DRAFT
ENVIRONMENTAL IMPACT REPORT

Fiscal Year 1995 Service Modifications

Los Angeles County
Metropolitan Transportation Authority

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DRAFT
ENVIRONMENTAL IMPACT REPORT

PROPOSED FISCAL YEAR 1995
TRANSIT SERVICE MODIFICATIONS

Los Angeles County
Metropolitan Transportation Authority

June, 1994

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Introduction

INTRODUCTION

PURPOSE

This Environmental Impact Report (EIR) has been prepared to analyze the potential environmental impacts associated with the action of the Los Angeles County Metropolitan Transportation Authority (MTA) to modify transit services on a system-wide basis. The service modifications -- combined with additional measures -- are considered necessary to meet a projected $126 million operating deficit for fiscal year 1995. The modifications are expected to be permanent unless, at some future date, the MTA identifies new long-term revenue sources or other approaches to balancing the budget.

LEGAL REQUIREMENTS AND AUTHORITY

This EIR has been prepared pursuant to the California Environmental Quality Act of 1970 (Public Resources Code, Section 21000 et seq.), commonly referred to as CEQA; the *Guidelines for Implementation of the California Environmental Quality Act* published by the Resources Agency of the State of California (California Code of Regulations, Section 15000 et seq.); and in accordance with the MTA's CEQA Guidelines.

This EIR was prepared by consultants under contract to MTA. However, all information, analyses, and conclusions contained in this document reflect the independent review and judgement of MTA.

THE EIR IS AN INFORMATION DOCUMENT

This EIR is intended to provide information to public agencies and the general public regarding the potential short-term and long-term impacts associated with modifying bus and light rail services throughout MTA's service area. Under the provisions of the *California Environmental Quality Act* (CEQA), the purpose of an EIR "is to identify the significant effects of a project on the environment, to identify alternatives to the project, and to indicate the manner in which significant effects can be mitigated or avoided." For the purpose of this EIR, adoption and implementation of service modifications is considered "the project," for the reasons described below under "Scope of the Project."

USE OF THE EIR

This EIR provides information to be used by decision makers, public agencies, and the general public. It is not an MTA policy document about the desirability of the project or any of the potential alternatives discussed. During the EIR review process, the MTA Board of Directors, other agencies, and the public will use the EIR to assess project effects and to impose conditions or propose alternatives designed to lessen potential environmental impacts.

The EIR may be used by the following agencies for the following discretionary actions:

Agency	Action
1. Los Angeles County MTA Board of Directors	• Adoption of Service Modifications
2. Local Service Operators • Commerce Municipal Bus Service • City of Arcadia • Santa Monica Municipal Bus Lines • Gardena Municipal Bus Lines • Long Beach Public Transit • Norwalk Transit System • Culver City Municipal Bus Lines • Montebello Municipal Bus Lines • City of Redondo Beach • Torrance Transit System • La Mirada Transit • Pomona Valley Transit • City of Los Angeles Department of Transportation • City of Santa Clarita • Antelope Valley Transit • Foothill Transit Zone	• Contracting or providing for services cut by MTA
3. School Districts • Los Angeles • Pasadena • Glendale • Alhambra • Compton • Downey • Glendora • Inglewood • San Gabriel • Lynwood • Santa Monica • Palos Verdes Peninsula • Paramount • Temple City	• Providing alternative bus service

Agency	Action
4. South Coast Air Quality Management District	• Changes to future Air Quality Management Plans to reflect changes in transit service
5. Southern California Association of Governments	• Changes to Regional Mobility Element and other transportation plans to reflect changes in transit service

Pursuant to Section 15168(c) of the CEQA Guidelines, various responsible agencies may use the information presented in this EIR to determine if additional environmental review is required for subsequent actions linked to the project. If an agency finds that a project will create no new environmental effects, or that no new mitigation measures would be required, the agency may deem the project or activity within the scope of the EIR, thus eliminating the need for further environmental documentation. Agencies will use a written checklist to evaluate individual project impacts versus the content of this EIR.

SCOPE OF THE PROJECT

MTA currently is considering several approaches to balancing the operations budget for FY 1995 and beyond. The strategies include:

(1) Implementing internal cost reductions, such as reducing staff;
(2) Amending labor contract agreements;
(3) Obtaining new revenues from a variety of sources, such as special vehicle registration fees in Los Angeles County or a countywide gasoline tax;
(4) Reallocating revenues from other MTA funds;
(5) Adjusting the bus and light rail fare structure; and
(6) Modifying bus and light rail service.

The MTA Board of Directors may choose to implement one, all, or a combination of the above strategies.

None of Strategies 1 through 4 meets the definition of a "project" under CEQA (Section 15378 of the CEQA Guidelines). Therefore, no environmental review is required for these actions.

Modifying the fare structure is an action exempt from CEQA review [Section 21080(b)(8)]. The findings for this exemption are outlined in the May __, 1994 MTA staff report to the Board of Directors regarding proposed fare structure modifications. Thus, proposed fare adjustments are not addressed in this EIR.

However, major modifications to bus and train schedules and the other service restructuring proposals currently under consideration have the potential to result in adverse environmental impacts and are subject to review under CEQA. Therefore, this EIR examines the potential impacts associated with implementing the proposed service modifications between FY 1995 and FY 1998.

SCOPE OF THE ENVIRONMENTAL ANALYSIS

Pursuant to MTA's guidelines to implement CEQA, an Initial Study was prepared for this project. The Initial Study concluded that the proposed project might have a significant effect on the environment with respect to the following issues:

- Transportation/Circulation;
- Air quality;
- Noise;
- Land use;
- Energy resources;
- Schools; and
- Roadway maintenance.

The Initial Study is included in Appendix A of this EIR. A Notice of Preparation (NOP) was issued by MTA on May 6, 1994 in accordance with the requirements of the CEQA Guidelines, Sections 15082(a), 15103, and 15375. The NOP indicated that an EIR was being prepared and invited comments on the proposed project from public agencies and the public at large. Comments that were received have been addressed during the preparation of the EIR and are also included in Appendix A.

This EIR does not address potential economic or social effects resulting from the project. CEQA states that such analysis need not be included in an EIR. For further discussion of this issue and relevant CEQA citations, please refer to page 3-2 of this EIR.

PUBLIC REVIEW AND COMMENT

This Draft EIR is available for public inspection at the MTA library, located at 425 South Main Street, 5th Floor, Los Angeles, California 90013. Copies are also available at the following locations:

Los Angeles Public Library
630 W. Fifth Street
Los Angeles, CA 90071

Santa Monica Library
1346 Sixth Street
Santa Monica, CA 90401

Pasadena Public Library
285 E. Walnut Street
Pasadena, CA 91101

Long Beach Public Library
Attn: Sciences Department
101 Pacific Ave.
Long Beach, CA 90822

Inglewood Public Library
101 W. Manchester
Inglewood, CA 90301

Sherman Oaks Public Library
14245 Moorpark St.
Sherman Oaks, CA 91423

Organizations and individuals are invited to comment on the information presented in the Draft EIR. Where possible, respondents should provide additional information which they feel is not contained in the EIR, or should indicate where the information may be found.

Following a 45-day period of circulation and review of the Draft EIR, all comments and MTA responses to those comments will be incorporated into a Final EIR prior to certification of the document by the MTA Board of Directors.

CONTACT PERSON

The primary person who may be contacted for additional information is Scott Greene with the MTA Scheduling and Operations Planning Department, 425 S. Main Street, 5th Floor, Los Angeles, California 90013. Mr. Greene can be reached by telephone at (213) 972-4838.

Executive Summary

EXECUTIVE SUMMARY

PURPOSE OF THIS EIR

This EIR has been prepared to analyze the potential environmental impacts associated with the Los Angeles County Metropolitan Transportation Authority's proposed action to modify transit services on a system-wide basis. The service modifications are considered necessary to meet a $126 million operating deficit for fiscal year 1995.

The purpose of this EIR is to inform the public and government agencies about the project's potential impacts, and to provide the MTA Board of Directors with environmental information to consider in its action to adopt service modifications. The EIR will be circulated for public review. Following the review, public hearings will be held by the MTA Board of Directors. Public hearings are tentatively scheduled for August of 1994.

BACKGROUND

MTA operates the regional bus and rail transportation services in Los Angeles County. MTA currently faces a potential $126 million operating deficit for fiscal year 1995. To meet the deficit, MTA has examined several possible strategies, including:

- Implementing internal cost reductions, such as reducing staff;
- Amending labor contract agreements;
- Obtaining new revenues from a variety of sources, such as special vehicle registration fees in Los Angeles County or a countywide gasoline tax;
- Reallocating revenues from other MTA funds;
- Adjusting the bus and light rail fare structure; and
- Modifying bus and light and heavy rail service.

The MTA Board of Directors may choose to implement one, all, or a combination of the above strategies.

The first four strategies are not considered a "project" under the definition of "project" contained in the CEQA Guidelines. Therefore, these actions are not subject to environmental review. The action to adjust fares is listed in CEQA as a categorical exemption. However, the action to modify transit service is considered a project subject to review. Thus, this EIR examines the environmental impacts associated with implementing proposed service modifications.

PROJECT DESCRIPTION

MTA proposes system-wide bus and rail service modifications. The project area therefore encompasses all of Los Angeles County and abutting portions of western Orange County, western San Bernardino County, and eastern Ventura County.

MTA has identified 22 separate classes, or "packages," of service modifications that have the potential to reduce operating costs. Throughout this EIR, the packages are identified by letters A through V. Each package proposes modifying a specific type of bus or rail service -- such as holiday or express service -- or eliminating bus lines that have become redundant with the addition of commuter rail service in Los Angeles County. Tables 1, 2, and 3 in Section 1.0 (Project Description) identify which lines would be affected by each package of proposed modifications. Maps illustrating each package are contained in Appendix B.

The service changes can be grouped into five broad categories:

- *Cancellation packages*, which propose cancelling specific types of bus and rail service;
- *Contracting/Cancellation packages*, which would involve either cancelling specific bus services or contracting out the services to another operator;
- *Restructuring packages*, which would alter the way MTA serves the downtown Los Angeles Central Business District and manages bus/rail interface;
- *Schedule Modification packages*, which would increase the time between departures along specific bus and rail lines, and shorten certain lines; and
- *Other Modifications*. This category includes only one package consisting of a series of modifications proposed by the consulting firm Deloitte-Touche. Deloitte-Touche performed a service modification study independent of MTA staff which recommended several system-wide changes.

The MTA expects to adopt a program of service modifications which includes all or part of a number of these packages. It is not the intent of the MTA to implement all packages on all bus lines.

MTA has preliminarily identified a preferred project consisting of all or portions of Packages A, B, D, I, K, L, R, S, T, and V. While the EIR examines this package combination as the "preferred project," MTA staff may make further revisions to the recommended project prior to scheduled Board hearings. The

Board will consider all recommendations before adopting the final service modifications project.

PROJECT OBJECTIVES

MTA's primary objective of the proposed FY 1995 Service Modifications project is to reduce operating expenses as one part of a comprehensive program to achieve a balanced budget for FY 1995 and subsequent years. In selecting the combination of packages defined as the preferred project, MTA considered the following additional project objectives:

- To minimize the number of transit-dependent riders adversely affected by the service modifications;
- To provide more efficient operations by balancing service versus actual ridership demand;
- To better integrate rail and bus service;
- To eliminate route duplications of parallel bus and rail lines;
- To provide better coordination between MTA and other operator services;
- To make optimum use of existing resources; and
- To minimize the potential environmental consequences associated with its action.

POTENTIALLY SIGNIFICANT ENVIRONMENTAL EFFECTS

MTA staff determined that an EIR should be prepared for the FY 1995 Service Modifications project to identify any potentially significant adverse impacts and to recommend mitigation that would substantially reduce these impacts. A summary of potentially significant impacts is included in Table S-1 at the end of this section.

The environmental analysis contained in this EIR uses the words "significant" and "potentially significant" in the discussion of environmental impact. CEQA defines a significant effect on the environment as, "...a substantial, or potentially substantial, adverse change in any of the physical conditions within the area affected by the project including land, air, water, flora, fauna, ambient noise, and objects of historic or aesthetic significance" (CEQA Guidelines, Section 15382).

MITIGATION MEASURES

Mitigation measures are changes to the proposed project that can avoid, reduce, or compensate for significant environmental effects. Mitigation measures identified in the EIR are summarized in Table S-1 for potentially significant project effects.

ALTERNATIVES TO THE PROJECT

This EIR examines two specific potential alternatives to the project: (1) the "no project" alternative required by CEQA; and (2) a reduced environmental impact alternative consisting of portions of Packages ______________.

The no project alternative assumes that no service modifications are adopted. To meet the operating deficit, MTA would be required to raise fares and identify new revenue sources. Although these two actions would not result in any direct physical environmental change, environmental impacts nonetheless could be greater compared to the preferred project. Implementation of many of the packages has the potential to improve air quality by removing diesel buses from the roadways sooner than anticipated by regional air quality plans. The preferred project has the potential to reduce average daily emission of NO_x and PM_{10}.

The reduced impact alternative assumes that MTA adopts the modifications that would result in the fewest environmental impacts. This alternative would involve implementation of portions of Packages. **[This discussion will be completed following identification of additional alternative by MTA staff.]**

In addition to considering these specific alternatives, the EIR considers the environmental effects of each of the 22 individual packages of service modifications, and the interrelationships between these packages. With this information, the EIR is intended to provide the MTA with sufficient background to choose an alternative which involves a different combination of these packages than those specifically discussed in the EIR.

There is a very large number of possible combinations of these 22 packages, and an unlimited number of alternatives involving implementing packages to a lesser degree or on only some lines. Because it would be impractical to review all these potential combinations, the EIR provides the flexibility to determine the impact of many different alternatives by combining the effects of the various packages.

AREAS OF CONTROVERSY AND ISSUES TO BE RESOLVED

The MTA Board of Directors held a public hearing on April 23, 1994 to present to the public the MTA's proposals to balance the operations budget. Issues discussed in detail included the proposed service modifications and potential changes to the transit fare structure. Many persons testified in opposition to both the service modifications and fare increases, citing the dependency of a large population on bus service. Testimony also identified a potential conflict between regional efforts to encourage transit use and MTA's proposal to cut transit service.

The MTA Board of Directors' decision regarding how to balance the budget will need to weigh the potential environmental consequences associated with proposed service modifications together with:

- Regional mobility and clean air goals contained in the Los Angeles County Congestion Management Program, Air Quality Management Plan, and Regional Mobility Element; and

- Increased transit fares and the associated effect on ridership.

TABLE S-1
SUMMARY OF ENVIRONMENTAL IMPACTS

ISSUE AREA	POTENTIAL ENVIRONMENTAL IMPACT	MITIGATION MEASURES	RESIDUAL IMPACTS
I. Unavoidable Significant Environmental Impacts (Lead Agency must issue a "Statement of Overriding Considerations" under Sections 15093 and 15126(b) of the state CEQA Guidelines if the agency determines these effects are significant and approves the project).			
Air Quality	Eight of the 22 packages, individually, have the potential to produce average daily pollutant emissions in excess of SCAQMD recommended threshold levels. These packages are: F, G, I L, M, O, S, and V. Packages involving substantial reductions in transit service could hinder attainment of AQMP goals. The preferred project (staff recommendation) includes four of the eight packages with significant effects. Therefore, the preferred project will also result in significant air quality impacts.	The following measures are incorporated into the staff recommended preferred project: 1. MTA will adopt reduction measures on the least efficient lines only, minimizing the number of auto trips generated as a result of bus service reduction. 2. MTA will continue to expand the rail system (Green Line and Red Line) to provide service to areas currently served by buses. Many of the measures in the CMP and AQMP will mitigate the impacts of the service modifications by encouraging transit use. This will increase revenue potential and reduce needed subsidies, allowing MTA to increase service in the future on lines which now have insufficient demand to support economical transit service.	Significant and unavoidable
Cumulative - Air Quality	MTA's action of adopting service modifications, combined with the proposed MTA fare hike, service adjustments by other transit providers, and rail service changes will have the cumulative effect of increasing average daily pollutant emissions and potentially compromising AQMP attainment goals.	1. To the extent possible, contract for services rather than cancel service to minimize effects. 2. Pursue obtaining new funding through legislative and voter actions. 3. Consider using fare modifications rather than service modifications, since the fare increases do not generally discourage ridership to the same extent as reductions in service.	Significant and unavoidable

TABLE S-1
SUMMARY OF ENVIRONMENTAL IMPACTS
(continued)

ISSUE AREA	POTENTIAL ENVIRONMENTAL IMPACT	MITIGATION MEASURES	RESIDUAL IMPACTS
Cumulative - Air Quality (continued)		4. Work to accelerate the application of SCAQMD Rule 1501 to work sites with fewer than 100 employees. 5. Implementation measures to increase efficiency of service in conformance with the AQMP and CMP. 6. Use transit funds to promote bicycle use, such as providing lockers and showers at appropriate locations, including schools. 7. Prior to cutting service, study the affected lines and revise the schedules to minimize the number of passengers affected by the service cuts. 8. For the time period consisting of 30 days before the service cut and 30 days after the service cut, provide literature on the affected lines that announces the service cuts and the revised schedule. The literature shall also provide information about using other bus routes and alternative transportation modes to reach common destinations. 9. For the time period consisting of 30 days before the service cut and 30 days after the service cut, provide a toll-free information hotline to provide affected passengers with assistance in planning for alternative bus and other modes of transportation.	

TABLE S-1
SUMMARY OF ENVIRONMENTAL IMPACTS
(continued)

ISSUE AREA	POTENTIAL ENVIRONMENTAL IMPACT	MITIGATION MEASURES	RESIDUAL IMPACTS
Cumulative - Air Quality (continued)		10. For the time period consisting of 30 days before the service cut and 30 after the service cut, offer a toll-free information hotline for people seeking and providing carpooling.	
II. Significant Environmental Impacts That Can Be Avoided or Mitigated (Section 15126(c) of the state CEQA Guidelines).			
Transportation/ Circulation - Transit Services	ANALYSIS BEING COMPLETED BASED UPON INFORMATION PROVIDED BY MTA STAFF.		

TABLE S-1
SUMMARY OF ENVIRONMENTAL IMPACTS
(continued)

ISSUE AREA	POTENTIAL ENVIRONMENTAL IMPACT	MITIGATION MEASURES	RESIDUAL IMPACTS
Land Use	Proposals to reduce transit service run counter to the Land Use-Transportation Policy adopted jointly in November, 1993 by the City of Los Angeles and MTA. The policy provides for better integration of land-use and transit planning to encourage transit use.	In order to mitigate the significant adverse effects on Land Use-Transportation Policy, MTA has included the following measures in the proposed project: 1. Service elimination will occur only on low-performing branch routes and route tails, and on segments duplicated by municipal operators. 2. Service restructuring will involve rerouting lines near rail stations and to feed the Metro Red Line, and rerouting lines which are also served by local municipal line segments. This approach ensures that passengers will continue to have access to their destinations, with the option of taking rail or municipal bus lines. 3. The system-wide service reductions (Package S) will represent an approximate three percent service level reduction, which is consistent with adopted Board policies to maintain service levels commensurate with ridership levels. (Ridership declined by about four percent during FY 1994.) The following mitigation measure is under the jurisdiction of other agencies and are being implemented by those agencies: 4. Municipal transit operators will adjust service as appropriate to meet demand for local trips.	Less than significant

TABLE S-1
SUMMARY OF ENVIRONMENTAL IMPACTS
(continued)

ISSUE AREA	POTENTIAL ENVIRONMENTAL IMPACT	MITIGATION MEASURES	RESIDUAL IMPACTS
Schools	MTA currently provides additional buses on existing lines during school commute hours (called "school trippers"). The school trippers are provided to alleviate overcrowding on the regular routes. On the average school day, school trippers transport approximately 6,900 students within 16 public school districts. Private school students also use the school trippers. Package J proposes cancellation of this service. Given the number of students potentially affected and the fact that the students could be forced to find other means of transport to school, impacts are significant.	The MTA staff recommended preferred project does not include Package J. Implementation of the following mitigation measures will be required *only* if Package J is selected. 1. MTA will adjust regular bus service schedules on lines with the eliminated day trippers to better correspond with the public and private school schedules. 2. MTA will provide impacted public and private schools with an ample supply of appropriate bus schedules at the beginning of each semester. The schools will distribute the schedules to students living in the affected service areas. The following measures can be implemented by school districts: 3. For schools with large numbers of impacted students, the responsible school district (or private school administration office) may contract with a bus operator to provide bus transportation to and from school. MTA will assist districts in locating potential alternative operators. To partially offset the cost of the contract, the school district can charge students a fare similar to the existing MTA bus fare.	Less than significant

TABLE S-1
SUMMARY OF ENVIRONMENTAL IMPACTS
(continued)

ISSUE AREA	POTENTIAL ENVIRONMENTAL IMPACT	MITIGATION MEASURES	RESIDUAL IMPACTS
Schools (continued)		4. For schools with large numbers of impacted students, school administration offices may develop a volunteer car pool program with interested parent and student drivers. Drivers can be given the option of collecting money for fuel costs from non-driving passengers. To further encourage carpooling, schools should provide preferential parking for multi-passenger vehicles. 5. The administration office of affected schools should coordinate with the city agencies to identify safe and convenient bicycle routes connecting affected service areas to the school. MTA can assist with distribution of information about bicycle routes to students in impacted service areas at the beginning of each semester. Schools can encourage bicycle transportation by providing secure storage for students' bicycles during the school day.	

TABLE S-1
SUMMARY OF ENVIRONMENTAL IMPACTS
(continued)

ISSUE AREA	POTENTIAL ENVIRONMENTAL IMPACT	MITIGATION MEASURES	RESIDUAL IMPACTS
Cumulative - Transit Services, Energy Resources, Schools	MTA's action to cut service, combined with an increase in fares and actions of other transit operators to cut service, will result in a system-wide decline in transit availability and reliability. Increased automobile use may increase fuel consumption. Increased fares may further discourage students from using transit, creating indirect traffic and air quality impacts.	1. To the extent possible, contract for services rather than cancel service to minimize effects. 2. Pursue obtaining new funding through legislative and voter actions. 3. Consider using fare modifications rather than service modifications, since the fare increases do not generally discourage ridership to the same extent as reductions in service. 4. Work to accelerate the application of SCAQMD Rule 1501 to work sites with fewer than 100 employees. 5. Implementation measures to increase efficiency of service in conformance with the AQMP and CMP. 6. Use transit funds to promote bicycle use, such as providing lockers and showers at appropriate locations, including schools. 7. Prior to cutting service, study the affected lines and revise the schedules to minimize the number of passengers affected by the service cuts.	

TABLE S-1
SUMMARY OF ENVIRONMENTAL IMPACTS
(continued)

ISSUE AREA	POTENTIAL ENVIRONMENTAL IMPACT	MITIGATION MEASURES	RESIDUAL IMPACTS
Cumulative - Transit Services, Energy Resources, Schools (continued)		8. For the time period consisting of 30 days before the service cut and 30 days after the service cut, provide literature on the affected lines that announces the service cuts and the revised schedule. The literature shall also provide information about using other bus routes and alternative transportation modes to reach common destinations. 9. For the time period consisting of 30 days before the service cut and 30 days after the service cut, provide a toll-free information hotline to provide affected passengers with assistance in planning for alternative bus and other modes of transportation. 10. For the time period consisting of 30 days before the service cut and 30 after the service cut, offer a toll-free information hotline for people seeking and providing carpooling. As indicated previously, significant cumulative impacts pacts to schools can be mitigated by implementing the mitigation measures identified in Section 3.6, (Schools).	

TABLE S-1
SUMMARY OF ENVIRONMENTAL IMPACTS
(continued)

ISSUE AREA	POTENTIAL ENVIRONMENTAL IMPACT	MITIGATION MEASURES	RESIDUAL IMPACTS
III. Environmental Impacts That Are Considered Adverse, But Less Than Significant (Sections 15126 and 15128 of the state CEQA Guidelines).			
Energy Resources	Seven of the 22 proposed packages have the potential to increase fuel consumption compared to existing conditions. These packages are: Package C (cancel service expansion program); Package F (cancel Sunday service); Package G (cancel Saturday service); Package I (cancel route segments serving some cities); Package J (contract or cancel school service); Package M (increase express service); and Package S (system-wide headway adjustments).	Impacts will be less than significant. No mitigation measures are required.	Adverse but less than significant.

TABLE S-1
SUMMARY OF ENVIRONMENTAL IMPACTS
(continued)

ISSUE AREA	POTENTIAL ENVIRONMENTAL IMPACT	MITIGATION MEASURES	RESIDUAL IMPACTS
Energy Resources	Combined, these seven packages have the potential to increase daily fuel consumption by approximately 34,000 gallons in 1995. This represents four tenths of one percent (0.4%) of the total daily vehicle-related fuel consumption in Los Angeles County. While the increase is not significant, any increased use of a non-renewable resource represents an adverse impact.		
IV. Impacts Identified in the EIR as Neither Significant nor Adverse: traffic impacts on the CMP network, noise, and roadway maintenance.			
Issues Identified in the Initial Study as Neither Significant nor Adverse: earth (grading, topography, seismic), water resources, plant life, animal life, light and glare, risk of upset, population, housing, public services (fire protection, law enforcement, parks), utilities, human health, aesthetics, recreation, and cultural resources.			

Project Description

METRO

1.0 PROJECT DESCRIPTION

The Los Angeles County Metropolitan Transportation Authority (MTA) operates the regional bus and rail transportation services in Los Angeles County. MTA currently faces a potential $126 million deficit for fiscal year 1995. To meet the deficit, MTA has examined several possible strategies, including modifying the current bus and train fare structure, seeking new revenue sources, and implementing system-wide changes to MTA's transit services. This EIR examines the proposed changes to transit services.

1.1 PROJECT LOCATION

MTA proposes system-wide bus and rail service modifications. The project area therefore encompasses all of Los Angeles County and abutting portions of western Orange County, western San Bernardino County, and eastern Ventura County. Figure 1 identifies the region serviced by MTA.

1.2 OVERVIEW AND BACKGROUND

MTA faces an estimated FY 1995 operating shortfall of $126 million. The projected deficit is considered a "structural deficit," meaning that in subsequent years, MTA will continue to lack adequate funds to operate the regional bus and rail system unless long-term strategies are implemented to balance the operations budget.

According to a 1993 internal MTA memorandum, the budget shortfall can be attributed to several factors:

(1) Bus revenues have remained constant while operating expenses have continued to rise. MTA has not raised bus or Blue Line rail fares above the present cash rate of $1.10 since 1988.

(2) A slight decline in federal transit assistance;

(3) Decreased revenues from Proposition A[1] and the State Transit Assistance (STA) funding sources;

(4) Minor reductions in service levels due to the transfer of service to other carriers (such as the Foothill Transit Zone);

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[1] In 1980, Los Angeles County voters approved Proposition A, which authorized the collection of a 1/2 percent sales tax to fund regional non-rail transit.

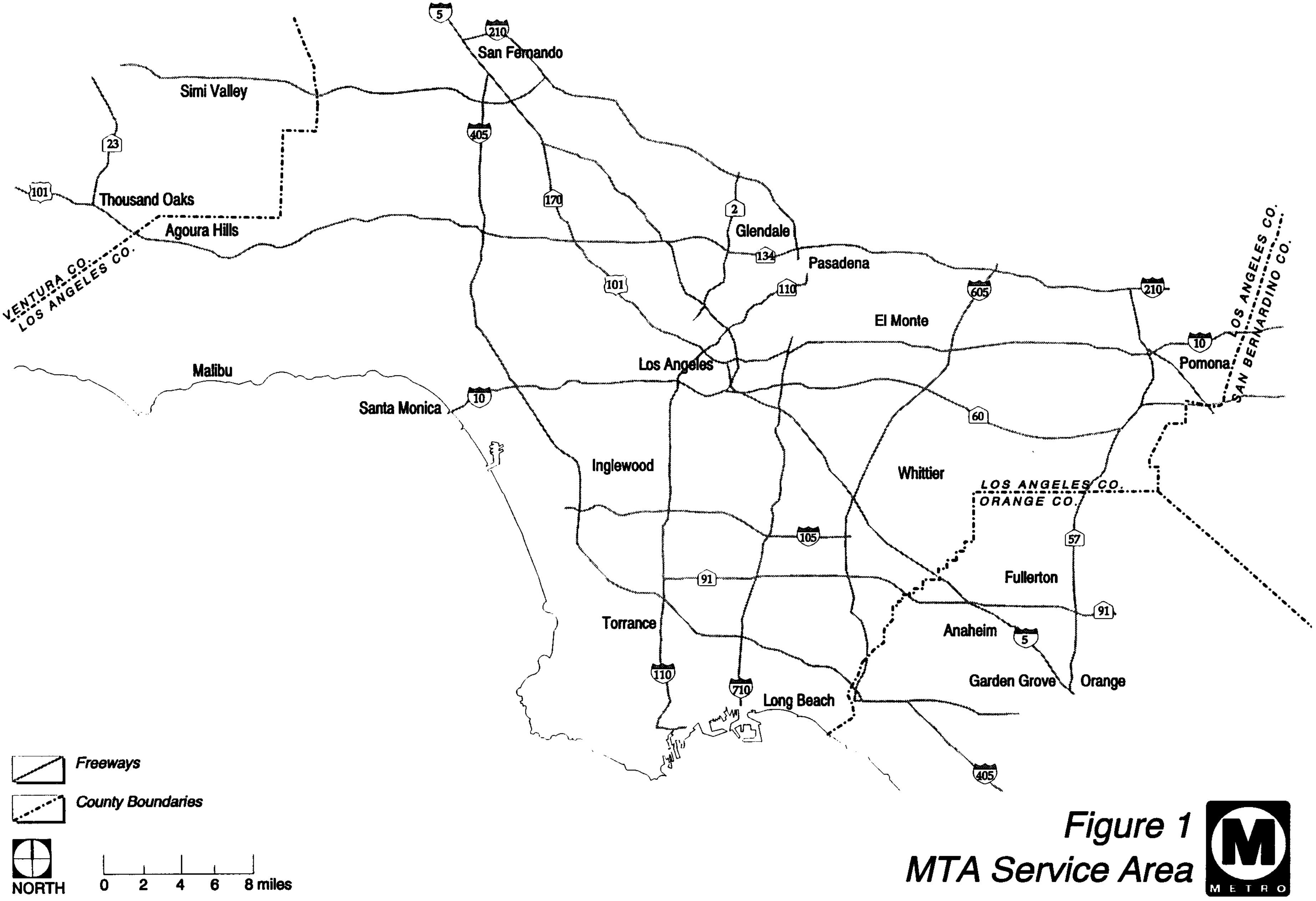

Figure 1
MTA Service Area

METRO

(5) Declining bus ridership; and

(6) Increased regulatory costs due to the Americans with Disabilities Act and federal Clean Air Act.

In previous fiscal years, MTA has balanced its operating budget by tapping reserve funds, achieving other operating efficiencies, and spending Proposition C discretionary funds.[2] Both the reserve funds and available monies from Proposition C have been exhausted. Therefore, MTA must now implement new strategies to meet the projected deficit.

MTA staff has identified six possible approaches to reducing costs and generating additional revenue as follows:

- Implementing internal cost reductions, such as reducing staff;
- Amending labor contract agreements;
- Obtaining new revenues from a variety of sources, such as special vehicle registration fees in Los Angeles County or a Countywide gasoline tax;
- Reallocating revenues from other MTA funds;
- Adjusting the bus and light rail fare structure; and
- Modifying bus and light rail service.

The MTA Board of Directors may choose to implement one, all, or a combination of the above strategies. Staff reductions occurred during fiscal year 1994. In March of 1994, the Board began review of a proposed new fare structure. As of the publication date of this Draft EIR, the Board had not reached a decision regarding a new bus and rail fare structure.

1.3 PROJECT CHARACTERISTICS

The MTA has identified 22 separate classes, or "packages," of service modifications that have the potential to reduce operating costs. Throughout this EIR, individual packages are identified by the letters A through V. Each package proposes modifying a specific type of bus or rail service -- such as holiday or express service -- or eliminating bus lines that have become redundant with the addition of commuter rail service in Los Angeles County. Table 1 summarizes each proposed package, and Table 2 identifies which specific bus and rail lines would be affected by the various packages. Appendix B of this EIR contains 22 maps illustrating which routes would be affected by each package.

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[2] Approved by voters in 1990, Proposition C established an additional 1/2 percent sales tax to fund transit projects. Ten percent of the collected proceeds is allocated by law to commuter rail; 25 percent is allocated for streets carrying transit; 20 percent goes to local transit agencies; five percent funds transit security services; and the remaining 40 percent represents discretionary funds.

As Table 1 indicates, the MTA has grouped the proposed service changes into five broad categories:

- *Cancellation packages*, which propose cancelling specific types of bus and rail service;

- *Contracting/Cancellation packages*, which would involve either cancelling specific bus services or contracting the services to another operator;

- *Restructuring packages*, which would alter the way MTA serves the downtown Los Angeles Central Business District and manages bus/rail interface;

- *Schedule Modification packages*, which would increase the time between departures along specific bus and rail lines, and shorten certain lines; and

- *Other Modifications*. This category includes only one package consisting of a series of modifications proposed by the consulting firm Deloitte-Touche. Deloitte-Touche performed a service modification study independent of MTA staff and recommended several system-wide changes, as described in Table 1.

Implementation of the second category -- contracting/cancellation -- could result in two very different impacts, depending upon whether MTA chooses to cancel identified services (see packages H through M) or simply contract with other transit operators to maintain the routes (such as Foothill Transit Zone or Santa Monica Municipal Bus Lines). If other transit operators are assigned contracts to operate the routes, no change in the existing physical environment will occur, and no adverse environmental impacts will result. Therefore, for the purposes of this EIR, service contracting is not considered part of the project.

Staff Recommended Preferred Project

In addition to considering these specific alternatives, the EIR considers the environmental effects of each of the 22 individual packages of service modifications, and the interrelationships between these packages. With this information, the EIR is intended to provide the MTA with sufficient background to choose an alternative which involves a different combination of these packages than those specifically discussed in the EIR.

There is a very large number of possible combinations of these 22 packages, and an unlimited number of alternatives involving implementing packages to a lesser degree or on only some lines. Because it would be impractical to review all these potential combinations, the EIR provides the flexibility to determine the impact of many different alternatives by combining the effects of the various packages.

The MTA Board of Directors may elect to adopt one, several, or no packages, or may select portions of specific packages to meet MTA's budget objectives. MTA staff has preliminarily identified a preferred project consisting of the 12 proposals listed in Table 4 and illustrated in Figure 2. Staff recommends adoption of entire packages or portions of packages which represent the lowest performing lines and line segments within the entire MTA transit system, or which duplicate service provided by other operators. Implementation of the staff recommendation has the potential to achieve $30 million in annual savings.

TABLE 1
SUMMARY OF POTENTIAL SERVICE MODIFICATIONS

PACKAGE	CATEGORY OF SERVICE CHANGE	POTENTIAL NET ANNUAL SAVINGS	INCLUDED IN PROPOSED PROJECT (Yes/No/ Partial)
	CANCELLATION PACKAGES		
A	**CANCEL OWL SERVICE** Late night service on 13 bus lines operating from 1:00 a.m. to 5:00 a.m. would be eliminated.	$1,177,216	Yes
B	**CANCEL SPECIAL EVENT SERVICE** Special bus service to events such as the New Year's parade, Rose Bowl, Dodger Stadium, and area racetracks would be discontinued. Ten special bus lines listed in this category are affected. Each line is currently operated with full public subsidies.	$2,092,649	Yes
C	**CANCEL SERVICE EXPANSION PROGRAM** MTA lines 114 and 130 would have their frequency reduced.	$571,797	No
D	**CANCEL BUS LINES THAT PARALLEL RAIL SERVICE** Four MTA bus lines that currently parallel one of several Metrolink and Blue Line service would be cancelled.	$3,633,200	Yes
E	**CANCEL ALL SERVICE ON HOLIDAYS** All bus and rail service currently operating on the six major public holidays of New Year's Day, Memorial Day, Independence Day, Labor Day, Thanksgiving Day and Christmas Day would be cancelled.	$4,007,356	No
F	**CANCEL ALL SERVICE ON SUNDAYS** The 124 bus lines and two rail lines shown in Table 2 now operating on Sundays would be cancelled under this proposal.	$17,999,686	No
G	**CANCEL ALL SATURDAY SERVICE** The 131 bus lines and two rail lines shown in Table 2 now operating on Saturdays would be cancelled under this proposal.	$31,724,468	No

TABLE 1
SUMMARY OF POTENTIAL SERVICE MODIFICATIONS
(continued)

PACKAGE	CATEGORY OF SERVICE CHANGE	POTENTIAL NET ANNUAL SAVINGS	INCLUDED IN PROPOSED PROJECT (Yes/No/ Partial)
	CONTRACTING/CANCELLATION PACKAGES		
H	**CANCEL OR CONTRACT NIGHT SERVICE** The 52 bus lines listed in Table 2 would have their night service (7-10 p.m.) trips either operated by other carriers under contract to the MTA or cancelled.	$7,558,176	No
I	**CANCEL OR CONVERT SELECTED LINE SEGMENTS TO CITY/MUNICIPAL OPERATORS** Approximately 60 MTA bus lines would have portions of their routes cancelled. These cancelled route segments could be operated by municipal operators. Table 3 identifies which lines would be affected.	$5,335,595	Partial
J	**CANCEL OR CONTRACT SCHOOL SERVICE** The 55 bus lines shown in Table 2 regularly operate additional service on school days. This additional service would be either operated by a private carrier under contract to the MTA or cancelled.	$875,508	No
K	**CANCEL OR CONTRACT ALL EXPRESS LINES THAT OPERATE ONLY DURING RUSH HOURS** The 18 bus lines that currently operate during weekday peak periods only would be operated under contract to the MTA by a private carrier or cancelled.	$4,860,901	Partial
L	**CANCEL OR CONTRACT LOW PERFORMING LOCAL BUS LINES** Seventeen daily services, twelve Saturday services and 18 Sunday low-performing services are affected by this proposal. The MTA would cancel all of these operations or contract them out to a private operator.	$5,533,000	Partial

TABLE 1
SUMMARY OF POTENTIAL SERVICE MODIFICATIONS
(continued)

PACKAGE	CATEGORY OF SERVICE CHANGE	POTENTIAL NET ANNUAL SAVINGS	INCLUDED IN PROPOSED PROJECT (Yes/No/ Partial)
M	**CREATE OR CONTRACT NEW LINES TO OPERATE DURING RUSH HOURS ON HEAVY PATRONAGE LINES** Eleven MTA local bus lines would have their additional rush hour service operated by a private operator. These bus lines operate significantly more service during weekday peak periods than during the midday. This additional service would be replaced by service contracted by the MTA.	$3,428,613	No
	RESTRUCTURING PACKAGES		
N	**ESTABLISH NEW LACBD BUS TERMINAL** The 30 lines shown in Table 2 would have their routes changed in downtown Los Angeles to end service at a new terminal near 9th and Olive Streets, rather than the existing terminal near 18th Street.	$2,890,571	No
O	**MTA COORDINATED DUAL HUB ON EL MONTE-HARBOR TRANSITWAY** This proposal would join the MTA express lines listed in Table 2 together with other municipal lines into one common route operating between El Monte and Artesia, with freeway stops at key locations. This option would require the route segments on the suburban surface street portion of the existing routes to be replaced by new local routes.	$3,570,436	No
P	**IMPLEMENT LACBD BUS INTERCEPT PROGRAM** The MTA bus lines shown in Table 2 would be modified in downtown Los Angeles to end their routes on the periphery of the LACBD. A shuttle bus network of routes would operate in the downtown area, transporting passengers from the intercept points to their destinations in the LACBD. Satellite transfer lots would need to be constructed on the periphery of downtown.	$3,602,980	No

TABLE 1
SUMMARY OF POTENTIAL SERVICE MODIFICATIONS
(continued)

PACKAGE	CATEGORY OF SERVICE CHANGE	POTENTIAL NET ANNUAL SAVINGS	INCLUDED IN PROPOSED PROJECT (Yes/No/ Partial)
Q	**IMPLEMENT GREEN LINE INTERFACE PLAN** The 39 MTA bus routes listed in Table 2 could be modified to provide direct connections with the 14 rail stations to be served by the Metro Green line. This option may also involve some municipal routes to be realigned or extended in order to provide direct access to the rail line.	($270,000)	No
R	**IMPLEMENT RED LINE INTERFACE PLAN (Segment-2A)** The nine MTA bus routes in Table 2 would be modified to provide direct connections with rail stations to be served along the second segment of the Metro Red Line. The second segment consists of the extension of the subway from Alvarado Station westward to Wilshire Boulevard and Western Avenue.	$2,042,007	No
	SCHEDULE MODIFICATIONS		
S	**REDUCE LEVELS OF BUS SERVICE** The bus lines listed in this category would have their frequency of service reduced. (-) indicates a service level reduction of less than 25% while (+) indicates a reduction of over 25% may be made.	$12,093,450	Partial
T	**OPERATE UP TO EVERY 120 MINUTES** The 15 bus lines listed in Table 2 would have their frequency of service reduced from 60 minutes to as much as two hours.	$3,093,613	Partial
U	**REDUCE RAIL SERVICE LEVELS** Service frequency on the Metro Blue Line and Metro Red Line would be reduced to reflect actual rider demand.	$975,000	No

TABLE 1
SUMMARY OF POTENTIAL SERVICE MODIFICATIONS
(continued)

PACKAGE	CATEGORY OF SERVICE CHANGE	POTENTIAL NET ANNUAL SAVINGS	INCLUDED IN PROPOSED PROJECT (Yes/No/ Partial)
	OTHER MODIFICATIONS		
V	**CONSULTANT SERVICE REDUCTION PROPOSALS** The bus lines listed in this category are proposed by transportation consultant Deloitte Touche to be modified as follows: Lines 70, 76, 78, 79, 378, 379, 483, 485, 487, 489 to be cut back at Union Station; Lines 21, 320, 322 to be cut back at Westlake Station; Line 60 to be cut back from Union Station and extended to Westlake Station; Line 127 to be cut back at Compton Station; Line 497 to end in Pomona; Line 418 to be cut back at Burbank Metrolink Station; Routes 53 and 55 to be combined with Lines 70 and 76; Line 264 to be cut back east of Garvey Ave.; Line 270 to be deleted north of El Monte Station. Consider establishing transportation zones in the following geographic areas: San Fernando Valley, South Bay and/or South Eastern Cities. Additional consultant recommendations are included in categories A through U.	Variable	Partial

TABLE 2
IDENTIFICATION OF AFFECTED LINES BY PACKAGE

		CANCELLATION PACKAGES							CONTRACTING/CANCELLATION PACKAGES						RESTRUCTURING PACKAGES					SCHEDULE MODIFICATIONS			*
		CNCEL OWL SERV.	CNCEL SPCIAL EVENT SERV.	CANCEL SERVICE EXPANSION PROGRAM	CANCEL BUS LINE TO FEED RAIL	CANCEL ALL SERV. ON HLIDAYS	CNCEL ALL SERV. ON SUN.	CNCEL ALL SERV. ON SAT.	CANCEL OR CONTRACT NIGHT SERVICE TRIPS	CANCEL OR CONTRACT LINE SEGMENTS TO CITY OPERATION	CANCEL OR CONTRACT SCHOOL SERVICE	CANCEL OR CONTRACT ALL PEAK ONLY EXPRESS LINES	CANCEL OR CONTRACT LOW PERF. LOCAL LINES	CREATE & CONTRACT NEW LINES FOR HEAVY PEAK LINES	ESTB. NEW DOWN-TOWN BUS TERM	DUAL HUB ON EL MONTE TO HARBOR TRANSWAY	IMPLEMENT LACBD BUS INTERCEPT PROGRAM	IMPLEMENT GREEN LINE INTERFACE	IMPLEMENT RED LINE INTERFACE	REDUCE BUS SERV. LEVELS	OPERATE UP TO EVERY 120 MIN.	REDUCE RAIL SERVICE LEVELS	MISC.
LINE NO.	LINE NAME	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V
	RAIL SERVICE																						
	METRO BLUE LINE					1	1	1														1	
	METRO RED LINE					1	1	1														1	
	BUS SERVICE																						
1	HOLLYWOOD BL.					1	1	1	2		1				2		4			1-			
2	SUNSET BL.					1	1	1	2		1				2		4			1-			
3	SUNSET BL. - BEVERLY DR.					1	1	1		1					2		4			1-			
4	SANTA MONICA BL.					1	1	1	2	1	1				2		4			1-			
10	MELROSE AV. - VIRGIL AV. - TEMPLE ST.	1				1	1	1			1						4			1-			
11	MELROSE AV.-VERMONT AVE.-TEMPLE ST.							1		1							4			1-			
14	BEVERLY BL.					1	1	1	2		1						4			1-			
16	WEST THIRD ST.					1	1	1	2					3			4			1-			
18	WEST SIXTH ST. - WHITTIER BL.	1				1	1	1									4			1-			
20	WILSHIRE BL.					1	1	1	2	1	1						4			1-			
21	WILSHIRE BL. - UCLA							1	2								4			1-			1
22	WILSHIRE BL.-CENTURY CITY-BRENTWOOD					1	1	1		1							4			1-			
26	SEVENTH ST.-VIRGIL AV.-FRANKLIN AV.					1	1	1	2	1				3			4			1-			
27	WEST OLYMPIC BL. - BURTON WAY					1	1	1		1							4			1-			
28	WEST OLYMPIC BL.	1				1	1	1	2		1						4			1-			
30	WEST PICO BL-E. FIRST ST-FLORAL DR					1	1	1	2	1	1						4			1-			
31	WEST PICO BL. - EAST FIRST ST.					1	1	1	2	1	1						4			1-			
33	VENICE BL.					1	1	1	2	1	1						4			1-			
34	VENICE BL. - ROSE AV.									1			ALL				4						
37	WEST ADAMS BL.					1	1	1									4			1-			
38	WEST JEFFERSON BL.	1				1	1	1	2		1						4			1-			
40	HAWTHORNE BL. - LA - COUNTY JAIL					1	1	1	2		1						4	1		1-			
42	LA - WESTCHESTER - LAX					1	1	1									4			1-			
45	BROADWAY-MERCURY AVE					1	1	1	2								4	1		1-			
46	GRIFFIN AVE									1							4						
48	MAPLE AVE.-SOUTH MAIN ST.					1	1	1		1							4	1		1-			
51	SAN PEDRO ST-AVALON BL-COMPTON BL					1	1	1	2					3			4	1		1-			
53	SOUTH CENTRAL AVE.					1	1	1	2		1			3			4	1		1-			
55	LA-COMPTON AVE-IMPERIAL STATION					1	1	1	2								4	1		1-			
56	LA-WILMINGTON AVE-IMPERIAL STA				1	1	1	1					ALL				4	1					

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* MISCELLANEOUS SERVICE MODIFICATIONS PROPOSED BY TRANSPORTATION CONSULTANT DeLOITTE & TOUCHE.

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TABLE 2
IDENTIFICATION OF AFFECTED LINES BY PACKAGE
(Continued)

		CANCELLATION PACKAGES							CONTRACTING/CANCELLATION PACKAGES						RESTRUCTURING PACKAGES					SCHEDULE MODIFICATIONS			*
		CNCEL OWL SERV.	CNCEL SPCIAL EVENT SERV.	CANCEL SERVICE EXPANSION PROGRAM	CANCEL BUS LINE TO FEED RAIL	CANCEL ALL SERV. ON HLIDAYS	CNCEL ALL SERV. ON SUN.	CNCEL ALL SERV. ON SAT.	CANCEL OR CONTRACT NIGHT SERVICE TRIPS	CANCEL OR CONTRACT LINE SEGMENTS TO CITY OPERATION	CANCEL OR CONTRACT SCHOOL SERVICE	CANCEL OR CONTRACT ALL PEAK ONLY EXPRESS LINES	CANCEL OR CONTRACT LOW PERF. LOCAL LINES	CREATE & CONTRACT NEW LINES FOR HEAVY PEAK LINES	ESTB. NEW DOWN-TOWN BUS TERM	DUAL HUB ON EL MONTE TO HARBOR TRANSWAY	IMPLEMENT LACBD BUS INTERCEPT PROGRAM	IMPLEMENT GREEN LINE INTERFACE	IMPLEMENT RED LINE INTERFACE	REDUCE BUS SERV. LEVELS	OPERATE UP TO EVERY 120 MIN.	REDUCE RAIL SERVICE LEVELS	MISC.
LINE NO.	LINE NAME	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V
60	LONG BEACH BL.-SANTA FE AVE.					1	1	1	2	1	1						4	1		1-			1
65	WASHINGTON BLVD.-INDIANA ST.-GAGE AVE					1	1	1		1				3			4			1-			
66	EAST OLYMPIC BLVD.-W. EIGHTH ST.					1	1	1	2		1			3			4		3	1-			1
67	OLYMPIC BLVD.													3			4		3	1-			1
68	WEST WASHINGTON BLVD.-BROOKLYN AVE.					1	1	1	2	1	1						4			1-			
70	LOS ANGELES-EL MONTE-VIA GARVEY AVE.					1	1	1	2						2		4			1-			1
71	CITY TERRACE-SYBIL BRAND					1	1	1			1						4			1-			
76	L. A.-EL MONTE VIA MAIN ST.-VALLEY BL	1				1	1	1	2						2		4			1-			1
78	LA-ALHAMBRA-S. ARCADIA VIA LAS TUNAS					1	1	1	2	1					2		4			1-			1
79	LOS ANGELES-ARCADIA VIA HUNTINGTON DR					1	1	1	2						2		4			1-			1
81	FIGUEROA ST.					1	1	1		1							4	1		1-			
83	PASADENA AVE.-YORK BLVD.	1				1	1	1									4			1-			
84	CYPRESS AVE.-EAGLE ROCK BLVD.	1				1	1	1	2								4			1-			
85	VERDUGO RD.-GLENDALE COLLEGE								2	1							4						
90	LA-SUNLAND-SYLMAR VIA PENN.AVE.					1	1	1			1			3			4			1-			
91	LA-SUNLAND-SYLMAR VIA LA CRES. AVE					1	1	1						3			4			1-			
92	LA-GLND-BURBNK-SAN FERN VIA GLENDALE	1				1	1	1	2	1					2		4			1-			
93	LA-GLND-BURBNK-SAN FERN VIA ALLESANDR					1	1	1	2	1					2		4			1-			
94	LOS ANGELES-SAN FERNANDO					1	1	1	2	1	1				2		4			1-			
96	LA-BURBNK-N. HOLLYWOOD VIA LA ZOO					1	1	1		1	1				2		4			1-			
97	LA-RVERSDE DR-SHRMN OAKS-VIA LA ZOO					1	1	1			1				2		4			1-			
102	E. JEFFERSON BLVD.-COLISEUM ST.					1	1	1		1	1		SU	3						1-			
104	E.LA-LA MRDA VIA E. WASHINGTON BL																			1+			
105	VERNON AVE.-LA CIENEGA BLVD.	1				1	1	1	2	1										1-			
107	54TH ST-FAIRVIEW BL-SANTA ANA ST					1	1	1		1			SU							1+			
108	SLAUSON AVE.					1	1	1		1										1-			
110	GAGE AV-CENTINELA BL-FOX HLS MALL					1	1	1	2											1-			
111	LAX-FLORENCE AVE.-LEFFINGWELL RD.	1				1	1	1	2	1	1									1-			
112	FLORENCE AVE.- OTIS ST.					1	1	1		1								1					
114	FLORENCE STA-SANTA ANA ST.-CLARA ST.			1																			
115	MANCHESTER AVE.-FIRESTONE BLVD.					1	1	1	2		1									1-			
117	CENTURY BL-TWEEDY BL-RANCHO LOS AMIGO					1	1	1	2	1								1		1-			
119	108TH ST.-FERNWOOD AVE.												ALL					1			1		

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(Continued)

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LINE NO.	LINE NAME	CNCEL OWL SERV. A	CNCEL SPCIAL EVENT SERV. B	CANCEL SERVICE EXPANSION PROGRAM C	CANCEL BUS LINE TO FEED RAIL D	CANCEL ALL SERV. ON HLIDAYS E	CNCEL ALL SERV. ON SUN. F	CNCEL ALL SERV. ON SAT. G	CANCEL OR CONTRACT NIGHT SERVICE TRIPS H	CANCEL OR CONTRACT LINE SEGMENTS TO CITY OPERATION I	CANCEL OR CONTRACT SCHOOL SERVICE J	CANCEL OR CONTRACT ALL PEAK ONLY EXPRESS LINES K	CANCEL OR CONTRACT LOW PERF. LOCAL LINES L	CREATE & CONTRACT NEW LINES FOR HEAVY PEAK LINES M	ESTB. NEW DOWN-TOWN BUS TERM N	DUAL HUB ON EL MONTE TO HARBOR TRANSWAY O	IMPLEMENT LACBD BUS INTERCEPT PROGRAM P	IMPLEMENT GREEN LINE INTERFACE Q	IMPLEMENT RED LINE INTERFACE R	REDUCE BUS SERV. LEVELS S	OPERATE UP TO EVERY 120 MIN. T	REDUCE RAIL SERVICE LEVELS U	MISC. V
120	IMPERIAL HWY.					1	1	1		1								1		1-	1		
124	EL SEGUNDO BLVD.-SANTA FE AVE.					1	1	1		1			ALL					1		1+			
125	ROSECRANS AVE.					1	1	1										1		1-			
126	YUKON AVE.-MANHATTAN BCH BLVD.												ALL					1			1		
127	COMPTON BLVD.-BELLFLOWER BLVD.									1	1		ALL							1+	1		1
128	ALONDRA BLVD.																			1+	1		
130	ARTESIA BLVD.			1		1	1	1		1			ALL							1+			
152	FALLBROOK AV-ROSCOE BL-VINLND AV-BURB					1	1	1		1	1									1-	1		
154	TAMPA A-VENTURA BL-BURBANK BL-OXNARD							1													1		
158	DEVONSHIRE ST.-WOODMAN AVE.					1	1	1					SU							1-			
161	WESTLAKE-CANOGA PARK					1	1	1					ALL							1+			
163	SHERMAN WAY					1	1	1		1										1-			
164	VICTORY BLVD.					1	1	1												1-			
165	VANOWEN ST.					1	1	1			1									1-			
166	NORDHOFF ST.-OSBORNE ST.					1	1	1			1									1-			
167	PLUMMER ST.-VAN NUYS BLVD.					1	1	1	2		1		SA/SU							1-			
168	LASSEN ST.-PAXTON ST.							1					ALL							1+			
169	SATICOY ST.-SUNLAND BLVD.					1	1	1			1									1+			
170	HELLMAN AV-EL MONTE VIA S.EL MONTE									1											1		
175	FOUNTAIN AV-TALMADGE ST-HYPERION AV										1									1+			
176	GLASSELL PK-HGHLND PK-ALHMBRA-EL MNTE									1											1		
177	GLND-LA CANADA-PASADENA-MONRVA-DUARTE									1			ALL								1		
180	HLLYWOOD-GLND-PASDNA VIA COLORADO BL	1				1	1	1	2	1	1									1-			
181	HLLYWOOD-GLND-PASDNA VIA YOSEMITE DR					1	1	1	2	1										1-			
183	MAGNOLIA BL-KENNETH RD-E.COLORADO ST					1	1	1			1									1+			
188	N.FAIR OAKS AV-COLORADO BL-DUARTE RD					1	1	1		1										1+			
200	ALVARADO ST.-ECHO PARK AVE.					1	1	1												1-			
201	SILVERLAKE BLVD.					1	1	1												1+			
202	WILLOWBROOK-COMPTON-WILMINGTON					1	1	1	2	1			SA/SU					1			1		
204	VERMONT AVE.					1	1	1	2									1		1-			
205	WILLOWBROOK-HARBOR CITY-SAN PEDRO					1	1	1	2	1			SU					1		1+			
206	NORMANDIE AVE.					1	1	1	2		1							1		1-			
207	WESTERN AVE.					1	1	1	2		1							1		1-			
208	BEACHWOOD DRIVE SHUTTLE (LOOP)					1	1	1					ALL										
209	VAN NESS AVE.-ARLINGTON AVE.							1					SA					1	3	1-			1

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210	VINE ST.-CRENSHAW BLVD.					1	1	1	2									1		1-			
211	PRAIRIE AVE.										1							1			1		
212	HOLLYWOOD WAY-LA BREA AVE.					1	1	1	2											1-			
215	INGLEWOOD AV-REDONDO BCH-DEL AMO CTR									1								1			1		
217	FAIRFAX AVE.					1	1	1	2											1-			
220	ROBERTSON BL-CULVER BL-LAX					1	1	1		1			ALL					1		1+			
225	AVIATION BL-PALOS VERDES PENINSULA							1		1	1		ALL					1			1		
226	AVIATION BL-PALOS VERDES DR W.							1					ALL					1			1		
228	COLDWATER CANYON AV-LANKERSHIM BL					1	1	1			1									1+			
230	LAUREL CANYON BLVD.					1	1	1			1									1+			
232	LONG BEACH-LAX					1	1	1	2									1		1-			
234	SEPULVEDA BL-BRAND BL-SAYRE ST					1	1	1			1									1			
236	BALBOA BL-VENTURA BL-WOODLEY AV					1	1	1					ALL										
239	WHITE OAK AV-ZELZAH AV-RINALDI ST					1	1	1			1									1+			
240	RESEDA BLVD.					1	1	1												1+			
243	DE SOTO AV-VENTURA BL-WINNETKA AV										1			3						1+			
245	TOPANGA CYN-MULHOLLAND-VALLEY CR.BL					1	1	1		1	1									1+			
250	BOYLE AV												ALL							1			
251	103RD STA-SOTO ST-DALY ST					1	1	1	2	1	1									1-			
252	CALIFORNIA AV-SOTO ST-HUNTINGTON DR					1	1	1	2	1	1							1		1-			
253	EUCLID AVE.-EVERGREEN AVE.					1	1	1					ALL							1			
254	120TH ST.-HUNTINGTON PARK-LORENA ST.					1	1	1		1			SU					1		1+			
255	GRIFFIN AV-COUNTY HOSP-ROWAN AV					1	1	1												1			
256	EASTERN AV-AVE 64-N. HILL AV					1	1	1		1										1+			
258	ARIZONA AVE.-ALHAMBRA									1										1+			
259	EASTERN AV-ARIZONA AV-EMERY PARK									1										1+			
260	WARDLOW STA-PASDNA-ALTADNA VIA ATLNTC					1	1	1										1		1-			
262	GARFIELD AVE.					1	1	1												1+			
264	SAN GABRIEL BLVD.-ALTADENA DR.												ALL							1+			
265	PARAMOUNT BLVD.-PICO RIVERA												ALL					1		1			
266	LAKEWOOD BLVD.-ROSEMEAD BLVD.					1	1	1		1								1		1-			1

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4 = CHANGE TO BE IMPLEMENTED IN FY 98 (JULY 97-JUNE 98)

* MISCELLANEOUS SERVICE MODIFICATIONS PROPOSED BY TRANSPORTATION CONSULTANT DeLOITTE & TOUCHE.

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TABLE 2
IDENTIFICATION OF AFFECTED LINES BY PACKAGE
(Continued)

		CANCELLATION PACKAGES							CONTRACTING/CANCELLATION PACKAGES						RESTRUCTURING PACKAGES					SCHEDULE MODIFICATIONS			*
LINE NO.	LINE NAME	CNCEL OWL SERV. A	CNCEL SPCIAL EVENT SERV. B	CANCEL SERVICE EXPANSION PROGRAM C	CANCEL BUS LINE TO FEED RAIL D	CANCEL ALL SERV. ON HLIDAYS E	CNCEL ALL SERV. ON SUN. F	CNCEL ALL SERV. ON SAT. G	CANCEL OR CONTRACT NIGHT SERVICE TRIPS H	CANCEL OR CONTRACT LINE SEGMENTS TO CITY OPERATION I	CANCEL OR CONTRACT SCHOOL SERVICE J	CANCEL OR CONTRACT ALL PEAK ONLY EXPRESS LINES K	CANCEL OR CONTRACT LOW PERF. LOCAL LINES L	CREATE & CONTRACT NEW LINES FOR HEAVY PEAK LINES M	ESTB. NEW DOWN-TOWN BUS TERM N	DUAL HUB ON EL MONTE TO HARBOR TRANSWAY O	IMPLEMENT LACBO BUS INTERCEPT PROGRAM P	IMPLEMENT GREEN LINE INTERFACE Q	IMPLEMENT RED LINE INTERFACE R	REDUCE BUS SERV. LEVELS S	OPERATE UP TO EVERY 120 MIN. T	REDUCE RAIL SERVICE LEVELS U	MISC. V
267	TEMPLE CITY BL-DEL MAR BL-LINCOLN AV					1	1	1					SU							1-			
268	WASHINGTON BLVD.-BALDWIN AVE.					1	1	1					SU							1-			
270	MONROVIA-EL MONTE-CERRITOS					1	1	1			1		SU					1					1
275	PICO RIVERA-WHITTIER-CERRITOS												ALL										
304	SANTA MONICA BLVD. LIMITED									1							4			1-			
320	WILSHIRE BLVD.-LIMITED					1	1	1		1							4		3	1-			1
322	WILSHR BL-CENTURY CITY-BRENTWOOD-LTD																4		3	1-			1
328	W. OLYMPIC BLVD. LIMITED																4			1-			
333	VENICE BLVD. LIMITED																4			1-			
345	SOUTH BROADWAY LIMITED																4			1-			
354	VERMONT AVE. LIMITED																	1		1-			
357	WESTERN AVE. LIMITED																	1		1-			
378	L. A.-ALHAMBRA-SOUTH ARCADIA LIMITED														2		4			1-			1
379	LA-ARCADIA VIA HUNTINGTON DR LTD		1												2		4			1-			1
401	LA-PASADENA-N. ALLEN AV EXP					1	1	1							2		4						
402	LA-PASADENA PARK-RIDE EXP											1			2		4			1-			
406	LA-SUNLAND EXP VIA PENNSYLVANIA AV											1					4						
407	LA-SUNLAND EXP VIA LA CRESCENTA AV											1					4						
410	LA-GLENOAKS BL EXP				1							1			2		4						
412	LA-BURBNK MEDIA DIST-N.HLLYWOOD-VLY P											1			2		4						
418	LA-ROSCOE BL-NORTHRIDGE EXPRESS										1	1			2		4						1
420	LA-VAN NUYS-PANORAMA CITY EXPRESS					1	1	1	2						2		4			1-			
424	LA-VENTURA BL-WARNER CENTER EXP	1				1	1	1	2		1				2		4			1-			
425	LA-VAN NUYS-VENTURA BLS-EXP-LTD										1				2		4			1-			
426	SAN FERNANDO VLY-WILSHIRE BL-LA EXP											1					4		3				1
427	LA-WARNER CNTR-CANOGA PARK-EXP											1			2		4						
429	LA-SUNSET BL-WESTWOOD EXP											1			2		4						
434	LA-SANTA MONICA-MALIBU-TRANCAS EXP					1	1	1		1	1						4		3	1-			1
436	LA-VENICE BL-OCEAN PARK-EXP											1					4		3				1
439	LA-LAX-REDONDO BEACH EXP					1	1	1		1	1						4	1	3	1-			1
442	LA-HAWTHORNE EXP											1				3	4	1					
443	LA-N.TORRANCE-REDONDO BCH-P.V. EXP										1	1				3	4						
444	LA-W.TRRNCE-ROLLNG HLS-RANCHO P.V.EXP					1	1	1								3	4			1-			
445	LA-ALPINE VILLAGE-SAN PEDRO EXP.											1				3	4						
446	LA-CARSON-WILMINGTON-SAN PEDRO EXP	1				1	1	1	2							3	4			1-			

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* MISCELLANEOUS SERVICE MODIFICATIONS PROPOSED BY TRANSPORTATION CONSULTANT DeLOITTE & TOUCHE.

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TABLE 2
IDENTIFICATION OF AFFECTED LINES BY PACKAGE
(Continued)

LINE NO.	LINE NAME	CANCELLATION PACKAGES							CONTRACTING/CANCELLATION PACKAGES						RESTRUCTURING PACKAGES					SCHEDULE MODIFICATIONS			*
		CNCEL OWL SERV.	CNCEL SPCIAL EVENT SERV.	CANCEL SERVICE EXPANSION PROGRAM	CANCEL BUS LINE TO FEED RAIL	CANCEL ALL SERV. ON HLIDAYS	CNCEL ALL SERV. ON SUN.	CNCEL ALL SERV. ON SAT.	CANCEL OR CONTRACT NIGHT SERVICE TRIPS	CANCEL OR CONTRACT LINE SEGMENTS TO CITY OPERATION	CANCEL OR CONTRACT SCHOOL SERVICE	CANCEL OR CONTRACT ALL PEAK ONLY EXPRESS LINES	CANCEL OR CONTRACT LOW PERF. LOCAL LINES	CREATE & CONTRACT NEW LINES FOR HEAVY PEAK LINES	ESTB. NEW DOWN-TOWN BUS TERM	DUAL HUB ON EL MONTE TO HARBOR TRANSWAY	IMPLEMENT LACBD BUS INTERCEPT PROGRAM	IMPLEMENT GREEN LINE INTERFACE	IMPLEMENT RED LINE INTERFACE	REDUCE BUS SERV. LEVELS	OPERATE UP TO EVERY 120 MIN.	REDUCE RAIL SERVICE LEVELS	MISC.
		A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V
447	LA-CARSON-WILMNGTN-SAN PEDRO-7TH ST					1	1	1		1						3	4			1-			
457	LA-EAST LONG BEACH EXP				1							1					4						
460	LA-NORWALK-DISNEYLAND					1	1	1		1							4			1-			
462	LA-SANTA FE SPNGS-NRWLK-HAWAIN GARD					1	1	1									4			1-			
466	LA-DWNEY-LA MRADA P-N-RIDE EXP											1					4						
470	LA-WHITTIER-LA HABRA-BREA MALL EXP					1	1	1		1	1						4			1-			
471	LA-WHITTIER-PUENTE HILLS MALL EXP					1	1	1		1	1						4			1-			
483	LA-ALTADENA VIA FAIR OAKS AVE EXP					1	1	1							2		4			1-			1
484	LA-EL MONTE-LA PUENTE-POMONA-ONTARIO					1	1	1		1					2	3	4			1-			
485	LA-PASADENA-ALTADENA VIA LAKE AVE.					1	1	1							2		4			1-			1
487	LA-SAN GABRIEL-SIERRA MADRE EXPRESS					1	1	1									4			1-			1
489	LA-HASTINGS RANCH EXP											1					4						1
490	LA-EL MNTE-COVNA-DIAM BAR-BREA EXP					1	1	1		1					2	3	4			1-			
491	LA-SIRRA MDRE VIA SNTA ANTA AV EXP					1	1	1								3	4			1-			1
497	LA-POMONA-MONTCLAIR PARK-N-RIDE EXP				1							1			2		4						1
560	LAX SAN DIEGO FWY-VAN NUYS BLVD EXP					1	1	1		1										1-			
576	S. LA-PACIFIC PALISADES EXP										1	1											
609	LA-LOS ALAMITOS RACETRACK EXP		1																				
610	LA-HOLLYWOOD PARK RACETRACK EXP		1																				
611	HOLLYWOOD-HOLLYWOOD PARK RACETRACK		1																				
612	W.L.A.-CULVER CITY-HOLLYWOOD PARK		1																				
613	SOUTH GATE-HOLLYWOOD PARK RACETRACK		1																				
614	L.A.-SANTA ANITA RACETRACK EXP		1																				
615	HOLLYWOOD-SANTA ANITA RACETRACK		1																				
620	BOYLE HEIGHTS SHUTTLE																						
635	DODGER STADIUM		1																				
697	SPECIAL EVENT SERVICE, LA-POMONA		1																				

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* MISCELLANEOUS SERVICE MODIFICATIONS PROPOSED BY TRANSPORTATION CONSULTANT DeLOITTE & TOUCHE.

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TABLE 3
ADDITIONAL DETAIL FOR PACKAGE I

LINE NO.	LINE SEGMENT TO BE REPLACED	
	FROM	TO
3	Sunset/Beverly Dr	Beverly/Pico
4	Santa Monica/Sepulveda	2nd/Santa Monica Blvd
20	Wilshire/Sepulveda	Ocean/Pico
26	Franklin/Vermont	Hawthorne/Highland
30	Rowan/Dozier	Atlantic/Riggin
31	1st/Rowan	Atlantic/Riggin
33	Main/Sunset	2nd/Santa Monica
34	Main/Rose	Rose/Penmar
46	N. Broadway/Griffin	Ave 42/Figueroa
60	Long Beach Blvd/Willow	1st/Long Beach Blvd
65	Cal State University of L.A.	Olympic/Soto
68	Riggin/Atlantic	Montebello Town Center
78	Las Tunas/Santa Anita	Longden/Myrtle
81	Figueroa/La Loma	Colorado/Eagledale
85	Eagle Rock/Verdugo Rd	Verdugo/Towne
92-93	Brand/Glenoaks	Brand/Mountain
94	Olive View Hospital	Juvenile Hall
96	Riverside/Lankershim	Laurel Canyon/Victory
102	Central Ave/41st St	37th St/Soto St
104	La Mirada/Alondra	Fullerton Park/Ride
105	Alamo/Gage	Cecelia/Atlantic
107	Santa Ana/Seville	Cecelia/Atlantic
108	Jefferson/Mesmer	Palawan Way/Washington
111	Norwalk/Florence	Whittier/Santa Gertrudes
112	Florence/Otis	San Luis/Norton

TABLE 3
ADDITIONAL DETAIL FOR PACKAGE I
(continued)

LINE NO.	LINE SEGMENT TO BE REPLACED	
	FROM	TO
117	Imperial/Atlantic	Rancho Los Amigos Hospital
120	Imperial Hwy/Beach Blvd	Brea Mall
124	Imperial Blue Line Station	Compton Transit Center
127	Alondra Blvd/Bellflower Blvd	Davis St/Brookshire Ave
130	Beach Blvd/Artesia	Fullerton Park/Ride Lot
152 Shtl	Olive Ave/San Fernando Rd	Burbank Station Metrolink
152	Universal Pl/Willowcrest Ave	1st St/Tujunga Ave
163	Burbank Airport	1st St/Angeleno Ave
170	Hill Dr/Paramount Blvd	Montebello Town Center Hall
176	Figueroa St/Avenue 50	San Fernando Rd
177	Foothill Blvd/Rosemead Blvd	City of Hope
180	Colorado Blvd/Lake Ave	Altadena Dr/Lake Ave
183	Olive/Glenoaks	Gardena/Cerritos
188	Fair Oaks Ave/Colorado Blvd	Fair Oaks Ave/Loma Alta Dr
188	Huntington Dr/Baldwin	Duarte/Highland
200	Montana St/Echo Park ave	Echo Park Ave/Donaldson St
201	Brand Blvd/Wilson Ave	Gardner Pl/Glenoaks Blvd
215	Catalina Ave/Torrance Blvd	Del Amo Fashion Center
220	Fijiway/Fisherman's Village	LAX Transit Center
225	Western Ave/Palos Verdes Dr So.	Golden Cove Shopping Center
245	Valley Circle Blvd/Vanowen St	West Hills Hospital
251	Florence Ave/Pacific Blvd	103rd St Blue Line Station
252	Florence Ave/Pacific Blvd	King Blvd/Norton Ave
254	Hazard Ave/City Terrace Dr	LAC/USC Hospital Busway Station
256	CSULA	Eastern/Triggs

TABLE 3
ADDITIONAL DETAIL FOR PACKAGE I
(continued)

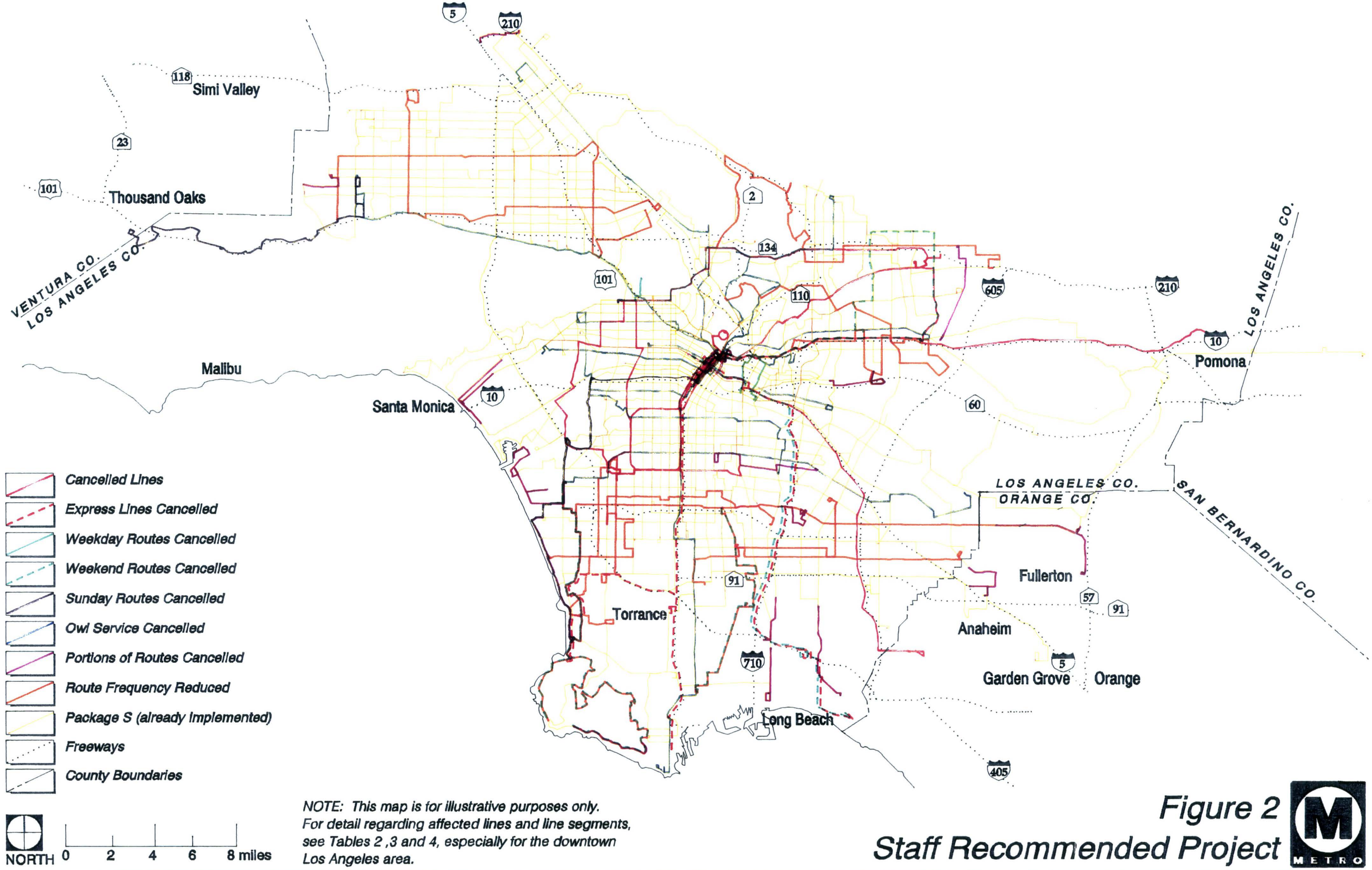
LINE NO.	LINE SEGMENT TO BE REPLACED	
	FROM	TO
258	Fremont/Commonwealth	Main/Garfield
259	Fremont Ave/Commonwealth Ave	Huntington Dr/Monterey Rd
266	Lakewood Blvd/Del Amo Blvd	Long Beach VA Hospital
268	Washington Blvd/Lincoln Ave	Jet Propulsion Laboratory
320	7th St/Maple Lot	Union Station
434	W. Los Angeles Transit Center	Union Station
439	Vista Del Mar Blvd/W. Grand Ave	Palos Verdes Blvd/Catalina Ave
447	7th St/Harbor Blvd	9th St/Weymouth Ave
460	Fullerton Park/Ride	Disneyland
470	Beach Blvd/La Habra Blvd	Brea Mall
471	Whittier/Colima	Puente Hills Mall
484	Holt Ave/Indian Hill Blvd	Ontario International Airport
490	Diamond Bar Blvd/SR 57 Freeway	Cal State University at Fullerton
560	Wilshire Blvd/Veteran Ave	LAX Transit Center

Source: MTA Announcement of Public Hearing, April 23, 1994.

TABLE 4
STAFF RECOMMENDEDSERVICE MODIFICATIONS
("PREFERRED PROJECT")

PROPOSED MODIFICATION	(ALL OR PORTION OF) PACKAGES	AFFECTED LINES	ESTIMATED ANNUAL PASSENGERS AFFECTED
1. Cancel Non-funded Special Event Service	B	See Table 2, Package B	375,000
2. Cancel Express Lines with Subsidy of over $0.60/mile	D, K, L, V	443, 445, 457, 487/491, 439	310,000
3. Cancel Local Lines with Subsidy over $2.00/ passenger mile	L, V	161, 202, 208, 225/226, 250/253	410,000
4. Reduce/Reroute Bus Lines Near Rail Lines	D, V	56, 410, 418, 497	400,000
5. Schedule up to 120 Minute Headway	T	See Table 2, Package T	300,000
6. Cancel Low-Performing Owl Routes	A	See Table 2, Package A	100,000
7. Cancel Low-Performing Branch Routes	L, V	46, 112, 126	240,000
8. Cancel Route Tails with 30 or Fewer Passengers/Hour	I	60, 94, 104, 117, 120, 130, 152s, 170, 220, 225/226, 245, 320, 434, 439, 490	700,000
9. Reduce Overall Service Levels by 2.5%	S	See Table 2, Package S	0
10. Reduce Line Segments Also Serviced by Other Operators	I, S, V	4/304, 20/320, 33/333	450,000
11. Cancel Line Segments Served by Other Operators	I, V	60, 68, 260, 266, 270	800,000
12. Reduce Bus Feed to Metro Red Line, Westlake Station	I, R, V	320, 322	600,000

Source: MTA Staff Memorandum to Board Operations Committee, May 18, 1994.



NOTE: This map is for illustrative purposes only. For detail regarding affected lines and line segments, see Tables 2 ,3 and 4, especially for the downtown Los Angeles area.

Figure 2
Staff Recommended Project

The preferred project has been identified to represent a project which best meets the project objectives listed on page S-3. During the public review period for this Draft EIR, MTA staff may further revise its recommendation to the Board of Directors to reduce the number of service modifications proposed for adoption. The Board will consider all recommendations and may add to or remove parts of the recommended program before adopting a final service modification program.

The impacts of each of the 22 potential service modification packages are examined in this EIR to allow the Board to identify the potential impacts associated with several alternatives. The "preferred project" represents just one alternative.

1.4 TIMING OF PROPOSED SERVICE MODIFICATIONS

While MTA is considering all packages described in Table 1 to address the FY 1995 budget deficit, not all proposals are planned for implementation during FY 1995. A schedule has been prepared to identify the timing for implementing each package. The schedule, outlined in Table 2, covers fiscal years 1995 through 1998.

1.5 PRIMARY VERSUS SECONDARY ENVIRONMENTAL EFFECTS

With the exception of Packages N (establish new downtown bus terminal) and P (implement downtown bus intercept program), none of the service modification proposals involves the construction of new transit facilities. In general, therefore, the project will not result in any direct physical changes to the environment. No grading or construction activity will occur, and existing land use patterns will not be affected. No biological habitat will be removed. Because the project involves no new building activity (except for Packages N and P), demands on public facilities and services will be minimal. Few primary or direct environmental impacts will result from the MTA's action to adopt service modifications.

The project is expected to create secondary environmental effects. For example, the cancellation of certain bus and rail services (packages A through M) may force transit riders to find other means of transport, such as private automobiles. Increased use of cars could lead to impacts on the road system and higher air pollutant emissions. Thus, the environmental analysis for this project focuses on the potential secondary effects which could result from implementation of the service modifications.

With regard to Packages N and P, some direct impacts could be expected since these packages would involve construction activity. Package N proposes relocation of the existing downtown Los Angeles bus terminal from 18th Street to the vicinity of 9th and Olive Streets. MTA has not identified a specific site for a new terminal nor prepared a site plan for the facility.

Package P would involve modifying existing bus routes in downtown Los Angeles to end at the periphery of downtown. Shuttle buses would transport riders from the intercept points to various destinations throughout downtown. This approach to service would require MTA to establish an undetermined number of intercept facilities -- consisting of parking for buses and passenger loading areas -- where passengers would transfer to the shuttle buses. Some construction activity would be required to establish the intercept facilities.

The limited available information for Packages N and P prevent MTA from performing a detailed environmental analysis of the proposed facilities at this time. Potential impacts can be addressed only in a general manner. If MTA chooses to implement these packages (Package N is proposed for FY 1995-96 and Package P for FY 1996-97), subsequent site-specific environmental analyses will be required.

1.6 PROJECT OBJECTIVES

MTA's primary objective of the proposed FY 1995 Service Modification project is to reduce operating expenses as part of a comprehensive program to achieve a balanced budget for FY 1995 and subsequent years. In selecting a recommended combination of packages defined as the "preferred project," MTA recognized the following additional project objectives:

- To minimize the number of transit-dependent riders adversely affected by the service modifications;
- To provide more efficient operations by balancing service versus actual ridership demand;
- To better integrate rail and bus service;
- To eliminate route duplications of parallel bus and rail lines;
- To provide better coordination between MTA and other operator services;
- To make optimum use of existing resources; and
- To minimize the potential environmental consequences associated with its action.

Uses of the EIR

The EIR may be used by the following agencies for the following discretionary actions:

Agency	Action
1. Los Angeles County MTA Board of Directors	• Adoption of Service Modifications

Agency	Action
2. Local Service Operators • Commerce Municipal Bus Service • City of Arcadia • Santa Monica Municipal Bus Lines • Gardena Municipal Bus Lines • Long Beach Public Transit • Norwalk Transit System • Culver City Municipal Bus Lines • Montebello Municipal Bus Lines • City of Redondo Beach • Torrance Transit System • La Mirada Transit • Pomona Valley Transit • City of Angeles Department of Transportation • City of Santa Clarita • Antelope Valley Transit • Foothill Transit Zone	• Contracting or providing for services cut by MTA
3. School Districts • Los Angeles • Pasadena • Glendale • Alhambra • Compton • Downey • Glendora • Inglewood • San Gabriel • Lynwood • Santa Monica • Palos Verdes Peninsula • Paramount • Temple City	• Providing alternative bus service
4. South Coast Air Quality Management District	• Changes to future Air Quality Management Plans to reflect changes in transit services
5. Southern California Association of Governments	• Changes to Regional Mobility Element and other transportation plans to reflect changes in transit services

REFERENCES

1. Internal MTA Memorandum, "Transit Operations Shortfall," August 9, 1993.

2. MTA Memorandum to Board Operations Committee, "Staff Proposal for Fiscal Year 1995 Service Reduction Plan," May 18, 1994.

Environmental Setting

2.0 ENVIRONMENTAL SETTING

The MTA service area encompasses all of Los Angeles County and abutting portions of western Orange, western San Bernardino, and eastern Ventura counties (see Figure 1 in Project Description). It contains major centers of population, employment, industry and commerce, and an extensive network of ground, air, and water transportation systems. MTA's bus and rail transit systems represent just one element of the regional transportation network serving the most populous urban area of the southern California region.

Geographically, the region is defined as a basin, ringed by several mountain ranges and bounded on the west by the Pacific Ocean. The basin has a Mediterranean climate, characterized by mild winters and hot summers. The region's geography, climate, and intensely-developed urban setting combine to create conditions suitable for the formation of air pollution. According to the federal government, the basin experiences some of the worst air quality conditions in the nation. While the natural setting does contribute to the formation and retention of the pollutants, intense urbanization is the root cause of the air pollution problem.

Extensive use of the automobile as the primary mode of transport has resulted in a severely congested roadway system, low mobility, and significant pollutant emissions. To address these problems and to reduce pollution and attain national and state air quality standards, several federal, state, and regional agencies have prepared numerous plans and programs. While these plans are designed to reduce emissions from all sources of air pollution -- including transportation, industrial, commercial, and agricultural activities -- reducing vehicular travel is the key to their effectiveness.

Among the existing and proposed plans, the Air Quality Management Plan (AQMP), Regional Mobility Element (RME), and Growth Management Plan (GMP) represent the primary regional plans that direct development in the basin towards the attainment of air quality standards. These plans work in concert with one another to provide control measures on principal factors contributing to air pollution, including population and employment growth, land use, transportation, and stationary and mobile air pollutant sources. The measures are designed to bring about reductions in emissions by substantially reducing vehicular travel.

In addition, local plans and programs that implement regional policies and programs further define the environmental setting within MTA's service area. MTA is responsible for developing and administering the Los Angeles County Congestion Management Program (CMP), adopted in 1992, which allows local jurisdictions to use state gas tax revenues for traffic congestion-relief projects. The CMP also includes a countywide deficiency plan that establishes a congestion mitigation goal for each city. Under this plan, cities are given "credits" for implementing projects or programs that reduce congestion, while their annual growth (in built development) will be translated into "debits."

All of these plans emphasize use of public transit as the single most important measure to reduce regional vehicular travel and associated pollutant emissions. The proposed service modifications are, therefore, addressed within the context of these plans in Section 3.0 (Environmental Impact Analysis) of this EIR. In particular, the impact analysis focuses on the CMP in Section 3.1 (Transportation/Circulation), on the Air Quality Management Plan in Section 3.2 (Air Quality), and on land use components of all these plans in Section 3.4 (Land Use).

Environmental Impact Analysis

METRO

3.0 ENVIRONMENTAL IMPACT ANALYSIS

This section describes the environmental setting, identifies potential environmental impacts, and establishes mitigation measures to mitigate, avoid, or substantially lessen any significant effects of the project.

MTA prepared an Initial Study (Appendix A) which identified seven potentially significant areas of impact. Each potential impact is discussed and analyzed in the sections that follow. Each impact issue area is addressed according to the following format:

- **Environmental Setting**: A discussion of the existing conditions, services, and physical environment within the MTA's service area;
- **Threshold for Determining Significance**: The amount or type of impact which constitutes a substantial or potentially substantial adverse change in the environment. Some thresholds are quantitative (e.g., noise), while others are qualitative (e.g., land use and schools). The thresholds and references are intended to help the reader understand why the EIR has concluded that a particular impact is considered "significant," "potentially significant," or neither.
- **Environmental Impact**: An evaluation of the proposed project's impact in both quantitative and qualitative terms. Based on the Thresholds for Determining Significance, project impacts can be considered "significant," "potentially significant," or "less than significant."
- **Mitigation Measures**: A discussion of the measures required by the MTA to minimize potential adverse impacts.
- **Level of Impact After Mitigation**: A determination of the project's potential impact if all required and recommended mitigation measures are implemented. This determination addresses CEQA Guidelines Section 15091 in order for MTA to define significant impacts.

SCOPE OF ANALYSIS

The environmental issues examined in this section include:

3.1 Transportation/Circulation
3.2 Air Quality
3.3 Noise
3.4 Land Use

3.5 Energy Resources
3.6 Schools
3.7 Roadway Maintenance

As indicated in the "Project Description" section, with the exception of Packages N (establish new downtown bus terminal) and P (implement downtown bus intercept program), none of the service modification proposals involve the construction of new transit facilities. Thus, the project, in general, will not involve any direct physical changes to the environment. Few primary or direct environmental impacts will result from MTA's action to adopt service modifications.

The project is instead expected to create secondary environmental effects. For example, the cancellation of certain bus and rail services (packages A through M) may force transit riders to find other means of transport, such as private automobiles. Increased use of cars could lead to impacts on the road system and higher air pollutant emissions. Thus, the environmental analysis in this section focuses on the potential secondary effects which could result from implementation of the service modifications. Figure 3 on the following page illustrates the potential chain of events which could result from reduced transit service.

This EIR does *not* examine the potential economic or social effects resulting from the project. The purpose of an EIR is to focus on a project's direct and indirect effects on the environment. CEQA defines the environment to be "the physical conditions which exist within an area which will be affected by a proposed project including land, air, water, minerals, flora, fauna, noise, and objects of historical or aesthetic significance" (Public Resources Code, Section 21060.5).

The CEQA Guidelines state that "economic and social information may be included in an EIR or may be presented in whatever form the (lead) agency desires" (CEQA Guidelines, Section 15131). If included in an EIR, however, the economic or social effects shall *not* be treated as significant effects on the environment [CEQA Guidelines, Section 15131(a)].

MTA recognizes that certain service modifications have the potential to affect the mobility of transit-dependent populations. To examine these potential effects, MTA staff is preparing a separate socio-demographic study. The information contained in this study will be presented to the Board of Directors to allow Board members to consider social factors together with environmental effects in reaching a decision on the project. The socio-demographic study will be available to the public no later than July 5, 1994. Copies will be made available with the Draft EIR at the locations listed in the Introduction section of this EIR.

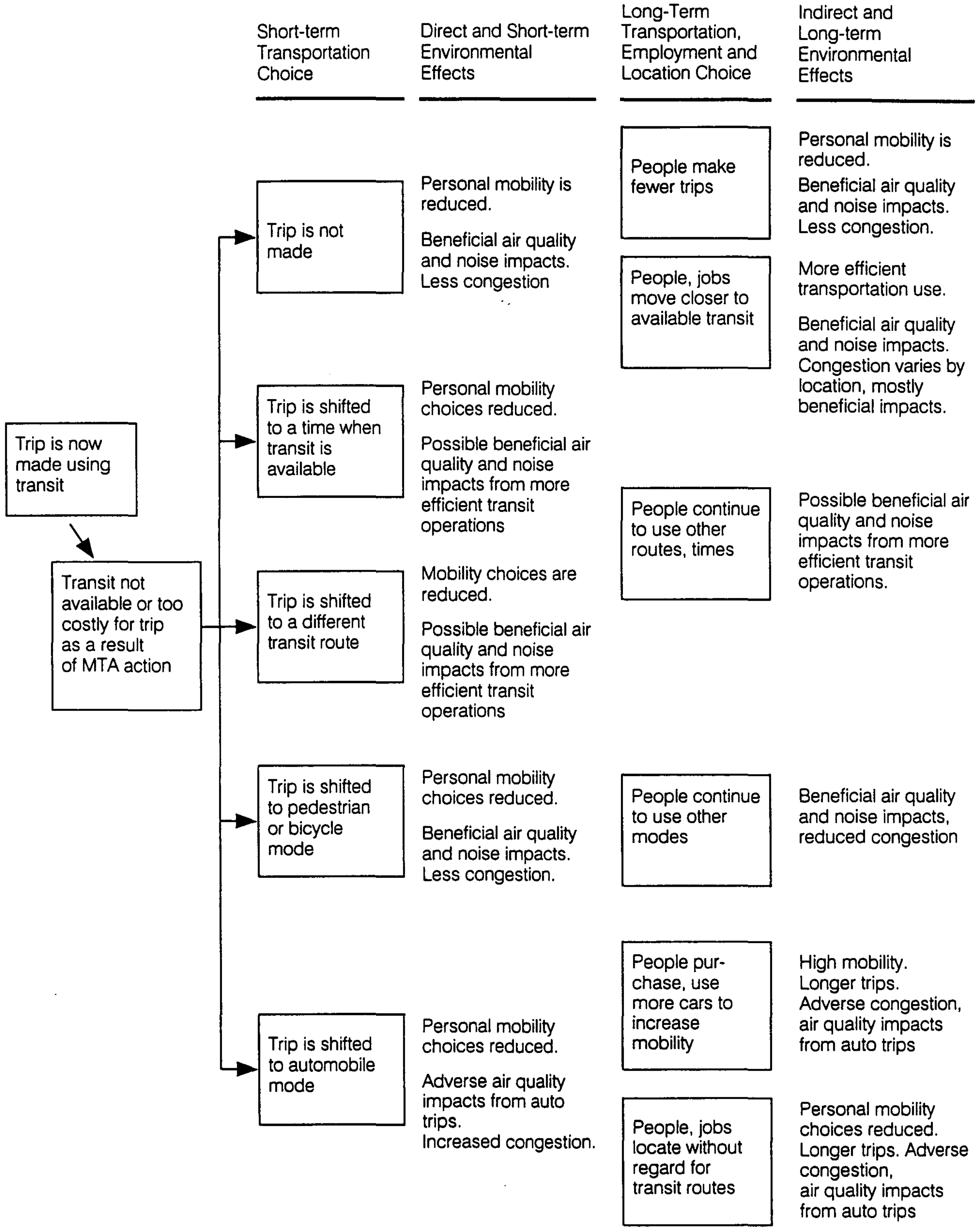


Figure 3: Transportation and Location Choices and Resulting Environmental Effects of Service Modifications

3.1 TRANSPORTATION/CIRCULATION

ENVIRONMENTAL SETTING

Los Angeles County is served by an extensive network of freeways, highways, major arterial roadways, and surface streets. Each day, millions of cars and buses travel along the network, transporting people to work, school, shopping centers, and other destinations.

The regional road network experiences substantial congestion during the morning and evening commute hours. According to the Los Angeles County Congestion Management Program, on the average weekday in 1990, the nearly 5.7 million licensed drivers using the roadways experienced over 1.7 million hours of delay.

Los Angeles County Congestion Management Program (CMP)

Roadway congestion represents a significant problem not just in Los Angeles County but in many of the urbanized areas throughout the state. In 1990, California voters approved Proposition 111, a measure designed to help relieve roadway congestion. Proposition 111 established a nine cent increase in the state gasoline tax over a five-year period, and put into effect a series of legislative acts that require certain jurisdictions to adopt Congestion Management Programs, or CMPs. The CMPs are intended to:

- Link land use, transportation, and air quality decisions;
- Develop a partnership among transportation decision makers on devising appropriate transportation solutions that include all modes of travel; and
- Propose transportation projects that are eligible to compete for state gas tax funds.

Comprehensive CMPs enable cities and counties to use the new gas tax revenues to implement traffic congestion-relief projects.

MTA is responsible for developing and administering the Los Angeles County CMP. MTA adopted the CMP in 1992, with a revision completed in 1993. Per state law, the CMP will be reviewed and updated as necessary every two years.

To implement the CMP, MTA developed a "Countywide Deficiency Plan Toolbox of Strategies." Each of the 54 toolbox strategies has a point value to provide local jurisdictions credits to offset congestion "debit" points from new development activity. No specific toolbox strategies are required to be implemented. The toolbox was created with regional participation and consensus that local jurisdictions have maximum flexibility in the selection of CMP strategies most appropriate for each jurisdiction's characteristics.

Toolbox strategy categories include: land use strategies, capital improvements, transportation systems management, and transportation demand management and transit services. The third category encompasses ridesharing operations, ridesharing support facilities, ridesharing incentives, parking management and pricing, telecommunications, and new or improved transit services.

CMP Roadway Network

The Los Angeles County CMP defines a highway and roadway network subject to the congestion reduction programs outlined in the CMP document. The network, illustrated in Figure 4, includes more than 1,000 miles of paved surfaces. The system encompasses all existing state highways (both freeways and arterials) and principal arterial roadways. Principal arterials are defined as roadways that complete gaps in the state highway system, provide connectivity to CMP systems in adjacent counties, and routes along major inter-jurisdictional travel corridors.

Public transportation needs on the CMP network are met by buses, light rail, heavy rail, and the Metrolink commuter rail system. MTA operates the regional bus system in Los Angeles County, as well as the Blue Line light rail system between Long Beach and downtown Los Angeles, and the Red Line subway. Future light rail systems are planned along Interstate 105 (the Green Line) and between Pasadena and downtown Los Angeles. The Southern California Regional Rail Authority operates the Metrolink system.

Municipal bus operators provide supplemental bus service within many of the cities throughout Los Angeles County, including the City of Los Angeles DASH shuttles, Montebello, Santa Monica, and Long Beach. Subregional transit operators such as the Foothill Transit Zone and Antelope Valley Transit serve larger subareas within MTA's service area.

