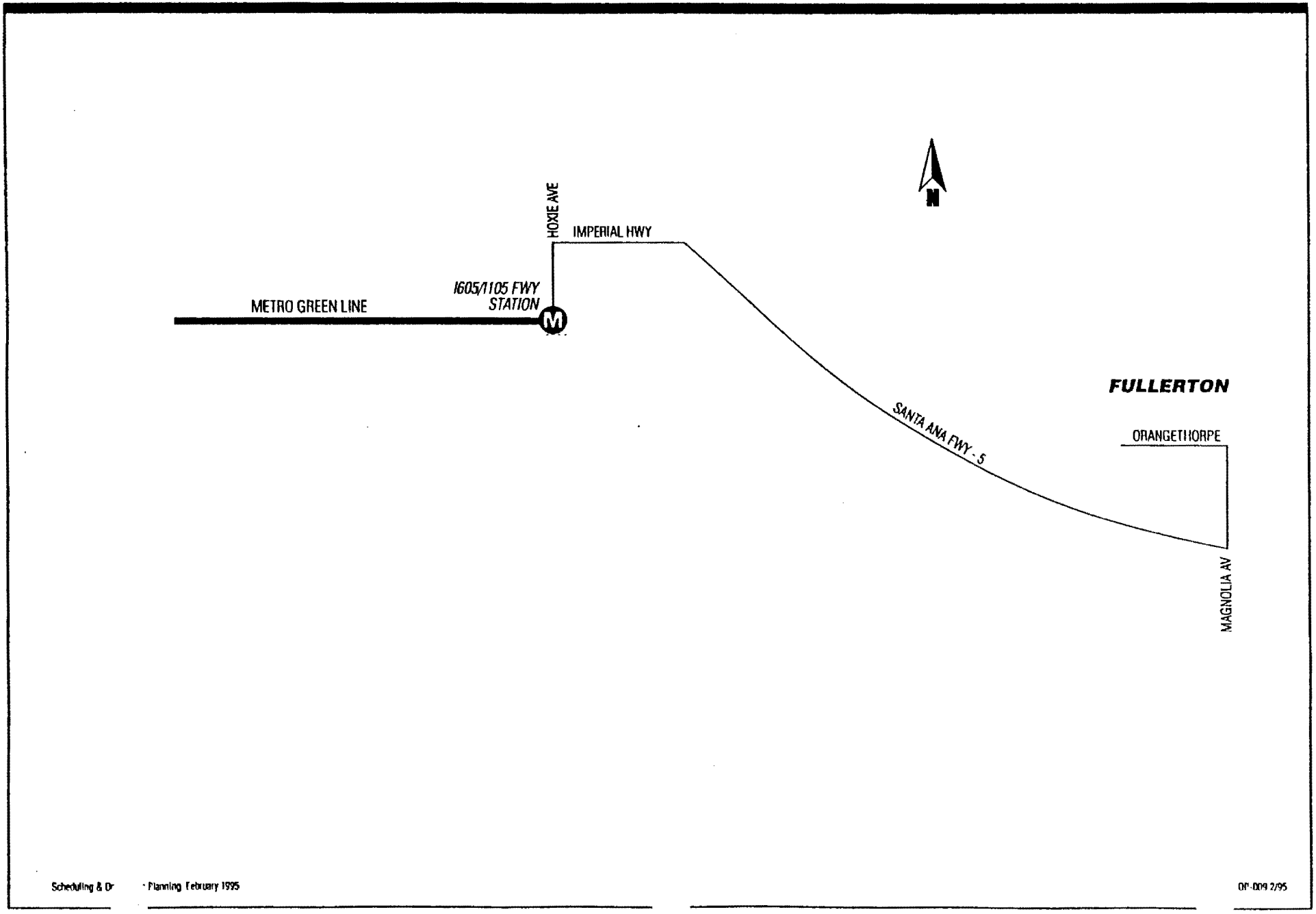
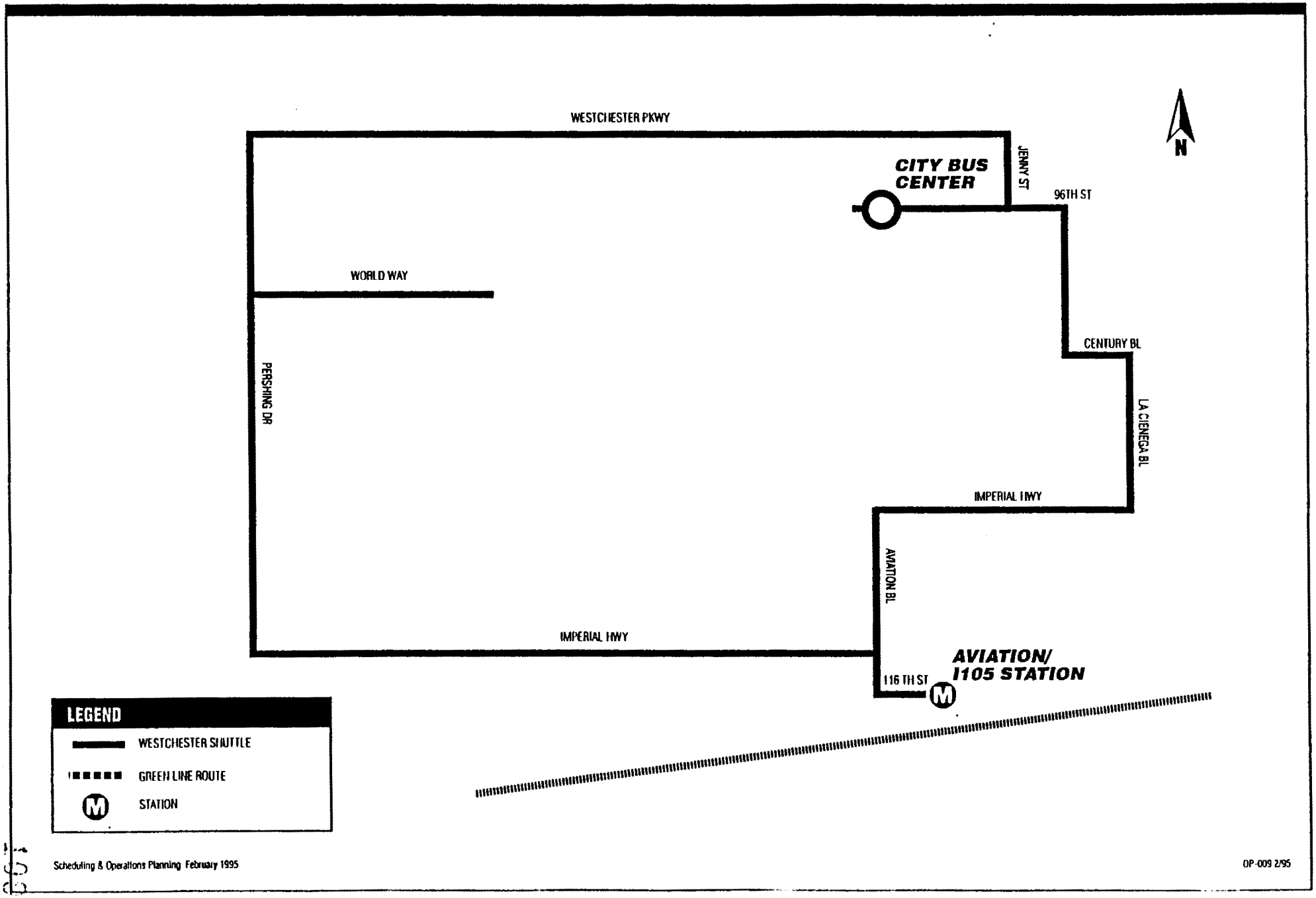
Fullerton Express - Study Line 6



