

**SUBSEQUENT DRAFT ENVIRONMENTAL IMPACT REPORT**

**GRAHAM AVENUE ROADWAY IMPROVEMENTS FOR  
THE FLORENCE LIGHT RAIL TRANSIT STATION**

**Lead Agency:**

**County of Los Angeles  
Department of Public Works**

**State Clearinghouse Number: 89041216**

**Prepared by**

**Myra L. Frank & Associates**

**In Association with**

**Korve Engineering, Inc.**

**October 1989**

NA  
6290.031  
.K857  
G44  
1989



**SUBSEQUENT DRAFT ENVIRONMENTAL IMPACT REPORT**

**GRAHAM AVENUE ROADWAY IMPROVEMENTS FOR  
THE FLORENCE LIGHT RAIL TRANSIT STATION**

**Lead Agency:**

**County of Los Angeles  
Department of Public Works**

**State Clearinghouse Number: 89041216**

**Prepared by**

**Myra L. Frank & Associates**

**In Association with**

**Korve Engineering, Inc.**

**October 1989**



## TABLE OF CONTENTS

	<u>Page</u>
<b>SUMMARY</b>	
A. Introduction	S-1
B. Description of the Proposed Project	S-1
C. Alternatives to the Proposed Project	S-1
D. Areas of Controversy	S-5
E. Issues to be Resolved	S-5
F. Summary of Environmental Impacts	S-5
<b>INTRODUCTION</b>	
A. Overview	I-1
B. EIR Preparation and Processing	I-1
C. Project Approval	I-2
<b>CHAPTER 1 - DESCRIPTION OF THE PROPOSED PROJECT</b>	
A. Project Background and Objectives	1-1
B. Project Location and Existing Uses	1-1
C. Project Characteristics	1-4
D. Related Projects	1-4
<b>CHAPTER 2 - ENVIRONMENTAL SETTING, IMPACTS AND MITIGATION</b>	
A. Introduction	2-1
B. Geology and Soils	2-1
C. Air Quality	2-5
D. Biology	2-15
E. Noise and Vibration	2-16
F. Light and Glare	2-26
G. Land Use and Planning	2-27
H. Population, Housing and Businesses	2-31
I. Traffic/Circulation and Parking	2-36
J. Community Services	2-56
K. Energy	2-57
L. Visual Quality and Aesthetics	2-59
M. Cultural Resources	2-60

	<u>Page</u>
<b>CHAPTER 3 - IMPACT OVERVIEW</b>	
A. Cumulative Effects	3-1
B. Unavoidable Adverse Impacts	3-1
C. Impacts Found Not to be Significant	3-2
D. Growth-Inducing Impacts	3-3
<b>CHAPTER 4 - ALTERNATIVES TO THE PROPOSED PROJECT</b>	
A. Introduction	4-1
B. Alternative A - No Project	4-1
C. Alternative B - LACTC Planned Improvements	4-1
D. Alternative C - 30-foot Roadway	4-2
E. Alternative D - Realigned 30-foot Roadway with 35-foot Park-and-Ride Lot	4-2
<b>CHAPTER 5 - PERSONS AND ORGANIZATIONS CONSULTED</b>	5-1
<b>CHAPTER 6 - BIBLIOGRAPHY</b>	6-1
<b>APPENDICES</b>	
A. Initial Study	
B. Notice of Preparation and Responses	
C. List of Preparers	
D. Traffic Study	

**LIST OF TABLES**

<b><u>Table No.</u></b>	<b><u>Title</u></b>	<b><u>Page</u></b>
2.C-1	National and State of California Ambient Air Quality Standards	2-6
2.C-2	Lynwood Station - Recent Pollutant Activity	2-9
2.C-3	Existing Florence-Graham Avenues Automobile Related Emissions	2-11
2.C-4	Existing and Predicted Local Pollutant Burden	2-13
2.E-1	Projected Noise Levels	2-23
2.H-1	1980 Vacancy Rates for Residential Units	2-31
2.H-2	1980 Household Size and Income	2-32
2.I-1	Definitions of Levels of Service	2-41
2.I-2	Existing Intersection Levels of Service (P.M. Peak Hour)	2-42
2.I-3	Future Intersection Levels of Service - Without Project (P.M. Peak Hour)	2-46
2.I-4	Future Intersection Levels of Service (P.M. Peak Hour)	2-53

**LIST OF FIGURES**

<b><u>Figure No.</u></b>	<b><u>Title</u></b>	<b><u>Page</u></b>
S-1	Regional Setting and Project Location	S-2
S-2	Project Vicinity	S-3
1-1	Regional Setting and Project Location	1-2
1-2	Project Vicinity	1-3
1-3	Project Site	1-5
1-4	Site Plan	1-6
2.B-1	Major Quaternary Faults Near Study Area	2-2
2.E-1	Land Use Compatibility Noise Equivalent Level	2-17
2.E-2	Construction Noise Equipment Ranges	2-21
2.E-3	Location of Noise Sensitive Receptors	2-22
2.E-4	Construction Vibration	2-25
2.G-1	Land Uses Near Project Site	2-28
2.G-2	Zoning Map	2-29
2.I-1	Project Site and Local Street System	2-37
2.I-2	Existing P.M. Peak Hour Traffic Volumes	2-39
2.I-3	Existing Bus Routes Serving Project Site	2-43
2.I-4	Future Traffic Volumes	2-45
2.I-5	Proposed Realignment	2-47
2.I-6	Project Trip Distribution	2-50
2.I-7	Project Trip Assignment for P.M. Peak Hour	2-51
2.I-8	Forecast Traffic Volumes	2-52



## **SUMMARY**

### **A. Introduction**

On March 15, 1988, the County of Los Angeles Department of Public Works requested the Graham Avenue roadway improvements for the Florence Light Rail Transit (LRT) Station. The Florence Station is part of the Long Beach - Los Angeles Rail Transit Project currently being constructed by the Los Angeles County Transportation Commission (LACTC) as the first line of a proposed countywide transit system. When completed in 1990, the light rail line will extend from downtown Los Angeles to downtown Long Beach. The total route will be about 22 miles in length, about 18 miles of which will follow an existing Southern Pacific Transportation Company (SPTC) right-of-way. The purpose of the proposed station area and Graham Avenue roadway improvements is to provide safe and efficient traffic circulation in the vicinity of the Florence Station and to provide ample room for a park-and-ride lot serving the station.

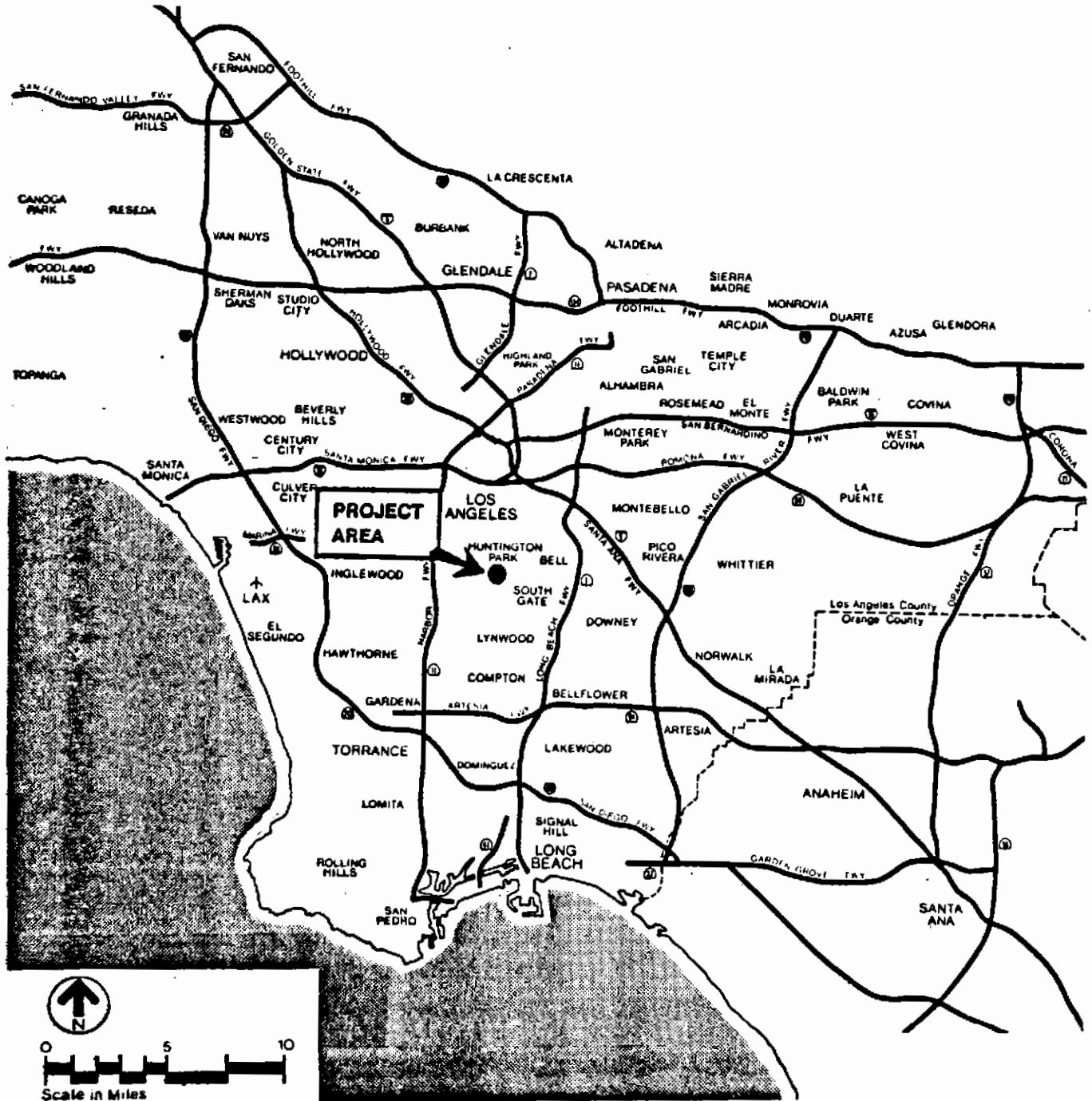
This Environmental Impact Report (EIR) for the Graham Avenue roadway improvements for the Florence LRT Station is being prepared as a subsequent document to the Final and Supplemental EIRs examining the environmental consequences of the Long Beach - Los Angeles Rail Transit Project. The Final EIR for the rail transit project was certified on March 13, 1985 and the project was approved on March 27, 1985.

### **B. Description of the Proposed Project**

The proposed project site is located in an unincorporated area of the County of Los Angeles (see Figures S-1 and S-2). The project site includes the section of Graham Avenue from Florence Avenue south about 620 feet to the F.D. Roosevelt Park and the lots immediately east of Graham Avenue encompassing about 1.7 acres. The Florence Station is located immediately west of Graham and south of Florence Avenue. The proposed project consists of widening and realigning the section of Graham Avenue south of Florence Avenue and north of the F.D. Roosevelt Park and the construction of an adjacent park-and-ride lot serving Florence Station. The realignment of Graham Avenue would provide a standard curb return radius and pedestrian refuge area on the southwest corner of Florence and Graham Avenues. The proposed project would also move Graham Avenue far enough from the tracks to allow left turns in and out of Graham Avenue at Florence Avenue, thereby improving access for the park and adjacent community. The realignment of Graham Avenue would require right-of-way acquisition of a church, one duplex, seven single family residences and seven multi-family units along the east side of Graham Avenue and six retail businesses along the south side of Florence Avenue.

### **C. Alternatives to the Proposed Project**

The California Environmental Quality Act (CEQA) guidelines require a discussion of possible alternatives to the project proposed in an EIR. In addition to the required "No Project" alternative, three other alternatives were considered; one was developed by the LACTC and two were developed by the County Department of Public Works.



**Graham Avenue Roadway  
Improvements  
Environmental Impact Report**  
Myra L. Frank & Associates

**Figure S-1**  
**Regional Setting  
and Project Location**  
Source: Myra L. Frank & Associates, 1989.

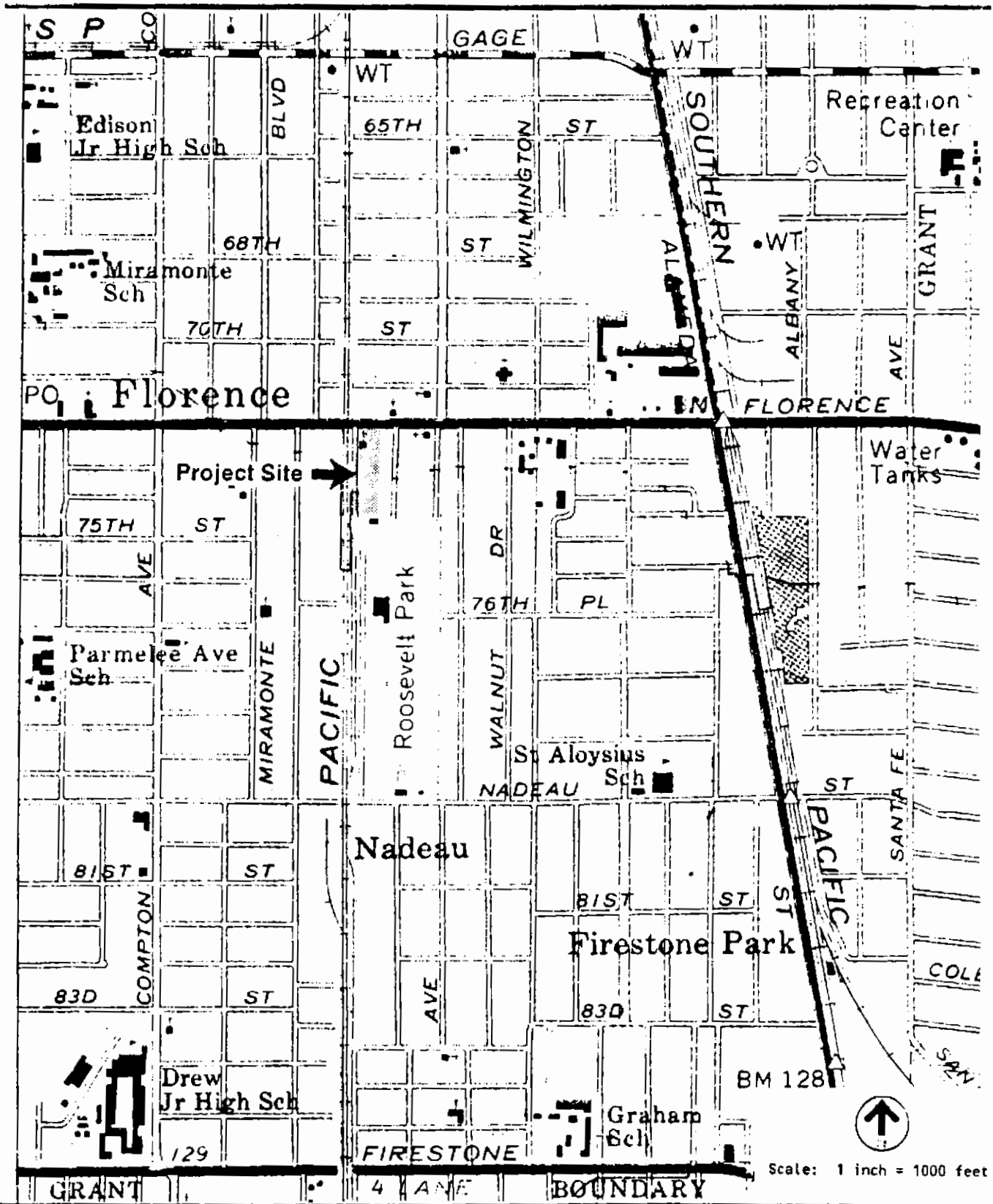


Figure S-2

Project Vicinity

**Graham Avenue Roadway  
Improvements  
Environmental Impact Report**  
Myra L. Frank & Associates

Source: Myra L. Frank & Associates, 1989  
U.S.G.S. 7.5' Southgate Quad.

Alternative A, the No Project alternative, would maintain the project site as it presently exists. Graham Avenue, which was recently reconstructed as part of the Long Beach - Los Angeles Rail Transit Project as a 26.5-foot roadway between curbs with a six-foot parkway on the east side, would remain in its present configuration. The residences, church and businesses fronting on the east side of Graham Avenue and south of Florence Avenue would remain. Under this alternative, no construction-related short-term impacts would occur, including noise, traffic or air quality impacts. No additional right-of-way would have to be acquired. As a result, residential and business tenants on Graham and Florence Avenues would not have to be relocated. The noise and traffic impacts of this alternative would be less significant than those under the proposed project. Because of the lack of significant effects, the No Project alternative would be the "environmentally superior alternative." However, the No Project alternative would result in a very small radius curb return on the southwest corner of Florence Avenue. The small radius return would make it difficult for vehicles, especially buses, to turn south on Graham from Florence Avenue and would not provide any pedestrian refuge area on this corner. In addition, this alternative does not provide a park-and-ride facility serving the Florence Station

Alternative B, consists of improvements planned by the LACTC. These improvements consist of creating a pedestrian refuge area at the southwest corner of Florence and Graham Avenues by narrowing Graham Avenue at Florence to 22 feet, with a 20-foot curb return radius. South of the intersection, Graham Avenue would be 26.5 feet curb to curb. This alternative would not require any additional right-of-way on the east side of Graham Avenue and would therefore not result in any significant effects. However, this alternative does not provide room for a park-and-ride facility or improve circulation by allowing left turns in and out of Graham Avenue.

Under Alternative C, about eight feet of right-of-way on the east side of Graham Avenue would be acquired to provide a 30-foot street between curbs with seven-foot and three-foot parkways on the east side and west side, respectively. Right-of-way acquisition would require relocation of one retail business and the occupants of one residence, and the removal of a storage shed. Although the right-of-way impacts of this proposal would be significantly less than the proposed project, this alternative would still require a relatively small radius curb return on the southwest corner of Florence and Graham, making it difficult for vehicles to turn south on Graham from Florence Avenue. It would also not provide a pedestrian refuge area on this corner or enough space for a park-and-ride lot.

Alternative D would require the acquisition of 42 feet of right of way on the east side of Graham Avenue to provide a realigned street with 30 feet between curbs with six-foot parkways (to match the alignment and width of Graham Avenue adjacent to the park). The resulting 35-foot strip between Graham Avenue and the Florence LRT Station could be used as a park-and-ride or transit-related facility. The right-of-way acquisition would require relocation of three retail businesses, a church, and the occupants of one duplex and seven houses. Traffic impacts would be similar to the proposed project. The increase in noise levels at residences fronting on Beach Street would be less than the projected increase in noise levels under the proposed project. This alternative would provide a standard curb return radius and pedestrian refuge area on the southwest corner of Florence and Graham

and would possibly move Graham far enough from the tracks so that left turns in and out of Graham at Florence Avenue could be allowed. This would improve access to the park and adjacent community. However, this alternative would provide less space for a park-and-ride lot than the proposed project.

#### **D. Areas of Controversy**

An area of controversy is the relocation of an estimated 63 residents and six commercial tenants and the elimination of 16 units of affordable housing located in a low-income area. These residents include a significant number of elderly and minority persons. Proposed mitigation measures include relocation assistance and payments. To mitigate the impact of the loss of affordable housing stock, it is recommended that residential structures acquired as a result of the project be offered for sale to the public at minimal cost for relocation to vacant parcels.

#### **E. Issues to be Resolved**

An issue to be resolved is the selection of appropriate measures to mitigate the noise impacts on residences along Beach Street due to the realignment of Graham Avenue.

#### **F. Summary of Environmental Impacts**

Outlined on the following pages are the anticipated project impacts in each environmental category, suggested mitigation measures, the level of significance after the mitigation is implemented, and the agency responsible for implementing the mitigation measure. A detailed description of the probable effects in each of the environmental categories can be found in Chapter 2 of this document.

<u>IMPACT</u>	<u>SIGNIFICANCE</u>	<u>MITIGATION</u>	<u>LEVEL OF SIGNIFICANCE AFTER MITIGATION</u>
<u>Geology and Soils</u> (Chapter 2, Section B)			
Construction of proposed project could result in minor soil erosion, soil stability problems and fugitive dust.	Not Significant	Minor erosion will be mitigated through the use of proper grading techniques, including site watering, soil compaction and sandbagging. Fugitive dust will be controlled through watering of construction site.	Not Significant
Active faults in the region could subject project site to strong ground shaking both during construction and in the long term.	Not Significant	Since the site is not located within an Alquist Priolo Special Study Zone for Fault Rupture Hazard, no mitigation is required.	Not Significant
Area of project site is at low to very low levels of risk from liquefaction.	Not Significant	No mitigation required	Not Significant
Potential for hazardous or contaminated materials.	Not Significant	Any hazardous or contaminated material encountered will be analyzed, classified and disposed of in an approved site in accordance with government procedures.	Not Significant

<u>IMPACT</u>	<u>SIGNIFICANCE</u>	<u>MITIGATION</u>	<u>LEVEL OF SIGNIFICANCE AFTER MITIGATION</u>
<u>Air Quality</u> (Chapter 2, Section C)			
Construction activities will generate fugitive dust.	Not Significant	Site will be watered during construction to reduce dust as required by AQMD Rule 403.	Not Significant
Project may produce a slight increase in pollutant emissions.	Not Significant	No mitigation required.	Not Significant
<u>Biology</u> (Chapter 2, Section D)			
Removal of existing landscaping including all mature trees and shrubs.	Not Significant	Mature trees of certain varieties that can be successfully transplanted should be removed from the project site prior to the demolition of existing structures. Park-and-ride lot will include landscaping. New landscaping should conform to any existing community landscaping guidelines and should include xerophytic species and other water-saving measures.	Not Significant

**LEVEL OF  
SIGNIFICANCE  
AFTER MITIGATION**

**IMPACT**

**SIGNIFICANCE**

**MITIGATION**

**Noise and Vibration  
(Chapter 2, Section E)**

Construction activities could result in intermittent high noise levels in the vicinity of the project site.