CMP Transit Policies and Programs

The CMP contains a transit element with a transit monitoring network developed as a planning tool. The CMP states that the network should be used to assist in:

- Quantifying transit service currently available in broad transportation corridors;
- Monitoring changes in transit availability in countywide corridors, and identifying future needs for transit service in those corridors;
- Identifying future transit needs to enhance mobility on the CMP highway system; and

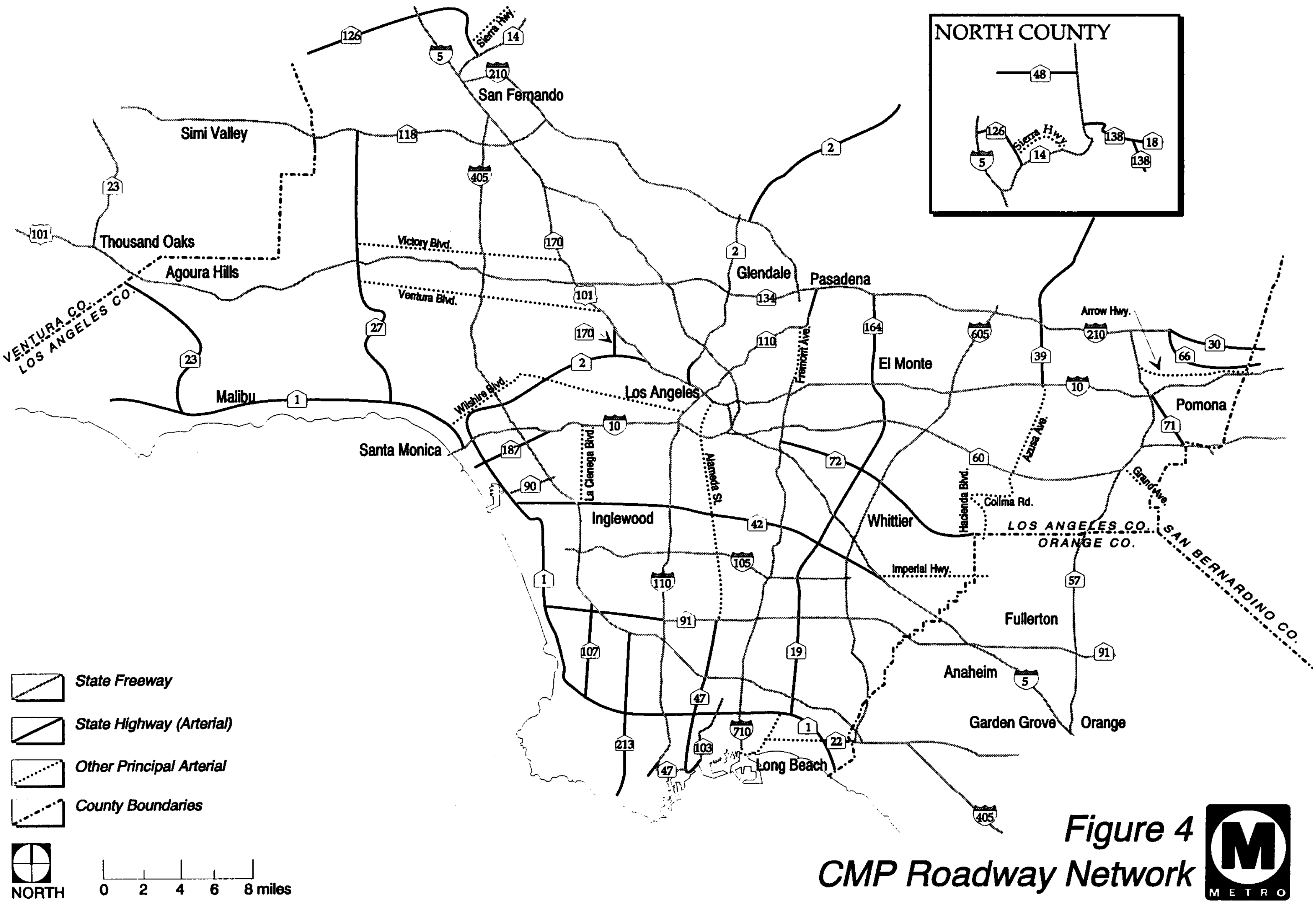


Figure 4
CMP Roadway Network

METRO

cba

- Distinguishing increases in transit ridership due to the implementation of deficiency plan strategies.

The CMP statute also requires development of a trip reduction and travel demand management (TDM) element that promotes alternative transportation methods, including transit. Chapter 6 of the Los Angeles County CMP describes transit service as part of the existing TDM programs currently available in Los Angeles County. The CMP indicates that transit services with the following characteristics are particularly useful for TDM purposes:

(1) Direct transit service to major commuter destinations (radial express service to downtown or suburb to suburb express service). Express services includes limited stop and freeway commuter routes.

(2) Frequent transit service during peak periods along high-demand routes and corridors.

(3) Feeder bus service to rail lines.

(4) Development of transit centers to facilitate transfer between modes and different transit systems.

(5) Effective public communication and ease of transit coordination (information systems, ease of transfer, and pre-paid fare media such as passes, tokens, tickets, etc.).

Transit and the availability of transit are important components of the regional Air Quality Management Plan described in Section 3.2 (Air Quality) of this EIR.

THRESHOLD FOR DETERMINING SIGNIFICANCE

Intersection Service Levels

The CMP establishes significance criteria for impacts on CMP components as follows: Any project which increases the volume-to-capacity (v/c) ratio at a CMP intersection or on a CMP roadway by 0.02 or greater will result in significant traffic impacts.

(The v\c measures the relationship between the capacity of circulation components and the volume of vehicles using that component during a specified time period.)

Transit Services

The CEQA Guidelines do not establish significance criteria for transit services. MTA considers impacts to be significant if adoption of a service modification package substantially conflicts with CMP proposals that facilitate TDM implementation (see items 1-5 under Environmental Setting, CMP Transit Policies and Programs), or which result in a substantial loss of service to transit-dependent or disadvantaged populations. Measures of the level of transit service include frequency of service, proximity to system access points, occupancy, and quality of service measures such as the age of vehicles and level of comfort features provided.

ENVIRONMENTAL IMPACT

Transportation system impacts include impacts on the level of transit service and secondary impacts on the roadway network as trips are shifted from transit to automobiles.

A detailed traffic study was prepared to analyze potential project impacts on the Los Angeles County CMP system illustrated in Figure 4. This section summarizes the traffic study. A complete copy of the traffic study prepared by Katz, Okitsu and Associates is contained in Appendix C.

Transit Services

CMP Goals: Elimination of weekday peak hour express bus service would conflict with CMP goals for facilitating TDM strategies. Four service modification packages propose eliminating selected express bus lines as follows: Package D (three lines), Package I (seven lines), Package K (18 lines), and Package V (13 lines). Implementation of any of these packages would conflict with CMP transit goals and result in potentially significant effects.

Several packages will help further CMP goals regarding improved peak hour service, better bus/rail interface, and multi-modal transit centers. Packages P, Q, and R will either increase available peak hour service or make existing service more efficient. Packages Q and R will implement the CMP goal of providing feeder bus service to rail lines. Packages N and P propose transit centers which will facilitate transfer between transit modes. Implementation of these packages will result in positive impacts.

Preferred Project: The MTA staff recommendation includes portions of Packages A, B, D, I, K, L, R, S, T, and V. Complete cancellation of three daily express lines is included in the recommendation, as well as a 2.5 percent service reduction for the 26 express lines included in Package S. While these proposals involve cancellation of lines with low ridership, impacts on transit service associated with the preferred project are potentially significant since line cancellation may affect transit-dependent populations.

CMP System Impacts

Methodology for Analysis: To measure the traffic impacts of each of the 22 service modification packages, as well as the preferred project, CMP traffic monitoring station sites throughout Los Angeles County were chosen. CMP monitoring stations are either arterial street intersections or freeway segments.

The levels of service at each monitoring station were used to assess the potential impact. Levels of Service (LOS) compare the traffic volume to total capacity at each station. The LOS ranges from A to F, with A indicating very good operating conditions and F indicating very poor operations. Table 5 describes LOS and associated v/c ratios.

Although both morning (a.m.) and evening (p.m.) peak periods are often considered in traffic analyses, the a.m. period mainly involves commute trips, while the p.m. period includes commute, business, and recreational trips. Thus, the p.m. period was used to calculate the traffic impact data for this project.

The traffic engineer determined that only packages I, K, L, V, and the preferred project are expected to have potential traffic impacts during weekday p.m. peak hours. Other options tend to affect transit operations during weekends, mid-day, or nighttime periods. Table 6 lists the packages and the rationale for examining only Packages I, K, L, V, and the MTA staff recommended project.

For packages which include "Cancel or Contract" services, the option exists for municipal or private carriers to take over the service. In such a case, no traffic impact is expected. The traffic analysis assumes that bus service will be canceled, since this represents the worst case in terms of traffic impacts.

Most CMP traffic monitoring stations are unaffected by any of the packages because affected bus lines do not pass through the station sites during the evening peak hour. Out of 160 CMP intersections and 79 CMP freeway segments, 40 CMP intersections and 20 CMP freeway segments have an affected bus line passing through them.

At each of the CMP stations, existing traffic volumes were lowered by the number of buses expected to be canceled under each package. In place of the buses, an increase in automobiles is expected. The traffic consultant assumed that 45 percent of the average number of transit riders on each line would travel by automobile instead (see the traffic study in Appendix C for explanation). The average number of transit riders for each bus line was determined by using passenger mile per revenue mile for each bus line as shown in MTA's *Line Performance Report FY95*, included in the traffic study. The former transit riders were assumed to shift their travel mode to automobiles, with an average automobile occupancy of 1.45. These new automobile travelers were assumed to drive along the same routes as the canceled bus routes. Calculations showing the reduction in buses and the increase in automobiles during the evening peak hour are contained in Appendix C of the traffic study.

TABLE 5
LEVEL OF SERVICE DEFINITIONS

Level of Service	Description	Volume to Capacity Ratio for Signalized Intersections
A	**Level of Service A** occurs when progression is extremely favorable and vehicles arrive during the green phase. Most vehicles do not stop at all. Short cycle lengths may also contribute to low delay.	0.60 and below
B	**Level of Service B** generally occurs with good progression and/or short cycle lengths. More vehicles stop than for LOS A, causing higher levels of average delay.	0.61 to 0.70
C	**Level of Service C** generally results when there is fair progression and/or longer cycle lengths. Individual cycle failures may begin to appear in this level. The number of vehicles stopping is significant at this level, although many still pass through the intersection without stopping.	0.71 to 0.80
D	**Level of Service D** generally results in noticeable congestion. Longer delays may result from some combination of unfavorable progression, long cycle lengths, or high volume to capacity ratios. Many vehicles stop, and the proportion of vehicles not stopping declines. Individual cycle failures are noticeable.	0.81 - 0.90
E	**Level of Service E** is considered to be the limit of acceptable delay. These high delay values generally indicate poor progression, long cycle lengths, and high volume to capacity ratios. Individual cycle failures are frequent occurrences.	0.91 to 1.00
F	**Level of Service F** is considered to be unacceptable to most drivers. This condition often occurs with over-saturation, i.e., when arrival flow rates exceed the capacity of the intersection. It may also occur at high volume to capacity ratios below 1.00 with many individual cycle failures. Poor progression and long cycle lengths may also be major contributing causes to such delay levels.	1.01 and up

Source: *Highway Capacity Manual*, Special Report 209, Transportation Research Board, National Research Council, Washington, D.C., 1985, pages 9-4 to 9-5.

TABLE 6
POTENTIAL P.M. PEAK HOUR CMP IMPACTS SUMMARY

Package	Description	Potential Peak Hour CMP Network Adverse Impact	Comments
A	Cancel Owl Service	No	Off-peak reduction only
B	Cancel Special Event Service	No	Does not occur on regular basis
C	Cancel Expansion Programs	No	Does not impact current operations
D	Cancel Bus Lines Parallel to Rail	No	Passengers transfer to adjacent service
E	Cancel Holiday Service	No	Off-peak reduction only
F	Cancel Sunday Service	No	Off-peak reduction only
G	Cancel Saturday Service	No	Off-peak reduction only
H	Cancel Night Service	No	Off-peak reduction only
I	Cancel Selected Line Segments	Yes	
J	Cancel School Service	No	a.m. peak-hour impact only
K	Cancel Express Lines	Yes	
L	Cancel Low Performing Local Lines	Yes	
M	Add Rush Hour Express Lines	No	Service improvement
N	New CBD Terminal	No	No CMP intersections near terminal
O	Hub Transitway	No	Service improvement
P	CBD Satellite Stations	No	No CMP intersections in CBD
Q	Green Line Interface	No	Service improvement
R	Red Line Interface	No	Service improvement
S	Reduced Service Levels	No	Off-peak impacts only

TABLE 6
POTENTIAL P.M. PEAK HOUR CMP IMPACTS SUMMARY
(Continued)

Package	Description	Potential Peak Hour CMP Network Adverse Impact	Comments
T	Reduced Frequencies	No	Off-peak impacts only
U	Reduced Rail Service	No	Off-peak impacts only
V	Consultant Recommendations	Yes	
Pref. Proj.	See Table 4	Yes	

Source: Environmental Review of Potential FY 1995 Service Economies. Traffic Impact Analysis. Katz, Okitsu and Associates, June 1994.

Calculations of intersection LOS were performed using data from the 1993 CMP Monitoring Program (CMP Appendix A).

Conclusions: Level of service calculations were performed at the 40 CMP arterial monitoring intersections and 20 CMP freeway segments where bus service would be altered under the service modification packages. The analysis shows that none of the 22 packages nor the preferred project will result in a volume-to-capacity change of 0.02 or greater at any of the CMP monitoring stations. Summaries of the calculation results are presented in Tables 5A through 5E in the traffic study.

Volume-to-capacity ratios would increase at most by 0.01. Since the criteria of significance according to the CMP requires an increase of 0.02, even with a margin of error of 100 percent, no significant traffic impact will result.

MITIGATION MEASURES

No mitigation is required to address impacts on the CMP roadway system since no significant impacts will result.

With regard to impacts on transit services, the following measures are included in the proposed project.

1. Many lines proposed for cancellation are duplicated by other municipal services. MTA will work with municipal operators to ensure that these lines are maintained.

2. In choosing the service modification packages to be adopted and implemented, MTA will strongly consider selection of those packages which least compromise (or facilitate implementation of) CMP policies relating to transit service. These packages include:

    - Package C (cancel service expansion on lines 114 and 130);
    - Package D (cancel service that parallels rail service);
    - Packages H-L (contract, rather than cancel, specified lines);
    - Package M (create or contract new heavy patronage rush hour lines);
    - Package O (Dual-hub El Monte-Harbor transitway);
    - Package Q (Green Line interface); and
    - Package R (Red Line interface).

3. The region's commuter rail service, Metrolink, is operated by the Southern California Regional Rail Authority. The Metrolink system is generally intended to transport passengers from the outlying suburban areas to the urban center of Los Angeles. This type of trip reduces a significant number of automobiles and automobile miles traveled. Increased use of Metrolink is one of the most effective transit strategies for long-haul trips. Transit riders who previously rode express buses may use Metrolink as an alternative. To

offset the rail cost differential to former bus passengers, MTA will investigate the feasibility of using Proposition C discretionary funds and other sources to further subsidize rail passes.

4. Approximately 385 miles of paths and lanes are currently designated on MTA's Los Angeles County Bike Map. Plans to expand the network of bicycle routes are being developed in the MTA's Regional Bicycle Master Plan and local municipal bike plans. Although only one percent of all trips are made by bicycle, according to the *1994 Countywide Bicycle Policy Document*, the expansion of paths and lanes is expected to encourage more bicycle use. Transit riders who previously rode on bus routes traveling two to seven miles may consider riding a bicycle. MTA will vigorously pursue implementation of the Regional Bicycle Master Plan. MTA will also provide bicycle lockers at transit centers.

The following measures may be implemented by others:

5. Public transit operators will fill any gaps in local systems created by MTA service reductions where ridership demand is sufficient to support the local service.

6. Private transit operators may respond to market demand to provide bus service to special event centers such as Dodger Stadium, the Rose Bowl, and regional race tracks.

LEVEL OF IMPACT AFTER MITIGATION

Impacts on the CMP road network will be less than significant.

With regard to transit impacts, selection of the packages listed in mitigation measure 2 can reduce impacts to less-than-significant levels.

REFERENCES

1. *1993 Congestion Management Program for Los Angeles County.* Los Angeles County Metropolitan Transportation Authority. November, 1993.

2. *Environmental Review of Potential FY 1995 Service Economies, Traffic Impact Analysis.* Katz, Okitsu and Associates. June 3, 1994.

3. *Countywide Bicycle Policy Document.* Los Angeles County Metropolitan Transportation Authority. April, 1994.

3.2 AIR QUALITY

The South Coast Air Quality Management District (SCAQMD) publishes the *CEQA Air Quality Handbook* to assist with the analysis of project air quality impacts. The following environmental setting discussion is based on information contained in the handbook, as amended through November, 1993.

ENVIRONMENTAL SETTING

Climate and Meteorology

Los Angeles County lies within the South Coast Air Basin (SCAB). The basin is a part of a large coastal plain with numerous connecting valleys and low hills. The plain is bounded on the southwest by the Pacific Ocean, on the west by the Santa Monica Mountains, on the north by the San Gabriel Mountains, and on the east by the San Jacinto Mountains.

The basin lies in a semi-permanent high pressure zone of the Eastern Pacific, resulting in a Mediterranean-style climate. This climate is generally mild with cool ocean breezes, interrupted by periods of extremely hot weather, winter storms, or Santa Ana winds. (Santa Ana winds are strong northeasterly flows from the mountains and deserts north of the basin.) This climatological pattern -- characterized by poor ventilation due to generally weak winds and shallow vertical mixing of the air, combined with the plentiful sunshine -- creates conditions suitable for the formation of air pollution. The SCAB is an area with high concentrations of air pollutants, including the highest ozone concentrations in the U.S.

Major Pollutants and Their Effects

The federal government has identified several types of pollutants which, in varied concentrations, have the potential to create unhealthful air conditions. The primary pollutants of concern in the basin are carbon monoxide, nitrogen dioxide, lead, and photochemical oxidants, which consist primarily of ozone and fine particulate matter (PM10). Reactive organic gases are also of concern because of their contribution to chemical reactions which produce ozone. Table 7 describes these pollutants and their potentially adverse health effects.

TABLE 7
AIR POLLUTION SOURCES, EFFECTS, AND STANDARDS

Air Pollutant	State Standard	Federal Primary Standard	Sources	Primary Effects
Ozone (O_3)	0.09 ppm, 1-hr. avg.	0.12 ppm, 1-hr. avg.	Atmospheric reaction of organic gases with nitrogen oxides in sunlight	Aggravation of respiratory and cardiovascular diseases Irritation of eyes Impairment of cardiopulmonary function Plant leaf injury
Carbon Monoxide (CO)	9.0 ppm, 8-hr. avg. 20 ppm, 1-hr. avg.	9 ppm, 8-hr. avg. 35 ppm, 1-hr. avg.	Incomplete combustion of fuels and other carbon-containing substances such as motor vehicle exhaust Natural events, such as decomposition of organic matter	Reduced tolerance for exercise Impairment of mental function Impairment of fetal development Death at high levels of exposure Aggravation of some heart diseases (angina)
Nitrogen Dioxide (NO_2)	0.25 ppm, 1-hr. avg.	0.053 ppm, ann. avg.	Motor vehicle exhaust High-temperature stationary combustion Atmospheric reactions	Aggravation of respiratory illness Reduced visibility Reduced plant growth Formation of acid rain
Sulfur Dioxide (SO_2)	0.25 ppm, 1-hr. avg. 0.05 ppm, 24-hr. avg. with ozone > = 0.10 ppm, 1 hr. avg. or TSP > = 100 micrograms/m^3, 24-hr. avg.	0.03 ppm, ann. avg. 0.14 ppm, 24-hr. avg.	Combustion of sulfur-containing fossil fuels Smelting of sulfur-bearing metal ores Industrial processes	Aggravation of respiratory diseases (asthma, emphysema) Reduced lung function Irritation of eyes Reduced visibility Plant injury Deterioration of metals, textiles, leather, finishes, coatings, etc.
Fine Particulate Matter (PM10)	30 micrograms/m^3, annual geometric mean > 50 micrograms/m^3, 24-hr. avg.	50 micrograms/m^3, annual arithmetic mean 150 micrograms/m^3, 24-hr. avg.	Stationary combustion of solid fuels Construction activities Industrial processes Industrial chemical reactions	Reduced lung function Aggravation of the effects of gaseous pollutants Aggravation of respiratory and cardio-respiratory diseases Increased cough and chest discomfort Soiling Reduced visibility
Lead	1.5 micrograms/m^3, 30-day avg.	1.5 micrograms/m^3, calendar quarter	Contaminated soil	Increased body burden Impairment of blood formation and nerve conduction
Visibility Reducing Particles	Sufficient to reduce visual range to less than 10 miles at relative humidity less than 70%, 8-hour avg (9am - 5pm).			Visibility impairment on days when relative humidity is less than 70 percent

ppm: parts per million
Source: South Coast Air Quality Management District, CEQA Air Quality Handbook, as amended through November, 1993 update.

Air Quality Standards

Federal and state agencies have established air quality standards for certain air pollutants. National Ambient Air Quality Standards exist for carbon monoxide, ozone, nitrogen dioxide, sulfur dioxide, inhalable particulate matter, and lead (Table 7). The ambient air quality standards set by the state for these pollutants are generally more stringent than the federal standards. Table 7 shows both federal and state criteria for the five major pollutants.

The entire South Coast Air Basin has been declared an extreme non-attainment area because it has levels of one or more pollutants exceeding the national standards. Due to the severity of air pollution the basin, including Los Angeles County, has been declared an extreme nonattainment area for ozone, and serious nonattainment area for carbon monoxide and inhalable particular matter.

Air Quality Plans

Air Quality Management Plan: In July of 1991, the SCAQMD and Southern California Association of Governments (SCAG) adopted the 1991 *Air Quality Management Plan* (AQMP) for the South Coast Air Basin, as required by both the amended federal Clean Air Act and the California Clean Air Act. The 1991 AQMP revises and expands the region's first AQMP of 1989, which was designed to meet only the federal air quality standards. The 1991 AQMP's goal is to bring the basin into compliance with all federal requirements by the year 2010.

The SCAQMD is now in the process of preparing the 1994 AQMP, with adoption scheduled for the summer of 1994. While the 1991 AQMP represents the currently effective document, this discussion focuses on the 1994 Draft AQMP since the regulations contained in the updated AQMP will govern MTA's actions. Also, the 1994 Draft AQMP follows the same format as the 1991 AQMP and includes many of the same programs. Key enhancements incorporated into the 1994 plan include:

- Use of 1993 air quality information;
- Improved emissions inventories;
- Revised control strategies and measures, including market incentive approaches; and
- Amendments to Federal Attainment Plans for nitrogen dioxide and carbon monoxide.

The 1994 Draft AQMP does not amend the attainment projections for federal or state standards contained in the 1991 AQMP. Target attainment dates are:

Pollutant	Federal Standards	State Standards
NO2	1995	1997
CO	2000	2000
PM10	2006	post-2010
Ozone	2010	post-2010

The Draft 1994 AQMP establishes two tiers of air pollution control strategies. The first tier includes short-term strategies which employ the best known current technology and management practices to reduce pollutant emission. The second tier are long-term approaches which include already-demonstrated but commercially-unavailable technologies, as well as "on the horizon" advances in technology. Fundamental control measures include extensive use of clean fuels; rapid introduction of electric vehicles; conserving natural gas and electricity; reducing emissions from all sources; and reducing vehicular trips and travel.

As indicated above, the state standards for ozone and particulate matter will not be attained by the year 2010 under the AQMP. Attainment of these standards will require development of additional measures and technologies, in addition to full implementation of the 1994 AQMP.

The fundamental control measures cited above include strategies which address transit. The strategies are described in Appendix IV-C of the Draft 1994 AQMP (Transportation Control and Indirect Source Measure Recommendations). Transportation Control Measures (TCMs) are transportation and land use-based strategies that are intended to reduce the amount of pollutants emitted into the air from motor vehicles by changing the way people make trips, alleviating traffic congestion, and facilitating infrastructure changes to promote alternatives to single-occupant vehicles. The 1990 Federal Clean Air Act Amendments require the development of near-term and long-term TCMs, as well as contingency measures for the SCAB. The California Clean Air Act requires extreme nonattainment areas (such as Los Angeles County) to achieve an average of 1.5 or more persons per vehicle during commute hours by 1999. This strategy depends on the availability of substantially expanded transit service during this time period.

The Draft 1994 AQMP contains strategies directed at increasing the average vehicle ridership (AVR) during commute hours. The TCMs emphasize AVR increases through expanded work trip reduction programs (enhanced Rule 1501); trip reductions for students; and trip reductions from regional shopping centers, special event centers, and airports. The AQMP also calls for improvements to high-occupancy vehicle and transit infrastructure to facilitate the achievement of the AVR and trip reduction goals.

The following 1994 TCMs could be affected by the MTA's proposed service modification packages:

- TCM 6. Transportation Improvements;
- TCM 10. Trip Reduction at Special Events Centers;
- TCM 11. Trip Reduction at Shopping Centers; and
- TCM 14. Trip Reduction for Schools.

Los Angeles County CMP: As discussed in Section 3.1 (Transportation/Circulation), the 1993 Congestion Management Program addresses regional traffic congestion -- and the resulting impacts on air quality -- by linking transportation, land use, and air quality decisions.

The CMP contains a "Countywide Deficiency Plan Toolbox of Strategies" which provides jurisdictions with maximum flexibility in the selection of CMP strategies most appropriate for each jurisdiction's characteristics.

Of the 54 toolbox strategies available, two strategies may have a bearing on air quality improvement goals and MTA's proposed service modifications packages: No. 301, Formal trip reduction program for small employers, and No. 303, Transportation Management Association (TMA) .

The 1994 U. S. EPA's FIP: A Draft Federal Implementation Plan (FIP) has been prepared for the South Coast Air Basin by the U.S. Environmental Protection Agency. The FIP is considered a "backstop" for the AQMP in that it contains programs to reduce basinwide emissions so that ozone and carbon monoxide attainment goals can be achieved. The Draft FIP was issued on February 14, 1994, with a Final FIP scheduled for adoption in February, 1995.

State and local agencies are still required by the Clean Air Act to develop air pollution control plans by November 15, 1994. As acceptable local and state rules are adopted, they can replace the proposed federal controls. Conformity rules are currently in draft and will be subject to AQMD review.

SCAG's 1994 Regional Mobility Element: The Regional Mobility Element (RME) of the Regional Comprehensive Plan represents SCAG's major policy and planning statement for regional transportation issues and goals. The RME is comprised of long-range policies, plans, and programs that visualize a regional transportation system compatible with federal and state mobility objectives. The goal of the RME is to provide effective coordination and orderly programming of transportation improvements within the six-county SCAG region.

The RME's Chapter 3 contains the recommended Regional Transportation Demand Management Program. The RME emphasizes accomplishing TDM goals through the CMP and the Regional Transportation Improvements Plan (RTIP). Policies to guide implementation of the regional TDM program include "promote TDM programs along with transit and ridesharing facilities as a viable and desirable part of the overall mobility program." (RME, p. 3-9)

Existing Air Quality

The SCAQMD is responsible for monitoring and measuring air quality in Los Angeles, Orange, Western Riverside, and Southwestern San Bernardino counties. The SCAQMD maintains monitoring stations throughout the region since air pollution concentrations vary depending upon local wind conditions, temperature, and other climatological factors. Table 8 displays selected air quality data reported for various Los Angeles County stations during the past three years.

TABLE 8
SELECTED AIR QUALITY DATA
FOR 1991 TO 1993 (a)

Location of Monitoring Station	CO No. Days Federal/State 8-Hour Standards Exceeded			Ozone No. Days Federal/State Standards Exceeded			PM10 % Samples Exceeding Standards: Federal/State			NO_2 Number of Days State Standards Exceeded (b)		
	1991	1992	1993	1991	1992	1993	1991	1992	1993	1991	1992	1993
Los Angeles	0/0	2/2	0/0	23/59	23/57	8/34	2/54	0/36	0/43	5	1	0
Long Beach	0/1	0/0	0/0	0/4	4/17	1/15	0/24	0/5	0/20	2	0	0
Pico Rivera	0/1	0/0	0/0	43/85	45/101	33/76	NM	NM	NM (c)	0	1	1
Pasadena	2/2	0/0	0/0	48/86	71/128	53/92	NM	NM	NM	2	0	0
Pomona	0/0	0/0	0/0	60/97	56/99	45/104	NM	NM	NM	0	0	0
Reseda	7/8	1/1	0/0	53/100	25/82	32/79	NM	NM	NM	0	0	0
Santa Clarita	0/0	0/0	0/0	65/118	71/127	44/92	0/42	0/13	0/15	0	0	0

Source: SCAQMD Air Quality Data for 1991, 1992, and 1993.

Notes:
(a) Standards for SO2, lead, and sulfate were either not measured or not exceeded at these stations.
(b) The federal standard for NO_2 was not exceeded at any station listed here.
(c) NM = not monitored.

In the SCAQMD region, over 95 percent of the carbon monoxide pollution is generated by automobiles. According to SCAQMD's CEQA handbook, vehicles of all types generate 75 percent of the oxides of nitrogen, 65 percent of sulfur oxides, and 50 percent of organic gases and particulate matter pollutants.

While high concentrations of air pollutants pose health problems for the general population, they particularly affect the children, the elderly, and the sick. Thus, schools, childcare centers, hospitals, convalescent homes, retirement homes, residences, parks or other facilities serving those groups are considered to be sensitive receptors. Typical health problems attributed to smog include respiratory ailments, pulmonary ailments, cough, headaches, and eye, throat and nose irritations.

THRESHOLD FOR DETERMINING SIGNIFICANCE

SCAQMD's *CEQA Air Quality Handbook* establishes emissions significance thresholds for new projects. The thresholds relevant to MTA's proposed service modification are as follows:

(1) Any project capable of producing daily pollutant emissions in excess of 55 pounds of reactive organic compounds, 55 pounds of NO_x, 550 pounds of CO, 150 pounds of PM10, 150 lbs of SO_x, and/or exceeding the state 1-hour or 8-hour CO standard.

(2) Any project that could interfere with the attainment of the state or federal ambient air quality standards.

ENVIRONMENTAL IMPACT

Short-Term, Construction-Related Emissions

As discussed in Section 1.0 (Project Description), with the exception of Packages N and P, the service modifications proposal does not involve any construction activity. Thus, construction impacts need not be examined.

Package N proposes relocating the downtown Los Angeles bus terminal to the vicinity of 9th and Olive Streets, and Package P would establish satellite bus transfer stations on the periphery of downtown. Specific locations for these project components have not been identified, and no site plans have been prepared. Any estimate of potential construction emissions would be speculative at this time. If MTA chooses to implement these packages, site-specific environmental review will be required at the project design stage. Mitigation such as compliance with SCAQMD Rule 403 can be incorporated into the construction phase to minimize emissions.

Long-Term Air Pollutant Emissions

The project does not involve the construction of new buildings, with the exception of Package N, as indicated above. Therefore, long-term stationary source emissions (those associated with the burning of fossil fuels for lighting, heating, power generation, etc.) do not require analysis.

Potential long-term project emissions of concern are those associated with motor vehicles (so-called mobile sources). MTA's action to cut bus services will reduce the annual bus vehicle miles traveled within the SCAB. All buses removed from operation will be diesel-powered vehicles. As discussed in Section 3.1 (Transportation/ Circulation), a reduction in bus service will mean that people use automobiles to take some of the trips they would have made using transit. This will increase the annual automobile vehicle miles traveled. Figures 5, 6, 7, and 8 show how the shift of transit trips to the automobile mode will affect pollutant emissions for CO, PM_{10} and ozone precursors (ROC and NO_x). Tables 2 and 3 in the traffic study (Appendix C) identify the reduction of annual bus miles and increase in automobile miles associated with each modification package.

For each proposed service modification package, the reduction in bus miles and increase in automobile miles will result in a change in daily and annual pollutant emissions. An analysis of each package was performed using the methodology contained in SCAQMD's *CEQA Air Quality Handbook*. Table 9 summarizes the results of the analysis for each package. The worksheets produced in conjunction with the analysis are contained in Appendix D. Table 9 reports the estimated *daily* emissions to facilitate comparison of each package to SCAQMD's threshold criteria stated above.

Of the 22 packages, eight individual packages have the potential to increase daily pollutant emissions for one or more major pollutants above the recommended threshold levels. These packages are:

- Package F (cancel Sunday service);
- Package G (cancel Saturday service);
- Package I (cancel route segments serving some cities);
- Package L (cancel low-performing lines);
- Package M (increase express service);
- Package O (El Monte-Harbor Dual Hub);
- Package S (system-wide headway adjustments); and
- Package V (system-wide changes recommended by Deloitte-Touche).

Adoption of any one of these packages will result in significant air quality impacts by SCAQMD's threshold criteria. If several packages are adopted as part of the Board's budget reduction decision, cumulative impacts will be significant.

Figure 5:
Carbon Monoxide (CO)

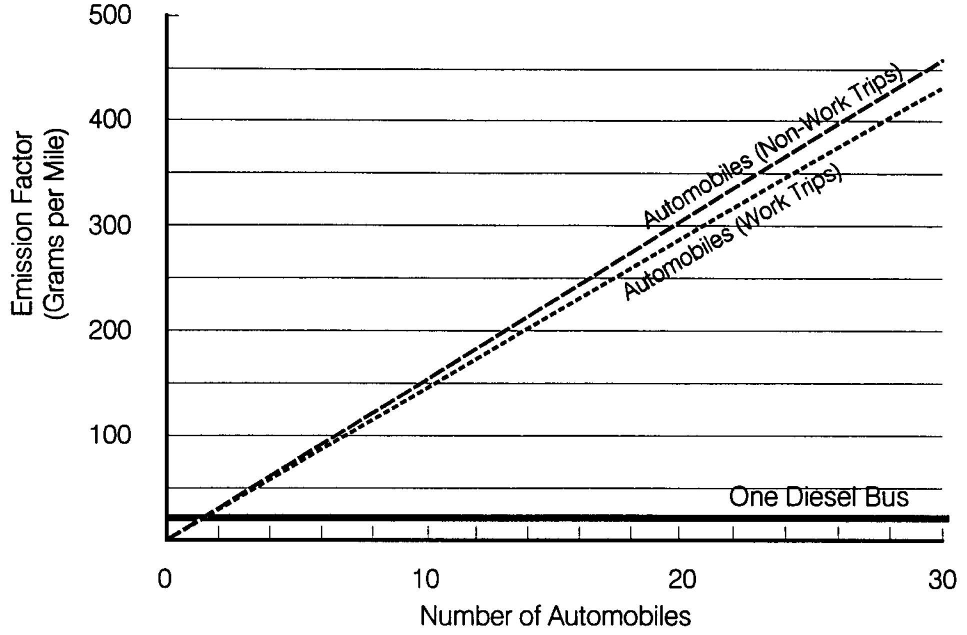
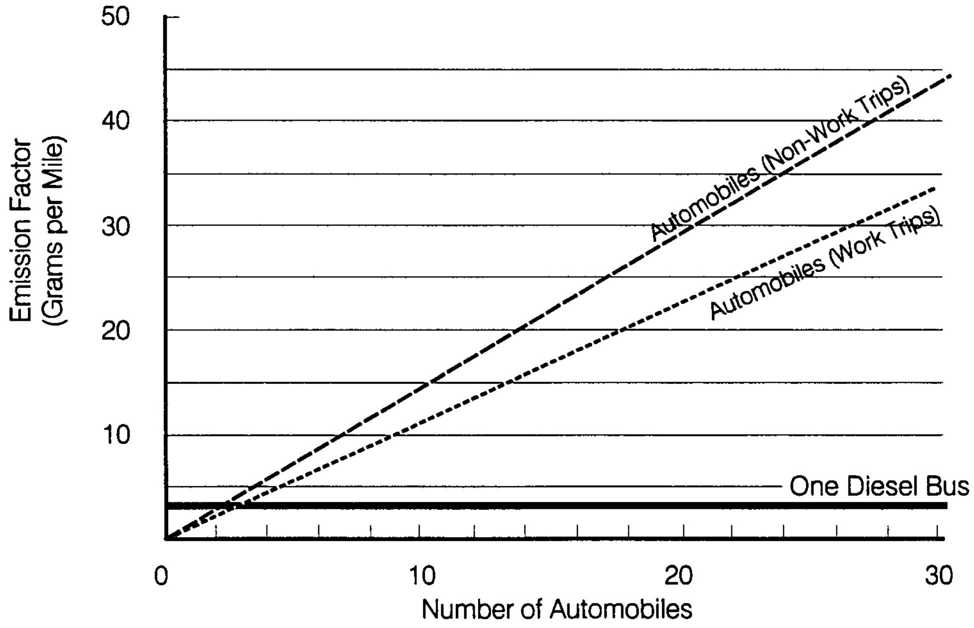


Figure 6:
Reactive Organic Compounds (ROC)



Figures 5 and 6: Comparison of Emission Factors in 1995

Figure 7:
Nitrogen Oxides (NOx)

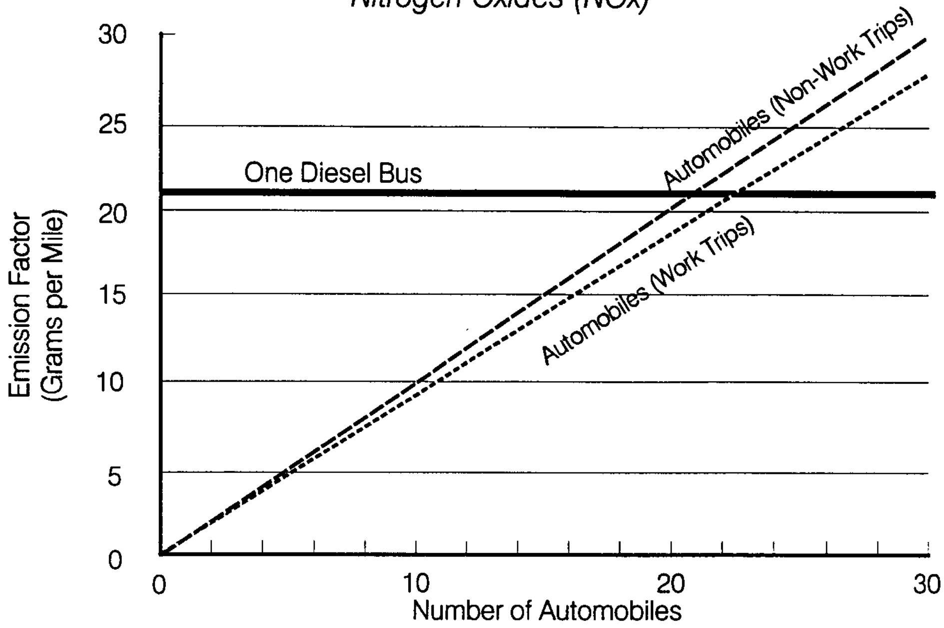


Figure 8:
Particulate Matter (PM10)

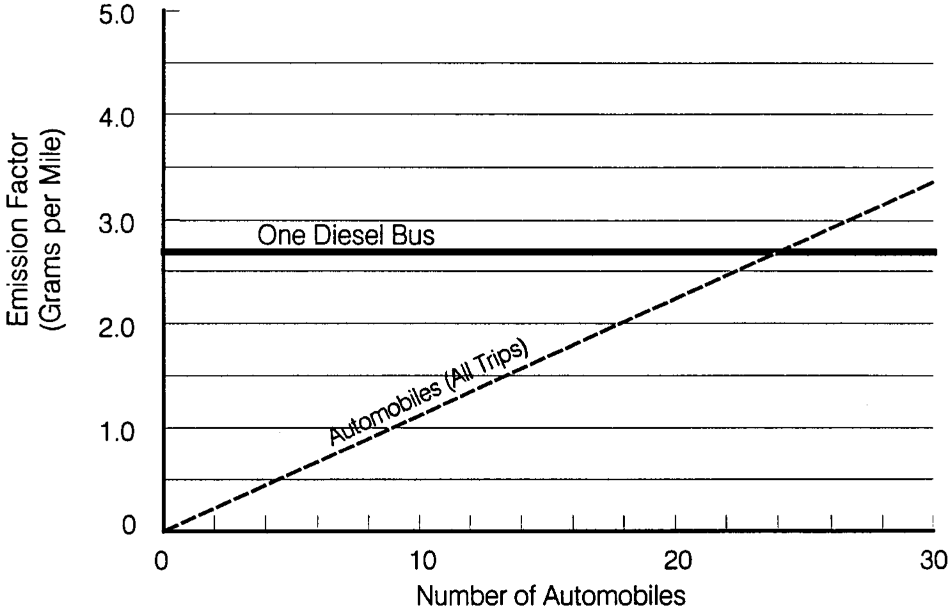


Figure 7 and 8: Comparisons of Emission Factors in 1995

TABLE 9
SUMMARY OF ESTIMATED CHANGE IN DAILY 1995 EMISSIONS ASSOCIATED WITH EACH PACKAGE

Package	LEVEL OF CHANGE IN POLLUTANT EMISSIONS IN POUNDS PER DAY FOR YEAR 1995			
	CO	ROC	NO_x	PM10
A	-19	-5	-46	-6
B	+47	+2	-37	-5
C	+77	+5	-19	-2
D	+326	+16	-177	-23
E	-143	-36	-150	-19
F	+7,413	+629	+339	+41
G	+10,540	+896	+519	+63
H	+546	+12	-429	-56
I	+2,387	+203	+120	+15
J	+247	+17	-21	-3
K	+548	+16	-372	-48
L	+778	+35	-474	-61
M	+2,032	+146	-86	-13
N	+94	+3	-74	-9
O	+1,907	+104	-577	-76
P	+117	-7	-280	-36
Q	N/A	N/A	N/A	N/A
R	-58	-8	-56	-7
S	+2,339	+183	-151	-20
T	+121	+1	-144	-19
U	N/A	N/A	N/A	N/A
V	+5,003	+326	-1,396	-181
Preferred Project	+45	-55	-982	-126

Notes:
(a) Refer to Appendix D for assumptions and calculations.
(b) SO_x not reported since the net effect for each package is not significant. See Appendix D worksheets.
(c) N/A = Not applicable
(d) Daily emissions for Packages E (holidays), F (Sundays) and G (Saturdays) have been adjusted to correspond to average weekday emissions.

Preferred Project Impacts

The preferred project recommended by MTA staff includes all of Package S, as well as portions of Packages I, L, S and V. Each of these individual packages will result in significant air quality impacts, and the combination of packages will compound the impacts. Impacts associated with the preferred project are significant.

CO "Hot-Spot" Impacts

The SCAQMD handbook requires analysis of CO "hot spot" impacts for projects located adjacent to schools, hospitals, and other sensitive receptors. A CO hot spot is an area where a high concentration of CO may exist, such as along a congested freeway or at a major intersection where vehicles idle. The handbook states that projects with sensitive receptors or projects that could negatively impact roadway (or intersection) level of service (LOS) should examine the potential for hot spot impacts.

As indicated in Section 3.1 (Transportation/Circulation), none of the 22 proposed service modification packages will result in a significant change to the LOS along any CMP roadway or at key regional intersections. Also, because the modifications will occur on a system-wide basis, impacts on sensitive receptors will be dispersed. For these reasons, no CO hot spot impacts are anticipated, and no further analysis is required.

Potential Odors

Service modifications that will reduce or eliminate certain bus services will reduce the number of diesel-powered buses idling at bus stops. Idling buses typically emit odors considered offensive by some persons. Thus, reduction in bus services will reduce odors. The level of potential beneficial effect will be localized and will depend upon which packages are implemented.

Regarding Package N (relocation of the downtown bus terminal), the concentration of buses in the vicinity of 9th and Olive Streets has the potential to concentrate bus emissions and associated odors. Potential terminal sites are located in an intensely-developed urban setting. Surrounding uses consist of business offices and retail stores. This environment is not expected to be adversely affected by odors associated with a bus terminal. However, detailed environmental analysis of Package N will be required if this proposal is selected and more clearly defined.

Consistency with Draft 1994 AQMP

A transportation project may be considered consistent with the Draft 1994 AQMP if it incorporates the mobile source and transportation control measures set forth in the AQMP.

The Draft 1994 AQMP states that SCAQMD has limited authority to control vehicle emissions in the basin and these responsibilities are shared with the federal Environmental Protection Agency and the California Air Resources Board (CARB). Emissions control measures cited in the AQMP include CARB measures to retrofit heavy-duty diesel buses and federal requirements to limit the useful life of heavy-duty trucks and buses (*CEQA Air Quality Handbook*, p. 4-14).

MTA proposals to reduce bus service (Packages A through M, S, T, and portions of V) will involve removing buses from active use. All buses removed will be diesel-powered vehicles. Thus, adoption of any package that will reduce bus service will implement AQMP goals to eliminate these vehicles from the regional fleet mix and thereby reduce pollutant emissions.

Appendix IV-C of the Draft 1994 AQMP contains Transportation Control and Indirect Source Measure Recommendations which directly address transit service. Implementation of four of these measures could be adversely affected by the MTA's proposed service modification packages: TCM Nos. 6, 10, 11, and 14 described previously.

TCM No. 6, "Transportation Improvements", includes capital-based and non-capital based facilities, projects and programs contained in the Regional Mobility Element and programmed through the RTIP process to reduce emissions. Capital-based actions include transit improvements such as bus, rail, and shuttle. Non-capital based actions include CMP-based strategies and seed money for transportation management associations. Transit operators are an implementing agency of this TCM, and are responsible for operating transit improvements consistent with the RTIP and Short Range Transit Plan. The MTA's proposed service reduction packages would have a range of impacts on implementation of this TCM ranging from significant to insignificant. The total impact varies according to the combination of packages selected. The packages contained in the MTA staff recommendation would have a significant impact on implementation of this TCM.

TCM No. 10, "Trip Reduction at Special Event Centers," has the goal of reducing vehicle trips to special event facilities by 12.5 percent. The SCAQMD will adopt a regional rule (Rule 1510) by 1996 that facilitates the reduction of non-work trips to special event centers. While the AQMP does not yet define "special event center", it may be assumed that some of the venues listed in service modification Package B, Cancellation of Special Event Service, will be subject to this rule. The venues include Santa Anita Racetrack, Hollywood Park Racetrack, Los Angeles County Fairgrounds-Pomona, and Dodger Stadium.

The AQMP's Appendix IV-C mentions transit programs as a potential action item for reducing vehicle trips to special event centers, by "providing free transit passes to ticket holders, and allowing public transit vehicles to deliver patrons as close to the special event site as possible." Implementation of Package B would run counter to this program by reducing the number of patrons arriving by transit.

TCM No. 11, "Trip Reduction at Shopping Centers" has the goal of reducing shopping center trips by 12.5 percent by offering alternative modes of transportation, including public transit. The AQMD will adopt a regional rule (Rule 1505) by 1996 that would require owners and property managers of shopping centers to implement programs and strategies that reduce vehicle trips to shopping centers. The following proposed service reduction packages include lines that serve regional shopping centers in Los Angeles County: F, G, I, N, P, S, T, and V. On a cumulative basis, adoption of these packages could be considered inconsistent with TCM No. 11 by reducing the number of buses available to support transit trips to shopping centers.

TCM No. 14, "Trip Reduction for Schools" has a goal of reducing trips generated by high school and college students by 12.5 percent and achieving a 1.5 AVR. The AQMD will adopt a regional rule, similar to Rule 1501, by 1997 that would include a list of approved strategies to achieve the trip reduction goal. The rule would require that the college, university, high school, or primary school district develop student trip reduction plans based on selected approved strategies. Examples of strategies to reduce student trips include increasing bus service, subsidizing bus passes, and providing transit stops. MTA Service Reduction Package J recommends canceling 55 bus lines that regularly operate additional service on school days. In addition, the following MTA proposed service reduction packages include lines that service colleges, universities and high schools during normal operating hours: I, K, L, M, S, and V. Implementation of Package J and other cited packages could significantly affect TCM No. 14 by reducing the transit options available to serve schools.

Consistency with Other Regional Air Quality Plans

CMP: Implementation of some of the proposed service reduction packages could have an adverse impact on the ability of local jurisdictions to maximize the effectiveness of two CMP toolbox strategies: No. 301, Formal trip reduction program for small employers, and No. 303, Transportation Management Association (TMA). This impact is minor because few of the strategies reduce transit service during peak commute periods.

Strategy No. 301 requires companies employing less than 100 employees to participate in a formal trip reduction program. The purpose is to encourage the use of transportation modes other than driving alone. The employer may choose from various incentive strategies such as carpool/vanpool matching, transit routing, guaranteed ride home, promotional incentives, telecommuting, and compressed work schedules. The overall goal of such programs is to increase average vehicle ridership (AVR), particularly during the a.m. weekday peak hours when CO concentrations are highest and ozone precursor emissions have the greatest effect on ozone concentrations later in the day. Increasing AVR should reduce total vehicle trips, reducing congestion and VMT, which in turn will reduce air pollutant emissions.

Reducing the availability of transit services during the weekday a.m. peak hours -- particularly express services -- could have an impact on the ability of employers to encourage employees to use rideshare modes for home-to-work transportation. While not all employers require employees to report to the work site during the a.m. peak hour, or return home during the p.m. peak hours, the CMP and regional air quality plans emphasize the goals of reducing trips and increasing AVR during the a.m. and p.m. peaks.

Toolbox strategy No. 303 provides CMP deficiency plan credits for the creation of new TMAs or the expansion of the target area of existing TMAs. TMA services typically include carpool/vanpool matching, transit fare media (e.g. passes, tokens, tickets, etc.) sales, transit route planning, promotional events, marketing, promotional incentives, and guaranteed ride home services for TMA members. Reducing the availability of transit services during the weekday a.m./p.m. peak hours -- particularly express services -- could have an impact on the ability of TMAs to encourage employees to use alternative modes for work transportation.

The CMP toolbox of optional alternative strategies was developed with the general understanding and consensus that not all strategies would be appropriate for all 88 jurisdictions and the unincorporated areas of Los Angeles County. Therefore, the reduced effectiveness of two out of 54 CMP toolbox strategies is not considered a significant impact.

Summary of Air Quality Impacts

Eight of the 22 packages, if implemented alone, would result in an increase in daily pollutant emissions above SCAQMD recommended threshold levels. The preferred project includes all or portions of four such packages. Air pollutant emission impacts will be significant.

The proposals to eliminate special event service (Package B), reduce lines serving major shopping centers (Packages F, G, I, N, P, S, T, and V), eliminate school service (Package J), and cancel express lines that operate during rush hours (Package K) could hinder the SCAQMD's ability to meet AQMP transit goals and possibly attainment goals. Impacts are significant.

MITIGATION MEASURES

The following measures are incorporated into the preferred project:

1. MTA will adopt reduction measures on the least efficient lines only, minimizing the number of auto trips generated as a result of bus service reduction.

2. MTA will continue to expand the rail system (Green Line and Red Line) to provide service to areas currently served by buses.

Many of the measures in the CMP and AQMP will mitigate the impacts of the service modifications by encouraging transit use. This will increase revenue potential and reduce needed subsidies, allowing MTA to increase service in the future on lines which now have insufficient demand to support economical transit service.

LEVEL OF IMPACT AFTER MITIGATION

Impacts will be significant and unavoidable. The MTA Board of Directors will be required to adopt a Statement of Overriding Considerations with regard to air quality impacts.

REFERENCES

1. *Draft 1994 Air Quality Management Plan*, South Coast Air Quality Management District, April 1994.

2. *CEQA Air Quality Handbook*, South Coast Air Quality Management District, as amended through November, 1993.

3. *Regional Mobility Element*, Southern California Association of Governments, May 1994 and amended June, 1994.

3.3 NOISE

Noise refers to any sound that is loud, unexpected, or unpleasant.

The Los Angeles County urban environment contains a multitude of noise sources such as cars, buses, sirens, air conditioners, nearby or distant train passings and aircraft overflights, construction equipment, air conditioners, people's voices, etc. Environmental noise that these sources generate is usually measured in A-weighted decibels, or dB(A). The dB(A) is a scale of noise measurement for which very low and very high frequency components of the sound are filtered out in a manner similar to the way in which the human ear filters noise. Examples of sounds measured in dB(A) include:

- A low whispering voice heard at a distance of three feet has a sound level of 30 dB(A).
- An average-level conversation at a three-foot distance produces a sound level of 65 dB(A).
- A helicopter overflight measures 70 dB(A).
- A train passing at 50 feet has a noise level of 90 dB(A).

In general, a person can perceive a three-decibel difference in noise levels of individual noise events if separated by a few seconds. Smaller differences are difficult to judge. A difference of ten dB(A) is perceived as a approximately a doubling of loudness.

Environmental noise levels typically fluctuate over time, and different types of noise descriptors are used to account for this variability. Human response to noise has been found to correspond well with noise descriptors based on the Equivalent Noise Level, or L_{eq}. This descriptor represents the constant noise level that would be measured if all the sound energy over the measurement period were spread out equally over that period. To distinguish specific L_{eq} values, the measurement period is often included in the subscript. For example, the L_{eq} for one hour may be written as $L_{eq(1)}$. In this EIR, the L_{eq} is used to compare the hourly noise level of traffic on streets before and after the preferred project is implemented.

To describe noise events, such as an aircraft overflight or a bus or car driveby, the Single Event Noise Exposure Level (SENEL) is often used. The SENEL is the energy average noise level over the duration of the event normalized to one second, that is, as if all the noise occurred during one second. Noise events with equal SENEL values will contribute an equal amount of energy to the L_{eq}, and thus SENEL is a good way to compare noise events with different time variations (such as a slow bus driveby and a rapid car driveby). In this EIR, the SENEL is used to compare the noise created by buses with the noise created by the number of automobiles that would be substituted for these buses if the buses were removed from service.

To describe noise environments over a day or year, the energy-averaged noise levels are commonly weighted to account for the additional sensitivity of people to noise at night when background levels are lower and most people are sleeping. The 24-hour environmental noise descriptor commonly used by federal agencies is the the Day-Night Level (L_{dn}). California noise standards are commonly expressed on the Community Noise Equivalent Level (CNEL) scale. On the L_{dn} scale, noise occurring between 10:00 p.m. and 7:00 a.m. is penalized by adding ten decibels to account for greater annoyance of nighttime noise. The CNEL scale is identical to the L_{dn} scale except that an additional 5-decibel penalty is added for noise occuring beteween 7:00 p.m. and 10:00 p.m. For practical purposes L_{dn} and CNEL values are nearly identical for all but unusual noise environments.

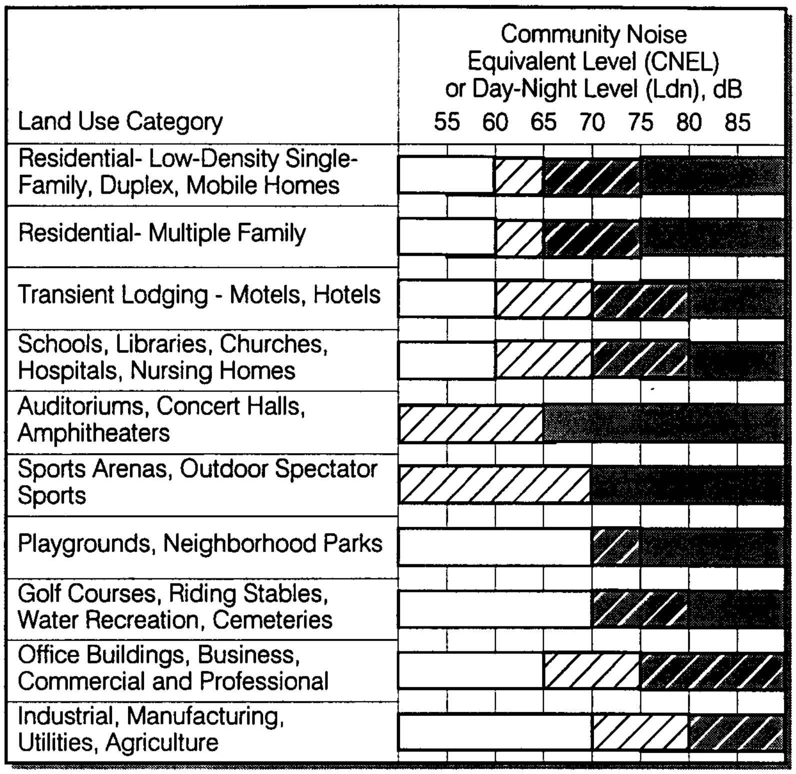
This EIR uses the L_{dn} and CNEL noise measurement scales to compare overall noise environments and to identify noise impact on the community in relation to community noise standards. Figure 9 on the following page illustrates the compatibility of various land uses with common urban CNEL and L_{dn} levels based on standards and guidelines of a number of agencies.

Two environments with a three-decibel difference as measured by these environmental noise measures can be perceived as substantially different by people, since a three-decibel difference may represent a doubling of the number of noise events, or a substantial difference in the source or type of noise. A three-decibel increase in the level of noise from a roadway may substantially increase the area exposed to unacceptable noise levels from that roadway.

ENVIRONMENTAL SETTING

Noise levels along the most of the affected bus routes are largely a function of average daily traffic volumes. MTA buses travel on many roadways that carry heavy volumes of traffic and are already affected by high noise levels. Typically, most somewhat noisy urban areas, near but not directly adjacent to high volumes of traffic, have noise levels in the range of 55 to 65 dB CNEL. Very noisy urban areas near arterial streets, freeeways, and airports have noise levels in the range of 65 to 75 decibels. Most MTA bus routes follow arterial streets within a very noisy existing environment.

Table 10 reports the peak hour traffic volumes for several CMP roadways within the project area and shows the estimated noise levels associated with these volumes. As shown, this range of noise levels includes relatively high 65 to 75 dB L_{eq} levels, typical of the urban areas serviced by MTA. MTA buses generate noise which contributes to the existing ambient noise levels along the affected routes.



Nature of the noise environment where the CNEL or Ldn level is:

Below 55 dB
Relatively quiet suburban or urban areas, no arterial streets within 1 block, no freeways within 1/4 mile.

55-65 dB
Most somewhat noisy urban areas, near but not directly adjacent to high volumes of traffic.

65-75 dB
Very noisy urban areas near arterials, freeways or airports.

75+ dB
Extremely noisy urban areas adjacent to freeways or under airport traffic patterns. Hearing damage with constant exposure outdoors.

□ **Normally Acceptable**
Specified land use is satisfactory, based on the assumption that any buildings are of normal conventional construction, without any special noise insulation requirements

▨ **Conditionally Acceptable**
New construction or development should be undertaken only after a detailed analysis of noise reduction requirements is made and needed noise insulation features included in design. Conventional con- struction, but with closed windows and fresh air supply systems or air conditioning, will normally suffice.

▨ **Normally Unacceptable**
New construction or development should generally be discouraged. If new construction or development does proceed, a detailed analysis of noise reduction requirements must be made and needed noise insulation features included in design.

▩ **Clearly Unacceptable**
New construction or development should generally not be undertaken.

The Community Noise Equivalent Level (CNEL) and Day-Night Noise Level (Ldn) are measures of the 24-hour noise environment. They represent the constant A-weighted noise level that would be measured if all the sound energy received over the day were averaged. In order to account for the greater sensitivity of people to noise at night, the CNEL weighting includes a 5-decibel penalty on noise between 7:00 p.m. and 10:00 p.m. and a 10-decibel penalty on noise between 10:00 p.m. and 7:00 a.m. of the next day. The Ldn includes only the 10-decibel weighting for late-night noise events. For practical purposes, the two measures are equivalent for typical urban noise environments.

Source: Cotton/Beland/Associates, adapted from City of Los Angeles *EIR Manual for Private Projects*, U.S. Department of Housing and Urban Development and State of California Guidelines and U.S. EPA, *Report on Levels of Environmental Noise Requisite to Protect the Public Health and Welfare with an Adequate Margin of Safety*, 1974.

This figure illustrates the acceptability of various land uses in areas exposed to various levels of environmental noise.

Figure 9: Guidelines for Land Use Compatibility with Exterior Noise Environments

Table 10
P.M. Peak Hour Project Noise Impact
Typical Arterial Street Locations

		1-hour Traffic Volume			Noise Level (dB Leq) at Distance from Roadway Centerline						
			Package Change		Existing			With Package			Change
Pack-age	Roadway Segment	Existing	Autos	Buses	60 feet	100 feet	200 feet	60 feet	100 feet	200 feet	(at 100 feet)
I	Santa Monica Blvd e/o Lincoln	1,524	▨	-11	69.8	65.6	60.8	69.1	65.2	60.4	-0.4
K	Artesia Blvd e/o Hawthorne Blvd	2,691	+13	-3	71.7	67.7	62.9	71.6	67.7	62.9	-0.1
K	Western Ave s/o Wilshire	2,048	+15	-3	70.6	66.6	61.8	70.4	66.5	61.7	-0.1
K	Arroyo Parkway s/o California	2,928	+18	-4	72.1	68.1	63.3	72.0	68.0	63.3	-0.1
K	Vermont Ave s/o Manchester Ave	2,111	+21	-4	70.7	66.7	61.9	70.6	66.6	61.9	-0.1
K	Centinela Ave s/o Venice Blvd	3,023	+16	-3	72.2	68.2	63.4	72.1	68.2	63.4	-0.0
L	Artesia Blvd e/o Vermont Ave	5,324	+18	-4	74.6	70.7	65.9	74.6	70.6	65.9	-0.0
M	(Typical)	3,000	-10	+2	72.2	68.2	63.4	72.2	68.2	63.4	+0.0

Assumptions:

Avg speed autos	56.3 km/hr	35.0 mph	94%	Autos
Avg speed buses	40.2 km/hr	25.0 mph	4%	Medium Trucks
Autos	6.1 meter	20.0 feet from centerline	2%	Heavy Trucks
Buses	12.2 meter	40.0 feet from centerline (curb lane)		

Noise path decay parameter for soft site

▨ **Check this data for DEIR**

Traffic volume changes from Appendix A

Calculations using methods of Federal Highway Administration *Highway Traffic Noise Prediction Mod* FHWA-RD-77-108, December, 1978.

Currently, MTA provides late "night owl" service (1:00 and 5:00 a.m.) on 13 bus lines, and night service (7:00 and 10:00 p.m.) on 52 bus lines affected by the proposed service modifications. Because most people have greater sensitivity to nighttime noises, noise generated by these late night buses may be perceived as substantially annoying to people with homes facing the streets along which these buses travel.

THRESHOLDS FOR DETERMINING SIGNIFICANCE OF IMPACT

Noise impacts are considered to be significant if the project or cumulative effects will increase noise or vibration levels to a level considered "normally unacceptable" for a given land use as outlined in Figure 9. Where noise levels are lower than the "normally unacceptable" level, a noise increase of three decibels, representing twice the traffic or doubling of the sound energy, may be noticeable and annoying to some people.

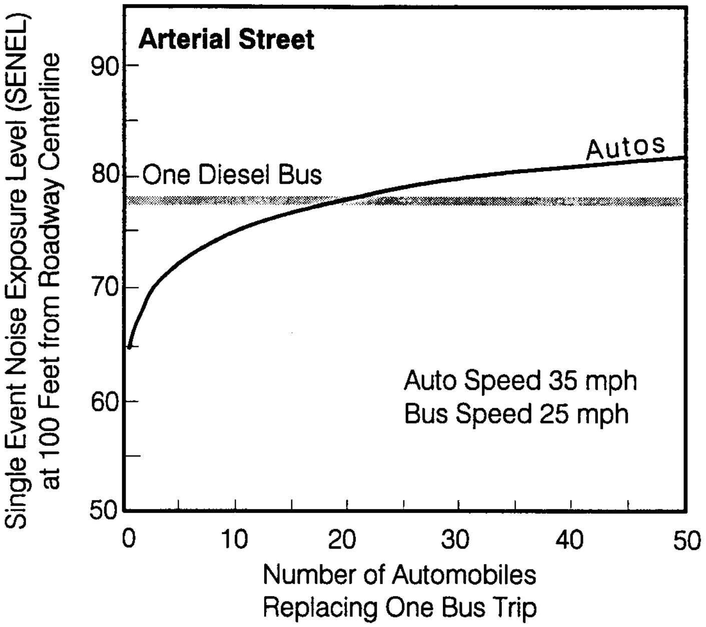
Where traffic or other background noise levels already exceed the noise level considered "normally unacceptable" for adjacent land uses (as is the case directly adjacent to most arterial streets where housing fronts the arterial street), a one-decibel increase in the CNEL or L_{dn} level may be considered significant, since this increase in noise level is sufficient to bring substantial additional area within the "normally unacceptable" noise impact area.

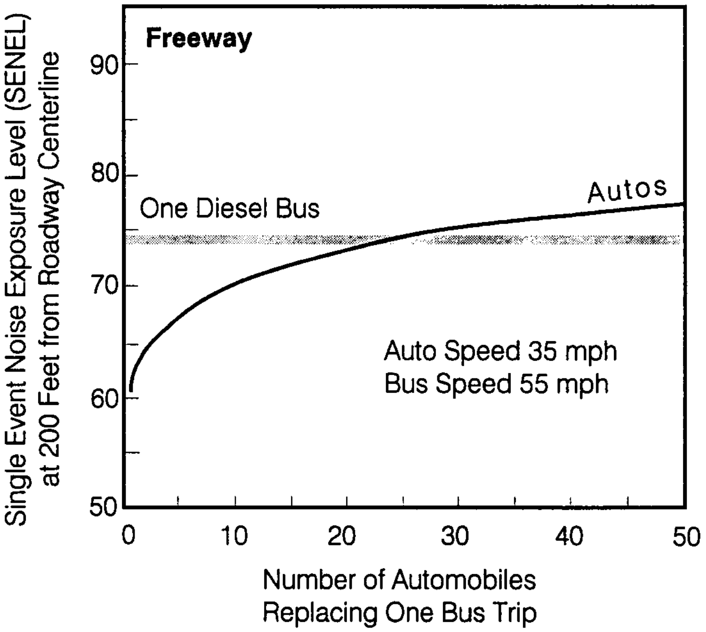
If the proposed project contributes 0.5 decibel or more to a significant cumulative effect, the project's contribution to the cumulative noise impact may be considered significant.

ENVIRONMENTAL IMPACT

A typical bus generates substantially more noise than a typical automobile. Peak noise levels from buses are typically from 10 to 15 decibels higher than automobile noise levels for the same driving conditions (Appendix E, Figure E-1). Because buses generally travel in or next to the curb lane along city streets, and because each acceleration from rest generates substantially more noise than an automobile acceleration, bus impact is greater than the difference in peak noise levels at a given distance. On freeways, buses typically operate in the High Occupancy Vehicle (HOV) lane, usually in the center of the roadway, and are therefore farther from noise-sensitive land uses. However, buses generally operate at 55 miles per hour in the HOV lane, while automobiles on the freeway at rush hour typically average 35 miles per hour or less.

Figure 10 on the following page illustrates the noise impact of substituting various numbers of automobiles for a single bus for arterial streets and freeways. As can be seen in the figure, the noise impact of one bus is approximately the same as the noise impact of 20 to 30 automobiles for both these cases.



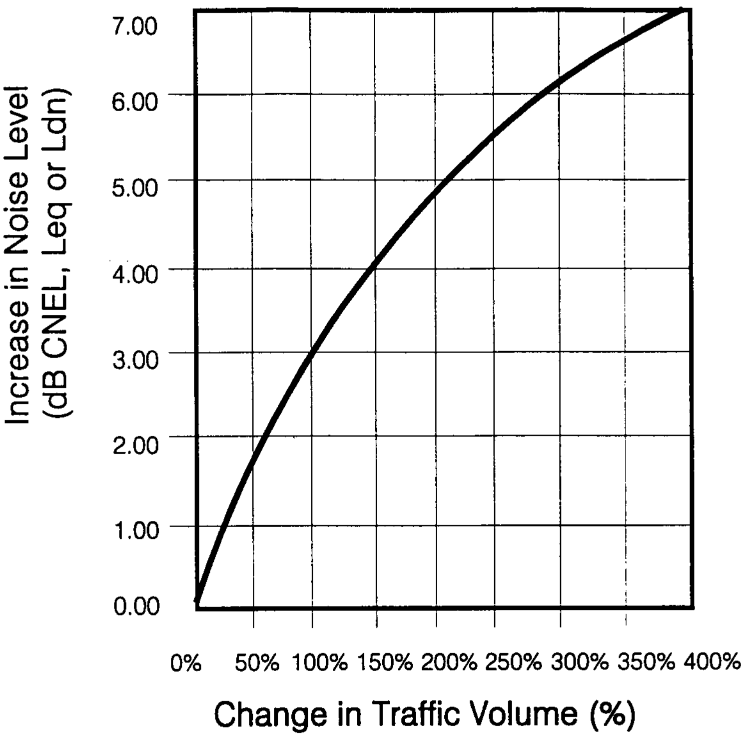


Based on methods of Federal Highway Administration *Highway Traffic Noise Prediction Model*, FHWA-RD-7-108, December, 1978. See Appendix E, Tables E-1 and E-2 for explanation of assumptions.

This figure illustrates the noise impact of substituting auto trips for bus trips for various numbers of automobiles. Noise impact would be expected to be adverse only if lines or line segments loaded substantially above the system average were dropped.

Figure 10: Noise Impact Substitution of Auto Trips for Bus Trips

Change in Noise Level with Change in Traffic Volume



As discussed in the traffic analysis section of the EIR, the average bus trip segment in the MTA system would generate only approximately 18 automobile trips, based on average occupancy of 45 passengers, a typical shift to automobile mode of only 45 percent of bus trips, and a typical automobile occupancy of 1.1 persons per vehicle. Thus, in general, a shift from the bus travel mode to the automobile travel mode will result in a reduction of noise levels.

In the case of low-occupancy bus route segments, this shift to automobiles would be substantially less. Because the preferred project emphasizes elimination of the least-used service, the preferred project would have beneficial noise impact in nearly all locations where service is affected.

Noise impacts associated with each of the 22 packages of potential modifications are summarized in Table 10A. As shown, 20 of these packages will result in either reduced overall noise levels or in no substantial change to existing noise levels.

TABLE 10A
SUMMARY OF NOISE IMPACTS

Package	POTENTIAL IMPACT		
	Reduced Noise	No Substantial Change	Increased Noise
A	X		
B		X	
C	X		
D	X		
E	X		
F	X		
G	X		
H	X		
I	X		
J	X		
K	X		
L	X		
M			X
N			X
O		X	
P		X	
Q		X	
R		X	
S	X		
T	X		
U	X		
V	X		
Staff Recommended Project	X		

Notes: (a) See Appendix E for assumptions and calculations.

Two packages -- Package M, which creates 11 new lines to operate during rush hours, and Package N, which proposes to establish a new bus terminal in downtown Los Angeles -- will result in generation of additional noise or a relocation of noise from one area to another. Because no residential units are located near the proposed location of the downtown bus terminal, no signficant adverse noise impacts are expected from this package.

The 20 packages that will result in a reduction in noise levels propose elimination or reduction of bus service along specific lines. As a result of the cutbacks, approximately 45 percent of affected bus users are anticipated to switch to car transportation, increasing the number of vehicles on the street network and generating additional noise. Figure 10 shows the change in noise level that would result from a change in volume of traffic.

As shown in Figure 10, the traffic volume would need to increase by approximately one fourth along a roadway for the noise level to increase by one decibel. In no case do increases in auto traffic exceed a few percent of current traffic volumes on roadways affected by the service modifications. In addition, noise impacts from bus service will be eliminated or reduced, including nighttime noise impacts, which will counterbalance the increase in noise from cars. Therefore, noise impacts associated with these 20 packages will not be significant.

Impacts associated with Package M, which creates new lines to operate during rush hours on 11 heavy patronage lines, also will not be significant. The routes along these lines are already affected by noise generated by heavy volumes of traffic during rush hours. The additional buses do not have the potential to contibute 0.5 decibel or more to the cumulative increase in ambient noise levels, which would be equivalent to increasing existing traffic volumes along those routes by roughly twelve percent.

Impacts associated with package N (establishing a new bus terminal near 9th and Olive Streets in downtown Los Angeles) would include short-term noise generated by construction activities and long-term noise generated by buses using the terminal. No specific site has yet been chosen for the terminal. The area near 9th and Olive Streets is developed with offices and commercial uses, with no adjacent residences, schools, hospitals, day care facilities, or other noise-sensitive uses. Environmental review of this project will include the preparation of a site-specific evaluation of environmental impacts, including noise impacts. This review will include a development of mitigation measures to reduce noise impacts. While this proposal may result in substantial localized impacts, on the system-wide level, these impacts will not be significant.

Impacts of Preferred Project

The staff-recommended project eliminates marginal, low-ridership bus lines, routes, or their segments; reduces service on these lines; and reroutes certain other lines to continue to provide basic service. The number of cars generated for each segment of bus service eliminated will be substantially less than the system average. Therefore this package will have beneficial noise impacts.

MITIGATION MEASURES

No mitigation measures are required because the proposed service modifications will not result in significant, system-wide adverse noise impacts.

LEVEL OF IMPACT WITH MITIGATION

Impacts are less than significant, and no mitigation measures are required.

REFERENCES

1. Administrative Final Environmental Impact Report, Service Reduction Project, Santa Clara County Transit District, June 1993.

2. AC Transit Service Reductions, Initial Study, Environmental Science Associates, May 1992.

3.4 LAND USE

ENVIRONMENTAL SETTING

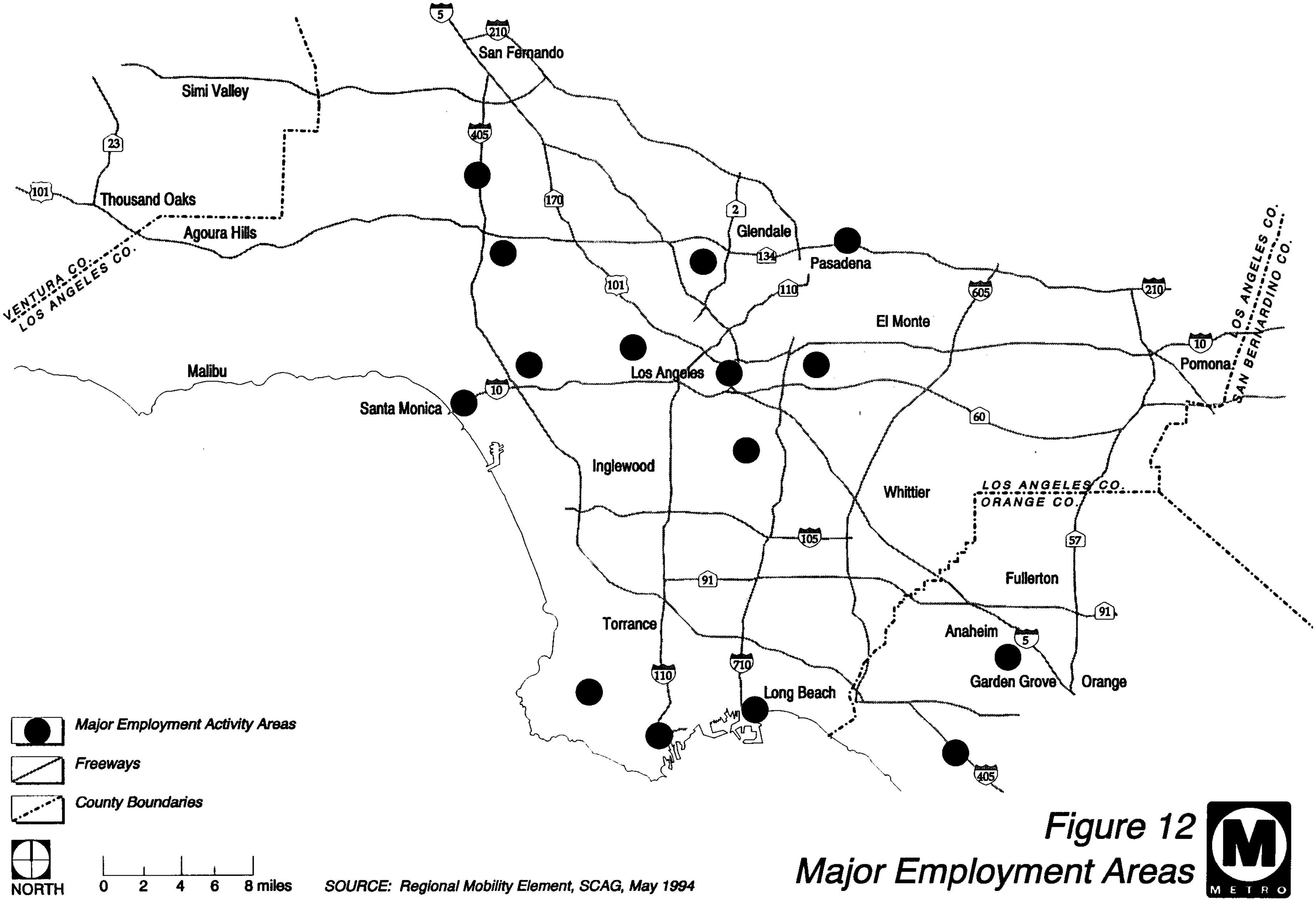
MTA provides transit service throughout Los Angeles County. The most heavily-traveled lines traverse the County's densely populated urbanized areas. The buses and rail lines link residential neighborhoods to places of employment, shopping centers, and other major destinations. Service largely responds to established land use patterns. MTA has not attempted to influence development patterns through the provision of bus service.

MTA does not have land use decision-making authority. Land use in the County of Los Angeles is governed both by regional and local plans. Regional planning for the six-county region that includes Los Angeles County is carried out primarily by the Southern California Association of Governments (SCAG), with special districts such as the SCAQMD and MTA having additional regional planning responsibilities for, respectively, air quality and public transit. Land use control at the local level is exercised by the County of Los Angeles (in the unincorporated portion of the County) and the 88 cities located throughout the county. As economic activity creates opportunities, future land development is guided by the general and specific plans and the public investments of each jurisdiction within Los Angeles County.

At the regional level, SCAG has developed regional goals and objectives for the distribution of population, housing, and employment growth. SCAG's planning efforts, which have involved coordination with local jurisdictions, particularly through the AQMP, have been undertaken to improve air quality in the region. These goals are included in the adopted Growth Management Plan for the region. SCAG has also identified major employment areas (concentrations of employment density) to help shape transportation demand management policy and program coordination. Figure 11 identifies these areas.

Various regional policies, plans, and programs link transportation/transit, land use, and air quality improvement actions in Los Angeles County:

- MTA's 1993 Los Angeles County Congestion Management Program (CMP);
- The City of Los Angeles/MTA 1993 adopted Land Use-Transportation Policy;
- SCAQMD's 1994 Draft Air Quality Management Plan (AQMP);
- The U.S. Environmental Protection Agency's 1994 Draft Federal Implementation Plan (FIP); and
- SCAG's May 1994 Regional Mobility Element (RME).



SOURCE: Regional Mobility Element, SCAG, May 1994

Figure 12
Major Employment Areas

Participation in these policies, plans, and programs is not voluntary; at least one -- the Federal Implementation Plan, or FIP -- has been imposed by court order. The following paragraphs summarize each to facilitate review of the proposed service modifications in relation to the plans, and to identify whether the project will affect the ability of agencies and municipalities within Los Angeles County to implement these policies, plans, and programs with respect to land use.

MTA's 1993 Los Angeles County Congestion Management Program

Section 3.1 of this EIR describes the CMP and examines impacts of the proposed service modification packages on the CMP road network, transit monitoring network, and transportation demand management element.

The CMP provides a range of strategies which local jurisdictions may pursue to ensure conformity with the CMP. The CMP outlines a "toolbox" of land use, transportation demand management, transportation system management, and capital improvement strategies.

Each local jurisdiction may select the actions it deems most appropriate for its community. Land-use strategies focus on integrating complementary land uses (such as residential and retail) and on concentrating activity in areas that can be efficiently served by transit. Effective land-use planning and project implementation can reduce the demand for travel on the CMP system, thereby addressing regional traffic congestion. The CMP Countywide Deficiency Plan toolbox includes 11 land use strategies, four of which are relevant to the proposed service modifications packages:

- No. 103: Residential development along transit corridors;
- No. 104: Commercial development along transit corridors;
- No. 107: Residential mixed-use development along transit corridors; and
- No. 108: Commercial mixed-use development along transit corridors.

The CMP defines "transit corridor" as a series of transit nodes where frequent transit activity occurs. A node is "the intersection of two bus lines, each with evening peak hour headways of ten minutes or less."

The City of Los Angeles/MTA Land Use-Transportation Policy

The Land Use-Transportation Policy (November, 1993) adopted jointly by the City of Los Angeles Planning Commission, Los Angeles City Council, and Board of Directors of the Los Angeles County MTA sets forth these agencies' goals to encourage transit use in the county. The policy document provides a framework to guide future development around transit station areas. The policy includes eight elements: Land Use, Housing, Urban Design, Ridership Strategy, Parking and Traffic Circulation, Equity, Economic Development, and Community Facilities. The purpose of these elements is to guide land-use decision making with transit considerations clearly in mind.

The Land Use-Transportation Policy document includes descriptions of Transit Station Area Prototypes. Prototypes illustrate potential future neighborhood characteristics that would result from implementation of land use/transportation policy. Some prototypes emphasize or require the inclusion of rail transit services. Others emphasize bus service, such as the "Major Bus Center" prototype. The major bus center is characterized by a mix of land uses developed along high ridership bus lines.

The U.S. EPA's Federal Implementation Plan (FIP)

EPA's FIP is described in Section 3.2 (Air Quality) of this EIR. The FIP is the EPA's comprehensive plan for achievement of the National Ambient Air Quality Standards in the South Coast Air Basin. The FIP was prepared by EPA in response to a federal court order based on the court's determination that local plans were not capable of achieving the standards as required by the Clean Air Act. Section 131 of the Clean Air Act states: "Nothing in this Act constitutes an infringement on the existing authority of counties and cities to plan or control land use, and nothing in this Act provides or transfers authority over such land use." FIP actions taken by EPA cannot infringe on the authority of local governments to control land use. At best, EPA could restrain the ability of certain entities to engage in activities that cause certain air quality problems. The FIP notes that "EPA does not have the authority to make the land use planning policies that would be effective in reducing VMT (vehicle miles traveled) growth in the FIP areas".

THRESHOLD FOR DETERMINING SIGNIFICANCE

A significant effect on land use caused by implementation of a service modification package is defined as a substantial, or potentially substantial, adverse change in land use that alters present or planned land uses in Los Angeles County (the MTA service area).

A modification of service that could inhibit full implementation of the City/County Land Use-Transportation Policy is considered a significant impact. The policy is designed to maximize the benefits of the extensive public investment in building a regional transportation system by encouraging land-use patterns that support transit ridership and revenue-capture opportunities.

A modification of service that results in the elimination of an existing CMP "transit corridor" is considered a significant impact because it could have the effect of inhibiting a local jurisdiction from gaining CMP deficiency plan credits through the implementation of CMP land use strategies along transit corridors.

ENVIRONMENTAL IMPACT

Potential Land Use Changes

Package N (relocate the downtown bus terminal) and Package P (implement LACBD bus intercept program with potentially four to five satellite transfer stations) represent the only proposed service modification packages that could result in direct land use changes.

MTA has not identified specific locations for the potential terminal or transfer stations. The limited information available for these packages prevent MTA from performing a detailed environmental impact analysis at this time. If MTA chooses to implement these packages, subsequent site-specific environmental analyses will be required.

CMP Implications

The Final EIR for the CMP concluded that the program would not systematically result in a land-use pattern substantially different from the adopted regional forecast or systematically different from market patterns. However, the CMP's Countywide Deficiency Plan Toolbox encourages localized redistribution of development in the form of greater densification of transit corridors and/or station areas. No CMP-designated transit centers are affected by any of the proposed service modification packages.

Some local jurisdictions in Los Angeles County have adopted, or intend to adopt, enabling ordinances such as a zoning code amendment, zone change, or general plan amendment to facilitate implementation of CMP Countywide Deficiency Plan Toolbox land use strategies. Strategies which involve intensification of density or the encouragement of mixed uses along transit corridors could be affected by proposed service reduction packages involving evening peak-hour service with headways of ten minutes or less.

If implementation of any proposed service reduction packages results in a designated CMP transit corridor not meeting the CMP transit corridor definition of p.m. peak service with ten minute headways, a jurisdiction would not lose the current CMP transit corridor designation. Reduction in transit service that affects CMP transit corridor status has the effect of eliminating four potential CMP deficiency plan toolbox strategies for local governments. In the 1995 bi-annual update of the CMP, the list of CMP transit corridors will be reviewed, according to services required by the CMP definition. Transit services in CMP transit corridors need not be provided by MTA. Local jurisdictions may use their Proposition A/C or other funds to contract for local transit service. The toolbox was developed with the general understanding and consensus that not all strategies would be appropriate for all 88 jurisdictions and the unincorporated areas of Los Angeles County. Therefore, the reduced availability of four out of 54 strategies does not result in a significant impact.

To the extent that toolbox strategies are effective in concentrating activities and increasing transit demand, these strategies would reduce the need for subsidies and potentially permit the expansion of transit service to these areas in the long term. Changes in transit service have the potential to alter the location decisions of businesses and households in the long term. These effects are discussed with reference to regional land use policies below.

City of Los Angeles/MTA Land Use-Transportation Policy

The policy focuses on areas within one-quarter mile or one-half mile of transit stations. With the exception of Packages N and P, none of the service modification packages directly impacts transit stations.

Package N involves relocation of the Los Angeles CBD bus terminal from 18th Street to 9th Street. Package P could create four or five bus transfer stations at the periphery of the Los Angeles CBD in unspecified locations. If these stations are developed, the Land Use-Transportation Policy states that Transit Oriented Districts (TODs) should be designated at each transit station with the adoption of a Master Environmental Impact Report for each TOD. Once sites for these projects are defined, site-specific environmental review will be required.

With regard to policy encouraging major bus center development consistent with the prototype, several service modification packages are likely to impact the provision of service along the 20 most heavily traveled bus routes identified in the Land Use/Transportation Policy, namely: A, D, E, F, G, H, I, J, K, M, N, O, P, R, and S. Reduced service could reduce the potential for concentrated, transit-friendly development at key locations in Los Angeles. Service reductions run counter to Land Use-Transportation policy and could hinder long-term policy implementation. Impacts are significant.

MITIGATION MEASURES

In order to mitigate the significant adverse effects on Land Use-Transportation Policy, MTA has included the following measures in the proposed project:

1. Service elimination will occur only on low-performing branch routes and route tails, and on segments duplicated by municipal operators.

2. Service restructuring will involve rerouting lines near rail stations and to feed the Metro Red Line, and rerouting lines which are also served by local municipal line segments. This approach ensures that passengers will continue to have access to their destinations, with the option of taking rail or municipal bus lines.

3. The system-wide service reductions (Package S) will represent an approximate three percent service level reduction, which is consistent with

adopted Board policies to maintain service levels commensurate with ridership levels. (Ridership declined by about four percent during FY 1994.)

The following mitigation measures are under the jurisdiction of other agencies and are being implemented by those agencies:

4. Municipal transit operators will adjust service as appropriate to meet demand for local trips.

LEVEL OF IMPACT WITH MITIGATION

Short-term impacts will be less than significant. With regard to long-term, cumulative impacts, please refer to the discussion in Section 6.0 of this EIR.

REFERENCES

1. *Draft Proposed Los Angeles Central Business District Bus Intercept Program.* Planning Department, Southern California Rapid Transit District, June 1987.

2. *Los Angeles County Congestion Management Program.* Los Angeles County Metropolitan Transportation Authority. November, 1993.

3. *Administrative Final Environmental Impact Report, Service Reduction Project*, Santa Clara County Transit District, June, 1993.

4. *Final Environmental Impact Report, Los Angeles County Congestion Management Program,* Los Angeles County Transportation Commission, Certified November 1992.

5. *Final Environmental Impact Report, Los Angeles County Congestion Management Program,* Los Angeles County Metropolitan Transportation Authority, Certified November 1993.

6. *Land Use/Transportation Policy for the City of Los Angeles and The Los Angeles County Metropolitan Transportation Authority.* Adopted in 1993.

7. Proposed Federal Implementation Plan: South Coast Air Basin, U.S. Environmental Protection Agency. February, 1994.

3.5 ENERGY RESOURCES

ENVIRONMENTAL SETTING

California depends heavily on petroleum fuels to satisfy its transportation energy needs. In 1992, transportation consumed about 40 percent of all energy used in the state. Gasoline consumption accounted for 55 percent of transportation fuel use (*Fuels Report*).

According to the SCAQMD's *CEQA Air Quality Handbook*, total daily vehicle miles traveled (VMT) in Los Angeles County by passenger cars, trucks, motorcycles, and buses in 1995 is estimated at 176.2 million miles. This level of vehicle use consumes approximately 8.1 million gallons of fuel each day. Total VMT in Los Angeles County is projected by the SCAQMD to increase over time. By the year 2009, total daily VMT in Los Angeles County is expected to increase to 214.3 million miles, potentially consuming 7.7 million gallons of fuel daily. This reduction in fuel use compared to the level of consumption in 1995 is a result of anticipated improvements in fuel performance and automobile technologies. (Refer to Appendix F for calculation worksheets.)

THRESHOLD FOR DETERMINING SIGNIFICANCE

Impacts on energy resources are considered significant if implementation of the project will result in a significant increase in energy consumption. While there is no specific state or federal standard defining a "significant increase" in energy consumption, significant energy impacts are generally linked with projects that would involve substantial energy consumption or use of energy in a wasteful manner (CEQA Guidelines, Appendix G).

ENVIRONMENTAL IMPACT

MTA's action to modify existing bus services may potentially impact regional fuel consumption. With the reduction in MTA services, displaced MTA passengers are expected to shift to other transit services and/or travel in passenger cars. Thus, implementation of any of the 22 service modification packages will decrease the VMT by bus but increase the VMT by cars. All buses to be eliminated are diesel-powered vehicles, which consume more gallons of fuel per mile than do passenger cars. The fuel consumption impacts associated with increases in VMT by cars may therefore be offset by the lower consumption of fuel by cars.

This section of the EIR analyzes the change in fuel consumption associated with each proposed package using assumptions and methodology contained in the SCAQMD CEQA Air Quality Handbook. Table 11 summarizes the results of this analysis for each package. Appendix F contains the worksheets for calculating fuel consumption.

As shown in Table 11, seven individual packages may have the potential to result in a net increase in fuel consumption. These packages are:

- Package C (cancel service expansion program);
- Package F (cancel Sunday service);
- Package G (cancel Saturday service);
- Package I (cancel route segments serving some cities);
- Package J (contract or cancel school service);
- Package M (increase express service); and
- Package S (system-wide headway adjustments).

All seven packages have the potential to increase daily fuel consumption by approximately 34,000 gallons in 1995. This represents four tenths of one percent (0.4%) of the total vehicle-related fuel consumption in Los Angeles County, which is not significant. Fuel consumption varies by much more than this amount from year to year based on changes in price and many other factors.

Over time, fuel performance and automobile technologies are expected to improve, thereby further reducing fuel consumption impacts associated with these packages. (See Appendix F for fuel consumption in the year 2009.)

MITIGATION MEASURES

Impacts will be less than significant; no mitigation measures are required.

LEVEL OF IMPACT AFTER MITIGATION

Impacts are less than significant.

REFERENCES

1. *Fuels Report*, California Energy Commission, 1993.
2. *CEQA Air Quality Handbook*, South Coast Air Quality Management District, as updated through November, 1993.

TABLE 11
SUMMARY OF ESTIMATED CHANGE IN AVERAGE DAILY 1995 FUEL CONSUMPTION ASSOCIATED WITH EACH PACKAGE

Package	Change in Fuel Consumption (in gallons/day)		Net Change in Fuel Consumption (gallons/day)
	Buses	Cars	
A	-227	+36	-190
B	-206	+136	-70
C	-124	+154	+31
D	-1,030	+817	-213
E	-721	+21	-700
F	-994	+11,334	+10,340
G	-1,230	+16,056	+14,827
H	-2,349	+1,271	-1,078
I	-268	+3,633	+3,365
J	-186	+345	+160
K	-2,061	+1,199	-862
L	-2,720	+2,034	-686
M	-1,072	+2,724	+1,653
N	-412	+272	-140
O	-3,543	+3,215	-329
P	-1,484	+654	-830
Q	N/A	N/A	N/A
R	-268	0	-268
S	-1,640	+4,005	+2,364
T	-783	+432	-351
U	N/A	N/A	N/A
V	-9,017	+10,346	+1,329
Pref. Project	-5,059	+1,702	-3,357

Notes: (a) See Section 3.1 (Transportation/Circulation) for assumptions, and Appendix F for calculations.

(b) Average daily fuel consumption for Packages E (cancel holiday service), F (cancel Sunday service), and G (cancel Saturday service) have been adjusted to facilitate comparison to average weekday consumption.

3.6 SCHOOLS

ENVIRONMENTAL SETTING

A number of existing MTA bus lines provide transportation for public and private school students. During peak morning and afternoon student ridership periods, MTA adds additional buses to existing routes to accommodate the influx of student riders. MTA provides the additional buses -- called school trippers -- in response to the additional market demand created by the students. School trippers were originally added on lines where normal ridership was impacted by students commuting to school via bus.

MTA currently provides school trippers in the following school districts:

- Los Angeles Unified School District;
- Alhambra Unified School District;
- Centinela Valley Unified School District;
- Compton Unified School District;
- Downey Unified School District;
- Glendora Unified School District;
- Glendale Unified School District;
- Inglewood Unified School District;
- Lynwood Unified School District;
- Palos Verdes Peninsula Unified School District;
- Paramount Unified School District;
- Pasadena Unified School District;
- Redondo Union School District;
- San Gabriel Unified School District;
- Santa Monica Unified School District; and
- Temple City Unified School District.

In addition, school trippers are supplied to accommodate students attending private schools throughout Los Angeles County. In both the public school districts and the private school systems, only junior high and senior high schools are served by the additional MTA buses.

MTA does not contract with the school districts or private schools to provide student transportation services. The student bus service is provided by MTA in response to market demand rather than by formal agreements with the districts. MTA coordinates the school tripper schedules with the districts to respond to changes in class schedules and holidays.

According to the state Department of Education, school districts are not required by state law to provide transportation, with the exception of transportation for disabled students. School districts establish their own policy regarding student transportation and are only responsible for meeting their own transportation policy. Consequently, transportation policies vary district to district.

THRESHOLD FOR DETERMINING SIGNIFICANCE

A project will have significant impact on schools if it will generate in additional students substantially beyond the ability of the districts to provide facilities, or if it would substantially adversely affect school facilities or programs. None of these types of direct environmental changes to schools would result from project implementation.

School service cancellation would force students to find alternate modes of transport, and school districts may find it necessary to contract for limited bus service. These actions would result in the secondary traffic, air quality, and noise impacts discussed in other sections of this EIR.

ENVIRONMENTAL IMPACT ANALYSIS

Only one of the service modification packages considered by MTA will affect schools. Package J, Cancel or Contract School Service, proposes eliminating or contracting the additional service for students on 55 lines. As discussed in Section 1.0 (Project Description), contracting for service will not result in adverse environmental impacts. As a result, contracting for service is not considered part of the proposed project for the purpose of the EIR analysis.

Eliminating additional bus service for students will not affect the physical condition of schools. However, eliminating the school trippers may create the need for additional services to be provided by affected school districts and private schools. If the school trippers are eliminated, the ability of students who are dependent on buses for transportation to and from school will be significantly affected. The school districts may have to provide limited transportation services to meet their established transportation policy. As described above, transportation policy varies district to district. The elimination of school trippers for private schools also creates the need for new transportation services for private school students.

Table 12 identifies the schools in each district served by special MTA bus service. For each school, the lines serving the school are listed. Many bus lines serve more than one school and cross school district boundaries.

Package J includes a number of the school trippers identified in Table 12. The bus lines in the column labeled "Affected Lines" correspond to the lines included for elimination in Package J. Only the additional school trippers would be cut.