Westchester Shuttle - Study Line 7



Scheduling & Operations Planning February 1995

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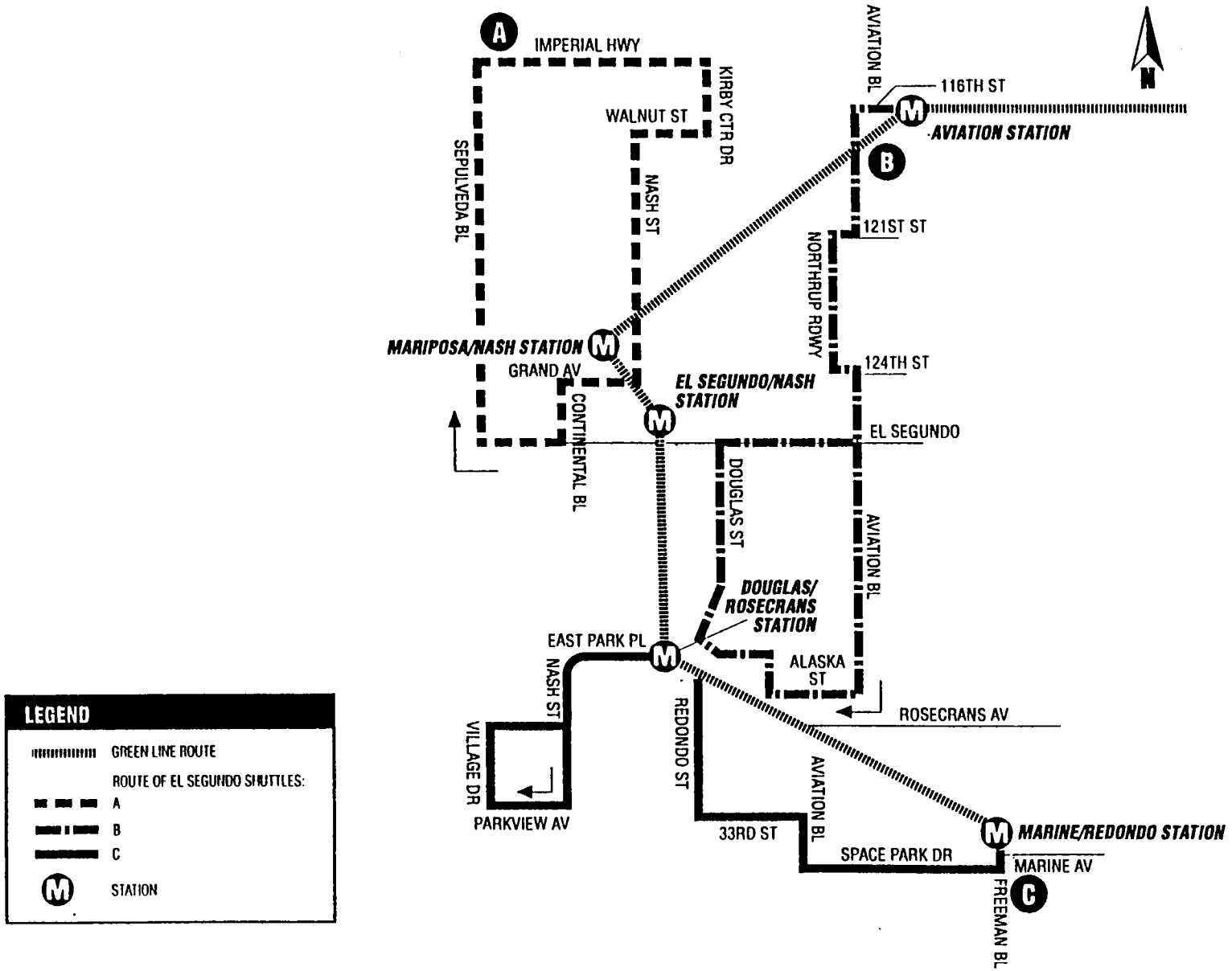
El Segundo Shuttle - Study Lines 8A, 8B, 8C