Not Significant

To reduce construction noise impacts, the following measures are recommended: (1) Use of low noise-generating equipment; (2) Scheduling of high noise activities during periods that are least sensitive; (3) Construction of noise barriers; and (4) Compliance with the County of Los Angeles construction noise regulations.

Not Significant

S-8

Traffic on realigned Graham Avenue would increase noise levels at adjacent sensitive receptors.

Significant

Noise wall at property line east of realigned Graham Avenue should be constructed.

Not Significant

Users of park-and-ride lot could generate intermittent high noise levels due to car doors slamming, car horns and alarms.

Not Significant

No mitigation required

Not Significant

Vibration from construction activities may be perceptible at nearby residences.

Not Significant

No mitigation required.

Not Significant



<u>IMPACT</u>	<u>SIGNIFICANCE</u>	<u>MITIGATION</u>	<u>LEVEL OF SIGNIFICANCE AFTER MITIGATION</u>
<u>Light and Glare</u> (Chapter 2, Section F)			
Project site may be illuminated for security and safety reasons, thereby increasing the amount of off-site light during construction.	Not Significant	No mitigation required.	Not Significant
Implementation of proposed project would introduce new sources of light and glare into the area from sources such as pole-mounted lights, automobile headlights, and nighttime street lights.	Not Significant	Lighting plan for the project should include fixtures such as full cut-off luminaries or hooded outdoor lights. Park-and-ride lot will include landscaping and/or low masonry wall to shield residences.	Not Significant
<u>Land Use and Planning</u> (Chapter 2, Section G)			
Proposed park-and-ride lot is inconsistent with existing residential zoning designation.	Not Significant	Conditional Use Permit and zone change will be required for the park-and-ride lot.	Not Significant
<u>Population and Housing/Business Displacement</u> (Chapter 2, Section H)			
An estimated 63 persons occupying 16 residential units and six retail businesses will be relocated. Marginal businesses may be forced to liquidate.	Significant	Relocation assistance and payments.	Not Significant

**LEVEL OF  
SIGNIFICANCE  
AFTER MITIGATION**

**IMPACT**

**SIGNIFICANCE**

**MITIGATION**

**Population and Housing/Business Displacement(continued)**  
(Chapter 2, Section H)

Loss of 16 residential units in a low-income area will have an adverse impact on housing stock and availability of affordable housing in the area.

Significant

Residences should be offered to public at nominal fee for relocation to vacant sites.

Significant

**Traffic/Circulation and Parking**  
(Chapter 2, Section I)

S-10

Florence/Graham intersection would operate at LOS F in P.M. peak hour with the project.

Not Significant

Two northbound Graham Ave. approach lanes at Florence or connection from Graham to Beach should be provided.

Not Significant

**Community Services**  
(Chapter 2, Section J)

Construction may restrict access to Graham Avenue and thereby limit access to Roosevelt Park.

Not Significant

Graham Avenue should not be completely closed to traffic during construction period. Detour directions should be provided to direct park users to Whitsett Avenue and Nadeau Street as alternate routes.

Not Significant

**Energy**  
(Chapter 2, Section K)

Minor consumption in energy during construction.

Not Significant

No mitigation required.

Not Significant

**LEVEL OF  
SIGNIFICANCE  
AFTER MITIGATION**

**IMPACT**

**SIGNIFICANCE**

**MITIGATION**

**Visual Quality and Aesthetics  
(Chapter 2, Section L)**

Views to and from the project site will be altered. Residences fronting on west side of Beach Street will experience loss of privacy.

Not Significant

Park-and-ride lot will include landscaping. Landscaped barrier wall east of Graham should be provided to reduce visual impacts.

Not Significant

**Cultural Resources  
(Chapter 2, Section M)**

No significant cultural resources would be affected by the proposed project.

Not Significant

No mitigation required

Not Significant



## **INTRODUCTION**

### **A. Overview**

This Environmental Impact Report (EIR) examines the potential environmental impacts that could result from the proposed roadway improvements for the Florence Avenue Station of the Long Beach/Los Angeles Light Rail Transit (LRT) system. The proposed improvements consist of acquiring the residential and commercial properties located immediately south of Florence Avenue and east of Graham Avenue in the County of Los Angeles and, using a curved alignment, aligning Graham Avenue with the section adjacent to the F.D. Roosevelt Playground. The realignment of Graham Avenue would leave approximately 120 feet between Graham Avenue and the Florence Avenue LRT Station for a park-and-ride lot. The proposed project would provide a standard curb return radius and pedestrian refuge area on the southwest corner of Florence and Graham Avenues. In addition, Graham Avenue would be moved far enough from the LRT tracks to allow left turns in and out of Graham Avenue at Florence Avenue. The right-of-way acquisition would require relocation of six businesses, a church and the occupants of one duplex, seven single-family residences and seven multi-family units.

### **B. EIR Preparation and Processing**

The Graham Avenue Roadway Improvements Project is subject to review under the requirements of the California Environmentally Quality Act (CEQA) of 1970, as amended. In accordance, with CEQA, an Initial Study (see Appendix A) for the project was completed by County staff in March 1989. Certain effects of the proposed project were found to be potentially significant, and it was then determined that an EIR should be prepared for the project. In April 1989, a Notice of Preparation (NOP) for an Environmental Impact Report and the Initial Study were circulated for comment among responsible agencies, and persons and organizations possibly interested in the project.

The potential environmental effects of the proposed Graham Avenue roadway improvements identified in the NOP/Initial Study included: minimal disruption of soils; additional air emissions; changes in runoff and runoff patterns; removal of vegetation; increased noise levels, additional light and glare, change in land use, disruption of access; displacement and relocation of residents and commercial tenants; increases in traffic; and changes in existing views.

All comments from the NOP process were taken into consideration during preparation of this EIR. The NOP and the comments received on it can be found in Appendix B of this report.

This EIR is a subsequent document to the EIR prepared for the Long Beach - Los Angeles Rail Transit Project and its supplements.

This EIR was prepared in compliance with the requirements of CEQA. In meeting requirements for CEQA, the project fulfills the requirements of the County of Los Angeles Environmental Document Reporting Procedures and Guidelines. The content and format of

the EIR is established by Article 9 (sections 15120 through 15132) of the state Guidelines and Appendix F of the county guidelines. The lead agency, the Los Angeles County Department of Public Works, is responsible for assuring that the EIR is prepared in accordance with these guidelines.

The purpose of an EIR, according to Section 15121 of the CEQA Guidelines, is to identify all potentially significant effects of a project on the physical environment, to determine the extent to which those effects could be reduced or avoided, and to identify and evaluate feasible alternatives to the project. An EIR need not be exhaustive in its analysis of a project but should analyze important issues to a sufficient degree that permitting and approving agencies can make informed decisions. Disagreement among experts, for example, does not render an EIR inadequate, but the major points of such disagreement should be summarized.

This DEIR is now being circulated for comment. A public review period of 45 days has been established. During this period, comments on the EIR's accuracy and completeness may be submitted by state and local agencies, public interest groups, and concerned individuals. Written comments may be submitted to the consultant to the lead agency:

Mr. Lee Lisecki  
Myra L. Frank & Associates  
403 W. 8th Street, Suite 801  
Los Angeles, CA 90014

A community meeting will be held on the EIR for this project. Written comments on the DEIR received during the public comment period will be included and addressed in the Final EIR if appropriate.

### **C. Project Approval**

When an EIR determines that a project could cause significant impacts on the physical environment, those agencies with permit authority over the project are required to make one or more of the following findings before the project can be approved:

- o The project has been altered to avoid or substantially lessen significant impacts identified in the Final EIR.
- o The responsibility to carry out the above is under the jurisdiction of another agency.
- o Specific social, economic or other considerations render the mitigation measures or alternatives to the project infeasible.

If the significant effects of a project on the environment cannot be eliminated or substantially lessened, then CEQA requires the lead agency, in order to approve a project, to adopt a "Statement of Overriding Considerations." This document is a public statement made by

the lead agency that balances the benefits of a proposed project against its unavoidable environmental risks. If the benefits are found to outweigh the unavoidable adverse effects, the adverse environmental impacts may be considered "acceptable" (CEQA, Section 15093 (a)).





## **CHAPTER 1 - DESCRIPTION OF THE PROPOSED PROJECT**

### **A. Project Background and Objectives**

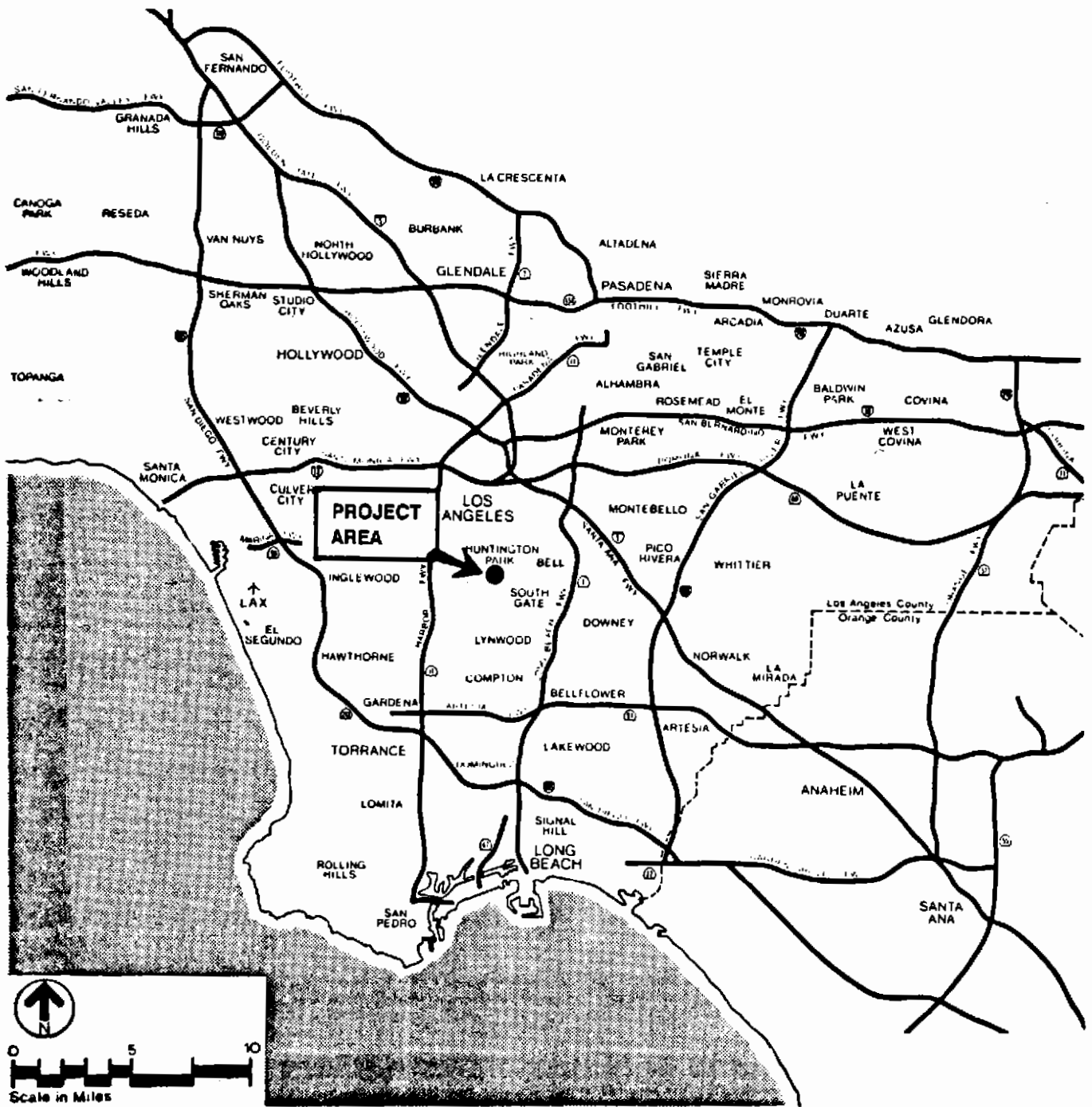
The proposed project consists of roadway improvements for the Florence Station of the Long Beach - Los Angeles Light Rail Transit Project. The light rail transit (LRT) system, which is currently under construction, is the first rail project to be undertaken as part of a transit improvement program by the Los Angeles County Transportation Commission (LACTC). When completed in 1990, the light rail line will extend along a transportation corridor from downtown Long Beach to downtown Los Angeles. The light rail line will pass through the cities of Compton and Carson and through the unincorporated Los Angeles County areas of Willowbrook, Dominguez Hills and Florence/Graham. The total route will be approximately 22 miles in length, about 18 miles of which follows the existing Southern Pacific Transportation Company (SPTC) right of way (Wilmington and East Long Beach Branches).

A May 1984 Draft Environmental Impact Report (DEIR) evaluated the environmental consequences of the Long Beach - Los Angeles Rail Transit Project. A subsequent Draft Supplemental EIR (December 1984) examined additional Long Beach alternatives, and the Final EIR (March 1985) contained responses to comments on both the May 1984 Draft EIR and the Supplemental EIR; the final EIR was certified on March 13, 1985 and the LACTC approved the project on March 27, 1985. In addition, the LACTC prepared a Subsequent EIR in October 1985 (and finalized in November of 1987) evaluating alternative alignments for the mid-corridor segment of the light rail project.

The County of Los Angeles requested the proposed roadway improvements on March 15, 1988. The proposed project consists of widening and realigning the section of Graham Avenue south of Florence Avenue and north of the F.D. Roosevelt Park, and the construction of an adjacent park-and-ride lot. The park-and-ride lot would be constructed by the LACTC. The purpose of these improvements is to provide safe and efficient traffic circulation in the vicinity of the Florence LRT Station, which is currently under construction, and to provide a park-and-ride facility serving the Florence Station. The realignment of Graham Avenue would require right-of-way acquisition of a church, six retail businesses, one duplex, seven single-family residences and seven multi-family units along the east side of Graham Avenue and the south side of Florence Avenue. Since the proposed project results in significant impacts and changes that were not evaluated in the previous EIR, the County of Los Angeles Department of Public Works determined that a subsequent EIR would be required for the proposed project. In February of 1989 the County issued a Request for Proposals for the preparation of an EIR for the proposed project. An Initial Study prepared by County staff was issued with a Notice of Preparation of an EIR in April of 1989.

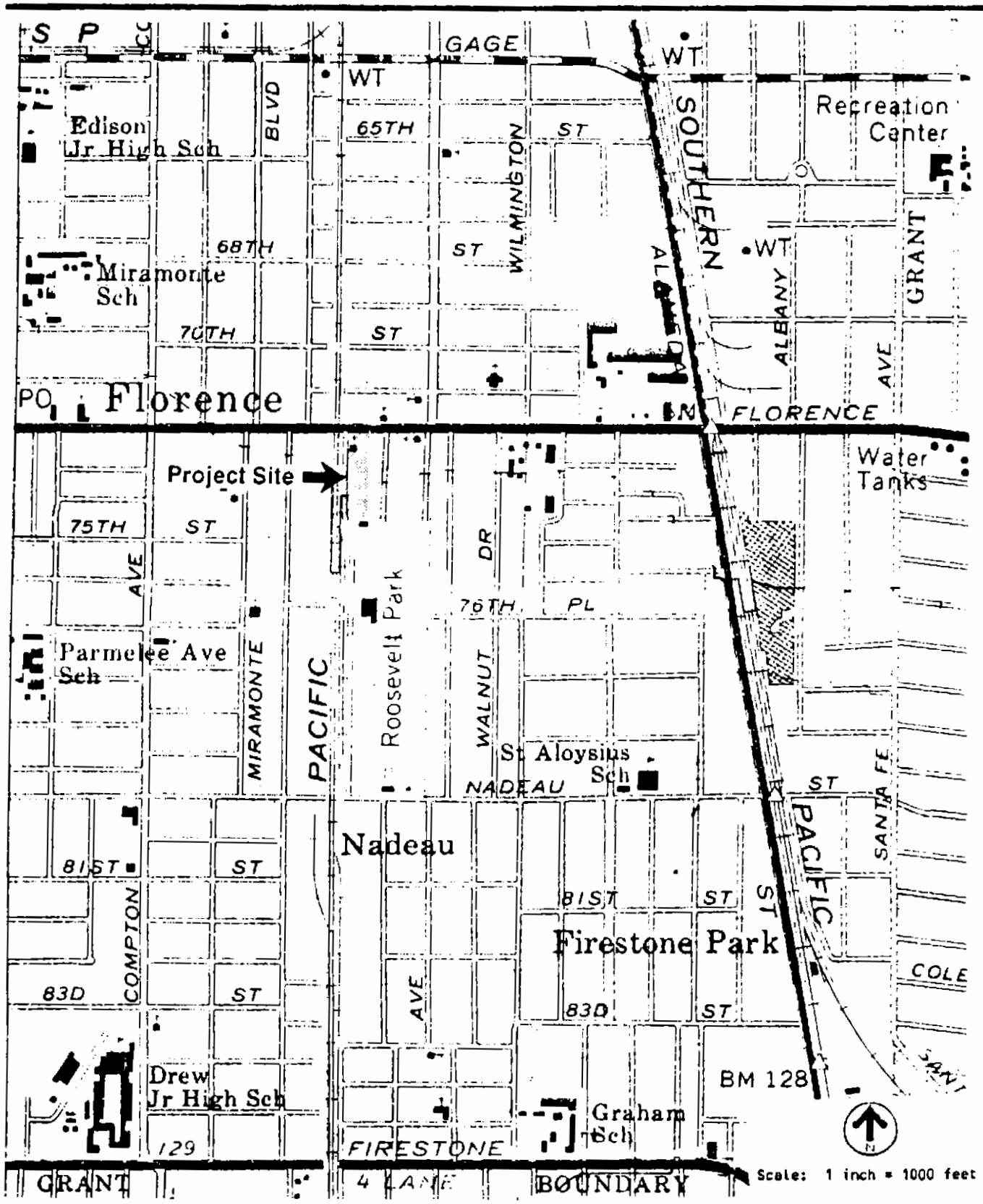
### **B. Project Location and Existing Uses**

The proposed project site is located in the Florence area, an unincorporated area of Los Angeles County (see Figures 1-1 and 1-2). The Florence area is bounded by the City of Los



**Graham Avenue Roadway  
Improvements  
Environmental Impact Report**  
Myra L. Frank & Associates

**Figure 1-1**  
**Regional Setting  
and Project Location**  
Source: Myra L. Frank & Associates, 1989.



**Graham Avenue Roadway  
Improvements  
Environmental Impact Report**

Figure 1-2

Project Vicinity

Myra L. Frank & Associates

Source: Myra L. Frank & Associates, 1989  
U.S.G.S. 7.5' Southgate Quad.

Angeles to the north, south and west, and the Cities of Huntington Park and South Gate on the east. The Florence area is primarily a residential area with commercial strips and some industrial uses along major east-west and north-south arterials. Some industrial uses also border the SPTC freight rail tracks.

The project site encompasses Graham Avenue from Florence Avenue south about 620 feet to the F.D. Roosevelt Park and the 1.7 acres of land on the east side of this section of Graham Avenue (see Figure 1-3). The project site includes single- and multi-family residences, a duplex and a church on the east side of Graham Avenue and commercial retail establishments along the south side of Florence Avenue. Primarily single-family residences are located east of the project site along Beach Street. F.D. Roosevelt Park is located south of the site and east of Graham Avenue. The SPTC right-of-way containing the light rail tracks and the Florence LRT Station currently under construction is immediately west of Graham Avenue. Industrial uses are located west of the SPTC right-of-way.

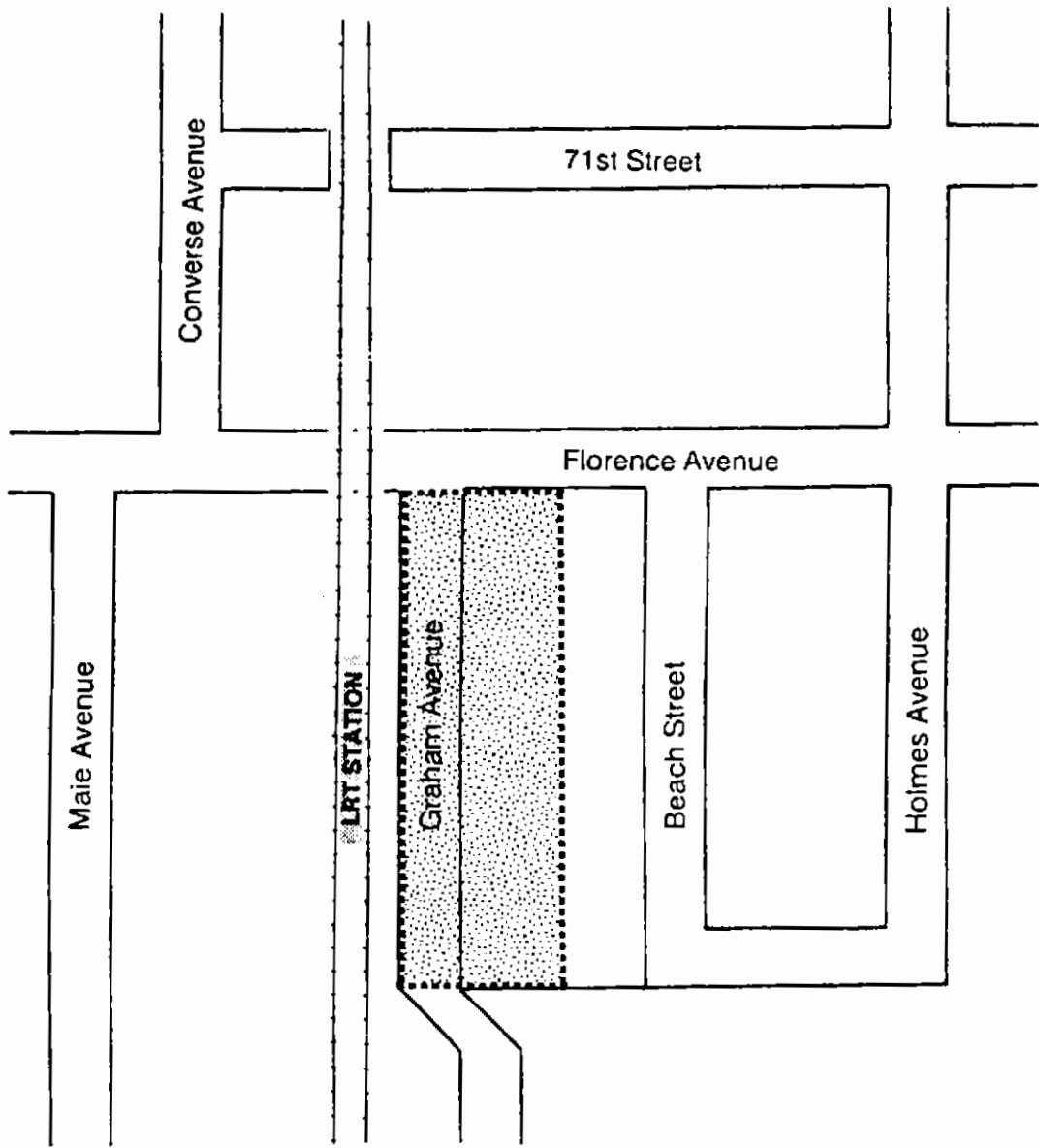
### **C. Project Characteristics**

The proposed project consists of Graham Avenue roadway improvements for the Florence LRT Station. Under the proposed project, the section of Graham Avenue from Florence Avenue south to about F.D. Roosevelt Park would be relocated to the back side of the existing lots which front on Beach Street (see Figures 1-3 and 1-4). The southern end of the relocated section of Graham Avenue would follow a curved alignment to align with the section of Graham Avenue to the south. The width of the realigned Graham Avenue would be 30 feet between curbs matching the width of the section of Graham Avenue adjacent to the park immediately south. Graham Avenue south of Florence is currently 26.5 feet wide between curbs, with a six-foot parkway on the east side. As a result of the realignment of Graham Avenue, there would be approximately 120 feet between Graham Avenue and the Florence LRT station that would be used for a park-and-ride lot. Figure 1-4 shows the conceptual plan of a park-and-ride lot in this location which would provide parking for about 113 cars.