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TABLE 12
SPECIAL SCHOOL BUSES BY DISTRICT/SCHOOL

School District	School	Lines with Special School Service	Other Lines Serving School
Los Angeles Unified School District	Adams Jr. High	40	421, 45-46
	Audubon Jr. High	40	42
	Bancroft Jr. High	4	
	Banning High		446
	Belmont High	14	
	Bethune High		1, 45
	Birmingham High	165	236
	Burbank Jr. High	28	83, 81, 176
	Burroughs Jr. High	20	21, 22
	Chatsworth High	243	
	Crenshaw High	40	210, 107
	Dorsey High	38, 102	212
	Eagle Rock High	28	84
	Canoga Park High	245	
	El Camino Real High	245	
	El Sereno Jr. High		256, 78
	Emerson Jr. High	4	
	Evans Adult	1, 2, 4	3
	Fairfax High	10	217
	Forshay Jr. High	207, 102	
	Francis Polytechnic High	152, 418	
	Franklin High		81, 83, 176
	Fulton Jr. High	169	
	Gage Jr. High		108, 254

TABLE 12
SPECIAL SCHOOL BUSES BY DISTRICT/SCHOOL
(Continued)

School District	School	Lines with Special School Service	Other Lines Serving School
Los Angeles Unified School District (Continued)	Garfield High	30	18, 260
	Granada Hills High	239	
	Grant High	228	154
	Griffith Jr. High		259-258
	Hamilton High		220
	Hollenbeck Jr. High	251-252	
	Hollywood High		420
	Huntington Park High	251-252	108
	Jefferson High	102	
	Jordan High		117
	King Middle School	1-175	
	LeConte Jr. High	2	
	Lincoln High		45
	Los Angeles High	28	27
	Mann Jr. High	111, 207	
	Manual Arts High	40	204, 42
	Marshall High	175	
	Metropolitan High	470	
	Millikan Jr. High	245	158
	Monroe High	166, 167	
	Mt. Vernon Jr. High	68	
	Mulholland Jr. High	165	236
	Nightingale Jr. High	251	84, 81
	Nimitz Jr. High		108

TABLE 12
SPECIAL SCHOOL BUSES BY DISTRICT/SCHOOL
(Continued)

School District	School	Lines with Special School Service	Other Lines Serving School
Los Angeles Unified School District (Continued)	Nobel Jr. High		154, 168
	North Hollywood	96, 228, 234	
	Olive Vista Jr. High	234	
	Pacific Palisades High	2	
	Pacoima Jr. High	230	
	Parkman Jr. High	424	243
	Pasteur Jr. High	33	
	Portola Jr. High	424	
	Reed Jr. High	96, 228, 234	
	Revere Jr. High	2-576	
	Roosevelt High	251-252	
	San Fernando High	230	
	Sepulveda Jr. High	234, 167	
	South Gate Jr. High	115	
	Taft High	234, 424	
	University High	20, 4	
	Venice High	33	
	Virgil Middle School	10-14	204
	Washington High	206, 207	119
	Westchester High	115	
	Wilson High School		256
	Wright Jr. High	115	

TABLE 12
SPECIAL SCHOOL BUSES BY DISTRICT/SCHOOL
(Continued)

School District	School	Lines with Special School Service	Other Lines Serving School
Alhambra Unified School District	Alhambra High		78, 259, 260, 262
	San Gabriel High		487
Centinela Valley Unified School District	Hawthorne High		124, 215
	Lewzinger High	40, 211	125
Compton Unified School District	Benjamin Davis Jr. High		125
	Whaley Jr. High		125
Downey Unified School District	Downey High	115	
	Warren High		265
Glendora Unified School District	Glendora High		448
	Goddard Jr. High		488
Glendale Unified School District	Hoover High	183	92-93
	Toll Jr. High	183	92-93
	Woodrow Wilson Jr. High	90-183	
Inglewood Unified School District	Crozier Jr. High	115	
	Inglewood High	40, 115	
Lynwood Unified School District	Lynwood High	60	
Palos Verdes Peninsula Unified School District	Palos Verdes Intermediate		226
	Peninsula High	225	
Paramount Unified School District	Paramount High		125

TABLE 12
SPECIAL SCHOOL BUSES BY DISTRICT/SCHOOL
(Continued)

School District	School	Lines with Special School Service	Other Lines Serving School
Pasadena Unified School District	Blair High		260, 401, 483
	Eliot Jr. High	180	485, 256
	Marshall High		401, 264, 268
	Muir High		267, 268
	Pasadena High		268, 264, 487
Redondo Union School District	Redondo Union High		215
San Gabriel Unified School District	Jefferson Intermediate		264
Santa Monica Unified School District	Malibu Jr. High	434	
Temple City Unified School District	Temple City High		267
Private Schools	Alemany High	239	
	Bishop Conaty High	30-31	
	Bishop Solesian High	251	18
	Crespi High	424	
	Don Bosco Tech		170, 264
	Herschel School	230	
	La Salle		268, 487
	Louisville High	245	
	Loyola Boys High	33	
	Notre Dame High	97	158
	Paster Noster High	94-90	91
	Pius X High		117-265

TABLE 12
SPECIAL SCHOOL BUSES BY DISTRICT/SCHOOL
(Continued)

School District	School	Lines with Special School Service	Other Lines Serving School
Private Schools (Continued)	Sacred Heart High	251	255
	San Gabriel Mission High		78-176
	St. Bernard High	115	
	St. Genevieve High	152, 169, 418	
	St. Mary's Academy	111, 40	

Source: *Southern California Rapid Transit District Schools Served Information List* (January 1993).

As indicated in Table 12, many schools would be affected by Package J. Most of the school trippers will be cut from Los Angeles Unified School District (LAUSD) schools. The large number of eliminated school trippers in LAUSD reflects the relative dominance of the LAUSD in the MTA service area.

Because a number of the bus lines and school trippers serve more than one school, the number of students using the school trippers to travel to a particular school is difficult to isolate. For the same reason, the number of students using MTA bus service within each district is difficult to assess. However, the number of students using the school trippers on each bus line can be estimated. Table 13 summarizes the school trippers proposed for elimination and the maximum number of affected student passengers.

A maximum total of 6,900 students will be affected by elimination of the school trippers. The estimates in Table 13 comprise a "worst case" scenario because they assume that the school trippers are filled to the planned capacity of 60 passengers. The actual number of students affected may be less because not all of the school trippers currently operate at the planned capacity. The estimates of students affected include students in both public and private schools.

The students displaced from the eliminated school trippers can use the regular bus service to travel to and from school. However, the buses will reach capacity sooner with the influx of student riders. Some students may not be allowed to board overcrowded buses and consequently, may be late to school or to after-school employment and sports. In addition, the regular bus service schedule may not correspond to the school schedules. Some students who presently use school trippers may be required to use other transportation modes, such as cars and bicycles, to reach school. For students without access to car or bicycle transportation, access to school may be impeded. For students already at risk of cutting classes or dropping out of school, the elimination of the school trippers may provide the impetus for missing more school.

To ensure that students have transportation to school, the school districts and private schools may need to provide additional bus service. The extent of the demand for bus service will vary according to the ridership of the individual school trippers, the service area of the schools, and the demographic characteristics of the displaced school tripper riders. In addition, each district and private school will have to satisfy internal policy established by their board regarding the transportation of students. If Package J is adopted, the increased demand on school districts to transport students may result in a significant impact on some school districts.

CMP and Other Considerations

The Los Angeles County CMP and AQMP encourage use of transit to reduce home-school trips. Elimination of the extra buses along lines serving schools may contribute to delays in the attainment of congestion-relief and air quality improvement goals.

TABLE 13
POTENTIAL NUMBER OF STUDENTS IMPACTED BY LINE

Line Numbers of School Trippers Considered for Elimination[1]	Route Description	Number of Schools Directly Served	Number of Special Trips	Maximum Passengers Per Trip	Maximum Impacted Students Per Line
1	Hollywood Blvd.	3	9	60	540
2	Sunset Blvd.	5	4	60	240
4	Santa Monica Blvd.	4	5	60	300
10	Melrose Ave. - Virgil Ave. - Temple St.	3	7	60	420
14	Beverly Blvd.	2	0	60	0
20	Wilshire Blvd.	3	8	60	480
28	West Olympic Blvd.	6	11	60	660
30/31	West Pico Blvd.	4	4	60	240
33	Venice Blvd.	3	3	60	180
38/71	West Jefferson Blvd., City Terrace	2	0	60	0
40	Hawthorne Blvd.	7	12	60	720
53	South Central Ave.	0	2	60	0[2]
60	Long Beach Blvd. - Santa Fe Ave.	1	7	60	420
66	East Olympic Blvd. - W. Eighth Ave.	1	2	60	120
68	W. Washington Blvd. - Brooklyn Ave.	3	0	60	0
90	L.A. - Sunland - Sylmar via Penn. Ave.	3	3	60	180
94	Los Angeles - San Fernando	1	0	60	0

TABLE 13
POTENTIAL NUMBER OF STUDENTS IMPACTED BY LINE
(Continued)

Line Numbers of School Trippers Considered for Elimination[1]	Route Description	Number of Schools Directly Served	Number of Special Trips	Maximum Passengers Per Trip	Maximum Impacted Students Per Line
96/97	L.A. - Burbank - No. Hollywood - Sherman Oaks	3	4	60	240
102	E. Jefferson Blvd. - Coliseum St.	3	0	60	0
111	Florence Ave. - Leffingwell Rd.	2	1	60	60
115	Manchester Ave. - Firestone Blvd.	7	8	60	480
127	Compton Blvd. - Bellflower Blvd.	0	0	60	0
152	Fallbrook Ave. - Roscoe Blvd. - Vineland Ave.	2	0	60	0
165	Vanowen St.	2	0	60	0
166	Nordhoff St. - Osborne St.	1	0	60	0
167	Plummer St. - Van Nuys Blvd.	2	0	60	0
169	Saticoy St. - Sunland Blvd.	2	0	60	0
175	Fountain Ave. - Talmadge St. - Hyperion Ave.	2	4	60	240
180	Hollywood - Glendale - Pasadena via Colorado Blvd.	1	1	60	60
183/234	Magnolia Blvd. - Kenneth Rd. - E. Colorado Blvd.	3	0	60	0

TABLE 13
POTENTIAL NUMBER OF STUDENTS IMPACTED BY LINE
(Continued)

Line Numbers of School Trippers Considered for Elimination[1]	Route Description	Number of Schools Directly Served	Number of Special Trips	Maximum Passengers Per Trip	Maximum Impacted Students Per Line
206	Normandie Ave.	1	2	60	120
207	Western Ave.	3	3	60	180
211	Prairie Ave.	3	0	60	0
225	Aviation Blvd. - Palos Verdes Peninsula	3	3	60	180
228	Coldwater Canyon Ave. - Lankershim Blvd.	3	3	60	180
230/239	Laurel Canyon Blvd. - White Oak Ave. - Zelzan Ave. - Rinaldi St.	5	3	60	180
243	DeSoto Ave. - Ventura Blvd. - Winnetka Ave.	3	1	60	60
245	Topanga Canyon, Mullholand - Valley Center Blvd.	4	0	60	0
251/252	103rd St. - Soto St. - Daly St.	6	2	60	120
270	Monrovia - El Monte - Cerritos	0	0	60	0
418	La Roscoe Blvd. - Northridge Express	2	0	60	0
424/425	LA - Ventura Blvd. - Warner Center - Van Nuys	4	0	60	0
434	LA - Santa Monica - Malibu	1	0	60	0
439	Redondo Beach Exp.	0	0	60	0

TABLE 13
POTENTIAL NUMBER OF STUDENTS IMPACTED BY LINE
(Continued)

Line Numbers of School Trippers Considered for Elimination[1]	Route Description	Number of Schools Directly Served	Number of Special Trips	Maximum Passengers Per Trip	Maximum Impacted Students Per Line
443	LA - N. Torrance - Redondo Beach	0	0	60	0
470/471	LA - Whittier - La Habra - Puente Hills	1	2	60	120
576	S. LA - Pacific Palisades Exp.	1	3	60	180
TOTAL IMPACTED STUDENTS (MAXIMUM)					6,900

[1] Based on column labeled "Package J" in Table 1 in EIR Section 1.0.

[2] Line 53 does not directly serve any schools but instead connects to other lines that directly serve schools. The student passengers on Line 53 special trips are accounted for under the lines directly serving schools.

Source: Data from MTA Operations Planning (May 1994), and *Southern California Rapid Transit District Schools Served Information List* (January 1993).

Preferred Project

MTA staff's proposal does not include adoption of Package J. Impacts on schools will not be significant if the Board adopts the staff recommendation.

MITIGATION MEASURES

The following mitigation measures are required to reduce significant impacts on schools. Implementation of the mitigation measures will *only* be required if Package J is selected.

1. MTA will adjust regular bus service schedules on lines with the eliminated day trippers to better correspond with the public and private school schedules.

2. MTA will provide impacted public and private schools with an ample supply of appropriate bus schedules at the beginning of each semester. The schools will distribute the schedules to students living in the affected service areas.

The following measures can be implemented by school districts:

3. For schools with large numbers of impacted students, the responsible school district (or private school administration office) may contract with a bus operator to provide bus transportation to and from school. MTA will assist districts in locating potential alternative operators. To partially offset the cost of the contract, the school district can charge students a fare similar to the existing MTA bus fare.

4. For schools with large numbers of impacted students, school administration offices may develop a volunteer car pool program with interested parent and student drivers. Drivers can be given the option of collecting money for fuel costs from non-driving passengers. To further encourage carpooling, schools should provide preferential parking for multi-passenger vehicles.

5. The administration office of affected schools should coordinate with the city agencies to identify safe and convenient bicycle routes connecting affected service areas to the school. MTA can assist with distribution of information about bicycle routes to students in impacted service areas at the beginning of each semester. Schools can encourage bicycle transportation by providing secure storage for students' bicycles during the school day.

LEVEL OF IMPACT AFTER MITIGATION

Impacts will be reduced to a less-than-significant level.

REFERENCES

1. Mary Lewis, State of California Department of Education, School Transportation, Telephone Conversation on May 18, 1994.

2. Scott Holmes, Supervising Operations Manager, Metropolitan Transportation Authority, Telephone Conversation on May 18, 1994.

3. Frank Schroder, Schedule Manager, Metropolitan Transportation Authority, Telephone Conversation on May 24, 1994.

4. *Southern California Rapid Transit District Schools Served Information List,* Metropolitan Transportation Authority, January 1993.

5. Data from Metropolitan Transportation Authority Operations Planning Department, May 24, 1994.

3.7 MAINTENANCE OF ROADWAYS

ENVIRONMENTAL SETTING

MTA operates buses on public roadways within its service area. The buses contribute to the deterioration of surface streets, especially streets used by heavy-patronage lines running many buses. Additional heavy-use areas include streets serving bus stops, bus terminals, rail intercept centers, and repair and maintenance facilities. MTA's buses represent only one component of the vehicle fleet that uses these streets and contributes to street wear. Roadway maintenance is the responsibility of local municipalities and counties. Maintenance costs are funded primarily by gas tax revenues. The California Department of Transportation (Caltrans) maintains the freeways.

THRESHOLD FOR DETERMINING SIGNIFICANCE

Impacts are considered significant if the proposed project will have a substantial effect upon, or result in a need for new or altered services to maintain public roads.

ENVIRONMENTAL IMPACT

Twenty of the proposed modification packages involve either eliminations or reductions in service, resulting in fewer buses using the streets. As a result, these proposals would have the beneficial impact of reducing the amount of heavy vehicle travel on affected surface streets.

Package M, which creates additional lines to operate during rush hours on heavy patronage lines, would result in a slight increase in the amount of wear on streets used by these lines. The additional service would be provided on 11 local bus lines whose routes are already equipped with bus stops and other necessary infrastructure. Impacts are considered less than significant because no new or altered street maintenance services would be required to accommodate this package, and no new bus stops requiring reinforced street sections would be required.

Package N, which establishes a new bus terminal in downtown Los Angeles, would increase bus traffic on streets serving the terminal. However, this proposal simply relocates impacts from the existing terminal located near 18th Street to a new terminal to be located near 9th and Olive Streets. As such, no additional adverse impacts are anticipated on a system-wide level.

Package P, which would implement a shuttle bus intercept program within the Los Angeles Central Business District, would concentrate buses at the intercept points and thereby potentially increase wear on the affected streets. The necessary roadway infrastructure such as satellite transfer lots would be constructed by MTA as part of this service. This impact is considered less than significant since Package P would not require a provision of additional or altered roadway maintenance services.

The staff-recommended proposal would eliminate and reduce service on marginal, low-ridership routes. The reduction in bus travel would reduce the use of surface streets along affected routes and thus reduce associated roadway deterioration. No significant impacts will result.

MITIGATION MEASURES

No mitigation measures are required as the proposed service modifications will not result in a significant, adverse impact on a system-wide level.

LEVEL OF IMPACT WITH MITIGATION

Impacts are less than significant.

Areas of No Potential Significant Impact

METRO

4.0 AREAS OF NO POTENTIAL SIGNIFICANT IMPACT

In May of 1994, MTA prepared an Initial Study to identify potentially significant impacts associated with the adoption and implementation of the proposed service modifications. A copy of the Initial Study is contained in Appendix A.

The Initial Study concluded that the project would not result in potentially significant impacts with respect to the following: earth resources, water resources, plant life, animal life, light and glare, risk of upset, population, housing, public services (fire protection, law enforcement), utility systems, human health, aesthetics, recreation, and cultural resources. The findings that support these conclusions are presented in the Initial Study and summarized below.

Earth Resources

With the exception of Packages N and P, the project does not involve any grading or construction activity. No significant impact will result. Site-specific environmental review of Packages N and P will be required once these projects are more clearly defined.

Water Resources

With the exception of Packages N and P, the project does not involve any grading or construction activity. No significant impact will result. Site-specific environmental review of Packages N and P will be required once these projects are more clearly defined. Mitigation will be included in the design of these projects to minimize runoff.

Plant Life

The project does not involve any activity which would remove sensitive plant species or important habitat. Potential construction projects would occur only in urbanized areas. No significant impact will result.

Animal Life

The project does not involve any activity which would remove important habitat. Potential construction projects would occur only in urbanized areas. No significant impact will result.

Light and Glare

With the exception of Packages N and P, the project does not involve any new building activity that would create new sources of light and glare. No significant impact will result. Site-specific environmental review of Packages N and P will be required once these projects are more clearly defined.

Risk of Upset

With the exception of Package N, the project does not involve any actions that would use or produce hazardous substances. No significant impact will result. Package N could involve the storage of fuels, oils, and similar substances. Associated impacts will be examined through site-specific environmental review when this project is more clearly defined.

Population

Because of the regional scope of the project, the proposed systemwide modifications are expected to be a very small factor in location decisions of businesses and households. All transit-dependent populations will be affected equally by the project. No significant impact will result. A separate analysis is being conducted to identify adverse effects of the potential service modifications on disadvantaged minority groups.

Housing

For the reasons cited above, the project is not expected to result in a significant shift in population. Therefore, the project will not affect the demand for certain types of housing throughout the MTA service region. No significant impact will result.

Public Services

The project does not involve any significant construction project that would require special fire protection or law enforcement services. No significant impact will result.

Utilities

The project does not involve any significant construction project that would demand any new utility services. No significant impact will result.

Human Health

Refer to discussion under "Risk of Upset."

Aesthetics

With the exception of Packages N and P, the project does not involve any new building activity. No significant impact will result. Site-specific environmental review of Packages N and P will be required once these projects are more clearly defined.

Recreation

The project does not involve any new construction -- such as new housing -- that would create a demand for additional recreation resources and programs. No significant impact will result.

Cultural Resources

With the exception of Packages N and P, the project does not involve any new building activity. No significant impact will result. Site-specific environmental review of Packages N and P will be required once these projects are more clearly defined.

Cumulative Impacts

6.0 CUMULATIVE IMPACTS

The CEQA Guidelines define cumulative effects as "two or more individual effects that, when considered together, are considerable or which compound or increase other environmental impacts." The Guidelines further state that the individual effects can be the various changes related to a single project or the changes involved in a number of other closely related past, present, and reasonable foreseeable future projects (Section 15355). The Guidelines allow for the use of two alternative methods to determine the scope of projects for the cumulative impact analysis:

- List Method - A list of past, present, and reasonably anticipated future projects producing cumulative impacts, including those outside the control of the lead agency; and

- Regional Growth Projections Method - A summary of projections contained in an adopted general plan or related planning document which is designed to evaluate regional or areawide conditions.

This EIR uses the List Method for the cumulative analysis, with related projects of similar scale used to define the scope of the analysis.

The proposed MTA service modifications involve a combination of related discrete actions. Each individual action would result in limited regional effects. However, the combined effect of implementing all 22 packages, together with similar proposals under consideration by other transit operators, could produce substantial cumulative impacts.

6.1 CUMULATIVE PROJECTS

This cumulative analysis addresses all known present and anticipated projects involving modifications to transit service within and serving Los Angeles County. (No past service modification projects are included because no similar projects have been implemented in the recent past.) Seven categories of service modification projects are included:

- All potential transit service modifications presently under consideration by MTA, as described in Section 1.0 of this EIR;

- All known potential service modifications planned by municipal operators in Los Angeles County;

- Proposed service modifications to lines extending into Los Angeles County by transit operators in adjacent counties;

- Proposed service modifications to municipal transit service funded by MTA;
- Fare increases which would affect transit ridership;
- CMP and AQMP programs which would increase demand for transit; and
- Rail construction projects.

MTA Service Modifications

As described in Section 1.0 of this EIR, MTA is proposing 22 separate packages of service modifications. The MTA Board of Directors may elect to adopt one, several, or no packages, or may select portions of specific packages to meet MTA's budget objectives. The cumulative impact analysis assumes that the Board will adopt all of the packages, which represents a "worst case" scenario.

Service Modifications by Municipal Operators

Municipal transit operators in Los Angeles County may be considering service modifications. Each municipal operator was sent a letter soliciting information about proposed MTA's service modifications. Responses were received from the City of Commerce Transportation Director and Long Beach Transit. Commerce indicated that no modification to service is presently under consideration. Long Beach Transit reported that an approximate 20 percent service reduction may be implemented. The Long Beach Transit reduction package consists of reducing service on selected lines, and eliminating or truncating several routes. The extent of the Long Beach Transit service reductions depends on the final outcome of MTA and state budget deliberations.

The cumulative impacts analysis assumes that all of the Long Beach Transit service modifications will be implemented. Because responses were not received from the other municipal operators, the cumulative impact analysis assumes that no other municipal operator is considering service modifications.

Service Modifications by Adjacent Transit Operators

Several transit operators outside of Los Angeles County run bus lines extending into the county. All operators serving areas adjacent to the county were contacted, including Omni Trans (San Bernardino County), Orange County Transportation Authority (OCTA), and Simi Valley Transit. The adjacent operators were asked if service modifications to lines running into Los Angeles County are being considered. OCTA and Simi Valley Transit reported that service modifications to lines extending into Los Angeles County are not presently being considered.

Omni Trans reported that one service cut into Los Angeles County is planned. Omni Trans Line 110-496 provides transportation from San Bernardino and Riverside Counties to downtown Los Angeles. Approximately 70,000 passengers per year use the line, but not all passengers use the line to access downtown Los Angeles. While this line is presently funded by MTA, the funding will be cut on July 1, 1994. This funding cut will result in the termination of the line at the Montclair Transit Center rather than downtown Los Angeles. To reach downtown, passengers will be required to transfer onto other lines.

MTA Recommended Municipal Operator Service Modifications

MTA fully and partially funds a number of local bus lines operated by municipal providers under the Transit Service Expansion and Bus Overcrowding Relief (TSE/BOR) projects, which were funded by Proposition A Discretionary unearned Transit Performance Measurement Program (TPM) funds. The original purpose of the program was to fund additional congestion-relieving transit service, including providing transit connections to the Metro Blue Line. The program called for a two-year commitment, with an intent to develop an ongoing funding source for the municipal TSE/BOR projects after the initial time period, assuming the lines met appropriate performance standards.

A number of the TSE/BOR lines do not currently meet established productivity standards. Due to MTA budget shortfalls, the MTA Board of Directors is considering funding withdrawal for TSE/BOR municipal lines not meeting productivity standards. The following lines will be affected by the recommended funding cuts:

- Foothill Transit Line 690
- Los Angeles Department of Transportation Lines 409, 549, 573 and 574
- Lynwood Metro Blue Line Shuttle
- MTA Line 620 (Boyle Heights Shuttle)
- MTA 15 - Bus Overcrowding Relief program
- MTA Line 30
- Torrance Line 6
- Torrance MAX Service

The cumulative impact analysis assumes that funding will be cut for all of the lines listed above.

Service Modifications by Regional Rail Operators

The Southern California Regional Rail Authority (SCRRA) operates Metrolink rail service in Ventura, San Bernardino, Riverside, Orange and Los Angeles counties. No reduction in Metrolink rail service is proposed by SCRRA at this time.

Fare Increases

MTA is considering increasing fares as one of the options to meet its budget deficit. MTA staff has estimated that this fare modification could reduce overall transit ridership by roughly four percent, as some transit users switch to other modes of transportation or reduce travel.

CMP and AQMP Programs

Both the CMP and AQMP assume increased use of public transit over time will help implement goals to reduce air pollution and traffic congestion. The plans contain numerous control measures to increase transit use, including concentrating residential and commercial development along transit corridors and around transit stations; providing a range of incentives for employees, shoppers, and students to use transit; and other measures. The success of such measures depends on additional development of the transit network to provide a comprehensive regional system, and on an economically-attractive fare structure.

Rail Construction

MTA operates the regional Metrorail system, which includes the Blue, Red and Green lines. The Blue Line is an above-ground light rail that transports passengers between Long Beach and downtown Los Angeles. The Red Line, which is partially constructed as a subway, connects downtown to the Wilshire corridor. The Green Line, scheduled for start up in 1995, will provide rail service along Interstate 105. The agency's 30-year plan envisions substantial enlargement of the system by extending these lines throughout the region and developing a new Orange rail line to link west Los Angeles to downtown.

6.2 CUMULATIVE IMPACT ANALYSIS

Transportation/Circulation

A significant cumulative transportation/circulation impact can result from either 1) a substantial increase in traffic that causes roadway operations to exceed acceptable service levels; or 2) a conflict with a regional transportation/ circulation plan.

Implementing all of the MTA service modifications and the additional transit service modifications in the county will result in the elimination of selected bus service. According to EIR Section 3.1, Transportation/Circulation, about 45 percent of the bus passengers affected by the service cuts will use automobile transportation in lieu of bus transportation. The new automobile trips will be distributed and dispersed across the vast CMP roadway network and consequently, will not cause substantial changes in the levels of operation of specific roadways.

Several regional plans address transportation and circulation in the county. The primary plan is the 1993 CMP. The CMP establishes strategies to reduce congestion by improving the circulation system and increasing the use of alternative transportation modes, including bus and rail. Implementing all of the MTA service modifications and the additional transit service modifications in the county will reduce the regional level of bus service, and reduce the total number of people using transit. This effect conflicts with the goals of the CMP, and is therefore considered a significant cumulative transportation/circulation impact. The mitigation approach described in Section 6.3, Mitigating Cumulative Significant Impacts can be used to reduce cumulative impacts on transportation and circulation.

Air Quality

A significant cumulative air quality impact can result from either: 1) the generation of emissions that exceed the SCAQMD threshold level for a new project; or 2) a conflict with regional air quality plans.

Section 3.2 (Air Quality) provides a quantitative analysis of the impacts resulting from the individual MTA service modification packages. The analysis indicates that several of the packages will each result in new emissions that exceed the threshold of significant effect for a project. The emissions will result from increased automobile trips as affected bus passengers opt to use private cars to replace bus service. If all of the MTA service modification packages are implemented along with the service modifications proposed by other transit agencies, the resultant emissions from new automobile trips will cause a significant cumulative impact.

The primary regional air quality plan is the 1991 *Air Quality Management Plan* (AQMP), adopted by SCAQMD and SCAG. The AQMP establishes strategies to achieve state and federal air quality standards in the South Coast Air Basin. A critical component AQMP is the assumption that single-occupancy automobile use will decrease in conjunction with increased use of transit. The MTA service modifications combined with the other transit and fare modifications proposed in the county will reduce the overall level of available transit service in the county. The reduction in transit service conflicts with the AQMP strategies and therefore represents a significant cumulative impact to air quality. The development of additional rail transit over the next decades will alleviate this impact to some degree. The mitigation approach described in Section 6.3, Mitigating Cumulative Significant Impacts, can be used to reduce this impact.

Noise

For the cumulative noise impact to be significant, the MTA service modifications and the additional transit service modifications must cause noise to increase by one dB(A) or more. The elimination of bus service along the identified lines will in general reduce noise levels along the routes. As discussed in Section 3.1 (Transportation/Circulation), about 45 percent of the passengers affected by the service cuts will use automobile transportation in lieu of bus transportation. The new car trips will be distributed system-wide trips would not be concentrated along the bus routes. The resultant noise from cars would similarly be dispersed. The noise levels along bus routes are not expected to increase by one dB(A) as a result of the increase in car trips, as the new trips would need to increase traffic volumes at these locations by roughly one quarter. Therefore, the resulting cumulative noise impact will not be significant.

Land Use

None of the proposed service reductions will result in direct land use changes, with the exception of MTA Package N (relocate downtown bus terminal) and Package P (implement LACBD bus intercept program with potentially four to five satellite transfer stations). If either Package N or P is implemented, MTA will perform a detailed environmental analysis to determine land use impacts and establish appropriate mitigation measures. The cumulative direct land use change from all of the MTA packages and the other service reductions in the county will not be significant.

Goals and objectives for the distribution of land use are established in plans and programs at the regional and local governmental levels. Various regional policy plans and programs link land use in Los Angeles County to transportation and air quality. The primary policy plans linking land use, transportation and air quality are the 1993 Los Angeles County CMP, and the 1993 City of Los Angeles/MTA Land Use Transportation Policy. Both of these plans are described in Section 3.6.

Implementation of all the MTA service reductions and the additional transit service reductions proposed in the county could result in the loss of designation of some transit corridors currently designated as CMP facilities. The loss of the designation would reduce to seven the number of eligible land use strategies available to meet the CMP goals at these locations. The cumulative land use impact from loss of the CMP transit corridors will not be significant because local jurisdictions will still have a toolbox of land use, circulation, and other strategies to manage congestion.

Implementation of the Major Bus Center development prototype established in the City of Los Angeles and MTA Land Use-Transportation Policy could be cumulatively impacted by implementation of all the MTA service reductions and the additional transit service reductions. The Major Bus Center is characterized by a mix of land uses developed along high ridership bus lines. The service along the high ridership bus lines will be reduced by the cumulative service reductions, and development of the Major Bus Center prototype could be impeded. The impact of all the MTA service reductions combined with the impact of the additional transit service reductions result in a significant cumulative impact to the Land Use-Transportation Policy. The mitigation approach described in Section 6.3, Mitigating Cumulative Significant Impacts can be used to reduce cumulative impacts.

Energy Resources

A significant cumulative impact to energy resources can result from a substantial increase in regional fuel consumption.

Buses use large amounts of diesel fuel. Moderate ridership levels are required for buses to be considered a fuel-efficient transportation mode. Alternatively, automobiles use smaller amounts of gasoline but they are considered inefficient due to the limited passenger capacity. As indicated in Section 3.1 (Transportation/Circulation), about 45 percent of the passengers affected by the MTA and additional transit modifications will switch to automobiles for transportation. While eliminating some bus service will reduce regional diesel consumption, increased use of automobiles by affected bus passengers will increase regional gasoline consumption.

The cumulative impact on fuel consumption will not be significant. Most of the bus services identified for elimination have low ridership levels, and consequently are an existing inefficient use of diesel fuel. The increase in gasoline consumption will be partially offset by the decrease in diesel fuel consumption. The net increase in fuel use will not be significant when compared to regional fuel consumption.

Schools

A significant cumulative impact on schools can result from a substantial increase in demand for transportation service provided by school districts.

Almost 6,900 junior and senior high school students use public bus service every weekday to travel to and from school. Public bus service is also used by private school students. Transit operators in the county often supply special buses on established lines to accommodate student riders. MTA Package J and one of the Long Beach Transit proposals involve cutting selected bus service for students, and the MTA proposal to modify fares includes increasing student fares. Some of the school districts in the county may have to provide new bus service for students affected by the MTA and Long Beach service cuts and fare increases. The cumulative impact on schools is significant but can be mitigated by implementing the measures identified in Section 3.6 (Schools).

Road Maintenance

A significant cumulative impact on roadway maintenance can result from a new demand for services to maintain public roads.

Due to their heavy weight and the roadway stress of frequent stops and starts at bus stops, buses contribute substantially to the physical deterioration of roadways. Local municipalities, the county, and Caltrans are responsible for maintaining the conditions of roadways for safe vehicle operation. Implementation of MTA and other transit service provider modifications will result in a reduced number of buses on public roadways. About 45 percent of the displaced transit passengers will transfer to automobiles, resulting in a net increase in automobiles on public roadways. Because of their light weight, automobiles contribute less significantly to the deterioration of roadways compared to buses providing the same number of passenger trips.

As a result, less service will be required to maintain the roads and thus, the cumulative impact will not be significant.

6.3 MITIGATING CUMULATIVE SIGNIFICANT IMPACTS

Implementation of all of the transit and fare modifications proposed in Los Angeles County will result in overall significant cumulative impacts to transit service, air quality, and land use. The determination that these effects are significant is based on the finding that reducing bus service conflicts with regional plans to reduce traffic congestion and improve air quality. Mitigating the cumulative transit, air quality, and land use impacts will require replacing the eliminated bus service with programs that implements the goals of the CMP, AQMP, and Transportation-Land Use Policy. To be feasible, the replacement program must meet the project objectives of balancing the MTA budget.

The mitigation programs should minimize the number of affected transit passengers resorting to single-occupancy automobile transportation. All of the transit operators cutting service will implement programs to consist of the following actions:

1. To the extent possible, contract for services rather than cancel service to minimize effects.

2. Pursue obtaining new funding through legislative and voter actions.

3. Consider using fare modifications rather than service modifications, since the fare increases do not generally discourage ridership to the same extent as reductions in service.

4. Work to accelerate the application of SCAQMD Rule 1501 to work sites with fewer than 100 employees.

5. Implementation measures to increase efficiency of service in conformance with the AQMP and CMP.

6. Use transit funds to promote bicycle use, such as providing lockers and showers at appropriate locations, including schools.

7. Prior to cutting service, study the affected lines and revise the schedules to minimize the number of passengers affected by the service cuts.

8. For the time period consisting of 30 days before the service cut and 30 days after the service cut, provide literature on the affected lines that announces the service cuts and the revised schedule. The literature shall also provide information about using other bus routes and alternative transportation modes to reach common destinations.

9. For the time period consisting of 30 days before the service cut and 30 days after the service cut, provide a toll-free information hotline to provide affected passengers with assistance in planning for alternative bus and other modes of transportation.

10. For the time period consisting of 30 days before the service cut and 30 after the service cut, offer a toll-free information hotline for people seeking and providing carpooling.

As indicated previously, significant cumulative impacts pacts to schools can be mitigated by implementing the mitigation measures identified in Section 3.6, (Schools).

REFERENCES

1. Transit Service Expansion and Bus Overcrowding Relief Projects Funding Recommendations for Fiscal Year 1995, Judith Wilson, Metropolitan Transportation Authority, April 28, 1994.

2. Larry Torres, Project Manager, Metropolitan Transportation Authority, May 19, 1994.

3. Tina Wu, Planning Technician, Omni Trans, Telephone Conversation on May 19, 1994.

4. Ray Turpin, Transit Administrator, Simi Valley Transit, Telephone Conversation on May 20, 1994.

5. George Duran, Transit Analyst, Orange County Transportation Authority, Telephone Conversation on May 23, 1994.

6. Guy Heston, Assistant General Manager, Long Beach Transit, Letter, May 19, 1994.

7. Annette Colfax, Director of Finance and Passenger Service, Southern California Regional Rail Authority, Telephone Conversation on June 2, 1994.

8. MTA News, press release on public hearing on service fare adjustment, March 23, 1994.

Alternatives to the Project

5.0 ALTERNATIVES TO THE PROJECT

The following discussion examines a "no project" alternative and an alternative package combination that has the potential to reduce environmental impacts below the levels associated with the preferred project. Through comparison of these alternatives to the proposed project, the advantages of each can be weighed and analyzed. State CEQA Guidelines require that a range of alternatives be addressed, "governed by a 'rule of reason' that requires the EIR to set forth only those alternatives necessary to permit a reasoned choice" (Section 15126[d]).

The 22 service modification packages offer a multitude of potential alternative combinations. In selecting alternatives to be examined, MTA was guided by the CEQA provisions cited above and the further CEQA requirement that the discussion of alternatives should focus on alternatives capable of either eliminating any significant adverse environmental effects or reducing them to a level of insignificance.

CEQA case law (*Citizens of Goleta Valley v. Board of Supervisors*) suggests that analysis of project alternatives should include consideration of feasible alternative locations for the project, if appropriate. Selection of the alternative site, or the decision not to examine alternative locations, should be governed by the "rule of reason" cited above. Alternative locations are not examined in this EIR because the project is not a physical development project located at a particular site.

The alternatives considered in this section include:

(A) The **"no project"** alternative required by CEQA, which assumes that MTA adopts none of the proposed service modifications. To meet the budget deficit, MTA will need to pursue new strategies. This analysis assumes that MTA will cut costs by other means, divert funds from capital investment to current operations, raise fares, and identify new funding sources in order to meet its budget shortfall.

(B) Alternative B, ---- to be identified by MTA staff (see page 5-3) ---

ALTERNATIVE A: NO PROJECT

CEQA requires examination of the "no project" alternative (CEQA Guidelines, Section 15126(d)(2)). "No project" assumes that MTA does not adopt any of the 22 proposed service modifications. To meet its operating deficit, MTA would be required to cut costs in other ways, divert funds from capital investments to current operations (subject to legal limitations), raise transit fares, or secure new sources of revenue.

MTA currently is reviewing thc proposed new fare structure options outlined in Table 14.

TABLE 14
PROPOSED FARE STRUCTURE OPTIONS

FARE CATEGORY	PEAK/OFF-PEAK	CASH	PROPORTIONAL	EXISTING FARE
A. Cash				
Regular	$1.25/$1.00	$1.10	$1.25	$1.10
Tokens	$1.00	$0.90	$1.00	$ .090
Transfers	$0.30	$0.25	$0.25	$ .025
Express	$0.50	$0.40	$0.50	$ 0.40
Senior/ Disabled	Full/Half	$0.45	$0.50	$ 0.45
B. Pass				
Regular	$62	-	$48	$42
Express	$15	-	$15	$12
Senior/ Disabled	$12	$12	$12	$10
Student	$20	-	$24	$18
College/ Vocational	-	-	$36	$25

Source: April 23, 1994 Public Hearing Notice, MTA Board of Directors.

MTA has identified potential new funding sources to subsidize transit service. Funding options involving new taxes or fees would require either voter approval or new state legislation. Potential sources and estimated annual revenues, where calculable, include:

- Countywide per gallon gasoline tax ($36.5 million);
- State gasoline tax (distributed through state);
- County vehicle registration fee ($29.5 million);
- State sales tax on federal excise tax ($15-20 million);
- Vehicle use fee ($140.4 million); and
- Parking pricing (difficult to calculate).

Actions to increase transit fares and secure new funding sources do not involve any physical construction nor other activity which would impact the physical environment. However, fare increases would result in shifts of some bus rides to other modes, including automobiles, and would have secondary effects similar to the proposed service modifications. The amount of such effects would be proportional to the fare increase.

The analysis contained in Section 3.0 (Environmental Impact Analysis) indicates that most packages will not result in any significant environmental impacts. Air quality impacts, however, would be significant.

Compared to the staff recommended project, the "no project" alternative has the potential to produce higher daily pollutant emissions of NO_x and PM_{10}, but lower CO and ROC emissions. The higher NO_x and PM_{10} emissions are related to operation of diesel buses. Under the "no project" alternative, in the short term these buses would continue to operate and emit more NO_x and PM_{10} than automobiles. Thus, the alternative of *not* adopting service modifications generally is neither environmentally superior nor inferior to the action of adopting a range of packages.

ALTERNATIVE B:

--- to be identified by MTA's staff ---

Note: We have analyzed several combinations of the 22 packages to develop an alternative that is environmentally superior to the MTA staff proposed project. None of these combinations results in reduced impacts, particularly on air quality or fuel consumption.

We have also considered an alternative of "less bus and more rail service," but this alternative is not clearly nor substantially environmentally superior.

The CEQA Guidelines require a consideration of an alternative which: 1) can accomplish objectives of the project; 2) has fewer or lesser environmental impacts than the project, and 3) is reasonable. We will discuss with Scott Greene an alternative which meets these criteria and will address potential impacts.

Growth-Inducing Impacts

7.0 GROWTH-INDUCING IMPACTS

Section 15126(g) of the CEQA Guidelines requires EIRs to address "the ways a proposed project could foster economic or population growth, or the construction of additional housing, either directly or indirectly, in the surrounding environment." Growth inducement refers to the potential of a project to stimulate growth, and/or remove obstacles to growth.

The proposed project consists of modifications to existing MTA transit service to meet the $126 million operating deficit. MTA has identified 22 package of service modifications that have the potential to reduce operating costs. MTA staff has prepared a recommended program which includes part or all of eight of these 22 packages. The MTA Board of Directors may elect to adopt one, several, or no packages, or may select portions of specific packages to meet MTA's budget objectives.

Two types of growth-inducing effects need to be examined in association with transit service modifications: (1) inducement of local and/or regional population growth; and (2) inducement of unanticipated growth in transit ridership.

Reducing service will not significantly increase transit ridership nor result in the demand for additional transit service. The service modifications primarily affect lines and/or schedules with low ridership. Passengers displaced by reduced service should in many cases be accommodated by other MTA lines.

Displaced MTA passengers may increase the demand for transit service from municipal operators. As a result, the proposed service modifications may cause municipal transit operators to experience unanticipated growth in transit ridership. The potential for unanticipated growth in ridership in the municipal transit operations is considered a growth-inducing impact. This growth-inducing impact will not be significant because many of the displaced MTA passengers can be expected to utilize the remaining MTA service rather than municipal operator lines. Limited overlap between MTA and municipal operator lines presently occurs, and displaced passengers will find it difficult to replace eliminated MTA service with municipal operator service.

Implementation of some of the Restructuring Packages will require the construction of new facilities, such as a new terminal in downtown Los Angeles and satellite transfer lots on the periphery of downtown. These new facilities will complement existing MTA service. Local or regional population growth will not be induced by the new facilities, and the facilities are not projected to cause ridership that exceeds the capacity of existing MTA facilities and lines.

If MTA adopts packages which have the potential to discourage concentrated urban development along major transit corridors or around transit centers, regional growth could, in the long term, occur primarily in outlying suburban areas. Such growth patterns contribute to urban "sprawl" and inefficient provision of all types of urban services.

Other CEQA-Required Topics

8.0 OTHER CEQA-REQUIRED TOPICS

8.1 IRREVERSIBLE ENVIRONMENTAL CHANGES AND IRRETRIEVABLE COMMITMENT OF RESOURCES

CEQA Guidelines require evaluating the uses of nonrenewable resources during all stages of a project. The Guidelines focus on the issue of whether such use may be irreversible, "...since a large commitment of natural resources makes removal or unuse thereafter unlikely. Primary impacts, and particularly, secondary impacts (such as a highway improvement which provides access to a previously inaccessible area) generally commit future generations to similar uses."

The project's impacts on fuel use are the most important secondary effects of the proposed service modifications on natural resources. As discussed in Section 3.5 (Energy Resources) of this EIR, 14 of the proposed 22 service modifications packages, plus the staff recommended project, are projected to result in no change or a decrease in fuel use compared to existing conditions. This reduced fuel use would result from a combination of eliminating the least efficient, low-ridership bus lines, and improvements in automobile fuel efficiency that counterbalance a projected increase in vehicular travel.

The remaining seven packages would result in either negligible or a less than significant increase in fuel use.

The proposed service modifications do not involve a commitment of large amounts of other natural resources to irreversible uses. Construction of a new bus terminal in downtown Los Angeles is the most substantial physical change associated with the project. The amounts of energy and building materials used in constructing this facility would not deplete nor substantially reduce the region's natural resources.

8.2. RELATIONSHIP BETWEEN LOCAL SHORT-TERM USES OF THE ENVIRONMENT AND THE MAINTENANCE AND ENHANCEMENT OF LONG-TERM PRODUCTIVITY

The analysis in this section focuses on the relationship between a short-term goal of reducing MTA's budget deficit and long-term adverse effects on the environment. Of particular importance are the project's impacts which narrow the range of beneficial uses of the environment.

MTA's public transit system is intended to benefit the local urban environment by providing an alternative to the use of automobiles for transportation. The provision of rail and bus systems is expected to reduce vehicular travel, traffic congestion, and the resultant air pollutant emissions and fuel consumption.

MTA proposes system-wide bus and rail service modifications to achieve a short-term financial goal of reducing its operating deficit for fiscal years 1995 through 1998.

The proposed service modifications are designed to minimize reductions in the overall service coverage, and minimize the number of bus and rail users adversely affected by the modifications. The preferred project, a package of modification measures recommended by MTA staff, consists primarily of changes to marginal segments of bus service that have very low ridership. Nonetheless, this project will have a long-term effect of narrowing the range of public transit choices in the MTA service area. When coupled with service reductions contemplated by other providers, such as some municipal bus operators, this project will have an overall adverse cumulative impact on Los Angeles County residents, especially those who depend on public transit for transportation.

The reason why MTA is proposing this project now, rather than reserving an option for further alternatives, is the absence of funds necessary to continue operating the system in its present form. The lingering effects of current economic recession on the operating budget do not afford MTA the option of implementing the proposed modifications at a later date. Should additional sources of funds become available in the future, MTA could restore the affected services and thereby terminate the project's long-term impact.

These sources of funds are in general subject to legislative or voter approval, and cannot be planned for with certainty by MTA.

Organizations and Persons Consulted

METRO

9.0 ORGANIZATIONS AND PERSONS CONSULTED

A. PREPARERS OF THE EIR

1. Cotton/Beland/Associates, Inc.
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	Leslie K. Scott

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B. ORGANIZATIONS AND PERSONS CONSULTED

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   Mary Lewis

4. Southern California Regional Rail Authority
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   Los Angeles, CA 90071

   Annette Colfax

5. Omni Trans
   San Bernardino, CA

   Tina Wu

6. Simi Valley Transit
   Simi Valley, CA

   Ray Turpin

7. Long Beach Transit
Long Beach, CA

Guy Heston

8. Orange County Transportation Authority
Santa Ana, CA

George Duran

Appendix A: Initial Study/NOP and Responses to NOP

NOTICE OF PREPARATION

To: ______________________________

(Agency)

____

(Address)

____

Subject: Environmental Impact Report for Proposed Fiscal Year 1995 Service Modifications

Lead Agency: Los Angeles County Metropolitan Transportation Authority, Planning Department
425 South Main Street
Los Angeles, CA 90013-1393

The Los Angeles County Metropolitan Transportation Authority (MTA) will be the Lead Agency and will prepare an environmental impact report (EIR) for the project identified below. We need to know the views of your agency regarding the scope of the environmental information relevant to your agency's statutory responsibilities for the proposed project. Your agency may need to use the EIR prepared by MTA when considering actions related to MTA's proposed actions.

The project description, location, and the potential environmental effects are contained in the attached materials. A copy of the Initial Study is attached.

Due to the time limits mandated by State law, your response must be sent at the earliest possible date but *not later than 30 days* after receipt of this notice.

Please send your response to Scott Greene at the address shown above. We will need the name for a contact person in your agency.

Project Title: MTA FY 1995 Service Modifications

Project Location: Throughout Los Angeles County, western Orange County, western San Bernardino County, and eastern Ventura County

Project Description: The MTA faces a potential budget deficit of $126 million for fiscal year 1995. In order to meet the deficit, the MTA proposes certain modifications to bus and rail service throughout Los Angeles County. Twenty-two separate service modification "packages" are being considered, including, for example, cancellation of late night service; cancellation of bus routes which parallel certain rail lines; contracting service to other transit operators; and reducing frequency of service along specific bus lines. A complete description of each package is contained in the attached Initial Study.

______________________________ ______________________________

(Signature) (Date)

____

(Title)

____

(Telephone #)

PROJECT DESCRIPTION
AND INITIAL STUDY

LOS ANGELES COUNTY
METROPOLITAN TRANSPORTATION AUTHORITY
PROPOSED FISCAL YEAR 1995
SERVICE MODIFICATIONS

The Los Angeles County Metropolitan Transportation Authority (MTA) operates the regional bus and commuter rail transportation services in Los Angeles County. The MTA currently faces a potential $126 million budget deficit for fiscal year 1995. To meet the deficit, the MTA has examined several possible approaches including modifying the current bus and train fare structure, and adjusting some or all of MTA's transit services.

Modifying the fare structure is not considered a "project" under the California Environmental Quality Act (CEQA). Thus, proposed fare adjustments are not addressed in this Initial Study. However, major modifications to bus and train schedules, and other service restructuring proposals currently under consideration, have the potential to result in adverse environmental impacts and are subject to review under CEQA. Therefore, this Initial Study examines the potential impacts associated with implementing some or all of the proposed service modifications between FY 1995 and FY 1998.

Project Location

The MTA proposes system-wide bus and rail service modifications. Thus, the project area encompasses all of Los Angeles County and abutting portions of western Orange County, western San Bernardino County, and eastern Ventura County.

The Project

The MTA has developed a series of potential service modification "packages." Each package proposes an adjustment to a specific type of bus or rail service -- such as holiday or express service -- or to bus lines that have become redundant with the addition of commuter rail service in Los Angeles County. The summary of service proposals in Table 1 describes each proposed package.

As Table 1 indicates, the MTA has grouped the proposed service changes into four broad categories:

- *Cancellation packages*, which propose cancelling specific types of bus and rail service;

TABLE 1
SUMMARY OF PROPOSED SERVICE MODIFICATIONS

ITEM	CATEGORY OF SERVICE CHANGE
	CANCELLATION PACKAGES
A	CANCEL OWL SERVICE Late night service on 13 bus lines operating from 1:00 a.m. to 5:00 a.m. would be eliminated.
B	CANCEL SPECIAL EVENT SERVICE Special bus service to events such as the New Year's parade, Rose Bowl, Dodger Stadium, and area racetracks would be discontinued. Ten special bus lines listed in this category are affected. Each line is currently operated with full public subsidies.
C	CANCEL SERVICE EXPANSION PROGRAM MTA lines 114 and 130 would have their frequency reduced.
D	CANCEL BUS LINES THAT PARALLEL RAIL SERVICE Four MTA bus lines that currently parallel one of several Metrolink and Blue Line service would be cancelled.
E	CANCEL ALL SERVICE ON HOLIDAYS All bus and rail service currently operating on the six major public holidays of New Year's Day, Memorial Day, Independence Day, Labor Day, Thanksgiving Day and Christmas Day would be cancelled.
F	CANCEL ALL SERVICE ON SUNDAYS The 124 bus lines and two rail lines shown in this category now operating on Sundays would be cancelled under this proposal.
G	CANCEL ALL SATURDAY SERVICE The 131 bus lines and two rail lines shown in this category now operating on Saturdays would be cancelled under this proposal.
	CONTRACTING/CANCELLATION PACKAGES
H	CANCEL OR CONTRACT NIGHT SERVICE TRIPS The 52 bus lines listed in this category would have their late night (owl service) trips either operated by other carriers under contract to the MTA or cancelled.
I	CANCEL OR CONVERT SELECTED LINE SEGMENTS TO CITY/MUNICIPAL OPERATORS Approximately 60 MTA bus lines would have portions of their routes cancelled. These cancelled route segments could be operated by municipal operators.
J	CANCEL OR CONTRACT SCHOOL SERVICE The 55 bus lines shown in Table 2 regularly operate additional service on school days. This additional service would be either operated by a private carrier under contract to the MTA or cancelled.

TABLE 1
SUMMARY OF PROPOSED SERVICE MODIFICATIONS
(continued)

ITEM	CATEGORY OF SERVICE CHANGE
K	**CANCEL OR CONTRACT ALL EXPRESS LINES THAT OPERATE ONLY DURING RUSH HOURS** The 18 bus lines that currently operate during weekday peak periods only would be operated under contract to the MTA by a private carrier or cancelled.
L	**CANCEL OR CONTRACT LOW PERFORMING LOCAL BUS LINES** Seventeen daily services, twelve Saturday services and 18 Sunday low-performing services are affected by this proposal. The MTA would cancel all of these operations or contract them out to a private operator.
M	**CREATE OR CONTRACT NEW LINES TO OPERATE DURING RUSH HOURS ON HEAVY PATRONAGE LINES** Eleven MTA local bus lines would have their additional rush hour service operated by a private operator. These bus lines operate significantly more service during weekday peak periods than during the midday. This additional service would be replaced by service contracted by the MTA.
	RESTRUCTURING PACKAGES
N	**ESTABLISH NEW LACBD BUS TERMINAL** The 30 lines shown in Table 2 would have their routes changed in downtown Los Angeles to end service near 9th and Olive Streets rather than near 18th Street.
O	**MTA COORDINATED DUAL HUB ON EL MONTE-HARBOR TRANSITWAY** This proposal would join the MTA express lines listed in Table 2 together with other municipal lines into one common route operating between El Monte and Artesia with freeway stops at key locations. This option would require the route segments on the suburban surface street portion of the existing routes to be replaced by new local routes.
P	**IMPLEMENT LACBD BUS INTERCEPT PROGRAM** The MTA bus lines shown in Table 2 would be modified in downtown Los Angeles to end their routes on the periphery of the LACBD. A shuttle bus network of routes would operate in the downtown area transporting passengers from the intercept points to their destinations in the LACBD.
Q	**IMPLEMENT GREEN LINE INTERFACE PLAN** The 39 MTA bus routes listed in Table 2 could be modified to provide direct connections with the 14 rail stations to be served by the Metro Green line. This option may also involve some municipal routes to be realigned or extended in order to provide direct access to the rail line.

TABLE 1
SUMMARY OF PROPOSED SERVICE MODIFICATIONS
(continued)

ITEM	CATEGORY OF SERVICE CHANGE
R	**IMPLEMENT RED LINE INTERFACE PLAN (Segment-2A)** The nine MTA bus routes in Table 2 would be modified to provide direct connections with rail stations to be served along the second segment of the Metro Red Line. The second segment consists of the extension of the subway from Alvarado Station westward to Wilshire Boulevard and Western Avenue.
	SCHEDULE MODIFICATIONS
S	REDUCE LEVELS OF BUS SERVICE The bus lines listed in this category would have their frequency of service reduced. (-) indicates a service level reduction of less than 25% while (+) indicates a reduction of over 25% may be made.
T	OPERATE UP TO EVERY 120 MINUTES The 15 bus lines listed in this category would have their frequency of service reduced from 60 minutes to as much as two hours.
U	REDUCE RAIL SERVICE LEVELS Service frequency on the Metro Blue Line and Metro Red Line would be reduced to reflect actual rider demand.
V	CONSULTANT SERVICE REDUCTION PROPOSALS The bus lines listed in this category are proposed by transportation consultant Deloitte Touche to be modified as follows: Lines 70, 76, 78, 79, 378, 379, 483, 485, 487, 489 to be cut back at Union Station; Lines 21, 320, 322 to be cut back at Westlake Station; Line 60 to be cut back from Union Station and extended to Westlake Station; Line 127 to be cut back at Compton Station; Line 497 to end in Pomona; Line 418 to be cut back at Burbank Metrolink Station; Routes 53 and 55 to be combined with Lines 70 and 76; Line 264 to be cut back east of Garvey Ave.; Line 270 to be deleted north of El Monte Station. Consider establishing transportation zones in the following geographic areas: San Fernando Valley, South Bay and/or South Eastern Cities. Additional consultant recommendations are included in categories A through U.

- *Contracting/Cancellation packages*, which would involve either cancelling specific bus services or contracting the services to another operator;
- *Restructuring packages*, which would alter the way MTA serves the downtown Los Angeles Central Business District and manages bus/rail interface; and

- *Schedule Modification packages*, which would increase the time between departures along specific bus and rail lines, and shorten certain lines.

Implementation of the second category -- contracting/cancellation -- could result in two very different impacts, depending upon whether the MTA chooses to cancel identified services (see packages H through M) or simply contract the routes out to other transit operators. If the routes are contracted, no change in the existing physical environment will occur, and no adverse environmental impacts will result. Therefore, for the purposes of this Initial Study, service contracting is not considered.

At this time, the MTA has not identified which service modifications will be implemented to meet the budget deficit. The MTA Board of Directors may elect to adopt one, several, or no packages, or may select portions of specific packages to meet MTA's budget objectives.

Timing of Proposed Service Modifications

While the MTA is considering all packages described in Table 1 to address the FY 1995 budget deficit, not all proposals are planned for implementation during FY 1995. A schedule has been prepared to identify the timing for implementing each package. The schedule, contained in the following Table 2, covers fiscal years 1995 through 1998.

Primary Versus Secondary Environmental Effects

With the exception of packages N (establish new downtown bus terminal) and P (implement downtown bus intercept program), none of the service modification proposals involve the construction of new transit facilities. In general, therefore, the project as a whole will not result in any direct physical changes to the environment. No grading or construction activity will occur, and existing land use patterns will not be affected. No biological habitat will be removed. Because the project largely involves no new building activity, demands on public facilities and services will be minimal. Few primary or direct environmental impacts will result from the MTA's action to adopt service modifications.

TABLE 2 (continued)

		CANCELLATION PACKAGES							CONTRACTING/CANCELLATION PACKAGES						RESTRUCTURING PACKAGES					SCHEDULE MODIFICATIONS			*
LINE NO.	LINE NAME	CNCEL OWL SERV.	CNCEL SPCIAL EVENT SERV.	CANCEL SERVICE EXPANSION PROGRAM	CANCEL BUS LINE TO FEED RAIL	CANCEL ALL SERV. ON HLIDAYS	CNCEL ALL SERV. ON SUN.	CNCEL ALL SERV. ON SAT.	CANCEL OR CONTRACT NIGHT SERVICE TRIPS	CANCEL OR CONTRACT LINE SEGMENTS TO CITY OPERATION	CANCEL OR CONTRACT SCHOOL SERVICE	CANCEL OR CONTRACT ALL PEAK ONLY EXPRESS LINES	CANCEL OR CONTRACT LOW PERF. LOCAL LINES	CREATE & CONTRACT NEW LINES FOR HEAVY PEAK LINES	ESTB. NEW DOWN-TOWN BUS TERM	DUAL HUB ON EL MONTE TO HARBOR TRANSWAY	IMPLEMENT LACBD BUS INTERCEPT PROGRAM	IMPLEMENT GREEN LINE INTERFACE	IMPLEMENT RED LINE INTERFACE	REDUCE BUS SERV. LEVELS	OPERATE UP TO EVERY 120 MIN.	REDUCE RAIL SERVICE LEVELS	MISC.
		A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V
120	IMPERIAL HWY.					1	1	1		1								1		1-	1		
124	EL SEGUNDO BLVD.-SANTA FE AVE.					1	1	1		1			ALL					1		1+			
125	ROSECRANS AVE.					1	1	1										1		1-			
126	YUKON AVE.-MANHATTAN BCH BLVD.												ALL					1			1		
127	COMPTON BLVD.-BELLFLOWER BLVD.									1	1		ALL							1+	1		1
128	ALONDRA BLVD.																			1+	1		
130	ARTESIA BLVD.			1		1	1	1		1			ALL							1+			
152	FALLBROOK AV-ROSCOE BL-VINLND AV-BURB					1	1	1		1	1									1-	1		
154	TAMPA A-VENTURA BL-BURBANK BL-OXNARD							1													1		
158	DEVONSHIRE ST.-WOODMAN AVE.					1	1	1					SU							1-			
161	WESTLAKE-CANOGA PARK					1	1	1					ALL							1+			
163	SHERMAN WAY					1	1	1		1										1-			
164	VICTORY BLVD.					1	1	1												1-			
165	VANOWEN ST.					1	1	1			1									1-			
166	NORDHOFF ST.-OSBORNE ST.					1	1	1			1									1-			
167	PLUMMER ST.-VAN NUYS BLVD.					1	1	1	2		1		SA/SU							1-			
168	LASSEN ST.-PAXTON ST.							1					ALL							1+			
169	SATICOY ST.-SUNLAND BLVD.					1	1	1			1									1+			
170	HELLMAN AV-EL MONTE VIA S.EL MONTE									1							1				1		
175	FOUNTAIN AV-TALMADGE ST-HYPERION AV										1									1+			
176	GLASSELL PK-HGHLND PK-ALHMBRA-EL MNTE									1											1		
177	GLND-LA CANADA-PASADENA-MONRVA-DUARTE									1			ALL								1		
180	HLLYWOOD-GLND-PASDNA VIA COLORADO BL	1				1	1	1	2	1	1									1-			
181	HLLYWOOD-GLND-PASDNA VIA YOSEMITE DR					1	1	1	2	1										1-			
183	MAGNOLIA BL-KENNETH RD-E.COLORADO ST					1	1	1			1									1+			
188	N.FAIR OAKS AV-COLORADO BL-DUARTE RD					1	1	1		1										1+			
200	ALVARADO ST.-ECHO PARK AVE.					1	1	1												1-			
201	SILVERLAKE BLVD.					1	1	1												1+			
202	WILLOWBROOK-COMPTON-WILMINGTON					1	1	1	2	1			SA/SU					1			1		
204	VERMONT AVE.					1	1	1	2									1		1-			
205	WILLOWBROOK-HARBOR CITY-SAN PEDRO					1	1	1	2	1			SU					1		1+			
206	NORMANDIE AVE.					1	1	1	2		1							1		1-			
207	WESTERN AVE.					1	1	1	2		1							1		1-			
208	BEACHWOOD DRIVE SHUTTLE (LOOP)					1	1	1					ALL										
209	VAN NESS AVE.-ARLINGTON AVE.							1					SA					1	3	1-			1

NOTE: CATEGORY "L" CHANGES ARE PROPOSED TO BE IMPLEMENTED IN FY 95 (JULY 94-JUNE 95)

1 = CHANGE TO BE IMPLEMENTED IN FY 95 (JULY 94-JUNE 95)
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* MISCELLANEOUS SERVICE MODIFICATIONS PROPOSED BY TRANSPORTATION CONSULTANT DeLOITTE & TOUCHE.

TABLE 2 (continued)

LINE NO.	LINE NAME	CANCELLATION PACKAGES							CONTRACTING/CANCELLATION PACKAGES						RESTRUCTURING PACKAGES					SCHEDULE MODIFICATIONS			*
		CNCEL OWL SERV.	CNCEL SPCIAL EVENT SERV.	CANCEL SERVICE EXPANSION PROGRAM	CANCEL BUS LINE TO FEED RAIL	CANCEL ALL SERV. ON HLIDAYS	CNCEL ALL SERV. ON SUN.	CNCEL ALL SERV. ON SAT.	CANCEL OR CONTRACT NIGHT SERVICE TRIPS	CANCEL OR CONTRACT LINE SEGMENTS TO CITY OPERATION	CANCEL OR CONTRACT SCHOOL SERVICE	CANCEL OR CONTRACT ALL PEAK ONLY EXPRESS LINES	CANCEL OR CONTRACT LOW PERF. LOCAL LINES	CREATE & CONTRACT NEW LINES FOR HEAVY PEAK LINES	ESTB. NEW DOWN-TOWN BUS TERM	DUAL HUB ON EL MONTE TO HARBOR TRANSWAY	IMPLEMENT LACBD BUS INTERCEPT PROGRAM	IMPLEMENT GREEN LINE INTERFACE	IMPLEMENT RED LINE INTERFACE	REDUCE BUS SERV. LEVELS	OPERATE UP TO EVERY 120 MIN.	REDUCE RAIL SERVICE LEVELS	MISC.
		A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V
210	VINE ST.-CRENSHAW BLVD.					1	1	1	2									1		1-			
211	PRAIRIE AVE.										1							1			1		
212	HOLLYWOOD WAY-LA BREA AVE.					1	1	1	2											1-			
215	INGLEWOOD AV-REDONDO BCH-DEL AMO CTR									1								1			1		
217	FAIRFAX AVE.					1	1	1	2											1-			
220	ROBERTSON BL-CULVER BL-LAX					1	1	1		1			ALL					1		1+			
225	AVIATION BL-PALOS VERDES PENINSULA							1		1	1		ALL					1			1		
226	AVIATION BL-PALOS VERDES DR W.							1					ALL					1			1		
228	COLDWATER CANYON AV-LANKERSHIM BL					1	1	1			1									1+			
230	LAUREL CANYON BLVD.					1	1	1			1									1+			
232	LONG BEACH-LAX					1	1	1	2									1		1-			
234	SEPULVEDA BL-BRAND BL-SAYRE ST					1	1	1			1									1			
236	BALBOA BL-VENTURA BL-WOODLEY AV					1	1	1					ALL										
239	WHITE OAK AV-ZELZAH AV-RINALDI ST					1	1	1			1									1+			
240	RESEDA BLVD.					1	1	1												1+			
243	DE SOTO AV-VENTURA BL-WINNETKA AV										1			3						1+			
245	TOPANGA CYN-MULHOLLAND-VALLEY CR.BL					1	1	1		1	1									1+			
250	BOYLE AV												ALL							1			
251	103RD STA-SOTO ST-DALY ST					1	1	1	2	1	1									1-			
252	CALIFORNIA AV-SOTO ST-HUNTINGTON DR					1	1	1	2	1	1							1		1-			
253	EUCLID AVE.-EVERGREEN AVE.					1	1	1					ALL							1			
254	120TH ST.-HUNTINGTON PARK-LORENA ST.					1	1	1		1			SU					1		1+			
255	GRIFFIN AV-COUNTY HOSP-ROWAN AV					1	1	1												1			
256	EASTERN AV-AVE 64-N. HILL AV					1	1	1		1										1+			
258	ARIZONA AVE.-ALHAMBRA									1										1+			
259	EASTERN AV-ARIZONA AV-EMERY PARK									1										1+			
260	WARDLOW STA-PASDNA-ALTADNA VIA ATLNTC					1	1	1										1		1-			
262	GARFIELD AVE.					1	1	1												1+			
264	SAN GABRIEL BLVD.-ALTADENA DR.												ALL							1+			
265	PARAMOUNT BLVD.-PICO RIVERA												ALL					1		1			
266	LAKEWOOD BLVD.-ROSEMEAD BLVD.					1	1	1		1								1		1-			1

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* MISCELLANEOUS SERVICE MODIFICATIONS PROPOSED BY TRANSPORTATION CONSULTANT DeLOITTE & TOUCHE.

TABLE 2
BUS LINES AFFECTED BY PROPOSED SERVICE MODIFICATIONS

		CANCELLATION PACKAGES							CONTRACTING/CANCELLATION PACKAGES						RESTRUCTURING PACKAGES					SCHEDULE MODIFICATIONS			*
		CNCEL OWL SERV.	CNCEL SPCIAL EVENT SERV.	CANCEL SERVICE EXPANSION PROGRAM	CANCEL BUS LINE TO FEED RAIL	CANCEL ALL SERV. ON HLIDAYS	CNCEL ALL SERV. ON SUN.	CNCEL ALL SERV. ON SAT.	CANCEL OR CONTRACT NIGHT SERVICE TRIPS	CANCEL OR CONTRACT LINE SEGMENTS TO CITY OPERATION	CANCEL OR CONTRACT SCHOOL SERVICE	CANCEL OR CONTRACT ALL PEAK ONLY EXPRESS LINES	CANCEL OR CONTRACT LOW PERF. LOCAL LINES	CREATE & CONTRACT NEW LINES FOR HEAVY PEAK LINES	ESTB. NEW DOWN-TOWN BUS TERM	DUAL HUB ON EL MONTE TO HARBOR TRANSWAY	IMPLEMENT LACBD BUS INTERCEPT PROGRAM	IMPLEMENT GREEN LINE INTERFACE	IMPLEMENT RED LINE INTERFACE	REDUCE BUS SERV. LEVELS	OPERATE UP TO EVERY 120 MIN.	REDUCE RAIL SERVICE LEVELS	MISC.
LINE NO.	LINE NAME	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V
	RAIL SERVICE																						
	METRO BLUE LINE					1	1	1														1	
	METRO RED LINE					1	1	1														1	
	BUS SERVICE																						
1	HOLLYWOOD BL.					1	1	1	2		1				2		4			1-			
2	SUNSET BL.					1	1	1	2		1				2		4			1-			
3	SUNSET BL. - BEVERLY DR.					1	1	1		1					2		4			1-			
4	SANTA MONICA BL.					1	1	1	2	1	1				2		4			1-			
10	MELROSE AV. - VIRGIL AV. - TEMPLE ST.	1				1	1	1			1						4			1-			
11	MELROSE AV.-VERMONT AVE.-TEMPLE ST.							1		1							4			1-			
14	BEVERLY BL.					1	1	1	2		1						4			1-			
16	WEST THIRD ST.					1	1	1	2					3			4			1-			
18	WEST SIXTH ST. - WHITTIER BL.	1				1	1	1									4			1-			
20	WILSHIRE BL.					1	1	1	2	1	1						4			1-			
21	WILSHIRE BL. - UCLA							1	2								4			1-			1
22	WILSHIRE BL.-CENTURY CITY-BRENTWOOD					1	1	1		1							4			1-			
26	SEVENTH ST.-VIRGIL AV.-FRANKLIN AV.					1	1	1	2	1				3			4			1-			
27	WEST OLYMPIC BL. - BURTON WAY					1	1	1		1							4			1-			
28	WEST OLYMPIC BL.	1				1	1	1	2		1						4			1-			
30	WEST PICO BL-E. FIRST ST-FLORAL DR					1	1	1	2	1	1						4			1-			
31	WEST PICO BL. - EAST FIRST ST.					1	1	1	2	1	1						4			1-			
33	VENICE BL.					1	1	1	2	1	1						4			1-			
34	VENICE BL. - ROSE AV.									1			ALL				4						
37	WEST ADAMS BL.					1	1	1									4			1-			
38	WEST JEFFERSON BL.	1				1	1	1	2		1						4			1-			
40	HAWTHORNE BL. - LA - COUNTY JAIL					1	1	1	2		1						4	1		1-			
42	LA - WESTCHESTER - LAX					1	1	1									4			1-			
45	BROADWAY-MERCURY AVE					1	1	1	2								4	1		1-			
46	GRIFFIN AVE									1							4						
48	MAPLE AVE.-SOUTH MAIN ST.					1	1	1		1							4	1		1-			
51	SAN PEDRO ST-AVALON BL-COMPTON BL					1	1	1	2					3			4	1		1-			
53	SOUTH CENTRAL AVE.					1	1	1	2		1			3			4	1		1-			
55	LA-COMPTON AVE-IMPERIAL STATION					1	1	1	2								4	1		1-			
56	LA-WILMINGTON AVE-IMPERIAL STA				1	1	1	1					ALL				4	1					

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TABLE 2 (continued)

		CANCELLATION PACKAGES							CONTRACTING/CANCELLATION PACKAGES						RESTRUCTURING PACKAGES					SCHEDULE MODIFICATIONS			*
LINE NO.	LINE NAME	CNCEL OWL SERV.	CNCEL SPCIAL EVENT SERV.	CANCEL SERVICE EXPANSION PROGRAM	CANCEL BUS LINE TO FEED RAIL	CANCEL ALL SERV. ON HLIDAYS	CNCEL ALL SERV. ON SUN.	CNCEL ALL SERV. ON SAT.	CANCEL OR CONTRACT NIGHT SERVICE TRIPS	CANCEL OR CONTRACT LINE SEGMENTS TO CITY OPERATION	CANCEL OR CONTRACT SCHOOL SERVICE	CANCEL OR CONTRACT ALL PEAK ONLY EXPRESS LINES	CANCEL OR CONTRACT LOW PERF. LOCAL LINES	CREATE & CONTRACT NEW LINES FOR HEAVY PEAK LINES	ESTB. NEW DOWN-TOWN BUS TERM	DUAL HUB ON EL MONTE TO HARBOR TRANSWAY	IMPLEMENT LACBD BUS INTERCEPT PROGRAM	IMPLEMENT GREEN LINE INTERFACE	IMPLEMENT RED LINE INTERFACE	REDUCE BUS SERV. LEVELS	OPERATE UP TO EVERY 120 MIN.	REDUCE RAIL SERVICE LEVELS	MISC.
		A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V
60	LONG BEACH BL.-SANTA FE AVE.					1	1	1	2	1	1						4	1		1-			1
65	WASHINGTON BLVD.-INDIANA ST.-GAGE AVE					1	1	1		1				3			4			1-			
66	EAST OLYMPIC BLVD.-W. EIGHTH ST.					1	1	1	2		1			3			4		3	1-			1
67	OLYMPIC BLVD.													3			4		3	1-			1
68	WEST WASHINGTON BLVD.-BROOKLYN AVE.					1	1	1	2	1	1						4			1-			
70	LOS ANGELES-EL MONTE-VIA GARVEY AVE.					1	1	1	2						2		4			1-			1
71	CITY TERRACE-SYBIL BRAND					1	1	1			1						4			1-			
76	L. A.-EL MONTE VIA MAIN ST.-VALLEY BL	1				1	1	1	2						2		4			1-			1
78	LA-ALHAMBRA-S. ARCADIA VIA LAS TUNAS					1	1	1	2	1					2		4			1-			1
79	LOS ANGELES-ARCADIA VIA HUNTINGTON DR					1	1	1	2						2		4			1-			1
81	FIGUEROA ST.					1	1	1		1							4	1		1-			
83	PASADENA AVE.-YORK BLVD.	1				1	1	1									4			1-			
84	CYPRESS AVE.-EAGLE ROCK BLVD.	1				1	1	1	2								4			1-			
85	VERDUGO RD.-GLENDALE COLLEGE								2	1							4						
90	LA-SUNLAND-SYLMAR VIA PENN.AVE.					1	1	1			1			3			4			1-			
91	LA-SUNLAND-SYLMAR VIA LA CRES. AVE					1	1	1						3			4			1-			
92	LA-GLND-BURBNK-SAN FERN VIA GLENDALE	1				1	1	1	2	1					2		4			1-			
93	LA-GLND-BURBNK-SAN FERN VIA ALLESANDR					1	1	1	2	1					2		4			1-			
94	LOS ANGELES-SAN FERNANDO					1	1	1	2	1	1				2		4			1-			
96	LA-BURBNK-N. HOLLYWOOD VIA LA ZOO					1	1	1		1	1				2		4			1-			
97	LA-RVERSDE DR-SHRMN OAKS-VIA LA ZOO					1	1	1			1				2		4			1-			
102	E. JEFFERSON BLVD.-COLISEUM ST.					1	1	1		1	1		SU	3						1-			
104	E.LA-LA MRDA VIA E. WASHINGTON BL																			1+			
105	VERNON AVE.-LA CIENEGA BLVD.	1				1	1	1	2	1										1-			
107	54TH ST-FAIRVIEW BL-SANTA ANA ST					1	1	1		1			SU							1+			
108	SLAUSON AVE.					1	1	1		1										1-			
110	GAGE AV-CENTINELA BL-FOX HLS MALL					1	1	1	2											1-			
111	LAX-FLORENCE AVE.-LEFFINGWELL RD.	1				1	1	1	2	1	1									1-			
112	FLORENCE AVE.- OTIS ST.					1	1	1		1								1					
114	FLORENCE STA-SANTA ANA ST.-CLARA ST.			1																			
115	MANCHESTER AVE.-FIRESTONE BLVD.					1	1	1	2		1									1-			
117	CENTURY BL-TWEEDY BL-RANCHO LOS AMIGO					1	1	1	2	1								1		1-			
119	108TH ST.-FERNWOOD AVE.												ALL					1			1		

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TABLE 2 (continued)

		CANCELLATION PACKAGES							CONTRACTING/CANCELLATION PACKAGES						RESTRUCTURING PACKAGES					SCHEDULE MODIFICATIONS			*
LINE NO.	LINE NAME	CNCEL OWL SERV.	CNCEL SPCIAL EVENT SERV.	CANCEL SERVICE EXPANSION PROGRAM	CANCEL BUS LINE TO FEED RAIL	CANCEL ALL SERV. ON HLIDAYS	CNCEL ALL SERV. ON SUN.	CNCEL ALL SERV. ON SAT.	CANCEL OR CONTRACT NIGHT SERVICE TRIPS	CANCEL OR CONTRACT LINE SEGMENTS TO CITY OPERATION	CANCEL OR CONTRACT SCHOOL SERVICE	CANCEL OR CONTRACT ALL PEAK ONLY EXPRESS LINES	CANCEL OR CONTRACT LOW PERF. LOCAL LINES	CREATE & CONTRACT NEW LINES FOR HEAVY PEAK LINES	ESTB. NEW DOWN-TOWN BUS TERM	DUAL HUB ON EL MONTE TO HARBOR TRANSWAY	IMPLEMENT LACBD BUS INTERCEPT PROGRAM	IMPLEMENT GREEN LINE INTERFACE	IMPLEMENT RED LINE INTERFACE	REDUCE BUS SERV. LEVELS	OPERATE UP TO EVERY 120 MIN.	REDUCE RAIL SERVICE LEVELS	MISC.
		A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V
267	TEMPLE CITY BL-DEL MAR BL-LINCOLN AV					1	1	1					SU							1-			
268	WASHINGTON BLVD.-BALDWIN AVE.					1	1	1					SU							1-			
270	MONROVIA-EL MONTE-CERRITOS					1	1	1			1		SU					1					1
275	PICO RIVERA-WHITTIER-CERRITOS												ALL										
304	SANTA MONICA BLVD. LIMITED									1							4			1-			
320	WILSHIRE BLVD.-LIMITED					1	1	1		1							4		3	1-			1
322	WILSHR BL-CENTURY CTY-BRENTWOOD-LTD																4		3	1-			1
328	W. OLYMPIC BLVD. LIMITED																4			1-			
333	VENICE BLVD. LIMITED																4			1-			
345	SOUTH BROADWAY LIMITED																4			1-			
354	VERMONT AVE. LIMITED																	1		1-			
357	WESTERN AVE. LIMITED																	1		1-			
378	L. A.-ALHAMBRA-SOUTH ARCADIA LIMITED														2		4			1-			1
379	LA-ARCADIA VIA HUNTINGTON DR LTD		1												2		4			1-			1
401	LA-PASADENA-N. ALLEN AV EXP					1	1	1							2		4						
402	LA-PASADENA PARK-RIDE EXP											1			2		4			1-			
406	LA-SUNLAND EXP VIA PENNSYLVANIA AV											1					4						
407	LA-SUNLAND EXP VIA LA CRESCENTA AV											1					4						
410	LA-GLENOAKS BL EXP				1							1			2		4						
412	LA-BURBNK MEDIA DIST-N.HLLYWOOD-VLY P											1			2		4						
418	LA-ROSCOE BL-NORTHRIDGE EXPRESS										1	1			2		4						1
420	LA-VAN NUYS-PANORAMA CITY EXPRESS					1	1	1	2						2		4			1-			
424	LA-VENTURA BL-WARNER CENTER EXP	1				1	1	1	2		1				2		4			1-			
425	LA-VAN NUYS-VENTURA BLS-EXP-LTD										1				2		4			1-			
426	SAN FERNANDO VLY-WILSHIRE BL-LA EXP											1					4		3				1
427	LA-WARNER CNTR-CANOGA PARK-EXP											1			2		4						
429	LA-SUNSET BL-WESTWOOD EXP											1			2		4						
434	LA-SANTA MONICA-MALIBU-TRANCAS EXP					1	1	1		1	1						4		3	1-			1
436	LA-VENICE BL-OCEAN PARK-EXP											1					4		3				1
439	LA-LAX-REDONDO BEACH EXP					1	1	1		1	1						4	1	3	1-			1
442	LA-HAWTHORNE EXP											1				3	4	1					
443	LA-N.TORRANCE-REDONDO BCH-P.V. EXP										1	1				3	4						
444	LA-W.TRRNCE-ROLLNG HLS-RANCHO P.V.EXP					1	1	1								3	4			1-			
445	LA-ALPINE VILLAGE-SAN PEDRO EXP.											1				3	4						
446	LA-CARSON-WILMINGTON-SAN PEDRO EXP	1				1	1	1	2							3	4			1-			

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TABLE 2 (continued)

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LINE NO.	LINE NAME	CNCEL OWL SERV. A	CNCEL SPCIAL EVENT SERV. B	CANCEL SERVICE EXPANSION PROGRAM C	CANCEL BUS LINE TO FEED RAIL D	CANCEL ALL SERV. ON HLIDAYS E	CNCEL ALL SERV. ON SUN. F	CNCEL ALL SERV. ON SAT. G	CANCEL OR CONTRACT NIGHT SERVICE TRIPS H	CANCEL OR CONTRACT LINE SEGMENTS TO CITY OPERATION I	CANCEL OR CONTRACT SCHOOL SERVICE J	CANCEL OR CONTRACT ALL PEAK ONLY EXPRESS LINES K	CANCEL OR CONTRACT LOW PERF. LOCAL LINES L	CREATE & CONTRACT NEW LINES FOR HEAVY PEAK LINES M	ESTB. NEW DOWN-TOWN BUS TERM N	DUAL HUB ON EL MONTE TO HARBOR TRANSWAY O	IMPLEMENT LACBD BUS INTERCEPT PROGRAM P	IMPLEMENT GREEN LINE INTERFACE Q	IMPLEMENT RED LINE INTERFACE R	REDUCE BUS SERV. LEVELS S	OPERATE UP TO EVERY 120 MIN. T	REDUCE RAIL SERVICE LEVELS U	MISC. V
447	LA-CARSON-WILMNGTN-SAN PEDRO-7TH ST					1	1	1		1						3	4			1-			
457	LA-EAST LONG BEACH EXP				1							1					4						
460	LA-NORWALK-DISNEYLAND					1	1	1		1							4			1-			
462	LA-SANTA FE SPNGS-NRWLK-HAWAIN GARD					1	1	1									4			1-			
466	LA-DWNEY-LA MRADA P-N-RIDE EXP											1					4						
470	LA-WHITTIER-LA HABRA-BREA MALL EXP					1	1	1		1	1						4			1-			
471	LA-WHITTIER-PUENTE HILLS MALL EXP					1	1	1		1	1						4			1-			
483	LA-ALTADENA VIA FAIR OAKS AVE EXP					1	1	1							2		4			1-			1
484	LA-EL MONTE-LA PUENTE-POMONA-ONTARIO					1	1	1		1					2	3	4			1-			
485	LA-PASADENA-ALTADENA VIA LAKE AVE.					1	1	1							2		4			1-			1
487	LA-SAN GABRIEL-SIERRA MADRE EXPRESS					1	1	1									4			1-			1
489	LA-HASTINGS RANCH EXP											1					4						1
490	LA-EL MNTE-COVNA-DIAM BAR-BREA EXP					1	1	1		1					2	3	4			1-			
491	LA-SIRRA MDRE VIA SNTA ANTA AV EXP					1	1	1								3	4			1-			1
497	LA-POMONA-MONTCLAIR PARK-N-RIDE EXP				1							1			2		4						1
560	LAX SAN DIEGO FWY-VAN NUYS BLVD EXP					1	1	1		1										1-			
576	S. LA-PACIFIC PALISADES EXP										1	1											
609	LA-LOS ALAMITOS RACETRACK EXP		1																				
610	LA-HOLLYWOOD PARK RACETRACK EXP		1																				
611	HOLLYWOOD-HOLLYWOOD PARK RACETRACK		1																				
612	W.L.A.-CULVER CITY-HOLLYWOOD PARK		1																				
613	SOUTH GATE-HOLLYWOOD PARK RACETRACK		1																				
614	L.A.-SANTA ANITA RACETRACK EXP		1																				
615	HOLLYWOOD-SANTA ANITA RACETRACK		1																				
620	BOYLE HEIGHTS SHUTTLE																						
635	DODGER STADIUM		1																				
697	SPECIAL EVENT SERVICE, LA-POMONA		1																				

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3 = CHANGE TO BE IMPLEMENTED IN FY 97 (JULY 96-JUNE 97)
4 = CHANGE TO BE IMPLEMENTED IN FY 98 (JULY 97-JUNE 98)

* MISCELLANEOUS SERVICE MODIFICATIONS PROPOSED BY TRANSPORTATION CONSULTANT DeLOITTE & TOUCHE.

MS/kcw:pub4.wq1

The project is instead expected to create secondary environmental effects. For example, the cancellation of certain bus and rail services (packages A through M) may force transit riders to find other means of transport, such as private automobiles. Increased use of cars could lead to impacts on the road system and higher air pollutant emissions. Thus, the environmental analysis for this project focuses on the potential secondary effects which could result from implementation of the service modifications.

With regard to Packages N and P, some direct impacts could be expected since these packages would involve construction activity. Package N proposes relocation of the existing downtown Los Angeles bus terminal from 18th Street to the vicinity of 9th and Olive Streets. The MTA has not identified a specific site for a new terminal nor prepared a site plan for the facility.

Package P would involve modifying existing bus routes in downtown Los Angeles to end at the periphery of downtown. Shuttle buses would transport riders from the intercept points to various destinations throughout downtown. This approach to service would require the MTA to establish an undetermined number of intercept facilities - consisting of parking for buses and passenger loading areas - where passengers would transfer to the shuttle buses. Some construction activity would be required to establish the intercept facilities.

The limited available information for Packages N and P prevent the MTA from performing a detailed environmental analysis of the proposed facilities at this time. Potential impacts can be addressed only in a general manner. If MTA chooses to implement these packages (Package N is proposed for FY 1995-96 and Package P for FY 1996-97), subsequent site-specific environmental analyses will be required.

Potential Environmental Impacts

The Initial Study Checklist presented on the following pages identifies the potentially significant environmental impacts associated with adopting and implementing the proposed service modifications. The checklist indicates that the project could result in significant impacts with respect to:

- Air quality;
- Noise;
- Natural resources (fuel consumption);
- Transportation/circulation;
- Schools;
- Maintenance of public roadways; and
- Energy.

Per the requirements of CEQA, an environmental impact report (EIR) is required to define the level of impact and to identify measures capable of either reducing or eliminating impacts.

INITIAL ENVIRONMENTAL STUDY
CHECKLIST

I. BACKGROUND

1. *Name of Proponent:* Los Angeles County Metropolitan Transportation Authority (MTA)

2. *Address and Phone Number of Proponent:*

   818 West Seventh Street
   Los Angeles, CA 90017

3. *Date of Environmental Assessment:* May 3, 1994

4. *Agency Requiring Assessment:* Los Angeles County MTA

5. *Name of Proposal, if applicable:* Fiscal Year 1995 Proposed Service Modifications

6. *Location of Proposal:* Throughout Los Angeles County, western Orange County, western San Bernardino County, and eastern Ventura County

II. ENVIRONMENTAL IMPACTS

1. *Earth. Will the proposal result in:*

	Yes	Maybe	No
a. *Unstable earth conditions or in changes in geologic substructures?*			X

Discussion: Relocation of the downtown bus terminal and establishment of bus transfer facilities near downtown represent the only potential construction components of the project. The MTA is considering relocating the terminal to the vicinity of 9th and Olive Streets in downtown Los Angeles. However, no precise location of the relocated terminal has been identified, and no site plans have been prepared. No plans have been prepared for potential transfer facilities.

The new terminal and transfer facilities would be established in an intensely-developed urban environment. Any mitigation necessary to address soil conditions would be implemented as part of the City of Los Angeles' standard building permit approval process. No significant impacts are anticipated.

Yes **Maybe** **No**

b. *Disruptions, displacements, compaction, or over-covering of the soil?* ____ ____ X

Discussion: Relocation of the downtown bus terminal and the proposed transfer facilities represent the only potential construction components of the project. As indicated in (a) above, the development would occur in downtown Los Angeles. No significant new grading would be required to prepare sites for development. Impacts would be less than significant.

c. *Substantial change in topography or ground surface relief features?* ____ ____ X

Discussion: Refer to discussion in (b) above.

d. *The destruction, covering, or modification of any unique geologic or physical features?* ____ ____ X

Discussion: Refer to discussion in (b) above.

e. *Any substantial increase in wind or water erosion of soils, either on or off site?* ____ ____ X

Discussion: Refer to discussion in (b) above.

f. *Changes in deposition or erosion of beach sands, or changes in siltation, deposition, or erosion which may modify the channel of a river or steam or the bed of the ocean or any bay, inlet, or lake?* ____ ____ X

Discussion: Refer to discussion in (a) above. Also, possible sites do not lie adjacent to any water body.

g. *Exposure of people or property to geologic hazards such as earthquakes, landslides, mudslides, ground failure, or similar hazards?* ____ ____ X

Discussion: The current bus terminal is located in downtown Los Angeles. Relocating the terminal to another site in the vicinity would not expose any persons to any new hazards. All facilities would be constructed consistent with State and local seismic safety and building codes. Impacts will thereby be reduced to a less-than-significant level.

2. *Air. Will the proposal result in:*

	Yes	Maybe	No
a. *Substantial air emissions or deterioration of ambient air quality?*		X	

Discussion: The project may result in the cancellation of bus lines and overall reduction in bus service. Persons who ordinarily travel by bus may instead use private automobiles to reach their destinations. Although reduced bus service could result in decreased pollutant emissions from buses, the potential increase in automobile miles traveled could increase overall emissions. The amount of net change in emissions will vary depending upon which packages the MTA chooses to implement. A detailed air quality analysis is required to identify potential impacts associated with each service package. This issue will be examined in the EIR.

	Yes	Maybe	No
b. *The creation of objectionable odors?*		X	

Discussion: Proposed Package N would relocate the downtown Los Angeles bus terminal from its current location to the vicinity of 9th and Olive Streets. Increased bus activity in this area could generate fumes and odors considered by some persons to be objectionable. These issues will be examined in the EIR. A general approach to the analysis will be used since no specific site for the proposed new terminal has been identified.

	Yes	Maybe	No
c. *Alteration of air movement, moisture, or temperature, or any change in climate, whether locally or regionally?*			X

Discussion: The project does not involve the construction of any new buildings or other facilities of a size or character which would influence air movement, temperature, or humidity. Impacts are less than significant.

3. *Water. Will the proposal result in:*

	Yes	Maybe	No
a. *Substantial changes in currents, or the course or direction of water movements, in either marine or fresh waters?*			X

Discussion: The project does not involve any construction project near any water body. Impacts are less than significant.

Yes Maybe No

b. *Substantial changes in absorption rates, drainage patterns, or the rate and amount of surface runoff?* ____ ____ X

Discussion: The only proposed packages involving paving or other covering of the ground with impervious surfaces are Package N, relocation of the downtown Los Angeles bus terminal, and Package P, which would involve construction of satellite bus transfer stations near downtown. The terminal would be located in the vicinity of 9th and Olive Streets. Potential sites for the terminal and transfer stations are currently covered by either buildings or parking lots. Thus, construction activity should not increase ground coverage nor alter absorption rates or runoff.

If a new terminal is constructed, engineered drainage plans would be prepared and reviewed by the City of Los Angeles. All drainage would comply with City requirements. These requirements will reduce impacts to a less-than-significant level.

c. *Alterations to the course or flow of floodwaters?* ____ ____ X

Discussion: The proposed new terminal represents the only building construction component of the project. According to Federal Emergency Management Agency floodplain maps, the area within which the terminal would be relocated does not lie within a flood zone. If a new terminal is constructed, impacts would be less than significant.

d. *Change in the amount of surface water in any water body?* ____ ____ X

Discussion: Refer to discussions in (a) and (b) above.

e. *Discharge into surface waters, or in any alteration of surface water quality including, but not limited to temperature, dissolved oxygen, or turbidity?* ____ ____ X

Discussion: Construction of the new terminal and transfer stations represent the only project activities with the potential to create runoff into the regional storm drain system, which eventually outlets into the Los Angeles River. Pursuant to State and local regulations in effect to meet the requirements of the federal Clean Water Act (through the National Pollution Discharge Elimination Systems program), all construction runoff will be controlled so as not to violate regional water quality standards. Impacts will thereby be reduced to a less-than-significant level.

Yes Maybe No

f. *Alteration of the direction or rate of flow of groundwaters?* ____ ____ X

Discussion: Relocation of the bus terminal and paving for the transfer stations would not involve any excavation deep enough to affect groundwater. Impacts are less than significant.

g. *Change in the quantity of ground waters, either through direct additions or withdrawals, or through interception of an aquifer by cuts or excavations?* ____ ____ X

Discussion: Refer to discussion in (f) above.

h. *Substantial reduction in the amount of water otherwise available for public water supplies?* ____ ____ X

Discussion: Any action by the MTA Board of Directors to cancel, alter, or contract bus lines, or to alter bus/rail interface, does not involve the use of public water supplies. No impact will result.

With regard to the downtown bus terminal relocation, the new facility would have roughly the same operating characteristics as the existing terminal. No net increase in water consumption would result.

i. *Exposure of people or property to water-related hazards such as flooding or tidal waves?* ____ ____ X

Discussion: Refer to discussion in (c) above.

j. *Significant changes in the temperature, flow, or chemical content of surface thermal springs?* ____ ____ X

Discussion: No surface thermal springs exist in the vicinity of the proposed new bus terminal site. No impact will result.

4. *Plant Life. Will the proposal result in:*

a. *Change in the diversity of species, or number of any native species of plants (including trees, shrubs, grass, crops, and aquatic plants)?* ____ ____ X

Discussion: The proposed bus terminal relocation and establishment of downtown transfer stations represent the only construction components of the project. The terminal would be located in downtown Los Angeles, in an intensely-urbanized setting devoid of any natural habitat. The satellite

Yes Maybe No

transfer stations would be built near downtown, also in urbanized areas. The construction projects would not affect the diversity of plant materials. Impacts will be less than significant.

b. *Reduction of the numbers of any unique, rare, or endangered species of plants?* ____ ____ X

Discussion: Refer to discussion in (a) above.

c. *Introduction of new species of plants into an area of native vegetation, or result in a barrier to the normal replenishment of existing species?* ____ ____ X

Discussion: Refer to discussion in (a) above.

d. *Substantial reduction in acreage of any agricultural crop?* ____ ____ X

Discussion: Refer to discussion in (a) above.

5. ***Animal Life.*** *Will the proposal result in:*

a. *Change in the diversity of species, or numbers of any species of animals (birds, land animals including reptiles, fish and shellfish, benthic organisms, or insects)?* ____ ____ X

Discussion: The proposed bus terminal relocation and establishment of downtown transfer stations represent the only construction components of the project. The facilities would be located in downtown Los Angeles, in an intensely-urbanized setting which does not provide natural habitat for any sensitive animal species. No adverse impacts on animal life will result.

b. *Reduction of the numbers of any unique, rare, or endangered species of animals?* ____ ____ X

Discussion: Refer to discussion in (a) above.

c. *Introduction of new species of animals into an area, or result in a barrier to the migration or movement of animals?* ____ ____ X

Discussion: Refer to discussion in (a) above.

Yes Maybe No

d. *Deterioration to existing fish or wildlife habitat?* ____ ____ _X_

Discussion: Refer to discussion in item 4(a) above.

6. *Noise. Will the proposal result in:*

a. *Increases in existing noise levels?* ____ _X_ ____

Discussion: The project may result in the cancellation of bus lines and overall reduction in bus service. Persons who ordinarily travel by bus may instead use private automobiles to reach their destinations. Although noise associated with bus operations along roadways may diminish, the potential increase in automobile traffic may increase 24-hour ambient noise levels. A noise analysis is required to assess the level of impact.

Relocation of the downtown bus terminal may increase noise levels in the immediate terminal vicinity. Although no specific site has been identified, the MTA has identified the general area for relocation. The potential noise impacts on surrounding land uses will be assessed in the EIR.

Package P proposes to establish shuttle bus service within the downtown Los Angeles central business district (CBD), rather than maintain existing through lines. Implementation of this proposal could result in increased bus traffic in the CBD and potentially greater noise levels. The level of potential impact will be assessed in the EIR.

b. *Exposure of people to severe noise levels?* ____ ____ _X_

Discussion: No component of the project involves any construction nor long-term activity which would produce severe noise levels. If a new bus terminal is constructed, all construction activities can be required to comply with City of Los Angeles noise regulations. Impacts can thereby be reduced to a less-than-significant level.

7. ***Light and Glare.*** *Will the proposal produce substantial new light or glare?* ____ ____ _X_

Discussion: The canceling of certain bus service (Packages A-M), coordinating MTA express bus lines (Package O), implementing better bus/rail interface programs (P-R), and reducing transit frequency (S-U) do not involve any actions that would produce any new light sources. Impacts are less than significant.

Yes Maybe No

Construction of a new downtown bus terminal has the potential to create new sources of light in the form of security lighting. The lights will be established in an intensely-urbanized area. However, no specific location for the terminal has been identified, and no site plans have been prepared. Thus, any analysis of potential impact would be speculative at this time. Site-specific environmental review will be required if MTA decides to relocate the facility.

8. *Land Use. Will the proposal result in a substantial alteration of the present or planned land use of an area?* ____ ____ X

Discussion: In July of 1993, the Los Angeles City Council and MTA Board of Directors adopted a Land Use/Transportation Policy that encourages compact development around transit stops. The policy recognizes the importance of transit, and envisions that the public transportation system will link the City's designated Center Study Areas; the City's neighborhoods; major places of employment, of public assembly and recreation; and schools, universities, and institutions. Proposed reductions in bus service could conflict with this policy and result in significant land use impacts. Potential impacts and the relationship of proposed service economies to adopted policy will be examined in the EIR.