Scheduling & Planning February 1995

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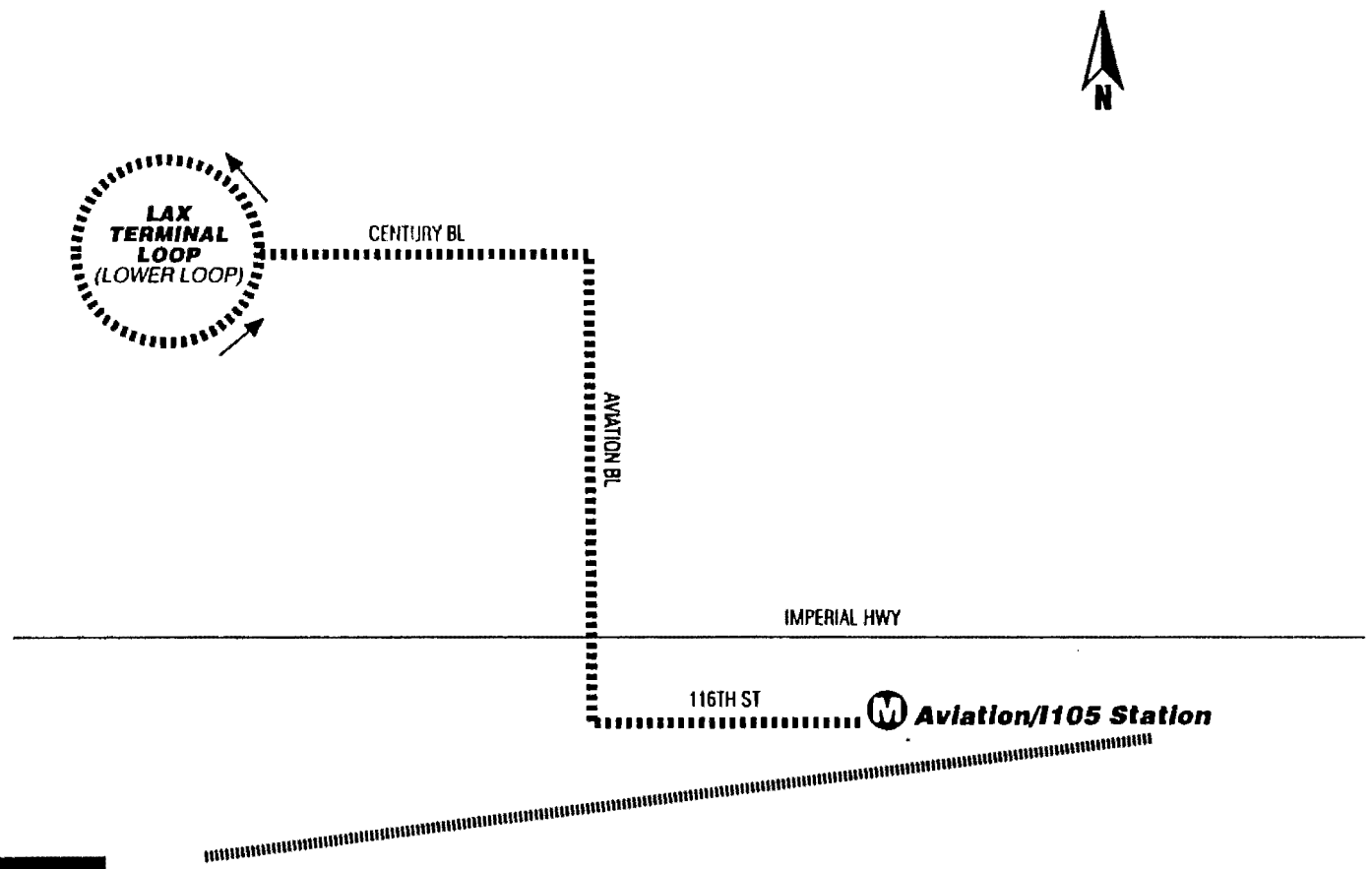
LAX Collector Loop - Study Line 9