The improvements to Graham Avenue would provide a standard curb return radius and pedestrian refuge area on the southwest corner of Florence and Graham Avenues. Graham Avenue would also be moved far enough from the LRT tracks to allow left turns in and out of Graham at Florence, thereby improving access to the park and adjacent community.

### **D. Related Projects**

The review and analysis conducted for the EIR did not identify any other projects in the vicinity, currently under construction or proposed, that could have cumulative effects on the project area.



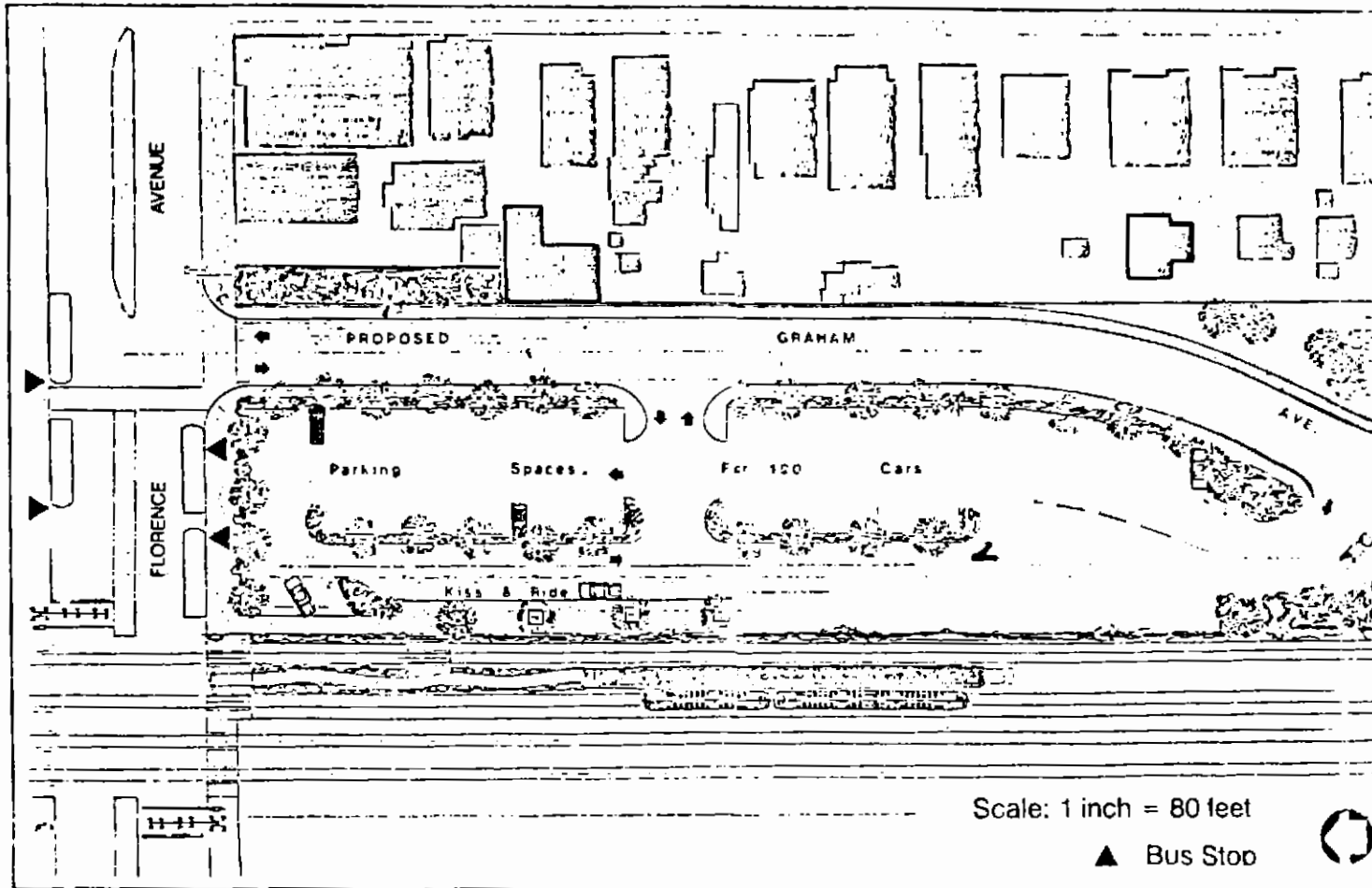
Project Site 

  
Not to scale

**Graham Avenue Roadway  
Improvements  
Environmental Impact Report**  
Myra L. Frank & Associates

**Figure 1-3  
Project Site**

Source: Myra L. Frank & Associates, 1989.



# Graham Avenue Roadway Improvements Environmental Impact Report

Myra L. Frank & Associates

Figure 1-4

Site Plan

Source: County of Los Angeles, 1989.

## **CHAPTER 2 - ENVIRONMENTAL SETTING, IMPACTS AND MITIGATION**

### **A. Introduction**

The purpose of this chapter is to describe the existing environmental conditions in the project area, the potential impacts arising from implementation of the proposed project and appropriate mitigation measures if required.

### **B. Geology and Soils**

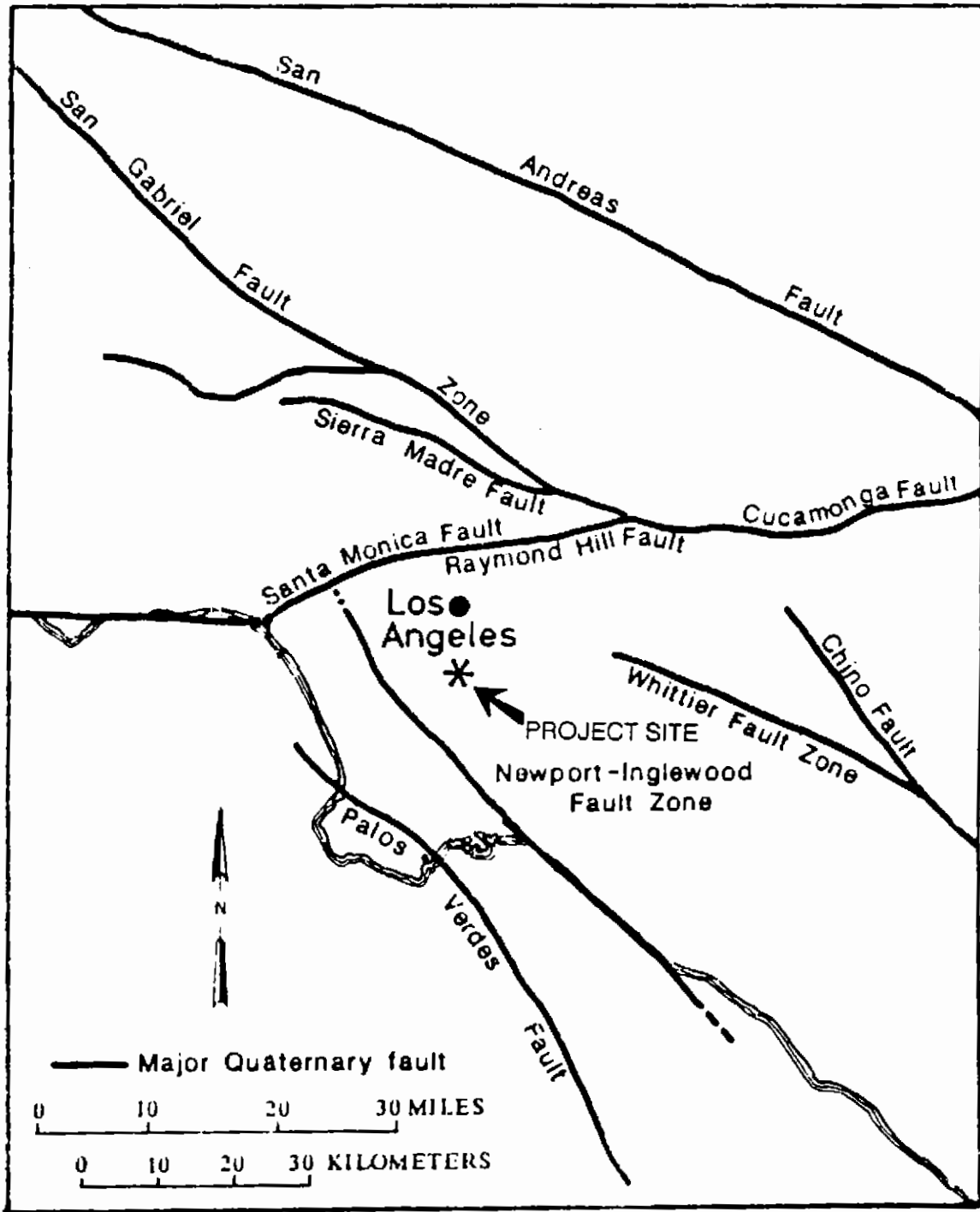
#### **1. Environmental Setting**

The study area is located in the central portion of the Los Angeles Basin, at an approximate elevation of 150 feet above sea level. The Los Angeles Basin is an ancestral coastal plain that slopes gently from north to south. Its dominant topographic feature is the San Gabriel Mountain Range which rises on the northern edge of the basin and extends toward the west to the Santa Monica Mountains. Soils in the basin are largely depositional, of both marine and non-marine origin.

The study area, as well as much of Southern California, is subjected to significant ground shaking as a result of seismic events along the faults zones located within the region. Geologists generally classify earthquake faults as active, potentially active, or inactive. Active faults are defined as those which show evidence of movement within the last 11,000 years, while potentially active faults are those which show evidence of movement within the last two million years. In general, the more recent the fault activity, the greater the probability for recurrence.

Major active faults which could cause significant groundshaking near the project area include but are not limited to the Newport-Inglewood/Cherry Hill fault complex, located approximately five miles to the west of the project area, and the Whittier Fault, located approximately thirteen miles to the northeast. Maximum possible earthquake magnitudes for the faults are 7.0 and 7.5 respectively (California Division of Mines and Geology, Map Sheet 23, R.W. Greenfelder, 1976). Figure 2.B-1 shows the location of active faults in the Los Angeles Metropolitan region.

Geologists believe the Newport-Inglewood/Cherry Hill Fault Complex to have been the source of the March 10, 1933 Richter Magnitude 6.3 Long Beach earthquake. The epicenter of the quake was located just off the Newport Beach coast at a depth of about six miles. Reports indicate that aftershocks registering up to Richter magnitude 5.5 occurred along the fault zone from Newport Beach to Long Beach. According to Richter (1958) the quake caused the death of 120 people and resulted in approximately \$50 million in property damage. Following the 1933 earthquake, the California legislature passed the Field Act, which regulates the construction of public schools, and the Riley Act, which regulates the construction of buildings larger than two-family dwellings (California Department of Conservation Division of Mines and Geology, Special Publication 99, 1988).



**Graham Avenue Roadway  
Improvements  
Environmental Impact Report**

Myra L. Frank & Associates

Figure 2.B-1

**Major Quaternary Faults  
Near Study Area**

Source: California Geology Magazine, April 1989.



The Whittier Fault was the source of the October 1, 1987 earthquake. That quake was centered approximately ten miles to the east of the Los Angeles Civic Center and was recorded as a 6.1 on the Richter Magnitude scale. The original magnitude was later refined and reduced to a magnitude 5.9. The earthquake caused eight deaths and extensive damage, especially to older residential and commercial buildings located near the epicenter. An aftershock of Richter magnitude 5.4 occurred on October 4, 1987. Together the two earthquakes caused at least \$215 million in damage to 10,500 residential and business structures (Weber, 1987).

The study area is not within an Alquist Priolo Special Study Zone for earthquake hazard. Since there are no reports of faulting directly at the study site, the possibility of damaging ground rupture is believed to be minimal (California Department of Conservation, Division of Mines and Geology, Special Publication 42, 1985).

Soils in the study area are late Holocene alluvium comprised of varying percentages of gravel, silt, and sand, and are generally unconsolidated and uncemented. Recent age, uncohesive soils such as these, in combination with high groundwater levels, can liquefy during an earthquake, in a process called liquefaction. Liquefaction and the resulting ground failure is a serious concern in the siting of buildings and other permanent facilities. The location of the proposed project, however, is in an area considered to have low to very low potential for liquefaction (Ziony et. al, 1985). Although the soils are of the type prone to liquefaction, groundwater levels (as of 1975) are too low for liquefaction to be a concern. Site-specific geotechnical studies done for the Long Beach - Los Angeles Rail Transit Project (1985) confirm this evaluation. Borings done for the Florence Station encountered no water and the general geologic profile placed the thickness of the alluvium at approximately 100 feet.

The Environmental Protection Agency's National Priorities List of July 1987 does not identify any federal or state Superfund sites on or immediately adjacent to the project site; the State of California Office of Planning and Research Hazardous Waste Site List of August 1988 identifies no hazardous waste sites near the study area.

## **2. Impacts**

Changes or alterations to the site resulting from the project are not expected to have any major adverse effect on the geology of the area. The project area has been developed for many years and the area has previously been graded and altered to accommodate existing development. The construction phase of the project will require earthwork which could result in minor soil erosion and soil stability problems as well as fugitive dust. No long-term erosion or stability impacts are anticipated.

No active faults are known to cross the study area, and the site is not within an Alquist Priolo Special Study Zone for Fault Rupture Hazard. However, the active Newport-Inglewood/Cherry Hill Fault Complex is located approximately five miles to the west of the study site, and although the possibility of fault rupture occurring during the construction period is slight, the potential does exist. In addition, due to the area's proximity to an active fault zone, the possibility of fault rupture occurring during the life of the project is elevated in

comparison to other areas within the basin not situated so close to an active fault. Both the Newport-Inglewood/Cherry Hill and the Whittier faults as well as other major faults in the Southern California area have the potential to subject the site to strong ground shaking both during construction and in the long term.

The project site lies in an area that has been identified as being at low to very low levels of risk from liquefaction.

The project will require the removal or demolition of existing residential and commercial structures located on the site exposing construction or demolition workers to risk of injury during an earthquake. No new residential or commercial structures are presently planned that could pose a hazard to occupants or pedestrians in the event of an earthquake.

### **3. Mitigation**

In order to reduce the possible adverse impacts that could be caused by soil erosion during the construction phase of the project, the construction contractor will be required to control erosion through the use of proper grading techniques. The specific erosion control measures, grading techniques, and drainage plans for the proposed project will be dictated by the characteristics of the project site. In general, grading techniques that reduce aeolian and hydraulic soil erosion include such measures as site watering (aeolian erosion control measure only), soil compaction and sandbagging. Fugitive dust will be controlled through watering of the construction site during construction activities.

Although the site is located within five miles of an active fault trace, the site is not within an Alquist Priolo Special Study Zone for Fault Rupture Hazard. No mitigation is required.

Because the proposed project will not require major excavations of soil material, additional mitigation measures such as site dewatering should not be required.

Although no hazardous or contaminated materials are known to exist at the study site, should contaminated soil be encountered during construction, it will be analyzed as to composition, classified appropriately, and disposed of in an approved site using appropriate handling and transportation methods.

## **C. Air Quality**

### **1. Environmental Setting**

The proposed Florence/Graham project is located in the southern portion of the City of Los Angeles, approximately four miles south of downtown Los Angeles. It is located in the South Coast Air Basin (SCAB), which includes Los Angeles and Orange counties and the urbanized portions of Riverside and San Bernardino counties. The SCAB has been designated a non-attainment area for several of pollutants for which National Ambient Air Quality Standards (NAAQS) have been developed by the U.S. Environmental Protection Agency (EPA). The following sections discuss the climate of the area, federal and state air quality standards, major pollutants and their health effects, sources of pollution, and specific air quality data pertaining to the project under consideration.

#### **a. Climate**

Southern California has a Mediterranean climate that is characterized by warm dry summers and mild winters. This is a result of Southern California's location on the southeastern edge of the Pacific High Pressure Area, which forces most of the low meteorological formations to follow a course northward of the United States, bringing about a stable weather pattern that would not otherwise exist.

During the summer, the dominant climatic feature is the Pacific High, which is a high pressure cell that results in air being heated by compression. This condition in turn creates a temperature inversion layer at an altitude of about 2,000 feet or less above sea level. This inversion, coupled with the presence of mountain ranges to the north, causes polluted air to be trapped in the basin. Prevailing sunny days further exaggerate this problem by inducing additional adverse photochemical reactions. Because the inversion layer is not prevalent during most other times of the year, excessive emissions are typically reduced during seasons other than summer.

#### **b. Federal and State Air Quality Standards**

Both the federal and state governments have established air quality standards to protect the health of the general population. These are known as the National Ambient Air Quality Standards (NAAQS) and the California Ambient Air Quality Standards (CAAQS), respectively, and they are shown in Table 2.C-1. The South Coast Air Basin currently exceeds the federal standards for carbon monoxide (CO), nitrogen dioxide (NO<sub>2</sub>), ozone, and particulate matter. Consequently it has been designated as a non-attainment area by the EPA. As a non-attainment area, the SCAB is required to prepare a plan for achieving the national standards. This plan, known as the 1988 Air Quality Management Plan (AQMP), was adopted locally in March of 1989, and by the State Air Resources Board in August, 1989.

**TABLE 2.C-1 - NATIONAL and STATE of CALIFORNIA  
 AMBIENT AIR QUALITY STANDARDS**

Air Pollutant	CALIFORNIA	FEDERAL	
		PRIMARY	SECONDARY
OZONE	0.09 ppm, 1-hour avg.	0.12 ppm, 1-hour avg.	0.12 ppm, 1-hour avg.
CARBON MONOXIDE	9 ppm, 8-hour avg. 20 ppm, 1-hour avg.	9 ppm, 8-hour avg. 35 ppm, 1-hour avg.	9 ppm, 8-hour avg. 35 ppm, 1-hour avg.
NITROGEN DIOXIDE	0.25 ppm, 1-hour avg.	0.05 ppm, annual avg.	0.053 ppm, annual avg.
SULFUR DIOXIDE	0.05 ppm, 24-hour avg. 0.25 ppm, 1-hour avg.	0.03 ppm, annual avg. 0.14 ppm, 24-hour avg.	0.53 ppm, annual avg.
TOTAL SUSPENDED PARTICULATES (TSP)		75 ug/m <sup>3</sup> , annual geometric mean 260 ug/m <sup>3</sup> , 24-hour avg.	60ug/m <sup>3</sup> annual geometric mean 150 ug/m <sup>3</sup> , 24-hour avg.
SUSPENDED PARTICULATE MATTERS(PM <sub>10</sub> )	30 ug/m <sup>3</sup> , annual geometric mean 50 ug/m <sup>3</sup> , 24-hour avg.	150 ug/m <sup>3</sup> , annual geometric mean	
SULFATES	25 ug/m <sup>3</sup> , 24-hour avg.		
LEAD	1.5 ug/m <sup>3</sup> , 30-day avg.	1.5 ug/m <sup>3</sup> , quarterly avg.	
HYDROGEN SULFIDE	0.03 ppm, 1-hour avg.		
VINYL CHLORIDE	0.010 ppm, 24-hour avg.		
ETHYLENE	0.10 ppm, 8-hour avg. 0.50 ppm, 1-hour avg.		
VISIBILITY-REDUCING PARTICLES	Sufficient to reduce visibility to less than 10 miles		

DEFINITIONS: ppm: parts per million; ug/m<sup>3</sup>: micro-grams per cubic meter

SOURCE: South Coast Air Quality Management District, Air Quality Handbook for Preparing Environmental Impact Reports, Appendix A, April 1987.

### c. Major Pollutants and Associated Health Effects

Both the federal and state governments have set health-based ambient air quality standards for the following six pollutants: sulfur dioxide (SO<sub>2</sub>), lead (Pb), ozone (O<sub>3</sub>), nitrogen dioxide (NO<sub>2</sub>), carbon monoxide (CO), and fine particulates of less than 10 microns in size (PM<sub>10</sub>). The SCAB currently complies with the standards for both sulfur dioxide and lead, but exceeds the standards for the remaining four. In addition, California has set standards for ethylene, hydrogen sulfide, sulfates, visibility and vinyl chloride. All but sulfates and visibility are controlled through permit requirements. Sulfates and visibility are addressed through control programs for the four pollutants discussed below.