In 1992 and 1993, the MTA Board of Directors adopted the Congestion Management Program (CMP) for Los Angeles County. The CMP is a complex program created to link land use, transportation and air quality decisions. In the CMP's implementation mechanism, the Deficiency Plan toolbox of mitigation options, there is an emphasis on long-term land use strategies for development around transit centers and along transit corridors. The current definition of "transit corridors" is tied to p.m. peak hour transit service headways. The proposed service reductions will be examined in the EIR to ensure that the alternatives would not result in significant land use impacts by discouraging the implementation of CMP land use strategies.

9. *Natural Resources. Will the proposal result in:*

   a. *Substantial increase in the rate of use of any natural resources?* ____ X ____

Discussion: The project may result in the cancellation of bus lines and overall reduction in bus service. Persons who ordinarily travel by bus may instead use private automobiles to reach their destinations. While reduced bus travel can be expected to reduce fuel consumption by transit vehicles,

Yes Maybe No

the potential increase in automobile traffic could increase overall fuel consumption. The net change in fuel consumption will be examined in the EIR.

b. *Substantial depletion of any nonrenewable natural resource?* ____ __X__ ____

Discussion: Refer to discussion in (a) above.

10. *Risk of Upset. Will the proposal involve:*

a. *A risk of an explosion or the release of hazardous substances (including but not limited to oil, pesticides, chemicals, or radiation) in the event of an accident or upset conditions?* ____ ____ __X__

Discussion: The canceling of certain bus service (Packages A-M), coordinating MTA and local express lines (Package O), implementing better bus/rail interface programs (P-R), and reducing transit headway (S-U) do not involve any actions that would use or produce hazardous substances. Potential impacts are less than significant.

If the downtown bus terminal is relocated, any hazardous materials (for example fuel, oil, and similar substances) stored at the present terminal would be stored at the new site. The storage and use of these materials would be performed in accordance with State and local regulations. These regulations are designed to reduce the risk of accidents. Project-level mitigation will be required if MTA decides to relocate the facility. Implementation of existing State and local regulations can reduce potential impacts to a less-than-significant level.

b. *Possible interference with an emergency response plan or an emergency evacuation plan?* ____ ____ __X__

Discussion: Most of the proposed service modifications are system-wide changes which would remove buses from the roadways during certain travel hours. Because the modifications would not affect specific areas or concentrate activity, no impacts on emergency response capabilities are anticipated.

	Yes	Maybe	No
11. *Population. Will the proposal alter the location, distribution, density, or growth rate of the human population of an area?*			X

Discussion: The proposed service cancellations and reductions represent system-wide changes to the transit network. All transit-dependent populations are expected to be affected equally by the service changes. For example, the cancellation of night owl service would affect all persons who ordinarily travel between 1:00 a.m. and 5:00 a.m. If transit-dependent persons are adversely affected by service cuts on lines serving their neighborhoods, they would not improve their access to bus and rail by moving to another area. Thus, this aspect of the project will not affect population densities. Impacts are less than significant.

With regard to proposed interface and line consolidation programs, transit-dependent persons' access to bus and rail service will not substantially change. These program components will not encourage any movement in populations. Impacts are less than significant.

	Yes	Maybe	No
12. *Housing. Will the proposal affect existing housing or create a demand for additional housing?*			X

Discussion: Refer to discussion under "Population."

13. *Transportation/Circulation. Will the proposal result in:*

	Yes	Maybe	No
a. Generation of substantial additional vehicular movement?		X	

Discussion: The project may result in the cancellation of bus lines and overall reduction in bus service. Persons who ordinarily travel by bus may instead use private automobiles to reach their destinations. While reduced bus travel will reduce the number of buses along the regional road network and can be expected to reduce associated congestion during peak travel hours, the potential increase in automobile traffic could increase peak hour congestion. The traffic impacts associated with each proposed package will be examined in the EIR.

Yes Maybe No

b. Effects on existing parking facilities, or demand for new parking? ____ X ____

Discussion: Program components involving cancelling or reducing bus and rail service would not remove any parking facilities nor create a demand for additional parking at any identifiable location. Impacts associated with these actions are less than significant.

Proposals to increase use of the El Monte-Harbor Transitway and to implement bus/rail interface programs could create a demand for additional auto and bus parking at centralized boarding locations. The potential demand will be examined in the EIR.

c. Substantial impact upon existing transportation systems? ____ X ____

Discussion: Refer to discussion in (a) above. Also, Package D could require the addition of train cars to the Blue Line, which currently runs at or near capacity.

d. Alterations to present patterns of circulation or movement of people and/or goods? ____ X ____

Discussion: Implementation of specific packages or combination of packages could substantially affect how the transit-dependent population moves throughout Los Angeles County. The effects of the proposed service economies on the movement of people will be examined in the EIR.

e. Alterations to waterborne, rail, or air traffic? ____ X ____

Discussion: The project may involve service frequency reduction on the Metro Blue and Red Lines. Related impacts will be examined in the EIR.

The project does not involve any proposal to alter waterborne or air traffic.

Yes Maybe No

14. *Public Services. Will the proposal have substantial effect upon, or result in a need for new or altered, governmental services in any of the following areas:*

a. Fire protection? ____ ____ X

Discussion: The proposal does not involve any significant construction project that would require special fire protection services. Impacts are less than significant.

b. Police protection? ____ ____ X

Discussion: The proposal does not involve any significant construction project that would require special police protection services. Impacts are less than significant.

c. Schools? ____ X ____

Discussion: Package J proposes the cancellation or contracting of weekday bus service along routes which provide transportation for school children to and from school. Cancelling service would significantly affect the ability of school children to easily travel to and from school, and could force the school districts into providing limited service. This issue will be examined in the EIR.

d. Parks or other recreational facilities? ____ ____ X

Discussion: The project does not involve any residential construction nor similar action that would create a demand for recreational facilities. Impacts are less than significant.

e. Maintenance of public facilities, including roads? ____ X ____

Discussion: Proposed alteration of bus lines and bus stops may involve concentrated bus activity at new locations system-wide. Given that such activity often creates a need for increased road maintenance, the project may adversely impact portions of the road system. The EIR will examine this issue.

f. Other governmental services? ____ ____ X

Yes **Maybe** **No**

15. *Energy. Will the proposal result in:*

a. Use of substantial amounts of fuel or energy? ____ X ____

Discussion: Refer to discussion under "Natural Resources."

b. Substantial increase in demand upon existing sources of energy, or require the development of new sources of energy? ____ ____ X

Discussion: Refer to discussion under "Natural Resources."

16. *Utilities. Will the proposal result in a need for new systems, or substantial alterations to the following utilities:*

a. Power or natural gas? ____ ____ X

Discussion: The project does not involve any construction activity nor long-term use of any facility which would require substantial electric power or natural gas service. Impacts are less than significant.

b. Communications systems? ____ ____ X

Discussion: The project does not involve any construction activity nor long-term use of any facility which would require substantial telephone or other communication services. Impacts are less than significant.

c. Water? ____ ____ X

Discussion: The project does not involve any construction activity nor long-term use of any facility which would require new levels of domestic water service. Impacts are less than significant.

d. Sewer or septic tanks? ____ ____ X

Discussion: The project does not involve any construction activity nor long-term use of any facility which would require new levels of municipal sewer service. Impacts are less than significant.

Yes Maybe No

e. *Storm water drainage?* ____ ____ X

Discussion: The project does not involve any construction activity nor long-term use of any facility which would require storm water drainage facilities beyond those currently available. Impacts are less than significant.

f. *Solid waste and disposal?* ____ ____ X

Discussion: The project does not involve any construction activity nor long-term use of any facility which would generate substantial new volumes of solid waste. Impacts are less than significant.

17. *Human Health. Will the proposal result in:*

a. *Creation of any health hazard or potential health hazard (excluding mental health)?* ____ ____ X

Discussion: Refer to discussion under "Risk of Upset."

b. *Exposure of people to potential health hazards?* ____ ____ X

Discussion: Refer to discussion under "Risk of Upset."

18. *Aesthetics. Will the proposal result in the obstruction of any scenic vista or view open to the public, or will the proposal result in the creation of an aesthetically offensive site open to public view?* ____ ____ X

Discussion: The only physical facility proposed by the project is the relocated bus terminal. The terminal would be constructed in downtown Los Angeles. The facility can be designed to ensure visual compatibility with other buildings in the neighborhood, and to avoid potentially unsightly views. Project-level mitigation can reduce potential aesthetic impacts to a less-than-significant level; however, project-level environmental review will be required.

19. *Recreation. Will the proposal result in an impact upon the quality or quantity of existing recreational opportunities?* ____ ____ X

Discussion: Refer to discussion under item 14.d above.

Yes Maybe No

20. *Cultural Resources.*

a. *Will the proposal result in the alteration of, or the destruction of, a prehistoric or historic archaeological site?* ____ ____ X

Discussion: The relocated bus terminal represents the only physical construction activity associated with the project. No specific site for the facility has been identified. Therefore, at this time, potential impacts cannot be stated. Project-level environmental analysis will be required once the MTA selects a site for the new terminal.

b. *Will the proposal result in adverse physical or aesthetic effects to a prehistoric or historic building, structure, or object?* ____ ____ X

Discussion: Refer to discussion under (a) above.

c. *Does the proposal have the potential to cause a physical change which would affect unique ethnic cultural values?* ____ ____ X

Discussion: Refer to discussion under (a) above.

d. *Will the proposal restrict existing religious or sacred uses within the potential impact area?* ____ ____ X

Discussion: Refer to discussion under (a) above.

21. *Mandatory Findings of Significance.*

a. *Does the project have the potential to degrade the quality of the environment, substantially reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, threaten to eliminate a plant or animal community, reduce the number or restrict the range of a rare or endangered plant or animal, or eliminate important examples of the major periods of California history or prehistory?* X ____ ____

	Yes	Maybe	No
b. *Does the project have the potential to achieve short-term goals, to the disadvantage of long-term, environmental goals? (A short-term impact on the environment is one which occurs in a relatively brief, definitive period of time while long-term impacts will endure well into the future.)*	X		
c. *Does the project have impacts which are individually limited, but cumulatively considerable? (A project's impact on two or more separate resources may be relatively small, but the effect of the total of those impacts on the environment is significant.)*	X		
d. *Does the project have environmental effects which will cause substantial adverse effects on human beings, either directly or indirectly?*		X	

ENVIRONMENTAL DETERMINATION

On the basis of this initial evaluation:

I find that the proposed project **COULD NOT** have a significant effect on the environment, and a **NEGATIVE DECLARATION** will be prepared. ___

I find that although the proposed project could have a significant effect on the environment, there will not be a significant effect in this case because the mitigation measures described on attached sheets have been added to the project. **A NEGATIVE DECLARATION WILL BE PREPARED.** ___

I find the proposed project **MAY** have a significant effect on the environment, and an **ENVIRONMENTAL IMPACT REPORT** is required. _X_

____
Signature

____
Name

____
Date

REFERENCES

1. Land Use/Transportation Policy for the City of Los Angeles and the Los Angeles County Metropolitan Transportation Authority, adopted by the City Council on November 2, 1993.

2. Final Environmental Impact Report, *Los Angeles County Congestion Management Plan*, certified November 1992.

CITY OF BUENA PARK
Department of Public Works
Donald K. Jensen, Director

May 16, 1994

Pat Greene
Los Angeles County
Metropolitan Transportation Authority
Planning Department
425 South Main Street
Los Angeles, CA 90013-1393

Subject: Metropolitan Transportation Authority
Fiscal Year 1995 - Service Modifications

Dear Mr. Greene:

City of Buena Park has received your Notice of Preparation for the MTA Fiscal Year 1995 Service Modifications Environmental Impact Report. Our main concern is the impacts to line number #460 which serves the Entertainment Corridor within the City of Buena Park.

Based on the proposed plan, MTA would cancel all service on Holidays, Saturdays and Sundays for this line. The proposed modifications have the potential to impact the City of Buena Park as follows:

1. Increase the number of vehicles traveling within the City of Buena Park. This bus line serves tourists that come to the Entertainment Corridor section of Buena Park, i.e. Knott's Berry Farm, Medieval Times, Movieland Wax Museum, Wild Bill's, etc.
2. An increase in traffic will cause deterioration of air quality.
3. The additional vehicles may require higher demand on parking facilities within the Entertainment Corridor.
4. It may have an economic impact on the City of Buena Park by reducing the number of tourists coming to the City.

6650 Beach Boulevard, P. O. Box 5009, Buena Park, California, 90622-5009
(714) 562-3500 Fax (714) 562-3677

If you have any questions, please feel free to call me at (714) 562-3697.

Sincerely,

Donald K. Jensen
Director of Public Works

Herbert E. Vargas

Herbert E. Vargas
Traffic Engineer

DKJ:HEV:cs

Appendix B:
Maps Illustrating Proposed Service Modifications

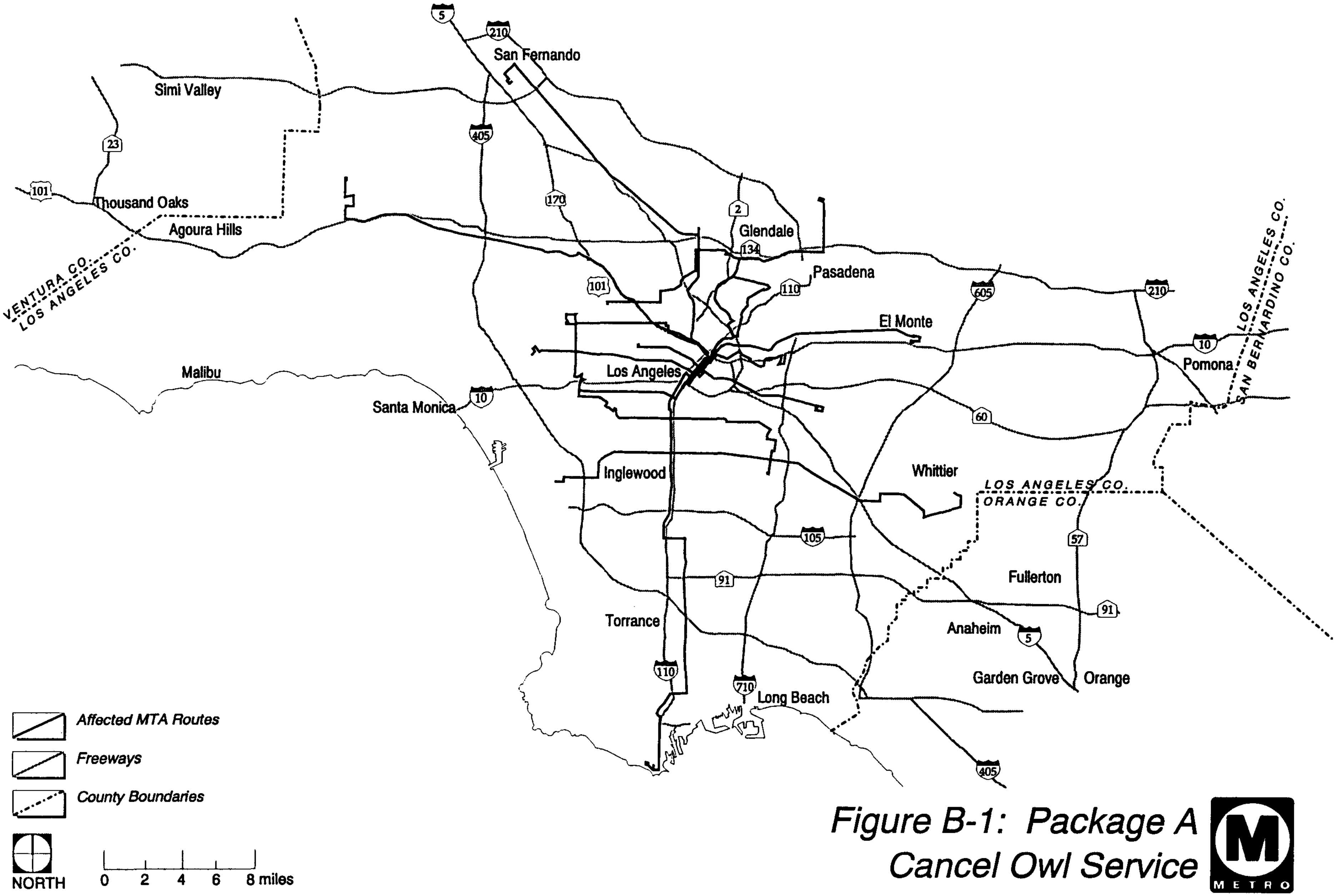


Figure B-1: Package A
Cancel Owl Service

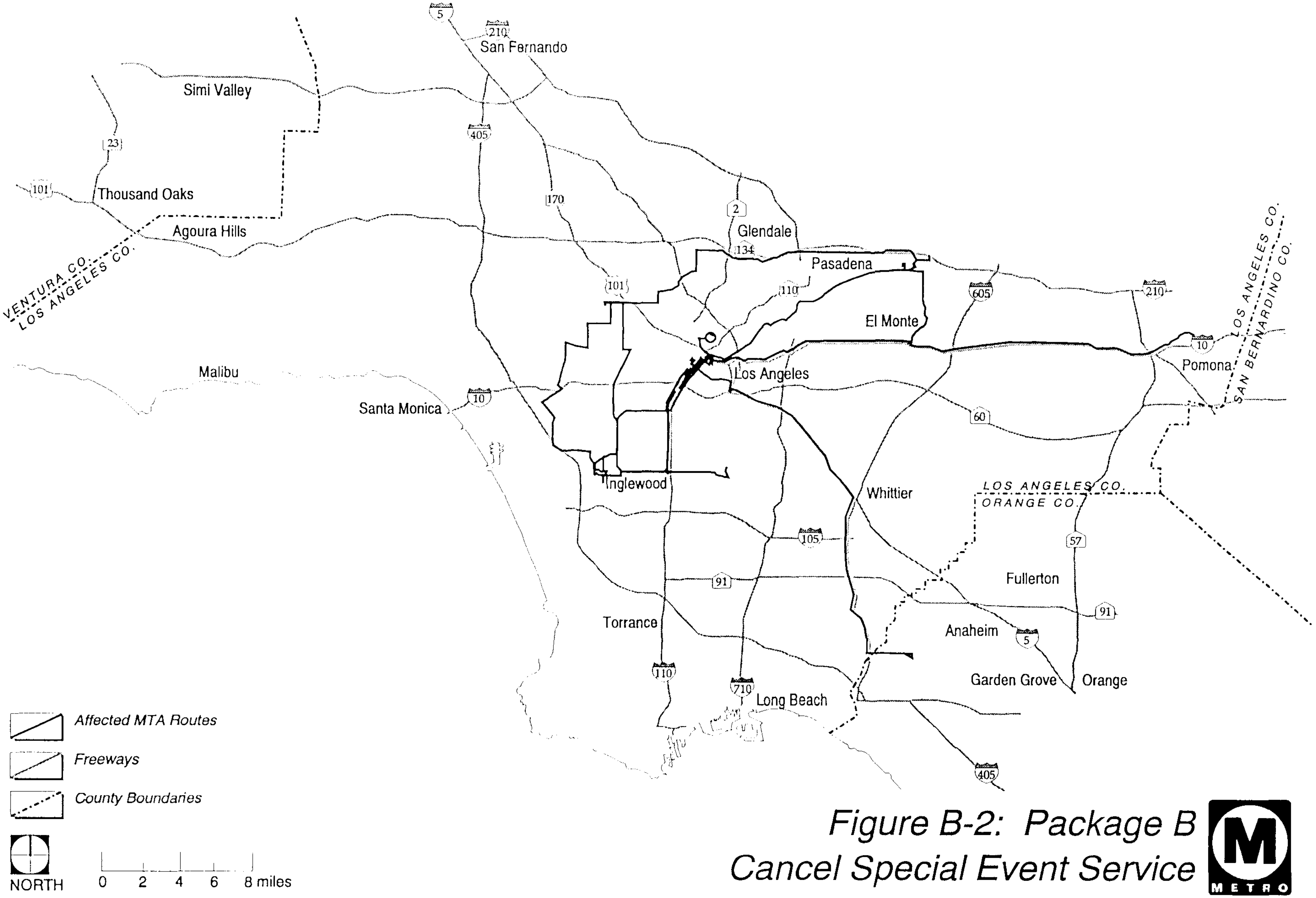


Figure B-2: Package B
Cancel Special Event Service

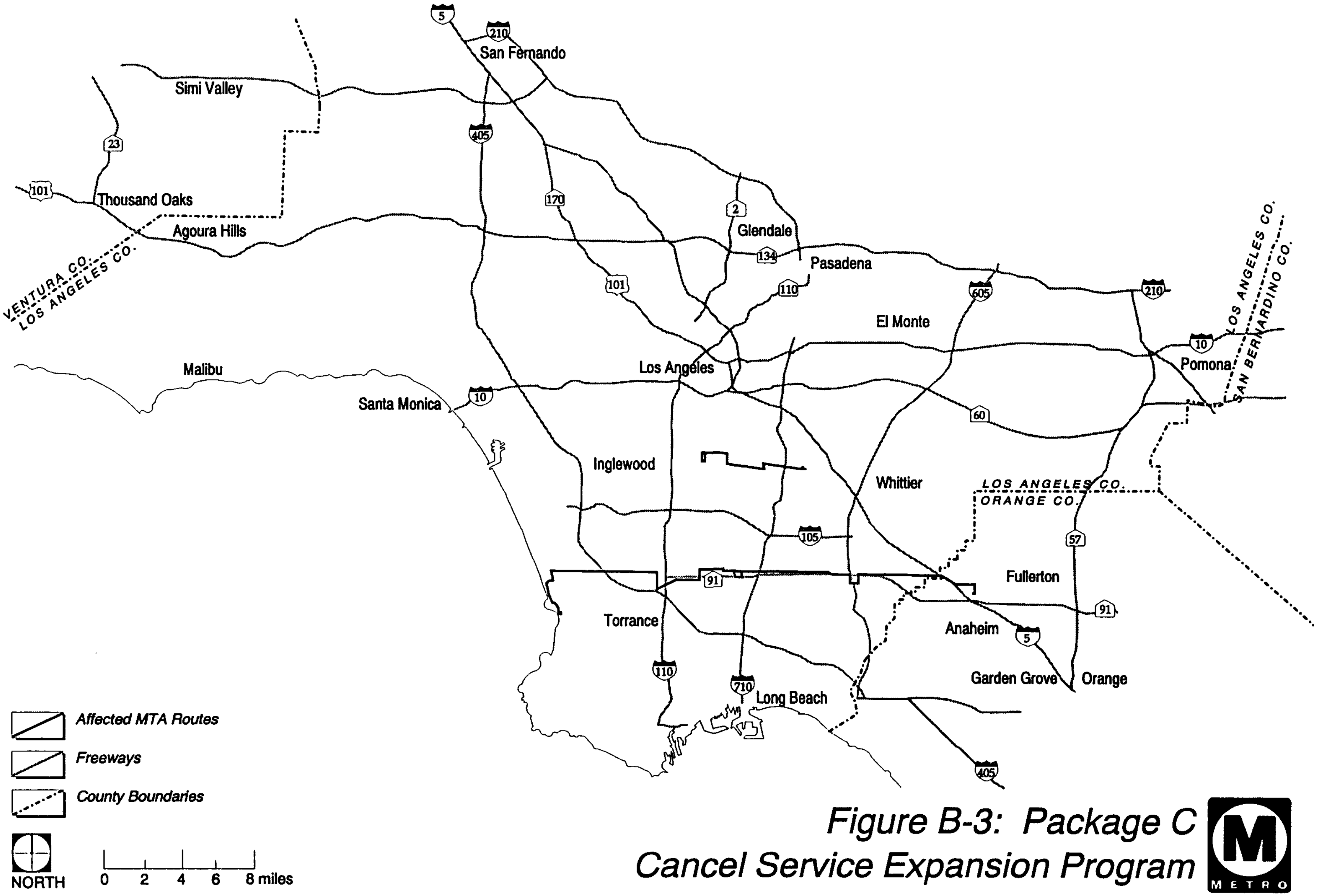


Figure B-3: Package C
Cancel Service Expansion Program

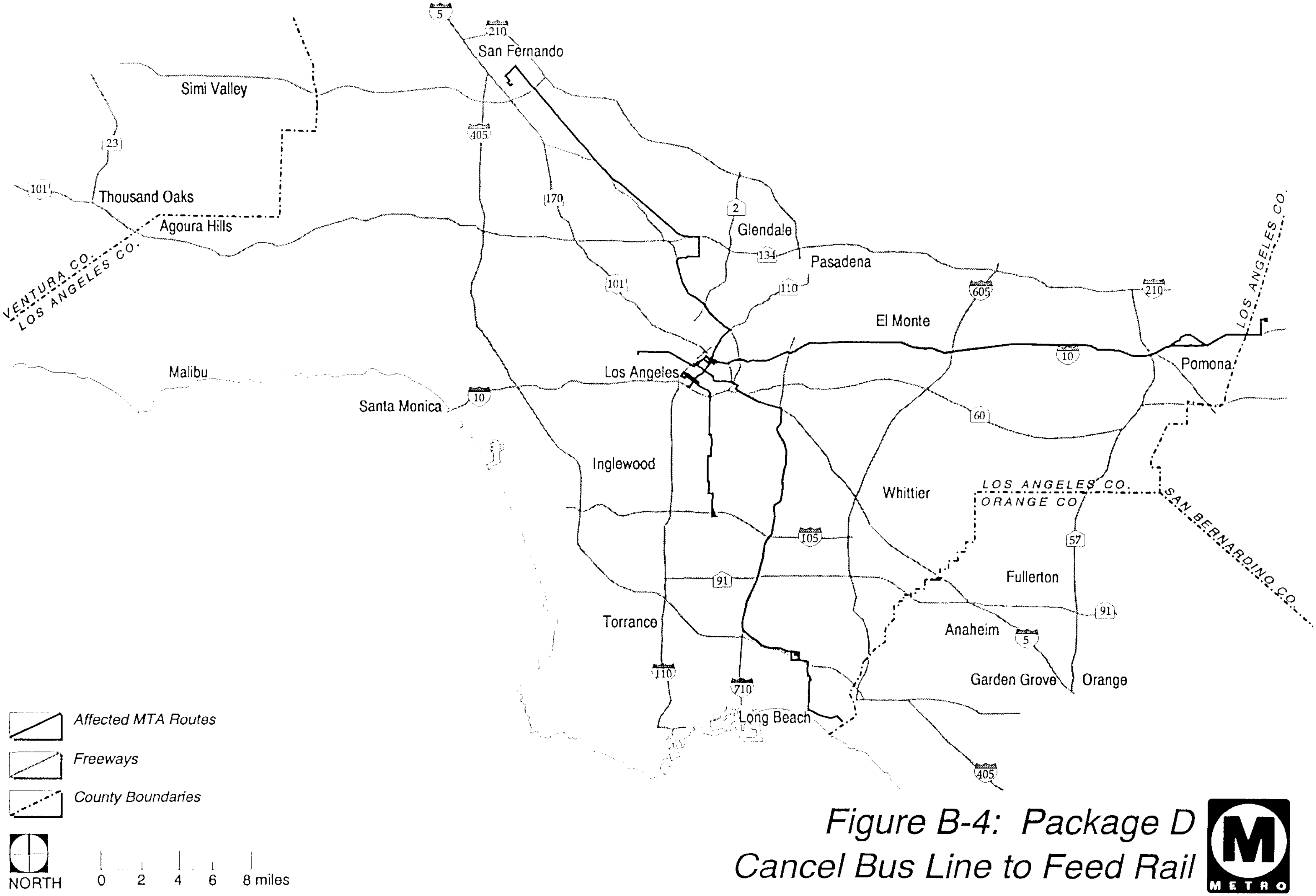


Figure B-4: Package D
Cancel Bus Line to Feed Rail

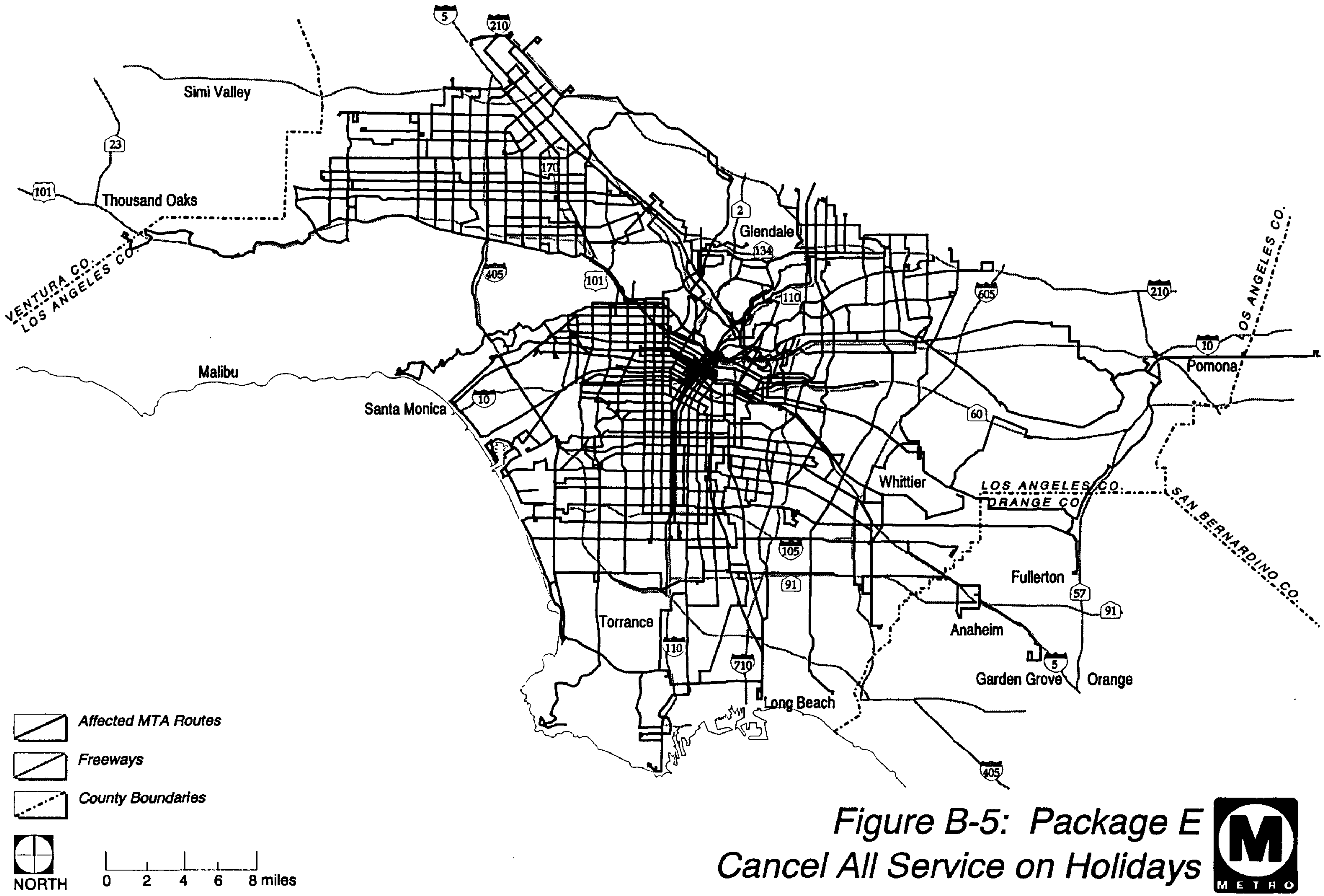


Figure B-5: Package E
Cancel All Service on Holidays

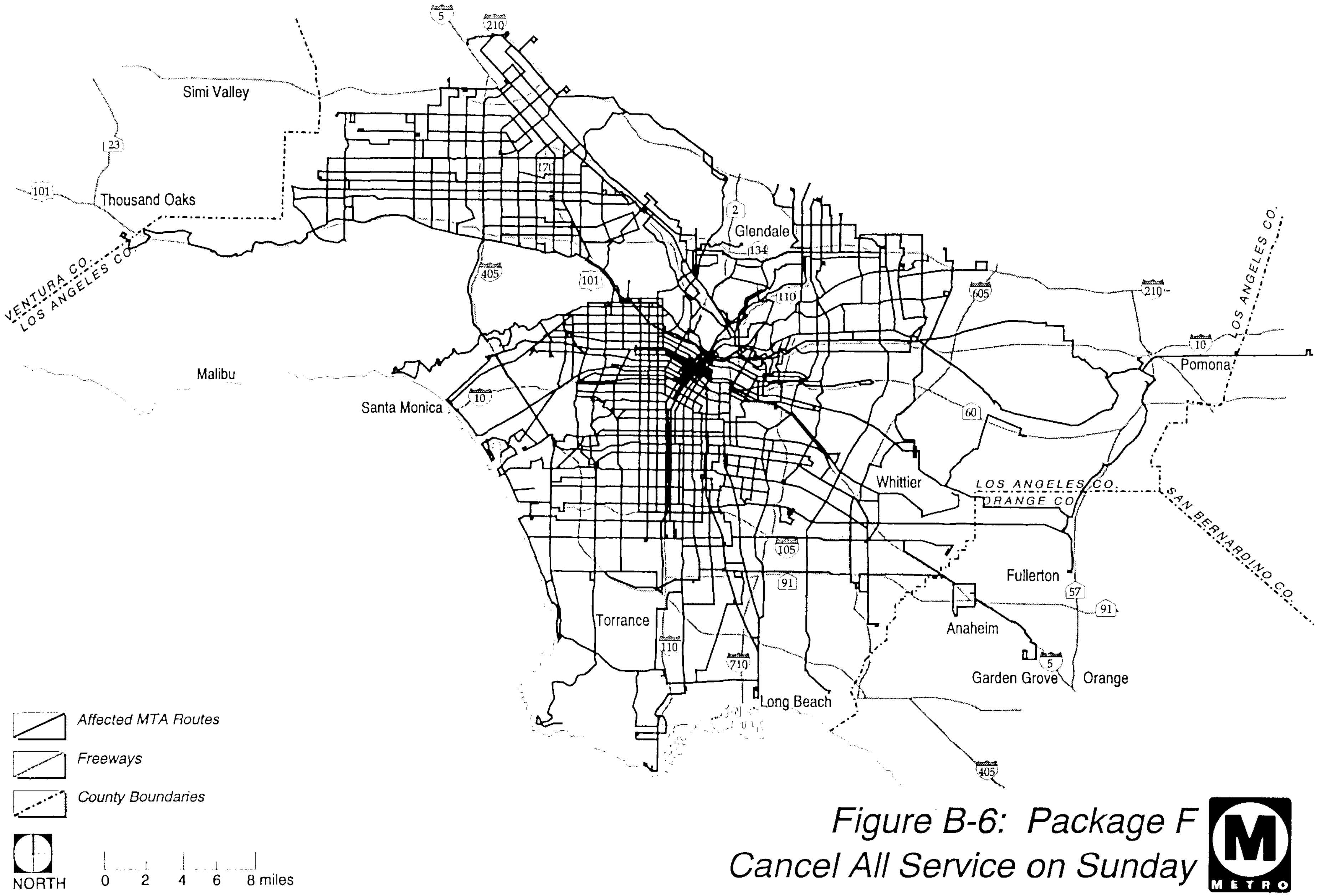


Figure B-6: Package F
Cancel All Service on Sunday

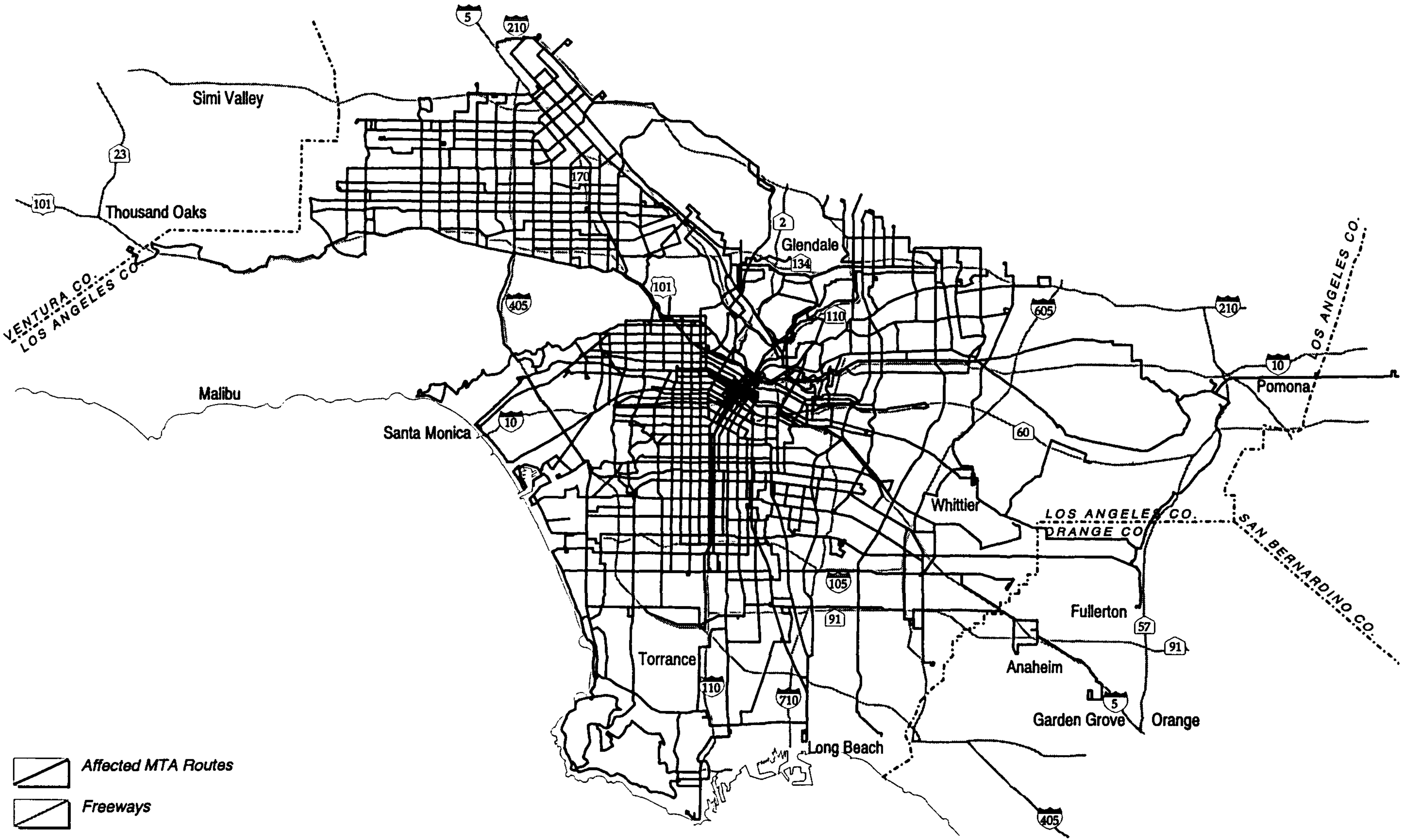


Figure B-7: Package G
Cancel All Service on Saturday

METRO

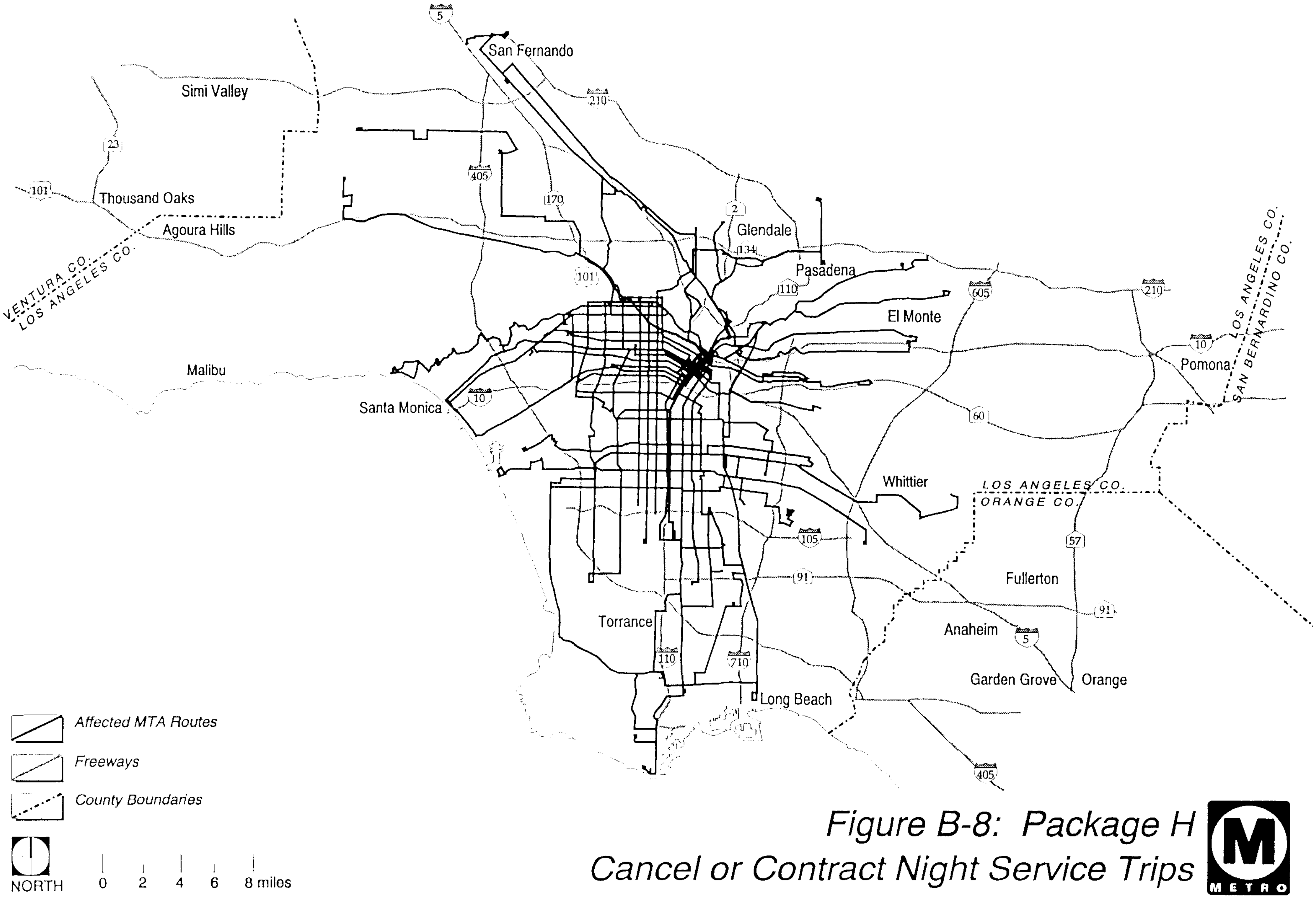


Figure B-8: Package H
Cancel or Contract Night Service Trips

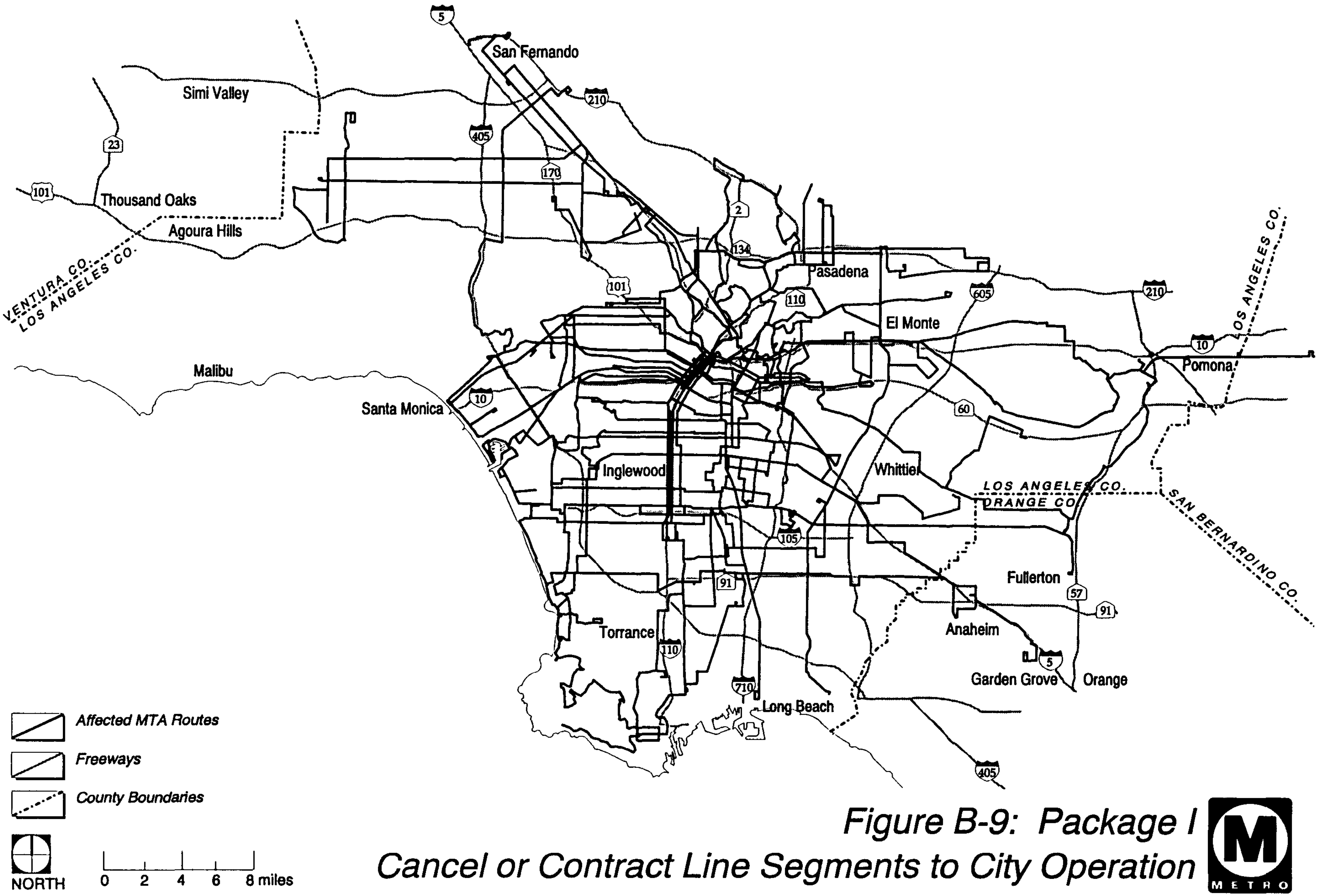


Figure B-9: Package I
Cancel or Contract Line Segments to City Operation

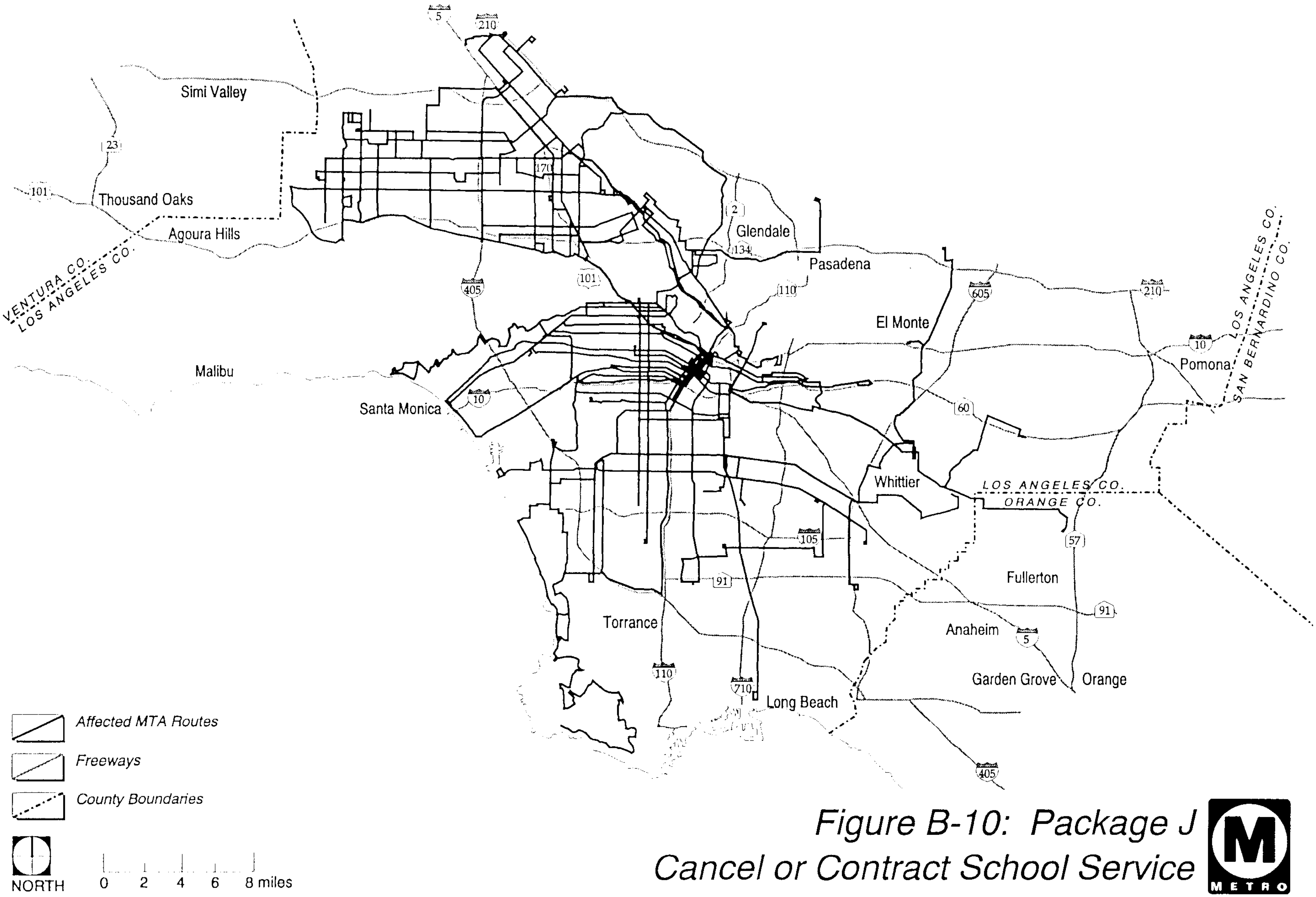


Figure B-10: Package J
Cancel or Contract School Service

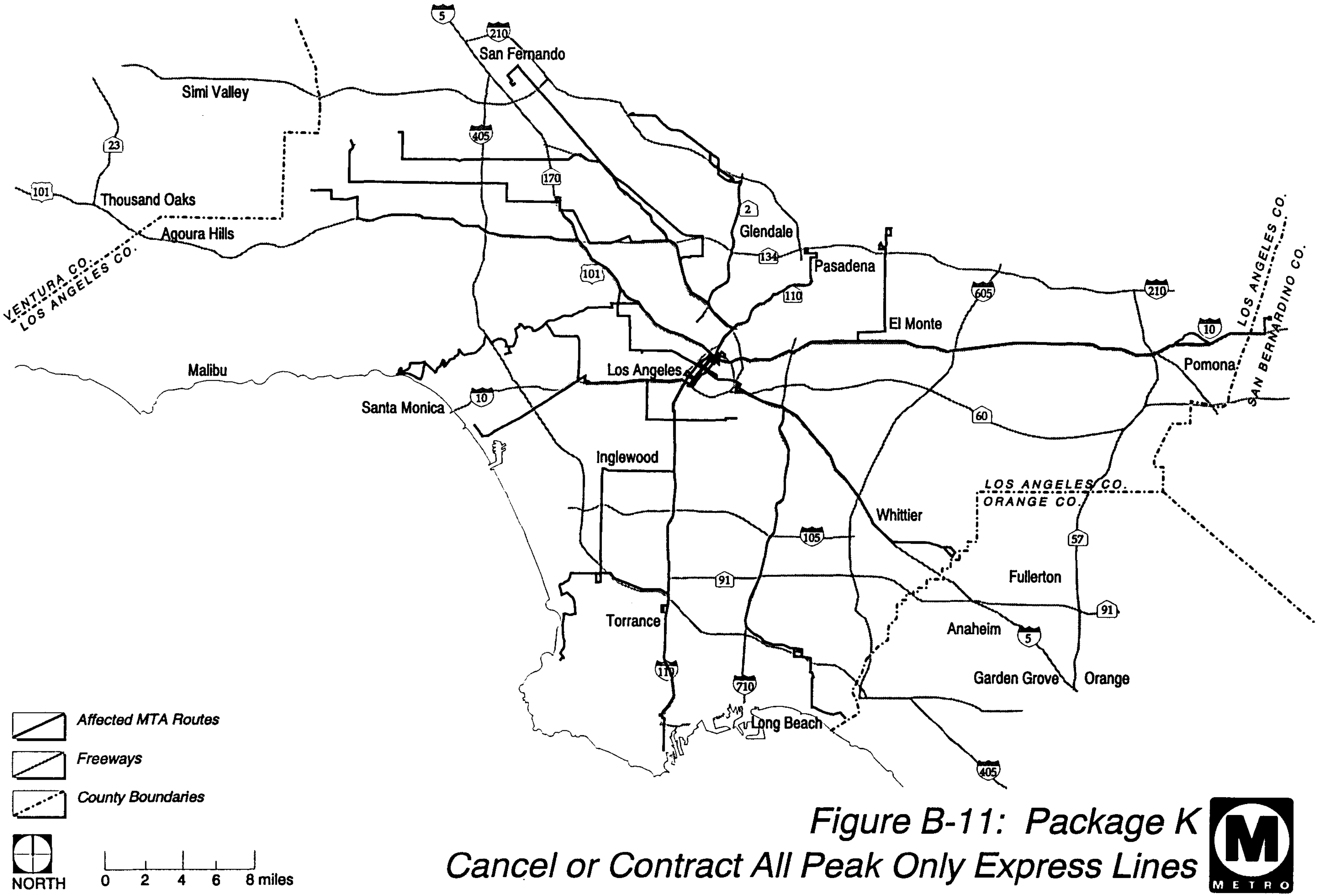


Figure B-11: Package K
Cancel or Contract All Peak Only Express Lines

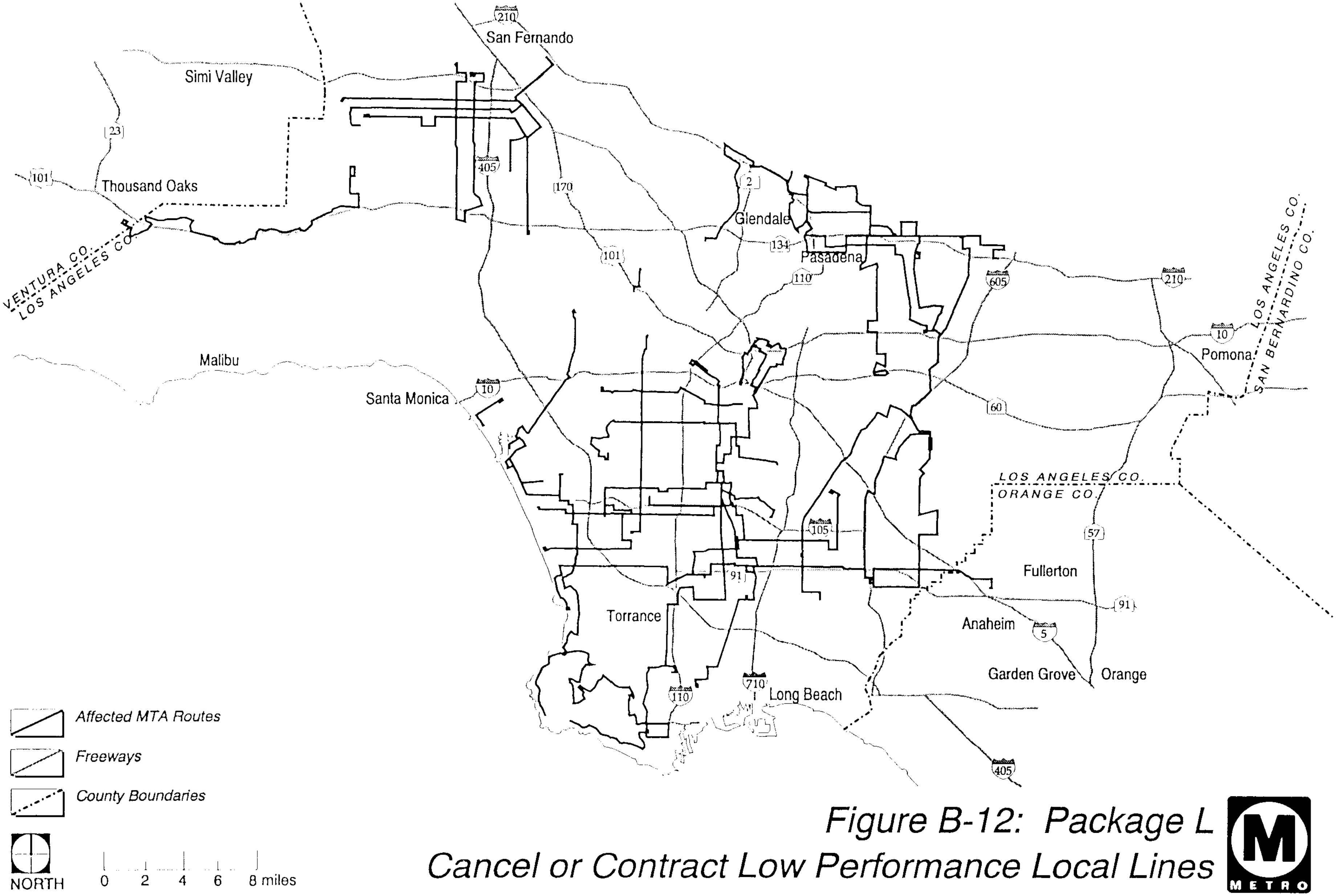


Figure B-12: Package L
Cancel or Contract Low Performance Local Lines

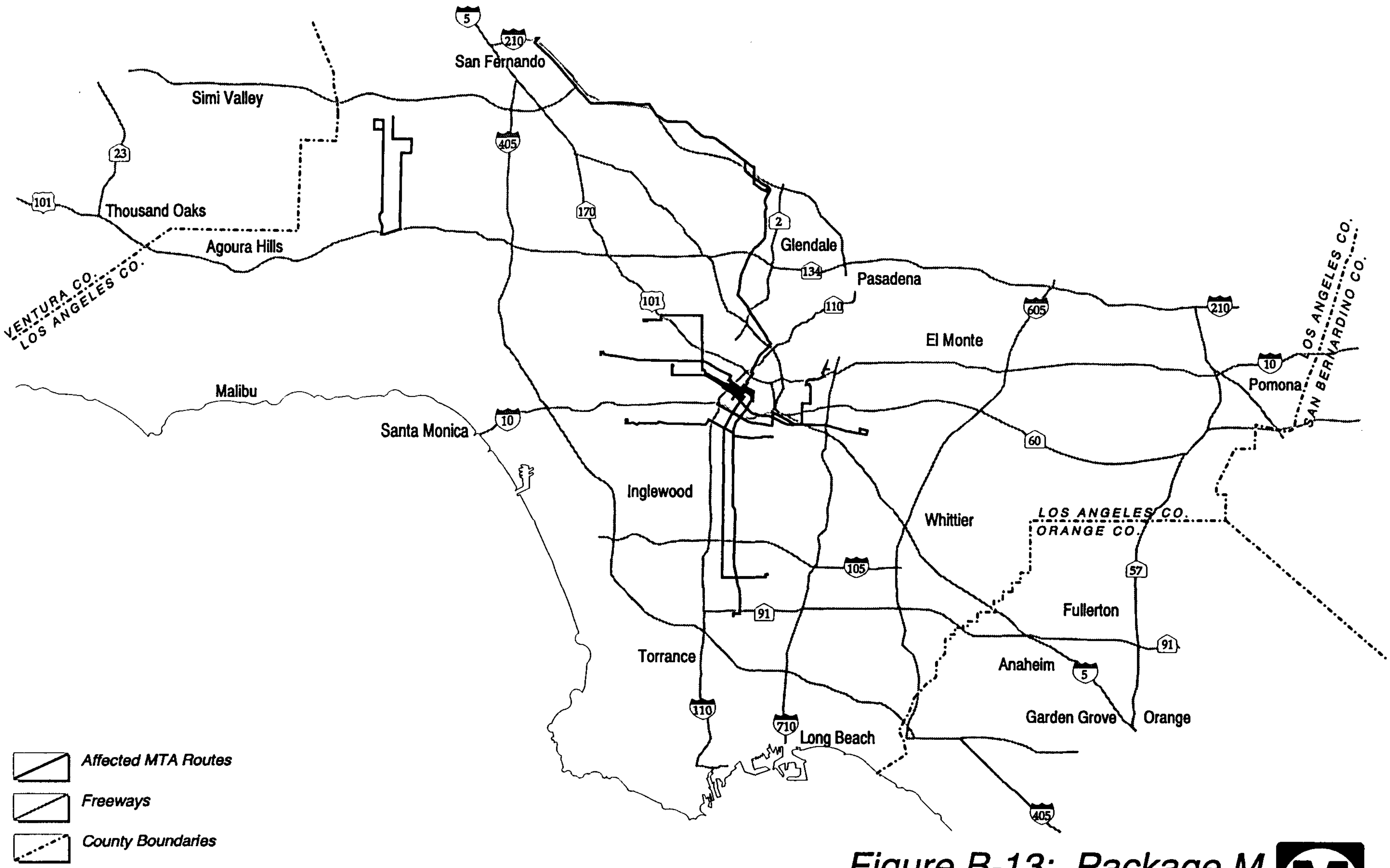


Figure B-13: Package M
Create and Contract New Lines for Heavy Peak Lines

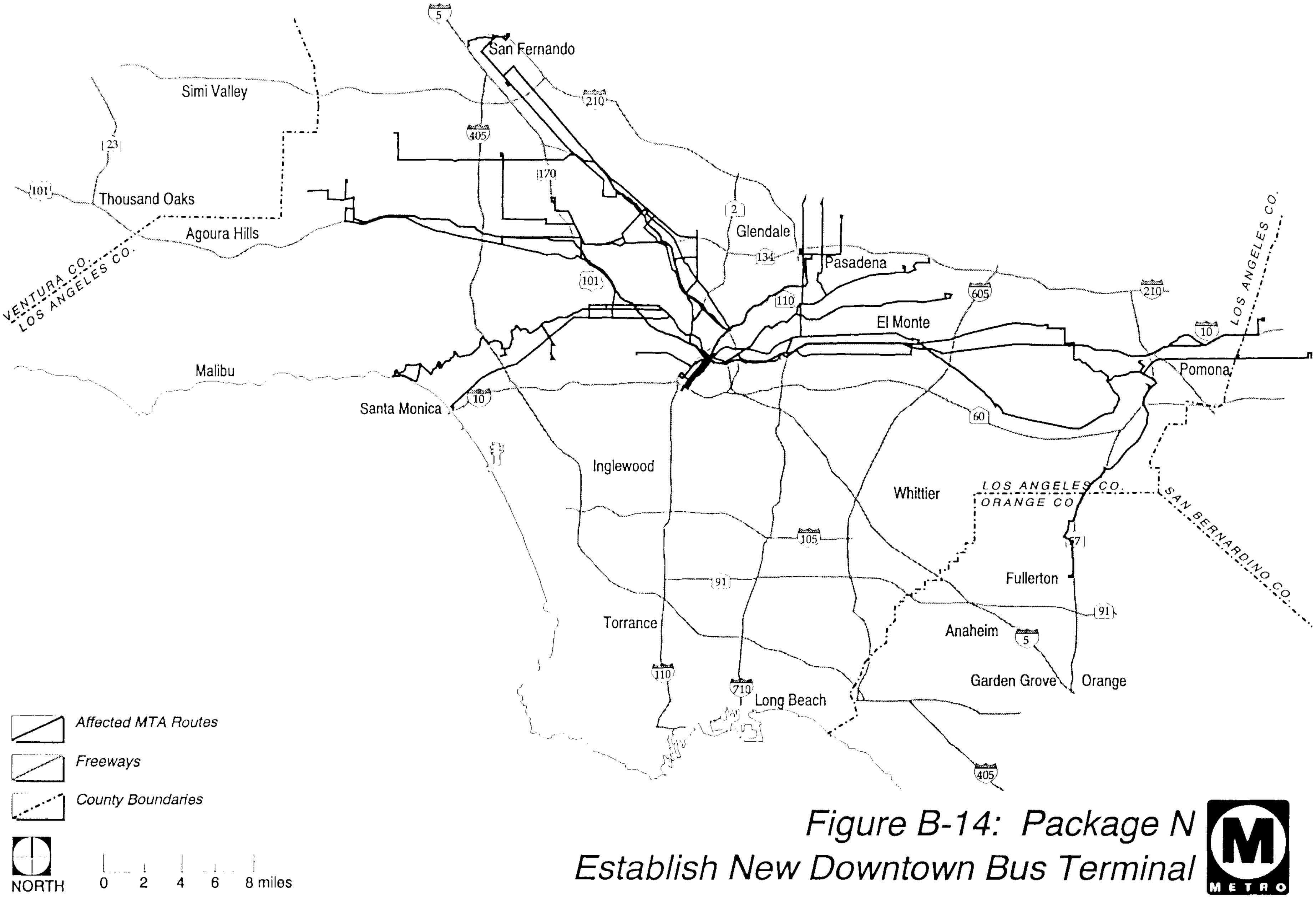


Figure B-14: Package N
Establish New Downtown Bus Terminal

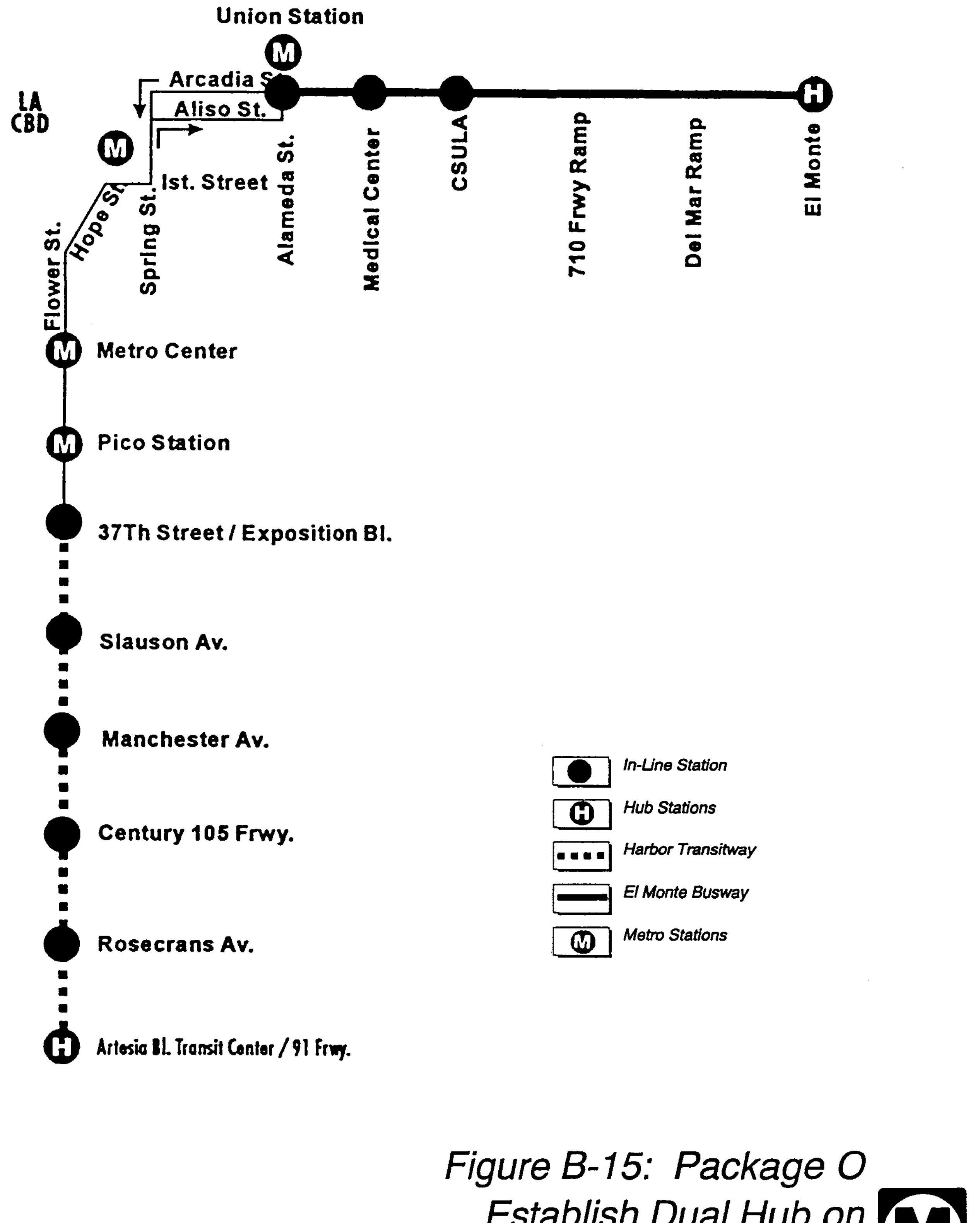


Figure B-15: Package O Establish Dual Hub on El Monte-Harbor Transitway

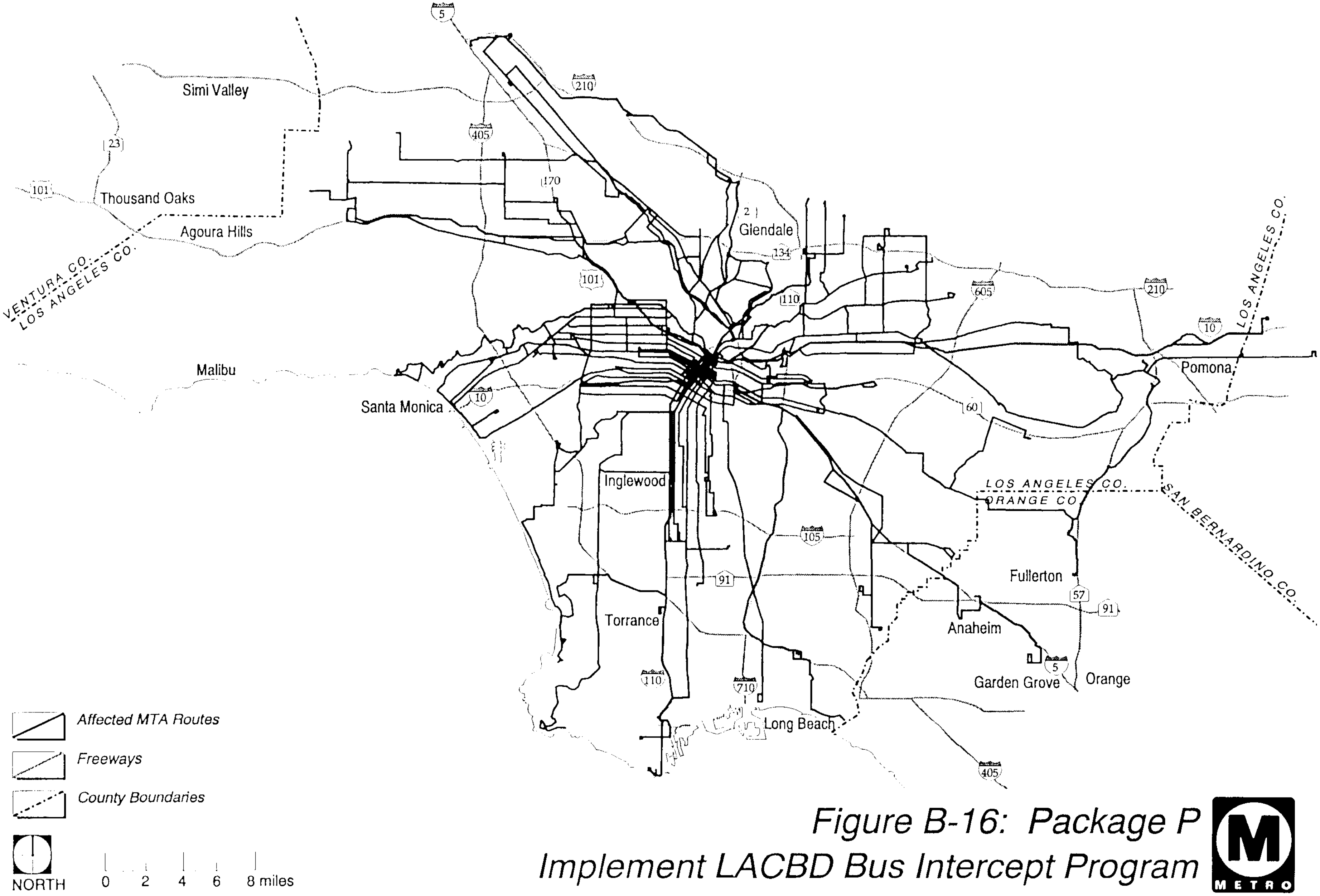
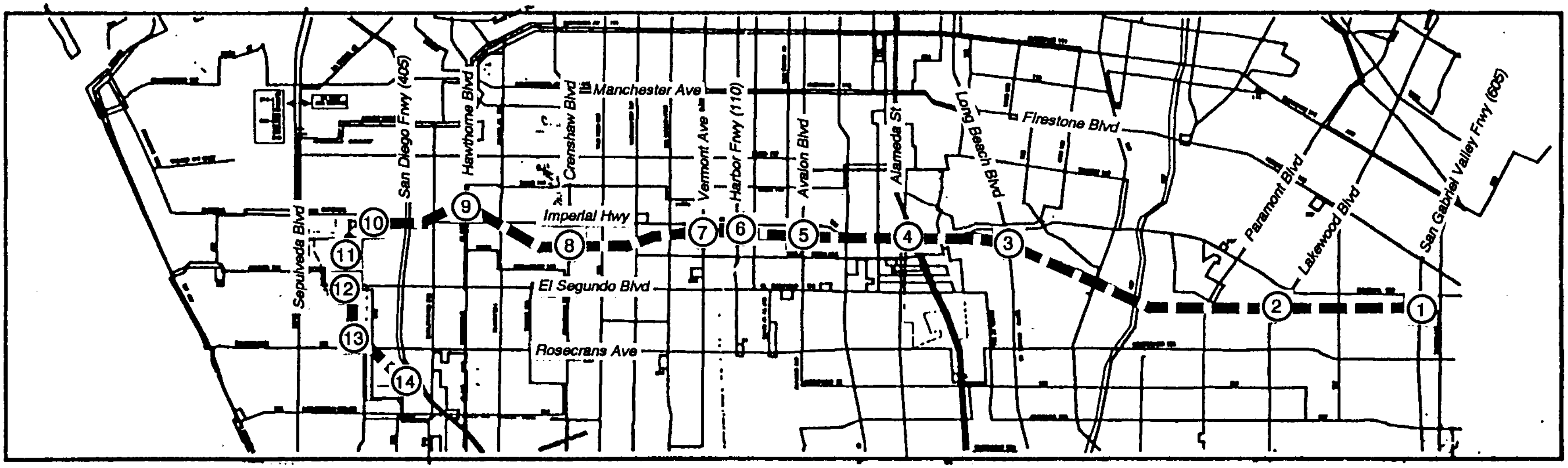


Figure B-16: Package P
Implement LACBD Bus Intercept Program



▬ ▬ *Metro Green Line*

① *Green Line Station*

Metro Green Line Stations

1. *Norwalk*
2. *Lakewood*
3. *Long Beach Blvd.*
4. *Imperial*
5. *Avalan*
6. *Harbor*
7. *Vermont*
8. *Crenshaw*
9. *Hawthorne*
10. *Aviation*
11. *Mariposa*
12. *El Segundo*
13. *Douglas*
14. *Maine*

NORTH

Figure B-17: Package Q
Implement Green Line Interface Plan

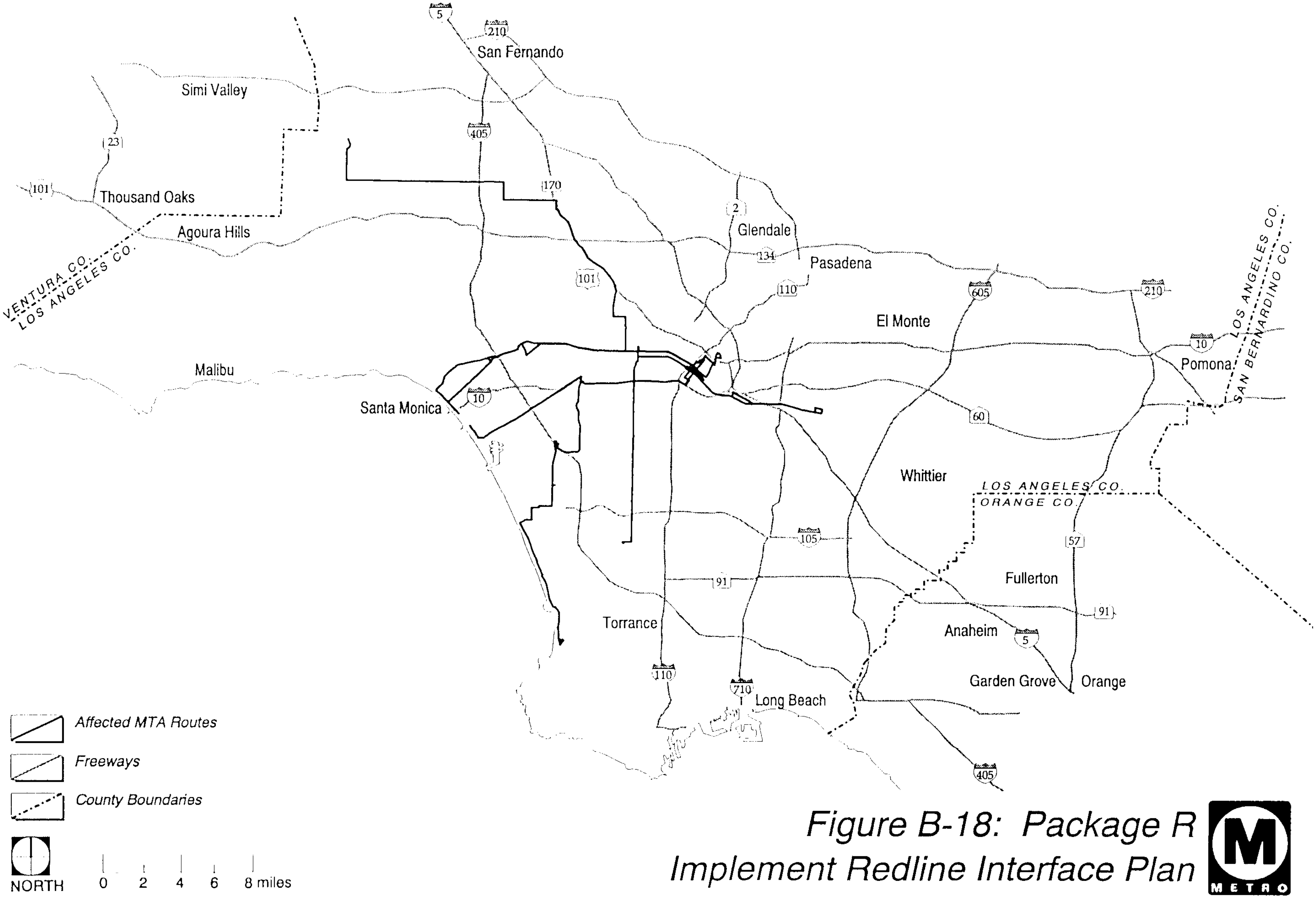


Figure B-18: Package R
Implement Redline Interface Plan

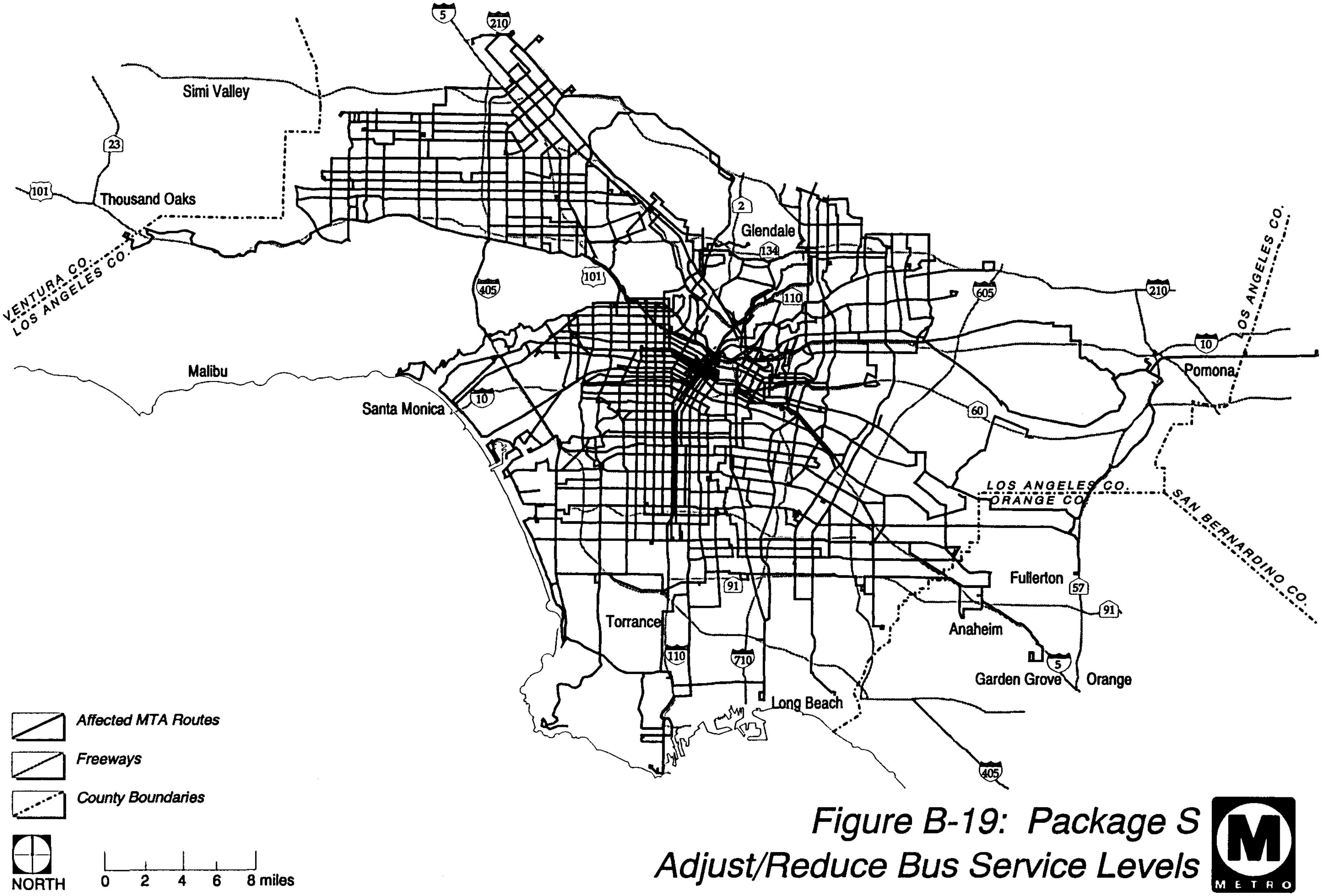


Figure B-19: Package S
Adjust/Reduce Bus Service Levels

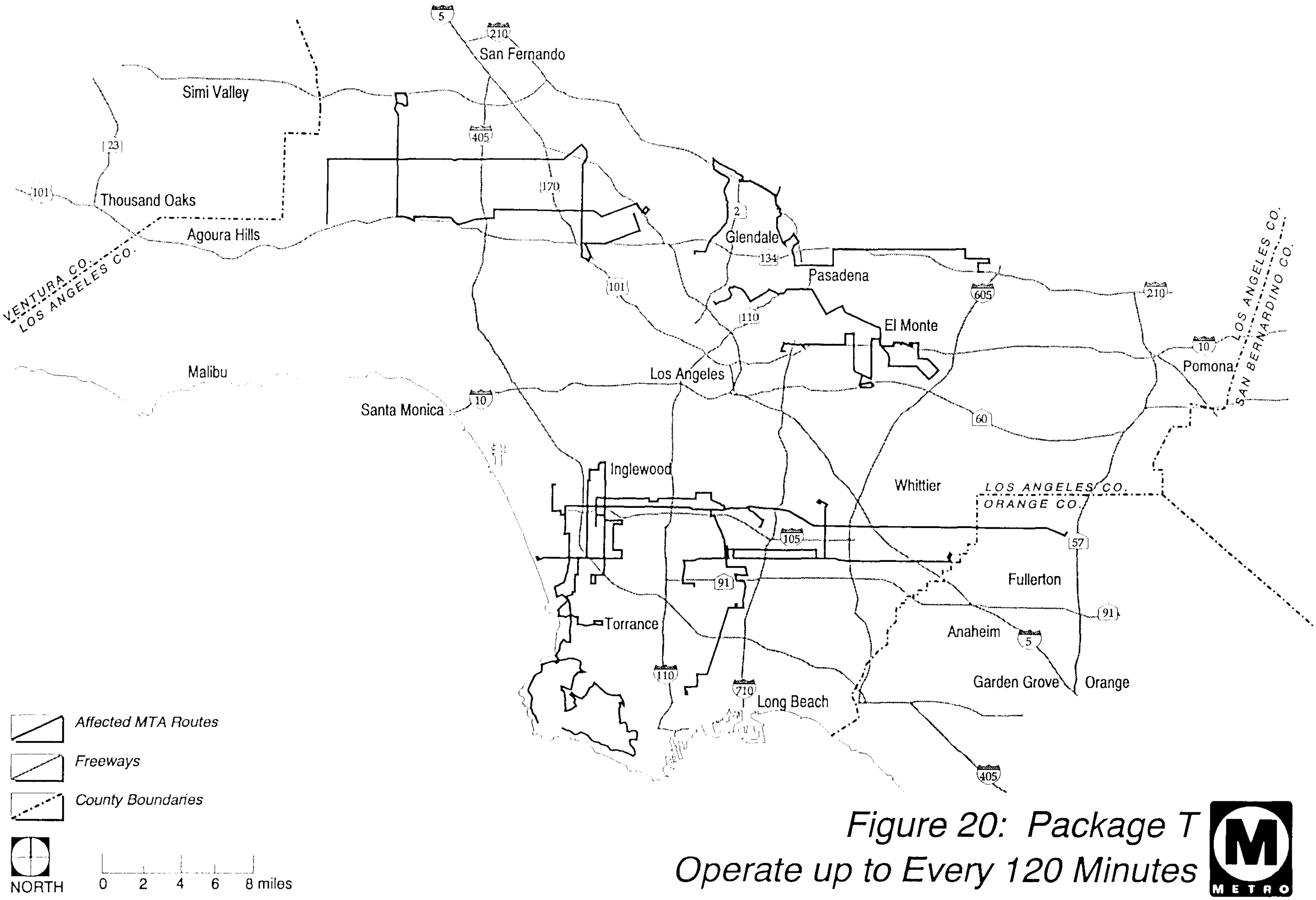


Figure 20: Package T
Operate up to Every 120 Minutes

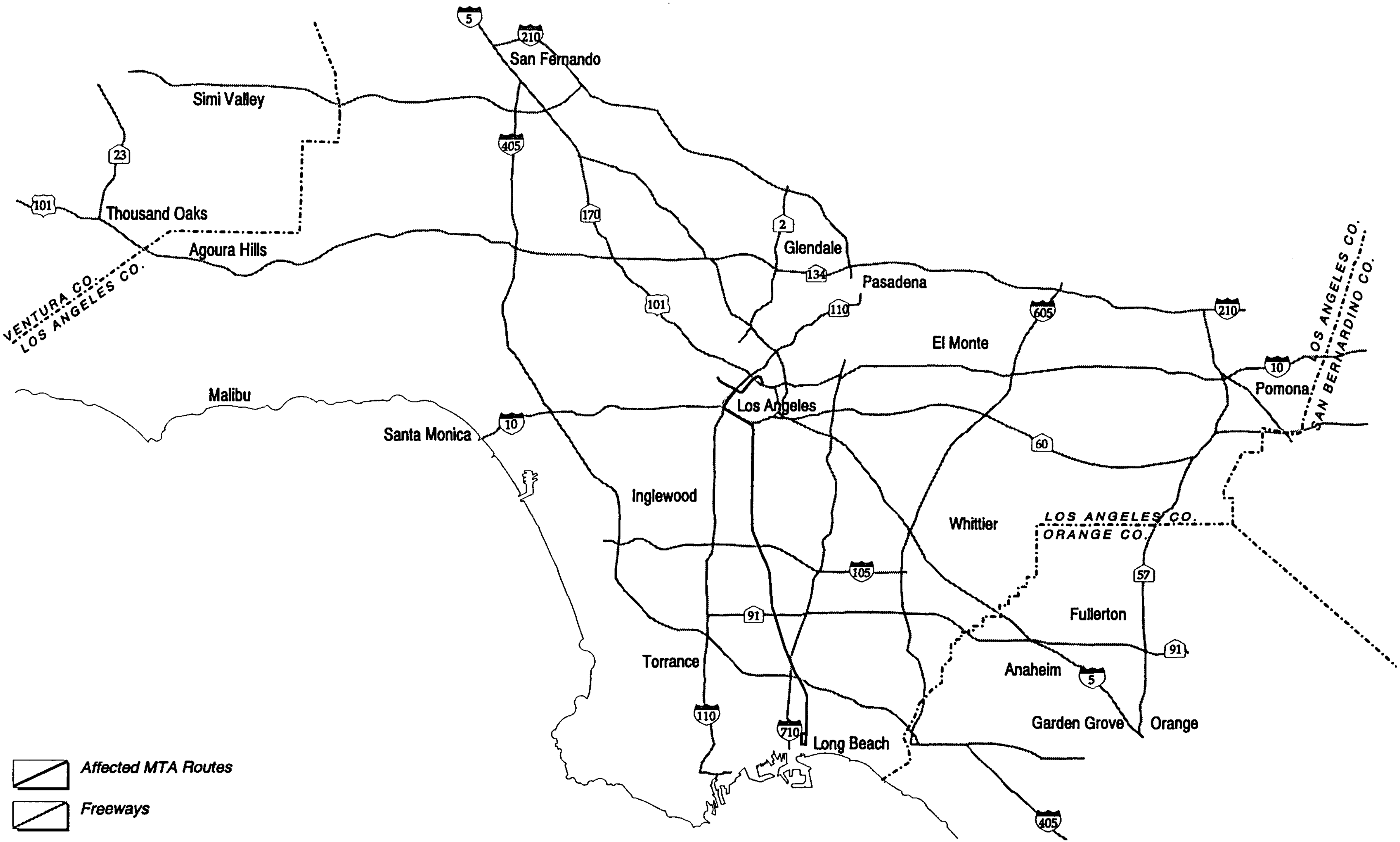


Figure 21: Package U
Reduce Rail Service Levels

METRO

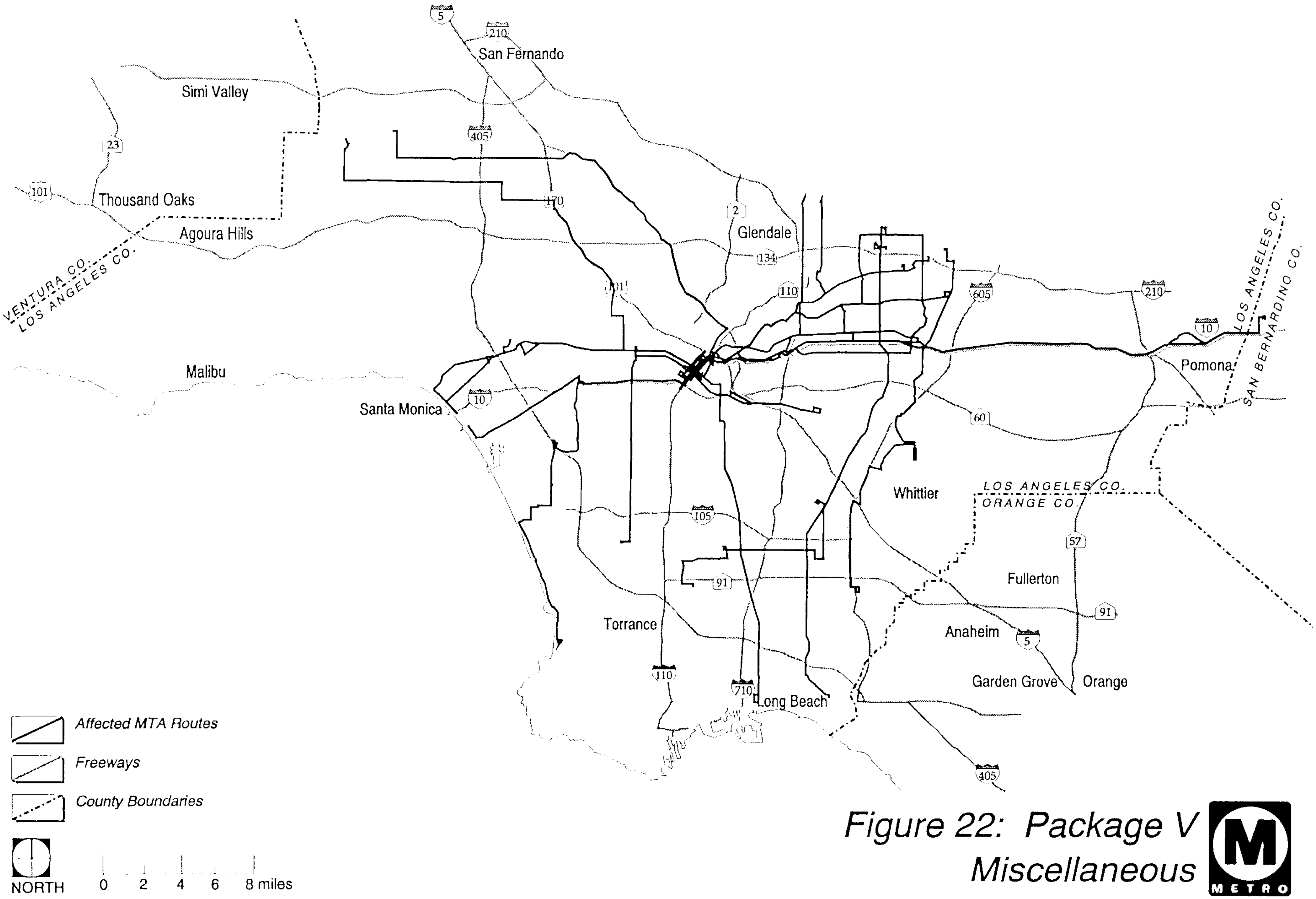


Figure 22: Package V Miscellaneous

Appendix C:
Traffic Study

Environmental Review of Potential FY1995
Service Economies
TRAFFIC IMPACT ANALYSIS

June 3, 1994

by:

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Exp. 12/97

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TRAFFIC IMPACT ANALYSIS
Environmental Review of Potential FY1995 Service Economies

1.0 INTRODUCTION

The purpose of this traffic analysis is to determine the impacts of various transit service modifications on the traffic network within Los Angeles County. Traffic data developed during this analysis is being used to perform the air quality analysis.

The greatest effect on traffic operations will occur during the PM peak hour periods, when traffic volumes are greatest and operating speeds and levels of service are lowest. The effect of transit service modification packages on off-peak weekday and weekend periods can be considered to be less than those associated with peak hour periods.

This analysis calculates the reduction in bus miles traveled, increase in automobile miles traveled, and impacts to stations identified in the Los Angeles County Congestion Management Program (CMP).

2.0 VEHICLE MILE CHANGES FOR AIR QUALITY ANALYSIS

This section describes the calculation of changes in bus mileage and automobile mileage as a result of various service modification packages.

2.1 Travel Characteristics and Assumptions

In order to calculate service modifications for the Los Angeles County MTA certain characteristics and assumptions have been made. These characteristics and assumptions are explained below:

Transit Dependency

Transit riders were surveyed by the Los Angeles County MTA to determine the degree of their reliance on public transit for travel. The results of the *RTD 1986 (FY87) On Board Survey* indicate that 51% do not have an automobile available, 31% have only one automobile available per household and 18% live in households with two or more automobiles. Those without an automobile are considered "transit dependent", those with one automobile per household are "automobile possible" and households with two or more automobiles are "automobile available."