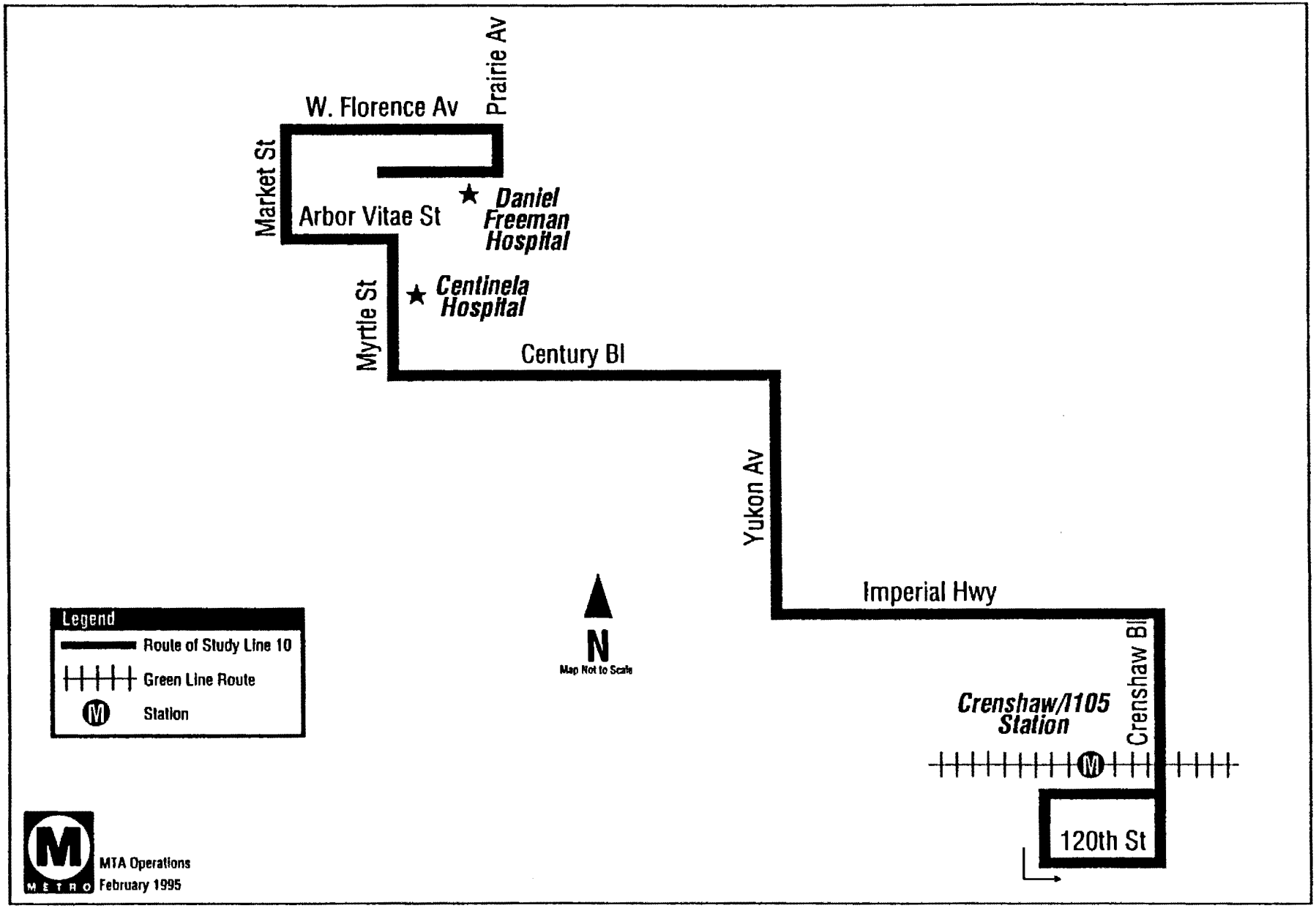
LEGEND

- LAX COLLECTOR
- GREEN LINE ROUTE
- STATION

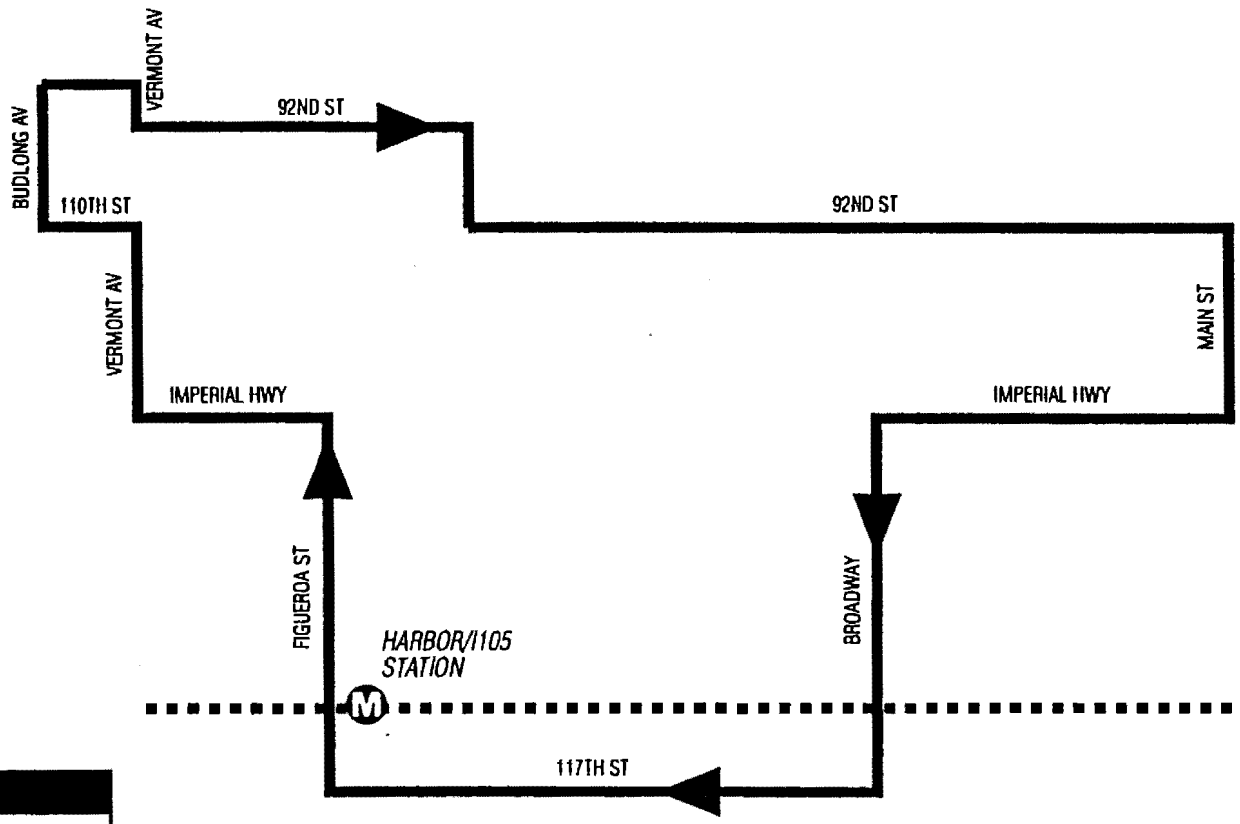
Scheduling & Operations Planning February 1995