Carbon Monoxide - This compound is formed by the incomplete combustion of fossil fuels and is produced almost entirely by automobiles. Carbon monoxide can cause dizziness and fatigue, and it can impair central nervous system function. Carbon monoxide concentrations in the SCAB are among the highest in the nation, about twice the NAAQS.

Nitrogen Dioxide - Nitrogen dioxide and nitric oxide are formed as a result of fuel combustion under high temperature or pressure. These compounds are referred to together as nitrogen oxides or NO<sub>x</sub>. Nitrogen dioxide contributes to other pollution problems, including concentration of fine particulate matter, poor visibility, and acid deposition; it decreases lung function and may reduce resistance to infection. Although the federal standard for this pollutant was exceeded by only 2 percent in 1987, the SCAB is the only region in the country that still exceeds the standard.

Ozone - Ozone is formed by photochemical reactions between NO<sub>x</sub> and reactive organic gases (ROG). Reactive organic gases are formed from the combustion of fuels and the evaporation of organic solvents. Elevated ozone concentrations result in reduced lung function, particularly during vigorous physical activity. This health problem is particularly acute in children. Ozone levels in the SCAB are about three times the federal standard, significantly higher than anywhere else in the country.

PM<sub>10</sub> - PM<sub>10</sub> refers to small suspended particles that are 10 microns or less in diameter. Nitrates and sulfates, as well as dust particles, are major components. These small particles can be directly emitted as a by-product of fuel combustion; through abrasion, such as wear of tires or brake linings; or through wind erosion of soil. They can also be formed in the atmosphere through chemical reactions. These particles may carry carcinogens and other toxic compounds which adhere to the particle surfaces and can enter the lungs. The maximum average PM<sub>10</sub> concentration in the SCAB in 1987 was about 80 percent above the federal standard.

### d. Sources of Pollution

At the present time, mobile sources account for approximately 96% of carbon monoxide production in the SCAB. On-road mobile sources (primarily autos and trucks) account for nearly all of this. The remainder is attributable to stationary sources. Daily production of carbon monoxide in the SCAB in 1985 was 5,430 tons.

Slightly more than one-half of the reactive organic gases produced in the SCAB come from mobile sources, and nearly all of this is attributable to on-road vehicles. The balance is produced in nearly equal amounts by residential, commercial and service industry sources, and the industrial/manufacturing sector; 1,246 tons of reactive organic gases were produced in the SCAB in 1985.

Mobile sources account for 72 percent of daily nitrogen oxide production in the SCAB. Of this, 59 percent was attributable to on-road vehicles and 13 percent to off-road sources. Stationary source contributions are divided nearly equally among the various stationary sectors. In 1985, 1,040 tons of reactive organic gases were produced daily in the SCAB.

In 1985, 1,645 tons per day of particulate matter were produced in the SCAB. Residential, commercial and service industry operations accounted for 210 tons per day. The industrial/manufacturing sector accounted for 1,338 tons per day. Taken together, these stationary sources accounted for about 94 percent of the total. The remainder is produced almost entirely by on-road vehicles.

e. Project Area Emissions

The South Coast Air Quality Management District maintains a system of monitoring stations located throughout the air basin. The closest monitoring station to the project is the Lynwood station, which is located about three miles to the south. Pollutant measurements at the Lynwood station over the past three years are shown in Table 2.C-2. The data in the table shows a continuing consistent violation of the standards for carbon monoxide and ozone. The data also shows infrequent violations of the state nitrogen dioxide standard and quite frequent violations of the state visibility standard.

f. Local Emissions

Emissions estimates have been prepared for the immediate vicinity of the proposed project, specifically in the area immediately surrounding the intersection of Florence and Graham Avenues. These estimates, which will be later used to assess the impacts resulting from the project, are of two types. First, current local burden amounts of criteria pollutants are estimated. Second, local carbon monoxide concentrations are estimated by use of a line source prediction model.

Current (1988) emissions produced as a result of automobiles traveling along Florence and Graham Avenues are estimated by multiplying daily vehicle miles of automobile travel by emission factors taken from Air Quality Handbook for Preparing Environmental Impact Reports, South Coast Air Quality Management District (SCAQMD), April 1987. Vehicle miles of travel were estimated in the following manner: P.M. peak hour traffic was assumed to be 10 percent of Average Daily Traffic (ADT). It was further assumed that a typical local trip length of two miles one-way or four miles roundtrip was appropriate. Peak-hour traffic on Florence was averaged for the values both to the west and east of Graham Avenue. The volume of traffic on Graham Avenue was added to this average. The total was multiplied by ten to yield an estimate of ADT, which was then multiplied by four miles per round trip. The

**TABLE 2.C-2 - LYNWOOD STATION - RECENT POLLUTANT ACTIVITY**

POLLUTANT/MEASURE		1985	1986	1987
<b><u>CARBON MONOXIDE</u></b>				
Maximum Concentration in ppm	1-hour	33	27	26
	8-hour	NA	NA	19.6
Number of days exceeding				
Federal standards	1-hour	0	0	0
	8-hour	32	41	40
State standards	1-hour	12	11	10
	8-hour	36	44	47
<b><u>OZONE</u></b>				
Maximum Concentration in ppm	1-hour	0.21	0.20	0.24
Number of days exceeding				
Federal standards		16	16	11
State standards	1-hour	41	46	24
<b><u>NITROGEN DIOXIDE</u></b>				
Maximum Concentration	1-hour	0.31	0.26	0.26
Percent of annual avg. exceeded federal standards		0	0	0
Number of days exceeding State standards		1	3	1
<b><u>SULFUR DIOXIDE</u></b>				
Maximum Concentration in ppm	1-hour	0.06	0.13	0.06
Number of days exceeding				
Federal standards	24-hour	0	0	0
State standards	24-hour	0	0	0
<b><u>VISIBILITY</u></b>				
Days not meeting state standards at Burbank Airport		170	219	242
<b><u>SUSPENDED PARTICULATES (PM<sub>10</sub>)</u></b>				
Maximum Concentration in ug/m <sup>3</sup>	24-hour	NM	NM	NM
Number of samples exceeding				
Federal standards	(150 ug/m <sup>3</sup> )	NM	NM	NM
State standards	(50 ug/m <sup>3</sup> )	NM	NM	NM

(Continued next page)

**TABLE 2.C-2 - LYNWOOD STATION - RECENT POLLUTANT ACTIVITY (Cont'd)**

POLLUTANT/MEASURE		1985	1986	1987
<b><u>PARTICULATES (TSP)</u></b>				
Maximum Concentration in ug/m <sup>3</sup>	24-hour	290	262	201
Annual Geometric Mean in ug/m <sup>3</sup>	24-hour	NA <sup>(1)</sup>	NA <sup>(2)</sup>	115.2
<b><u>LEAD</u></b>				
Maximum Concentration in ug/m <sup>3</sup>	24-hour	1.87	0.94	0.54
Occasions exceeding Federal standards		0	0	NM
State standards		0	0	NM
<b><u>SULFATE</u></b>				
Maximum Concentration in ug/m <sup>3</sup>	24-hour	24.0	22.4	18.2
Number of samples exceeding State standards		0	0	0

NOTE: (1) The federal primary standard was exceeded by 38.4% and the federal secondary standard was exceeded by 73.0% in 1985.

(2) The federal primary standard was exceeded by 34.5% and the secondary standard was exceeded by 68.2% in 1986.

DEFINITIONS: NA - not available  
 NM - pollutant not measured  
 ppm - parts per million  
 ug/m<sup>3</sup> - micro-grams per cubic meter

SOURCE: South Coast Air Quality Management District, Air Quality Data; 1985, 1986, 1987.



resulting VMT estimate (98,520) was then multiplied by the appropriate emission factor. The results are displayed in Table 2.C-3.

---

**TABLE 2.C-3  
EXISTING FLORENCE-GRAHAM AVENUE AUTOMOBILE-RELATED EMISSIONS**

	<u>Pollutant Emissions (pounds per day)</u>
Carbon monoxide	2,561
Reactive organic gases	204
Nitrogen oxides	338
Particulates	69

Daily VMT: 98,520 miles  
Avg. Speed: 25 miles per hour

Source: Myra L. Frank & Associates, July 1989.

---

Prior to adoption of the 1988 AQMP, SCAQMD guidelines provided thresholds of significance, for purposes of impact estimation. These thresholds were as follows: carbon monoxide = 550 pounds per day, reactive organic gases = 75 pounds per day, nitrogen oxides = 100 pounds per day, and particulates = 150 pounds per day. According to these threshold values, current local emissions associated with vehicular travel in the vicinity of Florence and Graham Avenues would qualify as significant, with the exception of particulate emissions. It should be noted that the 1988 AQMP removed these thresholds and as a result, the emission of pollutants in any quantity is considered significant.

Existing carbon monoxide concentrations in the vicinity of the proposed project have been estimated using the Caline 3 line source prediction model, existing peak hour vehicle volumes and speeds, and assuming a receptor located on the south side of Florence Avenue, in the vicinity of Graham Avenue. This location would represent a pedestrian standing on the sidewalk. It was further assumed that the background level was 6 ppm. The model estimates a current carbon monoxide concentration of 12.7 parts per million (ppm) at the receptor location, during the peak hour.

## **2. Impacts**

The proposed project would consist of three primary construction aspects, namely (1) demolition of existing structures and general site clearance, (2) construction of the realigned roadway and (3) construction of a park-and-ride facility (113 parking spaces) west of the realigned roadway. None of these aspects would result in a significant amount of additional emissions over the estimated three-month construction period. The number of trucks and other construction vehicles working at the site would be small, as would the number of workers traveling to and from the site. For this reason, the construction-related burden amounts have not been calculated.

The proposed project would result in the removal of a number of improved properties and the subsequent clearing of the area. This activity would produce localized increases in so-called "fugitive dust." Using an estimated 1.2 tons per acre-month (U.S. EPA publication AP-42), and applying this to the area of the proposed project (approximately 2 acres), yields an estimated 2.4 tons of dust that could be produced during an estimated one month of site clearing activity. Fugitive dust during construction is generally viewed as not hazardous but rather as a nuisance for the surrounding area. However, persons with chronic respiratory problems, who reside near the project site, could be adversely affected.

The long-term impacts associated with the project are of two types, namely: (1) the generation of amounts of criteria pollutant burden from vehicles traveling in the vicinity of the project and (2) the creation of local carbon monoxide concentrations. The project could result in an increase in transit patronage because of the added convenience of the parking facility, which would be a beneficial impact, albeit of small proportion.

Pollutant burden amounts have been calculated using predicted values for daily vehicle volumes for the year 2000 and predicted average speeds for that same year. The same methodological approach was used as described in the Setting section above. Both "without the project" and "with the project" conditions were evaluated. The results are shown in Table 2.C-4.

As shown in the table, the quantity of local burden emissions to be expected in the vicinity of the proposed project in the year 2000 is substantially less than at present, primarily due to improvements in automotive emissions technology. The table also shows that local burden emissions with the project would be slightly higher than without the project, because of increased local traffic in the area. It should be noted, however, that the provision of park-and-ride facilities as part of the proposed project should produce a small increase in light rail transit ridership. This would reduce the total number of regional vehicle miles driven by a small amount, which in turn would have a small beneficial effect on pollutant burden in the air basin. Because the degree of this beneficial effect is quite small, it has not been estimated. It could be an amount sufficient to offset the added local vehicular travel, in which case a net beneficial effect would result, as compared to the "without project" condition.

Using the Caline 3 line source model, year 2000 peak hour carbon monoxide concentrations have been estimated as a result of predicted traffic along Florence and

**TABLE 2.C-4  
EXISTING AND PREDICTED LOCAL POLLUTANT BURDEN**

	<u>Existing (1988)</u>	<u>Year 2000 Without Project</u>	<u>Year 2000 With Project</u>
<u>Daily VMT</u>	98,520	106,960	114,800
<u>Pollutant Emissions (pounds per day)</u>			
Carbon monoxide	2,561	1,429	1,536
Reactive Organic gases	204	111	119
Nitrogen oxides	338	259	278
Particulates	69	63	68

Source: Myra L. Frank & Associates, July 1989.

Graham Avenues, as experienced by a receptor located on the south side of the street. The results indicate that without the project, 11.9 parts per million (ppm) are predicted. With the proposed project, the predicted peak hour level is 12.2. These results indicate that the project would produce a slight increase in local carbon monoxide in the immediate area of the project. Neither state nor federal standards would be violated, however.

### **3. Mitigation**

The South Coast Air Quality Management District has published Rule 403, which governs the treatment of fugitive dust during construction activities. Essentially, this rule requires the contractor to water down the site thoroughly to reduce the escape of dust. This technique is typically 50 percent effective.

A revised regional Air Quality Management Plan was approved locally in March of 1989. This plan is a far-reaching three-tiered program that would attain the national ambient air quality standards by 2007. This plan is regarded as the primary means of mitigating future emissions in the air basin.

With construction of a park-and-ride facility, the project itself can be regarded as a mitigation measure because it provides an improved opportunity to use the light rail transit system. Insofar as it induces additional transit ridership, vehicle miles of travel would be reduced, although to a slight degree, and the emissions associated with that travel would therefore also be eliminated.

The project, due to the additional local traffic on Florence and Graham Avenues, would result in minor increases in local emissions compared to the "without project" case. In order to reduce this increase as much as possible, the park-and-ride facility should be designed to reduce idling (by promoting an efficient flow of vehicles into and out of the parking lot) and local area signalization should be managed to reduce delays and queues as much as possible.

## **D. Biology**

### **1. Environmental Setting**

The project site is a developed and highly urbanized area. Plant life at the project site is non-native and consists largely of exotics, including a variety of mature deciduous and evergreen trees commonly used in landscaping.

Animal life at the project site and those areas directly adjacent to it is confined to domestic animals such as dogs and cats and ruderal species such as pigeons and rats. The domestic animal population is limited largely to the housing at and around the project site, while the ruderal species are found at F. D. Roosevelt Park, located south of the project site.

The California Department of Fish and Game Natural Diversity Data Base reports that there are no known threatened, rare, or endangered plant or animal species or habitats at or near the study area.

### **2. Impacts**

The project site is located in a highly urbanized environment and existing vegetation consists of introduced species. In addition, there are no sensitive habitats associated with the site. The proposed project will require the removal of the existing landscaping, including all mature trees and shrubs. There is no significant animal life at the project site, and neither the construction nor the operation of the proposed project has the potential to disrupt any existing animal communities or habitats.

### **3. Mitigation**

The proposed project will disrupt and destroy existing landscaping at the project site. Mature trees of a variety that can be successfully transplanted should be removed from the project site prior to the demolition of existing buildings.

The park-and-ride lot will include landscaping which will conform with the landscaping guidelines in Section 9 of the Design and Performance Criteria for the Long Beach - Los Angeles Rail Transit Project. These criteria specify along the street perimeter, a low evergreen shrub mass, masonry wall or combination thereof, generally less than three feet in height to partially screen cars yet allow street surveillance into the lot. According to the criteria, trees will also be planted along the perimeter (where practicable), along major pedestrian walkways leading to the station and in the parking area as divisions between stalls or in stalls specifically designed for planting.

The landscaping will also comply with the County of Los Angeles recommended plant materials guidelines. Trees and plants will be selected to ensure compatibility with street construction. The landscaping should also be of a type that will complement existing landscaping in the surrounding area and conform with any existing community landscaping guidelines. In addition, new landscaping should include xerophytic species, which require less water than other species, and other water saving measures such as drip irrigation.

## **E. Noise and Vibration**

### **1. Environmental Setting**

#### **a. Noise**

Human response to noise is subjective and can vary greatly from person to person. The factors which can influence individual response include: intensity, frequency, and time pattern of the noise; the amount of background noise present before the intruding noise; and the nature of work or human activity that is exposed to the noise source. The adverse effects of noise include interference with concentration, communication and sleep; at the highest levels, noise can induce hearing damage.

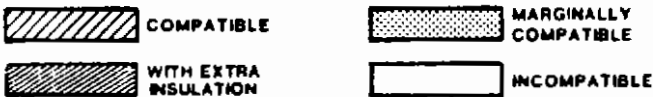
Noise is of most concern near sensitive locations where sleep or speech interference is a consideration. Sensitive receptors typically include residences, motels, schools, hospitals, and religious facilities.

The unit of measurement of environmental noise is the decibel (dB). To better approximate the range of sensitivity of the human ear to sounds of different frequencies, an A-weighted decibel scale was devised. Because the human ear is less sensitive to low frequency sounds, the A-scale de-emphasizes these frequencies by incorporating frequency weighting of the sound signal. When the A-scale is used, the decibel levels are shown as dBA. On this scale, the range of human hearing extends from about 3 dBA to about 140 dBA. A 10 dBA increase is judged by most people as a doubling of the sound level. The smallest change that can be heard is about 2 to 3 dBA. The noise levels in a quiet urban area in the daytime are typically about 50 dBA. Normal speech produces a sound level of about 65 dBA at 3 feet while a diesel truck at 50 feet would result in a sound level near 90 dBA. Noise levels above 110 dBA become intolerable and painful.

Since environmental noise fluctuates in intensity over time, noise impacts are commonly evaluated using time-averaged noise levels. The day-night average sound level (Ldn) represents the effect of noise exposure averaged over 24 hours, with a 10 dBA "penalty" added for nighttime noise (10 P.M. to 7 A.M.) to account for the greater sensitivity to noise during this period. This measurement has been endorsed by a number of federal agencies and is used extensively in other parts of the country. Within California, the preferred measures of noise exposure for assessing the potential impact of noise is the Community Noise Equivalent Level (CNEL). The CNEL represents an energy average of the A-weighted noise levels over a 24-hour period with 5 dBA and 10 dBA "penalties" added for nighttime noise between the hours of 7 P.M. and 10 P.M. and 10 P.M. to 7 A.M., respectively. Typical CNELs range from the mid-40s dBA in rural areas to the upper 70s dBA in a downtown area of a major metropolis. Suburban and low-density urban areas typically have a CNEL of about 52 to 60 dBA.

The level of acceptability of a noise environment is dependent upon the activity being conducted and the type of building construction (for indoor activity). Figure 2.E-1 provides noise exposure compatibility guidelines for a variety of land uses. The figure shows that for many "noise sensitive" land uses such as residences, schools, hospitals, etc., the

LAND USE	COMMUNITY NOISE EQUIVALENT LEVEL IN DECIBELS				
	50	60	70	80	90
RESIDENTIAL - EXTENSIVE OUTDOOR USE	COMPATIBLE	MARGINALLY COMPATIBLE	INCOMPATIBLE	INCOMPATIBLE	INCOMPATIBLE
RESIDENTIAL - MODERATE OUTDOOR USE	COMPATIBLE	MARGINALLY COMPATIBLE	WITH EXTRA INSULATION	INCOMPATIBLE	INCOMPATIBLE
RESIDENTIAL - LIMITED OUTDOOR USE	COMPATIBLE	MARGINALLY COMPATIBLE	WITH EXTRA INSULATION	WITH EXTRA INSULATION	INCOMPATIBLE
TRANSIENT LODGING	COMPATIBLE	MARGINALLY COMPATIBLE	WITH EXTRA INSULATION	INCOMPATIBLE	INCOMPATIBLE
SCHOOL CLASSROOMS, LIBRARIES, RELIGIOUS FACILITIES	COMPATIBLE	MARGINALLY COMPATIBLE	WITH EXTRA INSULATION	INCOMPATIBLE	INCOMPATIBLE
HOSPITALS, CLINICS, NURSING HOMES, HEALTH RELATED FACILITIES	COMPATIBLE	MARGINALLY COMPATIBLE	WITH EXTRA INSULATION	INCOMPATIBLE	INCOMPATIBLE
AUDITORIUMS, CONCERT HALLS	COMPATIBLE	MARGINALLY COMPATIBLE	INCOMPATIBLE	INCOMPATIBLE	INCOMPATIBLE
MUSIC SHELLS	COMPATIBLE	MARGINALLY COMPATIBLE	INCOMPATIBLE	INCOMPATIBLE	INCOMPATIBLE
SPORTS ARENAS, OUTDOOR SPECTATOR SPORTS	COMPATIBLE	MARGINALLY COMPATIBLE	INCOMPATIBLE	INCOMPATIBLE	INCOMPATIBLE
NEIGHBORHOOD PARKS	COMPATIBLE	MARGINALLY COMPATIBLE	INCOMPATIBLE	INCOMPATIBLE	INCOMPATIBLE
PLAYGROUNDS, GOLF COURSES, RIDING STABLES, WATER REC., CEMETERIES	COMPATIBLE	MARGINALLY COMPATIBLE	WITH EXTRA INSULATION	INCOMPATIBLE	INCOMPATIBLE
OFFICE BUILDINGS, PERSONAL SERVICES, BUSINESS AND PROFESSIONAL	COMPATIBLE	MARGINALLY COMPATIBLE	WITH EXTRA INSULATION	INCOMPATIBLE	INCOMPATIBLE
COMMERCIAL - RETAIL, MOVIE THEATERS, RESTAURANTS	COMPATIBLE	MARGINALLY COMPATIBLE	WITH EXTRA INSULATION	INCOMPATIBLE	INCOMPATIBLE
COMMERCIAL - WHOLESALE, SOME RETAIL, IND., MFG., UTILITIES	COMPATIBLE	MARGINALLY COMPATIBLE	WITH EXTRA INSULATION	WITH EXTRA INSULATION	INCOMPATIBLE
LIVESTOCK FARMING, ANIMAL BREEDING	COMPATIBLE	MARGINALLY COMPATIBLE	WITH EXTRA INSULATION	WITH EXTRA INSULATION	INCOMPATIBLE
AGRICULTURE (EXCEPT LIVESTOCK)	COMPATIBLE	MARGINALLY COMPATIBLE	WITH EXTRA INSULATION	WITH EXTRA INSULATION	INCOMPATIBLE
EXTENSIVE NATURAL WILDLIFE AND RECREATION AREAS	COMPATIBLE	MARGINALLY COMPATIBLE	WITH EXTRA INSULATION	WITH EXTRA INSULATION	INCOMPATIBLE



# Graham Avenue Roadway Improvements Environmental Impact Report

Myra L. Frank & Associates

Figure 2.E-1

## Land Use Compatibility Noise Equivalent Level

Source: After ANSI STD S3.23 - 1980.

maximum acceptable CNEL is 65 dB. For other land uses that may be found near the project site, such as commercial establishments, office buildings, etc., the maximum acceptable CNEL is 75 dB.