Replacement Travel After Service Reductions

Assumptions have been made as to how transit riders will travel after service modifications. Typically riders will replace their travel by remaining on transit service by rearranging times, routes and destinations or by shifting to other transportation modes such as single occupancy vehicles, carpools, vanpools, bicycles or by foot. The estimated replacement travel percentages are presented in Table 1:

TABLE 1
Replacement Travel Percentages

CATEGORY	TRANSIT USE BEFORE SERVICE MODIFICATION	TRANSIT USE AFTER SERVICE MODIFICATION	AUTOMOBILE OR OTHER MODE USE AFTER SERVICE MODIFICATION
Transit Dependent	51%	40%	11%
Automobile Possible	31%	15%	16%
Automobile Available	18%	0%	18%
TOTALS	**100%**	**55%**	**45%**

The level of replacement travel in this analysis assumes that of the 51% transit dependent, 40% will remain on a transit system while 11% will find another transportation mode. Of the 31% automobile possible, 15% will continue on a transit system and 16% will use an automobile or find another transportation mode. None of the 18% of the automobile available will use the transit system, but will instead use their automobile. These assumptions result in a replacement travel level of 55% of the total affected riders remaining on transit and 45% of the affected riders shifting to private automobile travel

Transit Boarding Versus Transit Trips

The Los Angeles County MTA provided annual transit boarding information for all affected routes. Since there is not a one-to-one relationship between the number of boarding and trips, transfers between routes must be considered in order to estimate actual transit boardings. According to the *RTD 1986 (FY87) On-Board Survey*, the number of transfers are 43% with none, 39% with one, 12% with two and 6% with three. In order to calculate the average number of boardings, based on transfers, the following formula is used:

$$(43\% /1 \text{ boarding})+(39\% /2 \text{ boardings})+(12\% /3 \text{ boardings})+(6\% /4 \text{ boardings})$$
$$= 0.68 \text{ trips per boarding}$$

$$1/0.68 = 1.47 \text{ boardings per trip}$$

Thus, the total number of trips per boarding is 0.68 and the total number of boardings per trip is 1.47.

Average Trip Length

Average trip lengths vary between transit trips and automobile trips. Data from the MTA regional model indicate that local transit trips have an average length of 3.3 miles while express transit have an average length of 7.7 miles. However, in order to provide a very conservative analysis, an average automobile trip length of 9.1 miles has been used in the analysis, based on the *SCAG 1991 Los Angeles County Origin-Destination Survey*, February 1993.

Automobile Vehicle Occupancy

The automobile vehicle occupancy is the average number of passengers per vehicle for all trips including commute, business and recreational trips. Based on the Los Angeles County MTA regional model and for purposes of this analysis, the average automobile vehicle occupancy is 1.45 passengers per vehicle. This data is also based on the *SCAG 1991 Los Angeles County Origin-Destination Survey*, February 1993.

Vehicle Travel Speeds

Vehicle travel speeds vary by time of day and by route. For the purpose of the analysis an average travel speed of 24.8 miles per hour is assumed. This data is based on the *1991 Southern California Origin-Destination Survey Summary*, February 1993.

Annualization of Transit Ridership

The Los Angeles County MTA has established a conversion factor for annual ridership data. Annual data for routes which operate 7 days a week is divided by 315 to obtain average daily weekday data. The annual week end data for Saturday and Sunday is divided by 52 to obtain average daily data. Holiday data is considered by dividing the annual data by 6.

2.2 Methodology for Vehicle Miles Traveled Data

The following is a discussion of the methodology for calculating mode shift for each of the alternatives and the resulting vehicles miles travelled data required for the air quality analysis. This methodology closely follows the methodology used for the Santa Clara County Transportation Agency Bus Service Reduction Impact Analysis.

Estimate of Reduction in Bus Miles

An estimate of reduction in bus revenue vehicle miles was provided by the Los Angeles County MTA. This number was adjusted upwards by 18% to account for non-revenue vehicle miles. The total bus mileage reduction includes both the revenue and non-revenue miles.

Estimate of Additional Automobile Trips

The transit service modifications may affect automobile trips. The following procedure was used to determine the number of new automobile trips which would be added to the roadway network after the service reductions.

Total boarding reductions for each alternative were provided by the Los Angeles County MTA. The future mode of travel for these boardings was determined based on the data in the transit dependency section which assumes a 45% automobile replacement value. Boardings are converted to trips using the 0.68 trips/boarding factor. Dividing the new automobile person trips by the average automobile occupancy of 1.45 provides the additional automobile vehicle trips.

$$\text{daily boarding reductions} \times \text{trips per boarding} = \text{person trips}$$

$$\frac{\text{person trips} \times \text{auto replacement}}{\text{average automobile occupancy}} = \text{additional automobile trips}$$

Estimate of Additional Automobile Miles

In addition to the increase in automobile trips there will be an increase in automobile miles traveled. The automobile miles traveled are based on the automobile trips times the average auto trip length of 9.1 miles as provided in the SCAG Report.

additional automobile trips X average automobile trip length = automobile miles traveled

2.3 Estimated Mileage Changes

Estimate of Bus Mileage

The bus service modifications will affect bus mileage. In calculating the impact of each of the package modifications the annual revenue and non revenue miles, as provided by the *Table of Service Reduction Savings* attached as Appendix A, were converted to daily bus mileage reductions. The number of actual bus mileage reductions range from 22,992 miles for the preferred project to no miles for package Q. Table 2 illustrates the specifics for each package as well as the preferred project.

Estimate of Automobile Trips and Miles

Bus service modifications will also affect automobile trips and mileage. Calculations for trips and mileage is based on the boarding reductions shown in *Table of Service Reduction Savings* (Appendix A). These boarding reductions take into consideration the trips per boarding ratio to get the estimated reduction in person trips. The person trips are then converted into daily automobile trips by using the percentage of automobile replacement and average automobile occupancy to compute the estimated increase in automobile trips. The actual increase in automobile trips range from 4,616 trips for the preferred project to no change in trips for package Q. Table 3 illustrates the increase for each package.

Once automobile trips are determined, those trips are multiplied by the average trip length to calculate the increase in automobile miles traveled. The actual increase in automobile miles range from 42,003 miles for the preferred project to no change in trips for package Q. Increases for each individual package are illustrated in Table 3.

Bus Mileage Reduction and Automobile Mileage Increase

As explained above, service modifications will decrease bus mileage and increase automobile mileage. Again, the range of reductions and increases vary. The preferred project would decrease bus miles by 22,992 while increasing automobile miles by 42,003 with a net increase of 19,011 automobile miles. Package Q has neither a bus mileage reduction nor an automobile mile increase. Comparisons of bus and automobile miles are found in Table 2 and 3.

TABLE 2
BUS MILEAGE REDUCTION

		A	B	C	D
Package	Description	Annual Bus Revenue Mile Reduction	Annual Bus Non-Revenue Mile Reduction	ANNUAL TOTAL Bus Mileage Reduction	DAILY TOTAL Bus Mileage Reduction
A	Cancellation of Low Patronage Owl Service (1AM to 5PM)	275,000	49,500	324,500	1,030
B	Cancellation of Special Event Services	250,000	45,000	295,000	937
C	Cancellation of Expansion Program Routes 114 and 130.	150,000	27,000	177,000	562
D	Cancel Bus Lines That Parallel Rail Service	1,250,000	225,000	1,475,000	4,683
E	Cancel All Service on Holidays (Assumes 6 Holidays/Year)	875,000	157,500	1,032,500	172,083
F	Cancel All Service on Sundays	7,305,740	1,315,033	8,620,773	27,368
G	Cancel All Service on Saturdays	9,034,948	1,626,291	10,661,239	33,845
H	Cancel or Contract Night Service Trips	2,850,000	513,000	3,363,000	10,676
I	Cancel Selected Line Segments	325,000	58,500	383,500	1,217
J	Cancel School Service	225,000	40,500	265,500	843
K	Cancel Express Lines Operating Only During Rush Hours	2,500,000	450,000	2,950,000	9,365
L	Cancel Low Performing Local Bus Lines	3,300,000	594,000	3,894,000	12,362
M	Create New Lines to Operate During Rush Hours	1,300,000	234,000	1,534,000	4,870
N	Establish New LACBD Bus Terminal	500,000	90,000	590,000	1,873
O	HUB Transitway Operations	4,275,000	769,500	5,044,500	16,014
P	Implement LACBD Bus Intercept Program	1,800,000	324,000	2,124,000	6,743
Q	Implement Metro Green Line Interface Plan	0	0	0	0
R	Implement Metro Red Line (Segment 2A) Interface Plan	325,000	58,500	383,500	1,217
S	Reduce Bus Service Levels (3%)	1,990,000	358,200	2,348,200	7,455
T	Operate Selected Lines at Reduced Frequencies	950,000	171,000	1,121,000	3,559
U	Reduce Rail Services Levels to Reflect Actual Ridership Demand	100,000 (Rail)	0	100,000 (Rail)	0
V	Consultant Service Reduction Proposals [1]	10,940,000	1,969,200	12,909,200	40,982
Pref.Prog.	Staff Recommended Service Reductions	6,137,763	1,104,797	7,242,560	22,992

COLUMNS
A = estimated annual revenue miles, source MTA Staff Report FY 95
B = non-revenue miles calculated @ 18% of revenue miles, source MTA Staff Meeting
C = annual bus mileage reduction calculated by adding columns A + B.
D = daily bus mileage reduction calculated by dividing by 315 days per year, 52 days per weekend, or 6 days per holiday depending on conditions

NOTE:
1. assumes A,C & D and one third of I,K,L,N,O,Q and R

TABLE 3
AUTOMOBILE TRIPS AND MILES

		A	B	C	D	E
Package	Description	Annual MTA Boarding Reduction	Average Daily MTA Boarding Reduction	Daily Bus Person–Trip Reduction	Increased Daily Automobile Trips	Increased Daily Automobile Miles Travelled
A	Cancellation of Low Patronage Owl Service (1AM to 5PM)	100,000	317	216	99	897
B	Cancellation of Special Event Services	375,000	1,190	810	369	3,362
C	Cancellation of Expansion Program Routes 114 and 130.	425,000	1,349	917	419	3,810
D	Cancel Bus Lines That Parallel Rail Service	2,250,000	7,143	4,857	2,217	20,172
E	Cancel All Service on Holidays (Assumes 6 Holidays/Year)	3,000,000	9,524	6,476	2,956	26,897
F	Cancel All Service on Sundays	31,200,000	600,000	408,000	186,207	1,694,483
G	Cancel All Service on Saturdays	44,200,000	850,000	578,000	263,793	2,400,517
H	Cancel or Contract Night Service Trips	3,500,000	11,111	7,556	3,448	31,379
I	Cancel Selected Line Segments	10,000,000	31,746	21,587	9,852	89,655
J	Cancel School Service	950,000	3,016	2,051	936	8,517
K	Cancel Express Lines Operating Only During Rush Hours	3,300,000	10,476	7,124	3,251	29,586
L	Cancel Low Performing Local Bus Lines	5,600,000	17,778	12,089	5,517	50,207
M	Create New Lines to Operate During Rush Hours	7,500,000	23,810	16,190	7,389	67,241
N	Establish New LACBD Bus Terminal	750,000	2,381	1,619	739	6,724
O	HUB Transitway Operations	8,850,000	28,095	19,105	8,719	79,345
P	Implement LACBD Bus Intercept Program	1,800,000	5,714	3,886	1,773	16,138
Q	Implement Metro Green Line Interface Plan	0	0	0	0	0
R	Implement Metro Red Line (Segment 2A) Interface Plan	0	0	0	0	0
S	Reduce Bus Service Levels (3%)	11,024,276	34,998	23,798	10,861	98,838
T	Operate Selected Lines at Reduced Frequencies	1,190,000	3,778	2,569	1,172	10,669
U	Reduce Rail Services Levels to Reflect Actual Ridership Demand	100,000 (Rail)	0	0	0	0
V	Consultant Service Reduction Proposals [1]	28,480,942	90,416	61,483	28,060	255,346
Pref.Prog.	Staff Recommended Service Reductions	4,685,000	14,873	10,114	4,616	42,003

COLUMNS
A = estimated annual boarding, source MTA Staff Report FY 95
B = estimated daily boarding calculated @ 315 days per year, 52 days per weekend or 6 days per holiday, depending on conditions.
C = daily bus person trip reductions calculated by daily boarding x 0.68 trips/boarding.
D = daily automobile trips calculated by person trips times 45% auto replacement divided by 1.45 average auto occupancy.
E = automobile miles calculated by auto trips x average auto trip length of 9.1 miles.

NOTE:
1. assumes A,C & D and one third of I,K,L,N,O,Q and R

3.0 TRAFFIC IMPACTS AT CMP STATIONS

3.1 Introduction

To measure the traffic impacts of the various alternatives, CMP station sites throughout Los Angeles County were chosen. CMP stations are either street intersections or freeway segments.

The levels of service at each station will be used in the calculations. Levels of service compare the traffic volume to total capacity at each station. Levels of service range from A to F, measuring very good to very poor operations.

Although both A.M. and P.M. periods are often considered, the A.M. period mainly involves commute trips while the P.M. period includes commute, business and recreational trips. Thus, the P.M. period will be used to calculate the traffic impact data.

It has been determined that only packages I, K, L, V and the Preferred Project are expected to have potential traffic impacts during weekday P.M. peak hours. Other options tend to affect transit operations during weekends, mid-day or night time periods which are not being considered at this time. Table 4 shows a listing of the packages and the potential impact during P.M. peak hours.

For packages which include "Cancel or Contract" services, the option exists for municipal or private carriers to take over the service. In such a case, no traffic impact is expected. The traffic analysis will assume that bus service will be canceled, since this represents the worst case in terms of traffic impacts.

3.2 Methodology for Determining Impacts

Most CMP stations are unaffected by any of the packages because affected bus lines do not pass through the station sites during the evening peak hour. Out of 160 CMP intersections and 79 CMP freeway segments, 40 CMP intersections and 20 CMP freeway segments have an affected bus line passing through them.

At each of the CMP stations, existing traffic volumes were lowered by the number of buses expected to be canceled under each package. In place of the buses, an increase in automobiles is expected. It is assumed that 45% of the average number of transit riders would travel by automobile instead. The average number of transit riders for each bus line was determined by using passenger miles per revenue miles for each bus line as shown in the *Line Performance Report FY95* attached as Appendix B. This 45% value is the same factor as the replacement value used for the vehicle mile calculations. The former transit riders were assumed to shift their travel mode to automobiles with an average occupancy of 1.45. These new automobile travelers were assumed to drive along the same routes as the canceled bus routes. Calculations showing the reduction in buses and the increase in automobiles during the evening peak hour are shown in Appendix C.

TABLE 4
POTENTIAL PEAK HOUR CMP ADVERSE IMPACT

Pack– age	Description	Potential Peak Hour CMP Network Adverse Impact	Comments
A	Cancellation of Low Patronage Owl Service (1AM to 5PM)	NO	Off peak reduction only
B	Cancellation of Special Event Services	NO	Does not occur on a regular basis.
C	Cancellation of Expansion Program Routes 114 and 130.	NO	Does not impact current operations, therefore no peak hour impact.
D	Cancel Bus Lines That Parallel Rail Service	NO	Reduction in bus service, passenger transfer to adjacent service
E	Cancel All Service on Holidays	NO	Off peak reduction only
F	Cancel All Service on Sundays	NO	Off peak reduction only
G	Cancel All Service on Saturdays	NO	Off peak reduction only
H	Cancel or Contract Night Service Trips	NO	Off peak reduction only
I	Cancel Selected Line Segments	YES	
J	Cancel School Service	NO	AM Peak hour impact only, NO PM IMPACT
K	Cancel Express Lines Operating Only During Rush Hours	YES	
L	Cancel Low Performing Local Bus Lines	YES	
M	Create New Lines to Operate During Rush Hours	NO	Service IMPROVEMENT, no adverse impact to CMP intersections.
N	Establish New LACBD Bus Terminal	NO	There are no CMP intersections near the proposed terminal.
O	HUB Transitway Operations	NO	Service IMPROVEMENT, no impact to CMP intersections.
P	Implement LACBD Bus Intercept Program	NO	There are no CMP intersections in the LACBD.
Q	Implement Metro Green Line Interface Plan	NO	Service improvement
R	Implement Metro Red Line (Segment 2A) Interface Plan	NO	Service improvement
S	Reduce Bus Service Levels (3%)	NO	Off peak impacts only.
T	Operate Selected Lines at Reduced Frequencies	NO	Off peak impacts only.
U	Reduce Rail Services Levels to Reflect Actual Ridership Demand	NO	Off peak impacts only.
V	Consultant Service Reduction Proposals	YES	
Preferred	Consultant Service Reduction Proposals	YES	

Calculations of intersection levels of service were performed using data from the 1993 CMP Monitoring Program. Using the same criteria of significance as the CMP, a station which experiences an increase of volume-to-capacity (v/c) ratio exceeding 0.02 with an ultimate v/c exceeding 1.00 is considered to be significantly impacted.

3.3 Level Of Service Impact Analysis

Level of service calculations were performed at the 40 CMP intersections and 20 CMP freeway segments where bus service would be altered under the service modification packages. It was found that no significant traffic impacts would occur at any of the CMP stations. Summaries of the calculation results are presented in Tables 5A through 5E. Specific calculations are contained in Appendix D.

Volume-to-capacity ratios would increase at most by 0.01. Since the criteria of significance according to the CMP requires an increase of 0.02, even with a margin of error of 100% there would be no significant traffic impact.

3.4 Mitigation Measures

None of the stations identified in the study were impacted. However, there may be other stations that were not included, particularly in the Downtown area where bus service is heavy, which may need some mitigation. Thus, consistent with the MTA's Countywide Deficiency Plan it is suggested that current and potential traffic impacts be addressed through mitigation measures. The plan includes a Countywide Deficiency Plan Toolbox of Strategies describing land use, transportation demand management, transit, transportation system management and capital improvement strategies. All 54 strategies were reviewed based on their cost, effectiveness and feasibility. Mitigation measures in the form of capital improvements and transportation systems managements (TSM) such as street widening or installation of additional lanes are impractical due to their high cost. Other Transportation Demand Management (TDM) and Transit Service strategies, such as rail transit, carpools, vanpools, bicycles and telecommuting, are more practical and effective.

Transit

There are some lines which are duplicated by other municipal services. Local municipalities could assume these routes. In addition, other service-reduced routes could be contracted to private carriers. Transit riders would then have the option to continue using bus services.

Rail Systems

Currently the Metrolink serves Los Angeles, Simi Valley, San Fernando Valley, San Bernardino and Orange Counties. The Metrolink system is intended to transport passengers from the outlying suburban areas to the urban center of Los Angeles. This type of trip reduces a significant number of automobiles and automobile miles traveled. Expansion of the Metrolink is one of the most effective strategies for long-haul trips. Transit riders who previously rode express buses may use Metrolink as an alternative.

TABLE 5A

Service Modification Review

03-Jun-94
03:55 PM

Katz, Okitsu & Associates

PACKAGE I

No.	CMP Station	City	1993 PM Peak Hour		Change in V/C	With Project PM Peak Hr		Significant?
			V/C	LOS		V/C	LOS	
7	Alameda/Carson	Carson	0.50	A	0.000	0.50	A	NO
12	Alameda/Compton	Compton	0.69	B	0.001	0.69	B	NO
18	Lakewood/Firestone	Downey	1.04	F	0.000	1.04	F	NO
34	Lakewood/Carson	Long Beach	0.84	D	0.001	0.84	D	NO
35	Lakewood/Willow	Long Beach	0.98	E	0.002	0.98	E	NO
36	Pacific Coast Hwy/7th st	Long Beach	1.00	E	0.002	1.00	E	NO
40	Pacific Coast Hwy/Ximeno	Long Beach	0.75	C	0.002	0.75	C	NO
50	Manchester/Sepulveda	Los Ang City	0.89	D	0.001	0.89	D	NO
52	Pacific Coast Hwy/Alameda	Los Ang City	0.67	B	0.000	0.67	B	NO
54	PCH/Figueroa	Los Ang City	0.78	C	0.000	0.78	C	NO
56	Pacific Coast Hwy/Western	Los Ang City	0.84	D	0.000	0.84	D	NO
61	Sepulveda/Lincoln	Los Ang City	1.07	F	0.000	1.07	F	NO
74	Ventura/Sepulved	Los Ang City	0.84	D	0.001	0.84	D	NO
86	Wilshire/Sepulveda	Los Ang City	0.95	E	0.012	0.96	E	NO
116	Pasadena/St. John/California	Pasadena	1.01	F	0.000	1.01	F	NO
117	Rosemead/Foothill	Pasadena	0.88	D	0.004	0.88	D	NO
124	Western/Toscanini	Rancho PV	0.72	C	0.001	0.72	C	NO
137	Wilshire/26th	Santa Monica	0.89	D	0.002	0.89	D	NO

No.	CMP Station	Dir	1993 PM Peak Hour		Chng in V/C	With Project PM Peak Hour		Significant?
			V/C	LOS		V/C	LOS	
1012	I10 La Brea Avenue 10.53	EB	1.36	F2	0.0005	1.36	F2	NO
		WB	1.26	F1	0.0004	1.26	F1	NO
1013	I10 Budlong Avenue 13.53	EB	1.36	F2	0.0005	1.36	F2	NO
		WB	1.36	F2	0.0005	1.36	F2	NO
1068	I405 Venice Boulevard 27.81	NB	1.36	F2	0.0005	1.36	F2	NO
		SB	1.01	F0	0.0005	1.01	F0	NO

TABLE 5B

Service Modification Review

03–Jun–94
04:03 PM

Katz, Okitsu & Associates

PACKAGE K

No.	CMP Station	City	1993 PM Peak Hour V/C	LOS	Change in V/C	With Project PM Peak Hr V/C	LOS	Significant?
15	Venice/Overland	Culver City	1.04	F	0.000	1.04	F	NO
24	Manchester/Crenshaw	Inglewood	1.09	F	0.005	1.10	F	NO
35	Lakewood/Willow	Long Beach	0.98	E	0.001	0.98	E	NO
40	Pacific Coast Hwy/Ximeno	Long Beach	0.75	C	0.000	0.75	C	NO
48	Lincoln/Venice	Los Ang City	1.04	F	0.004	1.04	F	NO
51	Manchester/Vermont	Los Ang City	0.78	C	0.000	0.78	C	NO
54	PCH/Figueroa	Los Ang City	0.78	C	0.001	0.78	C	NO
66	Topanga Cyn/Victory	Los Ang City	0.89	D	0.000	0.89	D	NO
68	Venice/Centinela	Los Ang City	0.98	E	0.003	0.98	E	NO
69	Venice/La Cienega	Los Ang City	0.99	E	0.003	0.99	E	NO
86	Wilshire/Sepulveda	Los Ang City	0.95	E	0.001	0.95	E	NO
87	Wilshire/Western	Los Ang City	0.76	C	0.000	0.76	C	NO
97	Rosemead/Huntington	Los Ang County	0.92	E	0.000	0.92	E	NO
115	Arroyo/California	Pasadena	0.93	E	0.001	0.93	E	NO
126	Pacific Coast/Torrance	Redondo Bch	0.88	D	0.000	0.88	D	NO
127	Rosemead/Valley	Rosemead	0.97	E	−0.001	0.97	E	NO

No.	CMP Station	Dir	1993 PM Peak Hour V/C	LOS	Chng in V/C	With Project PM Peak Hour V/C	LOS	Significant?
1001	SR2 @ Round Top Drive R17.78	NB	0.76	C	0.001	0.76	C	NO
1004	I5 Stadium Way 21.80	NB	1.26	F1	0.002	1.26	F1	NO
1005	I5 s/o Colorado St Ext 25.50	NB	1.26	F1	0.001	1.26	F1	NO
1012	I10 La Brea Avenue 10.53	EB	1.36	F2	0.003	1.36	F2	NO
1013	I10 Budlong Avenue 13.53	EB	1.36	F2	0.001	1.36	F2	NO
1014	I10 East LA City Limit 19.67	EB	1.01	F0	0.002	1.01	F0	NO
1015	I10 Atlantic Blvd 23.38	EB	1.46	F3	0.003	1.46	F3	NO
1016	I10 Rosemead Blvd 26.79	EB	1.36	F2	0.003	1.36	F2	NO
1017	I10 e/o Puente Avenue 34.28	EB	0.99	E	0.002	0.99	E	NO
1018	I10 Grand Avenue 38.48	EB	1.10	F0	0.003	1.10	F0	NO
		WB	0.71	C	0.001	0.71	C	NO
1019	I10 Dudley St 44.13	EB	1.46	F3	0.004	1.46	F3	NO
		WB	0.89	D	0.001	0.89	D	NO
1020	I10 w/o Indian Hill Blvd 47.11	EB	1.46	F3	0.003	1.46	F3	NO
		WB	0.98	E	0.001	0.98	E	NO
1039	US101 Santa Monica Blvd 5.48	NB	1.01	F0	0.002	1.01	F0	NO
		SB	0.72	C	0.001	0.72	C	NO
1040	US 101 Coldwater Cyn 13.98	SB	1.02	F0	0.001	1.02	F0	NO
1041	US101 Winnetka 23.40	SB	1.01	F0	0.002	1.01	F0	NO
1080	I10 Peck Road 30.30	EB	1.36	F2	0.003	1.36	F2	NO

TABLE 5C

Service Modification Review

03-Jun-94
04:11 PM

Katz, Okitsu & Associates

PACKAGE L

No.	CMP Station	City	1993 PM Peak Hour V/C	LOS	Change in V/C	With Project PM Peak Hr V/C	LOS	Significant?
7	Alameda/Carson	Carson	0.50	A	0.000	0.50	A	NO
12	Alameda/Compton	Compton	0.69	B	0.001	0.69	B	NO
13	Alameda/RTE 91 EB Ramps	Compton	0.49	A	0.000	0.49	A	NO
15	Venice/Overland	Culver City	1.04	F	0.002	1.04	F	NO
21	Artesia/Vermont	Gardena	0.99	E	0.001	0.99	E	NO
22	Pacific Cost Hwy/Artesia	Hermosa Beach	1.13	F	0.002	1.13	F	NO
77	Victory/Balboa	Los Ang City	0.87	D	0.001	0.87	D	NO
116	Pasadena/St. John/California	Pasadena	1.01	F	0.000	1.01	F	NO
117	Rosemead/Foothill	Pasadena	0.88	D	0.002	0.88	D	NO
119	Rosemead/Whittier	Pico Rivera	0.82	D	0.001	0.82	D	NO
124	Western/Toscanini	Rancho PV	0.72	C	0.001	0.72	C	NO
140	Firestone/Atlantic	South Gate	0.88	D	0.000	0.88	D	NO
144	Artesia/Hawthorne	Torrance	0.95	E	0.001	0.95	E	NO
149	Pacific Coast/Palos Verdes	Torrance	0.95	E	0.000	0.95	E	NO

TABLE 5D

Service Modification Review

03–Jun–94
04:16 PM

Katz, Okitsu & Associates

PACKAGE V

No.	CMP Station	City	1993 PM Peak Hour V/C	1993 PM Peak Hour LOS	Change in V/C	With Project PM Peak Hr V/C	With Project PM Peak Hr LOS	Significant?
15	Venice/Overland	Culver City	1.04	F	0.004	1.04	F	NO
34	Lakewood/Carson	Long Beach	0.84	D	0.000	0.84	D	NO
35	Lakewood/Willow	Long Beach	0.98	E	0.000	0.98	E	NO
36	Pacific Coast Hwy/7th st	Long Beach	1.00	E	0.000	1.00	E	NO
40	Pacific Coast Hwy/Ximeno	Long Beach	0.75	C	0.000	0.75	C	NO
48	Lincoln/Venice	Los Ang City	1.04	F	0.004	1.04	F	NO
50	Manchester/Sepulveda	Los Ang City	0.89	D	0.001	0.89	D	NO
53	Pacific Coast Hwy/Chautauqua	Los Ang City	1.32	F	0.003	1.32	F	NO
61	Sepulveda/Lincoln	Los Ang City	1.07	F	0.000	1.07	F	NO
68	Venice/Centinela	Los Ang City	0.98	E	0.003	0.98	E	NO
69	La Cienega/Venice	Los Ang City	0.99	E	0.003	0.99	E	NO
149	Pacific Coast/Palos Verdes	Torrance	0.95	E	0.001	0.95	E	NO

No.	CMP Station	Dir	1993 PM Peak Hour V/C	1993 PM Peak Hour LOS	Chng in V/C	With Project PM Peak Hour V/C	With Project PM Peak Hour LOS	Significant?
1010	I10 Lincoln Boulevard R2.17	EB	0.51	B	0.001	0.51	B	NO
		WB	0.63	C	0.001	0.63	C	NO
1011	I10 Manning/Overland Ave 7.22	EB	1.26	F1	0.001	1.26	F1	NO
		WB	0.99	E	0.001	0.99	E	NO
1012	I10 La Brea Avenue 10.53	EB	1.36	F2	0.002	1.36	F2	NO
		WB	1.26	F1	0.001	1.26	F1	NO
1013	I10 Budlong Avenue 13.53	EB	1.36	F2	0.002	1.36	F2	NO
		WB	1.36	F2	0.001	1.36	F2	NO

TABLE 5E

Service Modification Review

03-Jun-94
03:58 PM

Katz, Okitsu & Associates

Preferred Program

No.	CMP Station	City	1993 PM Peak Hour V/C	1993 PM Peak Hour LOS	Change in V/C	With Project PM Peak Hr V/C	With Project PM Peak Hr LOS	Significant?
34	Lakewood/Carson	Long Beach	0.84	D	0.002	0.84	D	NO
35	Lakewood/Willow	Long Beach	0.98	E	0.003	0.98	E	NO
36	Pacific Coast Hwy/7th st	Long Beach	1.00	E	0.002	1.00	E	NO
40	Pacific Coast Hwy/Ximeno	Long Beach	0.75	C	0.002	0.75	C	NO
54	PCH/Figueroa	Los Ang City	0.78	C	0.001	0.78	C	NO
126	Pacific Coast/Torrance	Redondo Bch	0.88	D	0.000	0.88	D	NO

No.	CMP Station	Dir	1993 PM Peak Hour V/C	1993 PM Peak Hour LOS	Chng in V/C	With Project PM Peak Hour V/C	With Project PM Peak Hour LOS	Significant?
1004	I5 Stadium Way 21.80	NB	1.26	F1	0.001	1.26	F1	NO
1005	I5 s/o Colorado St Ext 25.50	NB	1.26	F1	0.001	1.26	F1	NO
1012	I10 La Brea Avenue 10.53	EB	1.36	F2	0.000	1.36	F2	NO
		WB	1.26	F1	0.000	1.26	F1	NO
1013	I10 Budlong Avenue 13.53	EB	1.36	F2	0.000	1.36	F2	NO
		WB	1.36	F2	0.000	1.36	F2	NO
1078	I710 n/o I105 19.10	SB	0.99	E	0.000	0.99	E	NO

Carpools

Most trip reduction plans include carpool strategies as a major part of their program. In fact, the *Commuter Transportation Services 1993 State of the Commute Report* indicates that 75% of the participants in a trip reduction program belong to a carpool. Carpools include two or more passengers and use HOV lanes, park and ride facilities, preferential parking, loading areas and parking allowances. These facilities and services are necessary in creating an effective carpool system. Transit dependent riders who cannot use another bus route may opt to join a carpool.

Vanpools

Vanpools are popular with major corporations who provide vans for employees to be used for commute purposes. Typically a van carries seven or more passengers and travels fifteen to thirty miles one way. Vans also use HOV lanes, park and ride facilities, preferential parking, loading areas and parking allowances. Like carpools, these facilities and services are necessary for an effective vanpool system. Vanpools may be an option for transit riders who were riding long-haul or express routes.

Bicycles

There are approximately 385 miles of paths and lanes designated on the MTA's Los Angeles County Bike Map. Plans to expand the network of bicycle routes are being developed in the MTA's Regional Bicycle Master Plan and local municipal bike plans. Although only 1% of all trips, according to the *1994 Countywide Bicycle Policy Document*, are made by bicycle the expansion of paths and lanes are expected to encourage more bicycle use. Transit riders who previously rode on bus routes traveling 2 to 7 miles may consider riding a bicycle.

Telecommuting

With advanced technologies such as telephones, computers, fax machines and video conferencing, telecommunications is becoming one of the fastest growing TDM strategies. In fact, in the last year the number of formal telecommunications programs has more than doubled in the Los Angeles area. Telecommuting can be conducted from a home office or work center. Those transit riders who travel to work by bus may find an opportunity to telecommute instead of traveling to the office.

Although it may be difficult to implement these mitigation measures, all of the measures should be supported and considered when evaluating traffic impacts.

APPENDIX A
TABLE OF SERVICE REDUCTION SAVINGS

prepared by MTA Staff, April 7, 1994

POTENTIAL FY 1995 SERVICE ECONOMIES

GROUPED BY PUBLIC HEARING CATIGORIES

SERVICE REDUCTION OPTIONS	NO. OF LINES	EST. ANNUAL SAVED		EST. ANNUAL PASSENGERS	EST. ANN. MARGINAL COST	MARGINAL COST PER REV. HR.	EST. ANN. PSGR. REVENUE	EST. NET MARGINAL COST	EQUIPMENT					EST. ANN. CONTRACT SERVICE COSTS	EST. ANN. CONTRACT PSGR. REVENUE	EST. COST OF RETAINED MTA SUPPORT SERVICES	POTENTIAL NET MTA SAVINGS
		REV. HRS.	REV. MILES						PEAK	BASE	OWL	SAT.	SUN.				
	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q
A. CANCEL LOW PATRONIZED OWL SERVICES (10, 18, 28/83/84, 38, 76 92, 105, 111, 180, 424, 446)	13	20,000	275,000	100,000	$1,227,216	$61	$50,000	$1,177,216	0	0	19	0	0	-	-	-	$1,177,216
B. CANCEL ALL NON-FUNDED SPECIAL EVENT SERVICES (eg.RACE, DODGERS, ROSE BOWL)	10	30,000	250,000	375,000	$2,592,649	$86	$500,000	$2,092,649	25	10	0	30	25	-	-	-	$2,092,649
C. CANCEL ALL MTA SUBSIDY OF SERVICE EXPANSION PROG.	16	(185,000)	?	(4,100,000)	($11,000,000)	($57)	($1,500,000)	($9,500,000)	?	?	?	?	?	-	-	-	($4,500,000)
	MTA 2	11,000	150,000	425,000	$871,797	$79	$300,000	$571,797	4	4	0	0	0	-	-	-	$571,797
D. IMPLEMENT A VERY AGRESSIVE BUS RAIL INTERFACE PLAN (MTA 56, 410, 457, 497, SOUTH 60 - FTZ 495, 498, SCT 599, LADOT 413, 419)	MTA - 5	63,000	1,250,000	2,250,000	$6,163,200	$98	$2,500,000	$3,663,200	40	6	0	5	5	-	-	-	$3,663,200
	OTHERS - 5	(55,000)	(1,250,000)	(1,100,000)	($4,500,000)	($80)	($2,000,000)	($2,500,000)	(45)	-	-	-	-	-	-	-	($2,000,000)
E. CANCEL ALL SERVICE ON ALL SIX HOLIDYS	116	70,000	875,000	3,000,000	$5,507,356	$79	$1,500,000	$4,007,356	0	0	0	0	0	-	-	-	$4,007,356
F. CANCEL ALL SERVICE ON SUNDAYS	116	585,728	7,305,740	31,200,000	$47,324,468	$68	$22,100,000	$17,999,686	0	0	0	0	815	-	-	-	$17,999,686
G. CANCEL ALL SERVICE ON SATURDAYS	121	740,948	9,034,948	44,200,000	$40,099,686	$64	$15,600,000	$31,724,468	0	0	0	1,025	0	-	-	-	$31,724,468
H. SUB-CONTRACT ALL OWL TO BUS OPER. PLUS OTHER NIGHT TRIPS FOR 8 HRS EACH	40	120,000	1,600,000	2,000,000	$7,470,096	$62	$1,000,000	$6,470,096	0	0	42	0	0	$5,000,000	$1,000,000	$250,000	$2,220,096
H. CANCEL ALL OWL/LATE NIGHT SERVICE (1am TO 5am)	40	100,000	1,250,000	1,500,000	$6,088,080	$61	$750,000	$5,338,080	0	0	61	0	0	-	-	-	$5,338,080
I. CONVERT EXISTING LINE SEGMENTS TO MUNI OR CITY OPERATION.	55	250,000	3,250,000	10,000,000	$19,410,595	$78	$5,500,000	$13,910,595	85	50	0	50	40	$12,500,000	$4,000,000	$75,000	$5,335,595
J. SUB-CONTRACT ALL SCHOOL SERVICE OPERATED ON - SPECIAL ROUTES.	10	5,000	50,000	200,000	$682,624	$137	$75,000	$607,624	10	0	0	0	0	$350,000	$75,000	$40,000	$292,624
- REGULAR MTA ROUTES.	40	17,000	175,000	750,000	$1,804,884	$106	$250,000	$1,554,884	20	0	0	0	0	$1,200,000	$250,000	$40,000	$564,884
K. SUB-CONTRACT ALL PEAK PERIOD ONLY EXPRESS LINES (402, 406/407, 410, 412, 418 426, 427, 429, 434x, 436, 442, 443, 445, 457, 466, 489, 497, 576)	19	120,000	2,500,000	3,300,000	$17,185,901	$143	$6,300,000	$10,885,901	99	0	0	0	0	$12,000,000	$6,300,000	$325,000	$4,860,901

OTENTIAL FY 1995 SERVICE ECONOMIES

ROUPED BY PUBLIC HEARING CATIGORIES

SERVICE REDUCTION OPTIONS	NO. OF LINES	EST. ANNUAL SAVED		EST. ANNUAL PASSENGERS	EST. ANN. MARGINAL COST	MARGINAL COST PER REV. HR.	EST. ANN. PSGR. REVENUE	EST. NET MARGINAL COST	EQUIPMENT					EST. ANN. CONTRACT SERVICE COSTS	EST. ANN. CONTRACT PSGR. REVENUE	EST. COST OF RETAINED MTA SUPPORT SERVICES	POTENTIAL NET MTA SAVINGS
		REV. HRS.	REV. MILES						PEAK	BASE	OWL	SAT.	SUN.				
.	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q
L. SUB-CONTRACT ALL LOCAL LINES WITH SUBSIDY PER BOARDING OVER $2.50	14 DA. 9 SAT. 18 SUN.	250,000	3,300,000	5,600,000	$18,358,000	$73	$3,250,000	$15,108,000	65	45	0	25	50	$12,600,000	$3,250,000	$225,000	$5,533,000
M. CREATE NEW ROUTES TO OPERATE PEAK PERIOD SERVICE ON HEAVY LOCAL MTA LINES WITH HIGH PEAK/BASE RATIOS	8	110,000	1,300,000	7,500,000	$10,178,613	$93	$3,750,000	$6,428,613	75	0	0	0	0	$6,500,000	$3,750,000	$250,000	$3,428,613
N. EST. NEW LACBD OFF-STREET LAYOVER TERM. OLYMPIC/OLIVE	12	50,000	500,000	750,000	$3,325,884	$67	$400,000	$2,925,884	12	7	0	6	6	-	-	-	$2,925,884
O. DUAL HUB HOV OPERATION OF HARBOR - EL MONTE TRANSITWAY		25,000	625,000	850,000	$2,890,571	$116	0	$2,890,571	23	10	0	10	10	-	-	-	$2,890,571
. SUB-CONTRACT OPERATION OF DUAL HUB HARBOR - EL MONTE TRANSITWAY		125,000	3,000,000	6,000,000	$11,574,356	$93	$7,000,000	$4,574,356	38	10	0	10	10	$8,250,000	$7,000,000	$500,000	$2,824,356
. IN CONJUNCTION WITH DUAL HUB TRANSITWAY OPERATION, EXCHANGE ROUTE SEGMENTS WITH MUNI OPERATORS	8	50,000	650,000	2,000,000	$3,996,080	$80	$1,500,000	$2,496,080	20	10	0	10	8	$2,750,000	$1,000,000	-	$746,080
P IMPLEMENT LACBD BUS INTERCEPT PROGRAM	55	200,000	1,800,000	0	$13,102,980	$66	0	$13,102,980	60	40	0	40	35	$9,000,000	-	$500,000	$3,602,980
Q IMPLEMENT GREEN LINE BUS/RAIL INTERFACE PLAN (LOW COST OPTION)	25	0	0	0	$0	-	0	$0	0	0	0	0	0	-	-	-	($270,000)
R IMPLEMENT RED LINE INTERFACE PLAN	2 DA. : SAT. : SUN.	30,000	325,000	0	$2,042,007	$68	0	$2,042,007	9	5	0	5	4	-	-	-	$2,042,007
S REDUCE SERVICE LEVELS BY ~~2.5~~ 3% % TO MAINTAIN LOADING STANDARDS WITH A FARE INCREASE.	120	~~150,000~~ 200,000	1,750,000	0	$12,093,450	$81	$0	$12,093,450	90	55	0	50	40	-	-	-	$12,093,450
CANCEL TSEP BUS OVERCROWDING PROGRAM	2 MTA 10	(185,000) 20,000	? 240,000	? 250,000	? $1,767,201	($60) $88	? $100,000	($400,000) $1,667,201	? 15	? 3	? 0	? 0	? 0	-	-	-	($400,000) $1,667,201
T MODIFY CTSP TO ALLOW FOR UP TO 120 MIN. H/W	15	70,000	950,000	2,000,000	$4,903,613	$70	$1,000,000	$3,903,613	11	19	0	30	25	-	-	-	$3,903,613
U REDUCE RAIL SERVICE LEVELS	BLUE	4,200	100,000	100,000	$1,050,000	$250	$75,000	$975,000	0	1	0	1	1	?	?	?	$975,000

POTENTIAL FY 1995 SERVICE ECONOMIES

GROUPED BY PUBLIC HEARING CATIGORIES

SERVICE REDUCTION OPTIONS	NO. OF LINES	EST. ANNUAL SAVED		EST. ANNUAL PASSENGERS	EST. ANN. MARGINAL COST	MARGINAL COST PER REV. HR.	EST. ANN. PSGR. REVENUE	EST. NET MARGINAL COST	EQUIPMENT					EST. ANN. CONTRACT SERVICE COSTS	EST. ANN. CONTRACT PSGR. REVENUE	EST. COST OF RETAINED MTA SUPPORT SERVICES	POTENTIAL NET MTA SAVINGS
		REV. HRS.	REV. MILES						PEAK	BASE	OWL	SAT.	SUN.				
	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q
V (CONT'D) TO MATCH ACTUAL RIDERSHIP LEVELS AND LOADING STANDARDS.																	
TOTALS	MTA (bus)	3,212,676	42,405,688	124,250,000	$240,661,307	$75	$73,425,000	$167,236,307	701	274	122	1296	1073	$70,150,000	$26,625,000	$2,205,000	$121,236,307
	OTHERS	425,000	?	5,200,000	$15,500,000	$58	$3,500,000	$12,400,000	?	?	?	?	?				$6,900,000
	TOTAL(bus)	3,637,676	42,405,688	129,450,000	$256,161,307	$70	$76,925,000	$179,636,307	701	274	122	1296	1073	$70,150,000	$26,625,000	$2,205,000	$128,136,307
	MTA(rail)	4,200	100,000	100,000	$1,050,000	$250	$75,000	$975,000	0	1	0	1	1				$975,000
	TOTALS	3,641,876	42,505,688	129,550,000	$257,211,307	$320	$77,000,000	$180,611,307	N/A	N/A	N/A	N/A	N/A	$70,150,000	$26,625,000	$2,205,000	$129,111,307

DUE TO DUPLICATION OF SERVICE REDUCTION OPTIONS, PARTICULARLY THE CANCELLATION OF ALL WEEKEND SERVICE, THE TOTALS LISTED ABOVE OVERSTATE THE AGREGATION OF THESES ACTIONS.

SCHEDULING AND
OPERATIONS PLANNING
NOV. 22, 1993

- COST BASED ON FY 94 GPC COST MODEL + 3%.
- INTERLINE SAVINGS TO AFFECTED LINES ARE INCLUDED.

- SIGNIFICANT CONTRACT MODIFICATIONS WILL BE REQUIRED.
- LOCAL SERVICE SEGMENTS ASSUMED BY CITIES WILL BE COORDINATED BY MTA AND PARTIALLY SUBSIDIZED.
- INTERLINE SERVICE FROM AFFECTED LINES NOT ACCOUNTED FOR.

APPENDIX B
LINE PERFORMANCE REPORT

Prepared by MTA Staff, March 1994

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FY1994 WEEKDAY  COSTS (GPC FORMULA) & REVENUES - LINES RANKED BY  LINES RANKED NUMERICALLY (16)
 WEEKDAYS  WEEKDAYS  WEEKDAYS  WEEKDAYS  WEEKDAYS  WEEKDAYS  WEEKDAYS  WEEKDAYS  WEEKDAYS  WEEKDAYS  WEEKDAYS  WEEKDAYS  WEEKDAYS

                    L I N E   P E R F O R M A N C E   R E P O R T :  L I N E  R A N K I N G S



                                                               DATA COMPILED BY:
                                                               LACMTA PLANNING & PROG. DEPT.- DATA ANALYSIS GROUP
                                                               TEL:(213)972-4833




  TPM LINE CLASSIFICATION CODES                                THE CODES AND INDICATORS OF PERFORMANCE MEASURE

1  LOCAL SERVICE ON DEMAND BASED HEADWAYS                      (1)  TOTAL BOARDINGS
2  LOCAL SERVICE ON POLICY BASED HEADWAYS                      (2)  TOTAL OPERATING COST
3  INTRA-COMMUNITY LOCAL SERVICE                               (3)  TOTAL PASSENGER REVENUE
4  EXPRESS SERVICE WITH MULTIPLE LOCAL STOPS                   (4)  OPERATING RATIO
5  EXPRESS SERVICE WITH FEW LOCAL STOPS (PARK & RIDE)          (5)  REVENUE PER BOARDING
6  MOST SERVICE ON THE LINE IS BY CONTRACT                     (6)  REVENUE PER PASSENGER MILE
7  NOT USED                                                    (7)  OPERATING COST PER BOARDING
8  BEEP                                                        (8)  OPERATING COST PER IN-SERVICE BUS HOUR
9  OTHER SERVICE                                               (9)  OPERATING COST PER PEAK BUS
                                                               (10) SUBSIDY PER BOARDING
                                                               (11) SUBSIDY PER PASSENGER MILE
                                                               (12) BOARDINGS PER IN-SERVICE BUS HOUR
                                                               (13) IN-SERVICE BUS HOURS PER SCHEDULED PEAK VEHICLE
                                                               (14) PASSENGER MILES PER REVENUE BUS MILE
                                                               (15) PASSENGER MILES PER SEAT MILE
                                                               (16) LINES RANKED NUMERICALLY

GPC BUS COST FORMULA COEFFICIENTS                                                        CPI INDEXES
FROM     TO        BUSHRS    BUSMLS    PEAK BUS    BRDGS   FX.COST   WEEKDAYS          FROM     TO       CPI
920701   999999    36.30     1.13      35806.      0.119   0.2481     255              930701   999999   444.40
910701   920630    34.97     1.09      34495.      0.115   0.2481     256              920701   930630   439.40
900701   910630    32.70     1.18      29201.      0.030   0.3057     254              910701   920630   425.50
890701   900630    32.31     1.33      28372.      0.022   0.2375     254              900701   910630   410.70
880701   890630    42.45     1.88          0.      0.000   0.0000       0              890701   900630   389.70
870701   880630    37.48     1.89          0.      0.000   0.0000       0              880701   890630   369.50
860701   870630    38.75     1.79          0.      0.000   0.0000       0              870701   880630   352.40
850701   860630    34.14     2.27          0.      0.000   0.0000       0              860701   870630   337.20
840701   850630    31.06     2.10          0.      0.000   0.0000       0              850701   860630   325.60
830701   840630    28.97     1.96          0.      0.000   0.0000       0              840701   850630   312.90
820701   830630    28.02     1.83          0.      0.000   0.0000       0              830701   840630   299.30
810701   820630    27.20     1.56          0.      0.000   0.0000       0              820701   830630   288.70
700101   810630    24.88     1.36          0.      0.000   0.0000       0              810701   820630   282.70

  COEFF  VARIABLE    DESCRIPTION

   A     BUSHRS      TOTAL ACTUAL VEHICLE HOURS (PLATFORM HOURS)
   B     BUSMLS      TOTAL ACTUAL VEHICLE MILES (PLATFORM MILES)
   C     PEAK BUS    ANNUAL AVERAGE WEEKDAY PM PEAK VEHICLES
   D     BRDGS       TOTAL ANNUAL BOARDINGS
   E     FX.COST     FIXED COST FACTOR

   THE GPC COST [illegible]RMULA IS:

   [illegible]1 + [illegible]( . [illegible]RS + [illegible]SMLS[illegible](PE[illegible]S) + [illegible]RDGS[illegible]
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LINE PERFORMANCE REPORT: LINE RANKINGS

----- LISTED IN LINE NUMBER ORDER -----
ALL VALUES ARE IN FY1994 DOLLARS

LINE NO.	TC PO MD E	DATE	TOTAL BOARD -INGS (1)	TOTAL OPERATING COST* (2)	TOTAL PASSENGER REVENUE* (3)	OPER-ATING RATIO (4)	$$REVENUE$$ PER BOARD -ING $(5)	PER PSGR MILE $(6)	$$OPERATING COSTS$$ PER BOARD -ING $(7)	PER BUS HOUR** $(8)	PER PEAK BUS $(9)	$$SUBSIDY$$*** PER BOARD -ING $(10)	PER PSGR MILE $(11)	BRDGS PER BUS HOUR** (12)	BUS HOURS** PER PEAK BUS (13)	-PASSENGER- --MILES-- PER BUS MILE (14)	PER SEAT MILE (15)
1	1	931019	29025	$32212.	$13994.	0.434	0.48	.198	1.11	87.39	847.68	0.63	0.257	92.2	8.3	21.7	0.50
2	1	931102	21068	$33681.	$11320.	0.336	0.54	.151	1.60	87.33	990.61	1.06	0.298	64.3	9.6	17.9	0.41
9	1	931130	37180	$53160.	$20254.	0.381	0.54	.148	1.43	90.97	1042.35	0.89	0.240	74.5	9.8	22.4	0.53
10	1	930615	21103	$29619.	$12112.	0.409	0.57	.211	1.40	88.87	871.16	0.83	0.305	73.7	8.4	18.5	0.40
14	1	931209	25114	$30249.	$13467.	0.445	0.54	.207	1.20	83.79	945.29	0.67	0.258	80.9	9.7	18.8	0.40
16	1	940104	22965	$28634.	$11932.	0.417	0.52	.241	1.25	91.92	894.83	0.73	0.338	90.5	7.9	17.7	0.41
18	1	931213	24744	$30906.	$13837.	0.448	0.56	.200	1.25	91.71	1030.20	0.69	0.247	88.9	9.3	19.5	0.45
20	1	930308	54047	$80526.	$28621.	0.355	0.53	.126	1.49	90.57	958.64	0.96	0.229	71.7	9.0	24.3	0.59
26	1	930224	24162	$34295.	$15249.	0.445	0.63	.222	1.42	100.96	926.90	0.79	0.278	79.3	8.2	19.7	0.43
28	1	931011	38156	$57531.	$19914.	0.346	0.52	.231	1.51	94.39	885.09	0.99	0.436	70.7	8.3	13.0	0.42
30	1	930525	34927	$38175.	$18716.	0.490	0.54	.237	1.09	92.62	1004.61	0.56	0.247	97.3	9.4	19.8	0.46
33	1	930127	22535	$36052.	$13844.	0.384	0.61	.122	1.60	89.97	924.40	0.99	0.196	66.6	8.7	23.0	0.54
38	1	930930	11422	$15778.	$ 6419.	0.407	0.56	.219	1.38	87.85	1051.84	0.82	0.319	75.7	10.1	17.1	0.41
40	1	940118	25533	$49403.	$14831.	0.300	0.58	.154	1.93	91.13	950.05	1.35	0.359	55.3	8.9	16.9	0.39
45	1	930428	24714	$33414.	$14470.	0.433	0.59	.197	1.35	92.10	954.70	0.77	0.258	82.6	8.6	20.4	0.47
53	1	930927	13154	$20418.	$ 8027.	0.393	0.61	.196	1.55	88.97	972.28	0.94	0.303	72.9	8.6	15.3	0.38
55	1	930301	11454	$17850.	$ 7912.	0.443	0.69	.240	1.56	86.99	892.51	0.87	0.301	67.9	8.4	15.4	0.36
56	1	930921	1091	$ 4791.	$ 674.	0.141	0.62	.203	4.39	84.79	958.15	3.77	1.239	25.0	8.7	5.6	0.13
60	1	931215	25527	$48475.	$15865.	0.327	0.62	.163	1.90	89.64	989.29	1.28	0.336	54.0	9.6	18.0	0.41
65	1	930628	3743	$ 6228.	$ 2343.	0.376	0.63	.231	1.66	92.27	778.51	1.04	0.384	68.8	6.8	14.1	0.31
66	1	930304	25388	$27983.	$15585.	0.557	0.61	.217	1.10	96.16	874.47	0.49	0.173	105.6	7.5	23.5	0.51
68	1	931026	18030	$23067.	$ 9772.	0.424	0.54	.197	1.28	89.72	1098.43	0.74	0.267	85.2	10.1	19.6	0.47
70	1	930517	14944	$21536.	$ 8579.	0.398	0.57	.111	1.44	91.02	978.93	0.87	0.167	72.0	9.4	27.6	0.61
76	1	930914	12241	$17950.	$ 6604.	0.368	0.54	.177	1.47	87.27	1121.90	0.93	0.305	69.7	11.0	15.2	0.52
78	1	930929	11146	$22507.	$ 6403.	0.284	0.57	.121	2.02	92.85	937.79	1.44	0.305	56.6	8.2	17.7	0.43
81	1	940125	18605	$29497.	$10978.	0.372	0.59	.160	1.59	91.13	983.23	1.00	0.270	66.6	9.3	18.3	0.42
90	1	940120	5852	$14580.	$ 4751.	0.326	0.81	.132	2.49	96.43	971.98	1.68	0.274	45.5	8.6	15.9	0.38
92	1	930519	11555	$22737.	$ 7339.	0.323	0.64	.130	1.97	91.64	988.55	1.33	0.273	53.3	9.4	17.2	0.39
94	1	931208	15388	$30664.	$ 9554.	0.312	0.62	.105	1.99	92.09	1135.72	1.37	0.231	52.8	10.8	19.3	0.45
96	1	930511	5380	$16315.	$ 4476.	0.274	0.83	.142	3.03	97.18	959.71	2.20	0.375	37.9	8.3	13.4	0.31

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*** EXCLUDES LOCAL CONTRACT SUBSIDIES, OTHER SUBSIDY SOURCES INVOLVED.
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WEEKDAYS WEEKDAYS WEEKDAYS WEEKDAYS WEEKDAYS WEEKDAYS WEEKDAYS WEEKDAYS WEEKDAYS WEEKDAYS WEEKDAYS WEEKDAYS WEEKDAYS

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FY1994 WEEKDAY  COSTS (GPC FORMULA) & REVENUES - LINES RANKED BY  LINES RANKED NUMERICALLY (16)
 WEEKDAYS  WEEKDAYS  WEEKDAYS  WEEKDAYS  WEEKDAYS  WEEKDAYS  WEEKDAYS  WEEKDAYS  WEEKDAYS  WEEKDAYS  WEEKDAYS  WEEKDAYS  WEEKDAYS

                                   L I N E   P E R F O R M A N C E   R E P O R T :   L I N E   R A N K I N G S

                                                  ----- LISTED IN LINE NUMBER ORDER -----
                                                    ALL VALUES ARE IN FY1994 DOLLARS

                                                                                                             BUS    -PASSENGER-
      TC                                                            $$REVENUE$$ $$OPERATING COSTS$$  $$SUBSIDY$$***BRDGS    HOURS** --MILES--
      PO             TOTAL      TOTAL        TOTAL     OPER-        PER    PER  PER     PER      PER   PER      PER    PER       PER      PER    PER
LINE  MD             BOARD   OPERATING  PASSENGER  ATING        BOARD  PSGR BOARD   BUS     PEAK  BOARD    PSGR   BUS       PEAK     BUS    SEAT
NO.    E    DATE     -INGS      COST*      REVENUE*  RATIO        -ING   MILE -ING   HOUR**   BUS   -ING     MILE  HOUR**    BUS      MILE   MILE
                      (1)        (2)         (3)       (4)         $(5)   $(6) $(7)    $(8)     $(9)  $(10)    $(11) (12)      (13)     (14)   (15)


 102  1    931004     1411    $ 3735.    $  877.      0.235      0.62  .249  2.65   83.94  933.87  2.03  0.811    40.0      8.8      7.9  0.18
 104  2    930709     1397    $ 4591.    $  962.      0.210      0.69  .114  3.29   91.64 1147.79  2.60  0.430    31.6     11.1     11.3  0.24
 105  1    930506    18148    $21917.    $ 9872.      0.450      0.54  .212  1.21   90.68 1043.66  0.66  0.259    87.8      9.8     18.6  0.43
 107  1    930809     1814    $ 4948.    $ 1113.      0.225      0.61  .241  2.73   83.60  989.64  2.11  0.829    36.6      9.9      6.9  0.16
 108  1    930527    12168    $17092.    $ 7485.      0.438      0.62  .206  1.40   91.11 1139.48  0.79  0.265    76.7     10.6     15.7  0.40

 110  1    931122     7904    $12487.    $ 5113.      0.409      0.65  .240  1.58   91.69 1040.57  0.93  0.346    69.9      9.4     12.8  0.32
 111  1    930419    17770    $22452.    $10997.      0.490      0.62  .202  1.26   92.09 1122.60  0.64  0.210    88.8     10.0     19.0  0.45
 114  6    930611     1207    $ 2673.    $  740.      0.277      0.61  .221  2.21   91.24 1336.60  1.60  0.577    58.7     10.3      9.8  0.23
 115  1    930923    15774    $21706.    $ 9386.      0.432      0.60  .196  1.38   95.25  904.42  0.78  0.257    83.2      7.9     17.2  0.44
 117  1    931109    12517    $17489.    $ 7298.      0.417      0.58  .201  1.40   88.82 1165.91  0.81  0.281    75.3     11.1     16.7  0.37

 119  2    931004     1280    $ 4523.    $  847.      0.187      0.66  .251  3.53   81.06 1130.86  2.87  1.088    25.1     12.8      5.4  0.12
 120  1+   931115    11074    $17536.    $ 6986.      0.398      0.63  .156  1.58   99.30 1169.05  0.95  0.236    73.5     10.0     17.9  0.42
 124  2    930712     2690    $ 6687.    $ 1828.      0.273      0.68  .196  2.49   86.62  955.22  1.81  0.522    38.8      9.9     10.0  0.23
 125  1    940217     5284    $13688.    $ 3492.      0.255      0.66  .182  2.59   93.89 1052.96  1.93  0.531    41.4      9.8      9.6  0.24
 127  2    930423     1043    $ 3447.    $  718.      0.208      0.69  .269  3.30   78.33 1148.84  2.62  1.022    30.3     11.5      5.7  0.14

 130  2    930920     3341    $ 8498.    $ 2205.      0.259      0.66  .123  2.54   94.94 1062.19  1.88  0.352    43.1      9.7     14.0  0.33
 152  1    930401    10047    $16515.    $ 6631.      0.402      0.66  .151  1.64   95.08 1032.18  0.98  0.225    64.0      9.8     18.5  0.41
 154  2    930719     1969    $ 4978.    $ 1235.      0.248      0.63  .143  2.53   88.59 1244.53  1.90  0.434    40.5     12.1     10.1  0.23
 158  1    930420     2667    $ 5150.    $ 1589.      0.309      0.60  .132  1.93   93.83 1030.05  1.34  0.297    56.8      9.4     13.9  0.33
 161  2    940110     1259    $ 4681.    $  894.      0.191      0.71  .071  3.72   95.91  520.07  3.01  0.300    31.5      4.4     15.5  0.39

 163  1    930414     8349    $12747.    $ 5282.      0.414      0.63  .157  1.53   94.99 1062.26  0.89  0.221    74.7      9.3     19.1  0.45
 165  1    940113    13022    $22678.    $ 8060.      0.355      0.62  .152  1.74   97.75 1030.81  1.12  0.276    58.9     10.0     15.9  0.37
 166  1    930427     3280    $ 6074.    $ 2165.      0.356      0.66  .155  1.85  106.37  607.35  1.19  0.279    70.6      4.6     17.5  0.42
 167  2    930614     1538    $ 4231.    $  863.      0.204      0.56  .129  2.75   83.13  528.83  2.19  0.505    39.2      4.9     10.5  0.21
 168  2    930429      673    $ 2317.    $  446.      0.192      0.66  .135  3.44   84.87 1158.46  2.78  0.564    30.6     11.0      7.6  0.19

 169  2    931119     2415    $ 6156.    $ 1527.      0.248      0.63  .143  2.55   89.74  879.46  1.92  0.432    42.7      8.1     11.0  0.23
 170  2    930503     1134    $ 3689.    $  677.      0.184      0.60  .149  3.25   83.85 1229.77  2.66  0.664    23.7     16.0      7.1  0.16
 175  3    940105     1366    $ 2765.    $  674.      0.244      0.49  .280  2.02  102.04  460.90  1.53  0.867    66.5      3.4      9.2  0.26
 176  2    930621     1405    $ 3498.    $  766.      0.219      0.55  .151  2.49   83.69 1166.14  1.94  0.539    40.4     11.6      9.2  0.28
 177  2    931119     1794    $ 7331.    $ 1082.      0.148      0.60  .115  4.09   95.34 1047.25  3.48  0.663    27.9      9.2      8.6  0.21

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FY1994 WEEKDAY COSTS (GPC FORMULA) & REVENUES - LINES RANKED BY LINES RANKED NUMERICALLY (16)
WEEKDAYS WEEKDAYS WEEKDAYS WEEKDAYS WEEKDAYS WEEKDAYS WEEKDAYS WEEKDAYS WEEKDAYS WEEKDAYS WEEKDAYS WEEKDAYS WEEKDAYS

LINE PERFORMANCE REPORT: LINE RANKINGS

----- LISTED IN LINE NUMBER ORDER -----
ALL VALUES ARE IN FY1994 DOLLARS

							$$REVENUE$$		$$OPERATING COSTS$$			$$SUBSIDY$$***		BRDGS	BUS HOURS**	-PASSENGER- --MILES--	
LINE NO.	TC PO MD E	DATE	TOTAL BOARD -INGS (1)	TOTAL OPERATING COST* (2)	TOTAL PASSENGER REVENUE* (3)	OPER-ATING RATIO (4)	PER BOARD -ING $(5)	PER PSGR MILE $(6)	PER BOARD -ING $(7)	PER BUS HOUR** $(8)	PER PEAK BUS $(9)	PER BOARD -ING $(10)	PER PSGR MILE $(11)	PER BUS HOUR** (12)	PER PEAK BUS (13)	PER BUS MILE (14)	PER SEAT MILE (15)
180	1	930421	17415	$25508.	$ 9026.	0.354	0.52	.140	1.46	90.52	1275.41	0.95	0.256	72.8	12.0	21.9	0.48
[redacted]	1	930430	3999	$ 7015.	$ 2280.	0.325	0.57	.193	1.75	92.54	1002.08	1.18	0.401	65.7	8.7	[redacted]	0.31
200	1	940106	16467	$16238.	$ 8212.	0.506	0.50	.374	0.99	84.57	1159.85	0.49	0.365	110.7	10.6	14.1	0.35
201	2	940307	1861	$ 4541.	$ 961.	0.212	0.52	.151	2.44	81.25	1135.24	1.92	0.562	38.8	12.0	10.6	0.31
[redacted]	2	930611	1601	$ 5340.	$ 1030.	0.193	0.64	.239	3.34	78.88	1334.88	2.69	1.002	29.6	13.5	[redacted]	0.13
204	1	930512	48849	$43755.	$25351.	0.579	0.52	.227	0.90	91.75	1182.58	0.38	0.165	111.6	11.8	23.9	0.51
[redacted]	2	940207	3170	$10473.	$ 2054.	0.196	0.65	.146	3.30	82.93	1309.19	2.66	0.599	29.6	13.4	[redacted]	0.23
206	1	940124	15527	$18940.	$ 8529.	0.450	0.55	.208	1.22	91.68	1052.23	0.67	0.253	88.7	9.7	19.1	0.45
207	1	940210	32294	$33080.	$16556.	0.500	0.51	.225	1.02	95.52	1140.69	0.51	0.225	112.9	9.9	20.7	0.48
208	3	930730	321	$ 1349.	$ 156.	0.116	0.49	.495	4.20	90.56	1348.51	3.71	3.786	34.7	9.2	1.3	0.08
209	1	940222	1716	$ 4033.	$ 974.	0.242	0.57	.174	2.35	86.93	1008.17	1.78	0.548	48.9	8.8	10.5	0.25
210	1	940215	20457	$26004.	$10796.	0.415	0.53	.156	1.27	91.92	1130.61	0.74	0.219	86.1	10.3	21.9	0.50
211	2	930928	2005	$ 5821.	$ 1395.	0.240	0.70	.214	2.90	90.41	831.61	2.21	0.678	36.3	7.9	7.7	0.19
212	1	930405	13983	$22051.	$ 7679.	0.348	0.55	.161	1.58	92.27	1002.34	1.03	0.302	71.3	8.9	17.9	0.43
220	2	930430	1319	$ 4588.	$ 758.	0.165	0.57	.123	3.48	87.57	1146.99	2.90	0.620	30.9	10.7	8.8	0.20
[redacted]	2	930510	1909	$ 8854.	$ 1251.	0.141	0.66	.115	4.64	97.10	804.94	3.98	0.700	24.0	7.2	[redacted]	0.17
228	2	930503	2678	$ 5443.	$ 1786.	0.328	0.67	.247	2.03	97.55	680.43	1.37	0.506	62.8	5.3	9.9	0.23
230	1	931110	5590	$10291.	$ 3435.	0.334	0.61	.192	1.84	93.82	935.54	1.23	0.384	61.2	8.3	11.6	0.29
232	1	930610	6327	$14216.	$ 4458.	0.314	0.70	.113	2.25	90.55	1093.57	1.54	0.248	47.5	10.2	18.3	0.41
234	1	931123	8935	$15358.	$ 5586.	0.364	0.63	.170	1.72	90.08	959.87	1.09	0.297	59.4	9.4	15.0	0.36
[redacted]	2	931015	1864	$ 4946.	$ 1052.	0.213	0.56	.159	2.65	84.83	824.26	2.09	0.589	38.4	8.1	[redacted]	0.17
240	1	930922	4552	$ 5704.	$ 2555.	0.448	0.56	.228	1.25	86.17	1140.78	0.69	0.281	95.5	9.5	17.0	0.38
243	2	931007	2625	$ 4816.	$ 1702.	0.353	0.65	.226	1.83	96.91	687.94	1.19	0.413	60.7	6.2	10.3	0.24
245	2	930426	1835	$ 4407.	$ 1094.	0.248	0.60	.192	2.40	86.94	734.50	1.81	0.581	44.8	6.8	7.3	0.17
250	3	931015	636	$ 2171.	$ 361.	0.166	0.57	.418	3.41	80.10	1085.40	2.85	2.095	28.2	11.3	2.9	0.08
251	1	931006	18650	$23763.	$11102.	0.467	0.60	.206	1.27	90.63	950.50	0.68	0.235	85.8	8.7	20.0	0.45
254	2	931001	2836	$ 7081.	$ 1844.	0.260	0.65	.226	2.50	86.25	1011.55	1.85	0.641	40.7	10.0	7.8	0.20
255	1	930921	1468	$ 2829.	$ 868.	0.307	0.59	.284	1.93	82.74	942.92	1.34	0.643	55.6	8.8	9.3	0.27
256	2	930524	3241	$ 6634.	$ 1880.	0.283	0.58	.170	2.05	86.38	947.71	1.47	0.431	49.1	9.4	11.4	0.32
259	1	931021	2222	$ 5586.	$ 1309.	0.234	0.59	.202	2.51	86.48	1117.27	1.92	0.661	44.6	10.0	8.6	0.20

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WEEKDAYS WEEKDAYS WEEKDAYS WEEKDAYS WEEKDAYS WEEKDAYS WEEKDAYS WEEKDAYS WEEKDAYS WEEKDAYS WEEKDAYS WEEKDAYS WEEKDAYS

304, 433, 402
406, 407, 410, 412

FY1994 WEEKDAY COSTS (GPC FORMULA) & REVENUES - LINES RANKED BY LINES RANKED NUMERICALLY (16)
WEEKDAYS WEEKDAYS WEEKDAYS WEEKDAYS WEEKDAYS WEEKDAYS WEEKDAYS WEEKDAYS WEEKDAYS WEEKDAYS WEEKDAYS WEEKDAYS WEEKDAYS

LINE PERFORMANCE REPORT: LINE RANKINGS

442

----- LISTED IN LINE NUMBER ORDER -----
ALL VALUES ARE IN FY1994 DOLLARS

LINE NO.	TC PO MD E	DATE	TOTAL BOARD -INGS (1)	TOTAL OPERATING COST* (2)	TOTAL PASSENGER REVENUE* (3)	OPER- ATING RATIO (4)	$$REVENUE$$ PER BOARD -ING $(5)	$$REVENUE$$ PER PSGR MILE $(6)	$$OPERATING COSTS$$ PER BOARD -ING $(7)	$$OPERATING COSTS$$ PER BUS HOUR** $(8)	$$OPERATING COSTS$$ PER PEAK BUS $(9)	$$SUBSIDY$$*** PER BOARD -ING $(10)	$$SUBSIDY$$*** PER PSGR MILE $(11)	BRDGS PER BUS HOUR** (12)	BUS HOURS** PER PEAK BUS (13)	-PASSENGER- --MILES-- PER BUS MILE (14)	-PASSENGER- --MILES-- PER SEAT MILE (15)
260	1	921119	14562	$21950.	$ 8789.	0.400	0.60	.157	1.51	99.01	1097.48	0.90	0.235	74.5	9.8	17.1	0.46
262	1	930913	2485	$ 4712.	$ 1417.	0.301	0.57	.185	1.90	85.67	1178.02	1.33	0.431	57.8	10.8	11.9	0.27
264	2	930614	962	$ 3605.	$ 545.	0.151	0.57	.162	3.75	86.05	901.17	3.18	0.908	29.5	8.1	6.1	0.14
265	2	931112	1354	$ 5300.	$ 956.	0.180	0.71	.154	3.91	94.65	1060.03	3.21	0.700	28.1	9.6	7.0	0.16
266	2	930601	4418	$ 9487.	$ 2865.	0.302	0.65	.126	2.15	92.46	1185.82	1.50	0.292	53.2	10.4	19.0	0.34
267	1	930916	2469	$ 5104.	$ 1535.	0.301	0.62	.131	2.07	93.33	850.73	1.45	0.305	52.9	7.8	17.4	0.39
268	2	930621	2370	$ 6482.	$ 1268.	0.196	0.54	.144	2.74	96.03	589.28	2.20	0.591	38.9	5.5	8.9	0.21
270	2	930913	2716	$ 7688.	$ 1652.	0.215	0.61	.128	2.83	94.11	1098.28	2.22	0.469	37.5	10.3	11.4	0.26
401	4	930804	3296	$10777.	$ 3194.	0.296	0.97	.116	3.27	103.82	828.98	2.30	0.275	39.7	6.4	18.4	0.44
418	4	940110	826	$ 4145.	$ 1008.	0.243	1.22	.083	5.02	174.15	460.54	3.80	0.258	34.7	2.6	22.9	0.51
420	4	930504	21198	$38565.	$13770.	0.357	0.65	.119	1.82	93.81	988.86	1.17	0.215	60.0	9.1	23.7	0.53
424	4	921130	17395	$40041.	$14693.	0.367	0.84	.102	2.30	98.65	755.49	1.46	0.176	49.3	6.7	23.7	0.56
426	4	940110	1588	$ 5787.	$ 1148.	0.198	0.72	.081	3.64	136.52	526.11	2.92	0.326	39.4	3.7	17.1	0.41
427	5	940110	451	$ 3721.	$ 812.	0.218	1.80	.092	8.25	145.91	620.14	6.45	0.330	19.4	3.9	16.3	0.35
429	4	931102	1067	$ 4277.	$ 814.	0.190	0.76	.127	4.01	115.93	534.60	3.25	0.540	32.7	4.1	13.9	0.32
434	4	930716	2429	$10747.	$ 1799.	0.167	0.74	.054	4.42	99.42	895.59	3.68	0.266	26.8	7.5	15.1	0.30
436	4	940126	442	$ 2148.	$ 437.	0.203	0.99	.117	4.86	149.28	268.52	3.87	0.457	30.8	1.8	16.7	0.36
439	4	931008	2634	$10999.	$ 1883.	0.171	0.71	.081	4.18	87.22	1099.91	3.46	0.391	25.7	10.2	13.4	0.31
443	4	931027	342	$ 3509.	$ 472.	0.135	1.38	.100	10.26	132.98	501.33	8.88	0.643	14.5	3.4	10.2	0.26
444	4	930318	1960	$ 9946.	$ 1770.	0.178	0.90	.086	5.07	108.24	904.19	4.17	0.397	25.1	7.1	12.3	0.28
445	5	930625	180	$ 2481.	$ 304.	0.123	1.69	.095	13.78	189.38	496.18	12.09	0.677	14.7	2.4	11.3	0.25
446	4	930922	4407	$16087.	$ 3377.	0.210	0.77	.107	3.65	90.48	1149.08	2.88	0.402	30.3	10.4	12.6	0.28
457	5	930601	116	$ 2464.	$ 251.	0.102	2.16	.085	21.24	177.38	492.77	19.08	0.751	8.9	2.6	8.1	0.20
460	6+	930708	2664	$15938.	$ 3518.	0.221	1.32	.085	5.98	90.00	1226.03	4.66	0.301	19.0	10.8	14.0	0.32
462	4	930706	2866	$ 9697.	$ 2241.	0.231	0.78	.093	3.38	90.80	1077.45	2.60	0.309	34.3	9.3	16.8	0.39
466	5	930622	362	$ 2983.	$ 666.	0.223	1.84	.113	8.24	129.15	596.70	6.40	0.392	23.4	3.1	14.3	0.45
470	4+	931005	5449	$16126.	$ 3909.	0.242	0.72	.096	2.96	100.36	1007.88	2.24	0.299	38.0	9.0	16.4	0.38
483	4	930609	6402	$15909.	$ 4502.	0.283	0.70	.119	2.48	87.12	994.31	1.78	0.303	43.8	9.1	15.1	0.36
484	4+	930701	7626	$23417.	$ 7294.	0.311	0.96	.101	3.07	98.64	1115.09	2.11	0.224	37.3	9.7	16.8	0.39
487	4	930707	3044	$12558.	$ 2847.	0.227	0.94	.126	4.13	99.43	837.20	3.19	0.429	29.1	7.0	10.0	0.26

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WEEKDAYS WEEKDAYS WEEKDAYS WEEKDAYS WEEKDAYS WEEKDAYS WEEKDAYS WEEKDAYS WEEKDAYS WEEKDAYS WEEKDAYS WEEKDAYS WEEKDAYS

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FY1994 WEEKDAY  COSTS (GPC FORMULA) & REVENUES - LINES RANKED BY  LINES RANKED NUMERICALLY (16)
 WEEKDAYS  WEEKDAYS  WEEKDAYS  WEEKDAYS  WEEKDAYS  WEEKDAYS  WEEKDAYS  WEEKDAYS  WEEKDAYS  WEEKDAYS  WEEKDAYS  WEEKDAYS  WEEKDAYS

                         L I N E    P E R F O R M A N C E    R E P O R T :   L I N E  R A N K I N G S

                                     ----- LISTED IN LINE NUMBER ORDER -----
                                       ALL VALUES ARE IN FY1994 DOLLARS

                                                                                                                BUS    -PASSENGER-
       TC                                                          $$REVENUE$$ $$OPERATING COSTS$$  $$SUBSIDY$$***BRDGS   HOURS** --MILES--
       PO             TOTAL     TOTAL     TOTAL    OPER-     PER    PER  PER    PER      PER    PER     PER   PER     PER    PER   PER
LINE  MD             BOARD  OPERATING PASSENGER  ATING     BOARD  PSGR BOARD  BUS      PEAK   BOARD   PSGR  BUS     PEAK   BUS   SEAT
 NO.   E    DATE     -INGS     COST*   REVENUE*  RATIO     -ING   MILE -ING   HOUR**   BUS    -ING    MILE  HOUR**  BUS    MILE  MILE
                      (1)       (2)      (3)      (4)      $(5)   $(6) $(7)   $(8)     $(9)   $(10)   $(11) (12)    (13)   (14)  (15)


 489  4   930713     917    $  136.   $ 1036.    7.606     1.13  .138  0.15    0.00    0.00 -0.98  -.120    0.0     0.0    0.0  0.00
 490  4+  930427    4753    $14136.   $ 4269.    0.302     0.90  .107  2.97   98.65 1087.42  2.08  0.248   40.3     9.1   15.6  0.37
 497  5+  930714    2163    $16171.   $ 5246.    0.324     2.43  .098  7.48  136.70  770.06  5.05  0.204   24.4     4.2   16.6  0.42
 560  4   930331   15898    $24912.   $10440.    0.419     0.66  .146  1.57   91.05 1083.14  0.91  0.203   69.0    10.0   20.4  0.47
 573  6+  930106     327    $ 7753.   $  292.    0.038     0.89  .056 23.71   71.72  861.39 22.82  1.443    6.3     5.8    7.5  0.11

 576  4   930525     702    $ 3370.   $  541.    0.161     0.77  .074  4.80  151.85  561.60  4.03  0.385   32.7     3.6   26.7  0.45
 620  6   931015    1465    $ 2434.   $  403.    0.166     0.28  .166  1.66   88.85  811.20  1.39  0.837   70.5     6.9    8.5  0.19

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 SYSTEM SUMMARY   (TOTAL LINES IN DATA =127)











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WEEKDAYS  WEEKDAYS  WEEKDAYS  WEEKDAYS  WEEKDAYS  WEEKDAYS  WEEKDAYS  WEEKDAYS  WEEKDAYS  WEEKDAYS  WEEKDAYS  WEEKDAYS  WEEKDAYS
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CMP Station:    7  Alameda/Carson                   Carson
   Direction: N-bound
     Bus Rte:     202        Time:  5:24      Pas/Bus:     5.4
   Total in this direction:  1        Total  Pas/Bus:     5.4
   Expected Increase in Cars:     2

   Direction: S-bound
     Bus Rte:     202        Time:  5:29      Pas/Bus:     5.4
   Total in this direction:  1        Total  Pas/Bus:     5.4
   Expected Increase in Cars:     2

CMP Station:   12  Alameda/Compton                  Compton
   Direction: E-bound
     Bus Rte:     124        Time:  5:40      Pas/Bus:    10.0
   Total in this direction:  1        Total  Pas/Bus:    10.0
   Expected Increase in Cars:     3

   Direction: W-bound
     Bus Rte:     124        Time:  5:00      Pas/Bus:    10.0
     Bus Rte:     124        Time:  6:00      Pas/Bus:    10.0
   Total in this direction:  2        Total  Pas/Bus:    20.0
   Expected Increase in Cars:     6

CMP Station:   18  Lakewood/Firestone               Downey
   Direction: E-bound
     Bus Rte:     127        Time:  5:38      Pas/Bus:     5.7
   Total in this direction:  1        Total  Pas/Bus:     5.7
   Expected Increase in Cars:     2

   Direction: W-bound
     Bus Rte:     127        Time:  5:10      Pas/Bus:     5.7
   Total in this direction:  1        Total  Pas/Bus:     5.7
   Expected Increase in Cars:     2

CMP Station:   34  Lakewood/Carson                  Long Beach
   Direction: N-bound
     Bus Rte:     266        Time:  5:09      Pas/Bus:    14.0
     Bus Rte:     266        Time:  5:09      Pas/Bus:     7.4
     Bus Rte:     266        Time:  5:38      Pas/Bus:     7.4
     Bus Rte:     266        Time:  5:38      Pas/Bus:    14.0
   Total in this direction:  4        Total  Pas/Bus:    42.8
   Expected Increase in Cars:    13

   Direction: S-bound
     Bus Rte:     266        Time:  5:03      Pas/Bus:     7.4
     Bus Rte:     266        Time:  5:03      Pas/Bus:    14.0
   Total in this direction:  2        Total  Pas/Bus:    21.4
   Expected Increase in Cars:     7

CMP Station:   35  Lakewood/Willow                  Long Beach
   Direction: N-bound
     Bus Rte:     266        Time:  5:04      Pas/Bus:    14.0
     Bus Rte:     266        Time:  5:04      Pas/Bus:     7.4
     Bus Rte:     266        Time:  5:33      Pas/Bus:    14.0
     Bus Rte:     266        Time:  5:33      Pas/Bus:     7.4
   Total in this direction:  4        Total  Pas/Bus:    42.8
   Expected Increase in Cars:    13

   Direction: S-bound
     Bus Rte:     266        Time:  5:27      Pas/Bus:    14.0
     Bus Rte:     266        Time:  5:27      Pas/Bus:     7.4
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     Bus Rte:     266        Time:  5:54      Pas/Bus:     7.4
     Bus Rte:     266        Time:  5:54      Pas/Bus:    14.0
   Total in this direction:  4        Total  Pas/Bus:    42.8
   Expected Increase in Cars:    13

CMP Station:   36  Pacific Coast Hwy/7th st         Long Beach
   Direction: N-bound
     Bus Rte:     266        Time:  5:25      Pas/Bus:     7.4
     Bus Rte:     266        Time:  5:25      Pas/Bus:    14.0
     Bus Rte:     266        Time:  5:55      Pas/Bus:     7.4
     Bus Rte:     266        Time:  5:55      Pas/Bus:    14.0
   Total in this direction:  4        Total  Pas/Bus:    42.8
   Expected Increase in Cars:    13

   Direction: S-bound
     Bus Rte:     266        Time:  5:12      Pas/Bus:    14.0
     Bus Rte:     266        Time:  5:12      Pas/Bus:     7.4
     Bus Rte:     266        Time:  5:40      Pas/Bus:    14.0
     Bus Rte:     266        Time:  5:40      Pas/Bus:     7.4
   Total in this direction:  4        Total  Pas/Bus:    42.8
   Expected Increase in Cars:    13

CMP Station:   40  Pacific Coast Hwy/Ximeno         Long Beach
   Direction: N-bound
     Bus Rte:     266        Time:  5:00      Pas/Bus:     7.4
     Bus Rte:     266        Time:  5:00      Pas/Bus:    14.0
   Total in this direction:  2        Total  Pas/Bus:    21.4
   Expected Increase in Cars:     7

   Direction: S-bound
     Bus Rte:     266        Time:  5:07      Pas/Bus:     7.4
     Bus Rte:     266        Time:  5:07      Pas/Bus:    14.0
     Bus Rte:     266        Time:  5:35      Pas/Bus:    14.0
     Bus Rte:     266        Time:  5:35      Pas/Bus:     7.4
   Total in this direction:  4        Total  Pas/Bus:    42.8
   Expected Increase in Cars:    13

CMP Station:   50  Manchester/Sepulveda             Los Ang City
   Direction: N-bound
     Bus Rte:     560        Time:  5:22      Pas/Bus:    20.4
   Total in this direction:  1        Total  Pas/Bus:    20.4
   Expected Increase in Cars:     6

   Direction: S-bound
     Bus Rte:     560        Time:  5:37      Pas/Bus:    20.4
   Total in this direction:  1        Total  Pas/Bus:    20.4
   Expected Increase in Cars:     6

CMP Station:   52  Pacific Coast Hwy/Alameda        Los Ang City
   Direction: N-bound
     Bus Rte:     202        Time:  5:15      Pas/Bus:     5.4
   Total in this direction:  1        Total  Pas/Bus:     5.4
   Expected Increase in Cars:     2

   Direction: S-bound
     Bus Rte:     202        Time:  5:37      Pas/Bus:     5.4
   Total in this direction:  1        Total  Pas/Bus:     5.4
   Expected Increase in Cars:     2
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PACKAGE I

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CMP Station:   54  PCH/Figueroa                  Los Ang City
   Direction: N-bound
     Bus Rte:     205        Time:  5:28     Pas/Bus:    7.9
     Bus Rte:     205        Time:  5:58     Pas/Bus:    7.9
   Total in this direction:  2       Total Pas/Bus:   15.8
   Expected Increase in Cars:     5


CMP Station:   56  Pacific Coast Hwy/Western     Los Ang City
   Direction: N-bound
     Bus Rte:     205        Time:  5:23     Pas/Bus:    7.9
     Bus Rte:     205        Time:  5:53     Pas/Bus:    7.9
   Total in this direction:  2       Total Pas/Bus:   15.8
   Expected Increase in Cars:     5


CMP Station:   61  Sepulveda/Lincoln             Los Ang City
   Direction: N-bound
     Bus Rte:     560        Time:  5:17     Pas/Bus:   20.4
   Total in this direction:  1       Total Pas/Bus:   20.4
   Expected Increase in Cars:     6

   Direction: S-bound
     Bus Rte:     560        Time:  5:42     Pas/Bus:   20.4
   Total in this direction:  1       Total Pas/Bus:   20.4
   Expected Increase in Cars:     6


CMP Station:   74  Ventura/Sepulved              Los Ang City
   Direction: E-bound
     Bus Rte:     183        Time:  5:00     Pas/Bus:   10.0
     Bus Rte:     183        Time:  5:40     Pas/Bus:   10.0
   Total in this direction:  2       Total Pas/Bus:   20.0
   Expected Increase in Cars:     6

   Direction: W-bound
     Bus Rte:     183        Time:  5:17     Pas/Bus:   10.0
   Total in this direction:  1       Total Pas/Bus:   10.0
   Expected Increase in Cars:     3


CMP Station:   86  Wilshire/Sepulveda            Los Ang City
   Direction: E-bound
     Bus Rte:      20        Time:  5:08     Pas/Bus:   24.3
     Bus Rte:      20        Time:  5:20     Pas/Bus:   24.3
     Bus Rte:      20        Time:  5:24     Pas/Bus:   24.3
     Bus Rte:      20        Time:  5:28     Pas/Bus:   24.3
     Bus Rte:      20        Time:  5:45     Pas/Bus:   24.3
     Bus Rte:      20        Time:  6:00     Pas/Bus:   24.3
   Total in this direction:  6       Total Pas/Bus:  145.8
   Expected Increase in Cars:    45

   Direction: N-bound
     Bus Rte:     560        Time:  5:02     Pas/Bus:   20.4
     Bus Rte:     560        Time:  5:14     Pas/Bus:   20.4
     Bus Rte:     560        Time:  5:23     Pas/Bus:   20.4
     Bus Rte:     560        Time:  5:34     Pas/Bus:   20.4
     Bus Rte:     560        Time:  5:46     Pas/Bus:   20.4
   Total in this direction:  5       Total Pas/Bus:  102.0
   Expected Increase in Cars:    32

   Direction: S-bound
     Bus Rte:     560        Time:  5:00     Pas/Bus:   20.4
     Bus Rte:     560        Time:  5:10     Pas/Bus:   20.4
     Bus Rte:     560        Time:  5:20     Pas/Bus:   20.4
```

```
     Bus Rte:     560        Time:  5:30     Pas/Bus:   20.4
     Bus Rte:     560        Time:  5:40     Pas/Bus:   20.4
     Bus Rte:     560        Time:  5:50     Pas/Bus:   20.4
   Total in this direction:  6       Total Pas/Bus:  122.4
   Expected Increase in Cars:    38

   Direction: W-bound
     Bus Rte:      20        Time:  5:08     Pas/Bus:   24.3
     Bus Rte:      20        Time:  5:27     Pas/Bus:   24.3
     Bus Rte:      20        Time:  5:46     Pas/Bus:   24.3
   Total in this direction:  3       Total Pas/Bus:   72.9
   Expected Increase in Cars:    23


CMP Station:  116  Pasadena/St. John/California  Pasadena
   Direction: E-bound
     Bus Rte:     177        Time:  5:14     Pas/Bus:    8.6
   Total in this direction:  1       Total Pas/Bus:    8.6
   Expected Increase in Cars:     3

   Direction: W-bound
     Bus Rte:     177        Time:  5:12     Pas/Bus:    8.6
     Bus Rte:     177        Time:  5:52     Pas/Bus:    8.6
   Total in this direction:  2       Total Pas/Bus:   17.2
   Expected Increase in Cars:     5


CMP Station:  117  Rosemead/Foothill             Pasadena
   Direction: E-bound
     Bus Rte:     177        Time:  5:00     Pas/Bus:    8.6
     Bus Rte:     177        Time:  5:40     Pas/Bus:    8.6
     Bus Rte:     188        Time:  5:05     Pas/Bus:   13.9
     Bus Rte:     188        Time:  5:35     Pas/Bus:   13.9
     Bus Rte:     268        Time:  5:18     Pas/Bus:    8.9
   Total in this direction:  5       Total Pas/Bus:   53.9
   Expected Increase in Cars:    17

   Direction: W-bound
     Bus Rte:     177        Time:  5:33     Pas/Bus:    8.6
     Bus Rte:     188        Time:  5:23     Pas/Bus:   13.9
     Bus Rte:     188        Time:  5:49     Pas/Bus:   13.9
     Bus Rte:     268        Time:  5:39     Pas/Bus:    8.9
   Total in this direction:  4       Total Pas/Bus:   45.3
   Expected Increase in Cars:    14


CMP Station:  124  Western/Toscanini             Rancho PV
   Direction: S-bound
     Bus Rte:     205        Time:  5:08     Pas/Bus:    7.9
     Bus Rte:     205        Time:  5:38     Pas/Bus:    7.9
   Total in this direction:  2       Total Pas/Bus:   15.8
   Expected Increase in Cars:     5


CMP Station:  135  Santa Monica/Cloverfield      Santa Monica
   Direction: E-bound
     Bus Rte:       4        Time:  5:02     Pas/Bus:   22.4
     Bus Rte:       4        Time:  5:10     Pas/Bus:   22.4
     Bus Rte:       4        Time:  5:18     Pas/Bus:   22.4
     Bus Rte:       4        Time:  5:34     Pas/Bus:   22.4
     Bus Rte:       4        Time:  5:49     Pas/Bus:   22.4
   Total in this direction:  5       Total Pas/Bus:  112.0
   Expected Increase in Cars:    35

   Direction: W-bound
     Bus Rte:       4        Time:  5:09     Pas/Bus:   22.4
```

```
     Bus Rte:      4      Time:  5:33     Pas/Bus:   22.4
     Bus Rte:      4      Time:  5:57     Pas/Bus:   22.4
   Total in this direction:  3      Total Pas/Bus:   67.2
   Expected Increase in Cars:   21


CMP Station:  137  Wilshire/26th                 Santa Monica
   Direction: E-bound
     Bus Rte:     20      Time:  5:58     Pas/Bus:   24.3
   Total in this direction:  1      Total Pas/Bus:   24.3
   Expected Increase in Cars:    8

   Direction: W-bound
     Bus Rte:     20      Time:  6:00     Pas/Bus:   24.3
   Total in this direction:  1      Total Pas/Bus:   24.3
   Expected Increase in Cars:    8


CMP Station: 1012  I10 La Brea Avenue 10.53
   Direction: E-bound
     Bus Rte:    434      Time:  5:13     Pas/Bus:   15.1
   Total in this direction:  1      Total Pas/Bus:   15.1
   Expected Increase in Cars:    5

   Direction: W-bound
     Bus Rte:    434      Time:  5:40     Pas/Bus:   15.1
   Total in this direction:  1      Total Pas/Bus:   15.1
   Expected Increase in Cars:    5


CMP Station: 1013  I10 Budlong Avenue 13.53
   Direction: E-bound
     Bus Rte:    434      Time:  5:21     Pas/Bus:   15.1
   Total in this direction:  1      Total Pas/Bus:   15.1
   Expected Increase in Cars:    5

   Direction: W-bound
     Bus Rte:    434      Time:  5:35     Pas/Bus:   15.1
   Total in this direction:  1      Total Pas/Bus:   15.1
   Expected Increase in Cars:    5


CMP Station: 1068  I405 Venice Boulevard 27.81
   Direction: N-bound
     Bus Rte:    560      Time:  5:36     Pas/Bus:   20.4
   Total in this direction:  1      Total Pas/Bus:   20.4
   Expected Increase in Cars:    6

   Direction: S-bound
     Bus Rte:    560      Time:  5:25     Pas/Bus:   20.4
   Total in this direction:  1      Total Pas/Bus:   20.4
   Expected Increase in Cars:    6
```

```
CMP Station:   15  Venice/Overland                 Culver City
   Direction: W-bound
     Bus Rte:     436        Time:  5:03      Pas/Bus:    16.7
     Bus Rte:     436        Time:  5:17      Pas/Bus:    16.7
     Bus Rte:     436        Time:  5:37      Pas/Bus:    16.7
     Bus Rte:     436        Time:  5:57      Pas/Bus:    16.7
   Total in this direction:  4      Total Pas/Bus:    66.8
   Expected Increase in Cars:   21

CMP Station:   24  Manchester/Crenshaw             Inglewood
   Direction: S-bound
     Bus Rte:     442        Time:  5:03      Pas/Bus:    16.9
     Bus Rte:     442        Time:  5:17      Pas/Bus:    16.9
     Bus Rte:     442        Time:  5:31      Pas/Bus:    16.9
     Bus Rte:     442        Time:  5:47      Pas/Bus:    16.9
   Total in this direction:  4      Total Pas/Bus:    67.6
   Expected Increase in Cars:   21

CMP Station:   35  Lakewood/Willow                 Long Beach
   Direction: S-bound
     Bus Rte:     457        Time:  5:08      Pas/Bus:     8.1
     Bus Rte:     457        Time:  5:45      Pas/Bus:     8.1
   Total in this direction:  2      Total Pas/Bus:    16.2
   Expected Increase in Cars:    5

CMP Station:   40  Pacific Coast Hwy/Ximeno        Long Beach
   Direction: S-bound
     Bus Rte:     457        Time:  5:17      Pas/Bus:     8.1
     Bus Rte:     457        Time:  5:54      Pas/Bus:     8.1
   Total in this direction:  2      Total Pas/Bus:    16.2
   Expected Increase in Cars:    5

CMP Station:   48  Lincoln/Venice                  Los Ang City
   Direction: W-bound
     Bus Rte:     436        Time:  5:15      Pas/Bus:    16.7
     Bus Rte:     436        Time:  5:29      Pas/Bus:    16.7
     Bus Rte:     436        Time:  5:49      Pas/Bus:    16.7
   Total in this direction:  3      Total Pas/Bus:    50.1
   Expected Increase in Cars:   16

CMP Station:   51  Manchester/Vermont              Los Ang City
   Direction: S-bound
     Bus Rte:     442        Time:  5:08      Pas/Bus:    16.9
     Bus Rte:     442        Time:  5:22      Pas/Bus:    16.9
     Bus Rte:     442        Time:  5:38      Pas/Bus:    16.9
     Bus Rte:     442        Time:  5:59      Pas/Bus:    16.9
   Total in this direction:  4      Total Pas/Bus:    67.6
   Expected Increase in Cars:   21

CMP Station:   54  PCH/Figueroa                    Los Ang City
   Direction: S-bound
     Bus Rte:     445        Time:  5:23      Pas/Bus:    11.3
     Bus Rte:     445        Time:  5:52      Pas/Bus:    11.3
   Total in this direction:  2      Total Pas/Bus:    22.6
   Expected Increase in Cars:    7
```

```
CMP Station:   66  Topanga Cyn/Victory             Los Ang City
   Direction: E-bound
     Bus Rte:     427        Time:  5:17      Pas/Bus:    16.3
     Bus Rte:     427        Time:  5:43      Pas/Bus:    16.3
     Bus Rte:     427        Time:  5:47      Pas/Bus:    16.3
   Total in this direction:  3      Total Pas/Bus:    48.9
   Expected Increase in Cars:   15

CMP Station:   68  Venice/Centinela                Los Ang City
   Direction: W-bound
     Bus Rte:     436        Time:  5:10      Pas/Bus:    16.7
     Bus Rte:     436        Time:  5:24      Pas/Bus:    16.7
     Bus Rte:     436        Time:  5:44      Pas/Bus:    16.7
   Total in this direction:  3      Total Pas/Bus:    50.1
   Expected Increase in Cars:   16