OP-009 2/95

Crenshaw Bl./I105 Station Shuttle - Study Line 10



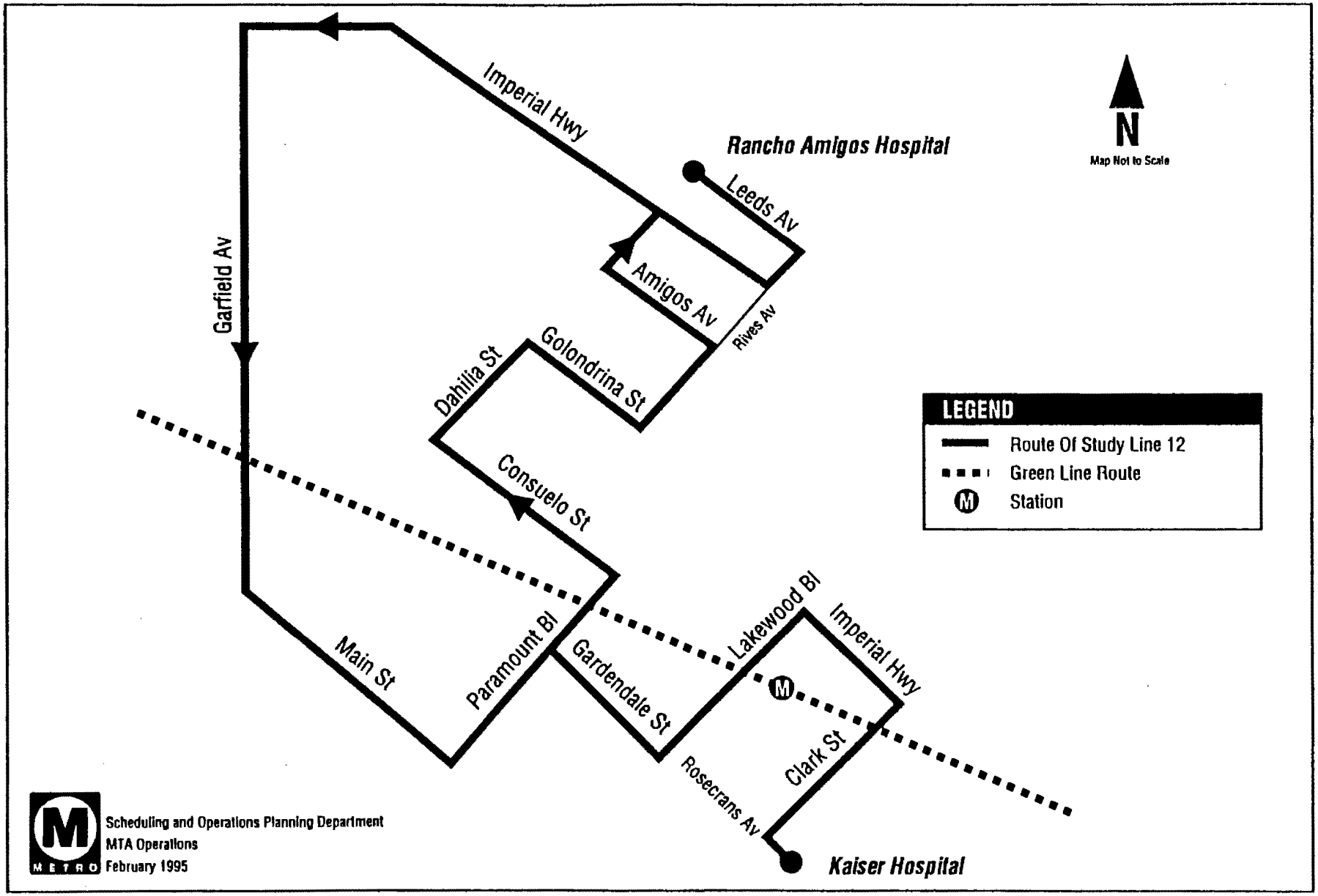
Harbor Station/I105 Shuttle-StudyLine 11



LEGEND

- EXISTING OF LINE 206
- GREEN LINE ROUTE
- STATION

Lakewood Bl/I105 Station-Los Amigos-Kaiser Hospital Shuttle-Study Line 12



APPENDIX C

Recommended Service Plan:
Service Characteristics

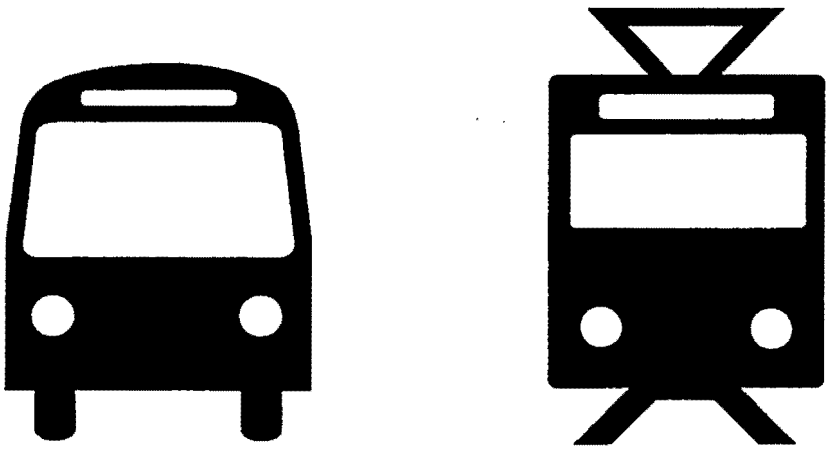


TABLE 1

SUMMARY RECOMMENDED SERVICE PLAN
FULL ACCESS

I. LINES TO BE EXTENDED TO RAIL STATIONS (8):

LINE - 112, 119, 125, 207 (357), 252, 270 AND 560.