When a noise source is introduced into an area, or when an existing source is expected to change, the noise impact associated with these changes may be assessed in two ways. First, the absolute noise exposure is compared with the preceding criteria to evaluate acceptability of the future noise intrusion. Second, the relative change in the noise exposure is examined. Small changes in noise exposure of 1 to 2 dBA are usually imperceptible to the average person and are insignificant regardless of the absolute level. Changes of 3 to 4 dBA are usually noticeable but may not be significant depending upon the absolute level. Increases of 5 dBA and above are usually considered significant.

Changes in noise levels are most noticeable during quieter periods of the day or night. The hourly energy sound level (Leq) is used to measure the hourly noise exposure. Leq is a single number which represents the energy-averaged sound level over the measurement period (usually 15 minutes to an hour). An Leq of 70 dBA can often make it difficult to have face-to-face conversations at normal voice levels. For example, freeway traffic noise (70 dBA at 50 feet) can make telephone use difficult.

Legal limits in Los Angeles County for noise and vibration are established in County Ordinances 11778 and 11773. The ordinances are codified in Volume 4, Title 12, Chapter 12.08 of the Los Angeles County Code. They are administered by the county's Hazardous Materials group in the Health Department. The county noise control ordinance includes community noise criteria and also places specific limits on construction noise. According to the ordinance, the exterior noise level standards for residential areas is 50 dBA during the daytime (7 A.M. to 10 P.M.) and 45 during the nighttime (10 P.M. to 7 A.M.). Intrusive noises are prohibited from causing the exterior noise levels measured at the affected property to exceed the noise level standards or the ambient  $L_{50}$  noise level, whichever is highest, for a cumulative period of more than 30 minutes in any hour. The  $L_{50}$  noise level is defined as that noise level which is exceeded 50 percent of the time measured. For shorter durations of time, higher noise level standards apply. For example, intrusive noises are prohibited from causing the exterior noise levels at the affected properties to exceed standard noise levels plus 5 dBA or the ambient  $L_{25}$ , whichever is highest, for a cumulative period of 15 minutes in any hour. Similarly, the standard noise levels plus 10 dBA or the ambient  $L_{8.3}$  noise level, whichever is higher, shall not be exceeded for a cumulative period of five minutes in any hour. The standard noise levels plus 15 dBA or the ambient  $L_{1.7}$  noise level, whichever is highest, may not be exceeded for a cumulative period of more than one minute in any hour. And, the standard noise level plus 20 dBA or the ambient  $L_0$  noise level, whichever is highest, may not be exceeded for any period of time.

Construction activities are prohibited by county ordinance from creating a noise disturbance across any residential or commercial property line during the weekday hours of 7 P.M. to 7 A.M., or at any time on Sunday. The ordinance also specifies the maximum noise levels that may not be exceeded at affected buildings. For mobile equipment operating intermittently and for less than ten days, the maximum noise level at single-family residential structures is 75 dBA during the weekdays (excluding Sundays and legal holidays) from 7



A.M. to 8 P.M. and 60 dBA daily including Sundays and holidays from 8 P.M. to 7 A.M. At multi-family residences, the 7 A.M. to 8 P.M. and 8 P.M. to 7 A.M. maximum noise levels are 80 and 64 dBA respectively. For stationary equipment operating repetitively and for ten days or more, the maximum noise levels at single-family residences may not exceed 60 dBA daily (except Sundays and legal holidays) from 7 A.M. to 8 P.M. and 50 dBA daily from 8 P.M. to 7 A.M. At multi-family residences, the maximum noise levels for the 7 A.M. to 8 P.M. and 8 P.M. to 7 A.M. periods are 65 and 55 dBA, respectively. A variance from these construction noise limits may be granted by a health officer if it is determined that the noise-generated activities cannot feasibly be done in a manner that would comply with the provisions of the noise ordinance, and no alternative is available to the applicant.

The primary source of noise in the project area is the freight rail traffic and construction activities along the SPTC right-of-way and the automobile, truck and bus traffic on streets near the project site. The streets in the immediate vicinity of the site include Graham Avenue, Florence Avenue a major east-west arterial located immediately north of the site and Beach Street, a local street east of the site. Traffic volumes are heaviest on Florence Avenue, with an average daily traffic volume of 34,300 vehicles east of Graham Avenue (August 1987) and 25,100 vehicles west of Graham (near Compton Ave.) (May 1988). Traffic counts conducted during the P.M. peak period from 4 to 6 P.M. on June 11, 1989 at Florence and Graham indicated 55 vehicles in the P.M. peak hour along Graham Avenue. Other noise sources include recreational activities in F.D. Roosevelt Park and the industrial uses located along the west side of the SPTC right-of-way.

Sensitive receptors in the vicinity of the project site include the single- and multi-family residences immediately east of the project site fronting on Graham Avenue and Beach Street.

Noise measurements conducted along the mid-corridor near the SPTC right-of-way in 1986 for the Long Beach - Los Angeles Rail Transit Project indicated CNELs ranging from about 64 dBA to 74 dBA. The highest measured CNEL of 73.8 dBA was recorded at 1700 E. 68th Street in Florence.

#### **b. Vibration**

Legal limits in Los Angeles County for noise and vibration are established by county ordinance as administered by the county's Hazardous Materials group in the Health Department. The ordinance sets the limit for perceivable vibration at 0.01 inches per second peak velocity (0.007 inches/second root mean square velocity) at frequencies between 1 and 100 Hertz (Hz). This roughly corresponds to the commonly accepted threshold of perception established by the International Organization for Standardization. Vibration amplitudes may be expressed in decibels, such that the allowable peak velocity level is 80 dB relative to one microinch per second.

Major sources of ground-borne vibration in the project area typically include trucks and buses operating on surface streets and the freight rail trains on the SPTC right-of-way. Construction activities including pile driving can also be a significant source of ground-borne vibration.

## **2. Impacts**

### **a. Noise**

Construction activities could result in intermittent high noise levels in the vicinity of the project site. Since the construction activities and mix of equipment would vary as construction proceeds, the character of noise levels surrounding the construction site would therefore change as work progresses. However, as can be seen in Figure 2.E-2, typical commercial construction activities can be expected to produce noise levels generally ranging from 75 to 90 dBA (energy average) at a distance of 50 feet from the source.

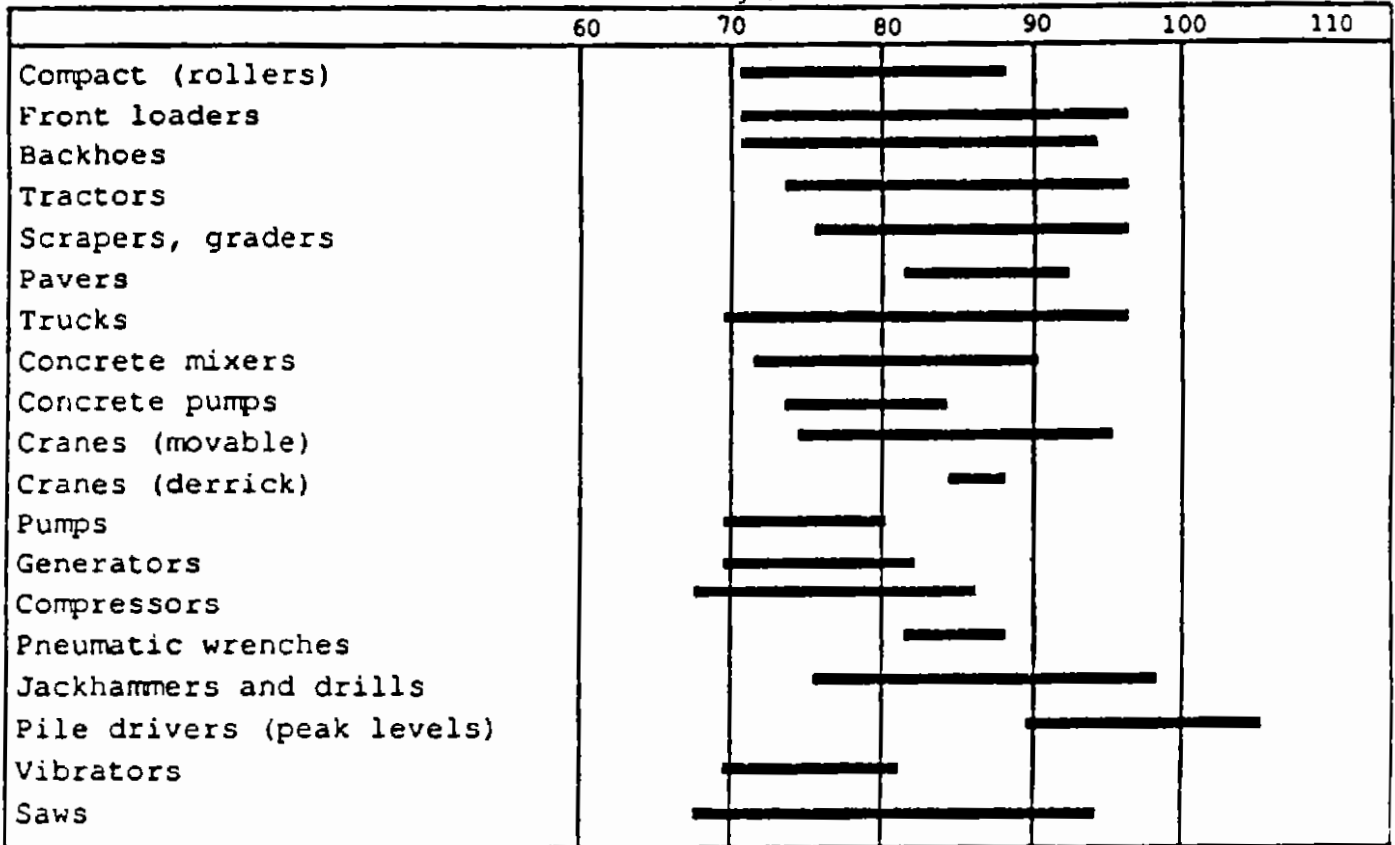
The residences immediately east of the project site fronting Beach Street would be the closest sensitive receptors to the proposed project. Intermittent high noise levels generated by construction activities could be annoying to these nearby residents; however, construction would be limited to daytime hours and would be temporary.

Implementation of the project would result in additional traffic on surface streets which would increase noise levels in the vicinity of the project site. The noise levels generated by existing traffic and projected traffic were calculated using the Federal Highway Administration's Highway Traffic Noise Prediction Model (Stamina 2.0, Version 3, March 1983) and traffic data supplied by Korve Engineering, Inc. The analysis used traffic counts for two roadway segments: Graham Avenue south of Florence; and Florence Avenue east of Graham. These roadways were selected because of the presence of adjacent sensitive receptors and because they would experience the greatest increase in traffic as a result of the project.

Table 2.E-1 presents projected noise levels, with and without the project, at two residences on Beach Street. Figure 2.E-3 shows the location of these residences in relation to realigned and existing Graham Avenues. The projected noise levels at these residences are based on an analysis of noise levels due to future traffic along Graham and Florence Avenues and freight and light rail traffic along the SPTC right-of-way. The residential structures fronting on Beach Street would be about 20 to 120 feet from the centerline of the realigned section of Graham Avenue. As shown in the table, the project would result in a CNEL of about 67.2 dBA at the first residence and about 64.0 dBA at the second residence. These projected noise levels with the project are about 7 and 6 dBA higher than the projected levels in the year 2000 without the project. An increase of 5 dBA or more is considered to be significant. Therefore, the proposed project could result in significant adverse increases in noise levels at those residences on Beach Street closest to the project site.

Other potential sources of noise on the project site, which could affect adjacent sensitive uses, include slamming of car doors, car horns, car alarms and people talking. Car doors slamming and car horns and alarms are intermittent events which could generate high noise levels annoying to residents near the project site.

A-Weighted Sound Level (dBA) at 50 feet



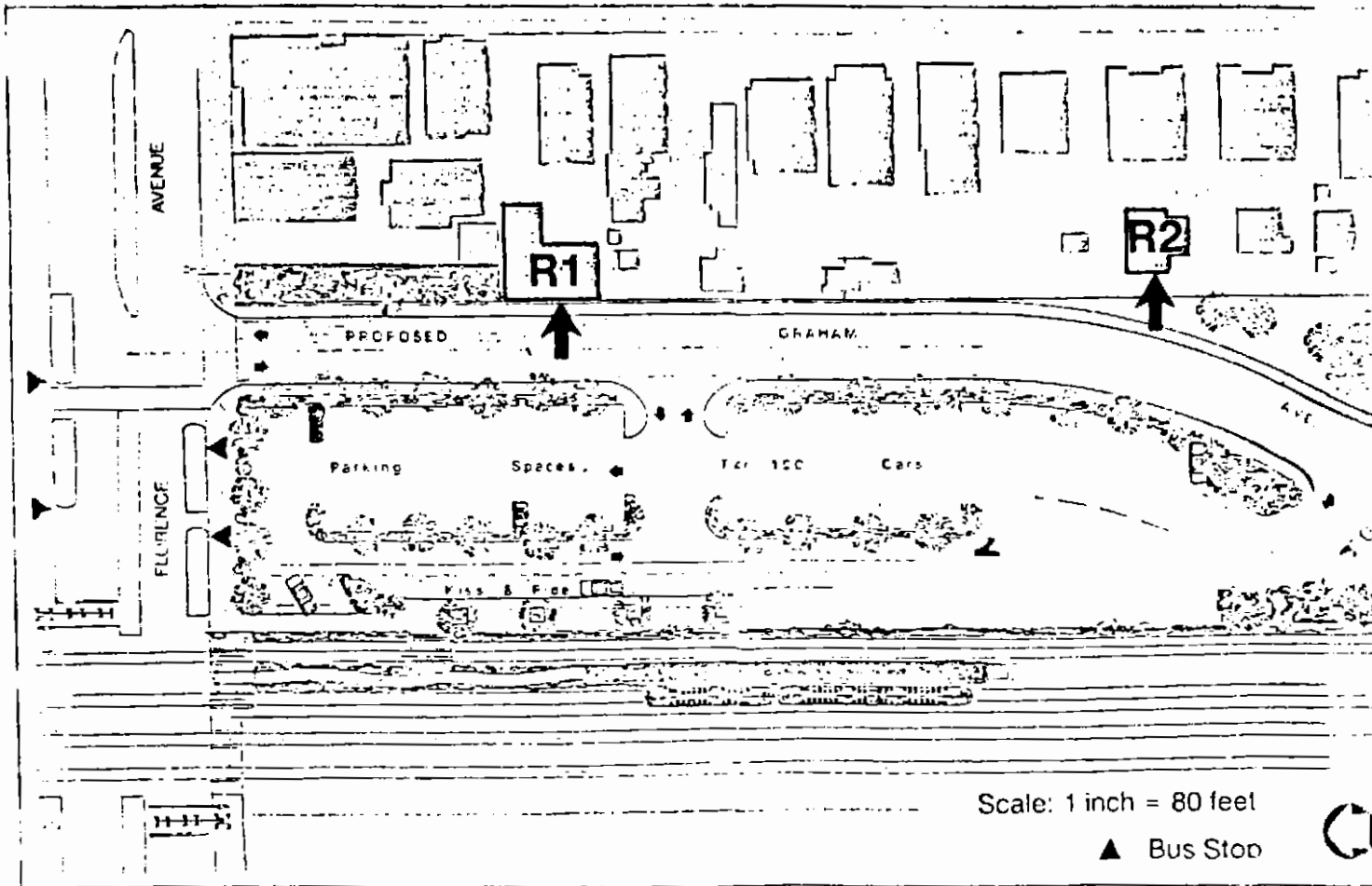
**Graham Avenue Roadway  
Improvements  
Environmental Impact Report**

Myra L. Frank & Associates

Figure 2.E-2

**Construction Equipment  
Noise Ranges**

Source: Cyrill Harris, Handbook of  
Noise Control



# Graham Avenue Roadway Improvements Environmental Impact Report

Myra L. Frank & Associates

Figure 2.E-3

Location of Sensitive Receptors

Sources: Myra L. Frank & Associates, County of Los Angeles, 1989.

**TABLE 2.E-1  
PROJECTED NOISE LEVELS<sup>1</sup>**

<u>Location<sup>2</sup></u>	<u>Distance to Centerline of Realigned Graham</u>	<u>Future No Project CNEL</u>	<u>Future With Project CNEL</u>	<u>Incremental Increase due to Project</u>
1. Residence	22 feet	60.1 dBA	67.3 dBA	+7.2 dBA
2. Residence	42 feet	58.1 dBA	64.0 dBA	+5.9 dBA

Notes:

Average Speed: 30 mph

Average Daily Traffic (ADT):

	<u>Future No Project</u>	<u>Future With Project</u>
Florence (E. of Graham)	940	1,880
Graham (S. of Florence)	26,660	26,860

Time of day:	70.0% Day 7 A.M. - 7 P.M.	Fleet Mix:	92% Autos
	15.0% Evening 7 P.M. - 10 P.M.		6.0% Med Trucks
	15.0% Night 10 P.M. - 7 A.M.		2.0% Hvy Trucks

<sup>1</sup> Projected noise levels due to vehicular traffic on Graham and Florence Avenues and freight and light rail traffic along the SPTC right-of-way. Estimates of CNELs due to rail activity were based on data provided by HMMH Inc. for the Long Beach - Los Angeles Rail Transit Project.

<sup>2</sup> See Figure 2.E-3 for location of sensitive receptors.

Source: Myra L. Frank & Associates, 1989.

## **b. Vibration**

Vibration from construction activities can be strong enough to be felt or even cause structural damage. The threshold of perception for humans is .01 inches per second (in/sec) peak particle velocity. Lower levels of ground vibration have been known to cause windows and pictures to rattle. Structural damage from continuous vibration is not expected below 0.20 in/sec peak particle velocity. Higher levels of vibration may not cause damage depending on the type of building construction. Typical levels of vibration caused by construction equipment as a function of distance from the source are shown in Figure 2.E-4.

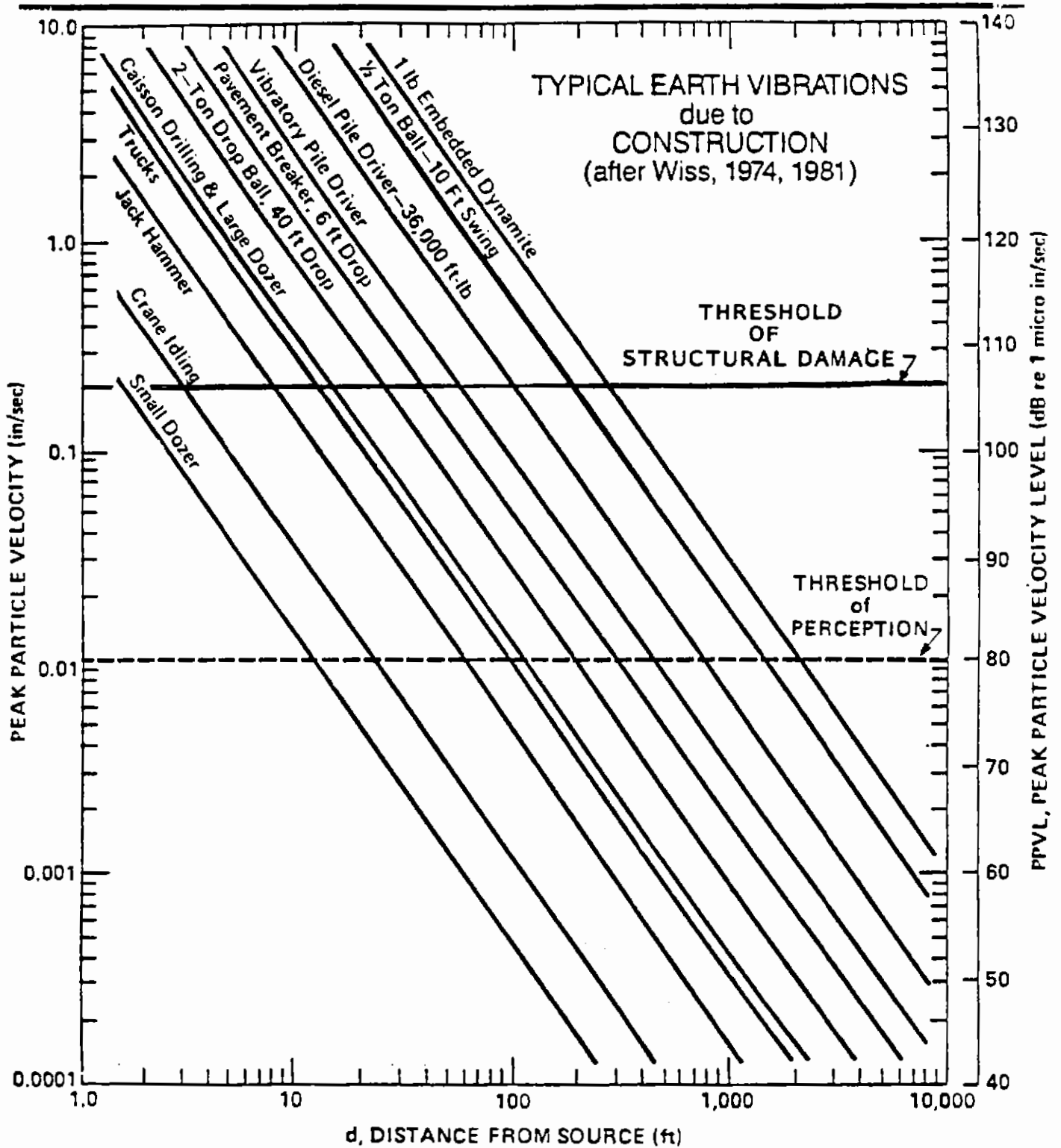
Nearby structures are not expected to experience any damage as a result of construction activities. The closest residences, however, may be able to perceive vibration due to construction.