CMP Station:   69  Venice/La Cienega               Los Ang City
   Direction: W-bound
     Bus Rte:     436        Time:  5:06      Pas/Bus:    16.7
     Bus Rte:     436        Time:  5:26      Pas/Bus:    16.7
     Bus Rte:     436        Time:  5:46      Pas/Bus:    16.7
   Total in this direction:  3      Total Pas/Bus:    50.1
   Expected Increase in Cars:   16

CMP Station:   86  Wilshire/Sepulveda              Los Ang City
   Direction: E-bound
     Bus Rte:     429        Time:  5:30      Pas/Bus:    13.9
   Total in this direction:  1      Total Pas/Bus:    13.9
   Expected Increase in Cars:    4

   Direction: W-bound
     Bus Rte:     429        Time:  5:55      Pas/Bus:    13.9
   Total in this direction:  1      Total Pas/Bus:    13.9
   Expected Increase in Cars:    4

CMP Station:   87  Wilshire/Western                Los Ang City
   Direction: E-bound
     Bus Rte:     497        Time:  5:03      Pas/Bus:    16.6
     Bus Rte:     497        Time:  5:15      Pas/Bus:    16.6
     Bus Rte:     497        Time:  5:47      Pas/Bus:    16.6
   Total in this direction:  3      Total Pas/Bus:    49.8
   Expected Increase in Cars:   15

CMP Station:   97  Rosemead/Huntington             Los Ang County
   Direction: E-bound
     Bus Rte:     489        Time:  5:14      Pas/Bus:
     Bus Rte:     489        Time:  5:34      Pas/Bus:
     Bus Rte:     489        Time:  5:50      Pas/Bus:
   Total in this direction:  3      Total Pas/Bus:     0.0
   Expected Increase in Cars:    0

CMP Station:  115  Arroyo/California               Pasadena
   Direction: N-bound
     Bus Rte:     402        Time:  5:13      Pas/Bus:    18.4
     Bus Rte:     402        Time:  5:38      Pas/Bus:    18.4
   Total in this direction:  2      Total Pas/Bus:    36.8
   Expected Increase in Cars:   11
```

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```
   Direction: S-bound
     Bus Rte:    402       Time:  5:26     Pas/Bus:    18.4
   Total in this direction:  1       Total Pas/Bus:    18.4
   Expected Increase in Cars:     6

CMP Station:  126  Pacific Coast/Torrance         Redondo Bch
   Direction: S-bound
     Bus Rte:    443       Time:  5:06     Pas/Bus:    10.2
     Bus Rte:    443       Time:  5:46     Pas/Bus:    10.2
   Total in this direction:  2       Total Pas/Bus:    20.4
   Expected Increase in Cars:     6

CMP Station:  127  Rosemead/Valley                Rosemead
   Direction: E-bound
     Bus Rte:    489       Time:  5:01     Pas/Bus:
     Bus Rte:    489       Time:  5:21     Pas/Bus:
     Bus Rte:    489       Time:  5:37     Pas/Bus:
   Total in this direction:  3       Total Pas/Bus:     0.0
   Expected Increase in Cars:     0

CMP Station: 1001  SR2 @ Round Top Drive R17.78
   Direction: N-bound
     Bus Rte:    406       Time:  5:00     Pas/Bus:    15.9
     Bus Rte:    406       Time:  6:00     Pas/Bus:    15.9
     Bus Rte:    407       Time:  5:30     Pas/Bus:    15.9
   Total in this direction:  3       Total Pas/Bus:    47.7
   Expected Increase in Cars:    15

CMP Station: 1004  15 Stadium Way 21.80
   Direction: N-bound
     Bus Rte:    406       Time:  5:50     Pas/Bus:    15.9
     Bus Rte:    407       Time:  5:20     Pas/Bus:    15.9
     Bus Rte:    410       Time:  5:11     Pas/Bus:    17.2
     Bus Rte:    410       Time:  5:41     Pas/Bus:    17.2
     Bus Rte:    412       Time:  5:22     Pas/Bus:    13.4
   Total in this direction:  5       Total Pas/Bus:    79.6
   Expected Increase in Cars:    25

CMP Station: 1005  15 s/o Colorado St Ext 25.50
   Direction: N-bound
     Bus Rte:    410       Time:  5:20     Pas/Bus:    17.2
     Bus Rte:    410       Time:  5:50     Pas/Bus:    17.2
     Bus Rte:    412       Time:  5:32     Pas/Bus:    13.4
   Total in this direction:  3       Total Pas/Bus:    47.8
   Expected Increase in Cars:    15

CMP Station: 1012  l10 La Brea Avenue 10.53
   Direction: E-bound
     Bus Rte:    576       Time:  5:12     Pas/Bus:    26.7
     Bus Rte:    576       Time:  5:38     Pas/Bus:    26.7
   Total in this direction:  2       Total Pas/Bus:    53.4
   Expected Increase in Cars:    17

   Direction: W-bound
     Bus Rte:    436       Time:  5:20     Pas/Bus:    16.7
     Bus Rte:    436       Time:  5:40     Pas/Bus:    16.7
   Total in this direction:  2       Total Pas/Bus:    33.4
   Expected Increase in Cars:    10
```

```
CMP Station: 1013  l10 Budlong Avenue 13.53
   Direction: W-bound
     Bus Rte:    436       Time:  5:15     Pas/Bus:    16.7
     Bus Rte:    436       Time:  5:35     Pas/Bus:    16.7
   Total in this direction:  2       Total Pas/Bus:    33.4
   Expected Increase in Cars:    10

CMP Station: 1014  l10 East LA City Limit 19.67
   Direction: E-bound
     Bus Rte:    497       Time:  5:03     Pas/Bus:    16.6
     Bus Rte:    497       Time:  5:13     Pas/Bus:    16.6
     Bus Rte:    497       Time:  5:23     Pas/Bus:    16.6
     Bus Rte:    497       Time:  5:30     Pas/Bus:    16.6
     Bus Rte:    497       Time:  5:40     Pas/Bus:    16.6
     Bus Rte:    497       Time:  5:52     Pas/Bus:    16.6
   Total in this direction:  6       Total Pas/Bus:    99.6
   Expected Increase in Cars:    31

CMP Station: 1015  l10 Atlantic Blvd. 23.38
   Direction: E-bound
     Bus Rte:    497       Time:  5:08     Pas/Bus:    16.6
     Bus Rte:    497       Time:  5:18     Pas/Bus:    16.6
     Bus Rte:    497       Time:  5:28     Pas/Bus:    16.6
     Bus Rte:    497       Time:  5:35     Pas/Bus:    16.6
     Bus Rte:    497       Time:  5:45     Pas/Bus:    16.6
     Bus Rte:    497       Time:  5:57     Pas/Bus:    16.6
   Total in this direction:  6       Total Pas/Bus:    99.6
   Expected Increase in Cars:    31

CMP Station: 1016  l10 Rosemead Blvd. 26.79
   Direction: E-bound
     Bus Rte:    497       Time:  5:13     Pas/Bus:    16.6
     Bus Rte:    497       Time:  5:23     Pas/Bus:    16.6
     Bus Rte:    497       Time:  5:33     Pas/Bus:    16.6
     Bus Rte:    497       Time:  5:40     Pas/Bus:    16.6
     Bus Rte:    497       Time:  5:50     Pas/Bus:    16.6
   Total in this direction:  5       Total Pas/Bus:    83.0
   Expected Increase in Cars:    26

CMP Station: 1017  l10 e/o Puente Avenue 34.28
   Direction: E-bound
     Bus Rte:    497       Time:  5:23     Pas/Bus:    16.6
     Bus Rte:    497       Time:  5:33     Pas/Bus:    16.6
     Bus Rte:    497       Time:  5:43     Pas/Bus:    16.6
     Bus Rte:    497       Time:  5:50     Pas/Bus:    16.6
     Bus Rte:    497       Time:  6:00     Pas/Bus:    16.6
   Total in this direction:  5       Total Pas/Bus:    83.0
   Expected Increase in Cars:    26

CMP Station: 1018  l10 Grand Avenue 38.48
   Direction: E-bound
     Bus Rte:    497       Time:  5:09     Pas/Bus:    16.6
     Bus Rte:    497       Time:  5:17     Pas/Bus:    16.6
     Bus Rte:    497       Time:  5:25     Pas/Bus:    16.6
     Bus Rte:    497       Time:  5:31     Pas/Bus:    16.6
     Bus Rte:    497       Time:  5:35     Pas/Bus:    16.6
     Bus Rte:    497       Time:  5:45     Pas/Bus:    16.6
     Bus Rte:    497       Time:  5:55     Pas/Bus:    16.6
   Total in this direction:  7       Total Pas/Bus:   116.2
   Expected Increase in Cars:    36
```

```
   Direction: W-bound
     Bus Rte:    497       Time:  6:00     Pas/Bus:    16.6
   Total in this direction:  1      Total Pas/Bus:    16.6
   Expected Increase in Cars:     5

CMP Station: 1019  l10 Dudley St 44.13
   Direction: E-bound
     Bus Rte:    497       Time:  5:03     Pas/Bus:    16.6
     Bus Rte:    497       Time:  5:16     Pas/Bus:    16.6
     Bus Rte:    497       Time:  5:26     Pas/Bus:    16.6
     Bus Rte:    497       Time:  5:34     Pas/Bus:    16.6
     Bus Rte:    497       Time:  5:42     Pas/Bus:    16.6
     Bus Rte:    497       Time:  5:48     Pas/Bus:    16.6
     Bus Rte:    497       Time:  5:52     Pas/Bus:    16.6
   Total in this direction:  7      Total Pas/Bus:   116.2
   Expected Increase in Cars:    36

   Direction: W-bound
     Bus Rte:    497       Time:  5:47     Pas/Bus:    16.6
   Total in this direction:  1      Total Pas/Bus:    16.6
   Expected Increase in Cars:     5


CMP Station: 1020  l10 w/o Indian Hill Blvd 47.11
   Direction: E-bound
     Bus Rte:    497       Time:  5:05     Pas/Bus:    16.6
     Bus Rte:    497       Time:  5:17     Pas/Bus:    16.6
     Bus Rte:    497       Time:  5:30     Pas/Bus:    16.6
     Bus Rte:    497       Time:  5:40     Pas/Bus:    16.6
     Bus Rte:    497       Time:  5:47     Pas/Bus:    16.6
     Bus Rte:    497       Time:  5:56     Pas/Bus:    16.6
   Total in this direction:  6      Total Pas/Bus:    99.6
   Expected Increase in Cars:    31

   Direction: W-bound
     Bus Rte:    497       Time:  5:40     Pas/Bus:    16.6
   Total in this direction:  1      Total Pas/Bus:    16.6
   Expected Increase in Cars:     5


CMP Station: 1039  US 101 Santa Monica Blvd 5.48
   Direction: E-bound
     Bus Rte:    429       Time:  5:12     Pas/Bus:    13.9
     Bus Rte:    429       Time:  5:43     Pas/Bus:    13.9
   Total in this direction:  2      Total Pas/Bus:    27.8
   Expected Increase in Cars:     9

   Direction: N-bound
     Bus Rte:    427       Time:  5:29     Pas/Bus:    16.3
     Bus Rte:    427       Time:  5:59     Pas/Bus:    16.3
   Total in this direction:  2      Total Pas/Bus:    32.6
   Expected Increase in Cars:    10

   Direction: W-bound
     Bus Rte:    429       Time:  5:02     Pas/Bus:    13.9
     Bus Rte:    429       Time:  5:27     Pas/Bus:    13.9
     Bus Rte:    429       Time:  5:48     Pas/Bus:    13.9
   Total in this direction:  3      Total Pas/Bus:    41.7
   Expected Increase in Cars:    13


CMP Station: 1040  US 101 Coldwater Cyn 13.98
   Direction: E-bound
     Bus Rte:    427       Time:  5:45     Pas/Bus:    16.3
```

```
     Bus Rte:    427       Time:  5:58     Pas/Bus:    16.3
   Total in this direction:  2      Total Pas/Bus:    32.6
   Expected Increase in Cars:    10

CMP Station: 1041  US 101 Winnetka 23.40
   Direction: E-bound
     Bus Rte:    427       Time:  5:06     Pas/Bus:    16.3
     Bus Rte:    427       Time:  5:35     Pas/Bus:    16.3
     Bus Rte:    427       Time:  5:48     Pas/Bus:    16.3
   Total in this direction:  3      Total Pas/Bus:    48.9
   Expected Increase in Cars:    15

CMP Station: 1080  l10 Peck Road 30.30
   Direction: E-bound
     Bus Rte:    497       Time:  5:18     Pas/Bus:    16.6
     Bus Rte:    497       Time:  5:28     Pas/Bus:    16.6
     Bus Rte:    497       Time:  5:38     Pas/Bus:    16.6
     Bus Rte:    497       Time:  5:45     Pas/Bus:    16.6
     Bus Rte:    497       Time:  5:55     Pas/Bus:    16.6
   Total in this direction:  5      Total Pas/Bus:    83.0
   Expected Increase in Cars:    26
```

```
CMP Station:    7  Alameda/Carson                     Carson
   Direction: N-bound
     Bus Rte:    202        Time:  5:24     Pas/Bus:     5.4
   Total in this direction:  1      Total Pas/Bus:     5.4
   Expected Increase in Cars:    2

   Direction: S-bound
     Bus Rte:    202        Time:  5:29     Pas/Bus:     5.4
   Total in this direction:  1      Total Pas/Bus:     5.4
   Expected Increase in Cars:    2


CMP Station:   12  Alameda/Compton                    Compton
   Direction: E-bound
     Bus Rte:    127        Time:  5:51     Pas/Bus:     5.7
   Total in this direction:  1      Total Pas/Bus:     5.7
   Expected Increase in Cars:    2

   Direction: W-bound
     Bus Rte:    127        Time:  5:51     Pas/Bus:     5.7
   Total in this direction:  1      Total Pas/Bus:     5.7
   Expected Increase in Cars:    2


CMP Station:   13  Alameda/RTE 91 EB Ramps            Compton
   Direction: N-bound
     Bus Rte:    202        Time:  5:11     Pas/Bus:     5.4
     Bus Rte:    202        Time:  5:41     Pas/Bus:     5.4
   Total in this direction:  2      Total Pas/Bus:    10.8
   Expected Increase in Cars:    3

   Direction: S-bound
     Bus Rte:    202        Time:  5:14     Pas/Bus:     5.4
     Bus Rte:    202        Time:  5:44     Pas/Bus:     5.4
   Total in this direction:  2      Total Pas/Bus:    10.8
   Expected Increase in Cars:    3


CMP Station:   15  Venice/Overland                    Culver City
   Direction: E-bound
     Bus Rte:     34        Time:  5:14     Pas/Bus:    18.3
     Bus Rte:     34        Time:  5:40     Pas/Bus:    18.3
   Total in this direction:  2      Total Pas/Bus:    36.6
   Expected Increase in Cars:   11

   Direction: W-bound
     Bus Rte:     34        Time:  5:14     Pas/Bus:    18.3
     Bus Rte:     34        Time:  5:40     Pas/Bus:    18.3
   Total in this direction:  2      Total Pas/Bus:    36.6
   Expected Increase in Cars:   11


CMP Station:   21  Artesia/Vermont                    Gardena
   Direction: E-bound
     Bus Rte:    130        Time:  5:10     Pas/Bus:    14.0
     Bus Rte:    130        Time:  5:45     Pas/Bus:    14.0
   Total in this direction:  2      Total Pas/Bus:    28.0
   Expected Increase in Cars:    9

   Direction: W-bound
     Bus Rte:    130        Time:  5:08     Pas/Bus:    14.0
     Bus Rte:    130        Time:  5:43     Pas/Bus:    14.0
   Total in this direction:  2      Total Pas/Bus:    28.0
   Expected Increase in Cars:    9
```

```
CMP Station:   22  Pacific Cost Hwy/Artesia       Hermosa Beach
   Direction: E-bound
     Bus Rte:    130        Time:  5:23     Pas/Bus:    14.0
     Bus Rte:    130        Time:  6:00     Pas/Bus:    14.0
   Total in this direction:  2      Total Pas/Bus:    28.0
   Expected Increase in Cars:    9

   Direction: W-bound
     Bus Rte:    130        Time:  5:07     Pas/Bus:    14.0
     Bus Rte:    130        Time:  5:34     Pas/Bus:    14.0
   Total in this direction:  2      Total Pas/Bus:    28.0
   Expected Increase in Cars:    9


CMP Station:   77  Victory/Balboa                 Los Ang City
   Direction: N-bound
     Bus Rte:    236        Time:  5:36     Pas/Bus:     9.7
   Total in this direction:  1      Total Pas/Bus:     9.7
   Expected Increase in Cars:    3

   Direction: S-bound
     Bus Rte:    236        Time:  5:11     Pas/Bus:     9.7
     Bus Rte:    236        Time:  5:56     Pas/Bus:     9.7
   Total in this direction:  2      Total Pas/Bus:    19.4
   Expected Increase in Cars:    6


CMP Station:  116  Pasadena/St. John/California   Pasadena
   Direction: E-bound
     Bus Rte:    177        Time:  5:14     Pas/Bus:     8.6
   Total in this direction:  1      Total Pas/Bus:     8.6
   Expected Increase in Cars:    3

   Direction: W-bound
     Bus Rte:    177        Time:  5:12     Pas/Bus:     8.6
     Bus Rte:    177        Time:  5:52     Pas/Bus:     8.6
   Total in this direction:  2      Total Pas/Bus:    17.2
   Expected Increase in Cars:    5


CMP Station:  117  Rosemead/Foothill              Pasadena
   Direction: E-bound
     Bus Rte:    177        Time:  5:00     Pas/Bus:     8.6
     Bus Rte:    177        Time:  5:40     Pas/Bus:     8.6
     Bus Rte:    268        Time:  5:39     Pas/Bus:     8.9
   Total in this direction:  3      Total Pas/Bus:    26.1
   Expected Increase in Cars:    8

   Direction: W-bound
     Bus Rte:    177        Time:  5:33     Pas/Bus:     8.6
     Bus Rte:    268        Time:  5:18     Pas/Bus:     8.9
   Total in this direction:  2      Total Pas/Bus:    17.5
   Expected Increase in Cars:    5


CMP Station:  119  Rosemead/Whittier              Pico Rivera
   Direction: N-bound
     Bus Rte:    265        Time:  5:35     Pas/Bus:     7.0
   Total in this direction:  1      Total Pas/Bus:     7.0
   Expected Increase in Cars:    2

   Direction: S-bound
     Bus Rte:    265        Time:  5:22     Pas/Bus:     7.0
   Total in this direction:  1      Total Pas/Bus:     7.0
   Expected Increase in Cars:    2
```

PACKAGE L

```
CMP Station:  124  Western/Toscanini              Rancho PV
   Direction: N-bound
     Bus Rte:     205       Time:  5:09     Pas/Bus:    7.9
     Bus Rte:     205       Time:  5:39     Pas/Bus:    7.9
   Total in this direction:  2      Total Pas/Bus:   15.8
   Expected Increase in Cars:    5

   Direction: S-bound
     Bus Rte:     205       Time:  5:08     Pas/Bus:    7.9
     Bus Rte:     205       Time:  5:38     Pas/Bus:    7.9
   Total in this direction:  2      Total Pas/Bus:   15.8
   Expected Increase in Cars:    5

CMP Station:  140  Firestone/Atlantic             South Gate
   Direction: N-bound
     Bus Rte:     225       Time:  5:42     Pas/Bus:    7.4
     Bus Rte:     226       Time:  5:12     Pas/Bus:
   Total in this direction:  2      Total Pas/Bus:    7.4
   Expected Increase in Cars:    2

   Direction: S-bound
     Bus Rte:     225       Time:  5:32     Pas/Bus:    7.4
     Bus Rte:     226       Time:  5:02     Pas/Bus:
     Bus Rte:     226       Time:  6:00     Pas/Bus:
   Total in this direction:  3      Total Pas/Bus:    7.4
   Expected Increase in Cars:    2

CMP Station:  144  Artesia/Hawthorne              Torrance
   Direction: E-bound
     Bus Rte:     130       Time:  5:34     Pas/Bus:   14.0
   Total in this direction:  1      Total Pas/Bus:   14.0
   Expected Increase in Cars:    4

   Direction: W-bound
     Bus Rte:     130       Time:  5:22     Pas/Bus:   14.0
     Bus Rte:     130       Time:  5:55     Pas/Bus:   14.0
   Total in this direction:  2      Total Pas/Bus:   28.0
   Expected Increase in Cars:    9

CMP Station:  149  Pacific Coast/Palos Verdes     Torrance
   Direction: N-bound
     Bus Rte:     225       Time:  5:58     Pas/Bus:    7.4
     Bus Rte:     226       Time:  5:25     Pas/Bus:
   Total in this direction:  2      Total Pas/Bus:    7.4
   Expected Increase in Cars:    2

   Direction: S-bound
     Bus Rte:     225       Time:  5:50     Pas/Bus:    7.4
     Bus Rte:     226       Time:  5:15     Pas/Bus:
   Total in this direction:  2      Total Pas/Bus:    7.4
   Expected Increase in Cars:    2
```

```
CMP Station:   15  Venice/Overland                Culver City
   Direction: E-bound
     Bus Rte:     436       Time:  5:03     Pas/Bus:    16.7
     Bus Rte:     436       Time:  5:17     Pas/Bus:    16.7
     Bus Rte:     436       Time:  5:37     Pas/Bus:    16.7
     Bus Rte:     436       Time:  5:57     Pas/Bus:    16.7
   Total in this direction:  4       Total Pas/Bus:    66.8
   Expected Increase in Cars:   21

CMP Station:   34  Lakewood/Carson                Long Beach
   Direction: N-bound
     Bus Rte:     266       Time:  5:09     Pas/Bus:     7.4
     Bus Rte:     266       Time:  5:09     Pas/Bus:    14.0
     Bus Rte:     266       Time:  5:38     Pas/Bus:     7.4
     Bus Rte:     266       Time:  5:38     Pas/Bus:    14.0
   Total in this direction:  4       Total Pas/Bus:    42.8
   Expected Increase in Cars:   13

CMP Station:   35  Lakewood/Willow                Long Beach
   Direction: N-bound
     Bus Rte:     266       Time:  5:04     Pas/Bus:    14.0
     Bus Rte:     266       Time:  5:04     Pas/Bus:     7.4
     Bus Rte:     266       Time:  5:33     Pas/Bus:    14.0
     Bus Rte:     266       Time:  5:33     Pas/Bus:     7.4
   Total in this direction:  4       Total Pas/Bus:    42.8
   Expected Increase in Cars:   13

CMP Station:   36  Pacific Coast Hwy/7th st       Long Beach
   Direction: N-bound
     Bus Rte:     266       Time:  5:25     Pas/Bus:     7.4
     Bus Rte:     266       Time:  5:25     Pas/Bus:    14.0
     Bus Rte:     266       Time:  5:55     Pas/Bus:    14.0
     Bus Rte:     266       Time:  5:55     Pas/Bus:     7.4
   Total in this direction:  4       Total Pas/Bus:    42.8
   Expected Increase in Cars:   13

CMP Station:   40  Pacific Coast Hwy/Ximeno       Long Beach
   Direction: N-bound
     Bus Rte:     266       Time:  5:00     Pas/Bus:    14.0
     Bus Rte:     266       Time:  5:00     Pas/Bus:     7.4
     Bus Rte:     266       Time:  5:30     Pas/Bus:     7.4
     Bus Rte:     266       Time:  5:30     Pas/Bus:    14.0
     Bus Rte:     266       Time:  6:00     Pas/Bus:    14.0
     Bus Rte:     266       Time:  6:00     Pas/Bus:     7.4
   Total in this direction:  6       Total Pas/Bus:    64.2
   Expected Increase in Cars:   20

CMP Station:  w48  Lincoln/Venice                 Los Ang City
   Direction: E-bound
     Bus Rte:     436       Time:  5:15     Pas/Bus:    16.7
     Bus Rte:     436       Time:  5:29     Pas/Bus:    16.7
     Bus Rte:     436       Time:  5:49     Pas/Bus:    16.7
   Total in this direction:  3       Total Pas/Bus:    50.1
   Expected Increase in Cars:   16

CMP Station:   50  Manchester/Sepulveda           Los Ang City
   Direction: N-bound
     Bus Rte:     439       Time:  5:25     Pas/Bus:    13.4
     Bus Rte:     439       Time:  6:00     Pas/Bus:    13.4
```

```
   Total in this direction:  2       Total Pas/Bus:    26.8
   Expected Increase in Cars:    8

   Direction: S-bound
     Bus Rte:     439       Time:  5:09     Pas/Bus:    13.4
     Bus Rte:     439       Time:  5:39     Pas/Bus:    13.4
   Total in this direction:  2       Total Pas/Bus:    26.8
   Expected Increase in Cars:    8

CMP Station:   53  Pacific Coast Hwy/Chautauqua   Los Ang City
   Direction: E-bound
     Bus Rte:     434       Time:  5:14     Pas/Bus:    15.1
     Bus Rte:     434       Time:  5:36     Pas/Bus:    15.1
     Bus Rte:     434       Time:  5:55     Pas/Bus:    15.1
   Total in this direction:  3       Total Pas/Bus:    45.3
   Expected Increase in Cars:   14

   Direction: W-bound
     Bus Rte:     434       Time:  5:00     Pas/Bus:    15.1
     Bus Rte:     434       Time:  5:24     Pas/Bus:    15.1
     Bus Rte:     434       Time:  5:32     Pas/Bus:    15.1
     Bus Rte:     434       Time:  5:35     Pas/Bus:    15.1
   Total in this direction:  4       Total Pas/Bus:    60.4
   Expected Increase in Cars:   19

CMP Station:   61  Sepulveda/Lincoln              Los Ang City
   Direction: N-bound
     Bus Rte:     439       Time:  5:20     Pas/Bus:    13.4
     Bus Rte:     439       Time:  5:55     Pas/Bus:    13.4
   Total in this direction:  2       Total Pas/Bus:    26.8
   Expected Increase in Cars:    8

   Direction: S-bound
     Bus Rte:     439       Time:  5:17     Pas/Bus:    13.4
     Bus Rte:     439       Time:  5:47     Pas/Bus:    13.4
   Total in this direction:  2       Total Pas/Bus:    26.8
   Expected Increase in Cars:    8

CMP Station:  w68  Venice/Centinela               Los Ang City
   Direction: E-bound
     Bus Rte:     436       Time:  5:10     Pas/Bus:    16.7
     Bus Rte:     436       Time:  5:24     Pas/Bus:    16.7
     Bus Rte:     436       Time:  5:44     Pas/Bus:    16.7
   Total in this direction:  3       Total Pas/Bus:    50.1
   Expected Increase in Cars:   16

CMP Station:  w69  Venice/La Cienega              Los Ang City
   Direction: E-bound
     Bus Rte:     436       Time:  5:06     Pas/Bus:    16.7
     Bus Rte:     436       Time:  5:26     Pas/Bus:    16.7
     Bus Rte:     436       Time:  5:46     Pas/Bus:    16.7
   Total in this direction:  3       Total Pas/Bus:    50.1
   Expected Increase in Cars:   16

CMP Station:  149  Pacific Coast/Palos Verdes     Torrance
   Direction: N-bound
     Bus Rte:     439       Time:  5:06     Pas/Bus:    13.4
     Bus Rte:     439       Time:  5:41     Pas/Bus:    13.4
   Total in this direction:  2       Total Pas/Bus:    26.8
   Expected Increase in Cars:    8
```

PACKAGE V

```
   Direction: S-bound
     Bus Rte:    439      Time:  5:06     Pas/Bus:    13.4
   Total in this direction:  1      Total Pas/Bus:    13.4
   Expected Increase in Cars:    4


CMP Station:  161  La Cienega/Jefferson          Los Ang City
   Direction: S-bound
     Bus Rte:    439      Time:  5:21     Pas/Bus:    13.4
   Total in this direction:  1      Total Pas/Bus:    13.4
   Expected Increase in Cars:    4


CMP Station: 1010  l10 Lincoln Boulevard R2.17
   Direction: E-bound
     Bus Rte:    434      Time:  5:20     Pas/Bus:    15.1
     Bus Rte:    434      Time:  5:42     Pas/Bus:    15.1
   Total in this direction:  2      Total Pas/Bus:    30.2
   Expected Increase in Cars:    9

   Direction: W-bound
     Bus Rte:    434      Time:  5:19     Pas/Bus:    15.1
   Total in this direction:  1      Total Pas/Bus:    15.1
   Expected Increase in Cars:    5


CMP Station: 1011  l10 Manning/Overland Ave 7.22
   Direction: E-bound
     Bus Rte:    434      Time:  5:14     Pas/Bus:    15.1
     Bus Rte:    434      Time:  5:35     Pas/Bus:    15.1
   Total in this direction:  2      Total Pas/Bus:    30.2
   Expected Increase in Cars:    9

   Direction: W-bound
     Bus Rte:    434      Time:  5:10     Pas/Bus:    15.1
     Bus Rte:    434      Time:  5:56     Pas/Bus:    15.1
   Total in this direction:  2      Total Pas/Bus:    30.2
   Expected Increase in Cars:    9


CMP Station: 1012  l10 La Brea Avenue 10.53
   Direction:w[illegible]-bound
     Bus Rte:    434      Time:  5:12     Pas/Bus:    15.1
     Bus Rte:    434      Time:  5:50     Pas/Bus:    15.1
     Bus Rte:    436      Time:  5:20     Pas/Bus:    16.7
     Bus Rte:    436      Time:  5:40     Pas/Bus:    16.7
     Bus Rte:    439      Time:  5:29     Pas/Bus:    13.4
   Total in this direction:  5      Total Pas/Bus:    77.0
   Expected Increase in Cars:   24

   Direction: W-bound
     Bus Rte:    439      Time:  5:07     Pas/Bus:    13.4
     Bus Rte:    439      Time:  5:39     Pas/Bus:    13.4
   Total in this direction:  2      Total Pas/Bus:    26.8
   Expected Increase in Cars:    8


CMP Station: 1013  l10 Budlong Avenue 13.53
   Direction:[illegible]-bound
     Bus Rte: w  434      Time:  5:22     Pas/Bus:    15.1
     Bus Rte:    436      Time:  5:15     Pas/Bus:    16.7
     Bus Rte:    436      Time:  5:35     Pas/Bus:    16.7
     Bus Rte:    439      Time:  5:06     Pas/Bus:    13.4
     Bus Rte:    439      Time:  5:41     Pas/Bus:    13.4
   Total in this direction:  5      Total Pas/Bus:    75.3
   Expected Increase in Cars:   23
```

```
   Direction: W-bound
     Bus Rte:    439      Time:  5:02     Pas/Bus:    13.4
     Bus Rte:    439      Time:  5:34     Pas/Bus:    13.4
   Total in this direction:  2      Total Pas/Bus:    26.8
   Expected Increase in Cars:    8
```

```
CMP Station:   34  Lakewood/Carson                  Long Beach
   Direction: N-bound
     Bus Rte:     266         Time:  5:09      Pas/Bus:    7.4
     Bus Rte:     266         Time:  5:09      Pas/Bus:   14.0
     Bus Rte:     266         Time:  5:38      Pas/Bus:    7.4
     Bus Rte:     266         Time:  5:38      Pas/Bus:   14.0
   Total in this direction:  4        Total Pas/Bus:   42.8
   Expected Increase in Cars:   13

   Direction: S-bound
     Bus Rte:     266         Time:  5:27      Pas/Bus:    7.4
     Bus Rte:     266         Time:  5:27      Pas/Bus:   14.0
     Bus Rte:     266         Time:  5:54      Pas/Bus:   14.0
     Bus Rte:     266         Time:  5:54      Pas/Bus:    7.4
   Total in this direction:  4        Total Pas/Bus:   42.8
   Expected Increase in Cars:   13


CMP Station:   35  Lakewood/Willow                  Long Beach
   Direction: E-bound
     Bus Rte:     457         Time:  5:08      Pas/Bus:    8.1
     Bus Rte:     457         Time:  5:45      Pas/Bus:    8.1
   Total in this direction:  2        Total Pas/Bus:   16.2
   Expected Increase in Cars:    5

   Direction: N-bound
     Bus Rte:     266         Time:  5:04      Pas/Bus:   14.0
     Bus Rte:     266         Time:  5:04      Pas/Bus:    7.4
     Bus Rte:     266         Time:  5:33      Pas/Bus:   14.0
     Bus Rte:     266         Time:  5:33      Pas/Bus:    7.4
   Total in this direction:  4        Total Pas/Bus:   42.8
   Expected Increase in Cars:   13

   Direction: S-bound
     Bus Rte:     266         Time:  5:03      Pas/Bus:    7.4
     Bus Rte:     266         Time:  5:03      Pas/Bus:   14.0
     Bus Rte:     266         Time:  5:32      Pas/Bus:   14.0
     Bus Rte:     266         Time:  5:32      Pas/Bus:    7.4
     Bus Rte:     266         Time:  5:59      Pas/Bus:   14.0
     Bus Rte:     266         Time:  5:59      Pas/Bus:    7.4
   Total in this direction:  6        Total Pas/Bus:   64.2
   Expected Increase in Cars:   20

CMP Station:   36  Pacific Coast Hwy/7th st         Long Beach
   Direction: N-bound
     Bus Rte:     266         Time:  5:25      Pas/Bus:   14.0
     Bus Rte:     266         Time:  5:25      Pas/Bus:    7.4
     Bus Rte:     266         Time:  5:55      Pas/Bus:    7.4
     Bus Rte:     266         Time:  5:55      Pas/Bus:   14.0
   Total in this direction:  4        Total Pas/Bus:   42.8
   Expected Increase in Cars:   13

   Direction: S-bound
     Bus Rte:     266         Time:  5:12      Pas/Bus:    7.4
     Bus Rte:     266         Time:  5:12      Pas/Bus:   14.0
     Bus Rte:     266         Time:  5:40      Pas/Bus:    7.4
     Bus Rte:     266         Time:  5:40      Pas/Bus:   14.0
   Total in this direction:  4        Total Pas/Bus:   42.8
   Expected Increase in Cars:   13

CMP Station:   40  Pacific Coast Hwy/Ximeno         Long Beach
   Direction: N-bound
     Bus Rte:     266         Time:  5:00      Pas/Bus:   14.0
```

```
     Bus Rte:     266         Time:  5:00      Pas/Bus:    7.4
     Bus Rte:     266         Time:  5:30      Pas/Bus:   14.0
     Bus Rte:     266         Time:  5:30      Pas/Bus:    7.4
     Bus Rte:     266         Time:  6:00      Pas/Bus:    7.4
     Bus Rte:     266         Time:  6:00      Pas/Bus:   14.0
   Total in this direction:  6        Total Pas/Bus:   64.2
   Expected Increase in Cars:   20

   Direction: S-bound
     Bus Rte:     266         Time:  5:07      Pas/Bus:    7.4
     Bus Rte:     266         Time:  5:07      Pas/Bus:   14.0
     Bus Rte:     457         Time:  5:17      Pas/Bus:    8.1
     Bus Rte:     266         Time:  5:35      Pas/Bus:    7.4
     Bus Rte:     266         Time:  5:35      Pas/Bus:   14.0
     Bus Rte:     457         Time:  5:54      Pas/Bus:    8.1
   Total in this direction:  6        Total Pas/Bus:   59.0
   Expected Increase in Cars:   18


CMP Station:   54  PCH/Figueroa                     Los Ang City
   Direction: S-bound
     Bus Rte:     445         Time:  5:23      Pas/Bus:   11.3
     Bus Rte:     445         Time:  5:52      Pas/Bus:   11.3
   Total in this direction:  2        Total Pas/Bus:   22.6
   Expected Increase in Cars:    7


CMP Station:  126  Pacific Coast/Torrance           Redondo Bch
   Direction: S-bound
     Bus Rte:     443         Time:  5:06      Pas/Bus:   10.2
     Bus Rte:     443         Time:  5:46      Pas/Bus:   10.2
   Total in this direction:  2        Total Pas/Bus:   20.4
   Expected Increase in Cars:    6


CMP Station: 1004  15 Stadium Way 21.80
   Direction: N-bound
     Bus Rte:     410         Time:  5:11      Pas/Bus:   17.2
     Bus Rte:     410         Time:  5:41      Pas/Bus:   17.2
   Total in this direction:  2        Total Pas/Bus:   34.4
   Expected Increase in Cars:   11


CMP Station: 1005  15 s/o Colorado St Ext 25.50
   Direction: N-bound
     Bus Rte:     410         Time:  5:20      Pas/Bus:   17.2
     Bus Rte:     410         Time:  5:50      Pas/Bus:   17.2
   Total in this direction:  2        Total Pas/Bus:   34.4
   Expected Increase in Cars:   11


CMP Station: 1012  l10 La Brea Avenue 10.53
   Direction: E-bound
     Bus Rte:     434         Time:  5:13      Pas/Bus:   15.1
   Total in this direction:  1        Total Pas/Bus:   15.1
   Expected Increase in Cars:    5

   Direction: W-bound
     Bus Rte:     434         Time:  5:40      Pas/Bus:   15.1
   Total in this direction:  1        Total Pas/Bus:   15.1
   Expected Increase in Cars:    5


CMP Station: 1013  l10 Budlong Avenue 13.53
   Direction: E-bound
     Bus Rte:     434         Time:  5:21      Pas/Bus:   15.1
```

PREFERRED PROGRAM

```
   Total in this direction:  1      Total Pas/Bus:    15.1
   Expected Increase in Cars:    5

   Direction: W-bound
     Bus Rte:    434      Time:  5:35     Pas/Bus:    15.1
   Total in this direction:  1      Total Pas/Bus:    15.1
   Expected Increase in Cars:    5


CMP Station: 1078  l710 n/o l105 19.10
   Direction: S-bound
     Bus Rte:    457      Time:  5:25     Pas/Bus:     8.1
     Bus Rte:    457      Time:  5:50     Pas/Bus:     8.1
   Total in this direction:  2      Total Pas/Bus:    16.2
   Expected Increase in Cars:    5
```

APPENDIX C
BUS AND AUTO VOLUME ADJUSTMENTS AT CMP STATIONS

APPENDIX D
TRAFFIC CALCULATIONS

INTERSECTION CAPACITY UTILIZATION

Intersection: Alameda St. (N/S) & Carson St. (E/W) 7 (Station)

Count Date: 3/4/93 Peak Hr: 4:00–5:00

Analyst: GRD Agency: City of Carson

Movement	Volume	Adjusted Volume [1]	No. of Lanes [3]	Capacity [2]	V/C Ratio	Critical V/C	Total
NB Left	52	52	1	1600	0.033		
NB Thru	510	510	2	3200	0.182	<==	
NB Right	71	71	0	0	---		
SB Left	90	90	1	1600	0.056	<==	
SB Thru	513	513	2	3200	0.178		
SB Right	58	58	0	0	---		
EB Left	94	94	1	1600	0.059		
EB Thru	218	218	1	1600	0.136	<==	
EB Right	67	67	1	1600	0.042		
WB Left	56	56	1	1600	0.035	<==	
WB Thru	122	122	2	3200	0.050		
WB Right	39	39	0	0	---		
Sum of Critical V/C Ratios							0.409
Adjustment for Lost Time							0.100
Intersection Capacity Utilization (ICU)							0.509
Level of Service (LOS) – Refer to table below							A

NOTES

1. Counted volume adjusted for left turn PCE or free flow right turn (if applicable).
2. Per–lane Capacity= 1600 vph
   dual turn lane cap.= 2880 vph
3. Non–integer values indicate proportion of shared lane used by movement.

LOS	Maximum V/C
A	0.60
B	0.70
C	0.80
D	0.90
E	1.00
F	n/a

06/03/94

INTERSECTION CAPACITY UTILIZATION

Intersection: Alameda St. (N/S) & Carson St. (E/W) 7 (Station)
Count Date: WITH PROJECT – Package I Peak Hr: 4:00–5:00
Analyst: GRD Agency: City of Carson

Movement	Volume	Adjusted Volume [1]	No. of Lanes [3]	Capacity [2]	V/C Ratio	Critical V/C	Total
NB Left	52	52	1	1600	0.033		
NB Thru	510	511	2	3200	0.182	<==	
NB Right	71	71	0	0	---		
SB Left	90	90	1	1600	0.056	<==	
SB Thru	513	514	2	3200	0.179		
SB Right	58	58	0	0	---		
EB Left	94	94	1	1600	0.059		
EB Thru	218	218	1	1600	0.136	<==	
EB Right	67	67	1	1600	0.042		
WB Left	56	56	1	1600	0.035	<==	
WB Thru	122	122	2	3200	0.050		
WB Right	39	39	0	0	---		
Sum of Critical V/C Ratios							0.409
Adjustment for Lost Time							0.100
Intersection Capacity Utilization (ICU)							0.509
Level of Service (LOS) – Refer to table below							A

NOTES

1. Counted volume adjusted for left turn PCE or free flow right turn (if applicable).
2. Per–lane Capacity= 1600 vph
   dual turn lane cap.= 2880 vph
3. Non–integer values indicate proportion of shared lane used by movement.

LOS	Maximum V/C
A	0.60
B	0.70
C	0.80
D	0.90
E	1.00
F	n/a

06/03/94

INTERSECTION CAPACITY UTILIZATION

Intersection: Alameda St. (N/S) & Carson St. (E/W) 7 (Station)

Count Date: **WITH Project – Package L** Peak Hr: 4:00–5:00

Analyst: GRD Agency: City of Carson

Movement	Volume	Adjusted Volume [1]	No. of Lanes [3]	Capacity [2]	V/C Ratio	Critical V/C	Total
NB Left	52	52	1	1600	0.033		
NB Thru	510	511	2	3200	0.182	<==	
NB Right	71	71	0	0	---		
SB Left	90	90	1	1600	0.056	<==	
SB Thru	513	514	2	3200	0.179		
SB Right	58	58	0	0	---		
EB Left	94	94	1	1600	0.059		
EB Thru	218	218	1	1600	0.136	<==	
EB Right	67	67	1	1600	0.042		
WB Left	56	56	1	1600	0.035	<==	
WB Thru	122	122	2	3200	0.050		
WB Right	39	39	0	0	---		
Sum of Critical V/C Ratios							0.409
Adjustment for Lost Time							0.100
Intersection Capacity Utilization (ICU)							0.509
Level of Service (LOS) – Refer to table below							A

NOTES

1. Counted volume adjusted for left turn PCE or free flow right turn (if applicable).
2. Per–lane Capacity= 1600 vph
   dual turn lane cap.= 2880 vph
3. Non–integer values indicate proportion of shared lane used by movement.

LOS	Maximum V/C
A	0.60
B	0.70
C	0.80
D	0.90
E	1.00
F	n/a

06/03/94

INTERSECTION CAPACITY UTILIZATION

Intersection: Alameda St. (N/S) & Compton Blvd. (E/W) 12 (Station)

Count Date: 6/9/93 Peak Hr: 4:00–5:00

Analyst: GRD Agency: City of Compton

Movement	Volume	Adjusted Volume [1]	No. of Lanes [3]	Capacity [2]	V/C Ratio	Critical V/C	Total
NB Left	68	68	1	1600	0.043	<==	
NB Thru	562	562	2	3200	0.193		
NB Right	55	55	0	0	---		
SB Left	75	75	1	1600	0.047		
SB Thru	601	601	2	3200	0.208	<==	
SB Right	63	63	0	0	---		
EB Left	71	71	1	1600	0.044		
EB Thru	924	924	2	3200	0.312	<==	
EB Right	75	75	0	0	---		
WB Left	35	35	1	1600	0.022	<==	
WB Thru	735	735	2	3200	0.250		
WB Right	65	65	0	0	---		

Sum of Critical V/C Ratios	0.585
Adjustment for Lost Time	0.100
Intersection Capacity Utilization (ICU)	0.685
Level of Service (LOS) – Refer to table below	B

NOTES

1. Counted volume adjusted for left turn PCE or free flow right turn (if applicable).
2. Per–lane Capacity= 1600 vph
   dual turn lane cap.= 2880 vph
3. Non–integer values indicate proportion of shared lane used by movement.

LOS	Maximum V/C
A	0.60
B	0.70
C	0.80
D	0.90
E	1.00
F	n/a

06/03/94

INTERSECTION CAPACITY UTILIZATION

Intersection: Alameda St. (N/S) & Compton Blvd. (E/W) 12 (Station)

Count Date: **WITH PROJECT – Package I** Peak Hr: 4:00–5:00

Analyst: GRD Agency: City of Compton

Movement	Volume	Adjusted Volume [1]	No. of Lanes [3]	Capacity [2]	V/C Ratio	Critical V/C	Total
NB Left	68	68	1	1600	0.043	<==	
NB Thru	562	562	2	3200	0.193		
NB Right	55	55	0	0	---		
SB Left	75	75	1	1600	0.047		
SB Thru	601	601	2	3200	0.208	<==	
SB Right	63	63	0	0	---		
EB Left	71	71	1	1600	0.044		
EB Thru	924	926	2	3200	0.313	<==	
EB Right	75	75	0	0	---		
WB Left	35	35	1	1600	0.022	<==	
WB Thru	735	739	2	3200	0.251		
WB Right	65	65	0	0	---		
Sum of Critical V/C Ratios							0.586
Adjustment for Lost Time							0.100
Intersection Capacity Utilization (ICU)							0.686
Level of Service (LOS) – Refer to table below							B

NOTES

1. Counted volume adjusted for left turn PCE or free flow right turn (if applicable).
2. Per-lane Capacity= 1600 vph
   dual turn lane cap.= 2880 vph
3. Non-integer values indicate proportion of shared lane used by movement.

LOS	Maximum V/C
A	0.60
B	0.70
C	0.80
D	0.90
E	1.00
F	n/a

06/03/94

INTERSECTION CAPACITY UTILIZATION

Intersection: Alameda St. (N/S) & Compton Blvd. (E/W) 12 (Station)

Count Date: **WITH PROJECT – Package L** Peak Hr: 4:00–5:00

Analyst: GRD Agency: City of Compton

Movement	Volume	Adjusted Volume [1]	No. of Lanes [3]	Capacity [2]	V/C Ratio	Critical V/C	Total
NB Left	68	68	1	1600	0.043	<==	▨
NB Thru	562	562	2	3200	0.193		▨
NB Right	55	55	0	0	---		▨
SB Left	75	75	1	1600	0.047		▨
SB Thru	601	601	2	3200	0.208	<==	▨
SB Right	63	63	0	0	---		▨
EB Left	71	71	1	1600	0.044		▨
EB Thru	924	925	2	3200	0.313	<==	▨
EB Right	75	75	0	0	---		▨
WB Left	35	35	1	1600	0.022	<==	▨
WB Thru	735	736	2	3200	0.250		▨
WB Right	65	65	0	0	---		▨

Sum of Critical V/C Ratios	0.586
Adjustment for Lost Time	0.100
Intersection Capacity Utilization (ICU)	0.686
Level of Service (LOS) – Refer to table below	B

NOTES

1. Counted volume adjusted for left turn PCE or free flow right turn (if applicable).
2. Per–lane Capacity= 1600 vph
   dual turn lane cap.= 2880 vph
3. Non–integer values indicate proportion of shared lane used by movement.

LOS	Maximum V/C
A	0.60
B	0.70
C	0.80
D	0.90
E	1.00
F	n/a

06/03/94

INTERSECTION CAPACITY UTILIZATION

Intersection: Alameda St. (N/S) & SR91 EB Ramps (E/W) 13 (Station)
Count Date: 6/9/93 Peak Hr: 4:00–5:00
Analyst: GRD Agency: City of Compton

Movement	Volume	Adjusted Volume [1]	No. of Lanes [3]	Capacity [2]	V/C Ratio	Critical V/C	Total
NB Left	341	341	1	1600	0.213	<==	
NB Thru	346	346	2	3200	0.108		
NB Right	0	0	0	0	---		
SB Left	0	0	0	0	---		
SB Thru	346	346	2	3200	0.108	<==	
SB Right	436	436	Free	0	---		
EB Left	50	50	1	1600	0.031	<==	
EB Thru	0	0	0	0	0.000		
EB Right	23	23	1	1600	0.014		
WB Left	0	0	0	0	---		
WB Thru	0	0	0	0	0.000		
WB Right	0	0	0	0	---		
Sum of Critical V/C Ratios							0.352
Adjustment for Lost Time							0.100
Intersection Capacity Utilization (ICU)							0.452
Level of Service (LOS) – Refer to table below							A

NOTES

1. Counted volume adjusted for left turn PCE or free flow right turn (if applicable).
2. Per–lane Capacity= 1600 vph
   dual turn lane cap.= 2880 vph
3. Non–integer values indicate proportion of shared lane used by movement.

LOS	Maximum V/C
A	0.60
B	0.70
C	0.80
D	0.90
E	1.00
F	n/a

INTERSECTION CAPACITY UTILIZATION

Intersection: Alameda St. (N/S) & SR91 EB Ramps (E/W) 13 (Station)

Count Date: WITH PROJECT – Package L Peak Hr: 4:00–5:00

Analyst: GRD Agency: City of Compton

Movement	Volume	Adjusted Volume [1]	No. of Lanes [3]	Capacity [2]	V/C Ratio	Critical V/C	Total
NB Left	341	341	1	1600	0.213	<==	
NB Thru	346	347	2	3200	0.108		
NB Right	0	0	0	0	---		
SB Left	0	0	0	0	---		
SB Thru	346	347	2	3200	0.108	<==	
SB Right	436	436	Free	0	---		
EB Left	50	50	1	1600	0.031	<==	
EB Thru	0	0	0	0	0.000		
EB Right	23	23	1	1600	0.014		
WB Left	0	0	0	0	---		
WB Thru	0	0	0	0	0.000		
WB Right	0	0	0	0	---		
Sum of Critical V/C Ratios							0.352
Adjustment for Lost Time							0.100
Intersection Capacity Utilization (ICU)							0.452
Level of Service (LOS) – Refer to table below							A

NOTES

1. Counted volume adjusted for left turn PCE or free flow right turn (if applicable).
2. Per–lane Capacity= 1600 vph
   dual turn lane cap.= 2880 vph
3. Non–integer values indicate proportion of shared lane used by movement.

LOS	Maximum V/C
A	0.60
B	0.70
C	0.80
D	0.90
E	1.00
F	n/a

06/03/94

INTERSECTION CAPACITY UTILIZATION

Intersection: Venice Blvd. (N/S) & Overland Blvd. (E/W) 15 (Station)

Count Date: 5-26-93 Peak Hr: PM 5:00-6:00

Analyst: KW Agency: Culver City

Movement	Volume	Adjusted Volume [1]	No. of Lanes [3]	Capacity [2]	V/C Ratio	Critical V/C	Total
NB Left	125	125	1	1600	0.078		
NB Thru	527	527	1	1600	0.402	<==	
NB Right	116	116	0	0	---		
SB Left	128	128	1	1600	0.080	<==	
SB Thru	483	483	1	1600	0.366		
SB Right	102	102	0	0	---		
EB Left	118	118	1	1600	0.074		
EB Thru	1704	1704	3	4800	0.355	<==	
EB Right	143	143	1	1600	0.089		
WB Left	158	158	1	1600	0.099	<==	
WB Thru	1756	1756	3	4800	0.366		
WB Right	132	132	1	1600	0.083		

Sum of Critical V/C Ratios	0.936
Adjustment for Lost Time	0.100
Intersection Capacity Utilization (ICU)	1.036
Level of Service (LOS) - Refer to table below	F

NOTES

1. Counted volume adjusted for left turn PCE or free flow right turn (if applicable).
2. Per-lane Capacity= 1600 vph
   dual turn lane cap.= 2880 vph
3. Non-integer values indicate proportion of shared lane used by movement.

LOS	Maximum V/C
A	0.60
B	0.70
C	0.80
D	0.90
E	1.00
F	n/a

06/03/94

INTERSECTION CAPACITY UTILIZATION

Intersection: Venice Blvd. (N/S) & Overland Blvd. (E/W) 15 (Station)

Count Date: WITH PROJECT – Package K Peak Hr: PM 5:00–6:00

Analyst: GRD Agency: Culver City

Movement	Volume	Adjusted Volume [1]	No. of Lanes [3]	Capacity [2]	V/C Ratio	Critical V/C	Total
NB Left	125	125	1	1600	0.078		
NB Thru	527	527	1	1600	0.402	<==	
NB Right	116	116	0	0	---		
SB Left	128	128	1	1600	0.080	<==	
SB Thru	483	483	1	1600	0.366		
SB Right	102	102	0	0	---		
EB Left	118	118	1	1600	0.074		
EB Thru	1704	1704	3	4800	0.355	<==	
EB Right	143	143	1	1600	0.089		
WB Left	158	158	1	1600	0.099	<==	
WB Thru	1756	1773	3	4800	0.369		
WB Right	132	132	1	1600	0.083		

Sum of Critical V/C Ratios	0.936
Adjustment for Lost Time	0.100
Intersection Capacity Utilization (ICU)	1.036
Level of Service (LOS) – Refer to table below	F

NOTES

1. Counted volume adjusted for left turn PCE or free flow right turn (if applicable).
2. Per–lane Capacity= 1600 vph
   dual turn lane cap.= 2880 vph
3. Non–integer values indicate proportion of shared lane used by movement.

LOS	Maximum V/C
A	0.60
B	0.70
C	0.80
D	0.90
E	1.00
F	n/a

06/03/94

INTERSECTION CAPACITY UTILIZATION

Intersection: Venice Blvd. (N/S) & Overland Blvd. (E/W) 15 (Station)

Count Date: **WITH PROJECT – Package L** Peak Hr: PM 5:00–6:00

Analyst: GRD Agency: Culver City

Movement	Volume	Adjusted Volume [1]	No. of Lanes [3]	Capacity [2]	V/C Ratio	Critical V/C	Total
NB Left	125	125	1	1600	0.078		
NB Thru	527	527	1	1600	0.402	<==	
NB Right	116	116	0	0	---		
SB Left	128	128	1	1600	0.080	<==	
SB Thru	483	483	1	1600	0.366		
SB Right	102	102	0	0	---		
EB Left	118	118	1	1600	0.074		
EB Thru	1704	1713	3	4800	0.357	<==	
EB Right	143	143	1	1600	0.089		
WB Left	158	158	1	1600	0.099	<==	
WB Thru	1756	1765	3	4800	0.368		
WB Right	132	132	1	1600	0.083		
Sum of Critical V/C Ratios							0.938
Adjustment for Lost Time							0.100
Intersection Capacity Utilization (ICU)							1.038
Level of Service (LOS) – Refer to table below							F

NOTES

1. Counted volume adjusted for left turn PCE or free flow right turn (if applicable).
2. Per–lane Capacity= 1600 vph
   dual turn lane cap.= 2880 vph
3. Non–integer values indicate proportion of shared lane used by movement.

LOS	Maximum V/C
A	0.60
B	0.70
C	0.80
D	0.90
E	1.00
F	n/a

06/03/94

INTERSECTION CAPACITY UTILIZATION

Intersection: Venice Blvd. (N/S) & Overland Blvd. (E/W) 15 (Station)

Count Date: WITH PROJECT – Package V Peak Hr: PM 5:00–6:00

Analyst: GRD Agency: Culver City

Movement	Volume	Adjusted Volume [1]	No. of Lanes [3]	Capacity [2]	V/C Ratio	Critical V/C	Total
NB Left	125	125	1	1600	0.078		
NB Thru	527	527	1	1600	0.402	<==	
NB Right	116	116	0	0	---		
SB Left	128	128	1	1600	0.080	<==	
SB Thru	483	483	1	1600	0.366		
SB Right	102	102	0	0	---		
EB Left	118	118	1	1600	0.074		
EB Thru	1704	1721	3	4800	0.359	<==	
EB Right	143	143	1	1600	0.089		
WB Left	158	158	1	1600	0.099	<==	
WB Thru	1756	1756	3	4800	0.366		
WB Right	132	132	1	1600	0.083		
Sum of Critical V/C Ratios							0.940
Adjustment for Lost Time							0.100
Intersection Capacity Utilization (ICU)							1.040
Level of Service (LOS) – Refer to table below							F

NOTES

1. Counted volume adjusted for left turn PCE or free flow right turn (if applicable).
2. Per–lane Capacity= 1600 vph
   dual turn lane cap.= 2880 vph
3. Non–integer values indicate proportion of shared lane used by movement.

LOS	Maximum V/C
A	0.60
B	0.70
C	0.80
D	0.90
E	1.00
F	n/a

06/03/94

INTERSECTION CAPACITY UTILIZATION

Intersection: Lakewood Blvd. (N/S) & Firestone Blvd. (E/W) 18 (Station)

Count Date: 6/8/93 Peak Hr: PM

Analyst: BKL Agency: City of Downey

Movement	Volume	Adjusted Volume [1]	No. of Lanes [3]	Capacity [2]	V/C Ratio	Critical V/C	Total
NB Left	300	300	1	1600	0.188	<==	
NB Thru	727	727	2	3200	0.227		
NB Right	184	184	1	1600	0.115		
SB Left	324	324	1	1600	0.203		
SB Thru	1019	1019	3	4800	0.274	<==	
SB Right	295	295	0	0	---		
EB Left	240	240	1	1600	0.150		
EB Thru	855	855	3	4800	0.208	<==	
EB Right	141	141	0	0	---		
WB Left	390	390	1	1600	0.244	<==	
WB Thru	991	991	3	4800	0.206		
WB Right	272	272	1	1600	0.170		
Sum of Critical V/C Ratios							0.914
Adjustment for Lost Time							0.100
Intersection Capacity Utilization (ICU)							1.014
Level of Service (LOS) – Refer to table below							F

NOTES

1. Counted volume adjusted for left turn PCE or free flow right turn (if applicable).
2. Per-lane Capacity= 1600 vph
   dual turn lane cap.= 2880 vph
3. Non-integer values indicate proportion of shared lane used by movement.

LOS	Maximum V/C
A	0.60
B	0.70
C	0.80
D	0.90
E	1.00
F	n/a

06/03/94

INTERSECTION CAPACITY UTILIZATION

Intersection: Lakewood Blvd. (N/S) & Firestone Blvd. (E/W) 18 (Station)
Count Date: WITH PROJECT – Package I Peak Hr: PM
Analyst: GRD Agency: City of Downey

Movement	Volume	Adjusted Volume [1]	No. of Lanes [3]	Capacity [2]	V/C Ratio	Critical V/C	Total
NB Left	300	300	1	1600	0.188	<==	
NB Thru	727	727	2	3200	0.227		
NB Right	184	184	1	1600	0.115		
SB Left	324	324	1	1600	0.203		
SB Thru	1019	1019	3	4800	0.274	<==	
SB Right	295	295	0	0	---		
EB Left	240	240	1	1600	0.150		
EB Thru	855	856	3	4800	0.208	<==	
EB Right	141	141	0	0	---		
WB Left	390	390	1	1600	0.244	<==	
WB Thru	991	992	3	4800	0.207		
WB Right	272	272	1	1600	0.170		

Sum of Critical V/C Ratios	0.914
Adjustment for Lost Time	0.100
Intersection Capacity Utilization (ICU)	1.014
Level of Service (LOS) – Refer to table below	F

NOTES

1. Counted volume adjusted for left turn PCE or free flow right turn (if applicable).
2. Per–lane Capacity= 1600 vph
   dual turn lane cap.= 2880 vph
3. Non–integer values indicate proportion of shared lane used by movement.

LOS	Maximum V/C
A	0.60
B	0.70
C	0.80
D	0.90
E	1.00
F	n/a

06/03/94

INTERSECTION CAPACITY UTILIZATION

Intersection: Vermont Ave. (N/S) & Artesia Blvd. (E/W) 21 (Station)

Count Date: 6/10/93 Peak Hr: PM

Analyst: BKL Agency: City of Gardena

Movement	Volume	Adjusted Volume [1]	No. of Lanes [3]	Capacity [2]	V/C Ratio	Critical V/C	Total
NB Left	134	134	1	1600	0.084		
NB Thru	624	624	2	3200	0.195	<==	
NB Right	458	458	1	1600	0.286		
SB Left	326	326	1	1600	0.204	<==	
SB Thru	628	628	2	3200	0.196		
SB Right	114	114	1	1600	0.071		
EB Left	119	119	1	1600	0.074		
EB Thru	2489	2489	4	6400	0.389	<==	
EB Right	208	208	1	1600	0.130		
WB Left	397	397	2	2880	0.138	<==	
WB Thru	2260	2260	4	6400	0.404		
WB Right	325	325	0	0	---		

Sum of Critical V/C Ratios	0.926
Adjustment for Lost Time	0.100
Intersection Capacity Utilization (ICU)	1.026
Level of Service (LOS) – Refer to table below	F

NOTES

1. Counted volume adjusted for left turn PCE or free flow right turn (if applicable).
2. Per–lane Capacity= 1600 vph
   dual turn lane cap.= 2880 vph
3. Non–integer values indicate proportion of shared lane used by movement.

LOS	Maximum V/C
A	0.60
B	0.70
C	0.80
D	0.90
E	1.00
F	n/a

06/03/94

INTERSECTION CAPACITY UTILIZATION

Intersection: Vermont Ave. (N/S) & Artesia Blvd. (E/W) 21 (Station)
Count Date: WITH PROJECT – Package L Peak Hr: PM
Analyst: GRD Agency: City of Gardena

Movement	Volume	Adjusted Volume [1]	No. of Lanes [3]	Capacity [2]	V/C Ratio	Critical V/C	Total
NB Left	134	134	1	1600	0.084		
NB Thru	624	624	2	3200	0.195	<==	
NB Right	458	458	1	1600	0.286		
SB Left	326	326	1	1600	0.204	<==	
SB Thru	628	628	2	3200	0.196		
SB Right	114	114	1	1600	0.071		
EB Left	119	119	1	1600	0.074		
EB Thru	2489	2496	4	6400	0.390	<==	
EB Right	208	208	1	1600	0.130		
WB Left	397	397	2	2880	0.138	<==	
WB Thru	2260	2267	4	6400	0.405		
WB Right	325	325	0	0	---		
Sum of Critical V/C Ratios							0.927
Adjustment for Lost Time							0.100
Intersection Capacity Utilization (ICU)							1.027
Level of Service (LOS) – Refer to table below							F

NOTES

1. Counted volume adjusted for left turn PCE or free flow right turn (if applicable).
2. Per–lane Capacity= 1600 vph
   dual turn lane cap.= 2880 vph
3. Non–integer values indicate proportion of shared lane used by movement.

LOS	Maximum V/C
A	0.60
B	0.70
C	0.80
D	0.90
E	1.00
F	n/a

06/03/94

INTERSECTION CAPACITY UTILIZATION

Intersection: Sepulveda Blvd. (N/S) & Artesia Blvd(Gould Ave) (E/W) 22 (Station)

Count Date: 6/9/93 Peak Hr: 4:00-5:00PM

Analyst: BKL Agency: City of Hermosa Beach

Movement	Volume	Adjusted Volume [1]	No. of Lanes [3]	Capacity [2]	V/C Ratio	Critical V/C	Total
NB Left	83	83	1	1600	0.052	<==	
NB Thru	1051	1051	3	4800	0.260		
NB Right	199	199	0	0	---		
SB Left	386	386	1	1600	0.241		
SB Thru	2900	2900	3	4800	0.627	<==	
SB Right	110	110	0	0	---		
EB Left	75	75	1	1600	0.047		
EB Thru	360	360	2	3200	0.113	<==	
EB Right	81	81	1	1600	0.051		
WB Left	368	368	1	1600	0.230	<==	
WB Thru	646	646	2	3200	0.202		
WB Right	308	308	1	1600	0.193		
Sum of Critical V/C Ratios							1.022
Adjustment for Lost Time							0.100
Intersection Capacity Utilization (ICU)							1.122
Level of Service (LOS) - Refer to table below							F

NOTES

1. Counted volume adjusted for left turn PCE or free flow right turn (if applicable).
2. Per-lane Capacity= 1600 vph
   dual turn lane cap.= 2880 vph
3. Non-integer values indicate proportion of shared lane used by movement.

LOS	Maximum V/C
A	0.60
B	0.70
C	0.80
D	0.90
E	1.00
F	n/a

06/03/94

INTERSECTION CAPACITY UTILIZATION

Intersection: Sepulveda Blvd. (N/S) & Artesia Blvd(Gould Ave) (E/W) 22 (Station)

Count Date: **WITH PROJECT – Package L** Peak Hr: 4:00–5:00PM

Analyst: GRD Agency: City of Hermosa Beach

Movement	Volume	Adjusted Volume [1]	No. of Lanes [3]	Capacity [2]	V/C Ratio	Critical V/C	Total
NB Left	83	83	1	1600	0.052	<==	
NB Thru	1051	1051	3	4800	0.260		
NB Right	199	199	0	0	---		
SB Left	386	386	1	1600	0.241		
SB Thru	2900	2900	3	4800	0.627	<==	
SB Right	110	110	0	0	---		
EB Left	75	75	1	1600	0.047		
EB Thru	360	367	2	3200	0.115	<==	
EB Right	81	81	1	1600	0.051		
WB Left	368	368	1	1600	0.230	<==	
WB Thru	646	653	2	3200	0.204		
WB Right	308	308	1	1600	0.193		

Sum of Critical V/C Ratios	1.024
Adjustment for Lost Time	0.100
Intersection Capacity Utilization (ICU)	1.124
Level of Service (LOS) – Refer to table below	F

NOTES

1. Counted volume adjusted for left turn PCE or free flow right turn (if applicable).
2. Per–lane Capacity= 1600 vph
   dual turn lane cap.= 2880 vph
3. Non–integer values indicate proportion of shared lane used by movement.

LOS	Maximum V/C
A	0.60
B	0.70
C	0.80
D	0.90
E	1.00
F	n/a

06/03/94

INTERSECTION CAPACITY UTILIZATION

Intersection: Crenshaw Blvd. (N/S) & Manchester Blvd. (E/W) 24 (Station)
Count Date: 05/26/93 Peak Hr: 5:00–6:00 PM
Analyst: AK Agency: Inglewood

Movement	Volume	Adjusted Volume [1]	No. of Lanes [3]	Capacity [2]	V/C Ratio	Critical V/C	Total
NB Left	121	121	1	1600	0.076	<==	
NB Thru	996	996	3	4800	0.230		
NB Right	107	107	0	0	---		
SB Left	123	123	1	1600	0.077		
SB Thru	1490	1490	2	3200	0.466	<==	
SB Right	59	59	1	1600	0.037		
EB Left	127	127	1	1600	0.079		
EB Thru	1042	1042	2	3200	0.326	<==	
EB Right	74	74	1	1600	0.046		
WB Left	194	194	1	1600	0.121	<==	
WB Thru	962	962	2	3200	0.301		
WB Right	146	146	1	1600	0.091		
Sum of Critical V/C Ratios							0.989
Adjustment for Lost Time							0.100
Intersection Capacity Utilization (ICU)							1.089
Level of Service (LOS) – Refer to table below							F

NOTES

1. Counted volume adjusted for left turn PCE or free flow right turn (if applicable).
2. Per–lane Capacity= 1600 vph
   dual turn lane cap.= 2880 vph
3. Non–integer values indicate proportion of shared lane used by movement.

LOS	Maximum V/C
A	0.60
B	0.70
C	0.80
D	0.90
E	1.00
F	n/a

06/03/94

INTERSECTION CAPACITY UTILIZATION

Intersection: Crenshaw Blvd. (N/S) & Manchester Blvd. (E/W) 24 (Station)

Count Date: WITH PROJECT – Package K Peak Hr: 5:00–6:00 PM

Analyst: GRD Agency: Inglewood

Movement	Volume	Adjusted Volume [1]	No. of Lanes [3]	Capacity [2]	V/C Ratio	Critical V/C	Total
NB Left	121	121	1	1600	0.076	<==	
NB Thru	996	996	3	4800	0.230		
NB Right	107	107	0	0	---		
SB Left	123	123	1	1600	0.077		
SB Thru	1490	1507	2	3200	0.471	<==	
SB Right	59	59	1	1600	0.037		
EB Left	127	127	1	1600	0.079		
EB Thru	1042	1042	2	3200	0.326	<==	
EB Right	74	74	1	1600	0.046		
WB Left	194	194	1	1600	0.121	<==	
WB Thru	962	962	2	3200	0.301		
WB Right	146	146	1	1600	0.091		

Sum of Critical V/C Ratios	0.994
Adjustment for Lost Time	0.100
Intersection Capacity Utilization (ICU)	1.094
Level of Service (LOS) – Refer to table below	F

NOTES

1. Counted volume adjusted for left turn PCE or free flow right turn (if applicable).
2. Per–lane Capacity= 1600 vph
   dual turn lane cap.= 2880 vph
3. Non–integer values indicate proportion of shared lane used by movement.

LOS	Maximum V/C
A	0.60
B	0.70
C	0.80
D	0.90
E	1.00
F	n/a

06/03/94

INTERSECTION CAPACITY UTILIZATION

Intersection: Lakewood Blvd. (N/S) & Carson St. (E/W) 34 (Station)

Count Date: 4-01-93 Peak Hr: PM

Analyst: SC Agency: Long Beach

Movement	Volume	Adjusted Volume [1]	No. of Lanes [3]	Capacity [2]	V/C Ratio	Critical V/C	Total
NB Left	225	225	1	1600	0.141	<==	
NB Thru	1103	1103	3	4800	0.230		
NB Right	232	232	1	1600	0.145		
SB Left	111	111	1	1600	0.069		
SB Thru	768	768	3	4800	0.176	<==	
SB Right	76	76	0	0	---		
EB Left	142	142	1	1600	0.089		
EB Thru	1431	1431	3	4800	0.364	<==	
EB Right	315	315	0	0	---		
WB Left	133	133	2	2880	0.046	<==	
WB Thru	683	683	3	4800	0.155		
WB Right	59	59	0	0	---		
Sum of Critical V/C Ratios							0.727
Adjustment for Lost Time							0.100
Intersection Capacity Utilization (ICU)							0.827
Level of Service (LOS) – Refer to table below							D

NOTES

1. Counted volume adjusted for left turn PCE or free flow right turn (if applicable).
2. Per–lane Capacity= 1600 vph
   dual turn lane cap.= 2880 vph
3. Non–integer values indicate proportion of shared lane used by movement.

LOS	Maximum V/C
A	0.60
B	0.70
C	0.80
D	0.90
E	1.00
F	n/a

06/03/94

INTERSECTION CAPACITY UTILIZATION

Intersection: Lakewood Blvd. (N/S) & Carson St. (E/W) 34 (Station)

Count Date: **WITH PROJECT – Package I** Peak Hr: PM

Analyst: GRD Agency: Long Beach

Movement	Volume	Adjusted Volume [1]	No. of Lanes [3]	Capacity [2]	V/C Ratio	Critical V/C	Total
NB Left	225	225	1	1600	0.141	<==	
NB Thru	1103	1112	3	4800	0.232		
NB Right	232	232	1	1600	0.145		
SB Left	111	111	1	1600	0.069		
SB Thru	768	773	3	4800	0.177	<==	
SB Right	76	76	0	0	---		
EB Left	142	142	1	1600	0.089		
EB Thru	1431	1431	3	4800	0.364	<==	
EB Right	315	315	0	0	---		
WB Left	133	133	2	2880	0.046	<==	
WB Thru	683	683	3	4800	0.155		
WB Right	59	59	0	0	---		
Sum of Critical V/C Ratios							0.728
Adjustment for Lost Time							0.100
Intersection Capacity Utilization (ICU)							0.828
Level of Service (LOS) – Refer to table below							D

NOTES

1. Counted volume adjusted for left turn PCE or free flow right turn (if applicable).
2. Per–lane Capacity= 1600 vph
   dual turn lane cap.= 2880 vph
3. Non–integer values indicate proportion of shared lane used by movement.

LOS	Maximum V/C
A	0.60
B	0.70
C	0.80
D	0.90
E	1.00
F	n/a

06/03/94

INTERSECTION CAPACITY UTILIZATION

Intersection: Lakewood Blvd. (N/S) & Carson St. (E/W) 34 (Station)
Count Date: WITH PROJECT – Package V
Peak Hr: PM
Analyst: GRD
Agency: Long Beach

Movement	Volume	Adjusted Volume [1]	No. of Lanes [3]	Capacity [2]	V/C Ratio	Critical V/C	Total
NB Left	225	225	1	1600	0.141	<==	
NB Thru	1103	1112	3	4800	0.232		
NB Right	232	232	1	1600	0.145		
SB Left	111	111	1	1600	0.069		
SB Thru	768	768	3	4800	0.176	<==	
SB Right	76	76	0	0	---		
EB Left	142	142	1	1600	0.089		
EB Thru	1431	1431	3	4800	0.364	<==	
EB Right	315	315	0	0	---		
WB Left	133	133	2	2880	0.046	<==	
WB Thru	683	683	3	4800	0.155		
WB Right	59	59	0	0	---		

Sum of Critical V/C Ratios	0.727
Adjustment for Lost Time	0.100
Intersection Capacity Utilization (ICU)	0.827
Level of Service (LOS) – Refer to table below	D

NOTES

1. Counted volume adjusted for left turn PCE or free flow right turn (if applicable).
2. Per–lane Capacity= 1600 vph
   dual turn lane cap.= 2880 vph
3. Non–integer values indicate proportion of shared lane used by movement.

LOS	Maximum V/C
A	0.60
B	0.70
C	0.80
D	0.90
E	1.00
F	n/a

06/03/94

INTERSECTION CAPACITY UTILIZATION

Intersection: Lakewood Blvd. (N/S) & Carson St. (E/W) 34 (Station)

Count Date: WITH PROJECT – P~~ackage W~~ Preferred

Peak Hr: PM

Analyst: GRD

Agency: Long Beach

Movement	Volume	Adjusted Volume [1]	No. of Lanes [3]	Capacity [2]	V/C Ratio	Critical V/C	Total
NB Left	225	225	1	1600	0.141	<==	
NB Thru	1103	1112	3	4800	0.232		
NB Right	232	232	1	1600	0.145		
SB Left	111	111	1	1600	0.069		
SB Thru	768	777	3	4800	0.178	<==	
SB Right	76	76	0	0	---		
EB Left	142	142	1	1600	0.089		
EB Thru	1431	1431	3	4800	0.364	<==	
EB Right	315	315	0	0	---		
WB Left	133	133	2	2880	0.046	<==	
WB Thru	683	683	3	4800	0.155		
WB Right	59	59	0	0	---		

Sum of Critical V/C Ratios	0.729
Adjustment for Lost Time	0.100
Intersection Capacity Utilization (ICU)	0.829
Level of Service (LOS) – Refer to table below	D

NOTES

1. Counted volume adjusted for left turn PCE or free flow right turn (if applicable).
2. Per–lane Capacity= 1600 vph
   dual turn lane cap.= 2880 vph
3. Non–integer values indicate proportion of shared lane used by movement.

LOS	Maximum V/C
A	0.60
B	0.70
C	0.80
D	0.90
E	1.00
F	n/a

06/03/94

INTERSECTION CAPACITY UTILIZATION

Intersection: Lakewood Blvd. (N/S) & Willow St. (E/W) 35 (Station)

Count Date: 4-1-93 Peak Hr: PM

Analyst: SC Agency: Long Beach

Movement	Volume	Adjusted Volume [1]	No. of Lanes [3]	Capacity [2]	V/C Ratio	Critical V/C	Total
NB Left	154	154	1	1600	0.096	<==	
NB Thru	819	819	4	6400	0.150		
NB Right	144	144	0	0	---		
SB Left	203	203	1	1600	0.127		
SB Thru	1185	1185	3	4800	0.247	<==	
SB Right	187	187	1	1600	0.117		
EB Left	250	250	1	1600	0.156		
EB Thru	2394	2394	3	4800	0.499	<==	
EB Right	276	276	1	1600	0.173		
WB Left	76	76	1	1600	0.048	<==	
WB Thru	689	689	3	4800	0.144		
WB Right	406	406	1	1600	0.254		
Sum of Critical V/C Ratios							0.890
Adjustment for Lost Time							0.100
Intersection Capacity Utilization (ICU)							0.990
Level of Service (LOS) – Refer to table below							E

NOTES

1. Counted volume adjusted for left turn PCE or free flow right turn (if applicable).
2. Per-lane Capacity= 1600 vph
   dual turn lane cap.= 2880 vph
3. Non-integer values indicate proportion of shared lane used by movement.

LOS	Maximum V/C
A	0.60
B	0.70
C	0.80
D	0.90
E	1.00
F	n/a

06/03/94

INTERSECTION CAPACITY UTILIZATION

Intersection: Lakewood Blvd. (N/S) & Willow St. (E/W) 35 (Station)
Count Date: **WITH PROJECT – Package I**　Peak Hr: PM
Analyst: GRD　Agency: Long Beach

Movement	Volume	Adjusted Volume [1]	No. of Lanes [3]	Capacity [2]	V/C Ratio	Critical V/C	Total
NB Left	154	154	1	1600	0.096	<==	
NB Thru	819	828	4	6400	0.152		
NB Right	144	144	0	0	---		
SB Left	203	203	1	1600	0.127		
SB Thru	1185	1194	3	4800	0.249	<==	
SB Right	187	187	1	1600	0.117		
EB Left	250	250	1	1600	0.156		
EB Thru	2394	2394	3	4800	0.499	<==	
EB Right	276	276	1	1600	0.173		
WB Left	76	76	1	1600	0.048	<==	
WB Thru	689	689	3	4800	0.144		
WB Right	406	406	1	1600	0.254		
Sum of Critical V/C Ratios							0.892
Adjustment for Lost Time							0.100
Intersection Capacity Utilization (ICU)							0.992
Level of Service (LOS) – Refer to table below							E

NOTES

1. Counted volume adjusted for left turn PCE or free flow right turn (if applicable).
2. Per-lane Capacity= 1600 vph
   dual turn lane cap.= 2880 vph
3. Non-integer values indicate proportion of shared lane used by movement.

LOS	Maximum V/C
A	0.60
B	0.70
C	0.80
D	0.90
E	1.00
F	n/a

06/03/94

INTERSECTION CAPACITY UTILIZATION

Intersection: Lakewood Blvd. (N/S) & Willow St. (E/W) 35 (Station)

Count Date: WITH PROJECT – Package K Peak Hr: PM

Analyst: GRD Agency: Long Beach

Movement	Volume	Adjusted Volume [1]	No. of Lanes [3]	Capacity [2]	V/C Ratio	Critical V/C	Total
NB Left	154	154	1	1600	0.096	<==	
NB Thru	819	819	4	6400	0.150		
NB Right	144	144	0	0	---		
SB Left	203	203	1	1600	0.127		
SB Thru	1185	1188	3	4800	0.248	<==	
SB Right	187	187	1	1600	0.117		
EB Left	250	250	1	1600	0.156		
EB Thru	2394	2394	3	4800	0.499	<==	
EB Right	276	276	1	1600	0.173		
WB Left	76	76	1	1600	0.048	<==	
WB Thru	689	689	3	4800	0.144		
WB Right	406	406	1	1600	0.254		
Sum of Critical V/C Ratios							0.891
Adjustment for Lost Time							0.100
Intersection Capacity Utilization (ICU)							0.991
Level of Service (LOS) – Refer to table below							E

NOTES

1. Counted volume adjusted for left turn PCE or free flow right turn (if applicable).
2. Per-lane Capacity= 1600 vph
   dual turn lane cap.= 2880 vph
3. Non-integer values indicate proportion of shared lane used by movement.

LOS	Maximum V/C
A	0.60
B	0.70
C	0.80
D	0.90
E	1.00
F	n/a

06/03/94

INTERSECTION CAPACITY UTILIZATION

Intersection: Lakewood Blvd. (N/S) & Willow St. (E/W) 35 (Station)

Count Date: **WITH PROJECT – Package V** Peak Hr: PM

Analyst: GRD Agency: Long Beach

Movement	Volume	Adjusted Volume [1]	No. of Lanes [3]	Capacity [2]	V/C Ratio	Critical V/C	Total
NB Left	154	154	1	1600	0.096	<==	
NB Thru	819	828	4	6400	0.152		
NB Right	144	144	0	0	---		
SB Left	203	203	1	1600	0.127		
SB Thru	1185	1185	3	4800	0.247	<==	
SB Right	187	187	1	1600	0.117		
EB Left	250	250	1	1600	0.156		
EB Thru	2394	2394	3	4800	0.499	<==	
EB Right	276	276	1	1600	0.173		
WB Left	76	76	1	1600	0.048	<==	
WB Thru	689	689	3	4800	0.144		
WB Right	406	406	1	1600	0.254		
Sum of Critical V/C Ratios							0.890
Adjustment for Lost Time							0.100
Intersection Capacity Utilization (ICU)							0.990
Level of Service (LOS) – Refer to table below							E

NOTES

1. Counted volume adjusted for left turn PCE or free flow right turn (if applicable).
2. Per-lane Capacity= 1600 vph
   dual turn lane cap.= 2880 vph
3. Non-integer values indicate proportion of shared lane used by movement.

LOS	Maximum V/C
A	0.60
B	0.70
C	0.80
D	0.90
E	1.00
F	n/a

06/03/94

INTERSECTION CAPACITY UTILIZATION

Intersection: Lakewood Blvd. (N/S) & Willow St. (E/W) 35 (Station)

Count Date: WITH PROJECT – ~~Package W~~ Preferred Peak Hr: PM

Analyst: GRD Agency: Long Beach

Movement	Volume	Adjusted Volume [1]	No. of Lanes [3]	Capacity [2]	V/C Ratio	Critical V/C	Total
NB Left	154	154	1	1600	0.096	<==	
NB Thru	819	828	4	6400	0.152		
NB Right	144	144	0	0	---		
SB Left	203	203	1	1600	0.127		
SB Thru	1185	1199	3	4800	0.250	<==	
SB Right	187	187	1	1600	0.117		
EB Left	250	250	1	1600	0.156		
EB Thru	2394	2397	3	4800	0.499	<==	
EB Right	276	276	1	1600	0.173		
WB Left	76	76	1	1600	0.048	<==	
WB Thru	689	689	3	4800	0.144		
WB Right	406	406	1	1600	0.254		
Sum of Critical V/C Ratios							0.893
Adjustment for Lost Time							0.100
Intersection Capacity Utilization (ICU)							0.993
Level of Service (LOS) – Refer to table below							E

NOTES

1. Counted volume adjusted for left turn PCE or free flow right turn (if applicable).
2. Per-lane Capacity= 1600 vph
   dual turn lane cap.= 2880 vph
3. Non-integer values indicate proportion of shared lane used by movement.

LOS	Maximum V/C
A	0.60
B	0.70
C	0.80
D	0.90
E	1.00
F	n/a

06/03/94

INTERSECTION CAPACITY UTILIZATION

Intersection: PCH (N/S) & 7th St. (E/W) 36 (Station)

Count Date: 3-30-93 Peak Hr: PM

Analyst: SC Agency: Long Beach

Movement	Volume	Adjusted Volume [1]	No. of Lanes [3]	Capacity [2]	V/C Ratio	Critical V/C	Total
NB Left	151	151	1	1600	0.094	<==	
NB Thru	596	596	3	4800	0.128		
NB Right	17	17	0	0	---		
SB Left	604	604	2	2880	0.210		
SB Thru	1369	1369	3	4800	0.288	<==	
SB Right	15	15	0	0	---		
EB Left	0	0	0	0	---		
EB Thru	1967	1967	3	4800	0.441		
EB Right	149	149	0	0	---		
WB Left	0	0	0	0	---		
WB Thru	1667	1667	2	3200	0.521	<==	
WB Right	532	532	1	1600	0.333		

Sum of Critical V/C Ratios	0.903
Adjustment for Lost Time	0.100
Intersection Capacity Utilization (ICU)	1.003
Level of Service (LOS) – Refer to table below	F

NOTES

1. Counted volume adjusted for left turn PCE or free flow right turn (if applicable).
2. Per-lane Capacity= 1600 vph
   dual turn lane cap.= 2880 vph
3. Non-integer values indicate proportion of shared lane used by movement.

LOS	Maximum V/C
A	0.60
B	0.70
C	0.80
D	0.90
E	1.00
F	n/a

06/03/94

INTERSECTION CAPACITY UTILIZATION

Intersection: PCH (N/S) & 7th St. (E/W) 36 (Station)

Count Date: **WITH PROJECT – Package I**

Peak Hr: PM

Analyst: GRD

Agency: Long Beach

Movement	Volume	Adjusted Volume [1]	No. of Lanes [3]	Capacity [2]	V/C Ratio	Critical V/C	Total
NB Left	151	151	1	1600	0.094	<==	
NB Thru	596	605	3	4800	0.130		
NB Right	17	17	0	0	---		
SB Left	604	604	2	2880	0.210		
SB Thru	1369	1378	3	4800	0.290	<==	
SB Right	15	15	0	0	---		
EB Left	0	0	0	0	---		
EB Thru	1967	1967	3	4800	0.441		
EB Right	149	149	0	0	---		
WB Left	0	0	0	0	---		
WB Thru	1667	1667	2	3200	0.521	<==	
WB Right	532	532	1	1600	0.333		

Sum of Critical V/C Ratios	0.905
Adjustment for Lost Time	0.100
Intersection Capacity Utilization (ICU)	1.005
Level of Service (LOS) – Refer to table below	F

NOTES

1. Counted volume adjusted for left turn PCE or free flow right turn (if applicable).
2. Per–lane Capacity = 1600 vph
   dual turn lane cap. = 2880 vph
3. Non–integer values indicate proportion of shared lane used by movement.

LOS	Maximum V/C
A	0.60
B	0.70
C	0.80
D	0.90
E	1.00
F	n/a

06/03/94

INTERSECTION CAPACITY UTILIZATION

Intersection: PCH (N/S) & 7th St. (E/W) 36 (Station)
Count Date: **WITH PROJECT – Package V** Peak Hr: PM
Analyst: GRD Agency: Long Beach

Movement	Volume	Adjusted Volume [1]	No. of Lanes [3]	Capacity [2]	V/C Ratio	Critical V/C	Total
NB Left	151	151	1	1600	0.094	<==	
NB Thru	596	605	3	4800	0.130		
NB Right	17	17	0	0	---		
SB Left	604	604	2	2880	0.210		
SB Thru	1369	1369	3	4800	0.288	<==	
SB Right	15	15	0	0	---		
EB Left	0	0	0	0	---		
EB Thru	1967	1967	3	4800	0.441		
EB Right	149	149	0	0	---		
WB Left	0	0	0	0	---		
WB Thru	1667	1667	2	3200	0.521	<==	
WB Right	532	532	1	1600	0.333		
Sum of Critical V/C Ratios							0.903
Adjustment for Lost Time							0.100
Intersection Capacity Utilization (ICU)							1.003
Level of Service (LOS) – Refer to table below							F

NOTES

1. Counted volume adjusted for left turn PCE or free flow right turn (if applicable).
2. Per–lane Capacity= 1600 vph
   dual turn lane cap.= 2880 vph
3. Non–integer values indicate proportion of shared lane used by movement.

LOS	Maximum V/C
A	0.60
B	0.70
C	0.80
D	0.90
E	1.00
F	n/a

06/03/94

INTERSECTION CAPACITY UTILIZATION

Intersection: PCH (N/S) & 7th St. (E/W) 36 (Station)

Count Date: WITH PROJECT – ~~Package W~~ Preferred

Peak Hr: PM

Analyst: GRD

Agency: Long Beach

Movement	Volume	Adjusted Volume [1]	No. of Lanes [3]	Capacity [2]	V/C Ratio	Critical V/C	Total
NB Left	151	151	1	1600	0.094	<==	
NB Thru	596	605	3	4800	0.130		
NB Right	17	17	0	0	---		
SB Left	604	604	2	2880	0.210		
SB Thru	1369	1378	3	4800	0.290	<==	
SB Right	15	15	0	0	---		
EB Left	0	0	0	0	---		
EB Thru	1967	1967	3	4800	0.441		
EB Right	149	149	0	0	---		
WB Left	0	0	0	0	---		
WB Thru	1667	1667	2	3200	0.521	<==	
WB Right	532	532	1	1600	0.333		
Sum of Critical V/C Ratios							0.905
Adjustment for Lost Time							0.100
Intersection Capacity Utilization (ICU)							1.005
Level of Service (LOS) – Refer to table below							F

NOTES

1. Counted volume adjusted for left turn PCE or free flow right turn (if applicable).
2. Per-lane Capacity= 1600 vph
   dual turn lane cap.= 2880 vph
3. Non-integer values indicate proportion of shared lane used by movement.

LOS	Maximum V/C
A	0.60
B	0.70
C	0.80
D	0.90
E	1.00
F	n/a

06/03/94

INTERSECTION CAPACITY UTILIZATION

Intersection: Ximeno Ave. (N/S) & PCH (E/W) 40 (Station)

Count Date: −113 Peak Hr: PM

Analyst: SC Agency: Long Beach

Movement	Volume	Adjusted Volume [1]	No. of Lanes [3]	Capacity [2]	V/C Ratio	Critical V/C	Total
NB Left	71	71	1	1600	0.044	<==	
NB Thru	529	529	3	4800	0.131		
NB Right	102	102	0	0	---		
SB Left	82	82	1	1600	0.051		
SB Thru	1333	1333	3	4800	0.278	<==	
SB Right	247	247	1	1600	0.154		
EB Left	322	322	2	2880	0.112	<==	
EB Thru	742	742	2	3200	0.232		
EB Right	97	97	1	1600	0.061		
WB Left	93	93	1	1600	0.058		
WB Thru	642	642	2	3200	0.211	<==	
WB Right	34	34	0	0	---		
Sum of Critical V/C Ratios							0.645
Adjustment for Lost Time							0.100
Intersection Capacity Utilization (ICU)							0.745
Level of Service (LOS) – Refer to table below							C

NOTES

1. Counted volume adjusted for left turn PCE or free flow right turn (if applicable).
2. Per-lane Capacity= 1600 vph
   dual turn lane cap.= 2880 vph
3. Non-integer values indicate proportion of shared lane used by movement.

LOS	Maximum V/C
A	0.60
B	0.70
C	0.80
D	0.90
E	1.00
F	n/a

06/03/94

INTERSECTION CAPACITY UTILIZATION

Intersection: Ximeno Ave. (N/S) & PCH (E/W) 40 (Station)

Count Date: **WITH PROJECT – Package I** Peak Hr: PM

Analyst: GRD Agency: Long Beach

Movement	Volume	Adjusted Volume [1]	No. of Lanes [3]	Capacity [2]	V/C Ratio	Critical V/C	Total
NB Left	71	71	1	1600	0.044	<==	
NB Thru	529	534	3	4800	0.133		
NB Right	102	102	0	0	---		
SB Left	82	82	1	1600	0.051		
SB Thru	1333	1342	3	4800	0.280	<==	
SB Right	247	247	1	1600	0.154		
EB Left	322	322	2	2880	0.112	<==	
EB Thru	742	742	2	3200	0.232		
EB Right	97	97	1	1600	0.061		
WB Left	93	93	1	1600	0.058		
WB Thru	642	642	2	3200	0.211	<==	
WB Right	34	34	0	0	---		
Sum of Critical V/C Ratios							0.647
Adjustment for Lost Time							0.100
Intersection Capacity Utilization (ICU)							0.747
Level of Service (LOS) – Refer to table below							C

NOTES

1. Counted volume adjusted for left turn PCE or free flow right turn (if applicable).
2. Per–lane Capacity= 1600 vph
   dual turn lane cap.= 2880 vph
3. Non–integer values indicate proportion of shared lane used by movement.

LOS	Maximum V/C
A	0.60
B	0.70
C	0.80
D	0.90
E	1.00
F	n/a

06/03/94

INTERSECTION CAPACITY UTILIZATION

Intersection: Ximeno Ave. (N/S) & PCH (E/W) 40 (Station)

Count Date: **WITH PROJECT – Packag K** Peak Hr: PM

Analyst: GRD Agency: Long Beach

Movement	Volume	Adjusted Volume [1]	No. of Lanes [3]	Capacity [2]	V/C Ratio	Critical V/C	Total
NB Left	71	71	1	1600	0.044	<==	
NB Thru	529	529	3	4800	0.131		
NB Right	102	102	0	0	---		
SB Left	82	82	1	1600	0.051		
SB Thru	1333	1336	3	4800	0.278	<==	
SB Right	247	247	1	1600	0.154		
EB Left	322	322	2	2880	0.112	<==	
EB Thru	742	742	2	3200	0.232		
EB Right	97	97	1	1600	0.061		
WB Left	93	93	1	1600	0.058		
WB Thru	642	642	2	3200	0.211	<==	
WB Right	34	34	0	0	---		
Sum of Critical V/C Ratios							0.645
Adjustment for Lost Time							0.100
Intersection Capacity Utilization (ICU)							0.745
Level of Service (LOS) – Refer to table below							C

NOTES

1. Counted volume adjusted for left turn PCE or free flow right turn (if applicable).
2. Per–lane Capacity= 1600 vph
   dual turn lane cap.= 2880 vph
3. Non–integer values indicate proportion of shared lane used by movement.

LOS	Maximum V/C
A	0.60
B	0.70
C	0.80
D	0.90
E	1.00
F	n/a

06/03/94

INTERSECTION CAPACITY UTILIZATION

Intersection: Ximeno Ave. (N/S) & PCH (E/W) 40 (Station)
Count Date: **WITH PROJECT – Package V** Peak Hr: PM
Analyst: GRD Agency: Long Beach

Movement	Volume	Adjusted Volume [1]	No. of Lanes [3]	Capacity [2]	V/C Ratio	Critical V/C	Total
NB Left	71	71	1	1600	0.044	<==	
NB Thru	529	543	3	4800	0.134		
NB Right	102	102	0	0	---		
SB Left	82	82	1	1600	0.051		
SB Thru	1333	1333	3	4800	0.278	<==	
SB Right	247	247	1	1600	0.154		
EB Left	322	322	2	2880	0.112	<==	
EB Thru	742	742	2	3200	0.232		
EB Right	97	97	1	1600	0.061		
WB Left	93	93	1	1600	0.058		
WB Thru	642	642	2	3200	0.211	<==	
WB Right	34	34	0	0	---		
Sum of Critical V/C Ratios							0.645
Adjustment for Lost Time							0.100
Intersection Capacity Utilization (ICU)							0.745
Level of Service (LOS) – Refer to table below							C

NOTES

1. Counted volume adjusted for left turn PCE or free flow right turn (if applicable).
2. Per-lane Capacity = 1600 vph
   dual turn lane cap. = 2880 vph
3. Non-integer values indicate proportion of shared lane used by movement.

LOS	Maximum V/C
A	0.60
B	0.70
C	0.80
D	0.90
E	1.00
F	n/a

06/03/94

INTERSECTION CAPACITY UTILIZATION

Intersection: Ximeno Ave. (N/S) & PCH (E/W) 40 (Station)
Count Date: WITH PROJECT – ~~Package W~~ Preferred Peak Hr: PM
Analyst: GRD Agency: Long Beach

Movement	Volume	Adjusted Volume [1]	No. of Lanes [3]	Capacity [2]	V/C Ratio	Critical V/C	Total
NB Left	71	71	1	1600	0.044	<==	
NB Thru	529	543	3	4800	0.134		
NB Right	102	102	0	0	---		
SB Left	82	82	1	1600	0.051		
SB Thru	1333	1345	3	4800	0.280	<==	
SB Right	247	247	1	1600	0.154		
EB Left	322	322	2	2880	0.112	<==	
EB Thru	742	742	2	3200	0.232		
EB Right	97	97	1	1600	0.061		
WB Left	93	93	1	1600	0.058		
WB Thru	642	642	2	3200	0.211	<==	
WB Right	34	34	0	0	---		

Sum of Critical V/C Ratios	0.647
Adjustment for Lost Time	0.100
Intersection Capacity Utilization (ICU)	0.747
Level of Service (LOS) – Refer to table below	C

NOTES

1. Counted volume adjusted for left turn PCE or free flow right turn (if applicable).
2. Per–lane Capacity= 1600 vph
   dual turn lane cap.= 2880 vph
3. Non–integer values indicate proportion of shared lane used by movement.