II. LINES TO BE REROUTED TO RAIL STATIONS (12):

LINE 45, 53, 126, 211, 215, 220, 232, 265, 439, 446(447), AND 460.

III. LINES TO BE SHORTENED OR ENDED AT RAIL STATIONS (9):

LINES 81, 115, 117, 120, 206, 209, 254, 260 AND 266.

IV. LINES TO MAINTAIN CURRENT ROUTING (17):

LINE 40(442), 48, 51, 55, 56, 60, 124, 202, 204(354), 205, 210, 225(226), 444 AND 445.

V. NEW FEEDER ROUTES TO SERVE RAIL STATION (13):

Line	Name
S-1	EL MONTE-NORWALK EXPRESS
S-2	EAST IMPERIAL
S-3	WHITTIER-NORWALK EXPRESS
S-4	CERRITOS-NORWALK EXPRESS
S-5*	HUNTINGTON BEACH EXPRESS
S-6	FULLERTON NORWALK EXPRESS
S-7	WESTCHESTER
S-8A	MARIPOSA SHUTTLE
S-8B	AVIATION STATION SHUTTLE
S-8C	MARINE STATION SHUTTLE
S-9	LAX COLLECTOR LOOP
S-10	CRENSHAW STATION SHUTTLE
S-11	HARBOR STATION SHUTTLE
S-12	LAKEWOOD BL STATION-RANCHO AMIGOS-KAISER SHUTTLE

* TO BE OPERATED BY OCTA AS LINE 701 MODIFICATION

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TABLE 2
SUMMARY OF MTA SERVICE TO GREEN LINE STATIONS
FULL ACCESS

RAIL STATION	TO BE SERVED BY MTA LINE(s)	DAY OF SERVICE DAILY	SATURDAY	SUNDAY
I-605/I-105	115	X	X	X
	121	X	X	X
	125	X	X	X
	270	X	-	-
	460	X	X	X
	S-1	X	-	-
	S-2	X	X	X
	S-3	X	-	-
	S-4	X	-	-
	S-6	X	-	-
LAKEWOOD	265	X	-	-
	266	X	X	X
	S-12	X	X	X
LONG BEACH	60	X	X	X
	112	X	X	X
	119	X	-	-
	252	X	X	X
IMPERIAL	55	X	X	X
	56	X	X	X
	120	X	X	X
	121	X	X	X
	124	X	X	X
	202	X	X	X
	205	X	X	X
	207	X	X	X
	254	X	X	X
AVALON	48	X	X	X
	51	X	X	X
	53	X	X	X
HARBOR TRANSITWAY	45	X	X	X
	81	X	X	X
	120	X	X	X
	207	X	X	X
	444	X	X	X
	445	X	-	-
	446-447	X	X	X
	S-11	X	-	-
VERMONT	204-354	X	X	X
	206	X	X	X
	209	X	X	-

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MTA OPERATIONS PLANNING (February 1995)

TABLE 2
SUMMARY OF MTA SERVICE TO GREEN LINE STATIONS
FULL ACCESS (con't)

RAIL STATION	TO BE SERVED BY MTA LINE(s)	DAY OF SERVICE DAILY	SATURDAY	SUNDAY
CRENSHAW	210	X	X	X
	S-10	X	-	-
HAWTHORNE	40-442	X	X	X
	119	X	-	-
	211-215	X	-	-
AVIATION	120	X	X	X
	220	X	X	X
	439	X	X	X
	560	X	X	X
	S-7	X	-	-
	S-8B	X	-	-
	S-9	X	X	X
MARIPOSA	225-226	X	X	-
	232	X	X	X
	S-8A	X	-	-
EL SEGUNDO	124	X	X	X
	S-8A	X	-	-
DOUGLAS	225-226	X	X	-
	125	X	X	X
	S-8C	X	-	-
MARINE	126	X	-	-
	215	X	-	-
	S-8C	X	-	-