## **3. Mitigation**

In order to reduce potential construction noise impacts on adjacent sensitive receptors, the following measures are recommended:

- o use of low noise-generating construction equipment;
- o scheduling high noise activities during periods that are least sensitive;
- o construction of noise barriers and fences, whenever feasible, to screen construction equipment and activities from adjacent noise-sensitive land uses;
- o compliance with County of Los Angeles construction noise regulations.

There are three ways that should be considered to mitigate operation noise impacts on adjacent sensitive receptors: 1) soundwalls; 2) soundproofing; and 3) purchase of noise easements. A six- to nine-foot soundwall constructed on the east side of the realigned section of Graham Avenue would mitigate the noise impacts of the project on residences closest to the project site. A soundwall would also mitigate the loss of privacy experienced by residences adjacent to a realigned Graham Avenue; however, it could pose potential maintenance problems. A second method of mitigation would be to modify homes to reduce interior noise levels. One disadvantage of this approach is that the outdoor noise environment is not affected. While it is difficult to estimate the exact types of mitigation that would be required without a detailed study of the structures to be modified, it is technically feasible to obtain a reduction of 10 to 15 dBA (relative to an open window condition) by appropriate modification to windows, doors, and walls and the addition of air conditioning or mechanical ventilation systems. A third method of mitigation would entail the purchase of noise easements from the affected properties. Such easements would result from negotiations between the County and the property owners in question. However, easements would not, of course, reduce the actual noise impact.



**Graham Avenue Roadway  
Improvements  
Environmental Impact Report**

Myra L. Frank & Associates

Figure 2.E-4

**Construction Vibration**

Source: Bolt Beranek & Newman, Inc., 1989

## **F. Light and Glare**

### **1. Environmental Setting**

The project site is located in a developed suburban area with sources of nighttime illumination consisting of street lighting, and lighting from commercial structures along Florence Avenue, from industrial buildings west of the SPTC right-of-way, and from residences along Graham Avenue and Beach Street. Sensitive receptors include the single- and multi-family residences along Graham Avenue and Beach Street.

### **2. Impacts**

During the construction phase of the project, the project site may be illuminated for security and safety reasons. This illumination could increase the amount of light affecting adjacent off-site sensitive receptors. Implementation of the proposed project would also introduce new sources of light and glare into the project area. Pole-mounted light fixtures located in the proposed park-and-ride lot could increase the amount of light off-site. Nearby residences located on the west side of Beach Street immediately east of the project site, could also be affected by light from the headlights of vehicles using a park-and-ride facility. Realignment of Graham Avenue and relocation of light standards closer to these residences fronting on Beach Street may also result in an increase of amount of nighttime light at these residences.

### **3. Mitigation**

The lighting plan for the project should incorporate use of lighting fixtures such as full cut-off luminaries or hooded outdoor lights which control the amount of light transmitted off-site. The park-and-ride lot will include perimeter landscaping or low masonry wall to shield nearby residences from the headlights of vehicles using the park-and-ride facility.



## **G. Land Use and Planning**

### **1. Environmental Setting**

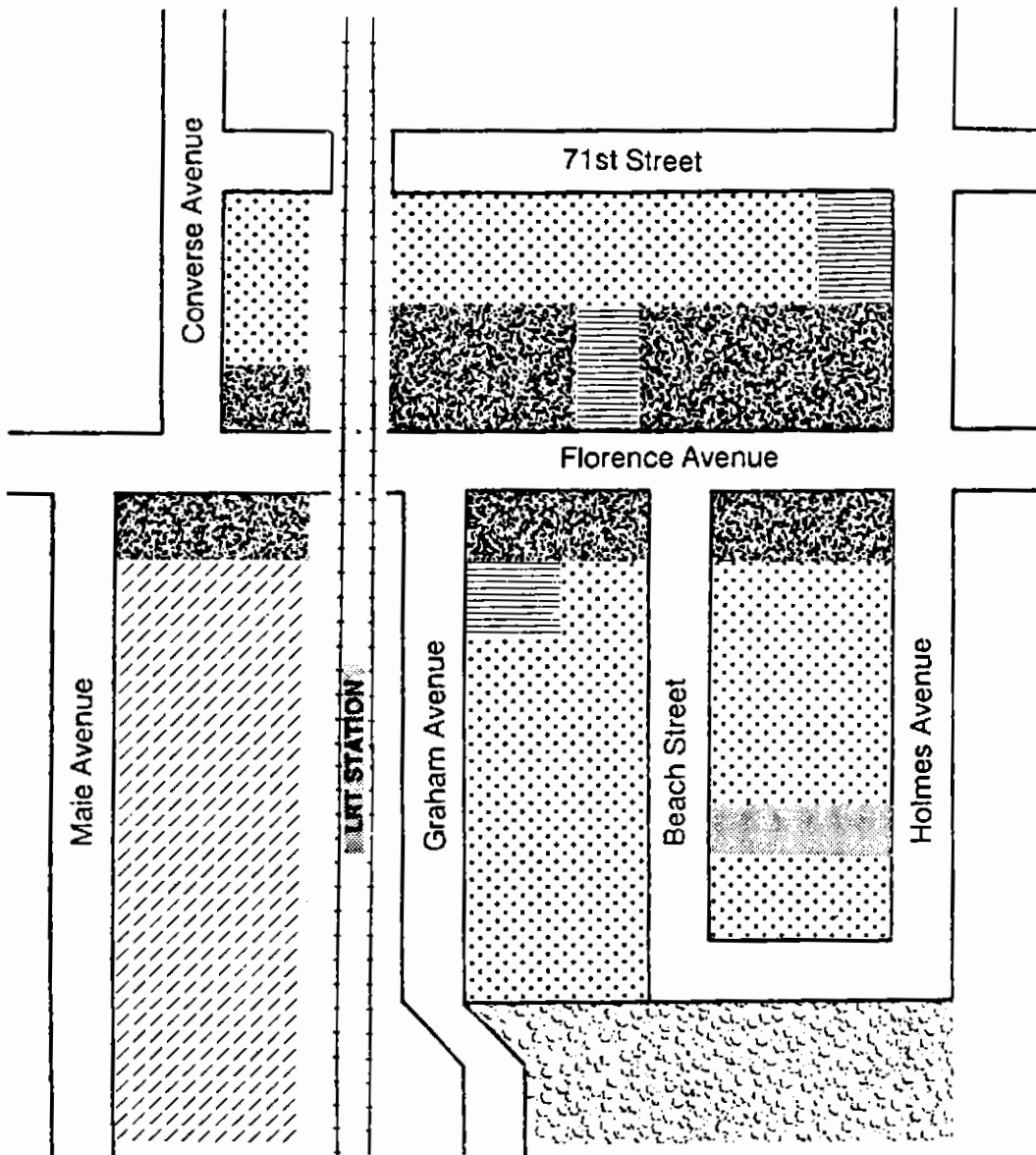
Land uses within one block of the proposed project are predominantly single family residential, with local-serving commercial uses along Florence Avenue (see Figure 2.G-1). A church, 15 residential buildings including one duplex, occupy the east side of Graham Avenue, immediately adjacent to the Florence LRT Station. Behind this area, on the west side of Beach Street, are ten more single family homes and two duplexes. To the south is the F.D. Roosevelt Park. West of the LRT Station and SPTC right-of-way are several warehouses and light industrial uses. A small commercial retail area is located to the north of the LRT Station on both the north and south sides of Florence Avenue. A church is also located on the north side of Florence Avenue.

Land uses both east and north of the LRT Station and Graham Avenue realignment are much the same. Small commercial uses continue on both sides of Florence Avenue. Single family residential uses and a four-unit apartment occupy the east side of Beach Street as well as the west side of Holmes Avenue. A third church is located at the corner of Holmes Avenue and 71st Street. Eight single family residences occupy the remainder of the south side of 71st Street between the SPTC right-of-way and Holmes Street. Four additional single family residences are located on the south side of 71st Street between the rail lines and Converse Avenue. Three single family residences are located on the east side of Converse Avenue between 71st Street and Florence Avenue.

All properties within one block of the proposed project are located in an unincorporated portion of Los Angeles County. Land uses are therefore governed by the County of Los Angeles General Plan, adopted by the Board of Supervisors on November 25, 1980.

The Florence/Graham Community Business Revitalization Area is located west of the project area in the vicinity of Compton and Florence Avenues.

Current zoning for the project area and surrounding blocks, designated by the Los Angeles Zoning Ordinance, is illustrated in Figure 2.G-2. Properties on the east side of Graham Avenue are designated as R-3, a "Limited Multiple Residence" zoning which permits apartments, two family residences, and single family residences. Zoning designation for land west of Graham Avenue and the Florence LRT Station is M-2, "Heavy Manufacturing." All uses except residential, some institutions, and schools are permitted. Properties along both sides of Florence Avenue carry a C-3 zoning designation for "Unlimited Commercial" use. Permitted uses include: commercial services, retail sales, rentals, and bars. Other zoning in the one block area includes R-4, "Unlimited Residence," along the south side of 71st Street and R-3, "Limited Multiple Residence," on the east side of Beach Street and the west side of Holmes Avenue. The F.D. Roosevelt Park is zoned R-3. Both R-4 and R-3 zoning designations permit most residential uses.



Commercial/Retail



Single Family Residential



Multi-Family Residential



Public/Institutional



Industrial



Park/Open Space



Not to scale

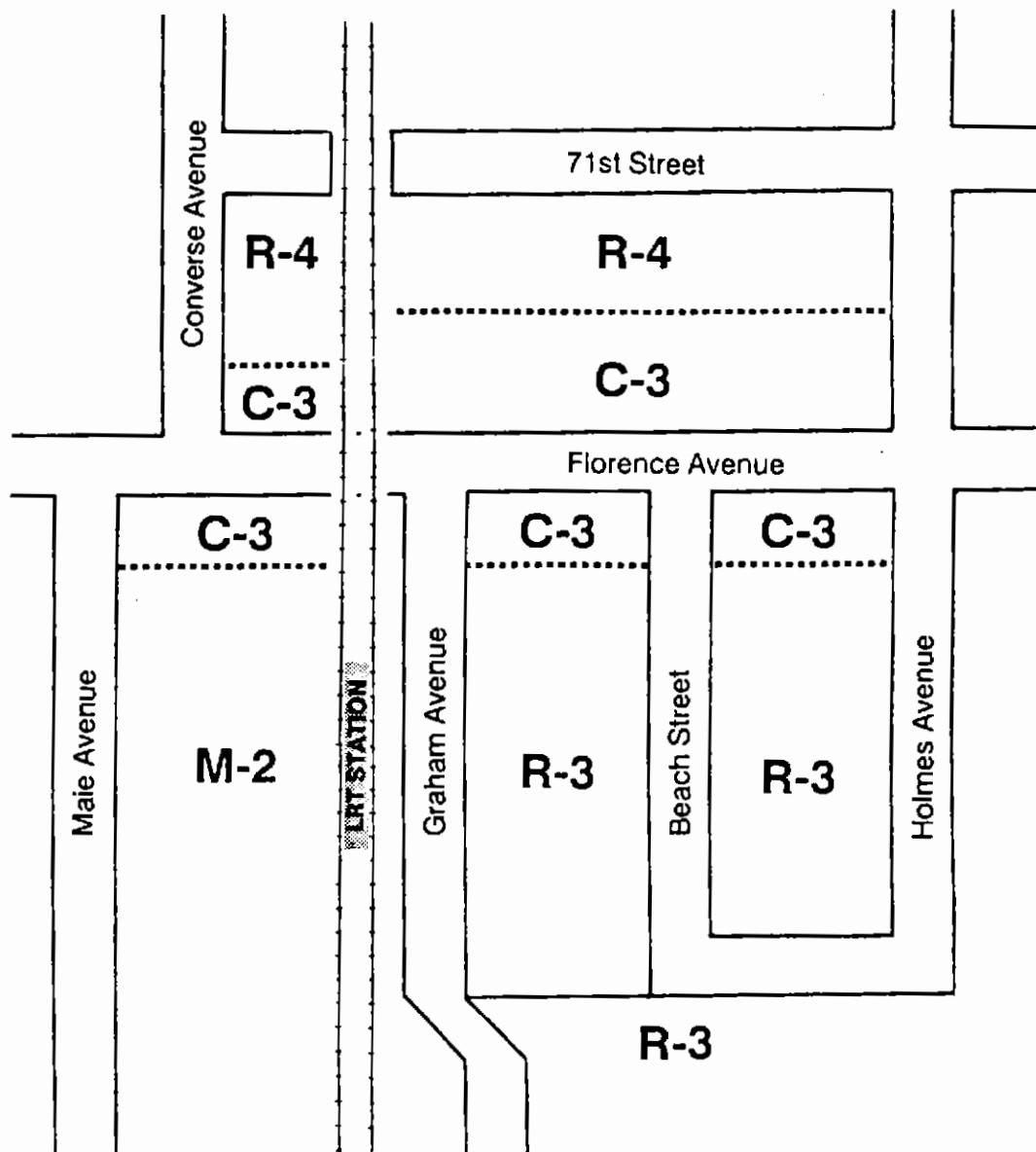
# Graham Avenue Roadway Improvements Environmental Impact Report

Myra L. Frank & Associates

Figure 2.G-1

Land Uses Near  
Project Site

Source: Myra L. Frank & Associates, 1989.



**Graham Avenue Roadway  
Improvements  
Environmental Impact Report**

Myra L. Frank & Associates

Figure 2.G-2

Zoning Map

Source: Myra L. Frank & Associates, 1989.

## **2. Impacts**

As a result of the proposed project, Graham Avenue would be realigned to the east to the back of the existing lots fronting on Graham. Right-of-way acquisition would require that the church and occupants of 16 residential units be relocated. The realignment of Graham Avenue would also require right-of-way acquisition and relocation of six businesses along the south side of Florence Avenue between Graham Avenue and Beach Street.

Implementation of the project could result in a change in land use to transportation purposes associated with the Florence LRT Station. Approximately 120 feet between Graham Avenue and the LRT Station would be developed as a park-and-ride lot. This change in land use conforms with the County of Los Angeles General Plan's goal "to emphasize development of an improved public transportation system that will support urban revitalization and to development and improvement of a community level transit system." The change in land use is also compatible with the existing residential, commercial and industrial land uses in the surrounding area. Land uses surrounding the project site are not expected to change as a result of the project.

The proposed realignment of Graham Avenue would also affect the existing zoning along the east side of Graham Avenue. The existing R-3 zoning designation would have to change to C-3 and a conditional use permit would be required in order to allow transit-related facilities (e.g. a park-and-ride lot). Zoning elsewhere in the surrounding one block area is not expected to be affected.

## **3. Mitigation**

Relocation assistance and payments will be provided to displaced tenants and businesses. For a more detailed discussion of these mitigation measures see Section H of this chapter.

## H. Population, Housing and Businesses

### 1. Environmental Setting

#### a. Housing and Businesses

The project site is located in a suburban area of the City of Los Angeles, approximately seven miles southeast of downtown Los Angeles. The proposed Florence/Graham station and roadway improvements are a part of the Long Beach - Los Angeles Rail Transit Project. The corridor containing the rail line, which is currently under construction, was studied extensively during the planning stage of the Long Beach - Los Angeles Rail Transit Project.

As of March 1985, average housing costs in the corridor were substantially lower than elsewhere in the county. At the time of preparation of the EIR for the Long Beach - Los Angeles Rail Transit Project, values of owner-occupied units averaged 36 percent lower, while contract rents averaged 26 percent lower.

Since 1970 overall residential building activity in the corridor has been relatively stagnant, with the mid-corridor area, which includes the Florence Station and project site, showing a loss of one-tenth of one percent of housing units between 1970 and 1980. However, according to the U.S. Bureau of the Census and Southern California Association of Governments (SCAG) 1983 projections, an increase in the number of housing units in the mid-corridor area of 0.6 percent per year may be expected from 1980 to 2000.

Table 2.H-1 provides a comparison of the number of units and occupied units in the census tract block area containing the project site, the Florence Station area (defined as a circle extending one-quarter mile from the station), the corridor and Los Angeles County. As shown in the table, the vacancy rates for the census block area containing the project site and for Florence Station area are lower than the vacancy rate for the county as a whole.

---

**TABLE 2.H-1  
1980 VACANCY RATES FOR RESIDENTIAL UNITS**

	Census Tract 5349.00 <u>Block 402</u>	Florence <u>Station Area</u>	<u>Corridor</u>	<u>LA County</u>
Total Units	156	725	4,184	2,853,453
Occupied	153	706	3974	2,730,469
Vacant	3	19	210	122,984
% Vacancy	1.9%	2.6%	5%	4.3%

Source: Southern California Association of Governments, 1982.

---

The major land uses within one-quarter mile of the project site are mixed multi-family and single-family housing with community commercial activity centers at Firestone Boulevard and Florence Avenue and commercial strip development along Florence Avenue. Immediately adjacent to the right-of-way between Firestone Boulevard and Florence Avenue are industrial and warehouse uses along the west, and a community park along the east (south and southeast of the project site). The Florence-Graham Community Business Revitalization Area is located just west of the project alignment in the vicinity of Compton and Florence Avenues.

The existing residential uses within the project site include seven single-family houses, one duplex and seven apartment units. The residential structures are primarily one-story wood-framed bungalows, some of which have been stuccoed. One of the single-family houses is currently vacant. The structures are in fair condition, although some show signs of deferred maintenance. In addition, a church is located on Graham Avenue, and about six small retail commercial uses are located along Florence Avenue within the boundaries of the project site.

**b. Population**

The source for the most recent population data for the project surroundings is the March 1984 Technical Appendix to the Long Beach - Los Angeles Rail Transit Project EIR, prepared by Sedway Cooke Associates. The Appendix, which is based on 1980 Census data, indicates that the Florence Station area differs from other station areas within the Mid-Corridor in that it is predominantly (90 percent) Hispanic, young and family-oriented. In 1980, nearly half of the approximately 3,000 people living within the station area radius were under 19 years old, and only five percent were older than 65. Average household size is the highest for the Mid-Corridor, at 4.2 people per household (see Table 2.H-2). Approximately half the station- area households are headed by women.

---

**TABLE 2.H-2  
1980 HOUSEHOLD SIZE AND INCOME**

	<u>Florence Station Area</u>	<u>Mid-Corridor</u>	<u>Corridor Total</u>	<u>L.A. County</u>
Average Household Size	4.2	3.8	3.0	2.3
Average Household Income	\$12,978	\$14,517	\$14,862	\$22,518

Source: Sedway Cooke Associates, 1984.

---

Only 39 percent of the population was low-income, compared to an average of 47 percent for the entire Mid-Corridor. The median income of the area surrounding Florence Avenue station was \$12,978.

By multiplying the average household size of 4.2 by the number of occupied dwelling units (15), the current residential population on the proposed project site is estimated to be 63.

## **2. Impacts**

### **a. Housing and Businesses**

The project will require acquisition and demolition or removal of approximately 16 low-income dwelling units (seven single family houses, one duplex and seven apartment units). The loss of affordable housing stock in a low-income area is considered to be a significant adverse impact.

An estimated 63 residential occupants living on the proposed site would be relocated as a result of the project. Residential relocation impacts include: disruption of social patterns; possible decreased accessibility to employment; loss of time and energy involved in the relocation process itself; and potential increases in housing costs. Due to the relatively low vacancy rates in the vicinity of the project site, it may be difficult to find replacement housing in the immediate vicinity.

A total of six small businesses and one church will be displaced as a result of the proposed project. The businesses include a video store, a beauty salon, a tax consultant's office, a small restaurant, an optometrist's office and a Mexican-style herb shop (botanico). As development and renovation occur along Florence Avenue, the kinds of owner/operator small businesses found within the project area are increasingly giving way to larger companies and local and national franchises. Because several of the businesses to be displaced do not appear to be thriving, relocation impacts could result in financial hardship or liquidation.

### **b. Population**

The total number of people to be displaced as a result of this project will not be so large as to cause a significant effect on any recognized ethnic or demographic group. Further, the area's predominantly Hispanic dislocatees are expected to relocate within adjacent areas which are similar socially and economically.

## **3. Mitigation Measures**

### **a. Housing and Businesses**

The proposed project will result in the unavoidable loss of 16 low-income dwelling units. This impact could be partially mitigated by offering those units in good condition to the public for a nominal fee for relocation to a vacant site.

Since July 1, 1972, amendments to the California Government Code require that extensive relocation assistance be provided by any governmental agency acquiring property for public purposes. In accordance with these State relocation requirements, when private property is acquired or condemned due to local governmental activity, responsible government agencies will administer a relocation program to help occupants move to permanent homes and businesses. Consequently, the County of Los Angeles has a legal obligation to relocate each displaced household or business into housing or buildings complying with building and occupancy standards, with cost or rental levels that each relocated household or business can afford, and in close proximity to the existing site.

On June 21, 1977, the County of Los Angeles Board of Supervisors adopted rules in conformance with State guidelines, known as the County of Los Angeles Relocation Assistance and Real Property Acquisition Rules and Regulations. In accordance with the Rules and Regulations, when more than 50 persons will be displaced, as will occur as a result of this project, the County will encourage the residents, business people and members of existing organizations in the displacement area to form a relocation committee. Prior to displacement, a relocation plan shall be prepared by the County Department of Public Works, and submitted for approval to the Board of Supervisors. The Relocation Plan will include a written analysis of relocation needs, based on personal interviews with residents and business owners in the displacement area, along with a detailed description of how these needs will be met. In accordance with Article III of the Rules and Regulations, the County shall make a payment to an eligible homeowner displaced from a dwelling. This payment is not to exceed a combined total of \$15,000, the exact amount to be determined in part is the lesser of the following:

- a) the difference between the acquisition cost of the dwelling acquired for the project and the reasonable cost of a comparable replacement;
- b) the difference between the acquisition price and the actual purchase price of the replacement dwelling.

To the above amount will be added the amount of increased interest costs, reasonable expenses associated with purchase and certain rehabilitation costs. Again, the combination of payments is not to exceed \$15,000.

In the case of displaced tenants, a payment not to exceed \$4,000 will be made. This sum may be used to enable eligible tenants to lease or rent a replacement dwelling for a period of up to four years. Or, the payment of \$4,000 may be used by a displaced tenant to make a down payment on the purchase of a replacement dwelling.