LOS	Maximum V/C
A	0.60
B	0.70
C	0.80
D	0.90
E	1.00
F	n/a

06/03/94

CMP# 48
PACKAGE K,V

```
CRITICAL MOVEMENT ANALYSIS - LOTUS 123 (Release 2.01):B(CMA):CMA4.WK1 (8/14/91 edition)                26-May-93

 A        B          C          D       E  F   G      H      I   J   K      L      M   N   O       P      Q   R   S      T      U   V   W
 4          11         8          10    4  2   5      6      5   3   5      7      5   3   5       7      5   3   5      7      5   3   4
                                                                                                                                    122
 4 INTERSECTION:      Lincoln Blvd. & Venice Blvd. (CT)                               Intersectn no.:  56                             4
 5  SCENARIO:         CMP YEAR      ( 1993 )      MANUAL COUNT ==> 1993 Geometry                                                  5
 6 PEAK HOUR (am/pm):             pm                                                                                              6
 7                                 | -----  N B  ----- | -----  S B  ----- | -----  E B  ----- | -----  W B  ----- |              7
 8                                 |   L      T     R  |   L      T     R  |   L      T     R  |   L      T     R  |              8
 9                                 |                   |                   |                   |                   |              9
10 ATSAC? (y/n)                 n  |                   |                   |                   |                   |             10
11                                 |                   |                   |                   |                   |             11
12 lane configurations             |  1.0    2.0   1.0 |  1.0    2.0   1.0 |  1.0    3.0   1.0 |  2.0    2.0   1.0 |             12
13 no. of lanes available          |   1      2     1  |   1      2     1  |   1      3     1  |   2      2     1  |             13
14 existing turn arrow? (y/n)      | y            n    | y            n    | y            n    | y            n    |             14
15 no.of veh in adj-lane to blk turn|  12          12  |   9          10   |  14           7   |  15           7   |             15
16   03/11/93                      |  102   1648   122 |  183   1526    97 |  171    630   100 |  296    611   218 |             16
17  * adjusted volume              |  102   1648   122 |  183   1526    97 |  171    630   100 |  296    611   218 |             17
18 "effective" volume              |  102   1681   104 |  183   1606    74 |  171    630   100 |  296    611   218 |             18
19                                 |                   |                   |                   |                   |             19
20                                 |                   |                   |                   |                   |             20
21 right turns on red (RTOR)       |               104 |                74 |               100 |                92 |             21
22 volume after RTOR               |                 0 |                 0 |                 0 |               127 |             22
150 opposed phasing?               |   ?               |   ?               |   ?               |   ?               |            150
160 future left arrow?             |   y               |   y               |   y               |   y               |            160
161                                |                   |                   |                   |                   |            161
215 no. of non-optional through lanes|       2         |          2        |          3        |          2        |            215
220 subphase A&B lanes             |   -    2.0   1.0  |   -    2.0   1.0  |   -    3.0   1.0  |   -    2.0   1.0  |            220
230 subphases A&B volume/lane      |   -    841     0  |   -    803     0  |   -    210     0  |   -    306   127  |            230
231 subphase A volume/lane         |   -    803     -  |   -    803     -  |   -    210     -  |   -    210   127  |            231
232 volume after subphase A        |  102    75     0  |  183     0     0  |  171     0     0  |  296    191     0 |            232
236 subphases B&C volume/lane      |  102    37     0  |  183     0     0  |  171     0     0  |  163     96     0 |            236
23                                 |                   |                   |                   |                   |             23
24 (volume/lane) on green          |  102   841     0  |  183   803     0  |  171   210     0  |  163    306   127 |             24
25 critical moves                  |         X         |   X               |   X               |         X         |             25
26 critical volumes                | N&S:  1024                            | E&W:   477                            |             26
27 critical move phases:        4  | total  1500      v/c:     1.091                                              |             27
28                                 |                                                                               |             28
29 phases, w/ N&S opposed       4  | total  2120      v/c:     1.542                                              |             29
30 phases, w/ E&W opposed       4  | total  1539      v/c:     1.119                                              |             30
31                                 |                                                                               |             31
32 opposed phasing vol/lane        |  102   841     0  |  183   803     0  |  171   210     0  |  163    306   127 |             32
33 critical volumes                | N&S:  1644                            | E&W:   516                            |             33
34 critical move phases:        4  | total  2159      v/c:     1.570                                              |             34
35                                 |                  ************************************                         |             35
36 CRITICAL MOVE PHASES:        4  | TOTAL  1500      V/C:     1.091        LOS:  F                              |             36
37                                                    ************************************                                       37
38                                                                                                                               38
 *   03/11/93                      with  1.000 yearly adjustment                1.000 peak-hour adjustment                       39
40                                                                                                                               40
41 Lincoln Blvd. & Venice Blvd. (CT)                                                                                              41

CMP YEAR(1993)MANUAL COUNT ==> 1993 Geometry                                                          PM PEAK HOUR
```

ADD 13

ADD 6

ADD 6

NET V/C CHANGE = 0.0044 NOT SIGNIF.

REVISED 6/3/94 BY W.OKITSU.
PACKAGE K & V
ASSUME LINE 436 CANCELLED.
LOSE 3 W/B BUSES.
GAIN 3 BUS W/B x 16.7 $\frac{\text{RIDERS}}{\text{BUS}}$ X .45 MODE SHIFT ÷ 1.45 AUTO OCCUPANCY
= 16. W/B AUTOS (NET 13)

CMP #50
PACKAGE I,V

```
CRITICAL MOVEMENT ANALYSIS - LOTUS 123 (Release 2.01):B(CMA):CMA4.WK1 (8/14/91 edition)                      26-May-93

 A      B        C         D      E F  G     H     I  J  K     L    M  N  O     P     Q  R  S     T     U  V  W
 4         11    8          10   4 2   5      6    5  3  5     7    5  3  5     7     5  3  5     7     5  3  4
                                                                                                            122
 4 INTERSECTION:      Manchester Av. & Sepulveda Blvd.                        Intersectn no.:  57              4
 5  SCENARIO:         CMP YEAR      ( 1993 )     MANUAL COUNT ==> 1993 Geometry                                 5
 6 PEAK HOUR (am/pm):             pm                                                                          6
 7                                 | ----- N B ----- | ----- S B ----- | ----- E B ----- | ----- W B ----- |  7
 8                                 |   L     T    R  |   L     T    R  |   L     T    R  |   L     T    R  |  8
 9                                 |                 |                 |                 |                 |  9
10 ATSAC? (y/n)                y   |                 |                 |                 |                 | 10
11                                 |                 |                 |                 |                 | 11
12 lane configurations             |  1.0   2.5  0.5 |  1.0   2.5  0.5 |  1.0   2.0  1.0 |  1.0   2.0  1.0 | 12
13 no. of lanes available          |   1     3    1  |   1     3    1  |   1     2    1  |   1     2    1  | 13
14 existing turn arrow? (y/n)      | n          n    | n          n    | n          n    | n          n    | 14
15 no.of veh in adj-lane to blk turn |  13        1  |   9         1   |  16         13  |  12          3  | 15
16   02/25/93                      |  139  1540   71 |  174  1548  275 |  118  1026   67 |   73   943  243 | 16
17   * adjusted volume             |  139  1540   71 |  174  1548  275 |  118  1026   67 |   73   943  243 | 17
18 "effective" volume              |  139  1605    6 |  174  1825   21 |  118  1026   67 |   73  1101   85 | 18
19                                 |                 |                 |                 |                 | 19
20                                 |                 |                 |                 |                 | 20
21 right turns on red (RTOR)       |              6  |             21  |             67  |             85  | 21
22 volume after RTOR               |              0  |              0  |              0  |              0  | 22
150 opposed phasing?               |   ?             |   ?             |   ?             |   ?             | 150
160 future left arrow?             |   ?             |   ?             |   ?             |   ?             | 160
161                                |                 |                 |                 |                 | 161
215 no. of non-optional through lanes |      2       |        2        |        2        |        2        | 215
220 subphase A&B lanes             |   -   2.5  0.5  |   -   2.5  0.5  |   -   2.0  1.0  |   -   2.0  1.0  | 220
230 subphases A&B volume/lane      |   -   535  535  |   -   608  608  |   -   513    0  |   -   551    0  | 230
231 subphase A volume/lane         |   -   535  535  |   -   535  535  |   -   513    -  |   -   513    -  | 231
232 volume after subphase A        |  139    0    0  |  174   220    0 |  118     0    0 |   73    75    0 | 232
236 subphases B&C volume/lane      |  139    0    0  |  174    73   73 |  118     0    0 |   73    37    0 | 236
 23                                |                 |                 |                 |                 | 23
 24 (volume/lane) on green         |  139  535  535  |  174   608  608 |  118   513    0 |   73   551    0 | 24
 25 critical moves                 |   X             |         X    X  |   X             |         X       | 25
 26 critical volumes               | N&S:   747                         | E&W:   669                         | 26
 27 critical move phases:       2  | total  1416      v/c:     0.882                                       | 27
 28                                |                                                                      | 28
 29 phases, w/ N&S opposed      3  | total  1812      v/c:     1.201                                       | 29
 30 phases, w/ E&W opposed      3  | total  1811      v/c:     1.201                                       | 30
 31                                |                                                                      | 31
 32 opposed phasing vol/lane       |  139  535  535  |  174   608  608 |  118   513    0 |   73   551    0 | 32
 33 critical volumes               | N&S:  1143                         | E&W:  1064                         | 33
 34 critical move phases:       4  | total  2207      v/c:     1.535                                       | 34
 35                                |           ************************************                       | 35
 36 CRITICAL MOVE PHASES:       2  | TOTAL  1416      V/C:     0.882          LOS:  D                      | 36
 37                                            ************************************                          37
 38                                                                                                          38
  *    02/25/93                      with  1.000 yearly adjustment            1.000 peak hour adjustment     39
 40                                                                                                          40
 41 Manchester Av. & Sepulveda Blvd.                                                                         41



CMP YEAR(1993)MANUAL COUNT ==> 1993 Geometry                                                    PM PEAK HOUR
```

INCREASE I:5 V:6

INCREASE I:2 V:2

INCREASE I:2, V:2

Δ V/C: ~~2~~/1600 = 0.0013, I & V

REVISED 6/3/94 W. OKITSU

	PACKAGE I	PACKAGE V
ASSUME CANCEL LINE	560	439
# OF BUSES LOST N/B	1	2
# OF BUSES LOST S/B	1	2
RIDERS/BUS, EACH DIRECT.	20.4	13.4
# OF AUTOS GAINED, N/B*	6	8
# OF AUTOS GAINED, S/B*	6	8
NET CHANGE, NB OR S/B	5	6

* # BUSES X RIDERS/BUS x 0.45 MODE SHIFT ÷ 1.45 AVR

CMP 51
PACKAGE K

```
CRITICAL MOVEMENT ANALYSIS - LOTUS 123 (Release 2.01):B(CMA):CMA4.WK1 (8/14/91 edition)                26-May-93

 A       B         C          D      E  F   G      H     I  J   K      L     M  N    O      P     Q  R    S      T     U  V  W
 4         11        8         10   4 2   5      6     5  3   5      7     5  3    5      7     5  3    5      7     5  3  4
                                                                                                                          122
 4 INTERSECTION:      Manchester Av. & Vermont Av.                          Intersectn no.: ~~60~~ 51                      4
 5  SCENARIO:         CMP YEAR      ( 1993 )      MANUAL COUNT ==> 1993 Geometry                                           5
 6 PEAK HOUR (am/pm):             pm                                                                                       6
 7                                    | -----  N B  ----- | -----  S B  ----- | -----  E B  ----- | -----  W B  ----- |   7
 8                                    |   L      T     R  |   L      T     R  |   L      T     R  |   L      T     R  |   8
 9                                    |                   |                   |                   |                   |   9
10 ATSAC? (y/n)                   n   |                   |                   |                   |                   |  10
11                                    |                   |                   |                   |                   |  11
12 lane configurations                |  1.0    3.0   1.0 |  1.0    3.0   1.0 |  1.0    2.5   0.5 |  1.0    2.5   0.5 |  12
13 no. of lanes available             |   1      3     1  |   1      3     1  |   1      3     1  |   1      3     1  |  13
14 existing turn arrow? (y/n)         | y            n    | y            n    | n            n    | n            n    |  14
15 no.of veh in adj-lane to blk turn  |  12            2  |  12            2  |  11            1  |   9            1  |  15
16   03/24/93                         |  134    804   114 |  195    806    99 |  140   1463   153 |  100   1323   125 |  16
17   * adjusted volume                |  134    804   114 |  195    806    99 |  140   1463   153 |  100   1323   125 |  17
18 "effective" volume                 |  134    875    43 |  195    868    37 |  140   1603    13 |  100   1437    11 |  18
19                                    |                   |                   |                   |                   |  19
20                                    |                   |                   |                   |                   |  20
21 right turns on red (RTOR)          |                43 |                37 |                13 |                11 |  21
22 volume after RTOR                  |                 0 |                 0 |                 0 |                 0 |  22
150 opposed phasing?                  |   ?               |   ?               |   ?               |   ?               | 150
160 future left arrow?                |   y               |   y               |   ?               |   ?               | 160
161                                   |                   |                   |                   |                   | 161
215 no. of non-optional through lanes |          3        |          3        |          2        |          2        | 215
220 subphase A&B lanes                |   -     3.0   1.0 |   -     3.0   1.0 |   -     2.5   0.5 |   -     2.5   0.5 | 220
230 subphases A&B volume/lane         |   -     292     0 |   -     289     0 |   -     534   534 |   -     479   479 | 230
231 subphase A volume/lane            |   -     289     - |   -     289     - |   -     479   479 |   -     479   479 | 231
232 volume after subphase A           |  134      7     0 |  195      0     0 |  140    166     0 |  100      0     0 | 232
236 subphases B&C volume/lane         |  134      2     0 |  195      0     0 |  140     55    55 |  100      0     0 | 236
23                                    |                   |                   |                   |                   |  23
24 (volume/lane) on green             |  134    292     0 |  195    289     0 |  140    534   534 |  100    479   479 |  24
25 critical moves                     |          X        |   X               |          X     X  |   X               |  25
26 critical volumes                   | N&S:    487                           | E&W:    634                           |  26
27 critical move phases:          3   | total  1121      v/c:    0.787                                                |  27
28                                    |                                                                               |  28
29 phases, w/ N&S opposed         3   | total  1215      v/c:    0.853                                                |  29
30 phases, w/ E&W opposed         4   | total  1500      v/c:    1.091                                                |  30
31                                    |                                                                               |  31
32 opposed phasing vol/lane           |  134    292     0 |  195    289     0 |  140    534   534 |  100    479   479 |  32
33 critical volumes                   | N&S:    581                           | E&W:   1013                           |  33
34 critical move phases:          4   | total  1594      v/c:    1.160                                                |  34
35                                    |                  ***********************************                          |  35
36 CRITICAL MOVE PHASES:          3   | TOTAL  1121      V/C:    0.787        LOS:  C                                 |  36
37                                                      ***********************************                              37
38                                                                                                                       38
 *   03/24/93                      with  1.000 yearly adjustment             1.000 peak-hour adjustment                  39
40                                                                                                                       40
41 Manchester Av. & Vermont Av.                                                                                          41



CMP YEAR(1993)MANUAL COUNT ==> 1993 Geometry                                                           PM PEAK HOUR
```

ADD 17

ADD 6

ΔV/C = 0.000
NO CHANGE

REVISED 6/3/94 W. OKITSU

CANCEL LINE 442.
LOSE 4 BUSES S/B.
GAIN AUTOS:
4 BUS × 16.9 RIDERS/BUS × .45 MODE SHIFT /1.45 AVR
= 21 S/B. (NOT 17)

CMP #52
PACKAGE I

```
CRITICAL MOVEMENT ANALYSIS - LOTUS 123 (Release 2.01):B(CMA):CMA4.WK1 (8/14/91 edition)          26-May-93

A    B        C        D       E F  G     H    I J  K     L    M N  O     P    Q R  S     T    U V W
4       11       8       10   4 2   5     6    5 3  5     7    5 3  5     7    5 3  5     7    5 3 4
                                                                                                 122
4 INTERSECTION:     Alameda St. & Pacific Coast Highway                 Intersectn no.: ~~9~~ 52   4
5  SCENARIO:        CMP YEAR      ( 1993 )     MANUAL COUNT ==> 1993 Geometry                      5
6 PEAK HOUR (am/pm):          pm                                                                   6
7                                 | ----- N B ----- | ----- S B ----- | ----- E B ----- | ----- W B ----- |  7
8                                 |  L     T     R  |  L     T     R  |  L     T     R  |  L     T     R  |  8
9                                 |                 |                 |                 |                 |  9
10 ATSAC? (y/n)              y    |                 |                 |                 |                 | 10
11                                |                 |                 |                 |                 | 11
12 lane configurations            | 1.0   2.0   1.0 | 1.0   2.0   1.0 | 1.0   2.0   1.0 | 1.0   2.0   1.0 | 12
13 no. of lanes available         |  1     2     1  |  1     2     1  |  1     2     1  |  1     2     1  | 13
14 existing turn arrow? (y/n)     | y          n    | y          n    | n          n    | n          n    | 14
15 no.of veh in adj-lane to blk turn|  8         99 |  9         99  | 13         99   | 17         99   | 15
16  03/16/93                      | 147   223   124 |  59   255   235 | 154  1282    64 |  41  1172    56 | 16
17  * adjusted volume             | 147   223   124 |  59   255   235 | 154  1282    64 |  41  1172    56 | 17
18 "effective" volume             | 147   223   124 |  59   255   235 | 154  1282    64 |  41  1172    56 | 18
19                                |                 |                 |                 |                 | 19
20                                |                 |                 |                 |                 | 20
21 right turns on red (RTOR)      |              50 |              77 |              64 |              56 | 21
22 volume after RTOR              |              75 |             158 |               0 |               0 | 22
150 opposed phasing?              |  ?              |  ?              |  ?              |  ?              | 150
160 future left arrow?            |  y              |  y              |  ?              |  ?              | 160
161                               |                 |                 |                 |                 | 161
215 no. of non-optional through lanes|      2       |        2        |        2        |        2        | 215
220 subphase A&B lanes            |  -    2.0   1.0 |  -    2.0   1.0 |  -    2.0   1.0 |  -    2.0   1.0 | 220
230 subphases A&B volume/lane     |  -    112    75 |  -    128   158 |  -    641     0 |  -    586     0 | 230
231 subphase A volume/lane        |  -    112    75 |  -    112   112 |  -    586     - |  -    586     - | 231
232 volume after subphase A       | 147     0     0 |  59    32    47 | 154   110     0 |  41     0     0 | 232
236 subphases B&C volume/lane     | 147     0     0 |  59    16    47 | 154    55     0 |  41     0     0 | 236
23                                |                 |                 |                 |                 | 23
24 (volume/lane) on green         | 147   112    75 |  59   128   158 | 154   641     0 |  41   586     0 | 24
25 critical moves                 |  x              |             x   |  x              |        x        | 25
26 critical volumes               | N&S:  305                         | E&W:  740                         | 26
27 critical move phases:      3   | total 1045    v/c:    0.685                                           | 27
28                                |                                                                     | 28
29 phases, w/ N&S opposed     3   | total 1045    v/c:    0.685                                           | 29
30 phases, w/ E&W opposed     4   | total 1532    v/c:    1.044                                           | 30
31                                |                                                                     | 31
32 opposed phasing vol/lane       | 147   112    75 |  59   128   158 | 154   641     0 |  41   586     0 | 32
33 critical volumes               | N&S:  305                         | E&W:  1227                        | 33
34 critical move phases:      4   | total 1532    v/c:    1.044                                           | 34
35                                |            ************************************                     | 35
36 CRITICAL MOVE PHASES:      3   | TOTAL 1045    V/C:    0.685         LOS:  B                           | 36
37                                             ************************************                         37
38                                                                                                          38
*   03/16/93                   with  1.000 yearly adjustment          1.000 peak-hour adjustment            39
40                                                                                                          40
41 Alameda St. & Pacific Coast Highway                                                                      41


[illegible](1993)MANUAL COUNT ==> 1993 Geometry                                          PM PEAK HOUR
```

INCREASE BY 1

ΔV/C = 0.00
NO CHANGE

REVISED 6/3/94 W. OKITSU

CANCEL LINE 202.

LOSE 1 BUS N/B + S/B.

GAIN 1 BUS × 5.4 $\frac{\text{RIDERS}}{\text{BUS}}$ × .45 (MODE SHIFT) ÷ 1.45 AVR

= 2 CARS N/B + S/B.

NET: 1 veh N/B, 1 veh S/B

CMP #53
PACKAGE "V"

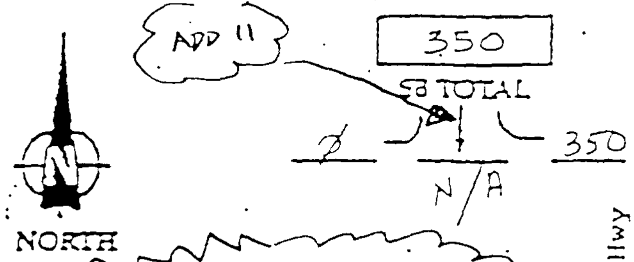
CITY OF LOS ANGELES
PLANNING APPLICATION WORK SHEET

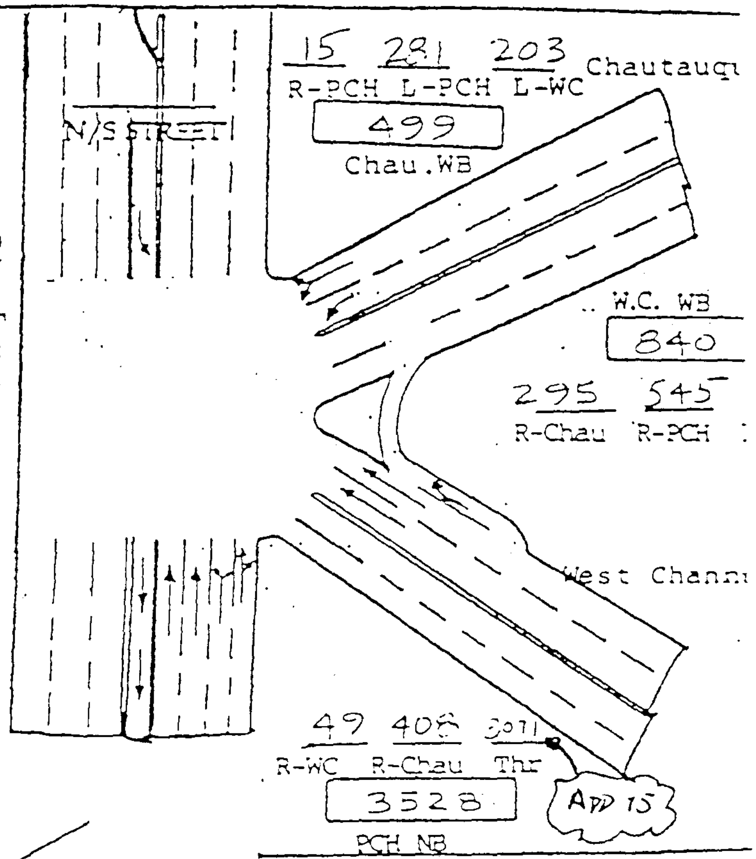
INTERSECTION: Chautauqua Bl. (West Channel Rd.) & Pacific Coast Highway DATE: 3-11-93 ANALYST

TIME PERIOD ANALYZED: p.m. peak CONDITION: normal SIGNAL PHASES

PROJECT #: COMMENT: CMP

VOLUME AND GEOMETRICS

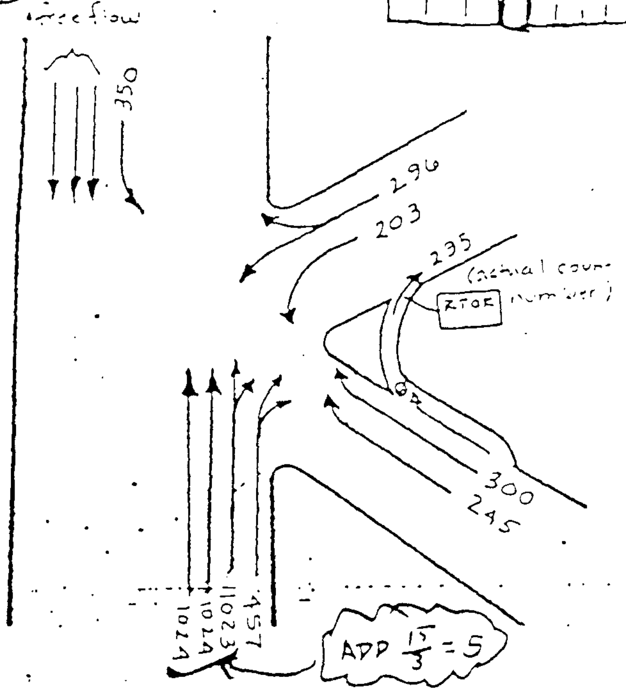




MODIFIED 6/3/94 BY W. OKITSU.
ASSUME LINE 434 CANCELLED.
LOSE 3 EB(SB) & 4 WB(NB) BUSES
IN P.M. PEAK.

INCREASE IN AUTOS:
SB = 3 BUS × 15.1 $\frac{\text{RIDERS}}{\text{BUS}}$ × 0.45 MODE SHIFT ÷ 1.45 AUTO OCCUP.
= 14 AUTOS (NET 11)
NB = 4 BUS × 15.1 × 0.45 ÷ 1.45
= 19 AUTOS (NET 15)

VOLUMES BY LANE



LOS	MAXIMUM SUM OF CRITICAL VOLUMES 2 PHASES	 3 PHASES	 4 OR MORE PHASES	[illegible]
A	850	800	750	0.00
B	1000	950	900	>0.60
C	1150	1100	1050	>0.70
D	1300	1250	1150	>0.80
E	1500	1425	1375	>0.90
F	NOT APPLICABLE			1.00

1970/1600 = 1.231 + 0.1

ADD 5

1024 + 350 + 296 + 300 = 1970

Ph. 1 Crit. / Ph 2 Crit. / Ph. 3 Crit. / Ph. 4 Crit.

ADD 5 = 1975

V/C Ratio = 1.331

Level Of Service = F

WITH PACKAGE "V"
ΔV/C = 0.003 NOT SIGNIFICANT

CMP # 54

PACKAGE I, K, + PREFERRED

```
CRITICAL MOVEMENT ANALYSIS - LOTUS 123 (Release 2.01):B(CMA):CMA4.WK1 (8/14/91 edition)       26-May-93

A      B       C        D      E F  G     H     I  J  K     L     M  N  O     P     Q  R  S     T     U  V  W
4       11      8        10    4 2  5     6     5  3  5     7     5  3  5     7     5  3  5     7     5  3  4
                                                                                                        122
4 INTERSECTION:     Figueroa St. & Pacific Coast Hwy.                      Intersectn no.: 38 54          4
5  SCENARIO:          CMP YEAR     ( 1993 )      MANUAL COUNT ==> 1993 Geometry                          5
6 PEAK HOUR (am/pm):             pm                                                                      6
7                                | -----  N B  ----- | -----  S B  ----- | -----  E B  ----- | -----  W B  ----- |  7
8                                |   L     T     R   |   L     T     R   |   L     T     R   |   L     T     R   |  8
9                                |                   |                   |                   |                   |  9
10 ATSAC? (y/n)              Y   |                   |                   |                   |                   | 10
11                               |                   |                   |                   |                   | 11
12 lane configurations         . |  1.0   1.5   0.5  |  1.0   1.5   0.5  |  2.0   1.5   0.5  |  1.0   2.5   0.5  | 12
13 no. of lanes available        |   1     2     1   |   1     2     1   |   2     2     1   |   1     3     1   | 13
14 existing turn arrow? (y/n)    | n           n     | n           n     | y           n     | y           n     | 14
15 no.of veh in adj-lane to blk turn |  5        1   |   4           2   |  99           1   |  15           1   | 15
16   03/16/93                    |  204   311   148  |   49   211    77  |  643  1463   156  |   84   959   477  | 16
17  * adjusted volume            |  204   311   148  |   49   211    77  |  643  1463   156  |   84   959   477  | 17
18 "effective" volume            |  204   416    43  |   49   211    77  |  643  1609    10  |   84  1376    60  | 18
19                               |                   |                   |                   |                   | 19
20                               |                   |                   |                   |                   | 20
21 right turns on red (RTOR)     |               42  |               77  |               10  |               51  | 21
22 volume after RTOR             |                1  |                0  |                0  |               10  | 22
150 opposed phasing?             |   ?               |   ?               |   ?               |   ?               | 150
160 future left arrow?           |   ?               |   ?               |   y               |   y               | 160
161                              |                   |                   |                   |                   | 161
215 no. of non-optional through lanes |       1      |         1         |         1         |         2         | 215
220 subphase A&B lanes           |   -    1.5   0.5  |   -    1.5   0.5  |   -    1.5   0.5  |   -    2.5   0.5  | 220
230 subphases A&B volume/lane    |   -    209   209  |   -    106   106  |   -    805   805  |   -    462   462  | 230
231 subphase A volume/lane       |   -    106   106  |   -    106   106  |   -    462   462  |   -    462   462  | 231
232 volume after subphase A      |  204   206     0  |   49     0     0  |  643   685     0  |   84     0     0  | 232
236 subphases B&C volume/lane    |  204   103   103  |   49     0     0  |  354   343   343  |   84     0     0  | 236
23                               |                   |                   |                   |                   | 23
24 (volume/lane) on green        |  204   209   209  |   49   106   106  |  354   805   805  |   84   462   462  | 24
25 critical moves                |   X               |         X     X   |         X     X   |   X               | 25
26 critical volumes              | N&S:   310                            | E&W:   889                           | 26
27 critical move phases:      3  | total  1198     v/c:    0.786                                             | 27
28                               |                                                                           | 28
29 phases, w/ N&S opposed     4  | total  1203     v/c:    0.817                                             | 29
30 phases, w/ E&W opposed     3  | total  1576     v/c:    1.036                                             | 30
31                               |                                                                           | 31
32 opposed phasing vol/lane      |  204   209   209  |   49   106   106  |  354   805   805  |   84   462   462  | 32
33 critical volumes              | N&S:   314                            | E&W:  1266                           | 33
34 critical move phases:      4  | total  1580     v/c:    1.079                                             | 34
35                               |                 ****************************************                   | 35
36 CRITICAL MOVE PHASES:      3  | TOTAL  1198     V/C:    0.786          LOS:  C                             | 36
37                                                ****************************************                     37
38                                                                                                           38
 *   03/16/93                   with  1.000 yearly adjustment        1.000 peak-hour adjustment              39
40                                                                                                           40
41 Figueroa St. & Pacific Coast Hwy.                                                                         41


CMP YEAR(1993)MANUAL COUNT ==> 1993 Geometry                                                 PM PEAK HOUR
```

I: INCREASE BY 3

K + PREFERD. ADD 5

I: INCREASE BY 2

K + PREFERRED: ADD 2

I: ΔV/C = 0.000

K PREF { ΔV/C = 2/1525 = 0.0013

REVISED 6/3/94 BY W. OKITSU

	I	K, PREFERRED
CANCELLED LINE :	205	445
LOST BUSES :	2 N/B	2 S/B
GAIN IN CARS :	5 N/B	7 S/B
NET :	3 N/B	5 S/B

CMP # 56

PACKAGE I

```
CRITICAL MOVEMENT ANALYSIS - LOTUS 123 (Release 2.01):B(CMA):CMA4.WK1 (8/14/91 edition)                              27-May


A      B           C          D        E F   G       H      I  J   K       L     M  N    O      P     Q  R   S      T     U  V
4          11          8         10    4 2   5       6      5  3   5       7     5  3    5      7     5  3   5      7     5  3

 4 INTERSECTION:      Pacific Coast Hwy. & Western Av.                                Intersectn no.: 100
 5  SCENARIO:         CMP YEAR      ( 1993 )      MANUAL COUNT ==> 1993 Geometry ;
 6 PEAK HOUR (am/pm):             pm
 7                                       | -----  N B  ----- | -----  S B  ----- | -----  E B  ----- | -----  W B  ----- |
 8                                       |   L      T     R  |   L      T     R  |   L      T     R  |   L      T     R  |
 9                                       |                   |                   |                   |                   |
10 ATSAC? (y/n)                 y        |                   |                   |                   |                   |
11                                       |                   |                   |                   |                   |
12 lane configurations                   |  2.0    2.0  1.0  |  1.0    1.5  0.5  |  1.0    2.5  0.5  |  1.0    2.5  0.5  |
13 no. of lanes available                |   2      2     1  |   1      2     1  |   1      3     1  |   1      3     1  |
14 existing turn arrow? (y/n)            | y           n     | y           n     | y           n     | y           n     |
15 no.of veh in adj-lane to blk turn     |  12            9  |  10            1  |  10            1  |  10            1  |
16   06/02/92                            | 387    579    52  | 134    925   124  | 119   1037   414  |  75   1008    66  |
17   * adjusted volume                   | 387    579    52  | 134    925   124  | 119   1037   414  |  75   1008    66  |
18 "effective" volume                    | 387    579    52  | 134   1037    12  | 119   1403    48  |  75   1066     8  |
19                                       |                   |                   |                   |                   |
20                                       |                   |                   |                   |                   |
21 right turns on red (RTOR)             |               38  |               12  |               48  |                8  |
22 volume after RTOR                     |               15  |                0  |                0  |                0  |
150 opposed phasing?                     |   ?               |   ?               |   ?               |   ?               |
160 future left arrow?                   |   Y               |   Y               |   Y               |   Y               |
161                                      |                   |                   |                   |                   |
215 no. of non-optional through lanes    |          2        |          1        |          2        |          2        |
220 subphase A&B lanes                   |   -    2.0   1.0  |   -    1.5   0.5  |   -    2.5   0.5  |   -    2.5   0.5  |
230 subphases A&B volume/lane            |   -    290    15  |   -    519   519  |   -    468   468  |   -    355   355  |
231 subphase A volume/lane               |   -    290    15  |   -    290   290  |   -    355   355  |   -    355   355  |
232 volume after subphase A              | 387      0     0  | 134    458     0  | 119    337     0  |  75      0     0  |
236 subphases B&C volume/lane            | 213      0     0  | 134    229   229  | 119    112   112  |  75      0     0  |
23                                       |                   |                   |                   |                   |
24 (volume/lane) on green                | 213    290    15  | 134    519   519  | 119    463   468  |  75    355   355  |
25 critical moves                        |   X               |          X     X  |          X     X  |   X               |
26 critical volumes                      | N&S:   731                            | E&W:   543                            |
27 critical move phases:           4     | total  1274      v/c:     0.866                                              |
28                                       |                                                                               |
29 phases, w/ N&S opposed          4     | total  1351      v/c:     0.918                                              |
30 phases, w/ E&W opposed          4     | total  1554      v/c:     1.060                                              |
31                                       |                                                                               |
32 opposed phasing vol/lane              | 213    290    15  | 134    519   519  | 119    468   468  |  75    355   355  |
33 critical volumes                      | N&S:   808                            | E&W:   823                            |
34 critical move phases:           4     | total  1631      v/c:     1.116                                              |
35                                       |                  ************************************                        |
36 CRITICAL MOVE PHASES:           4     | TOTAL  1274      V/C:     0.866          LOS:  D                              |
37                                                         ************************************
38
 *   06/02/92                              with  1.000 yearly adjustment              1.000 peak-hour adjustment
40
41 Pacific Coast Hwy. & Western Av.
```

ADD 3

ADD 1.5

ΔV/C = 0.000
NO CHANGE

REVISED WOKITSU 6/3/94
CANCEL LINE 205
LOSE 2 BUSES N/B
GAIN 5 CARS N/B
NET 3 CARS N/B

CMP YEAR(1993)MANUAL COUNT ==> 1993 Geometry   PM PEAK

I

CMP# 61
PACKAGE I, V

```
CRITICAL MOVEMENT ANALYSIS - LOTUS 123 (Release 2.01):B(CMA):CMA4.WK1 (8/14/91 edition)               26-May-93

 A       B          C          D        E F  G         H      I  J  K        L      M  N  O        P      Q  R  S        T      U  V  W
 4          11        8         10      4 2  5         6      5  3  5        7      5  3  5        7      5  3  5        7      5  3  4
                                                                                                                                  122
  4 INTERSECTION:       Lincoln Blvd. & Sepulveda Blvd.                               Intersectn no.: 53                          4
  5  SCENARIO:          CMP YEAR      ( 1993 )      MANUAL COUNT ==> 1993 Geometry                                                 5
  6 PEAK HOUR (am/pm):              pm                                                                                           6
  7                                   | -----  N B  ----- | -----  S B  ----- | -----  E B  ----- | -----  W B  ----- |          7
  8                                   |   L      T      R |   L      T      R |   L      T      R |   L      T      R |          8
  9                                   |                   |                   |                   |                   |          9
 10 ATSAC? (y/n)                y     |                   |                   |                   |                   |         10
 11                                   |                   |                   |                   |                   |         11
 12 lane configurations               |  2.0    3.0   0.0 |  0.0    3.0   1.0 |  0.0    0.0   2.0 |  0.0    0.0   0.0 |         12
 13 no. of lanes available            |   2      3      0 |   0      3      1 |   0      0      2 |   0      0      0 |         13
 14 existing turn arrow? (y/n)        | y             n   | n             n   | n             n   | n             n   |         14
 15 no.of veh in adj-lane to blk turn |  99           99  |  99            8  |  99           99  |  99           99  |         15
 16   02/25/93                        | 1696     0      0 |   0   2297      0 |   0      0      0 |   0      0      0 |         16
 17   * adjusted volume               | 1696     0      0 |   0   2297      0 |   0      0      0 |   0      0      0 |         17
 18 "effective" volume                | 1696     0      0 |   0   2297      0 |   0      0      0 |   0      0      0 |         18
 19                                   |                   |                   |                   |                   |         19
 20                                   |                   |                   |                   |                   |         20
 21 right turns on red (RTOR)         |               0   |               0   |               0   |               0   |         21
 22 volume after RTOR                 |               0   |               0   |               0   |               0   |         22
150 opposed phasing?                  |   ?               |   ?               |   n               |   n               |        150
160 future left arrow?                |   y               |   ?               |   ?               |   ?               |        160
161                                   |                   |                   |                   |                   |        161
215 no. of non-optional through lanes |          3        |          3        |          0        |          0        |        215
220 subphase A&B lanes                |   -     3.0   0.0 |   -     3.0   1.0 |   -     0.0   2.0 |   -     0.0   0.0 |        220
230 subphases A&B volume/lane         |   -      0      0 |   -     766     0 |   -      0      0 |   -      0      0 |        230
231 subphase A volume/lane            |   -      -      - |   -      0      - |   -      -      - |   -      -      - |        231
232 volume after subphase A           | 1696     0      0 |   0   2297      0 |   0      0      0 |   0      0      0 |        232
236 subphases B&C volume/lane         |  933     0      0 |   0    766      0 |   0      0      0 |   0      0      0 |        236
 23                                   |                   |                   |                   |                   |         23
 24 (volume/lane) on green            |  933     0      0 |   0    766      0 |   0      0      0 |   0      0      0 |         24
 25 critical moves                    |   x               |          x        |   x      x      x |   x      x      x |         25
 26 critical volumes                  | N&S:  1698                            | E&W:     0                            |         26
 27 critical move phases:         -   | total    -        v/c:      -                                                 |         27
 28                                   |                                                                               |         28
 29 phases, w/ N&S opposed        -   | total    -        v/c:      -                                                 |         29
 30 phases, w/ E&W opposed        2   | total  1698       v/c:    1.062                                               |         30
 31                                   |                                                                               |         31
 32 opposed phasing vol/lane          |  933     0      0 |   0    766      0 |   0      0      0 |   0      0      0 |         32
 33 critical volumes                  | N&S:  1698                            | E&W:     0                            |         33
 34 critical move phases:         2   | total  1698       v/c:    1.062                                               |         34
 35                                   |                   ****************************************                    |         35
 36 CRITICAL MOVE PHASES:         2   | TOTAL  1698       V/C:    1.062           LOS:  F                             |         36
 37                                                       ****************************************                              37
 38                                                                                                                             38
  *   02/25/93                         with  1.000 yearly adjustment            1.000 peak-hour adjustment                       39
 40                                                                                                                             40
 41 Lincoln Blvd. & Sepulveda Blvd.                                                                                             41


CMP YEAR(1993)MANUAL COUNT ==> 1993 Geometry                                                                       PM PEAK HOUR
```

NO CHANGE - NEITHER 560 NOR 439
PASS THRU SIGNALIZED PART OF I/S

NO ΔV/C
for I or V

Revised W. Okstu 6/3/94

	I		V	
CANCEL LINE	#560		#439	
	NB	SB	NB	SB
LOSE BUSES	-1	-1	-2	-2
GAIN CARS	+6	+6	+8	+8
NET	+5	+5	+6	+6

CMP # 66
PACKAGE K

```
CRITICAL MOVEMENT ANALYSIS - LOTUS 123 (Release 2.01):B(CMA):CMA4.WK1 (8/14/91 edition)                      26-May-93


A     B       C       D     E F  G     H     I  J  K     L     M  N  O     P     Q  R  S     T     U  V  W
4       11      8      10   4 2  5     6     5  3  5     7     5  3  5     7     5  3  5     7     5  3  4
                                                                                                       122
4 INTERSECTION:     Topanga Cyn. Blvd. & Victory Blvd.                          Intersectn no.: ~~57~~ 66   4
5  SCENARIO:        CMP YEAR     ( 1993 )     MANUAL COUNT ==> 1993 Geometry                            5
6 PEAK HOUR (am/pm):           pm                                                                       6
7                                  | -----  N B  ----- | -----  S B  ----- | -----  E B  ----- | -----  W B  ----- |   7
8                                  |   L     T     R   |   L     T     R   |   L     T     R   |   L     T     R   |   8
9                                  |                   |                   |                   |                   |   9
10 ATSAC? (y/n)                 Y  |                   |                   |                   |                   |  10
11                                 |                   |                   |                   |                   |  11
12 lane configurations             |  1.0   2.5   0.5  |  1.0   2.0   1.0  |  2.0   2.5   0.5  |  2.0   2.0   1.0  |  12
13 no. of lanes available          |   1     3     1   |   1     2     1   |   2     3     1   |   2     2     1   |  13
14 existing turn arrow? (y/n)      | Y           n     | Y           n     | Y           n     | Y           Y     |  14
15 no.of veh in adj-lane to blk turn |  14          1   |  14          8   |   5          1   |   9         15   |  15
16   02/11/93                      |  180  1416   199  |  144  1049   137  |  123   758   125  |  350  1144   217  |  16
17   * adjusted volume             |  180  1416   199  |  144  1049   137  |  123   758   125  |  350  1144   217  |  17
18 "effective" volume              |  180  1598    17  |  144  1065   121  |  123   866    20  |  350  1173   217  |  18
19                                 |                   |                   |                   |                   |  19
20                                 |                   |                   |                   |                   |  20
21 right turns on red (RTOR)       |               17  |               34  |               20  |              180  |  21
22 volume after RTOR               |                0  |               87  |                0  |               37  |  22
150 opposed phasing?               |   ?               |   ?               |   ?               |   ?               | 150
160 future left arrow?             |   Y               |   Y               |   Y               |   Y               | 160
161                                |                   |                   |                   |                   | 161
215 no. of non-optional through lanes |        2        |         2         |         2         |         2         | 215
220 subphase A&B lanes             |   -    2.5   0.5  |   -    2.0   1.0  |   -    2.5   0.5  |   -    2.0   1.0  | 220
230 subphases A&B volume/lane      |   -    533   533  |   -    533    87  |   -    289   289  |   -    587    37  | 230
231 subphase A volume/lane         |   -    533   533  |   -    533    87  |   -    289   287  |   -    289    37  | 231
232 volume after subphase A        |  180     1     0  |  144     0     0  |  123     0     0  |  350   596     0  | 232
236 subphases B&C volume/lane      |  180     0     0  |  144     0     0  |   68     0     0  |  193   298     0  | 236
23                                 |                   |                   |                   |                   |  23
24 (volume/lane) on green          |  180   533   533  |  144   533    87  |   68   289   289  |  193   587    37  |  24
25 critical moves                  |   X               |         X         |   X               |         X         |  25
26 critical volumes                | N&S:   713                            | E&W:   654                            |  26
27 critical move phases:        4  | total  1367      v/c:    0.929                                             |  27
28                                 |                                                                             |  28
29 phases, w/ N&S opposed       4  | total  1719      v/c:    1.180                                                29
30 phases, w/ E&W opposed       4  | total  1588      v/c:    1.085                                                30
31                                 |                                                                             |  31
32 opposed phasing vol/lane        |  180   533   533  |  144   533    87  |   68   289   289  |  193   587    37  |  32
33 critical volumes                | N&S:  1065                            | E&W:   875                            |  33
34 critical move phases:        4  | total  1940      v/c:    1.341                                             |  34
35                                 |                  **********************************                         |  35
36 CRITICAL MOVE PHASES:        4  | TOTAL  1367      V/C:    0.929      LOS:  E                                 |  36
37                                                  **********************************                            37
38                                                                                                                38
 *     02/11/93                        with  1.000 yearly adjustment--          1.000 peak-hour adjustment        39
40                                                                                                                40
41 Topanga Cyn. Blvd. & Victory Blvd.                                                                             41



CMP YEAR(1993)MANUAL COUNT ==> 1993 Geometry                                                        PM PEAK HOUR
```

ADD 12

ADD 4

ADD 0

NO V/C CHANGE 0.000

REVISED W. OKITSU 6/3/94

	PACKAGE K
CANCEL LINE	# 427
LOSE BUSES	-3 E/B
GAIN CARS	+15 E/B
NET	+12 E/B

CMP # 68
PACKAGE K, V

```
CRITICAL MOVEMENT ANALYSIS - LOTUS 123 (Release 2.01):B(CMA):CMA4.WK1 (8/14/91 edition)                    26-May-93

  A        B          C          D       E  F   G       H       I   J   K       L       M   N   O       P       Q   R   S       T       U   V   W
  4          11         8          10   4  2    5        6      5   3   5        7      5   3   5        7      5   3   5        7      5   3   4
                                                                                                                                          122
  4 INTERSECTION:      Centinella Av. & Venice Blvd.                                      Intersectn no.: ~~33~~ 68                         4
  5  SCENARIO:         CMP YEAR      ( 1993 )       MANUAL COUNT ==> 1993 Geometry                                                        5
  6 PEAK HOUR (am/pm):                    pm                                                                                              6
  7                                   | -----  N B  ----- | -----  S B  ----- | -----  E B  ----- | -----  W B  ----- |  7
  8                                   |   L      T     R  |   L      T     R  |   L      T     R  |   L      T     R  |  8
  9                                   |                   |                   |                   |                   |  9
 10 ATSAC? (y/n)                  n   |                   |                   |                   |                   | 10
 11                                   |                   |                   |                   |                   | 11
 12 lane configurations               |  1.0    2.0   1.0 |  1.0    2.0   1.0 |  1.0    3.0   1.0 |  1.0    3.0   1.0 | 12
 13 no. of lanes available            |   1      2     1  |   1      2     1  |   1      3     1  |   1      3     1  | 13
 14 existing turn arrow? (y/n)        | n            n    | n            n    | n            n    | n            n    | 14
 15 no.of veh in adj-lane to blk turn |  10          10   |  11           8   |  15           2   |  16           2   | 15
 16   03/11/93                        |  91    982   170  | 138   1355   171  | 157   1071   135  | 193   1326   125  | 16
 17  * adjusted volume                |  91    982   170  | 138   1355   171  | 157   1071   135  | 193   1326   125  | 17
 18 "effective" volume                |  91    982   170  | 138   1420   117  | 157   1168    38  | 193   1423    28  | 18
 19                                   |                   |                   |                   |                   | 19
 20                                   |                   |                   |                   |                   | 20
 21 right turns on red (RTOR)         |              121  |               79  |               38  |               28  | 21
 22 volume after RTOR                 |               49  |               39  |                0  |                0  | 22
150 opposed phasing?                  |   ?               |   ?               |   ?               |   ?               |150
160 future left arrow?                |   ?               |   ?               |   ?               |   ?               |160
161                                   |                   |                   |                   |                   |161
215 no. of non-optional through lanes |          2        |          2        |          3        |          3        |215
220 subphase A&B lanes                |   -    2.0   1.0  |   -    2.0   1.0  |   -    3.0   1.0  |   -    3.0   1.0  |220
230 subphases A&B volume/lane         |   -    491    49  |   -    710    39  |   -    389     0  |   -    474     0  |230
231 subphase A volume/lane            |   -    491    49  |   -    491    39  |   -    389     -  |   -    389     -  |231
232 volume after subphase A           |  91      0     0  | 138    438     0  | 157      0     0  | 193    255     0  |232
236 subphases B&C volume/lane         |  91      0     0  | 138    219     0  | 157      0     0  | 193     85     0  |236
 23                                   |                   |                   |                   |                   | 23
 24 (volume/lane) on green            |  91    491    49  | 138    710    39  | 157    389     0  | 193    474     0  | 24
 25 critical moves                    |   X               |          X        |   X               |          X        | 25
 26 critical volumes                  | N&S:   801                            | E&W:   631                            | 26
 27 critical move phases:          2  | total  1432      v/c:     0.955                                             | 27
 28                                   |                                                                               | 28
 29 phases, w/ N&S opposed         3  | total  1832      v/c:     1.286                                             | 29
 30 phases, w/ E&W opposed         3  | total  1665      v/c:     1.168                                             | 30
 31                                   |                                                                               | 31
 32 opposed phasing vol/lane          |  91    491    49  | 138    710    39  | 157    389     0  | 193    474     0  | 32
 33 critical volumes                  | N&S:  1201                            | E&W:   864                            | 33
 34 critical move phases:          4  | total  2065      v/c:     1.502                                             | 34
 35                                   |                  ************************************                         | 35
 36 CRITICAL MOVE PHASES:          2  | TOTAL  1432      V/C:     0.955      LOS:  E                                | 36
 37                                                     ************************************                            37
 38                                                                                                                     38
  *    03/11/93                          with  1.000 yearly adjustment          1.000 peak-hour adjustment              39
 40                                                                                                                     40
 41 Centinella Av. & Venice Blvd.                                                                                       41


CMP YEAR(1993)MANUAL COUNT ==> 1993 Geometry                                                             PM PEAK HOUR
```

ADD 13

ADD 4

$\Delta V/C = \frac{4}{1500} = .0027$

K & V

ADD 4

ADJUSTMENT 6/3/94 W. OKITSU

	K	V
CANCELLED LINES	#436	#436
BUSES LOST	3 WB	3 W/B
AUTOS GAINED	16 WB	16 W/B
NET	13 WB	13 W/B

CMP # 69

PACKAGE K, V

CRITICAL MOVEMENT ANALYSIS - LOTUS 123 (Release 2.01):B(CMA):CMA4.WK1 (8/14/91 edition) 25-May-93

```
A      B        C          D      E F  G      H     I  J  K      L     M  N  O      P     Q  R  S      T     U  V  W
4        11       8          10   4 2  5      6     5  3  5      7     5  3  5      7     5  3  5      7     5  3  4
                                                                                                              122
```

4 INTERSECTION: La Cienega Blvd. & Venice Blvd. Intersectn no.: ~~46~~ 69 4

5 SCENARIO: CMP YEAR (1993) MANUAL COUNT ==> 1993 Geometry 5

6 PEAK HOUR (am/pm): pm 6

```
7                                  | -----  N B  ----- | -----  S B  ----- | -----  E B  ----- | -----  W B  ----- |  7
8                                  |   L      T     R  |   L      T     R  |   L      T     R  |   L      T     R  |  8
9                                  |                   |                   |                   |                   |  9
10 ATSAC? (y/n)               Y    |                   |                   |                   |                   | 10
11                                 |                   |                   |                   |                   | 11
12 lane configurations             |  1.0    2.5   0.5 |  1.0    2.5   0.5 |  1.0    3.0   1.0 |  1.0    3.0   1.0 | 12
13 no. of lanes available          |   1      3     1  |   1      3     1  |   1      3     1  |   1      3     1  | 13
14 existing turn arrow? (y/n)      | n            n    | n            n    | y            n    | y            n    | 14
15 no.of veh in adj-lane to blk turn|  7            1  |  14            1  |  16            7  |  14            8  | 15
16   03/23/93                      |  99   1312    73  |  37   1594   314  | 305   1529   163  | 215   1410    35  | 16
17   * adjusted volume             |  99   1312    73  |  37   1594   314  | 305   1529   163  | 215   1410    35  | 17
18 "effective" volume              |  99   1391     7  |  37   1884    24  | 305   1564   128  | 215   1411    34  | 18
19                                 |                   |                   |                   |                   | 19
20                                 |                   |                   |                   |                   | 20
21 right turns on red (RTOR)       |                7  |               24  |               50  |               34  | 21
22 volume after RTOR               |                0  |                0  |               79  |                0  | 22
150 opposed phasing?               |   ?               |   ?               |   ?               |   ?               | 150
160 future left arrow?             |   ?               |   ?               |   y               |   y               | 160
161                                |                   |                   |                   |                   | 161
215 no. of non-optional through lanes|       2         |          2        |          3        |          3        | 215
220 subphase A&B lanes             |   -    2.5   0.5  |   -    2.5   0.5  |   -    3.0   1.0  |   -    3.0   1.0  | 220
230 subphases A&B volume/lane      |   -    464   464  |   -    628   628  |   -    521    79  |   -    470     0  | 230
231 subphase A volume/lane         |   -    464   464  |   -    464   464  |   -    470    79  |   -    470     -  | 231
232 volume after subphase A        |  99      0     0  |  37    493     0  | 305    153     0  | 215      0     0  | 232
236 subphases B&C volume/lane      |  99      0     0  |  37    164   164  | 305     51     0  | 215      0     0  | 236
23                                 |                   |                   |                   |                   | 23
24 (volume/lane) on green          |  99    464   464  |  37    628   628  | 305    521    79  | 215    470     0  | 24
25 critical moves                  |   X               |         X     X   |   X               |         X         | 25
26 critical volumes                | N&S:   727                            | E&W:   775                            | 26
27 critical move phases:        3  | total  1502      v/c:     0.985                                             | 27
28                                 |                                                                              | 28
29 phases, w/ N&S opposed       4  | total  1867      v/c:     1.288                                             | 29
30 phases, w/ E&W opposed       3  | total  1719      v/c:     1.136                                             | 30
31                                 |                                                                              | 31
32 opposed phasing vol/lane        |  99    464   464  |  37    628   628  | 305    521    79  | 215    470     0  | 32
33 critical volumes                | N&S:  1092                            | E&W:   992                            | 33
34 critical move phases:        4  | total  2083      v/c:     1.445                                             | 34
35                                 |                  *************************************                       | 35
36 CRITICAL MOVE PHASES:        3  | TOTAL  1502      V/C:     0.985         LOS:  E                              | 36
37                                                  *************************************                         37
38                                                                                                                38
 *   03/23/93                        with  1.000 yearly adjustment                1.000 peak-hour adjustment      39
40                                                                                                                40
41 La Cienega Blvd. & Venice Blvd.                                                                                41
```

ADD 13

ADD 4

$\Delta V/C = \frac{4}{1525} = .0026$

K + V

ADD 4

ADJUST 6/3/94 W. OKITSU

K + V

#436

CANCEL LINE

LOST BUSES 3 W/B

GAIN CARS 16 W/B

NET 13 W/B

CMP YEAR(1993)MANUAL COUNT ==> 1993 Geometry

PM PEAK HOUR

CMP# 74

PACKAGE I

```
CRITICAL MOVEMENT ANALYSIS - LOTUS 123 (Release 2.01):B(CMA):CMA4.WK1 (8/14/91 edition)                          26-May-93

 A      B          C          D      E F  G     H     I  J  K     L     M  N  O     P     Q  R  S     T     U  V  W
 4         11         8         10   4 2  5     6     5  3  5     7     5  3  5     7     5  3  5     7     5  3  4
                                                                                                                122
  4 INTERSECTION:      Sepulveda Blvd. & Ventura Blvd.                                Intersectn no.: 78          4
  5  SCENARIO:         CMP YEAR      ( 1993 )      MANUAL COUNT ==> 1993 Geometry                                 5
  6 PEAK HOUR (am/pm):              pm                                                                            6
  7                                   | -----  N B  ----- | -----  S B  ----- | -----  E B  ----- | -----  W B  ----- |   7
  8                                   |   L      T     R  |   L      T     R  |   L      T     R  |   L      T     R  |   8
  9                                   |                   |                   |                   |                   |   9
 10 ATSAC? (y/n)                y     |                   |                   |                   |                   |  10
 11                                   |                   |                   |                   |                   |  11
 12 lane configurations               |  2.0    2.5   0.5 |  2.0    2.5   1.5 |  2.0    2.5   0.5 |  2.0    2.5   0.5 |  12
 13 no. of lanes available            |   2      3     1  |   2      3     2  |   2      3     1  |   2      3     1  |  13
 14 existing turn arrow? (y/n)        | y            y    | y            y    | y            y    | y            y    |  14
 15 no.of veh in adj-lane to blk turn |  10            1  |  13           14  |  16            1  |   9            1  |  15
 16   03/16/93                        |  397   1168   232 |  210    536   635 |  462   1035   205 |  285   1255   185 |  16
 17  * adjusted volume                |  397   1168   232 |  210    536   635 |  462   1035   205 |  285   1255   185 |  17
 18 "effective" volume                |  397   1376    24 |  210    536   635 |  462   1216    24 |  285   1422    18 |  18
 19                                   |                   |                   |                   |                   |  19
 20                                   |                   |                   |                   |                   |  20
 21 right turns on red (RTOR)         |                24 |               254 |                24 |                18 |  21
 22 volume after RTOR                 |                 0 |               381 |                 0 |                 0 |  22
150 opposed phasing?                  |   ?               |   ?               |   ?               |   ?               | 150
160 future left arrow?                |   y               |   y               |   y               |   y               | 160
161                                   |                   |                   |                   |                   | 161
215 no. of non-optional through lanes |          2        |          2        |          2        |          2        | 215
220 subphase A&B lanes                |   -     2.5   0.5 |   -     2.5   1.5 |   -     2.5   0.5 |   -     2.5   0.5 | 220
230 subphases A&B volume/lane         |   -     459   459 |   -     237   237 |   -     405   405 |   -     474   474 | 230
231 subphase A volume/lane            |   -     237   237 |   -     237   237 |   -     405   405 |   -     405   405 | 231
232 volume after subphase A           |  397    664     0 |  210      0     0 |  462      0     0 |  285    206     0 | 232
236 subphases B&C volume/lane         |  218    221   221 |  116      0     0 |  254      0     0 |  157     69    69 | 236
 23                                   |                   |                   |                   |                   |  23
 24 (volume/lane) on green            |  218    459   459 |  116    237   237 |  254    405   405 |  157    474   474 |  24
 25 critical moves                    |          X     X  |   X               |   X               |          X     X  |  25
 26 critical volumes                  | N&S:   574                            | E&W:   728                            |  26
 27 critical move phases:          4  | total  1302      v/c:     0.885                                              |  27
 28                                   |                                                                               |  28
 29 phases, w/ N&S opposed         4  | total  1424      v/c:     0.968                                              |  29
 30 phases, w/ E&W opposed         4  | total  1454      v/c:     0.988                                              |  30
 31                                   |                                                                               |  31
 32 opposed phasing vol/lane          |  218    459   459 |  116    237   237 |  254    405   405 |  157    474   474 |  32
 33 critical volumes                  | N&S:   696                            | E&W:   879                            |  33
 34 critical move phases:          4  | total  1575      v/c:     1.076                                              |  34
 35                                   |                   ************************************                        |  35
 36 CRITICAL MOVE PHASES:          4  | TOTAL  1302      V/C:     0.885          LOS:  D                              |  36
 37                                                     ************************************                              37
 38                                                                                                                      38
  *   03/16/93                          with  1.000 yearly adjustment               1.000 peak-hour adjustment           39
 40                                                                                                                      40
 41 Sepulveda Blvd. & Ventura Blvd.                                                                                     41
```

ADD 4

ADD 2

ADD 2

ADD 1

$\Delta V/C = \frac{1}{1475} = .0007$

ADD 1

ADJUST BY W. OKITSU 6/3/94

I

CANCEL LINE #183

	E/B	W/B
BUSES LOST	2	1
AUTOS GAINED	6	3
NET	4	2

CMP #77
PACKAGE L

```
                                                                                                   26-May-93
CRITICAL MOVEMENT ANALYSIS - LOTUS 123 (Release 2.01):B(CMA):CMA4.WK1 (8/14/91 edition)

 A       B         C          D      E  F   G      H     I  J   K      L     M  N   O      P    Q  R   S      T     U  V  W
 4       11        8          10     4  2   5      6     5  3   5      7     5  3   5      7    5  3   5      7     5  3  4
                                                                                                                     122
 4 INTERSECTION:      Balboa Blvd. & Victory Blvd.                              Intersectn no.: 23                     4
 5  SCENARIO:         CMP YEAR      ( 1993 )     MANUAL COUNT ==> 1993 Geometry                                        5
 6 PEAK HOUR (am/pm):             pm                                                                                   6
                                 | -----  N B  ----- | -----  S B  ----- | -----  E B  ----- | -----  W B  ----- |    7
 7                               |   L      T     R  |   L      T     R  |   L      T     R  |   L      T     R  |    8
 8                               |                   |                   |                   |                   |    9
 9                               |                   |                   |                   |                   |   10
10 ATSAC? (y/n)             . Y  |                   |                   |                   |                   |   11
11                               |                   |                   |                   |                   |   12
12 lane configurations           |  1.0    2.5   0.5 |  1.0    2.5   0.5 |  1.0    3.0   1.0 |  1.0    2.5   0.5 |   13
13 no. of lanes available        |   1      3     1  |   1      3     1  |   1      3     1  |   1      3     1  |   14
14 existing turn arrow? (y/n)    | n            n    | n            n    | n            n    | n            n    |   15
15 no.of veh in adj-lane to blk turn | 14           1 |  15           1  |   9           9   |  15           1   |   16
16   03/10/93                    |  42    139    51  | 373    131   294  | 163   1053     2  |  24   2064   233  |   17
17  * adjusted volume            |  42    139    51  | 373    131   294  | 163   1053     2  |  24   2064   233  |   18
18 "effective" volume            |  42    146    44  | 373    156   269  | 163   1053     2  |  24   2283    14  |   19
19                               |                   |                   |                   |                   |   20
20                               |                   |                   |                   |                   |   21
21 right turns on red (RTOR)     |               44  |               82  |                2  |               14  |   22
22 volume after RTOR             |                0  |              188  |                0  |                0  |  150
150 opposed phasing?             |   ?               |   ?               |   ?               |   ?               |  160
160 future left arrow?           |   ?               |   ?               |   ?               |   ?               |  161
161                              |                   |                   |                   |                   |  215
215 no. of non-optional through lanes |      2       |          2        |          3        |          2        |  220
220 subphase A&B lanes           |   -    2.5   0.5  |   -    2.5   0.5  |   -    3.0   1.0  |   -    2.5   0.5  |  230
230 subphases A&B volume/lane    |   -     49    49  |   -     78   188  |   -    351     0  |   -    761   761  |  231
231 subphase A volume/lane       |   -     49    49  |   -     49    49  |   -    351     -  |   -    351   351  |  232
232 volume after subphase A      |  42      0     0  | 373     59   139  | 163      0     0  |  24   1230     0  |  236
236 subphases B&C volume/lane    |  42      0     0  | 373     29   139  | 163      0     0  |  24    410   410  |   23
 23                              |                   |                   |                   |                   |   24
 24 (volume/lane) on green       |  42     49    49  | 373     78   188  | 163    351     0  |  24    761   761  |   25
 25 critical moves               |          X     X  |   X               |   X               |          X     X  |   26
 26 critical volumes             | N&S:   422                            | E&W:   924                            |   27
 27 critical move phases:      2 | total 1346      v/c:     0.838                                               |   28
 28                              |                                                                              |   29
 29 phases, w/ N&S opposed     3 | total 1346      v/c:     0.883                                               |   30
 30 phases, w/ E&W opposed     3 | total 1534      v/c:     1.006                                               |   31
 31                              |                                                                              |   32
 32 opposed phasing vol/lane     |  42     49    49  | 373     78   188  | 163    351     0  |  24    761   761  |   33
 33 critical volumes             | N&S:   422                            | E&W:  1112                            |   34
 34 critical move phases:      4 | total 1534      v/c:     1.045                                               |   35
 35                              |                 **************************************                       |   36
 36 CRITICAL MOVE PHASES:      2 | TOTAL 1346      V/C:     0.838        LOS:  D                                    37
 37                                              **************************************                            38
 38                                                                                                                39
  *   03/10/93                    with  1.000 yearly adjustment              1.000 peak-hour adjustment            40
 40                                                                                                                41
 41 Balboa Blvd. & Victory Blvd.


                                                                                                     PM PEAK HOUR
CMP YEAR(1993)MANUAL COUNT ==> 1993 Geometry                                                               Page
```

77

ADD 2

ADD 4

ADD 1

ADD 1

ADD 1

$\Delta V/C = \frac{1}{1600} = 0.0086$

ADJUST BY W OKITSU 6/3/94

L

CANCEL LINE #236

	NB	SB
BUSES LOST	1	2
CARS GAINED	3	6
NET	2	4

Cmp # 86
PACKAGE I, K

```
CRITICAL MOVEMENT ANALYSIS - LOTUS 123 (Release 2.01):B(CMA):CMA4.WK1 (8/14/91 edition)                    26-May-93

 A       B          C          D      E F   G       H      I  J   K      L     M  N   O      P      Q  R   S      T      U  V  W
 4          11         8         10   4 2   5       6      5  3   5      7     5  3   5      7      5  3   5      7      5  3  4
                                                                                                                             122
 4 INTERSECTION:      Sepulveda Blvd. & Wilshire Blvd.                        Intersectn no.:  82                              4
 5  SCENARIO:         CMP YEAR       ( 1993 )      MANUAL COUNT ==> 1993 Geometry                                              5
 6 PEAK HOUR (am/pm):              pm                                                                                          6
 7                                    | -----  N B  ----- | -----  S B  ----- | -----  E B  ----- | -----  W B  ----- |    7
 8                                    |   L      T     R  |   L      T     R  |   L      T     R  |   L      T     R  |    8
 9                                    |                   |                   |                   |                   |    9
10 ATSAC? (y/n)                  y    |                   |                   |                   |                   |   10
11                                    |                   |                   |                   |                   |   11
12 lane configurations                |  1.0    1.5   0.5 |  1.0    1.5   0.5 |  1.0    3.5   0.5 |  2.0    4.5   0.5 |   12
13 no. of lanes available             |    1      2     1 |    1      2     1 |    1      4     1 |    2      5     1 |   13
14 existing turn arrow? (y/n)         | y            n    | n            n    | y            n    | y            n    |   14
15 no.of veh in adj-lane to blk turn  |   19            1 |   17            1 |   15            1 |    9            1 |   15
16   02/10/93                         |  333    812   303 |   52    218    71 |  134   2717   182 |  201   3388   218 |   16
17  * adjusted volume                 |  333    812   303 |   52    218    71 |  134   2717   182 |  201   3388   218 |   17
18 "effective" volume                 |  333   1081    34 |   52    260    29 |  134   2889    10 |  201   3651    12 |   18
19                                    |                   |                   |                   |                   |   19
20                                    |                   |                   |                   |                   |   20
21 right turns on red (RTOR)          |                34 |                29 |                10 |                12 |   21
22 volume after RTOR                  |                 0 |                 0 |                 0 |                 0 |   22
150 opposed phasing?                  |    ?              |    ?              |    ?              |    ?              |  150
160 future left arrow?                |    y              |    ?              |    y              |    y              |  160
161                                   |                   |                   |                   |                   |  161
215 no. of non-optional through lanes |           1       |           1       |           3       |           4       |  215
220 subphase A&B lanes                |    -    1.5   0.5 |    -    1.5   0.5 |    -    3.5   0.5 |    -    4.5   0.5 |  220
230 subphases A&B volume/lane         |    -    541   541 |    -    130   130 |    -    722   722 |    -    730   730 |  230
231 subphase A volume/lane            |    -    130   130 |    -    130   130 |    -    722   722 |    -    722   722 |  231
232 volume after subphase A           |  333    821     0 |   52      0     0 |  134      0     0 |  201     40     0 |  232
236 subphases B&C volume/lane         |  333   ,411   411 |   52      0     0 |  134      0     0 |  111      8     8 |  236
23                                    |                   |                   |                   |                   |   23
24 (volume/lane) on green             |  333    541   541 |   52    130   130 |  134    722   722 |  111    730   730 |   24
25 critical moves                     |           x     x |    x              |    x              |           x     x |   25
26 critical volumes                   | N&S:    593                           | E&W:    864                           |   26
27 critical move phases:          4   | total  1457      v/c:     0.990                                               |   27
28                                    |                                                                               |   28
29 phases, w/ N&S opposed         4   | total  1535      v/c:     1.046                                               |   29
30 phases, w/ E&W opposed         4   | total  2045      v/c:     1.417                                               |   30
31                                    |                                                                               |   31
32 opposed phasing vol/lane           |  333    541   541 |   52    130   130 |  134    722   722 |  111    730   730 |   32
33 critical volumes                   | N&S:    671                           | E&W:   1452                           |   33
34 critical move phases:          4   | total  2123      v/c:     1.474                                               |   34
35                                    |                  *****************************************                    |   35
36 CRITICAL MOVE PHASES:          4   | TOTAL  1457      V/C:     0.990            LOS:  E                            |   36
37                                                       *****************************************                        37
38                                                                                                                         38
 *   02/10/93                          with  1.000 yearly adjustment               1.000 peak-hour adjustment              39
40                                                                                                                         40
41 Sepulveda Blvd. & Wilshire Blvd.                                                                                        41
```

86

I: APD 27

I: APD 32

I: APD 39
K: APD 3

I: APD 20
K: APD 3

I: APD 14

C
NOT CRITICAL

I: APD 4
K: APD 1

$I: \Delta V/C = \frac{18}{1475} = 0.0122$

$K: \Delta V/C = \frac{1}{1475} = 0.0007$

I: APP 18
K: APP 1

ADJUST BY W. OKITSU 6/3/94

	I				K	
CANCEL LINES	#20, 560				#429	
	NB	SB	EB	WB	EB	WB
BUSES LOST	5	6	6	3	1	1
CARS GAINED	32	38	45	23	4	4
NET	27	32	39	20	3	3

CMP # 87

PACKAGE K

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CRITICAL MOVEMENT ANALYSIS - LOTUS 123 (Release 2.01):B(CMA):CMA4.WK1 (8/14/91 edition)                 26-May-93