TABLE 3

FULL ACCESS

HEADWAYS OF LINES SERVING GREEN LINE STATIONS

		WEEKDAY					SATURDAY					SUNDAY				
STATION	LINE	AM	BASE	PM	NIGHT	OWL	AM	BASE	PM	NIGHT	OWL	AM	BASE	PM	NIGHT	OWL
NORWALK	115	20	30	30	50	-	60	45	45	50	-	60	60	60	45	-
	120	15	30	15	60	-	20	30	20	60	-	30	30	30	60	-
	125	20	30	20	30	-	30	30	30	30	-	30	30	30	30	-
	270	35	60	60	60	-	NO SERVICE					NO SERVICE				
	460	20	30	20	35	-	30	30	30	40	-	30	30	30	40	-
	S-1	20	-	20	-	-	NO SERVICE					NO SERVICE				
	S-2	45	45	45	45	-	45	45	45	45	-	45	45	45	45	-
	S-3	20	-	20	-	-	NO SERVICE					NO SERVICE				
	S-4	20	-	20	-	-	NO SERVICE					NO SERVICE				
	S-5	20	-	20	-	-	NO SERVICE					NO SERVICE				
	S-6	20	-	20	-	-	NO SERVICE					NO SERVICE				
LAKEWOOD	265	60	60	60	60	-	NO SERVICE					NO SERVICE				
	266	35	40	40	60	-	40	40	35	60	-	40	40	35	60	-
	S-12	30	30	30	-	-	30	30	30	-	-	30	30	30	-	-
LONG BEACH	60	3	6	3	12	60	6	8	6	12	60	12	10	10	12	60
	112	60	60	60	60	-	60	60	60	60	-	60	60	60	60	-
	119	60	60	60	60	-	NO SERVICE					NO SERVICE				
	252	15	24	15	60	60	30	24	24	28	60	60	40	40	40	60
IMPERIAL	55	20	15	15	30	60	20	15	20	30	60	25	15	15	18	60
	56	40	40	40	60	-	40	40	40	60	-	60	55	55	60	-
	120	15	30	15	60	-	20	30	20	60	-	30	30	30	60	-
	124	30	60	30	60	-	-	60	60	-	-	-	60	60	-	-
	202	30	30	30	30	60	30	30	30	30	60	30	30	30	30	60
	205	30	30	30	60	-	30	30	30	60	-	60	60	60	60	-
	207	30	30	30	30	-	40	40	40	40	-	40	40	40	40	-
	254	40	60	40	-	-	60	60	60	-	-	60	60	60	-	-
AVALON	48	8	24	17	20	-	14	20	20	-	-	60	30	30	-	-
	51	10	20	10	60	-	31	20	20	60	-	40	30	20	60	-
	53	10	15	10	60	-	15	15	15	60	-	15	15	15	60	-
HARBOR	45	30	30	12	30	60	16	45	25	30	60	30	30	24	30	60
	81	7	30	16	30	-	20	24	24	30	-	30	20	20	30	-
	120	15	30	15	60	-	20	30	20	60	-	30	30	30	60	-
	443	32	-	30	-	-	NO SERVICE					NO SERVICE				
	444	20	60	40	-	-	60	60	60	-	-	60	60	60	-	-
	445	25	-	25	-	-	NO SERVICE					NO SERVICE				
	446-447	23	30	15	60	60	30	30	30	60	60	30	30	30	60	60
	S-11	30	30	30	-	-	NO SERVICE					NO SERVICE				

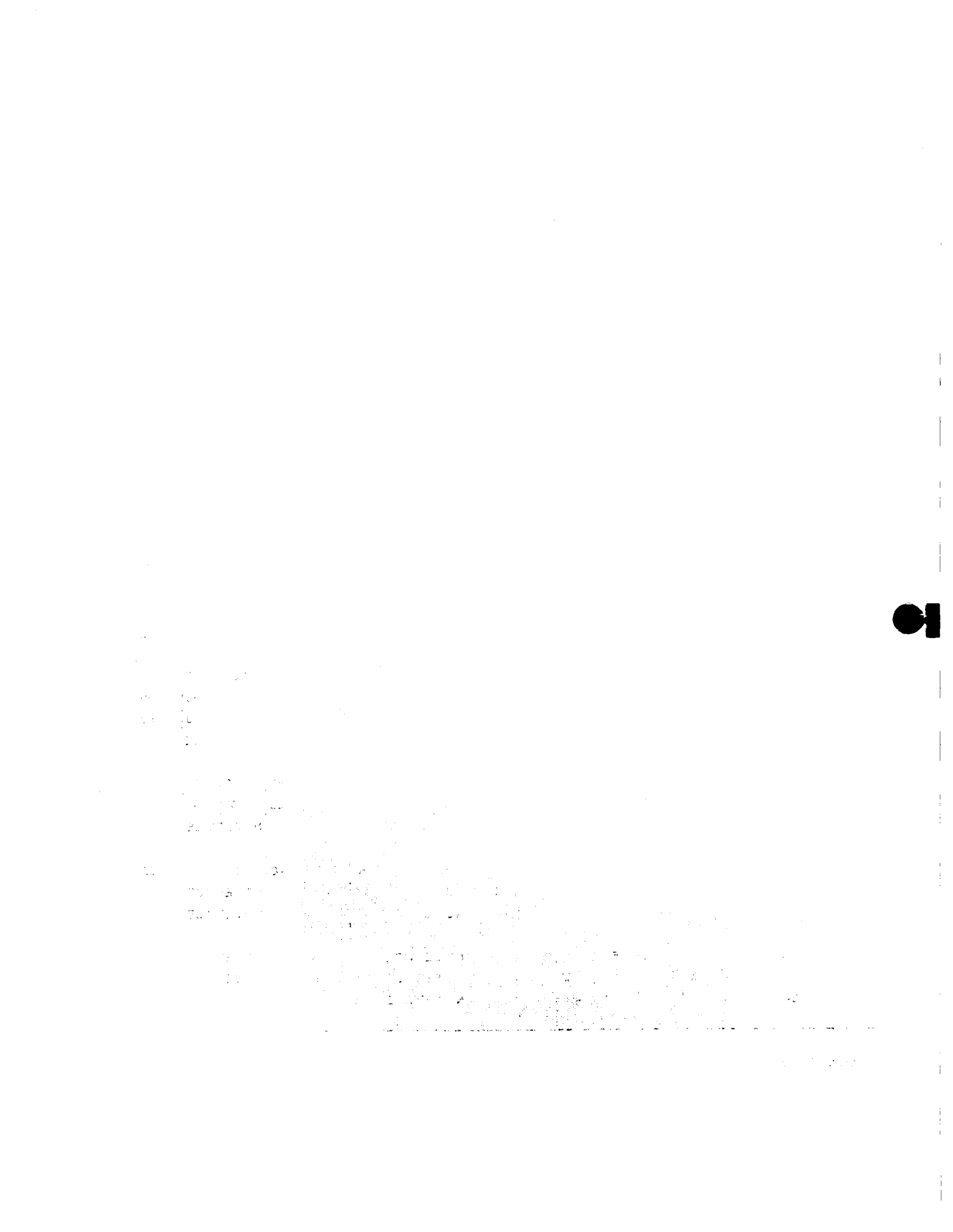

TABLE 3 (con'd)