Technical assistance will be provided to all eligible persons within the displacement area to facilitate completion of applications for payments and benefits, and to locate and move to a comparable replacement dwelling. If comparable housing is not available for any eligible person, County funds or funds authorized for the project will be used to provide such housing in accordance with Article IV, Last Resort Housing, of the Rules and Regulations. Alternatively, the Board of Supervisors may determine to provide payments in lieu of Last Resort Housing, or to modify, suspend or terminate the project.



In accordance with its Rules and Regulations, the County will provide maximum assistance in relocating displaced businesses. The Small Business Administration and other governmental agencies which might be of assistance will be consulted. In accordance with Article III of the Rules and Regulations, payment may be made for actual reasonable expenses for moving business operations. Expenses associated with moving can include, but are not limited to: transportation, packing and crating; necessary storage; disconnection and reconnection fees; reprinting of stationary and other printed materials; equipment modification and business licenses. Further, the County will make payments for actual direct losses of tangible personal property as a result of moving or discontinuing a business. In addition, the County will pay actual reasonable expenses, not to exceed \$1,000, incurred in searching for a replacement business. In lieu of the payments described above, an eligible person who is displaced from their place of business may elect to receive a payment equal to the average annual net earnings of the business, not to exceed \$10,000. Loss of goodwill will be compensated in the event that relocation will result in substantial loss of existing patronage. Although these measures may not completely mitigate the relocation impacts resulting from the proposed project, they will reduce any impacts to a level of acceptability.

## **1. Traffic/Circulation and Parking**

The following is a summary of the traffic study conducted by Korve Engineering, Inc. Their complete traffic report is provided in Appendix D.

### **1. Environmental Setting**

The following review of existing traffic conditions in the area of the project site identifies streets, highways and transit serving the area, traffic volumes, and traffic conditions at key intersections adjacent to the project site.

#### **a. Streets and Highways**

The streets serving the study area are part of the street grid that is oriented north-south and east-west in the Florence/Huntington Park area. The project site is about two miles east of the Harbor Freeway (I-110) which runs north-south, and about 5-1/2 miles south of downtown Los Angeles.

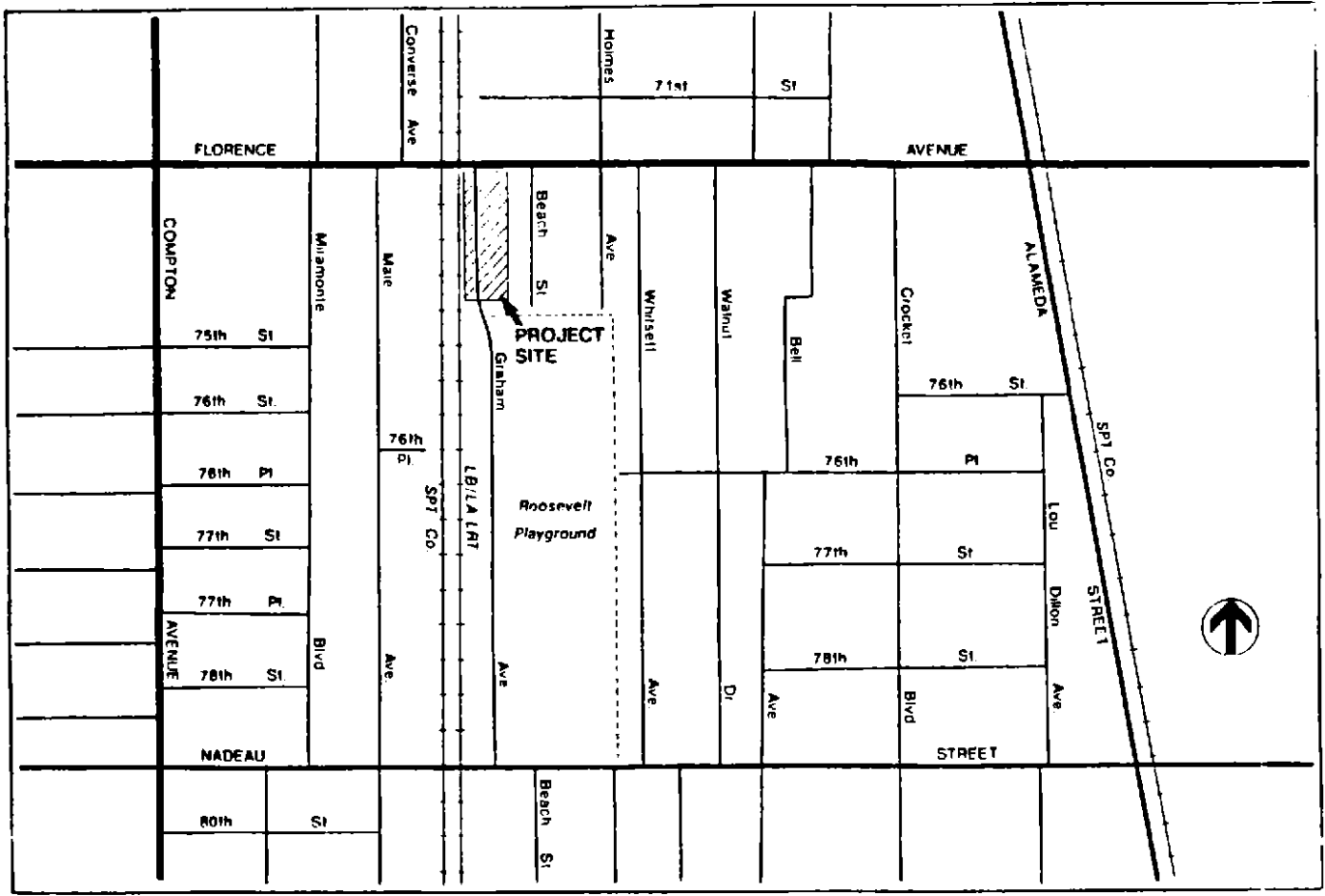
The key streets serving the study site are shown in Figure 2.1-1 and described below.

The major street in the area is Florence Avenue which is 70 feet wide between curbs with four through lanes, two in each direction, and a median lane. This arterial runs in the east-west direction. On-street parking is permitted on both sides of the street between 8:00 A.M. to 4:00 P.M., and prohibited during the evening peak period. It is a commercial street served by RTD Lines #111 and #112 traveling east-west and Line #56 traveling north-south along Florence Avenue between Maie and Holmes Avenues.

Immediately west of Graham Avenue, four railroad tracks cross Florence Avenue at grade. Two of the tracks are active Southern Pacific Transportation Company freight tracks. The other two tracks are not currently in use, but have recently been installed for the Long Beach/Los Angeles light rail line which is planned to begin operation in 1990. The railroad crossing is controlled by two standard automatic gate-type signals with cantilevers.

Graham Avenue is a two-lane local road that intersects with Florence Avenue as a "T" intersection and runs south from Florence Avenue, providing access to the Roosevelt Playground park, before ending in a T-intersection at Nadeau Street. The intersection of Florence and Graham is unsignalized, with stop sign control on the Graham Avenue approach. The roadway striping along Florence Avenue does not permit left turns to be made legally out of or into Graham Avenue. Graham Avenue is 26.5 feet wide with a six-foot wide sidewalk on the east side and a 12-inch A.C. curb on the west side immediately adjacent to the concrete wall of the LRT station. Parking is prohibited on both sides of Graham Avenue between Florence Avenue and the Roosevelt Playground.

Beach Street is a residential local north-south street one block east of Graham Avenue. It is a cul-de-sac that runs south from Florence to the F.D. Roosevelt Park, serving a small parking area for the park of 19 parking spaces. The street has two lanes, one in each direction with parking on both sides. Beach Street is linked to Holmes Avenue on the east



# Graham Avenue Roadway Improvements Environmental Impact Report

Myra L. Frank & Associates

Figure 2.I-1

Project Site and Local  
Street System

Source: Korve Engineering, Inc. 1989.

side through the parking lot. Beach Street is a 36.5 feet curb-to-curb roadway with a seven-foot sidewalk on the west side and a six-foot sidewalk on the east side. The intersection of Florence and Beach is unsignalized, with stop sign control on the Beach Street approach. Left turns are permitted into and out of Beach Street.

Holmes Avenue is a 70-foot wide collector street north of Florence Avenue with 2 lanes in each direction and one median lane, with parking permitted on both sides of the street. Holmes Avenue south of Florence Avenue is a local street, only 24 feet wide with one travel lane in each direction and parking permitted on the west side of the street only. It is a cul-de-sac south of Florence Avenue that provides access to residences and the north parking lot of F.D. Roosevelt Park. Access to Beach Street may be obtained through the parking area. The intersection of Holmes Avenue and Florence Avenue is signalized, with push-button activated pedestrian signals. The signal cycle is 60 seconds, with two signal phases.

The intersection spacing along Florence Avenue is as follows. Graham Avenue is currently located immediately to the east of the rail tracks. Beach Street is about 235 feet to the east of Graham Avenue, and Holmes Avenue is about 255 feet east of Beach Street.

#### b. Traffic Volumes

Existing traffic volumes on key streets in the study area were obtained from Los Angeles County Department of Public Works (1988 count records), and traffic counts conducted for this study.

Florence Avenue carries 34,300 daily vehicles east of Graham Avenue (August, 1987), 25,100 daily vehicles west of Graham (near Compton Avenue) (May, 1988).

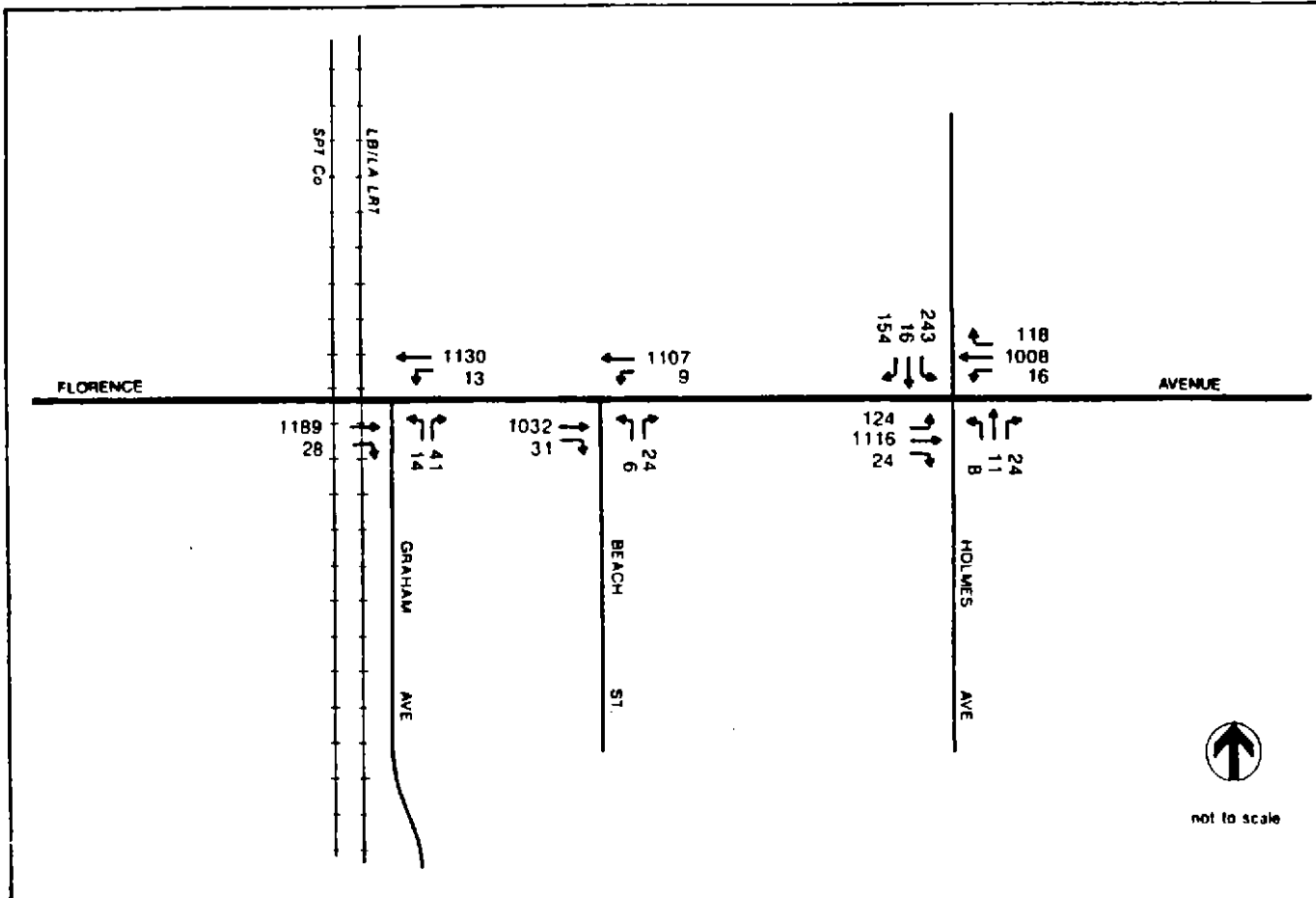
Three intersections were identified, in conjunction with the County of Los Angeles staff, for detailed analysis. These locations are at:

- o Florence Avenue and Graham Avenue
- o Florence Avenue and Beach Street
- o Florence Avenue and Holmes Avenue

A review of Los Angeles County traffic volumes data indicated that no traffic turn counts were available, so new counts were conducted for the evening (P.M.) peak period (4-6 P.M.) at all three locations on June 11, 1989. Figure 2.1-2 shows existing traffic volumes for the evening peak hour at the three locations.

The major traffic volumes in the vicinity of the project area are on Florence Avenue and on Holmes Avenue north of Florence. Eastbound and westbound traffic volumes on Florence Avenue are approximately equal during the P.M. peak hour.

As Figure 2.1-2 indicates, there are very low volumes of turning traffic at the intersections of Florence Avenue with Graham Avenue and Beach Street.



**Graham Avenue Roadway  
Improvements  
Environmental Impact Report**  
Myra L. Frank & Associates

**Figure 2.I-2**  
**Existing PM Peak Hour  
Traffic Volumes**  
Source: Korve Engineering, Inc. 1989.

Although not permitted by roadway striping there are 14 vehicles turning left from Graham into Florence Avenue, and 13 vehicles turning left from Florence Avenue into Graham. At Beach Street, because it is a cul-de-sac, the number of turning vehicles is even lower.

### c. Intersection Level of Service

Traffic conditions were evaluated in terms of Level of Service (LOS) at the three study area intersections. This is a measure that describes traffic flow conditions at an intersection, ranging from LOS A for free-flow and insignificant delays to LOS F for overloaded conditions and excessive delays. LOS D is generally considered the acceptable operation standard for urban street systems. Level Of Service definitions are summarized in Table 2.1-1.

The Critical Movement (CMA) method, as outlined in the Transportation Research Board Circular No. 212, was used to determine Levels Of Service for the P.M. peak hour at the signalized intersection of Florence and Holmes. Traffic volumes are compared to roadway capacity and the Volume/Capacity (V/C) ratio and corresponding Level Of Service determined.

The unsignalized intersections of Florence/Graham and Florence/Beach were analyzed using the Unsignalized Intersection Methodology in the Highway Capacity Manual (HCM), 1985, Transportation Research Board, Special Report 209. At these intersections, the traffic flow on Florence Avenue is uninhibited, and Level Of Service is determined for the constrained (turn) movements into and out of the minor streets. The results of the intersection analyses are summarized in Table 2.1-2.

As illustrated in Table 2.1-2, the Florence/Holmes Intersection operates at Level Of Service (LOS) B. At the unsignalized intersections of Florence Avenue with Graham Avenue and with Beach Street, the minor street approaches operate at LOS E and LOS D respectively, indicating long to very long delays for traffic turning out of these streets into Florence Avenue.

### d. Transit

The project area is currently served by RTD Bus Lines #56, #111 and #112 as illustrated in Figure 2.1-3.

Line #56 (Carson-Wilmington Avenue-Los Angeles) runs from the Carson Mall to downtown Los Angeles. In the project area it travels along Maie Avenue, Florence Avenue, and Holmes Avenue in both directions. During the evening peak hour, four Line #56 buses run along Florence Avenue in each direction. Lines #111 and #112 (Los Angeles Airport-Florence Avenue-Leffingwell Road) and (Los Angeles Airport-Florence Avenue-Otis Street) run from Westchester to Lynwood and Whittier, and travel on Florence Avenue in the east-west direction within the project area. During the evening peak hour, six Line #111/112 buses run along Florence Avenue in each direction.

As illustrated in Figure 2.1-3, bus stops are located on Florence Avenue, west and east of the railroad tracks, and at the Florence/Holmes intersection.

**TABLE 2.I-1  
DEFINITIONS OF LEVELS OF SERVICE**

<u>Level Of Service</u>	<u>Volume To Capacity Ratio</u>	<u>Description of Traffic Condition</u>
A	0.00-0.59	Insignificant Delays: No approach phase is fully utilized and no vehicle waits longer than one red indication.
B	0.60-0.69	Minimal Delays: An occasional approach phase is fully utilized. Drivers begin to feel restricted.
C	0.70-0.79	Acceptable Delays: Major approach phase may become fully utilized. Most drivers feel somewhat restricted.
D	0.80-0.89	Tolerable Delays: Drivers may wait through more than one red indication. Queues may develop but dissipate rapidly, without excessive delays.
E	0.90-0.99	Significant Delays. Volumes approaching capacity. Vehicles may wait through several signal cycles and long queues of vehicles form upstream.
F	N/A	Excessive Delays: Represents conditions at capacity, with extremely long delays. Queues may block upstream intersections and queues may form which do not dissipate.

Sources: Highway Capacity Manual, Highway Research Board, Special Report No. 87, Washington, D.C. 1965; Interim Materials on Highway Capacity, Transportation Research Board Circular 212, Washington, D.C., 1980; Highway Capacity Manual, Transportation Research Board Special Report No. 209, Washington, D.C., 1985; Korve Engineering, Inc.





---

**TABLE 2.1-2  
EXISTING INTERSECTION LEVEL OF SERVICE  
(P.M. PEAK HOUR)**

<u>Intersection</u>	<u>V/C Ratio or Reserve Capacity<sup>+</sup></u>	<u>Level Of Service</u>
1. Florence Avenue & Graham Ave.	+ 60	E
2. Florence Avenue & Beach Street	+ 124	D
3. Florence Avenue & Holmes Avenue	0.65	B

<sup>+</sup> Available reserve capacity for most constrained movement (minor street approach controlled by stop sign).

Source: Korve Engineering, Inc., July 1989.

---

## **2. Impacts**

### **a. Future Conditions Without Proposed Project**

The analysis of future traffic conditions (with and without the project), is based on the year 2000. This was the year on which the LB/LA Rail Transit Project EIR was based, and was also the year used as a baseline for all previous traffic analysis conducted for the LB/LA Rail Transit Project.

#### **Year 2000 Traffic Projections**

The year 2000 traffic projections were based on information available from previous studies. Future traffic projections for the Florence Avenue/Homes Avenue intersection were taken from the "Mid-Corridor LRT and Street Traffic Control System" Report (Los Angeles County Transportation Commission, July 1985). These forecasts, which were also used in the EIR for the LB/LA Rail Transit Project, were based on an annual 1% overall growth rate, and also include the trips generated by the proposed U.S. Postal Service facility in the vicinity of the project site.

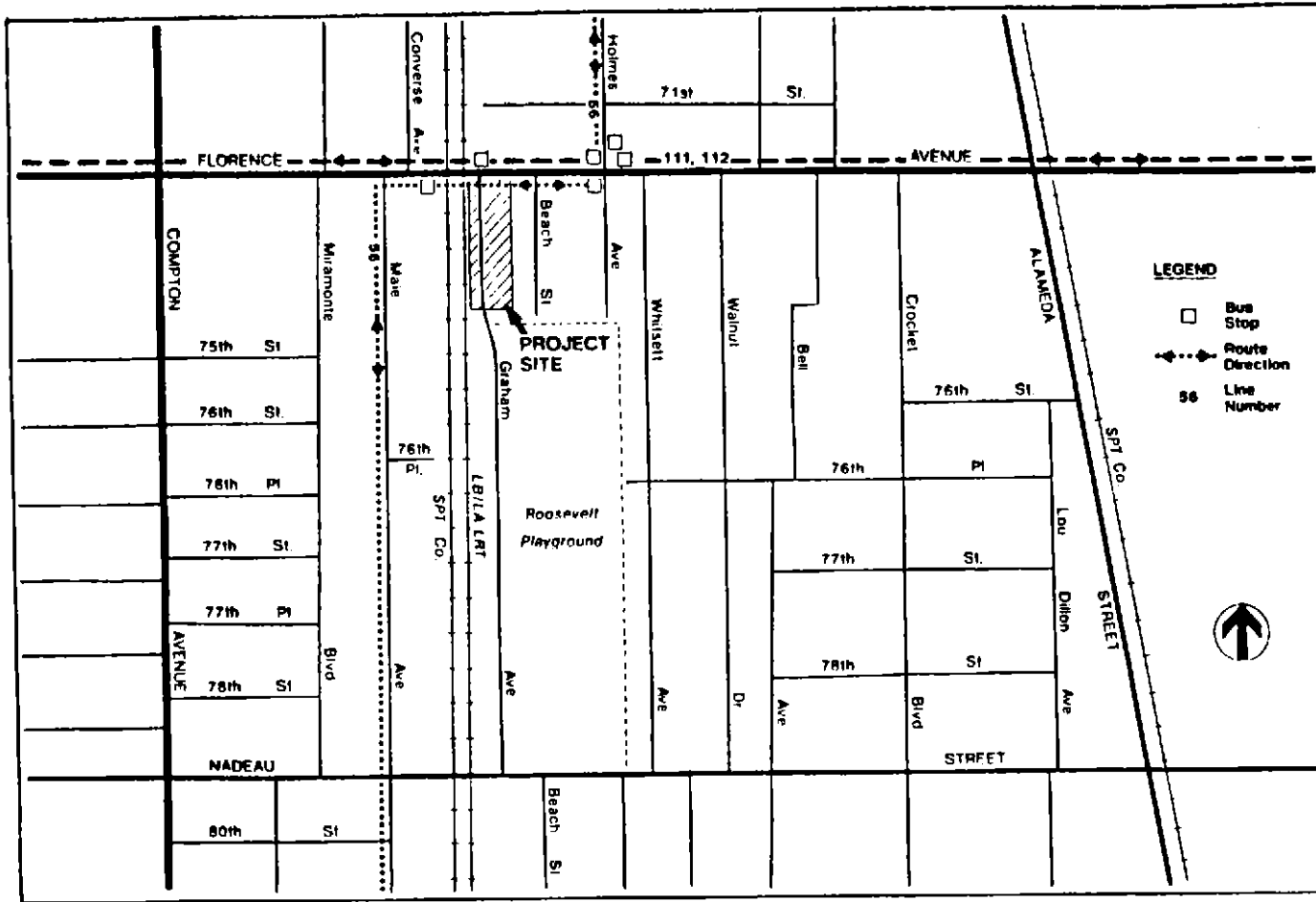


Figure 2.1-3

# Graham Avenue Roadway Improvements Environmental Impact Report

Myra L. Frank & Associates

Existing Bus Routes Serving Project Site

Source: Korve Engineering, Inc. 1989.