  A      B         C          D      E F   G      H     I  J   K      L     M  N    O      P     Q  R   S      T     U  V  W
  4         11         8        10   4 2   5       6    5  3   5       7    5  3    5       7    5  3   5       7    5  3  4
                                                                                                                        122
  4 INTERSECTION:      Western Av. & Wilshire Blvd. (Temp. Constr.)              Intersectn no.: 98                     4
  5  SCENARIO:         CMP YEAR      ( 1993 )     MANUAL COUNT ==> 1993 Geometry                                       5
  6 PEAK HOUR (am/pm):                pm                                                                                6
  7                                    | ----- N B ----- | -----  S B  ----- | ----- E B  ----- | ----- W B  ----- |  7
  8                                    |   L     T    R  |   L     T     R   |   L     T     R  |   L     T     R  |  8
  9                                    |                 |                   |                  |                  |  9
 10 ATSAC? (y/n)              Y        |                 |                   |                  |                  | 10
 11                                    |                 |                   |                  |                  | 11
 12 lane configurations                |  0.0   1.5  0.5 |  0.0   1.5  0.5   |  0.0   1.5  0.5  |  0.0   1.5  0.5  | 12
 13 no. of lanes available             |    0     2    1 |    0     2    1   |    0     2    1  |    0     2    1  | 13
 14 existing turn arrow? (y/n)         | n          n    | n           n     | n           n    | n           n    | 14
 15 no.of veh in adj-lane to blk turn  |   99          1 |   99           1  |   99           1 |   99           1 | 15
 16   02/16/93                         |    1  1178   49 |    0  1002    71  |    0   824    84 |    2  1084    89 | 16
 17  * adjusted volume                 |    1  1178   49 |    0  1002    71  |    0   824    84 |    2  1084    89 | 17
 18 "effective" volume.                |    1  1223    4 |    0  1067     6  |    0   899     9 |    2  1166     7 | 18
 19                                    |                 |                   |                  |                  | 19
 20                                    |                 |                   |                  |                  | 20
 21 right turns on red (RTOR)          |               4 |                0  |                9 |                0 | 21
 22 volume after RTOR                  |               0 |                6  |                0 |                7 | 22
150 opposed phasing?                   |    ?            |    ?              |    ?             |    ?             | 150
160 future left arrow?                 |    ?            |    ?              |    ?             |    ?             | 160
161                                    |                 |                   |                  |                  | 161
215 no. of non-optional through lanes  |         1       |         1         |         1        |         1        | 215
220 subphase A&B lanes                 |    -   1.5  0.5 |    -   1.5  0.5   |    -   1.5  0.5  |    -   1.5  0.5  | 220
230 subphases A&B volume/lane          |    -   612  612 |    -   537  537   |    -   450  450  |    -   587  587  | 230
231 subphase A volume/lane             |    -   537  537 |    -   537  537   |    -   450  450  |    -   450  450  | 231
232 volume after subphase A            |    1   150    0 |    0     0    0   |    0     0    0  |    2   272    2  | 232
236 subphases B&C volume/lane          |    1    75   75 |    0     0    0   |    0     0    0  |    2   137  137  | 236
 23                                    |                 |                   |                  |                  | 23
 24 (volume/lane) on green             |    1   612  612 |    0   537  537   |    0   450  450  |    2   587  587  | 24
 25 critical moves                     |         X    X  |    X              |    X             |         X    X   | 25
 26 critical volumes                   | N&S:    612                         | E&W:   587                          | 26
 27 critical move phases:          2   | total  1198      v/c:      0.746                                          | 27
 28                                    |                                                                             | 28
 29 phases, w/ N&S opposed         3   | total  1735      v/c:      1.147                                          | 29
 30 phases, w/ E&W opposed         3   | total  1648      v/c:      1.086                                          | 30
 31                                    |                                                                             | 31
 32 opposed phasing vol/lane           |    1   612  612 |    0   537  537   |    0   450  450  |    2   587  587  | 32
 33 critical volumes                   | N&S:   1148                         | E&W:  1036                           | 33
 34 critical move phases:          4   | total  2184      v/c:      1.518                                          | 34
 35                                    |                 ***********************************                       | 35
 36 CRITICAL MOVE PHASES:          2   | TOTAL  1198      V/C:      0.746       LOS:  C                           | 36
 37                                                      ***********************************                         37
 38                                                                                                                   38
  *    02/16/93                         with  1.000 yearly adjustment            1.000 peak-hour adjustment           39
 40                                                                                                                   40
 41 Western Av. & Wilshire Blvd. (Temp. Constr.)                                                                      41
```

87

ADD 12

ADD 6

NOT CRITICAL

ΔV/C = 0.000

ADJUST BY W. OKITSU, 6/3/94

ITEM K

CANCEL LINE #497

BUSES LOST 3 E/B

CARS GAINED 15 E/B

NET 12 E/B

INTERSECTION CAPACITY UTILIZATION

Intersection: Rosemead Blvd (N/S) & Huntington Dr (E/W) 97 (Station)
Count Date: 5/15/93 Peak Hr: 5:00–6:00PM
Analyst: JHC Agency: LACDPW

Movement	Volume	Adjusted Volume [1]	No. of Lanes [3]	Capacity [2]	V/C Ratio	Critical V/C	Total
NB Left	132	132	1	1600	0.083	<==	
NB Thru	883	883	2	3200	0.276		
NB Right	155	155	1	1600	0.097		
SB Left	208	208	1	1600	0.130		
SB Thru	1230	1230	2	3200	0.384	<==	
SB Right	85	85	1	1600	0.053		
EB Left	312	312	1	1600	0.195		
EB Thru	1407	1407	4	6400	0.220	<==	
EB Right	205	205	1	1600	0.128		
WB Left	429	429	2	2880	0.149	<==	
WB Thru	887	887	4	6400	0.139		*
WB Right	97	97	1	1600	0.061		
Sum of Critical V/C Ratios							0.836
Adjustment for Lost Time							0.100
Intersection Capacity Utilization (ICU)							0.936
Level of Service (LOS) – Refer to table below							E

NOTES

1. Counted volume adjusted for left turn PCE or free flow right turn (if applicable).
2. Per–lane Capacity= 1600 vph
   dual turn lane cap.= 2880 vph
3. Non–integer values indicate proportion of shared lane used by movement.

LOS	Maximum V/C
A	0.60
B	0.70
C	0.80
D	0.90
E	1.00
F	n/a

INTERSECTION CAPACITY UTILIZATION

Intersection: Rosemead Blvd (N/S) & Huntington Dr (E/W) 97 (Station)

Count Date: **WITH PROJECT – Package K** Peak Hr: 5:00–6:00PM

Analyst: GRD Agency: LACDPW

Movement	Volume	Adjusted Volume [1]	No. of Lanes [3]	Capacity [2]	V/C Ratio	Critical V/C	Total
NB Left	132	132	1	1600	0.083	<==	
NB Thru	883	883	2	3200	0.276		
NB Right	155	155	1	1600	0.097		
SB Left	208	208	1	1600	0.130		
SB Thru	1230	1230	2	3200	0.384	<==	
SB Right	85	85	1	1600	0.053		
EB Left	312	312	1	1600	0.195		
EB Thru	1407	1407	4	6400	0.220	<==	
EB Right	205	205	1	1600	0.128		
WB Left	429	429	2	2880	0.149	<==	
WB Thru	887	887	4	6400	0.139		*
WB Right	97	97	1	1600	0.061		
Sum of Critical V/C Ratios							0.836
Adjustment for Lost Time							0.100
Intersection Capacity Utilization (ICU)							0.936
Level of Service (LOS) – Refer to table below							E

NOTES
1. Counted volume adjusted for left turn PCE or free flow right turn (if applicable).
2. Per–lane Capacity= 1600 vph
   dual turn lane cap.= 2880 vph
3. Non–integer values indicate proportion of shared lane used by movement.

LOS	Maximum V/C
A	0.60
B	0.70
C	0.80
D	0.90
E	1.00
F	n/a

06/03/94

INTERSECTION CAPACITY UTILIZATION

Intersection: Arroyo Parkway (N/S) & California Blvd. (E/W) 115 (Station)

Count Date: 5/11/93 Peak Hr: PM

Analyst: GRD Agency: City of Pasadena

Movement	Volume	Adjusted Volume [1]	No. of Lanes [3]	Capacity [2]	V/C Ratio	Critical V/C	Total
NB Left	125	125	1	1600	0.078		
NB Thru	1126	1126	3	4800	0.289	<==	
NB Right	259	259	0	0	---		
SB Left	91	91	1	1600	0.057	<==	
SB Thru	1088	1088	3	4800	0.240		
SB Right	64	64	0	0	---		
EB Left	82	82	1	1600	0.051		
EB Thru	1025	1025	2	3200	0.320	<==	
EB Right	71	71	1	1600	0.044		
WB Left	277	277	1	1600	0.173	<==	
WB Thru	691	691	2	3200	0.234		
WB Right	59	59	0	0	---		
Sum of Critical V/C Ratios							0.839
Adjustment for Lost Time							0.100
Intersection Capacity Utilization (ICU)							0.939
Level of Service (LOS) – Refer to table below							E

NOTES

1. Counted volume adjusted for left turn PCE or free flow right turn (if applicable).
2. Per–lane Capacity= 1600 vph
   dual turn lane cap.= 2880 vph
3. Non–integer values indicate proportion of shared lane used by movement.

LOS	Maximum V/C
A	0.60
B	0.70
C	0.80
D	0.90
E	1.00
F	n/a

06/03/94

INTERSECTION CAPACITY UTILIZATION

Intersection: Arroyo Parkway (N/S) & California Blvd. (E/W) 115 (Station)

Count Date: **WITH PROJECT – Package K** Peak Hr: PM

Analyst: GRD Agency: City of Pasadena

Movement	Volume	Adjusted Volume [1]	No. of Lanes [3]	Capacity [2]	V/C Ratio	Critical V/C	Total
NB Left	125	125	1	1600	0.078		
NB Thru	1126	1135	3	4800	0.290	<==	
NB Right	259	259	0	0	---		
SB Left	91	91	1	1600	0.057	<==	
SB Thru	1088	1093	3	4800	0.241		
SB Right	64	64	0	0	---		
EB Left	82	82	1	1600	0.051		
EB Thru	1025	1025	2	3200	0.320	<==	
EB Right	71	71	1	1600	0.044		
WB Left	277	277	1	1600	0.173	<==	
WB Thru	691	691	2	3200	0.234		
WB Right	59	59	0	0	---		
Sum of Critical V/C Ratios							0.840
Adjustment for Lost Time							0.100
Intersection Capacity Utilization (ICU)							0.940
Level of Service (LOS) – Refer to table below							E

NOTES

1. Counted volume adjusted for left turn PCE or free flow right turn (if applicable).
2. Per-lane Capacity= 1600 vph
   dual turn lane cap.= 2880 vph
3. Non-integer values indicate proportion of shared lane used by movement.

LOS	Maximum V/C
A	0.60
B	0.70
C	0.80
D	0.90
E	1.00
F	n/a

06/03/94

INTERSECTION CAPACITY UTILIZATION

Intersection: Pasadena Ave (N/S) & California Blvd (E/W) 116 (Station)

Count Date: 6/9/93 Peak Hr: 5:00–6:00PM

Analyst: KDM Agency: City of Pasadena

Movement	Volume	Adjusted Volume [1]	No. of Lanes [3]	Capacity [2]	V/C Ratio	Critical V/C	Total
NB Left	50	50	1	1600	0.031		
NB Thru	1757	1757	3	4800	0.383	<==	
NB Right	80	80	0	0	---		
SB Left	0	0	0	0	---		
SB Thru	0	0	0	0	0.000		
SB Right	0	0	0	0	---		
EB Left	247	247	1	1600	0.154	<==	
EB Thru	868	868	2	3200	0.271		
EB Right	0	0	0	0	---		
WB Left	0	0	0	0	---		
WB Thru	412	412	2	3200	0.129		*
WB Right	582	582	1	1600	0.364	<==	

Sum of Critical V/C Ratios	0.901
Adjustment for Lost Time	0.100
Intersection Capacity Utilization (ICU)	1.001
Level of Service (LOS) – Refer to table below	F

NOTES

1. Counted volume adjusted for left turn PCE or free flow right turn (if applicable).
2. Per–lane Capacity= 1600 vph
   dual turn lane cap.= 2880 vph
3. Non–integer values indicate proportion of shared lane used by movement.

LOS	Maximum V/C
A	0.60
B	0.70
C	0.80
D	0.90
E	1.00
F	n/a

06/03/94

INTERSECTION CAPACITY UTILIZATION

Intersection: Pasadena Ave (N/S) & California Blvd (E/W) 116 (Station)

Count Date: **WITH PROJECT – Package I** Peak Hr: 5:00–6:00PM

Analyst: GRD Agency: City of Pasadena

Movement	Volume	Adjusted Volume [1]	No. of Lanes [3]	Capacity [2]	V/C Ratio	Critical V/C	Total
NB Left	50	50	1	1600	0.031		
NB Thru	1757	1757	3	4800	0.383	<==	
NB Right	80	80	0	0	---		
SB Left	0	0	0	0	---		
SB Thru	0	0	0	0	0.000		
SB Right	0	0	0	0	---		
EB Left	247	247	1	1600	0.154	<==	
EB Thru	868	870	2	3200	0.272		
EB Right	0	0	0	0	---		
WB Left	0	0	0	0	---		
WB Thru	412	415	2	3200	0.130		*
WB Right	582	582	1	1600	0.364	<==	

Sum of Critical V/C Ratios	0.901
Adjustment for Lost Time	0.100
Intersection Capacity Utilization (ICU)	1.001
Level of Service (LOS) – Refer to table below	F

NOTES

1. Counted volume adjusted for left turn PCE or free flow right turn (if applicable).
2. Per-lane Capacity= 1600 vph
   dual turn lane cap.= 2880 vph
3. Non-integer values indicate proportion of shared lane used by movement.

LOS	Maximum V/C
A	0.60
B	0.70
C	0.80
D	0.90
E	1.00
F	n/a

06/03/94

INTERSECTION CAPACITY UTILIZATION

Intersection: Pasadena Ave (N/S) & California Blvd (E/W) 116 (Station)
Count Date: **WITH PROJECT – Package L** Peak Hr: 5:00–6:00PM
Analyst: GRD Agency: City of Pasadena

Movement	Volume	Adjusted Volume [1]	No. of Lanes [3]	Capacity [2]	V/C Ratio	Critical V/C	Total
NB Left	50	50	1	1600	0.031		
NB Thru	1757	1757	3	4800	0.383	<==	
NB Right	80	80	0	0	---		
SB Left	0	0	0	0	---		
SB Thru	0	0	0	0	0.000		
SB Right	0	0	0	0	---		
EB Left	247	247	1	1600	0.154	<==	
EB Thru	868	870	2	3200	0.272		
EB Right	0	0	0	0	---		
WB Left	0	0	0	0	---		
WB Thru	412	415	2	3200	0.130		*
WB Right	582	582	1	1600	0.364	<==	
Sum of Critical V/C Ratios							0.901
Adjustment for Lost Time							0.100
Intersection Capacity Utilization (ICU)							1.001
Level of Service (LOS) – Refer to table below							F

NOTES

1. Counted volume adjusted for left turn PCE or free flow right turn (if applicable).
2. Per–lane Capacity= 1600 vph
   dual turn lane cap.= 2880 vph
3. Non–integer values indicate proportion of shared lane used by movement.

LOS	Maximum V/C
A	0.60
B	0.70
C	0.80
D	0.90
E	1.00
F	n/a

06/03/94

INTERSECTION CAPACITY UTILIZATION

Intersection: Rosemead Blvd (N/S) & Foothill Blvd (E/W) 117 (Station)

Count Date: 6/9/93 Peak Hr: 4:45–5:45PM

Analyst: KDM Agency: City of Pasadena

Movement	Volume	Adjusted Volume [1]	No. of Lanes [3]	Capacity [2]	V/C Ratio	Critical V/C	Total
NB Left	179	179	1	1600	0.112		
NB Thru	415	415	2	3200	0.130		
NB Right	510	510	1	1600	0.319	<==	
SB Left	302	302	1	1600	0.189	<==	
SB Thru	436	436	2	3200	0.136		
SB Right	18	18	1	1600	0.011		
EB Left	122	122	1	1600	0.076		
EB Thru	958	958	2	3200	0.299	<==	
EB Right	439	439	1	1600	0.274		
WB Left	133	133	1	1600	0.083		
WB Thru	350	350	2	3200	0.109		
WB Right	273	273	1	1600	0.171		
Sum of Critical V/C Ratios							0.807
Adjustment for Lost Time							0.100
Intersection Capacity Utilization (ICU)							0.907
Level of Service (LOS) – Refer to table below							E

NOTES

1. Counted volume adjusted for left turn PCE or free flow right turn (if applicable).
2. Per–lane Capacity= 1600 vph
   dual turn lane cap.= 2880 vph
3. Non–integer values indicate proportion of shared lane used by movement.

LOS	Maximum V/C
A	0.60
B	0.70
C	0.80
D	0.90
E	1.00
F	n/a

06/03/94

INTERSECTION CAPACITY UTILIZATION

Intersection: Rosemead Blvd (N/S) & Foothill Blvd (E/W) 117 (Station)
Count Date: **WITH PROJECT – Package I** Peak Hr: 4:45–5:45PM
Analyst: GRD Agency: City of Pasadena

Movement	Volume	Adjusted Volume [1]	No. of Lanes [3]	Capacity [2]	V/C Ratio	Critical V/C	Total
NB Left	179	179	1	1600	0.112		
NB Thru	415	415	2	3200	0.130		
NB Right	510	510	1	1600	0.319	<==	
SB Left	302	302	1	1600	0.189	<==	
SB Thru	436	436	2	3200	0.136		
SB Right	18	18	1	1600	0.011		
EB Left	122	122	1	1600	0.076		
EB Thru	958	970	2	3200	0.303	<==	
EB Right	439	439	1	1600	0.274		
WB Left	133	133	1	1600	0.083		
WB Thru	350	360	2	3200	0.113		
WB Right	273	273	1	1600	0.171		
Sum of Critical V/C Ratios							0.811
Adjustment for Lost Time							0.100
Intersection Capacity Utilization (ICU)							0.911
Level of Service (LOS) – Refer to table below							E

NOTES

1. Counted volume adjusted for left turn PCE or free flow right turn (if applicable).
2. Per–lane Capacity= 1600 vph
   dual turn lane cap.= 2880 vph
3. Non–integer values indicate proportion of shared lane used by movement.

LOS	Maximum V/C
A	0.60
B	0.70
C	0.80
D	0.90
E	1.00
F	n/a

06/03/94

INTERSECTION CAPACITY UTILIZATION

Intersection: Rosemead Blvd (N/S) & Foothill Blvd (E/W) 117 (Station)
Count Date: **WITH PROJECT – Package L** Peak Hr: 4:45–5:45PM
Analyst: GRD Agency: City of Pasadena

Movement	Volume	Adjusted Volume [1]	No. of Lanes [3]	Capacity [2]	V/C Ratio	Critical V/C	Total
NB Left	179	179	1	1600	0.112		
NB Thru	415	415	2	3200	0.130		
NB Right	510	510	1	1600	0.319	<==	
SB Left	302	302	1	1600	0.189	<==	
SB Thru	436	436	2	3200	0.136		
SB Right	18	18	1	1600	0.011		
EB Left	122	122	1	1600	0.076		
EB Thru	958	963	2	3200	0.301	<==	
EB Right	439	439	1	1600	0.274		
WB Left	133	133	1	1600	0.083		
WB Thru	350	353	2	3200	0.110		
WB Right	273	273	1	1600	0.171		
Sum of Critical V/C Ratios							0.809
Adjustment for Lost Time							0.100
Intersection Capacity Utilization (ICU)							0.909
Level of Service (LOS) – Refer to table below							E

NOTES

1. Counted volume adjusted for left turn PCE or free flow right turn (if applicable).
2. Per–lane Capacity= 1600 vph
   dual turn lane cap.= 2880 vph
3. Non–integer values indicate proportion of shared lane used by movement.

LOS	Maximum V/C
A	0.60
B	0.70
C	0.80
D	0.90
E	1.00
F	n/a

06/03/94

INTERSECTION CAPACITY UTILIZATION

Intersection: Rosemead Blvd (N/S) & Whittier Blvd (E/W) 119 (Station)

Count Date: 6/8/93 Peak Hr: PM

Analyst: SC Agency: Pico Rivera

Movement	Volume	Adjusted Volume [1]	No. of Lanes [3]	Capacity [2]	V/C Ratio	Critical V/C	Total
NB Left	137	137	1	1600	0.086		
NB Thru	1799	1799	2	3200	0.562	<==	
NB Right	84	84	1	1600	0.053		
SB Left	183	183	1	1600	0.114	<==	
SB Thru	797	797	2	3200	0.249		
SB Right	76	76	1	1600	0.048		
EB Left	187	187	1	1600	0.117		
EB Thru	1104	1104	3	4800	0.256	<==	
EB Right	126	126	0	0	---		
WB Left	171	171	1	1600	0.107	<==	
WB Thru	324	324	3	4800	0.108		
WB Right	195	195	0	0	---		
Sum of Critical V/C Ratios							1.039
Adjustment for Lost Time							0.100
Intersection Capacity Utilization (ICU)							1.139
Level of Service (LOS) – Refer to table below							F

NOTES

1. Counted volume adjusted for left turn PCE or free flow right turn (if applicable).
2. Per–lane Capacity= 1600 vph
   dual turn lane cap.= 2880 vph
3. Non–integer values indicate proportion of shared lane used by movement.

LOS	Maximum V/C
A	0.60
B	0.70
C	0.80
D	0.90
E	1.00
F	n/a

06/03/94

INTERSECTION CAPACITY UTILIZATION

Intersection: Rosemead Blvd (N/S) & Whittier Blvd (E/W) 119 (Station)

Count Date: **WITH PROJECT – Package L** Peak Hr: PM

Analyst: GRD Agency: Pico Rivera

Movement	Volume	Adjusted Volume [1]	No. of Lanes [3]	Capacity [2]	V/C Ratio	Critical V/C	Total
NB Left	137	137	1	1600	0.086		
NB Thru	1799	1800	2	3200	0.563	<==	
NB Right	84	84	1	1600	0.053		
SB Left	183	183	1	1600	0.114	<==	
SB Thru	797	798	2	3200	0.249		
SB Right	76	76	1	1600	0.048		
EB Left	187	187	1	1600	0.117		
EB Thru	1104	1104	3	4800	0.256	<==	
EB Right	126	126	0	0	---		
WB Left	171	171	1	1600	0.107	<==	
WB Thru	324	324	3	4800	0.108		
WB Right	195	195	0	0	---		
Sum of Critical V/C Ratios							1.040
Adjustment for Lost Time							0.100
Intersection Capacity Utilization (ICU)							1.140
Level of Service (LOS) – Refer to table below							F

NOTES

1. Counted volume adjusted for left turn PCE or free flow right turn (if applicable).
2. Per–lane Capacity= 1600 vph
   dual turn lane cap.= 2880 vph
3. Non–integer values indicate proportion of shared lane used by movement.

LOS	Maximum V/C
A	0.60
B	0.70
C	0.80
D	0.90
E	1.00
F	n/a

06/03/94

INTERSECTION CAPACITY UTILIZATION

Intersection: Toscanini (N/S) & Western Ave (E/W) 124 (Station)

Count Date: 6/2/93 Peak Hr: PM

Analyst: KWS Agency: Rancho Palos Verdes

Movement	Volume	Adjusted Volume [1]	No. of Lanes [3]	Capacity [2]	V/C Ratio	Critical V/C	Total
NB Left	85	85	1	1600	0.053	<==	
NB Thru	1310	1310	2	3200	0.409		
NB Right	82	82	1	1600	0.051		
SB Left	60	60	1	1600	0.038		
SB Thru	1735	1735	2	3200	0.542	<==	
SB Right	58	58	1	1600	0.036		
EB Left	31	31	0	0	---		
EB Thru	11	11	1	1600	0.026		
EB Right	88	88	1	1600	0.055		
WB Left	36	36	0	0	---		
WB Thru	27	27	1	1600	0.039	<==	
WB Right	81	81	1	1600	0.051		
Sum of Critical V/C Ratios							0.634
Adjustment for Lost Time							0.100
Intersection Capacity Utilization (ICU)							0.734
Level of Service (LOS) – Refer to table below							C

NOTES

1. Counted volume adjusted for left turn PCE or free flow right turn (if applicable).
2. Per–lane Capacity= 1600 vph
   dual turn lane cap.= 2880 vph
3. Non–integer values indicate proportion of shared lane used by movement.

LOS	Maximum V/C
A	0.60
B	0.70
C	0.80
D	0.90
E	1.00
F	n/a

06/03/94

INTERSECTION CAPACITY UTILIZATION

Intersection: Toscanini (N/S) & Western Ave (E/W) 124 (Station)

Count Date: **WITH PROJECT – Package I** Peak Hr: PM

Analyst: GRD Agency: Rancho Palos Verdes

Movement	Volume	Adjusted Volume [1]	No. of Lanes [3]	Capacity [2]	V/C Ratio	Critical V/C	Total
NB Left	85	85	1	1600	0.053	<==	
NB Thru	1310	1310	2	3200	0.409		
NB Right	82	82	1	1600	0.051		
SB Left	60	60	1	1600	0.038		
SB Thru	1735	1738	2	3200	0.543	<==	
SB Right	58	58	1	1600	0.036		
EB Left	31	31	0	0	---		
EB Thru	11	11	1	1600	0.026		
EB Right	88	88	1	1600	0.055		
WB Left	36	36	0	0	---		
WB Thru	27	27	1	1600	0.039	<==	
WB Right	81	81	1	1600	0.051		
Sum of Critical V/C Ratios							0.635
Adjustment for Lost Time							0.100
Intersection Capacity Utilization (ICU)							0.735
Level of Service (LOS) – Refer to table below							C

NOTES

1. Counted volume adjusted for left turn PCE or free flow right turn (if applicable).
2. Per–lane Capacity= 1600 vph
   dual turn lane cap.= 2880 vph
3. Non–integer values indicate proportion of shared lane used by movement.

LOS	Maximum V/C
A	0.60
B	0.70
C	0.80
D	0.90
E	1.00
F	n/a

06/03/94

INTERSECTION CAPACITY UTILIZATION

Intersection: Toscanini (N/S) & Western Ave (E/W) 124 · (Station)

Count Date: **WITH PROJECT – Package L** Peak Hr: PM

Analyst: GRD Agency: Rancho Palos Verdes

Movement	Volume	Adjusted Volume [1]	No. of Lanes [3]	Capacity [2]	V/C Ratio	Critical V/C	Total
NB Left	85	85	1	1600	0.053	<==	
NB Thru	1310	1313	2	3200	0.410		
NB Right	82	82	1	1600	0.051		
SB Left	60	60	1	1600	0.038		
SB Thru	1735	1738	2	3200	0.543	<==	
SB Right	58	58	1	1600	0.036		
EB Left	31	31	0	0	---		
EB Thru	11	11	1	1600	0.026		
EB Right	88	88	1	1600	0.055		
WB Left	36	36	0	0	---		
WB Thru	27	27	1	1600	0.039	<==	
WB Right	81	81	1	1600	0.051		

Sum of Critical V/C Ratios	0.635
Adjustment for Lost Time	0.100
Intersection Capacity Utilization (ICU)	0.735
Level of Service (LOS) – Refer to table below	C

NOTES

1. Counted volume adjusted for left turn PCE or free flow right turn (if applicable).
2. Per–lane Capacity= 1600 vph
   dual turn lane cap.= 2880 vph
3. Non–integer values indicate proportion of shared lane used by movement.

LOS	Maximum V/C
A	0.60
B	0.70
C	0.80
D	0.90
E	1.00
F	n/a

06/03/94

INTERSECTION CAPACITY UTILIZATION

Intersection: Pacific Coast Highway (N/S) & Torrance Boulevard (E/W) 126 (Station)
Count Date: 5/25/93 Peak Hr: PM
Analyst: GRD Agency: City of Redondo Beach

Movement	Volume	Adjusted Volume [1]	No. of Lanes [3]	Capacity [2]	V/C Ratio	Critical V/C	Total
NB Left	71	71	1	1600	0.044		
NB Thru	877	877	2	3200	0.303	<==	
NB Right	92	92	0	0	---		
SB Left	347	347	1	1600	0.217	<==	
SB Thru	1440	1440	2	3200	0.458		
SB Right	25	25	0	0	---		
EB Left	43	43	1	1600	0.027		
EB Thru	534	534	2	3200	0.181	<==	
EB Right	46	46	0	0	---		
WB Left	122	122	1	1600	0.076	<==	
WB Thru	526	526	2	3200	0.164		
WB Right	361	361	1	1600	0.226		

Sum of Critical V/C Ratios	0.777
Adjustment for Lost Time	0.100
Intersection Capacity Utilization (ICU)	0.877
Level of Service (LOS) – Refer to table below	D

NOTES

1. Counted volume adjusted for left turn PCE or free flow right turn (if applicable).
2. Per–lane Capacity= 1600 vph
   dual turn lane cap.= 2880 vph
3. Non–integer values indicate proportion of shared lane used by movement.

LOS	Maximum V/C
A	0.60
B	0.70
C	0.80
D	0.90
E	1.00
F	n/a

06/03/94

INTERSECTION CAPACITY UTILIZATION

Intersection: Pacific Coast Highway (N/S) & Torrance Boulevard (E/W) 126 (Station)
Count Date: WITH PROJECT – Package K Peak Hr: PM
Analyst: GRD Agency: City of Redondo Beach

Movement	Volume	Adjusted Volume [1]	No. of Lanes [3]	Capacity [2]	V/C Ratio	Critical V/C	Total
NB Left	71	71	1	1600	0.044		
NB Thru	877	877	2	3200	0.303	<==	
NB Right	92	92	0	0	---		
SB Left	347	347	1	1600	0.217	<==	
SB Thru	1440	1444	2	3200	0.459		
SB Right	25	25	0	0	---		
EB Left	43	43	1	1600	0.027		
EB Thru	534	534	2	3200	0.181	<==	
EB Right	46	46	0	0	---		
WB Left	122	122	1	1600	0.076	<==	
WB Thru	526	526	2	3200	0.164		
WB Right	361	361	1	1600	0.226		
Sum of Critical V/C Ratios							0.777
Adjustment for Lost Time							0.100
Intersection Capacity Utilization (ICU)							0.877
Level of Service (LOS) – Refer to table below							D

NOTES

1. Counted volume adjusted for left turn PCE or free flow right turn (if applicable).
2. Per–lane Capacity= 1600 vph
   dual turn lane cap.= 2880 vph
3. Non–integer values indicate proportion of shared lane used by movement.

LOS	Maximum V/C
A	0.60
B	0.70
C	0.80
D	0.90
E	1.00
F	n/a

06/03/94

INTERSECTION CAPACITY UTILIZATION

Intersection: Pacific Coast Highway (N/S) & Torrance Boulevard (E/W) 126 (Station)

Count Date: WITH PROJECT – P~~ackage W~~ Preferred

Peak Hr: PM

Analyst: GRD

Agency: City of Redondo Beach

Movement	Volume	Adjusted Volume [1]	No. of Lanes [3]	Capacity [2]	V/C Ratio	Critical V/C	Total
NB Left	71	71	1	1600	0.044		
NB Thru	877	877	2	3200	0.303	<==	
NB Right	92	92	0	0	---		
SB Left	347	347	1	1600	0.217	<==	
SB Thru	1440	1444	2	3200	0.459		
SB Right	25	25	0	0	---		
EB Left	43	43	1	1600	0.027		
EB Thru	534	534	2	3200	0.181	<==	
EB Right	46	46	0	0	---		
WB Left	122	122	1	1600	0.076	<==	
WB Thru	526	526	2	3200	0.164		
WB Right	361	361	1	1600	0.226		
Sum of Critical V/C Ratios							0.777
Adjustment for Lost Time							0.100
Intersection Capacity Utilization (ICU)							0.877
Level of Service (LOS) – Refer to table below							D

NOTES

1. Counted volume adjusted for left turn PCE or free flow right turn (if applicable).
2. Per–lane Capacity= 1600 vph
   dual turn lane cap.= 2880 vph
3. Non–integer values indicate proportion of shared lane used by movement.

LOS	Maximum V/C
A	0.60
B	0.70
C	0.80
D	0.90
E	1.00
F	n/a

06/03/94

INTERSECTION CAPACITY UTILIZATION

Intersection: Rosemead Boulevard (N/S) & Valley Boulevard (E/W) 127 (Station)
Count Date: 5/25/93 Peak Hr: PM
Analyst: GRD Agency: City of Rosemead

Movement	Volume	Adjusted Volume [1]	No. of Lanes [3]	Capacity [2]	V/C Ratio	Critical V/C	Total
NB Left	203	203	1	1600	0.127		
NB Thru	1676	1676	2	3200	0.524	<==	
NB Right	160	160	1	1600	0.100		
SB Left	77	77	1	1600	0.048	<==	
SB Thru	1380	1380	2	3200	0.431		
SB Right	185	185	1	1600	0.116		
EB Left	210	210	1	1600	0.131		
EB Thru	643	643	2	3200	0.201	<==	
EB Right	193	193	1	1600	0.121		
WB Left	157	157	1	1600	0.098	<==	
WB Thru	414	414	2	3200	0.129		
WB Right	69	69	1	1600	0.043		
Sum of Critical V/C Ratios							0.871
Adjustment for Lost Time							0.100
Intersection Capacity Utilization (ICU)							0.971
Level of Service (LOS) -- Refer to table below							E

NOTES

1. Counted volume adjusted for left turn PCE or free flow right turn (if applicable).
2. Per-lane Capacity= 1600 vph
   dual turn lane cap.= 2880 vph
3. Non-integer values indicate proportion of shared lane used by movement.

LOS	Maximum V/C
A	0.60
B	0.70
C	0.80
D	0.90
E	1.00
F	n/a

06/03/94

INTERSECTION CAPACITY UTILIZATION

Intersection: Rosemead Boulevard (N/S) & Valley Boulevard (E/W) 127 (Station)
Count Date: **WITH PROJECT – Package K** Peak Hr: PM
Analyst: GRD Agency: City of Rosemead

Movement	Volume	Adjusted Volume [1]	No. of Lanes [3]	Capacity [2]	V/C Ratio	Critical V/C	Total
NB Left	203	203	1	1600	0.127		
NB Thru	1676	1676	2	3200	0.524	<==	
NB Right	160	160	1	1600	0.100		
SB Left	77	77	1	1600	0.048	<==	
SB Thru	1380	1380	2	3200	0.431		
SB Right	185	185	1	1600	0.116		
EB Left	210	210	1	1600	0.131		
EB Thru	643	640	2	3200	0.200	<==	
EB Right	193	193	1	1600	0.121		
WB Left	157	157	1	1600	0.098	<==	
WB Thru	414	414	2	3200	0.129		
WB Right	69	69	1	1600	0.043		
Sum of Critical V/C Ratios							0.870
Adjustment for Lost Time							0.100
Intersection Capacity Utilization (ICU)							0.970
Level of Service (LOS) – Refer to table below							E

NOTES

1. Counted volume adjusted for left turn PCE or free flow right turn (if applicable).
2. Per–lane Capacity= 1600 vph
   dual turn lane cap.= 2880 vph
3. Non–integer values indicate proportion of shared lane used by movement.

LOS	Maximum V/C
A	0.60
B	0.70
C	0.80
D	0.90
E	1.00
F	n/a

06/03/94

INTERSECTION CAPACITY UTILIZATION

Intersection: Wilshire Blvd (N/S) & 26th St. (E/W) 137 (Station)
Count Date: 5/11/93 Peak Hr: 5:00-6:00PM
Analyst: JR Agency: City of Santa Monica

Movement	Volume	Adjusted Volume [1]	No. of Lanes [3]	Capacity [2]	V/C Ratio	Critical V/C	Total
NB Left	77	77	1	1600	0.048		
NB Thru	765	765	2	3200	0.275	<==	
NB Right	115	115	0	0	---		
SB Left	114	114	1	1600	0.071	<==	
SB Thru	433	433	2	3200	0.152		
SB Right	53	53	0	0	---		
EB Left	112	112	1	1600	0.070	<==	
EB Thru	1110	1110	2	3200	0.361		
EB Right	45	45	0	0	---		
WB Left	70	70	1	1600	0.044		
WB Thru	1128	1128	2	3200	0.394	<==	
WB Right	132	132	0	0	---		
Sum of Critical V/C Ratios							0.810
Adjustment for Lost Time							0.100
Intersection Capacity Utilization (ICU)							0.910
Level of Service (LOS) – Refer to table below							E

NOTES

1. Counted volume adjusted for left turn PCE or free flow right turn (if applicable).
2. Per-lane Capacity= 1600 vph
   dual turn lane cap.= 2880 vph
3. Non-integer values indicate proportion of shared lane used by movement.

LOS	Maximum V/C
A	0.60
B	0.70
C	0.80
D	0.90
E	1.00
F	n/a

06/03/94

INTERSECTION CAPACITY UTILIZATION

Intersection: Wilshire Blvd (N/S) & 26th St. (E/W) 137 (Station)
Count Date: **WITH PROJECT – Package I** Peak Hr: 5:00–6:00PM
Analyst: GRD Agency: City of Santa Monica

Movement	Volume	Adjusted Volume [1]	No. of Lanes [3]	Capacity [2]	V/C Ratio	Critical V/C	Total
NB Left	77	77	1	1600	0.048		
NB Thru	765	765	2	3200	0.275	<==	
NB Right	115	115	0	0	---		
SB Left	114	114	1	1600	0.071	<==	
SB Thru	433	433	2	3200	0.152		
SB Right	53	53	0	0	---		
EB Left	112	112	1	1600	0.070	<==	
EB Thru	1110	1117	2	3200	0.363		
EB Right	45	45	0	0	---		
WB Left	70	70	1	1600	0.044		
WB Thru	1128	1135	2	3200	0.396	<==	
WB Right	132	132	0	0	---		
Sum of Critical V/C Ratios							0.812
Adjustment for Lost Time							0.100
Intersection Capacity Utilization (ICU)							0.912
Level of Service (LOS) – Refer to table below							E

NOTES

1. Counted volume adjusted for left turn PCE or free flow right turn (if applicable).
2. Per–lane Capacity= 1600 vph
   dual turn lane cap.= 2880 vph
3. Non–integer values indicate proportion of shared lane used by movement.

LOS	Maximum V/C
A	0.60
B	0.70
C	0.80
D	0.90
E	1.00
F	n/a

06/03/94

INTERSECTION CAPACITY UTILIZATION

Intersection: Atlantic Blvd (N/S) & Firestone Blvd (E/W) 140 (Station)

Count Date: 2/17/93 Peak Hr: PM

Analyst: ES Agency: City of South Gate

Movement	Volume	Adjusted Volume [1]	No. of Lanes [3]	Capacity [2]	V/C Ratio	Critical V/C	Total
NB Left	126	126	1	1600	0.079		
NB Thru	476	476	2	3200	0.192	<==	
NB Right	139	139	0	0	---		
SB Left	516	516	2	2880	0.179	<==	
SB Thru	564	564	2	3200	0.210		
SB Right	109	109	0	0	---		
EB Left	132	132	1	1600	0.083	<==	
EB Thru	1524	1524	3	4800	0.333		
EB Right	73	73	0	0	---		
WB Left	108	108	1	1600	0.068		
WB Thru	1412	1412	3	4800	0.332	<==	
WB Right	181	181	0	0	---		
Sum of Critical V/C Ratios							0.786
Adjustment for Lost Time							0.100
Intersection Capacity Utilization (ICU)							0.886
Level of Service (LOS) – Refer to table below							D

NOTES

1. Counted volume adjusted for left turn PCE or free flow right turn (if applicable).
2. Per–lane Capacity= 1600 vph
   dual turn lane cap.= 2880 vph
3. Non–integer values indicate proportion of shared lane used by movement.

LOS	Maximum V/C
A	0.60
B	0.70
C	0.80
D	0.90
E	1.00
F	n/a

06/03/94

INTERSECTION CAPACITY UTILIZATION

Intersection: Atlantic Blvd (N/S) & Firestone Blvd (E/W) 140 (Station)
Count Date: WITH PROJECT – Package L
Peak Hr: PM
Analyst: GRD
Agency: City of South Gate

Movement	Volume	Adjusted Volume [1]	No. of Lanes [3]	Capacity [2]	V/C Ratio	Critical V/C	Total
NB Left	126	126	1	1600	0.079		
NB Thru	476	476	2	3200	0.192	<==	
NB Right	139	139	0	0	---		
SB Left	516	516	2	2880	0.179	<==	
SB Thru	564	565	2	3200	0.211		
SB Right	109	109	0	0	---		
EB Left	132	132	1	1600	0.083	<==	
EB Thru	1524	1524	3	4800	0.333		
EB Right	73	73	0	0	---		
WB Left	108	108	1	1600	0.068		
WB Thru	1412	1412	3	4800	0.332	<==	
WB Right	181	181	0	0	---		
Sum of Critical V/C Ratios							0.786
Adjustment for Lost Time							0.100
Intersection Capacity Utilization (ICU)							0.886
Level of Service (LOS) – Refer to table below							D

NOTES

1. Counted volume adjusted for left turn PCE or free flow right turn (if applicable).
2. Per–lane Capacity= 1600 vph
   dual turn lane cap.= 2880 vph
3. Non–integer values indicate proportion of shared lane used by movement.

LOS	Maximum V/C
A	0.60
B	0.70
C	0.80
D	0.90
E	1.00
F	n/a

06/03/94

INTERSECTION CAPACITY UTILIZATION

Intersection: Hawthorn (N/S) & Artesia (E/W) 144 ~~149~~ (Station)

Count Date: 4/21/93 Peak Hr: 5:00-6:00PM

Analyst: JEF Agency: Torrance

Movement	Volume	Adjusted Volume [1]	No. of Lanes [3]	Capacity [2]	V/C Ratio	Critical V/C	Total
NB Left	328	328	2	2880	0.114	<==	
NB Thru	2178	2178	4	6400	0.383		
NB Right	271	271	0	0	---		
SB Left	167	167	2	2880	0.058		
SB Thru	2245	2245	4	6400	0.356	<==	
SB Right	31	31	0	0	---		
EB Left	0	0	0	0	---		
EB Thru	745	745	2	3200	0.233	<==	
EB Right	284	284	1	1600	0.178		
WB Left	415	415	2	2880	0.144	<==	
WB Thru	1010	1010	2	3200	0.342		
WB Right	83	83	0	0	---		

Sum of Critical V/C Ratios	0.847
Adjustment for Lost Time	0.100
Intersection Capacity Utilization (ICU)	0.947
Level of Service (LOS) - Refer to table below	E

NOTES

1. Counted volume adjusted for left turn PCE or free flow right turn (if applicable).
2. Per-lane Capacity= 1600 vph
   dual turn lane cap.= 2880 vph
3. Non-integer values indicate proportion of shared lane used by movement.

LOS	Maximum V/C
A	0.60
B	0.70
C	0.80
D	0.90
E	1.00
F	n/a

INTERSECTION CAPACITY UTILIZATION

Intersection: Hawthorne (N/S) & Artesia (E/W) 144 ~~149~~ (Station)
Count Date: WITH PROJECT – Package L
Peak Hr: 5:00–6:00PM
Analyst: GRD
Agency: Torrance

Movement	Volume	Adjusted Volume [1]	No. of Lanes [3]	Capacity [2]	V/C Ratio	Critical V/C	Total
NB Left	328	328	2	2880	0.114	<==	
NB Thru	2178	2178	4	6400	0.383		
NB Right	271	271	0	0	---		
SB Left	167	167	2	2880	0.058		
SB Thru	2245	2245	4	6400	0.356	<==	
SB Right	31	31	0	0	---		
EB Left	0	0	0	0	---		
EB Thru	745	748	2	3200	0.234	<==	
EB Right	284	284	1	1600	0.178		
WB Left	415	415	2	2880	0.144	<==	
WB Thru	1010	1017	2	3200	0.344		
WB Right	83	83	0	0	---		
Sum of Critical V/C Ratios							0.848
Adjustment for Lost Time							0.100
Intersection Capacity Utilization (ICU)							0.948
Level of Service (LOS) – Refer to table below							E

NOTES

1. Counted volume adjusted for left turn PCE or free flow right turn (if applicable).
2. Per–lane Capacity= 1600 vph
   dual turn lane cap.= 2880 vph
3. Non–integer values indicate proportion of shared lane used by movement.

LOS	Maximum V/C
A	0.60
B	0.70
C	0.80
D	0.90
E	1.00
F	n/a

06/03/94

INTERSECTION CAPACITY UTILIZATION

Intersection: Palos Verdes (N/S) & Pacific Coast Hwy (E/W) 149 (Station)

Count Date: 3/11/93 Peak Hr: 5:00-6:00PM

Analyst: JEF Agency: Torrance

Movement	Volume	Adjusted Volume [1]	No. of Lanes [3]	Capacity [2]	V/C Ratio	Critical V/C	Total
NB Left	179	179	1	1600	0.112	<==	
NB Thru	431	431	2	3200	0.184		
NB Right	157	157	0	0	---		
SB Left	93	93	1	1600	0.058		
SB Thru	559	559	2	3200	0.175	<==	
SB Right	148	148	1	1600	0.093		
EB Left	93	93	1	1600	0.058		
EB Thru	1117	1117	2	3200	0.445	<==	
EB Right	308	308	0	0	---		
WB Left	194	194	1	1600	0.121	<==	
WB Thru	774	774	2	3200	0.242		
WB Right	76	76	1	1600	0.048		

Sum of Critical V/C Ratios	0.853
Adjustment for Lost Time	0.100
Intersection Capacity Utilization (ICU)	0.953
Level of Service (LOS) – Refer to table below	E

NOTES

1. Counted volume adjusted for left turn PCE or free flow right turn (if applicable).
2. Per-lane Capacity= 1600 vph
   dual turn lane cap.= 2880 vph
3. Non-integer values indicate proportion of shared lane used by movement.

LOS	Maximum V/C
A	0.60
B	0.70
C	0.80
D	0.90
E	1.00
F	n/a

06/03/94

INTERSECTION CAPACITY UTILIZATION

Intersection: Palos Verdes (N/S) & Pacific Coast Hwy (E/W) 149 (Station)

Count Date: **WITH PROJECT – Package L** Peak Hr: 5:00–6:00PM

Analyst: GRD Agency: Torrance

Movement	Volume	Adjusted Volume [1]	No. of Lanes [3]	Capacity [2]	V/C Ratio	Critical V/C	Total
NB Left	179	179	1	1600	0.112	<==	
NB Thru	431	431	2	3200	0.184		
NB Right	157	157	0	0	---		
SB Left	93	93	1	1600	0.058		
SB Thru	559	559	2	3200	0.175	<==	
SB Right	148	148	1	1600	0.093		
EB Left	93	93	1	1600	0.058		
EB Thru	1117	1117	2	3200	0.445	<==	
EB Right	308	308	0	0	---		
WB Left	194	194	1	1600	0.121	<==	
WB Thru	774	774	2	3200	0.242		
WB Right	76	76	1	1600	0.048		
Sum of Critical V/C Ratios							0.853
Adjustment for Lost Time							0.100
Intersection Capacity Utilization (ICU)							0.953
Level of Service (LOS) – Refer to table below							E

NOTES

1. Counted volume adjusted for left turn PCE or free flow right turn (if applicable).
2. Per–lane Capacity= 1600 vph
   dual turn lane cap.= 2880 vph
3. Non–integer values indicate proportion of shared lane used by movement.

LOS	Maximum V/C
A	0.60
B	0.70
C	0.80
D	0.90
E	1.00
F	n/a

06/03/94

INTERSECTION CAPACITY UTILIZATION

Intersection: Palos Verdes (N/S) & Pacific Coast Hwy (E/W) 149 (Station)

Count Date: WITH PROJECT – Package V Peak Hr: 5:00–6:00PM

Analyst: GRD Agency: Torrance

Movement	Volume	Adjusted Volume [1]	No. of Lanes [3]	Capacity [2]	V/C Ratio	Critical V/C	Total
NB Left	179	179	1	1600	0.112	<==	
NB Thru	431	437	2	3200	0.186		
NB Right	157	157	0	0	---		
SB Left	93	93	1	1600	0.058		
SB Thru	559	562	2	3200	0.176	<==	
SB Right	148	148	1	1600	0.093		
EB Left	93	93	1	1600	0.058		
EB Thru	1117	1117	2	3200	0.445	<==	
EB Right	308	308	0	0	---		
WB Left	194	194	1	1600	0.121	<==	
WB Thru	774	774	2	3200	0.242		
WB Right	76	76	1	1600	0.048		
Sum of Critical V/C Ratios							0.854
Adjustment for Lost Time							0.100
Intersection Capacity Utilization (ICU)							0.954
Level of Service (LOS) – Refer to table below							E

NOTES

1. Counted volume adjusted for left turn PCE or free flow right turn (if applicable).
2. Per–lane Capacity= 1600 vph
   dual turn lane cap.= 2880 vph
3. Non–integer values indicate proportion of shared lane used by movement.

LOS	Maximum V/C
A	0.60
B	0.70
C	0.80
D	0.90
E	1.00
F	n/a

06/03/94

Appendix D:
Air Quality Worksheets

WORKSHEETS FOR CALCULATING EMISSION FACTORS FOR WORST-CASE SCENARIO BY POLLUTANT

Trip Speeds

		Analysis Year		LA Co Avg. Speeds		
Assumptions:		**1995**	**2009**	1987	2010	
Avg. speed (mph) used	**CO/NOx:**	*22.96*	*21.13*	24	21	AM Peak
for analysis of running	**ROC:**	*33.65*	*33.04*	34	33	Off-peak
emissions by pollutant	**SOx/PM10:**	*16.96*	*15.13*	18	15	PM Peak

Source of Assumptions: Trip speeds: SCAQMD CEQA Manual Table A9-5-F.
nnn: Values in italics interpolated from tables.

Emission Factors for Buses at Worst-Case Scenario Speed

Carbon Monoxide (CO)

Year	Est. Wrst. Case Spd.	Running Exhaust		
		20 mph	*est. spd.*	25 mph
1995	22.96	24.80	*21.73*	19.60
2009	21.13	25.57	*24.36*	20.21

Reactive Organic Compounds (ROC)

Year	Est. Wrst. Case Spd.	Running Exhaust		
		30 mph	*est. spd.*	35 mph
1995	33.65	3.62	*3.05*	2.84
2009	33.04	3.75	*3.47*	3.29

Oxides of Nitrogen (NOx)

Year	Est. Wrst. Case Spd.	Running Exhaust		
		20 mph	*est. spd.*	25 mph
1995	22.96	22.02	*21.01*	20.32
2009	21.13	19.77	*19.42*	18.24

Particulate Matters (PM10)

Year	Est. Wrst. Case Spd.	PM10 Exhaust			PM10 Tire Wear		
		15 mph	*est. spd.*	20 mph	15 mph	*est. spd.*	20 mph
1995	16.96	2.03	*2.03*	2.03	0.66	*0.66*	0.66
2009	15.13	1.05	*1.05*	1.05	0.66	*0.66*	0.66

Source of Assumptions: Emission Factors: SCAQMD CEQA Manual, Table A11-5-H.
nnn: Values in italics interpolated from tables.

WORKSHEETS FOR CALCULATING EMISSION FACTORS FOR WORST-CASE SCENARIO BY POLLUTANT

Emission Factors for Cars 6,000 lbs or Less at Worst-Case Scenario Speed

Carbon Monoxide (CO)

	Est. Wrst.	Running Exhaust				
	Case	20	*est.*	25	Cold	Hot
Year	Spd.	mph	*spd.*	mph	Start	Start
1995	22.96	8.01	*7.06*	6.41	82.00	10.92
2009	21.13	2.75	*2.63*	2.20	47.65	3.76

Reactive Organic Compounds (ROC)

	Est. Wrst.	Running Exhaust						
	Case	30	*est.*	35	Cold	Hot	Hot	
Year	Spd.	mph	*spd.*	mph	Start	Start	Soak	Durl.
1995	33.65	0.37	*0.33*	0.31	4.37	0.96	1.11	2.90
2009	33.04	0.07	*0.06*	0.06	1.30	0.23	0.29	0.54

Oxides of Nitrogen (NOx)

	Est.	Running Exhaust				
	Worst-	20	*est.*	25	Cold	Hot
Year	Case Spd.	mph	*spd.*	mph	Start	Start
1995	22.96	0.70	*0.68*	0.66	2.52	1.31
2009	21.13	0.29	*0.28*	0.26	1.21	0.58

Particulate Matters (PM10)

	Est. Wrst.	PM10 Exhaust			PM10 Tire Wear		
	Case	15	*est.*	20	15	*est.*	20
Year	Spd.	mph	*spd.*	mph	mph	*spd.*	mph
1995	16.96	0.01	*0.01*	0.01	0.10	*0.10*	0.10
2009	15.13	0.005	*0.01*	0.005	0.10	*0.10*	0.10

Oxides of Sulfur (SOx)

	Est. Wrst.	Running Exhaust		
	Case	20	*est.*	25
Year	Spd.	mph	*spd.*	mph
1995	22.96	0.06	*0.06*	0.06
2009	21.13	0.05	*0.05*	0.05

Source of Assumptions: Emission Factors: SCAQMD CEQA Manual, Table A9-5.
nnn: Values in italics interpolated from tables.

WORKSHEETS FOR CALCULATING EMISSION FACTORS FOR WORST-CASE SCENARIO BY POLLUTANT

MTA Service Economies EIR
Net Change in Air Pollutant Emissions - 1995

	Total	Total		Hot/Cold Start			Emissions in Pounds/Day				
Package A	**Miles**	**Trips**		**%**	**Miles**	**Trips**	**CO**	**ROC**	**NOx**	**PM10**	**SOx**
Bus Mileage Reduction:	1,030						49	7	48	6	N/A
Auto Mileage Increase:	897	99	Cold:	90.00%	807	89	29	2	2	0	0
			Hot:	10.00%	90	10	2	0	0	0	0
Total Auto:							30	2	2	0	0
Net Change in Daily Emissions in 1995:							-19	-5	-46	-6	+0

	Total	Total		Hot/Cold Start			Emissions in Pounds/Day				
Package B	**Miles**	**Trips**		**%**	**Miles**	**Trips**	**CO**	**ROC**	**NOx**	**PM10**	**SOx**
Bus Mileage Reduction:	937						45	6	43	6	N/A
Auto Mileage Increase:	3,362	369	Cold:	52.72%	1,772	195	63	5	4	0	0
			Hot:	47.28%	1,590	174	29	3	3	0	0
Total Auto:							92	8	7	1	0
Net Change in Daily Emissions in 1995:							+47	+2	-37	-5	+0

	Total	Total		Hot/Cold Start			Emissions in Pounds/Day				
Package C	**Miles**	**Trips**		**%**	**Miles**	**Trips**	**CO**	**ROC**	**NOx**	**PM10**	**SOx**
Bus Mileage Reduction:	562						27	4	26	3	N/A
Auto Mileage Increase:	3,810	419	Cold:	52.72%	2,009	221	71	6	4	0	0
			Hot:	47.28%	1,801	198	33	3	3	0	0
Total Auto:							104	9	7	1	1
Net Change in Daily Emissions in 1995:							+77	+5	-19	-2	+1

	Total	Total		Hot/Cold Start			Emissions in Pounds/Day				
Package D	**Miles**	**Trips**		**%**	**Miles**	**Trips**	**CO**	**ROC**	**NOx**	**PM10**	**SOx**
Bus Mileage Reduction:	4,683						224	31	217	28	N/A
Auto Mileage Increase:	20,172	2,217	Cold:	52.72%	10,635	1,169	377	29	22	3	1
			Hot:	47.28%	9,537	1,048	174	18	17	2	1
Total Auto:							550	48	40	5	3
Net Change in Daily Emissions in 1995:							+326	+16	-177	-23	+3

	Total	Total		Hot/Cold Start			Emissions in Pounds/Day				
Package E	**Miles**	**Trips**		**%**	**Miles**	**Trips**	**CO**	**ROC**	**NOx**	**PM10**	**SOx**
Bus Mileage Reduction:	172,083						8,235	1,156	7,965	1,020	N/A
Auto Mileage Increase:	26,897	2,956	Cold:	52.72%	14,180	1,558	502	39	30	3	2
			Hot:	47.28%	12,717	1,398	231	24	23	3	2
Total Auto:							734	63	53	7	4
Net Change in Daily Emissions in 1995:							-7,501	-1,093	-7,913	-1,013	+4

	Total	Total		Hot/Cold Start			Emissions in Pounds/Day				
Package F	**Miles**	**Trips**		**%**	**Miles**	**Trips**	**CO**	**ROC**	**NOx**	**PM10**	**SOx**
Bus Mileage Reduction:	27,368						1,310	184	1,267	162	N/A
Auto Mileage Increase:	1,694,483	186,207	Cold:	52.72%	893,331	98,168	31,630	2,454	1,876	216	118
			Hot:	47.28%	801,152	88,039	14,583	1,539	1,448	194	106
Total Auto:							46,213	3,993	3,323	411	224
Net Change in Daily Emissions in 1995:							+44,904	+3,809	+2,056	+248	+224

WORKSHEETS FOR CALCULATING EMISSION FACTORS
FOR WORST-CASE SCENARIO BY POLLUTANT

	Total	Total			Hot/Cold Start				Emissions in Pounds/Day		
Package G	**Miles**	**Trips**		**%**	**Miles**	**Trips**	**CO**	**ROC**	**NOx**	**PM10**	**SOx**
Bus Mileage Reduction:	33,846						1,620	227	1,567	201	N/A
Auto Mileage Increase:	2,400,517	263,793	Cold:	52.72%	1,265,553	139,072	44,810	3,476	2,657	307	167
			Hot:	47.28%	1,134,964	124,721	20,659	2,181	2,051	275	150
						Total Auto:	65,469	5,657	4,708	582	317
						Net Change in Daily Emissions in 1995:	+63,849	+5,430	+3,141	+381	+317

	Total	Total			Hot/Cold Start				Emissions in Pounds/Day		
Package H	**Miles**	**Trips**		**%**	**Miles**	**Trips**	**CO**	**ROC**	**NOx**	**PM10**	**SOx**
Bus Mileage Reduction:	10,676						511	72	494	63	N/A
Auto Mileage Increase:	31,379	3,448	Cold:	90.00%	28,241	3,103	1,000	78	59	7	4
			Hot:	10.00%	3,138	345	57	6	6	1	0
						Total Auto:	1,057	84	65	8	4
						Net Change in Daily Emissions in 1995:	+546	+12	-429	-56	+4

	Total	Total			Hot/Cold Start				Emissions in Pounds/Day		
Package I	**Miles**	**Trips**		**%**	**Miles**	**Trips**	**CO**	**ROC**	**NOx**	**PM10**	**SOx**
Bus Mileage Reduction:	1,217						58	8	56	7	N/A
Auto Mileage Increase:	89,655	9,852	Cold:	52.72%	47,266	5,194	1,674	130	99	11	6
			Hot:	47.28%	42,389	4,658	772	81	77	10	6
						Total Auto:	2,445	211	176	22	12
						Net Change in Daily Emissions in 1995:	+2,387	+203	+120	+15	+12

	Total	Total			Hot/Cold Start				Emissions in Pounds/Day		
Package J	**Miles**	**Trips**		**%**	**Miles**	**Trips**	**CO**	**ROC**	**NOx**	**PM10**	**SOx**
Bus Mileage Reduction:	843						40	6	39	5	N/A
Auto Mileage Increase:	8,517	936	Cold:	90.00%	7,665	842	271	21	16	2	1
			Hot:	10.00%	852	94	16	2	2	0	0
						Total Auto:	287	23	18	2	1
						Net Change in Daily Emissions in 1995:	+247	+17	-21	-3	+1

	Total	Total			Hot/Cold Start				Emissions in Pounds/Day		
Package K	**Miles**	**Trips**		**%**	**Miles**	**Trips**	**CO**	**ROC**	**NOx**	**PM10**	**SOx**
Bus Mileage Reduction:	9,365						448	63	433	55	N/A
Auto Mileage Increase:	29,586	3,251	Cold:	90.00%	26,627	2,926	943	73	56	6	4
			Hot:	10.00%	2,959	325	54	6	5	1	0
						Total Auto:	997	79	61	7	4
						Net Change in Daily Emissions in 1995:	+548	+16	-372	-48	+4

	Total	Total			Hot/Cold Start				Emissions in Pounds/Day		
Package L	**Miles**	**Trips**		**%**	**Miles**	**Trips**	**CO**	**ROC**	**NOx**	**PM10**	**SOx**
Bus Mileage Reduction:	12,362						592	83	572	73	N/A
Auto Mileage Increase:	50,207	5,517	Cold:	52.72%	26,469	2,909	937	73	56	6	3
			Hot:	47.28%	23,738	2,608	432	46	43	6	3
						Total Auto:	1,369	118	98	12	7
						Net Change in Daily Emissions in 1995:	+778	+35	-474	-61	+7

WORKSHEETS FOR CALCULATING EMISSION FACTORS FOR WORST-CASE SCENARIO BY POLLUTANT

Trip Speeds

		Analysis Year		LA Co Avg. Speeds		
Assumptions:		**1995**	**2009**	1987	2010	
Avg. speed (mph) used	**CO/NOx:**	*22.96*	*21.13*	24	21	AM Peak
for analysis of running	**ROC:**	*33.65*	*33.04*	34	33	Off-peak
emissions by pollutant	**SOx/PM10:**	*16.96*	*15.13*	18	15	PM Peak

Source of Assumptions: Trip speeds: SCAQMD CEQA Manual Table A9-5-F.
nnn: Values in italics interpolated from tables.

Emission Factors for Buses at Worst-Case Scenario Speed

Carbon Monoxide (CO)

Year	Est. Wrst. Case Spd.	Running Exhaust 20 mph	*est. spd.*	25 mph
1995	22.96	24.80	*21.73*	19.60
2009	21.13	25.57	*24.36*	20.21

Reactive Organic Compounds (ROC)

Year	Est. Wrst. Case Spd.	Running Exhaust 30 mph	*est. spd.*	35 mph
1995	33.65	3.62	*3.05*	2.84
2009	33.04	3.75	*3.47*	3.29

Oxides of Nitrogen (NOx)

Year	Est. Wrst. Case Spd.	Running Exhaust 20 mph	*est. spd.*	25 mph
1995	22.96	22.02	*21.01*	20.32
2009	21.13	19.77	*19.42*	18.24

Particulate Matters (PM10)

		PM10 Exhaust			PM10 Tire Wear		
Year	Est. Wrst. Case Spd.	15 mph	*est. spd.*	20 mph	15 mph	*est. spd.*	20 mph
1995	16.96	2.03	*2.03*	2.03	0.66	*0.66*	0.66
2009	15.13	1.05	*1.05*	1.05	0.66	*0.66*	0.66

Source of Assumptions: Emission Factors: SCAQMD CEQA Manual, Table A11-5-H.
nnn: Values in italics interpolated from tables.

WORKSHEETS FOR CALCULATING EMISSION FACTORS FOR WORST-CASE SCENARIO BY POLLUTANT

Emission Factors for Cars 6,000 lbs or Less at Worst-Case Scenario Speed

Carbon Monoxide (CO)

Year	Est. Wrst. Case Spd.	Running Exhaust			Cold Start	Hot Start
		20 mph	*est. spd.*	25 mph		
1995	22.96	8.01	*7.06*	6.41	82.00	10.92
2009	21.13	2.75	*2.63*	2.20	47.65	3.76

Reactive Organic Compounds (ROC)

Year	Est. Wrst. Case Spd.	Running Exhaust			Cold Start	Hot Start	Hot Soak	Durl.
		30 mph	*est. spd.*	35 mph				
1995	33.65	0.37	*0.33*	0.31	4.37	0.96	1.11	2.90
2009	33.04	0.07	*0.06*	0.06	1.30	0.23	0.29	0.54

Oxides of Nitrogen (NOx)

Year	Est. Worst-Case Spd.	Running Exhaust			Cold Start	Hot Start
		20 mph	*est. spd.*	25 mph		
1995	22.96	0.70	*0.68*	0.66	2.52	1.31
2009	21.13	0.29	*0.28*	0.26	1.21	0.58

Particulate Matters (PM10)

Year	Est. Wrst. Case Spd.	PM10 Exhaust			PM10 Tire Wear		
		15 mph	*est. spd.*	20 mph	15 mph	*est. spd.*	20 mph
1995	16.96	0.01	*0.01*	0.01	0.10	*0.10*	0.10
2009	15.13	0.005	*0.01*	0.005	0.10	*0.10*	0.10

Oxides of Sulfur (SOx)

Year	Est. Wrst. Case Spd.	Running Exhaust		
		20 mph	*est. spd.*	25 mph
1995	22.96	0.06	*0.06*	0.06
2009	21.13	0.05	*0.05*	0.05

Source of Assumptions: Emission Factors: SCAQMD CEQA Manual, Table A9-5.

nnn: Values in italics interpolated from tables.

WORKSHEETS FOR CALCULATING EMISSION FACTORS FOR WORST-CASE SCENARIO BY POLLUTANT

MTA Service Economies EIR
Net Change in Air Pollutant Emissions - 1995

	Total	Total		Hot/Cold Start			Emissions in Pounds/Day				
Package A	**Miles**	**Trips**		**%**	**Miles**	**Trips**	**CO**	**ROC**	**NOx**	**PM10**	**SOx**
Bus Mileage Reduction:	1,030						49	7	48	6	N/A
Auto Mileage Increase:	897	99	Cold:	90.00%	807	89	29	2	2	0	0
			Hot:	10.00%	90	10	2	0	0	0	0
						Total Auto:	30	2	2	0	0
				Net Change in Daily Emissions in 1995:			-19	-5	-46	-6	+0

	Total	Total		Hot/Cold Start			Emissions in Pounds/Day				
Package B	**Miles**	**Trips**		**%**	**Miles**	**Trips**	**CO**	**ROC**	**NOx**	**PM10**	**SOx**
Bus Mileage Reduction:	937						45	6	43	6	N/A
Auto Mileage Increase:	3,362	369	Cold:	52.72%	1,772	195	63	5	4	0	0
			Hot:	47.28%	1,590	174	29	3	3	0	0
						Total Auto:	92	8	7	1	0
				Net Change in Daily Emissions in 1995:			+47	+2	-37	-5	+0

	Total	Total		Hot/Cold Start			Emissions in Pounds/Day				
Package C	**Miles**	**Trips**		**%**	**Miles**	**Trips**	**CO**	**ROC**	**NOx**	**PM10**	**SOx**
Bus Mileage Reduction:	562						27	4	26	3	N/A
Auto Mileage Increase:	3,810	419	Cold:	52.72%	2,009	221	71	6	4	0	0
			Hot:	47.28%	1,801	198	33	3	3	0	0
						Total Auto:	104	9	7	1	1
				Net Change in Daily Emissions in 1995:			+77	+5	-19	-2	+1

	Total	Total		Hot/Cold Start			Emissions in Pounds/Day				
Package D	**Miles**	**Trips**		**%**	**Miles**	**Trips**	**CO**	**ROC**	**NOx**	**PM10**	**SOx**
Bus Mileage Reduction:	4,683						224	31	217	28	N/A
Auto Mileage Increase:	20,172	2,217	Cold:	52.72%	10,635	1,169	377	29	22	3	1
			Hot:	47.28%	9,537	1,048	174	18	17	2	1
						Total Auto:	550	48	40	5	3
				Net Change in Daily Emissions in 1995:			+326	+16	-177	-23	+3

	Total	Total		Hot/Cold Start			Emissions in Pounds/Day				
Package E	**Miles**	**Trips**		**%**	**Miles**	**Trips**	**CO**	**ROC**	**NOx**	**PM10**	**SOx**
Bus Mileage Reduction:	172,083						8,235	1,156	7,965	1,020	N/A
Auto Mileage Increase:	26,897	2,956	Cold:	52.72%	14,180	1,558	502	39	30	3	2
			Hot:	47.28%	12,717	1,398	231	24	23	3	2
						Total Auto:	734	63	53	7	4
				Net Change in Daily Emissions in 1995:			-7,501	-1,093	-7,913	-1,013	+4

	Total	Total		Hot/Cold Start			Emissions in Pounds/Day				
Package F	**Miles**	**Trips**		**%**	**Miles**	**Trips**	**CO**	**ROC**	**NOx**	**PM10**	**SOx**
Bus Mileage Reduction:	27,368						1,310	184	1,267	162	N/A
Auto Mileage Increase:	1,694,483	186,207	Cold:	52.72%	893,331	98,168	31,630	2,454	1,876	216	118
			Hot:	47.28%	801,152	88,039	14,583	1,539	1,448	194	106
						Total Auto:	46,213	3,993	3,323	411	224
				Net Change in Daily Emissions in 1995:			+44,904	+3,809	+2,056	+248	+224

WORKSHEETS FOR CALCULATING EMISSION FACTORS FOR WORST-CASE SCENARIO BY POLLUTANT

	Total	Total		Hot/Cold Start			Emissions in Pounds/Day				
Package G	**Miles**	**Trips**		**%**	**Miles**	**Trips**	**CO**	**ROC**	**NOx**	**PM10**	**SOx**
Bus Mileage Reduction:	33,846						1,620	227	1,567	201	N/A
Auto Mileage Increase:	2,400,517	263,793	Cold:	52.72%	1,265,553	139,072	44,810	3,476	2,657	307	167
			Hot:	47.28%	1,134,964	124,721	20,659	2,181	2,051	275	150
Total Auto:							65,469	5,657	4,708	582	317
Net Change in Daily Emissions in 1995:							+63,849	+5,430	+3,141	+381	+317

	Total	Total		Hot/Cold Start			Emissions in Pounds/Day				
Package H	**Miles**	**Trips**		**%**	**Miles**	**Trips**	**CO**	**ROC**	**NOx**	**PM10**	**SOx**
Bus Mileage Reduction:	10,676						511	72	494	63	N/A
Auto Mileage Increase:	31,379	3,448	Cold:	90.00%	28,241	3,103	1,000	78	59	7	4
			Hot:	10.00%	3,138	345	57	6	6	1	0
Total Auto:							1,057	84	65	8	4
Net Change in Daily Emissions in 1995:							+546	+12	-429	-56	+4

	Total	Total		Hot/Cold Start			Emissions in Pounds/Day				
Package I	**Miles**	**Trips**		**%**	**Miles**	**Trips**	**CO**	**ROC**	**NOx**	**PM10**	**SOx**
Bus Mileage Reduction:	1,217						58	8	56	7	N/A
Auto Mileage Increase:	89,655	9,852	Cold:	52.72%	47,266	5,194	1,674	130	99	11	6
			Hot:	47.28%	42,389	4,658	772	81	77	10	6
Total Auto:							2,445	211	176	22	12
Net Change in Daily Emissions in 1995:							+2,387	+203	+120	+15	+12

	Total	Total		Hot/Cold Start			Emissions in Pounds/Day				
Package J	**Miles**	**Trips**		**%**	**Miles**	**Trips**	**CO**	**ROC**	**NOx**	**PM10**	**SOx**
Bus Mileage Reduction:	843						40	6	39	5	N/A
Auto Mileage Increase:	8,517	936	Cold:	90.00%	7,665	842	271	21	16	2	1
			Hot:	10.00%	852	94	16	2	2	0	0
Total Auto:							287	23	18	2	1
Net Change in Daily Emissions in 1995:							+247	+17	-21	-3	+1

	Total	Total		Hot/Cold Start			Emissions in Pounds/Day				
Package K	**Miles**	**Trips**		**%**	**Miles**	**Trips**	**CO**	**ROC**	**NOx**	**PM10**	**SOx**
Bus Mileage Reduction:	9,365						448	63	433	55	N/A
Auto Mileage Increase:	29,586	3,251	Cold:	90.00%	26,627	2,926	943	73	56	6	4
			Hot:	10.00%	2,959	325	54	6	5	1	0
Total Auto:							997	79	61	7	4
Net Change in Daily Emissions in 1995:							+548	+16	-372	-48	+4

	Total	Total		Hot/Cold Start			Emissions in Pounds/Day				
Package L	**Miles**	**Trips**		**%**	**Miles**	**Trips**	**CO**	**ROC**	**NOx**	**PM10**	**SOx**
Bus Mileage Reduction:	12,362						592	83	572	73	N/A
Auto Mileage Increase:	50,207	5,517	Cold:	52.72%	26,469	2,909	937	73	56	6	3
			Hot:	47.28%	23,738	2,608	432	46	43	6	3
Total Auto:							1,369	118	98	12	7
Net Change in Daily Emissions in 1995:							+778	+35	-474	-61	+7

WORKSHEETS FOR CALCULATING EMISSION FACTORS FOR WORST-CASE SCENARIO BY POLLUTANT

	Total	Total		Hot/Cold Start			Emissions in Pounds/Day				
Package M	**Miles**	**Trips**		**%**	**Miles**	**Trips**	**CO**	**ROC**	**NOx**	**PM10**	**SOx**
Bus Mileage Reduction:	4,870						233	33	225	29	N/A
Auto Mileage Increase:	67,241	7,389	Cold:	90.00%	60,517	6,650	2,143	166	127	15	8
			Hot:	10.00%	6,724	739	122	13	12	2	1
						Total Auto:	2,265	179	139	16	9
						Net Change in Daily Emissions in 1995:	+2,032	+146	-86	-13	+9

	Total	Total		Hot/Cold Start			Emissions in Pounds/Day				
Package N	**Miles**	**Trips**		**%**	**Miles**	**Trips**	**CO**	**ROC**	**NOx**	**PM10**	**SOx**
Bus Mileage Reduction:	1,873						90	13	87	11	N/A
Auto Mileage Increase:	6,724	739	Cold:	52.72%	3,545	390	126	10	7	1	0
			Hot:	47.28%	3,179	349	58	6	6	1	0
						Total Auto:	183	16	13	2	1
						Net Change in Daily Emissions in 1995:	+94	+3	-74	-9	+1

	Total	Total		Hot/Cold Start			Emissions in Pounds/Day				
Package O	**Miles**	**Trips**		**%**	**Miles**	**Trips**	**CO**	**ROC**	**NOx**	**PM10**	**SOx**
Bus Mileage Reduction:	16,014						766	108	741	95	N/A
Auto Mileage Increase:	79,345	8,719	Cold:	90.00%	71,411	7,847	2,528	196	150	17	9
			Hot:	10.00%	7,935	872	144	15	14	2	1
						Total Auto:	2,673	211	164	19	10
						Net Change in Daily Emissions in 1995:	+1,907	+104	-577	-76	+10

	Total	Total		Hot/Cold Start			Emissions in Pounds/Day				
Package P	**Miles**	**Trips**		**%**	**Miles**	**Trips**	**CO**	**ROC**	**NOx**	**PM10**	**SOx**
Bus Mileage Reduction:	6,743						323	45	312	40	N/A
Auto Mileage Increase:	16,138	1,773	Cold:	52.72%	8,508	935	301	23	18	2	1
			Hot:	47.28%	7,630	838	139	15	14	2	1
						Total Auto:	440	38	32	4	2
						Net Change in Daily Emissions in 1995:	+117	-7	-280	-36	+2

	Total	Total		Hot/Cold Start			Emissions in Pounds/Day				
Package Q	**Miles**	**Trips**		**%**	**Miles**	**Trips**	**CO**	**ROC**	**NOx**	**PM10**	**SOx**
Bus Mileage Reduction:	0						0	0	0	0	N/A
Auto Mileage Increase:	0	0	Cold:	0.00%	0	0	0	0	0	0	0
			Hot:	0.00%	0	0	0	0	0	0	0
						Total Auto:	0	0	0	0	0
						Net Change in Daily Emissions in 1995:	N/A	N/A	N/A	N/A	N/A

	Total	Total		Hot/Cold Start			Emissions in Pounds/Day				
Package R	**Miles**	**Trips**		**%**	**Miles**	**Trips**	**CO**	**ROC**	**NOx**	**PM10**	**SOx**
Bus Mileage Reduction:	1,217						58	8	56	7	N/A
Auto Mileage Increase:	0	0	Cold:	0.00%	0	0	0	0	0	0	0
			Hot:	0.00%	0	0	0	0	0	0	0
						Total Auto:	0	0	0	0	0
						Net Change in Daily Emissions in 1995:	-58	-8	-56	-7	N/A

WORKSHEETS FOR CALCULATING EMISSION FACTORS FOR WORST-CASE SCENARIO BY POLLUTANT

	Total	Total		Hot/Cold Start			Emissions in Pounds/Day				
Package S	Miles	Trips		%	Miles	Trips	CO	ROC	NOx	PM10	SOx
Bus Mileage Reduction:	7,455						357	50	345	44	N/A
Auto Mileage Increase:	98,838	10,861	Cold:	52.72%	52,107	5,726	1,845	143	109	13	7
			Hot:	47.28%	46,731	5,135	851	90	84	11	6
						Total Auto:	2,696	233	194	24	13
						Net Change in Daily Emissions in 1995:	+2,339	+183	-151	-20	+13

	Total	Total		Hot/Cold Start			Emissions in Pounds/Day				
Package T	Miles	Trips		%	Miles	Trips	CO	ROC	NOx	PM10	SOx
Bus Mileage Reduction:	3,559						170	24	165	21	N/A
Auto Mileage Increase:	10,669	1,172	Cold:	52.72%	5,625	618	199	15	12	1	1
			Hot:	47.28%	5,044	554	92	10	9	1	1
						Total Auto:	291	25	21	3	1
						Net Change in Daily Emissions in 1995:	+121	+1	-144	-19	+1

	Total	Total		Hot/Cold Start			Emissions in Pounds/Day				
Package U	Miles	Trips		%	Miles	Trips	CO	ROC	NOx	PM10	SOx
Bus Mileage Reduction:	0						0	0	0	0	N/A
Auto Mileage Increase:	0	0	Cold:	0.00%	0	0	0	0	0	0	0
			Hot:	0.00%	0	0	0	0	0	0	0
						Total Auto:	0	0	0	0	0
						Net Change in Daily Emissions in 1995:	N/A	N/A	N/A	N/A	N/A

	Total	Total		Hot/Cold Start			Emissions in Pounds/Day				
Package V	Miles	Trips		%	Miles	Trips	CO	ROC	NOx	PM10	SOx
Bus Mileage Reduction:	40,982						1,961	275	1,897	243	N/A
Auto Mileage Increase:	255,346	28,060	Cold:	52.72%	134,618	14,793	4,766	370	283	33	18
			Hot:	47.28%	120,728	13,267	2,198	232	218	29	16
						Total Auto:	6,964	602	501	62	34
						Net Change in Daily Emissions in 1995:	+5,003	+326	-1,396	-181	+34

	Total	Total		Hot/Cold Start			Emissions in Pounds/Day				
Preferred Project	Miles	Trips		%	Miles	Trips	CO	ROC	NOx	PM10	SOx
Bus Mileage Reduction:	22,992						1,100	154	1,064	136	N/A
Auto Mileage Increase:	42,003	4,616	Cold:	52.72%	22,144	2,434	784	61	46	5	3
			Hot:	47.28%	19,859	2,182	361	38	36	5	3
						Total Auto:	1,146	99	82	10	6
						Net Change in Daily Emissions in 1995:	+45	-55	-982	-126	+6

Source of Assumptions: Change in mileage and trips associated with mode shift obtained from traffic study by Katz, Okitsu & Associates, May 1994. MTA packages with vehicle trips converted from Express, Owl, and Special Event bus lines assumed to be 90% cold start and 10% hot start trips. Other packages assumed to have SCAQMD's regional average distribution of cold and hot start trips for 1995 (52.72% cold, 47.28% hot), CEQA Manual Table A9-5-M.

Methodology for calculation of air pollutant emissions obtained from SCAQMD CEQA Manual, November 1993.

WORKSHEETS FOR CALCULATING EMISSION FACTORS FOR WORST-CASE SCENARIO BY POLLUTANT

MTA Service Economies EIR
Net Change in Air Pollutant Emissions - 2009

	Total	Total		Hot/Cold Start			Emissions in Pounds/Day				
Package A	**Miles**	**Trips**		**%**	**Miles**	**Trips**	**CO**	**ROC**	**NOx**	**PM10**	**SOx**
Bus Mileage Reduction:	1,030						55	8	44	4	N/A
Auto Mileage Increase:	897	99	Cold:	90.00%	807	89	14	1	1	0	0
			Hot:	10.00%	90	10	1	0	0	0	0
					Total Auto:		15	1	1	0	0
			Net Change in Daily Emissions in 2009:				-41	-7	-43	-4	+0

	Total	Total		Hot/Cold Start			Emissions in Pounds/Day				
Package B	**Miles**	**Trips**		**%**	**Miles**	**Trips**	**CO**	**ROC**	**NOx**	**PM10**	**SOx**
Bus Mileage Reduction:	937						50	7	40	4	N/A
Auto Mileage Increase:	3,362	369	Cold:	53.00%	1,782	196	31	1	2	0	0
			Hot:	47.00%	1,580	173	11	1	1	0	0
					Total Auto:		41	2	3	1	0
			Net Change in Daily Emissions in 2009:				-9	-5	-37	-3	+0

	Total	Total		Hot/Cold Start			Emissions in Pounds/Day				
Package C	**Miles**	**Trips**		**%**	**Miles**	**Trips**	**CO**	**ROC**	**NOx**	**PM10**	**SOx**
Bus Mileage Reduction:	562						30	4	24	2	N/A
Auto Mileage Increase:	3,810	419	Cold:	53.00%	2,019	222	35	1	2	0	0
			Hot:	47.00%	1,791	197	12	1	1	0	0
					Total Auto:		47	2	3	1	0
			Net Change in Daily Emissions in 2009:				+17	-2	-21	-1	+0

	Total	Total		Hot/Cold Start			Emissions in Pounds/Day				
Package D	**Miles**	**Trips**		**%**	**Miles**	**Trips**	**CO**	**ROC**	**NOx**	**PM10**	**SOx**
Bus Mileage Reduction:	4,683						251	36	200	18	N/A
Auto Mileage Increase:	20,172	2,217	Cold:	53.00%	10,691	1,175	185	7	10	2	1
			Hot:	47.00%	9,481	1,042	63	4	7	2	1
					Total Auto:		249	11	17	5	2
			Net Change in Daily Emissions in 2009:				-3	-25	-183	-13	+2

	Total	Total		Hot/Cold Start			Emissions in Pounds/Day				
Package E	**Miles**	**Trips**		**%**	**Miles**	**Trips**	**CO**	**ROC**	**NOx**	**PM10**	**SOx**
Bus Mileage Reduction:	172,083						9,233	1,315	7,362	648	N/A
Auto Mileage Increase:	26,897	2,956	Cold:	53.00%	14,255	1,567	247	9	13	3	2
			Hot:	47.00%	12,642	1,389	85	5	10	3	1
					Total Auto:		331	14	23	6	3
			Net Change in Daily Emissions in 2009:				-8,901	-1,301	-7,340	-642	+3

	Total	Total		Hot/Cold Start			Emissions in Pounds/Day				
Package F	**Miles**	**Trips**		**%**	**Miles**	**Trips**	**CO**	**ROC**	**NOx**	**PM10**	**SOx**
Bus Mileage Reduction:	27,368						1,468	209	1,171	103	N/A
Auto Mileage Increase:	1,694,483	186,207	Cold:	53.00%	898,076	98,690	15,552	589	823	208	99
			Hot:	47.00%	796,407	87,517	5,331	316	609	184	88
					Total Auto:		20,883	906	1,432	392	187
			Net Change in Daily Emissions in 2009:				+19,414	+697	+261	+289	+187

WORKSHEETS FOR CALCULATING EMISSION FACTORS
FOR WORST-CASE SCENARIO BY POLLUTANT

	Total	Total		Hot/Cold Start			Emissions in Pounds/Day				
Package G	Miles	Trips		%	Miles	Trips	CO	ROC	NOx	PM10	SOx
Bus Mileage Reduction:	33,846						1,816	259	1,448	127	N/A
Auto Mileage Increase:	2,400,517	263,793	Cold:	53.00%	1,272,274	139,810	22,032	835	1,166	294	140
			Hot:	47.00%	1,128,243	123,983	7,552	448	862	261	124
						Total Auto:	29,584	1,283	2,029	555	264
			Net Change in Daily Emissions in 2009:				+27,768	+1,025	+580	+428	+264

	Total	Total		Hot/Cold Start			Emissions in Pounds/Day				
Package H	Miles	Trips		%	Miles	Trips	CO	ROC	NOx	PM10	SOx
Bus Mileage Reduction:	10,676						573	82	457	40	N/A
Auto Mileage Increase:	31,379	3,448	Cold:	90.00%	28,241	3,103	489	19	26	7	3
			Hot:	10.00%	3,138	345	21	1	2	1	0
						Total Auto:	510	20	28	7	3
			Net Change in Daily Emissions in 2009:				-63	-62	-428	-33	+3

	Total	Total		Hot/Cold Start			Emissions in Pounds/Day				
Package I	Miles	Trips		%	Miles	Trips	CO	ROC	NOx	PM10	SOx
Bus Mileage Reduction:	1,217						65	9	52	5	N/A
Auto Mileage Increase:	89,655	9,852	Cold:	53.00%	47,517	5,222	823	31	44	11	5
			Hot:	47.00%	42,138	4,630	282	17	32	10	5
						Total Auto:	1,105	48	76	21	10
			Net Change in Daily Emissions in 2009:				+1,040	+39	+24	+16	+10

	Total	Total		Hot/Cold Start			Emissions in Pounds/Day				
Package J	Miles	Trips		%	Miles	Trips	CO	ROC	NOx	PM10	SOx
Bus Mileage Reduction:	843						45	6	36	3	N/A
Auto Mileage Increase:	8,517	936	Cold:	90.00%	7,665	842	133	5	7	2	1
			Hot:	10.00%	852	94	6	0	1	0	0
						Total Auto:	138	5	8	2	1
			Net Change in Daily Emissions in 2009:				+93	-1	-28	-1	+1

	Total	Total		Hot/Cold Start			Emissions in Pounds/Day				
Package K	Miles	Trips		%	Miles	Trips	CO	ROC	NOx	PM10	SOx
Bus Mileage Reduction:	9,365						502	72	401	35	N/A
Auto Mileage Increase:	29,586	3,251	Cold:	90.00%	26,627	2,926	461	17	24	6	3
			Hot:	10.00%	2,959	325	20	1	2	1	0
						Total Auto:	481	19	27	7	3
			Net Change in Daily Emissions in 2009:				-22	-53	-374	-28	+3

	Total	Total		Hot/Cold Start			Emissions in Pounds/Day				
Package L	Miles	Trips		%	Miles	Trips	CO	ROC	NOx	PM10	SOx
Bus Mileage Reduction:	12,362						663	94	529	47	N/A
Auto Mileage Increase:	50,207	5,517	Cold:	53.00%	26,610	2,924	461	17	24	6	3
			Hot:	47.00%	23,597	2,593	158	9	18	5	3
						Total Auto:	619	27	42	12	6
			Net Change in Daily Emissions in 2009:				-45	-68	-486	-35	+6

WORKSHEETS FOR CALCULATING EMISSION FACTORS FOR WORST-CASE SCENARIO BY POLLUTANT

	Total	Total		Hot/Cold Start			Emissions in Pounds/Day				
Package M	**Miles**	**Trips**		**%**	**Miles**	**Trips**	**CO**	**ROC**	**NOx**	**PM10**	**SOx**
Bus Mileage Reduction:	4,870						261	37	208	18	N/A
Auto Mileage Increase:	67,241	7,389	Cold:	90.00%	60,517	6,650	1,048	40	55	14	7
			Hot:	10.00%	6,724	739	45	3	5	2	1
						Total Auto:	1,093	42	61	16	7
			Net Change in Daily Emissions in 2009:				+832	+5	-148	-3	+7

	Total	Total		Hot/Cold Start			Emissions in Pounds/Day				
Package N	**Miles**	**Trips**		**%**	**Miles**	**Trips**	**CO**	**ROC**	**NOx**	**PM10**	**SOx**
Bus Mileage Reduction:	1,873						100	14	80	7	N/A
Auto Mileage Increase:	6,724	739	Cold:	53.00%	3,564	392	62	2	3	1	0
			Hot:	47.00%	3,160	347	21	1	2	1	0
						Total Auto:	83	4	6	2	1
			Net Change in Daily Emissions in 2009:				-18	-11	-74	-5	+1

	Total	Total		Hot/Cold Start			Emissions in Pounds/Day				
Package O	**Miles**	**Trips**		**%**	**Miles**	**Trips**	**CO**	**ROC**	**NOx**	**PM10**	**SOx**
Bus Mileage Reduction:	16,014						859	122	685	60	N/A
Auto Mileage Increase:	79,345	8,719	Cold:	90.00%	71,411	7,847	1,237	47	65	17	8
			Hot:	10.00%	7,935	872	53	3	6	2	1
						Total Auto:	1,290	50	72	18	9
			Net Change in Daily Emissions in 2009:				+431	-72	-614	-42	+9

	Total	Total		Hot/Cold Start			Emissions in Pounds/Day				
Package P	**Miles**	**Trips**		**%**	**Miles**	**Trips**	**CO**	**ROC**	**NOx**	**PM10**	**SOx**
Bus Mileage Reduction:	6,743						362	52	288	25	N/A
Auto Mileage Increase:	16,138	1,773	Cold:	53.00%	8,553	940	148	6	8	2	1
			Hot:	47.00%	7,585	833	51	3	6	2	1
						Total Auto:	199	9	14	4	2
			Net Change in Daily Emissions in 2009:				-163	-43	-275	-22	+2

	Total	Total		Hot/Cold Start			Emissions in Pounds/Day				
Package Q	**Miles**	**Trips**		**%**	**Miles**	**Trips**	**CO**	**ROC**	**NOx**	**PM10**	**SOx**
Bus Mileage Reduction:	0						0	0	0	0	N/A
Auto Mileage Increase:	0	0	Cold:	0.00%	0	0	0	0	0	0	0
			Hot:	0.00%	0	0	0	0	0	0	0
						Total Auto:	0	0	0	0	0
			Net Change in Daily Emissions in 2009:				N/A	N/A	N/A	N/A	N/A

	Total	Total		Hot/Cold Start			Emissions in Pounds/Day				
Package R	**Miles**	**Trips**		**%**	**Miles**	**Trips**	**CO**	**ROC**	**NOx**	**PM10**	**SOx**
Bus Mileage Reduction:	1,217						65	9	52	5	N/A
Auto Mileage Increase:	0	0	Cold:	0.00%	0	0	0	0	0	0	0
			Hot:	0.00%	0	0	0	0	0	0	0
						Total Auto:	0	0	0	0	0
			Net Change in Daily Emissions in 2009:				-65	-9	-52	-5	N/A

WORKSHEETS FOR CALCULATING EMISSION FACTORS
FOR WORST-CASE SCENARIO BY POLLUTANT

	Total	Total		Hot/Cold Start			Emissions in Pounds/Day				
Package S	**Miles**	**Trips**		**%**	**Miles**	**Trips**	**CO**	**ROC**	**NOx**	**PM10**	**SOx**
Bus Mileage Reduction:	7,455						400	57	319	28	N/A
Auto Mileage Increase:	98,838	10,861	Cold:	53.00%	52,384	5,756	907	34	48	12	6
			Hot:	47.00%	46,454	5,105	311	18	36	11	5
						Total Auto:	1,218	53	84	23	11
						Net Change in Daily Emissions in 2009:	+818	-4	-235	-5	+11

	Total	Total		Hot/Cold Start			Emissions in Pounds/Day				
Package T	**Miles**	**Trips**		**%**	**Miles**	**Trips**	**CO**	**ROC**	**NOx**	**PM10**	**SOx**
Bus Mileage Reduction:	3,559						191	27	152	13	N/A
Auto Mileage Increase:	10,669	1,172	Cold:	53.00%	5,655	621	98	4	5	1	1
			Hot:	47.00%	5,014	551	34	2	4	1	1
						Total Auto:	131	6	9	2	1
						Net Change in Daily Emissions in 2009:	-59	-21	-143	-11	+1

	Total	Total		Hot/Cold Start			Emissions in Pounds/Day				
Package U	**Miles**	**Trips**		**%**	**Miles**	**Trips**	**CO**	**ROC**	**NOx**	**PM10**	**SOx**
Bus Mileage Reduction:	0						0	0	0	0	N/A
Auto Mileage Increase:	0	0	Cold:	0.00%	0	0	0	0	0	0	0
			Hot:	0.00%	0	0	0	0	0	0	0
						Total Auto:	0	0	0	0	0
						Net Change in Daily Emissions in 2009:	N/A	N/A	N/A	N/A	N/A

	Total	Total		Hot/Cold Start			Emissions in Pounds/Day				
Package V	**Miles**	**Trips**		**%**	**Miles**	**Trips**	**CO**	**ROC**	**NOx**	**PM10**	**SOx**
Bus Mileage Reduction:	40,982						2,199	313	1,753	154	N/A
Auto Mileage Increase:	255,346	28,060	Cold:	53.00%	135,333	14,872	2,344	89	124	31	15
			Hot:	47.00%	120,013	13,188	803	48	92	28	13
						Total Auto:	3,147	137	216	59	28
						Net Change in Daily Emissions in 2009:	+948	-177	-1,538	-95	+28

	Total	Total		Hot/Cold Start			Emissions in Pounds/Day				
Preferred Project	**Miles**	**Trips**		**%**	**Miles**	**Trips**	**CO**	**ROC**	**NOx**	**PM10**	**SOx**
Bus Mileage Reduction:	22,992						1,234	176	984	87	N/A
Auto Mileage Increase:	42,003	4,616	Cold:	53.00%	22,262	2,446	386	15	20	5	2
			Hot:	47.00%	19,741	2,170	132	8	15	5	2
						Total Auto:	518	22	35	10	5
						Net Change in Daily Emissions in 2009:	-716	-153	-948	-77	+5

Source of Assumptions: Change in mileage and trips associated with mode shift obtained from traffic study by Katz, Okitsu & Associates, May 1994. MTA packages with vehicle trips converted from Express, Owl, and Special Event bus lines assumed to be 90% cold start and 10% hot start trips. Other packages assumed to have SCAQMD's regional average distribution of cold and hot start trips for 2009 (53.00% cold, 47.00% hot), CEQA Manual Table A9-5-M.

Methodology for calculation of air pollutant emissions obtained from SCAQMD CEQA Manual, November 1993.

Appendix E:
Noise Analysis Worksheets

Appendix E

Technical Background for Noise Impact Analysis

Cotton/Beland/Associates
Urban and Environmental Planning

Technical Background for Noise Impact Analysis

Information on noise from typical municipal buses is limited. The Transportation Research Board published a report summarizing research to date on motor vehicle noise during the mid-1970s[1]. This research was used to develop the Federal Highway Administration's Highway Traffic Noise Prediction Model[2]. Environmental programs of most Federal agencies were minimal during the 1980s, and this research has not been updated.

The conclusion of the summary report on traffic noise was that "a bus is essentially a quiet truck. The engines are enclosed and larger mufflers are used."[3] Bus noise levels were reported by Wyle Laboratories in an extensive study of noise conducted for the U.S. Environmental Protection Agency in 1971.[4] Figure E-1 on the following page, comparing noise from various transportation noise sources, is taken from that report.

Environmental Impact

To determine the noise impact of reduction of bus service, it is necessary to determine the amount of noise created by a bus along a given route, and then to determine the amount of noise created by the automobile trips that would be generated if the bus passengers who have alternate transportation available took automobiles for the same trip. Tables E-1 and E-2 were prepared using the FHWA Highway Traffic Noise Prediction Model cited above to illustrate the difference between a single bus and a varying number of automobiles along a typical arterial street.

The following simplifying assumptions were made:

1. Auto trips may take different roadways than buses for the same trip. In particular, autos are more likely to use the freeway, where noise impact is less per vehicle, than arterial streets, which are closer to homes. As a worst-case assumption, cars were assumed to take the same route as the bus.

2. Buses start and stop more frequently than individual autos while traveling, but each stop and start of the bus has the potential to handle multiple passengers. The stops and starts were assumed to be comparable for the two trip types in terms of noise generation, and no correction for stop-and-go traffic was therefore made for either mode. Stop-and-go traffic is typically accounted for by adding 3 to 5 decibels to the level for constant traffic flow.

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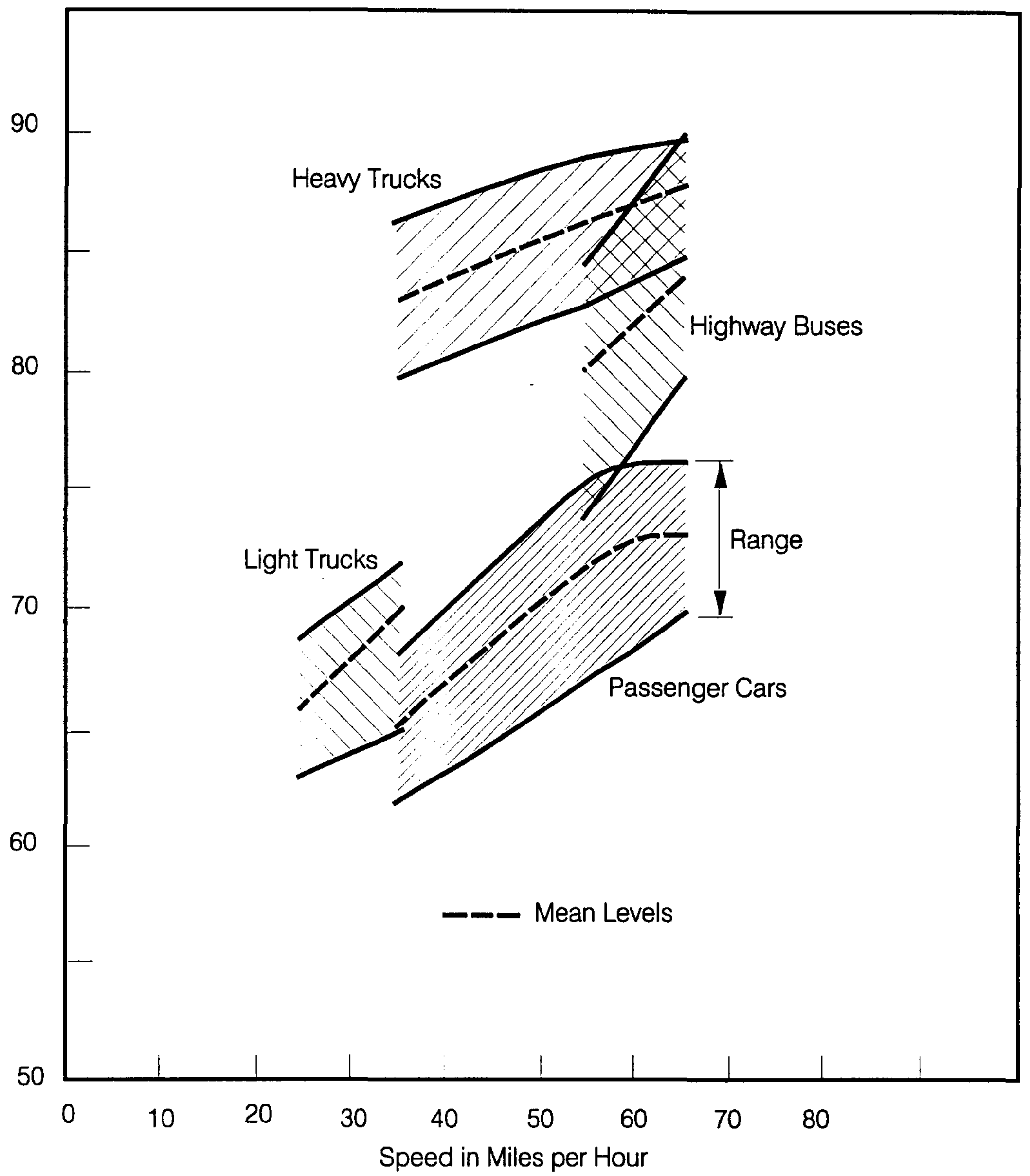
[1] Bolt Beranek & Newman, *Highway Noise, Generation and Control*, National Cooperative Highway Research Program Report 173, Washington, D.C., Transportation Research Board, 1976.

[2] T. M. Barry and J. A. Reagan, *Highway Traffic Noise Prediction Model*, FHWA-RD-77-108, Washington, D.C., Federal Highway Administration, December, 1978.

[3] Bolt Beranek & Newman, *op. cit.*, p. 31.

[4] Wyle Laboratories, *Transportation Noise and Noise from Equipment Powered by Internal Combustion Engines*, NTID 300.13, U.S. Environmental Protection Agency, 1971.



Single Vehicle Noise Output as a Function of Vehicle Speed

Source: Wyle Laboratories, *Transportation Noise and Noise From Equipment Powered by Internal Combustion Engines*, Washington, U.S. Environmental Protection Agency, 1971, p. 95.

This figure illustrates the peak noise level produced by various types of vehicles as reported in a number of different noise studies.

Figure E-1: Noise by Vehicle Speed for Various Vehicle Types

3. Buses tend to restrict their trips to arterial streets and collector streets, avoiding low-density residential areas. Car trips create noise up to the individual residence, therefore causing greater noise impact for that trip component than the bus trip.

4. Buses tend to travel in the curb lane or outside lane, while automobiles travel in all lanes. Buses were assumed to operate in the curb lane, and autos were assumed to operate in the center of each direction of traffic, using dimensions typical for 4-lane arterial streets with parking lanes.

5. Bus noise is assumed to be 3 decibels less than heavy truck noise as estimated by the Highway Noise Prediction Model.

As indicated in Table E-1 a bus creates approximately the same noise impact on an arterial street as 20 to 30 cars. According to the traffic impact analysis, less than half the total bus trips are expected to be shifted to the automobile mode. Thus even if each auto were only occupied by one passenger, a bus must be carrying 40 passengers or more in order to cause the auto trips generated by the loss of buss service to cause more noise than the bus.

Table E-1
Typical Noise Impact of Substitution of Cars for Buses
Arterial Street

	Noise Level (SENEL) at Distance from Roadway Centerline								
Number of Cars Replacing Each Bus Trip	Total for All Cars			One Bus			Change in SENEL With Shift to Auto Mode		
	60 feet	100 feet	200 feet	60 feet	100 feet	200 feet	60 feet	100 feet	200 feet
1	69.2	65.0	60.1	84.5	78.0	72.4	-15.3	-13.0	-12.3
2	72.2	68.0	63.1	84.5	78.0	72.4	-12.2	-10.0	-9.3
4	75.2	71.0	66.1	84.5	78.0	72.4	-9.2	-7.0	-6.3
6	77.0	72.8	67.9	84.5	78.0	72.4	-7.5	-5.3	-4.6
8	78.3	74.0	69.1	84.5	78.0	72.4	-6.2	-4.0	-3.3
10	79.2	75.0	70.1	84.5	78.0	72.4	-5.3	-3.0	-2.3
12	80.0	75.8	70.9	84.5	78.0	72.4	-4.5	-2.3	-1.6
14	80.7	76.4	71.6	84.5	78.0	72.4	-3.8	-1.6	-0.9
16	81.3	77.0	72.1	84.5	78.0	72.4	-3.2	-1.0	-0.3
18	81.8	77.5	72.7	84.5	78.0	72.4	-2.7	-0.5	+0.2
20	82.2	78.0	73.1	84.5	78.0	72.4	-2.2	-0.0	+0.7
22	82.6	78.4	73.5	84.5	78.0	72.4	-1.8	+0.4	+1.1
24	83.0	78.8	73.9	84.5	78.0	72.4	-1.5	+0.8	+1.5
26	83.4	79.1	74.3	84.5	78.0	72.4	-1.1	+1.1	+1.8
28	83.7	79.5	74.6	84.5	78.0	72.4	-0.8	+1.4	+2.1
30	84.0	79.8	74.9	84.5	78.0	72.4	-0.5	+1.7	+2.4
32	84.3	80.0	75.2	84.5	78.0	72.4	-0.2	+2.0	+2.7
34	84.5	80.3	75.4	84.5	78.0	72.4	+0.1	+2.3	+3.0
36	84.8	80.5	75.7	84.5	78.0	72.4	+0.3	+2.5	+3.2
38	85.0	80.8	75.9	84.5	78.0	72.4	+0.5	+2.8	+3.5
40	85.2	81.0	76.1	84.5	78.0	72.4	+0.8	+3.0	+3.7
42	85.5	81.2	76.3	84.5	78.0	72.4	+1.0	+3.2	+3.9
44	85.7	81.4	76.5	84.5	78.0	72.4	+1.2	+3.4	+4.1
46	85.8	81.6	76.7	84.5	78.0	72.4	+1.4	+3.6	+4.3
48	86.0	81.8	76.9	84.5	78.0	72.4	+1.6	+3.8	+4.5
50	86.2	82.0	77.1	84.5	78.0	72.4	+1.7	+3.9	+4.6

Assumptions:	Auto Speed	56.3 km/hr=	35.0 mph
	Bus Speed	40.2 km/hr=	25.0 mph
	Autos simplified to 2 lanes	7.3 meters=	24.0 feet from centerline (all lanes)
	Buses simplified to 2 lanes	12.2 meters=	40.0 feet from centerline (curb lanes)

Noise decay parameter for soft site (4.5 dB/doubling of distance)

At-grade roadway with no noise barrier.

Bus noise level = heavy truck noise level - 3 dB.

Calculations using methods of Federal Highway Administration *Highway Traffic Noise Prediction Model*, FHWA-RD-77-108, December, 1978.

Appendix F:
Fuel Consumption Worksheets

METRO

WORKSHEETS FOR CALCULATING FUEL CONSUMPTION

Forecasted Fuel Consumption (Gallons per VMT)
(Table A9-5-0 of CEQA Handbook, SCAQMD)

	Passenger Cars			**Buses***
	NCAT	CAT	Diesel	All Diesel
1995	0.08	0.04	0.03	0.22
2009	0.00	0.03	0.03	0.20

* Consumption factors for buses for 1995 and 2009 are not available.
Factors obtained from SCAQMD for 1994 and 2010 were used.

Fuel Type by Vehicle Type
(Tables A9-5-J and A11-5-H of CEQA Handbook,SCAQMD)

	6,000 lbs or Less			**Buses**
	NCAT	CAT	Diesel	All Diesel
1995	1.57%	97.32%	1.11%	100.00%
2009	0.00%	99.97%	0.03%	100.00%

WORKSHEETS FOR CALCULATING FUEL CONSUMPTION

MTA Service Economies EIR
Net Change in Fuel Consumption - 1995

		VMT by Fuel Type				Fuel Consumption by Fuel Type				Total
	Total	Passenger Cars			Buses	Passenger Cars			Buses	Fuel
	VMT	NCAT	CAT	Diesel	All Diesel	NCAT	CAT	Diesel	All Diesel	(in gallons)
Package A										
Bus Mileage Reduction:	1,030				1,030				226.6	226.6
Auto Mileage Increase:	897	14	873	10		1.1	34.9	0.3		36.3
						Net Change in Fuel Consumption in 1995:				-190.3
Package B										
Bus Mileage Reduction:	937				937				206.2	206.2
Auto Mileage Increase:	3,362	53	3,272	37		4.2	130.9	1.1		136.2
						Net Change in Fuel Consumption in 1995:				-70.0
Package C										
Bus Mileage Reduction:	562				562				123.7	123.7
Auto Mileage Increase:	3,810	60	3,708	42		4.8	148.3	1.3		154.4
						Net Change in Fuel Consumption in 1995:				+30.7
Package D										
Bus Mileage Reduction:	4,683				4,683				1,030.4	1,030.4
Auto Mileage Increase:	20,172	317	19,631	224		25.3	785.3	6.7		817.3
						Net Change in Fuel Consumption in 1995:				-213.1
Package E										
Bus Mileage Reduction:	172,083				172,083				37,863.7	37,863.7
Auto Mileage Increase:	26,897	422	26,176	299		33.8	1,047.0	9.0		1,089.8
						Net Change in Fuel Consumption in 1995:				-36,773.9
Package F										
Bus Mileage Reduction:	27,368				27,368				6,021.8	6,021.8
Auto Mileage Increase:	1,694,483	26,603	1,649,071	18,809		2,128.3	65,962.8	564.3		68,655.4
						Net Change in Fuel Consumption in 1995:				+62,633.5
Package G										
Bus Mileage Reduction:	33,845				33,845				7,447.0	7,447.0
Auto Mileage Increase:	2,400,517	37,688	2,336,183	26,646		3,015.0	93,447.3	799.4		97,261.7
						Net Change in Fuel Consumption in 1995:				+89,814.8
Package H										
Bus Mileage Reduction:	10,676				10,676				2,349.1	2,349.1
Auto Mileage Increase:	31,379	493	30,538	348		39.4	1,221.5	10.4		1,271.4
						Net Change in Fuel Consumption in 1995:				-1,077.7
Package I										
Bus Mileage Reduction:	1,217				1,217				267.8	267.8
Auto Mileage Increase:	89,655	1,408	87,252	995		112.6	3,490.1	29.9		3,632.6
						Net Change in Fuel Consumption in 1995:				+3,364.8
Package J										
Bus Mileage Reduction:	843				843				185.5	185.5
Auto Mileage Increase:	8,517	134	8,289	95		10.7	331.5	2.8		345.1
						Net Change in Fuel Consumption in 1995:				+159.6
Package K										
Bus Mileage Reduction:	9,365				9,365				2,060.6	2,060.6
Auto Mileage Increase:	29,586	465	28,793	328		37.2	1,151.7	9.9		1,198.7
						Net Change in Fuel Consumption in 1995:				-861.9
Package L										
Bus Mileage Reduction:	12,362				12,362				2,720.0	2,720.0
Auto Mileage Increase:	50,207	788	48,861	557		63.1	1,954.5	16.7		2,034.2
						Net Change in Fuel Consumption in 1995:				-685.8

WORKSHEETS FOR CALCULATING FUEL CONSUMPTION

MTA Service Economies EIR
Net Change in Fuel Consumption - 1995

		VMT by Fuel Type				Fuel Consumption by Fuel Type				Total
	Total	Passenger Cars			Buses	Passenger Cars			Buses	Fuel
	VMT	NCAT	CAT	Diesel	All Diesel	NCAT	CAT	Diesel	All Diesel	(in gallons)
Package M										
Bus Mileage Reduction:	4,870				4,870				1,071.6	1,071.6
Auto Mileage Increase:	67,241	1,056	65,439	746		84.5	2,617.6	22.4		2,724.4
						Net Change in Fuel Consumption in 1995:				+1,652.9
Package N										
Bus Mileage Reduction:	1,873				1,873				412.1	412.1
Auto Mileage Increase:	6,724	106	6,544	75		8.4	261.8	2.2		272.4
						Net Change in Fuel Consumption in 1995:				-139.7
Package O										
Bus Mileage Reduction:	16,104				16,104				3,543.4	3,543.4
Auto Mileage Increase:	79,345	1,246	77,219	881		99.7	3,088.7	26.4		3,214.8
						Net Change in Fuel Consumption in 1995:				-328.6
Package P										
Bus Mileage Reduction:	6,743				6,743				1,483.7	1,483.7
Auto Mileage Increase:	16,138	253	15,706	179		20.3	628.2	5.4		653.9
						Net Change in Fuel Consumption in 1995:				-829.8
Package Q										
Bus Mileage Reduction:	0				0				0.0	0.0
Auto Mileage Increase:	0	0	0	0		0.0	0.0	0.0		0.0
						Net Change in Fuel Consumption in 1995:				N/A
Package R										
Bus Mileage Reduction:	1,217				1,217				267.8	267.8
Auto Mileage Increase:	0	0	0	0		0.0	0.0	0.0		0.0
						Net Change in Fuel Consumption in 1995:				-267.8
Package S										
Bus Mileage Reduction:	7,455				7,455				1,640.3	1,640.3
Auto Mileage Increase:	98,838	1,552	96,189	1,097		124.1	3,847.6	32.9		4,004.6
						Net Change in Fuel Consumption in 1995:				+2,364.3
Package T										
Bus Mileage Reduction:	3,559				3,559				783.1	783.1
Auto Mileage Increase:	10,669	168	10,383	118		13.4	415.3	3.6		432.3
						Net Change in Fuel Consumption in 1995:				-350.8
Package U										
Bus Mileage Reduction:	0				0				0.0	0.0
Auto Mileage Increase:	0	0	0	0		0.0	0.0	0.0		0.0
						Net Change in Fuel Consumption in 1995:				N/A
Package V										
Bus Mileage Reduction:	40,982				40,982				9,017.3	9,017.3
Auto Mileage Increase:	255,346	4,009	248,503	2,834		320.7	9,940.1	85.0		10,345.9
						Net Change in Fuel Consumption in 1995:				+1,328.5
Preferred Project										
Bus Mileage Reduction:	22,992				22,992				5,059.0	5,059.0
Auto Mileage Increase:	42,003	659	40,877	466		52.8	1,635.1	14.0		1,701.8
						Net Change in Fuel Consumption in 1995:				-3,357.1

Methodology for estimating fuel consumption obtained from SCAQMD CEQA Manual, November 1993.

WORKSHEETS FOR CALCULATING FUEL CONSUMPTION

MTA Service Economies EIR
Net Change In Fuel Consumption - 2009

		VMT by Fuel Type				Fuel Consumption by Fuel Type				Total
	Total	Passenger Cars			Buses	Passenger Cars			Buses	Fuel
	VMT	NCAT	CAT	Diesel	All Diesel	NCAT	CAT	Diesel	All Diesel	(in gallons)
Package A										
Bus Mileage Reduction:	1,030				1,030				201.6	201.6
Auto Mileage Increase:	897	0	897	0		0.0	26.9	0.0		26.9
						Net Change in Fuel Consumption in 2009:				-174.7
Package B										
Bus Mileage Reduction:	937				937				183.4	183.4
Auto Mileage Increase:	3,362	0	3,361	1		0.0	100.8	0.0		100.9
						Net Change in Fuel Consumption in 2009:				-82.6
Package C										
Bus Mileage Reduction:	562				562				110.0	110.0
Auto Mileage Increase:	3,810	0	3,809	1		0.0	114.3	0.0		114.3
						Net Change in Fuel Consumption in 2009:				+4.3
Package D										
Bus Mileage Reduction:	4,683				4,683				916.7	916.7
Auto Mileage Increase:	20,172	0	20,166	6		0.0	605.0	0.2		605.2
						Net Change in Fuel Consumption in 2009:				-311.5
Package E										
Bus Mileage Reduction:	172,083				172,083				33,684.1	33,684.1
Auto Mileage Increase:	26,897	0	26,889	8		0.0	806.7	0.2		806.9
						Net Change in Fuel Consumption in 2009:				-32,877.2
Package F										
Bus Mileage Reduction:	27,368				27,368				5,357.1	5,357.1
Auto Mileage Increase:	1,694,483	0	1,693,975	508		0.0	50,819.2	15.3		50,834.5
						Net Change in Fuel Consumption in 2009:				+45,477.4
Package G										
Bus Mileage Reduction:	33,845				33,845				6,624.9	6,624.9
Auto Mileage Increase:	2,400,517	0	2,399,797	720		0.0	71,993.9	21.6		72,015.5
						Net Change in Fuel Consumption in 2009:				+65,390.6
Package H										
Bus Mileage Reduction:	10,676				10,676				2,089.8	2,089.8
Auto Mileage Increase:	31,379	0	31,370	9		0.0	941.1	0.3		941.4
						Net Change in Fuel Consumption in 2009:				-1,148.4
Package I										
Bus Mileage Reduction:	1,217				1,217				238.2	238.2
Auto Mileage Increase:	89,655	0	89,628	27		0.0	2,688.8	0.8		2,689.7
						Net Change in Fuel Consumption in 2009:				+2,451.4
Package J										
Bus Mileage Reduction:	843				843				165.0	165.0
Auto Mileage Increase:	8,517	0	8,514	3		0.0	255.4	0.1		255.5
						Net Change in Fuel Consumption in 2009:				+90.5
Package K										
Bus Mileage Reduction:	9,365				9,365				1,833.1	1,833.1
Auto Mileage Increase:	29,586	0	29,577	9		0.0	887.3	0.3		887.6
						Net Change in Fuel Consumption in 2009:				-945.6
Package L										
Bus Mileage Reduction:	12,362				12,362				2,419.8	2,419.8
Auto Mileage Increase:	50,207	0	50,192	15		0.0	1,505.8	0.5		1,506.2
						Net Change in Fuel Consumption in 2009:				-913.6

WORKSHEETS FOR CALCULATING FUEL CONSUMPTION

MTA Service Economies EIR
Net Change In Fuel Consumption - 2009

		VMT by Fuel Type				Fuel Consumption by Fuel Type				Total
	Total	Passenger Cars			Buses	Passenger Cars			Buses	Fuel
	VMT	NCAT	CAT	Diesel	All Diesel	NCAT	CAT	Diesel	All Diesel	(in gallons)
Package M										
Bus Mileage Reduction:	4,870				4,870				953.3	953.3
Auto Mileage Increase:	67,241	0	67,221	20		0.0	2,016.6	0.6		2,017.2
						Net Change in Fuel Consumption in 2009:				+1,064.0
Package N										
Bus Mileage Reduction:	1,873				1,873				366.6	366.6
Auto Mileage Increase:	6,724	0	6,722	2		0.0	201.7	0.1		201.7
						Net Change in Fuel Consumption in 2009:				-164.9
Package O										
Bus Mileage Reduction:	16,104				16,104				3,152.3	3,152.3
Auto Mileage Increase:	79,345	0	79,321	24		0.0	2,379.6	0.7		2,380.4
						Net Change in Fuel Consumption in 2009:				-771.9
Package P										
Bus Mileage Reduction:	6,743				6,743				1,319.9	1,319.9
Auto Mileage Increase:	16,138	0	16,133	5		0.0	484.0	0.1		484.1
						Net Change in Fuel Consumption in 2009:				-835.8
Package Q										
Bus Mileage Reduction:	0				0				0.0	0.0
Auto Mileage Increase:	0	0	0	0		0.0	0.0	0.0		0.0
						Net Change in Fuel Consumption in 2009:				N/A
Package R										
Bus Mileage Reduction:	1,217				1,217				238.2	238.2
Auto Mileage Increase:	0	0	0	0		0.0	0.0	0.0		0.0
						Net Change in Fuel Consumption in 2009:				-238.2
Package S										
Bus Mileage Reduction:	7,455				7,455				1,459.3	1,459.3
Auto Mileage Increase:	98,838	0	98,808	30		0.0	2,964.3	0.9		2,965.1
						Net Change in Fuel Consumption in 2009:				+1,505.9
Package T										
Bus Mileage Reduction:	3,559				3,559				696.7	696.7
Auto Mileage Increase:	10,669	0	10,666	3		0.0	320.0	0.1		320.1
						Net Change in Fuel Consumption in 2009:				-376.6
Package U										
Bus Mileage Reduction:	0				0				0.0	0.0
Auto Mileage Increase:	0	0	0	0		0.0	0.0	0.0		0.0
						Net Change in Fuel Consumption in 2009:				N/A
Package V										
Bus Mileage Reduction:	40,982				40,982				8,022.0	8,022.0
Auto Mileage Increase:	255,346	0	255,269	77		0.0	7,658.1	2.3		7,660.4
						Net Change in Fuel Consumption in 2009:				-361.6
Preferred Project										
Bus Mileage Reduction:	22,992				22,992				4,500.5	4,500.5
Auto Mileage Increase:	42,003	0	41,990	13		0.0	1,259.7	0.4		1,260.1
						Net Change in Fuel Consumption in 2009:				-3,240.4

Methodology for estimating fuel consumption obtained from SCAQMD CEQA Manual, November 1993.

REGIONAL FUEL CONSUMPTION - LOS ANGELES COUNTY

Projected Vehicle Miles Traveled by Vehicle Type

(Table A9-14-A of CEQA Handbook, SCAQMD)

	Passenger	Trucks	Motor-cycles	Buses
1995	156,512,871	18,251,492	1,065,000	319,000
2009	189,762,535	22,873,241	1,286,000	343,000

Forecasted Fuel Consumption (Gallons per VMT)

(Table A9-5-0 of CEQA Handbook, SCAQMD)

	Passenger Cars			Motocycles*	Buses*
	NCAT	CAT	Diesel	All CAT	All Diesel
1995	0.08	0.04	0.03	0.03	0.22
2009	0.00	0.03	0.03	0.03	0.20

	Light-Duty Trucks			Medium-Duty			Heavy-Duty		
	NCAT	CAT	Diesel	NCAT	CAT	Diesel	NCAT	CAT	Diesel
1995	0.09	0.05	0.04	0.10	0.09	N/A	0.18	0.18	0.17
2009	0.00	0.05	0.04	0.00	0.08	N/A	0.18	0.18	0.15

* Consumption factors for motorcycles and buses for 1995 and 2009 are not available. Factors obtained from SCAQMD for 1994 and 2010 were used.

Fuel Type by Vehicle Type

(Tables A9-5-J and A11-5-H of CEQA Handbook,SCAQMD)

	6,000 lbs or Less			6,000 lbs or More			Motocycle	Buses
	NCAT	CAT	Diesel	NCAT	CAT	Diesel	All CAT	All Diesel
1995	1.57%	97.32%	1.11%	20.65%	46.02%	33.33%	100.00%	100.00%
2009	0.00%	99.97%	0.03%	20.65%	46.02%	33.33%	100.00%	100.00%

Fleet Mix for Trucks

(URBEMIS3, ARB)

	Light-Trucks	Medium-Trucks	Heavy-Trucks
1995	54.37%	16.35%	29.28%
2009	54.37%	16.35%	29.28%

Projected Vehicle Miles Traveled by Vehicle Type

(With VMT for trucks distributed according to fleet mix shown above)

		Trucks				
	Passenger	Light	Medium	Heavy	Motor-cycles	Buses
1995	156,512,871	9,923,815	2,984,084	5,343,593	1,065,000	319,000
2009	189,762,535	12,436,781	3,739,731	6,696,728	1,286,000	343,000

REGIONAL FUEL CONSUMPTION - LOS ANGELES COUNTY

Forecasted Regional Fuel Consumption

(Based on estimates on fuel consumption factors, fuel type, and vehicle miles travelled)

	Passenger Cars			Motocycles	Buses
	NCAT	CAT	Diesel	All CAT	All Diesel
1995	196,580	6,092,733	52,119	32,680	70,190
2009	0	5,691,168	1,708	43,660	67,140

	Light-Duty Trucks			Medium-Duty			Heavy-Duty		
	NCAT	CAT	Diesel	NCAT	CAT	Diesel	NCAT	CAT	Diesel
1995	14,022	482,893	4,406	61,621	123,595	N/A	198,621	442,642	302,773
2009	0	621,653	149	0	137,682	N/A	248,917	554,730	334,803

Total Regional Fuel Consumption (Gallons)

	Total			
	NCAT	**CAT**	**Diesel**	**Total**
1995	470,845	7,174,543	429,488	8,074,876
2009	248,917	7,048,893	403,800	7,701,610