FULL ACCESS

HEADWAYS OF LINES SERVING GREEN LINE STATIONS

		WEEKDAY					SATURDAY					SUNDAY				
STATION	LINE	AM	BASE	PM	NIGHT	OWL	AM	BASE	PM	NIGHT	OWL	AM	BASE	PM	NIGHT	OWL
VERMONT	204/354	7	10	9	12	30	7	12	12	10	30	10	20	20	20	30
	206	10	17	12	60	-	20	20	20	60	-	20	20	20	60	-
CRENSHAW	209	30	45	20	60	-	60	60	60	60	-	NO SERVICE				
	210	6	16	9	30	60	16	16	16	20	60	20	16	16	20	60
	S-10	30	30	30	-	-	NO SERVICE					NO SERVICE				
HAWTHORNE	40	10	10	11	20	60	16	10	8	20	60	20	12	12	20	60
	119	60	60	60	60	-	NO SERVICE					NO SERVICE				
	211-215	20	60	30	60	-	NO SERVICE					NO SERVICE				
	442	14	-	18	-	-	NO SERVICE					NO SERVICE				
AVIATION	120	15	30	15	60	-	20	30	20	60	-	30	30	30	60	-
	220	45	60	40	-	-	60	60	60	-	-	60	60	60	-	-
	560	60	60	60	60	-	60	60	60	60	-	60	60	60	60	-
	S-7	15	-	15	-	-	NO SERVICE					NO SERVICE				
	S-8	12	-	12	-	-	NO SERVICE					NO SERVICE				
	S-9	12	12	12	12	-	12	12	12	12	-	12	12	12	12	-
MARIPOSA	225/226	30	30	33	-	-	31	30	30	-	-	NO SERVICE				
	232	10	30	20	60	-	30	30	30	60	-	30	30	30	60	-
	439	30	60	30	60	-	60	60	60	60	-	60	60	60	60	-
	S-8	12	-	12	-	-	NO SERVICE					NO SERVICE				
EL SEGUNDO	124	30	60	30	60	-	60	60	60	-	-	60	60	60	-	-
	232	10	30	20	60	-	30	30	30	60	-	30	30	30	60	-
	S-8	12	-	12	-	-	NO SERVICE					NO SERVICE				
DOUGLAS	125	20	30	20	30	-	40	30	30	30	-	40	30	30	30	-
	225/226	30	30	33	-	-	31	30	30	-	-	NO SERVICE				
	S-8	12	-	12	-	-	NO SERVICE					NO SERVICE				
MARINE	126	60	60	60	-	-	NO SERVICE					NO SERVICE				
	211-215	20	60	30	60	-	NO SERVICE					NO SERVICE				
	S-8	12	-	12	-	-	NO SERVICE					NO SERVICE				

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APPENDIX D

FINANCIAL PLAN FOR METRO GREEN LINE

Metro Green Line Operating Costs

Operating costs for the Metro Green Line are based on MTA's FY 1995-96 Budget and fully allocated Operation and Maintenance Cost Model. First year costs are estimated at $22,600,000. Annual increases of 3.1% are assumed for inflation and schedule changes.

The following operating characteristics are provided for the first and third year of service:

	Year 1	Year 3
Annual operating cost	$19,800,000	$20,730,000
Annual revenues	$19,800,000	$20,730,000
Local Sources (total)	*$2,196,000*	*$3,104,000*
Farebox	*$2,196,000*	*$3,104,000*
State Sources	*0*	*0*
Federal Sources	*$17,604,000*	*$17,626,000*
Ridership projections (Annual rail)	4,100,000	4,600,000
Operating costs covered by farebox	11%	15%
Farebox ratio	$0.54	$0.67

After the third year of service, Proposition A and C monies (local funds) are planned to replace any reduction in federal operating sources.

Metro Green Line Construction Costs

The total construction cost of the Metro Green Line is $722.4 million including $106.4 million in state funds. A summary of the project construction costs shows:

Proposition C (40% discretionary)	$417 million
Proposition C (25% highway)	$199 million
State Proposition 108	$ 22.4 million
State Proposition 116	$ 84 million
Total	**$722.4 million**

Metro Bus Operating Costs

Operating costs for the bus system are shown below. The Intermediate Access Plan is cost neutral for the Metro Bus, however, a cost is incurred for the operation of the new rail feeder routes that were implemented commensurate with the rail start. A federal Congestion Management Air Quality (CMAQ) grant is being used to fund their operation.

The Full Access Plan, although approved in concept by the MTA Board of Directors, is unfunded and will not be implemented until a revenue source can be identified to operate it.

	Estimated Annual Cost (Increase)		
Service Plan	Metro Bus	New Rail Feeders	Combined
Intermediate Access	$0	$2.7	$2.7
Full Access	$1.6	$4.8	$6.4

These costs reflect MTA operating costs only and do not include other carriers. It was estimated that the municipal operators within the Green Line corridor would require about $8.0 million to implement their collective interface plans. Like the Full Access Plan, some municipal operators have had to scale back their interface plans or defer them altogether pending the acquisition of additional revenue sources.