These growths in traffic were also applied to obtain projections of future traffic at the Florence/Beach and Florence/Graham intersection. Figure 2.1-4 illustrates the future traffic volumes for year 2000, P.M. peak hour, without the project.

#### Future Baseline Configuration of LB/LA Transit Project

The Long Beach - Los Angeles Light Rail System is planned to begin operation in mid-1990. A station will be located immediately south of Florence Avenue and west of Graham Avenue. Improvements planned by the LACTC for Graham Avenue consist of narrowing Graham at Florence to 22 to create a pedestrian refuge area at the southwest corner of the intersection. No park-and-ride facilities are planned. Station access will be from Florence Avenue.

With the light rail line in operation, RTD expects to maintain the bus routes and service frequencies currently operating along Florence Avenue. RTD also plans to divert the Route #110 (Gage Avenue - Centinela Avenue - Fox Hills Mall) which runs from Commerce/Bell Gardens along Gage Avenue to Fox Hills Mall, south to run along Florence Avenue between Compton Avenue and Holmes Avenue, to serve the Florence/Graham light rail station.

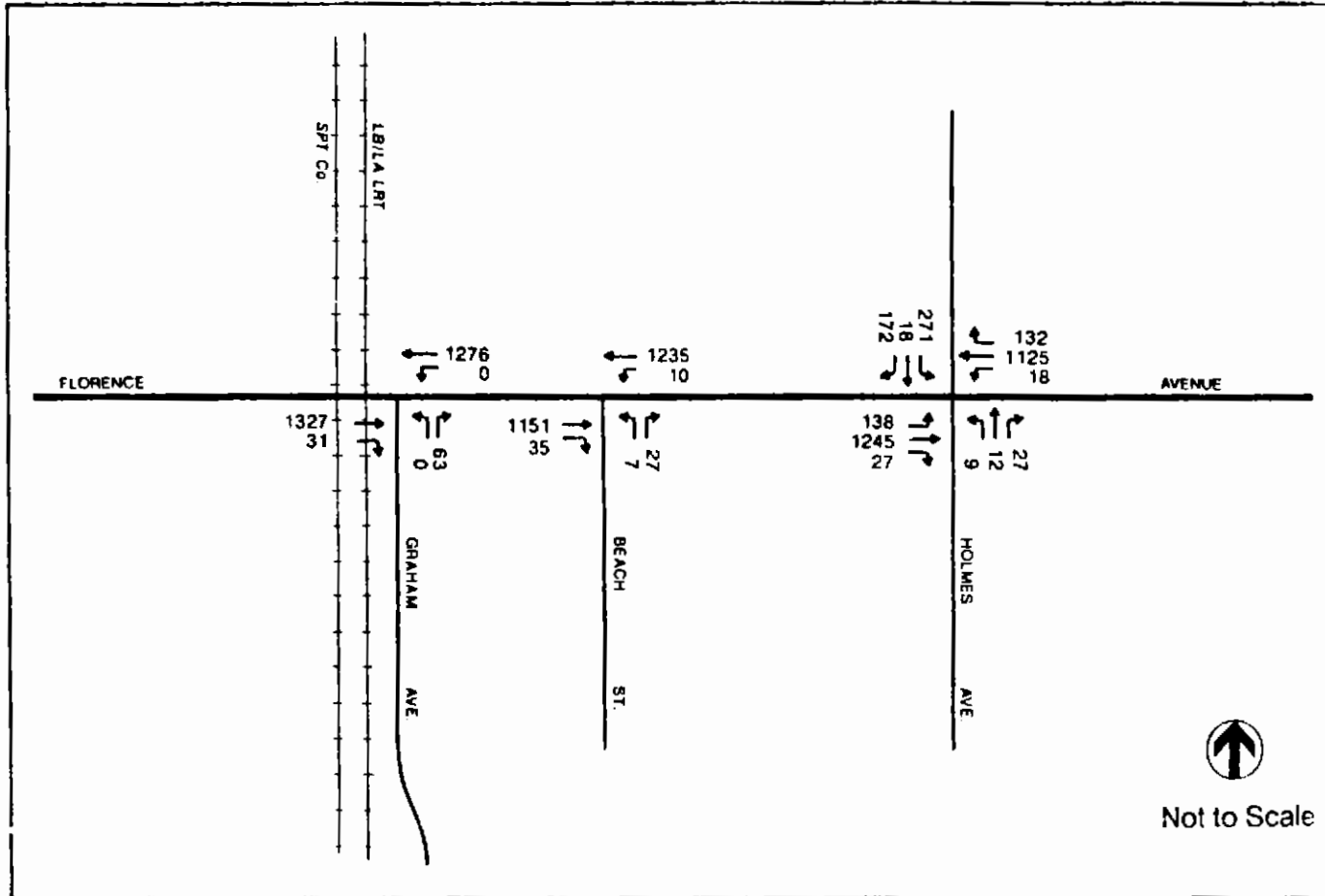
RTD projects a total of 11 P.M. peak hour buses in each direction on Florence Avenue. No other route changes are planned, and there are no plans for buses to use Graham Avenue to serve the light rail station. Bus stops will be located on Florence Avenue, west of the tracks for eastbound buses, and east of the Graham Avenue intersection for westbound buses.

No park-and-ride facilities are planned at the station, and virtually all access is expected to occur by feeder bus or walking to the station. No significant changes in traffic volumes are expected in the area due to the light rail station.

The at-grade crossing of the light rail and Southern Pacific tracks at Florence will continue to be gate controlled. As part of the improvements being constructed for the LB/LA Rail Transit Project, a new island will be installed in the median of Florence to the east of the tracks and opposite Graham Avenue. Movements to/from Graham Avenue from Florence Avenue will be restricted to right-in and right-out only. Left turns to and from Graham Avenue will be prohibited. (As the existing condition analysis noted, these turns are very few, numbering only 14 outbound left turns from Graham and 13 inbound left turns to Graham even though this latter movement is technically illegal.)

#### Traffic Conditions

Future intersection conditions without the project are shown in Table 2.1-3 for the P.M. peak hour. The Florence/Holmes Avenues intersection will operate at Level Of Service (LOS) D. in the year 2000 which is acceptable for urban conditions. The intersection of Florence Avenue and Beach Street is assured to remain unsignalized, and would operate at LOS D for the left turn movement from Florence Avenue and at LOS E for the left turn movement from Beach Street.



**Graham Avenue Roadway  
Improvements  
Environmental Impact Report**

Myra L. Frank & Associates

Figure 2.1-4

**PM Peak Hour Traffic Volumes  
for Year 2000**

Source: Kolve Engineering, Inc. 1989.

**TABLE 2.I-3  
FUTURE INTERSECTION LEVEL OF SERVICE - WITHOUT PROJECT  
(P.M. PEAK HOUR)**

	<u>Existing Condition</u>		<u>Future Year 2000</u>	
	<u>V/C Ratio or Reserve Capacity<sup>1</sup></u>	<u>LOS</u>	<u>V/C Ratio or Reserve Capacity<sup>1</sup></u>	<u>LOS</u>
1. Florence & Graham	+61	E	N/A <sup>2</sup>	N/A <sup>2</sup>
2. Florence & Beach	+129	D	+101	D
3. Florence & Holmes	0.65	B	0.72	D

<sup>1</sup> Available Reserved Capacity for most constrained movement (T intersection controlled by stop sign on minor street).

<sup>2</sup> Left turns not allowed at Florence/Graham.

Source: Korve Engineering, Inc., July 1989.

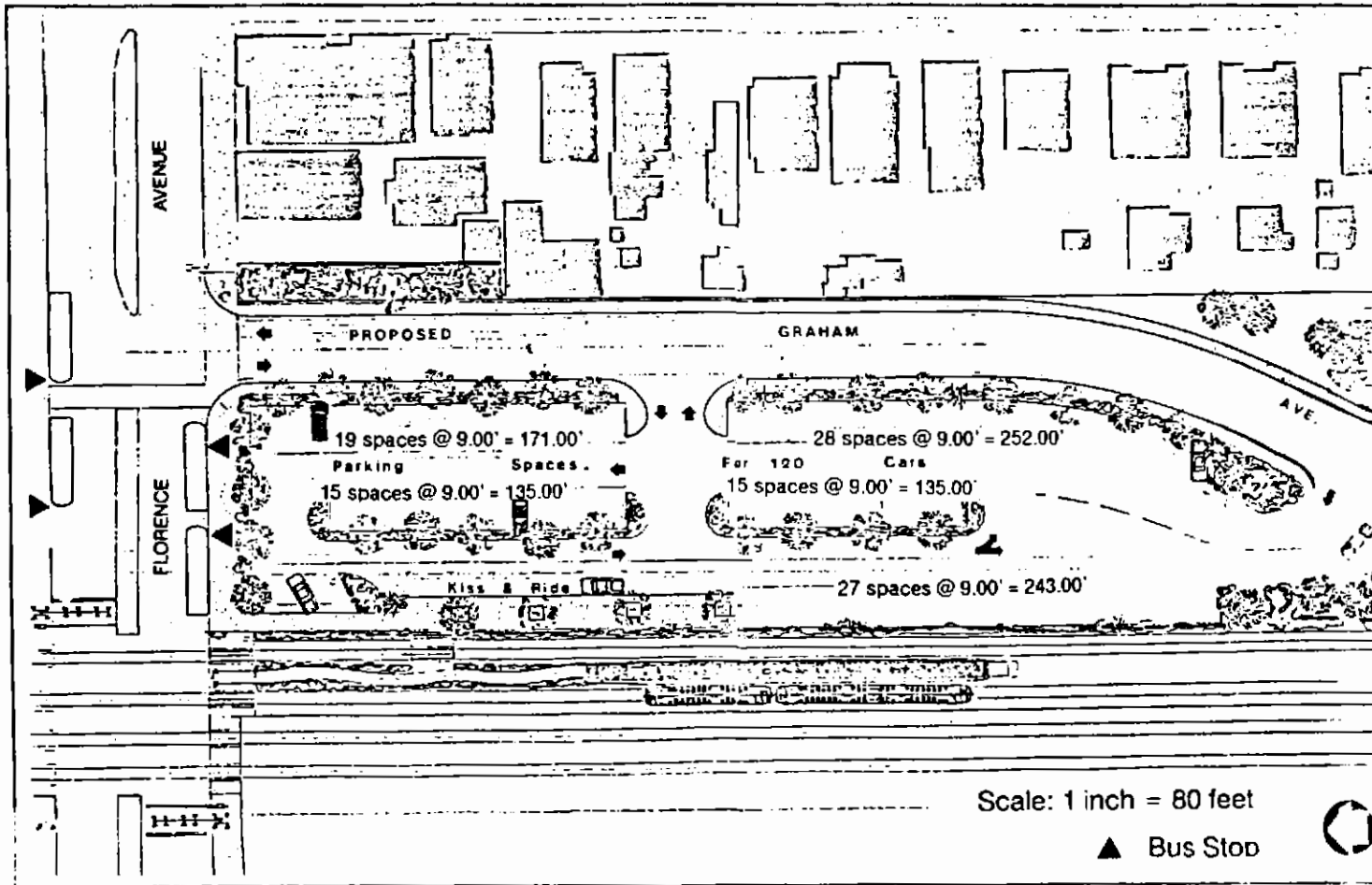
**b. Future Conditions with the Proposed Project**

**Description of the Project**

The changes proposed by Los Angeles County comprise the relocation of Graham Avenue about 120 feet to the east, and the provision of a 113 space park-and-ride lot between the realigned Graham Avenue and the LB/LA Light Rail Line. Access to/from the parking lot would be via two driveways on Graham Avenue.

The proposed realignment of Graham Avenue and the layout of the parking area are shown on the conceptual plan which was provided by Los Angeles County Department of Public Works, Planning Division, and illustrated in Figure 2.I-5. However, no dimensions have been provided and contact with the Los Angeles County Department of Public Works Design Division revealed that no detailed plans for the proposed realignment of Graham Avenue and the parking area have been produced at this stage.

The County has indicated that the proposed Graham Avenue will be 30 feet curb-to-curb in 42 feet of right-of-way. Also, the new curb return at Florence Avenue would be a 25-foot radii and the transition area of the curved section of Graham Avenue will be designed with a 320-foot radii.



**Graham Avenue Roadway  
Improvements  
Environmental Impact Report**

Myra L. Frank & Associates

Figure 2.I-5

Proposed Project Concept

Source: County of Los Angeles, 1989.

The park-and-ride lot would contain 104 parking stalls and 9 "Kiss and Ride" spaces for pick-up and drop-off, for a total of 113 spaces. Access to the lot would be from Graham Avenue via two driveways, one about 210 feet from Florence Avenue, and the second about 550 feet from Florence Avenue. Circulation within the lot would be one-way, with a pick-up/drop-off area located adjacent to the station platform. Buses would not be directed down Graham into the parking lot, but would continue to stop on Florence Avenue as currently planned.

### Comparison of Roadway Geometrics With and Without the Project

The "without project" configuration of Graham Avenue is assumed to be that which will be in place after construction of the light rail line. Without the project, Graham Avenue will be immediately to the east of the LB/LA light rail tracks. The width of Graham Avenue at Florence will be approximately 22 feet curb to curb, with 20-foot curb return radii. South of the intersection, Graham Avenue will be 26.5 feet curb to curb. Graham Avenue will be a two-lane road with one lane in each direction. Left turns into and out of Graham Avenue will be prohibited because of the proximity to the rail crossing of Florence Avenue.

The "with project" configuration of Graham Avenue, as proposed by Los Angeles County, would place the intersection of Graham Avenue with Florence Avenue about 120 feet east of the rail tracks. The roadway would be 30 feet wide curb to curb, with 25-foot curb return radii. Graham Avenue would be a two-lane road, with one lane in each direction. Left turns into and out of Graham Avenue could be allowed. With the project, the distance between the Florence/Graham and Florence/Beach intersections would be reduced from the current 235 feet, to approximately 120 feet.

### Project Traffic Generation

The provision of a park-and-ride lot at the station will generate automobile trips to/from the station. The number of additional vehicle trips likely to be generated in the P.M. peak hour was estimated based on systemwide ridership forecasts recently prepared by SCAG for LACTC.

The average rate of projected auto trip arrivals at park-and-ride lot sites at other stations along the Long Beach - Los Angeles Light Rail Line applied to the proposed Florence/Graham park-and-ride lot indicates that an estimated 115 cars will use the lot.

It seems unlikely that the Florence/Graham park-and-ride lot would generate more cars than its capacity, as the Florence Station is relatively close to downtown Los Angeles, as well as to the Imperial Station where a one thousand-space park-and-ride lot is being constructed. Both these factors will tend to limit park-and-ride usage at stations between these two locations.

Virtually all users of the park-and-ride lot are expected to be commuters, i.e., they will arrive in the morning and depart in the evening. However, due to differing work schedules and travel times to/from work, not everyone will arrive or depart during the actual peak hours.

A conservative assumption was taken that at most, two-thirds of the cars would exit the lot during the P.M. peak hour, thus generating 77 vehicle trips. It was further assumed there would be a negligible number of inbound trips to the park-and-ride lot during the evening peak hours.

Based on systemwide projections of SCAG, and LACTC, there would be an additional 24 "kiss and ride" vehicle trips generated during the P.M. peak hour. As these are pick-up/drop-off trips, there would be 24 inbound and 24 outbound trips.

The proposed park-and-ride lot is thus estimated to generate an additional 125 vehicle trips during the P.M. peak hour, of which 101 would be outbound and 24 would be inbound. Note that the County also proposes relocation of a church, one duplex, seven multi- and seven single-family units from Graham Avenue, and six small businesses from Florence, in order to implement the project. Correspondingly, existing trips from these land uses would no longer travel on the street system. However, as the volume of trips that would be eliminated would be almost negligible, the future traffic volumes were not reduced in the traffic impact evaluation, which thus may conservatively be considered a "worst case" evaluation.

#### Project Traffic Distribution

The distribution of project-generated traffic will be dependent on numerous factors, including the geographic origin of people who use the rail system, configuration of the surrounding street system and access routes to the station. These factors were all taken into account to determine the estimated trip distribution for this project, shown in Figure 2.1-6.

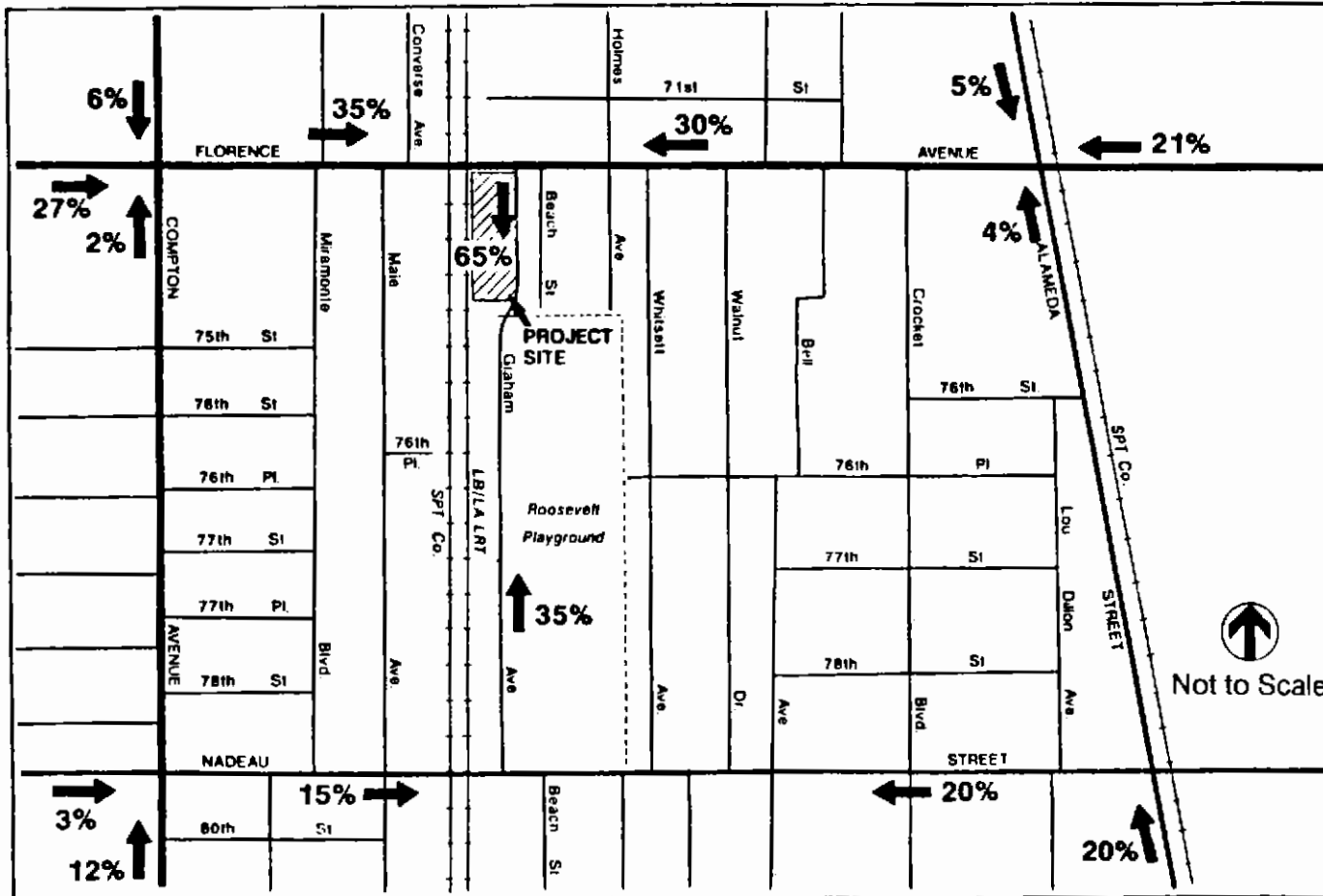
The LB/LA rail line runs north-south, with the next northerly station at Slauson Avenue and the next southerly station at Firestone Boulevard. The principal access directions to the Florence/Graham station will thus tend to be from the east and west. Access would also be expected to focus on Florence Avenue as the major arterial roadway in the area. As shown in Figure 2.1-6, it is estimated that about two-thirds of the trips will approach the station via Florence Avenue, split roughly equally from the east and the west. Approximately 35 percent of project trips will approach the station from the south, via Nadeau Street and Graham Avenue.

Figure 2.1-7 shows project traffic assignments for the P.M. peak hour. During the evening peak hour the project will add approximately 37 trips to Florence Avenue east of Graham Avenue, 43 trips to Florence Avenue west of Graham Avenue, and about 43 trips on Graham Avenue south of the park-and-ride lot.

#### Traffic Analysis for Future Conditions with Project Traffic

Forecast traffic volumes along Florence with the project are shown in Figure 2.1-8. Table 2.1-4 shows intersection Level Of Service for the P.M. peak hour for future conditions with the project.



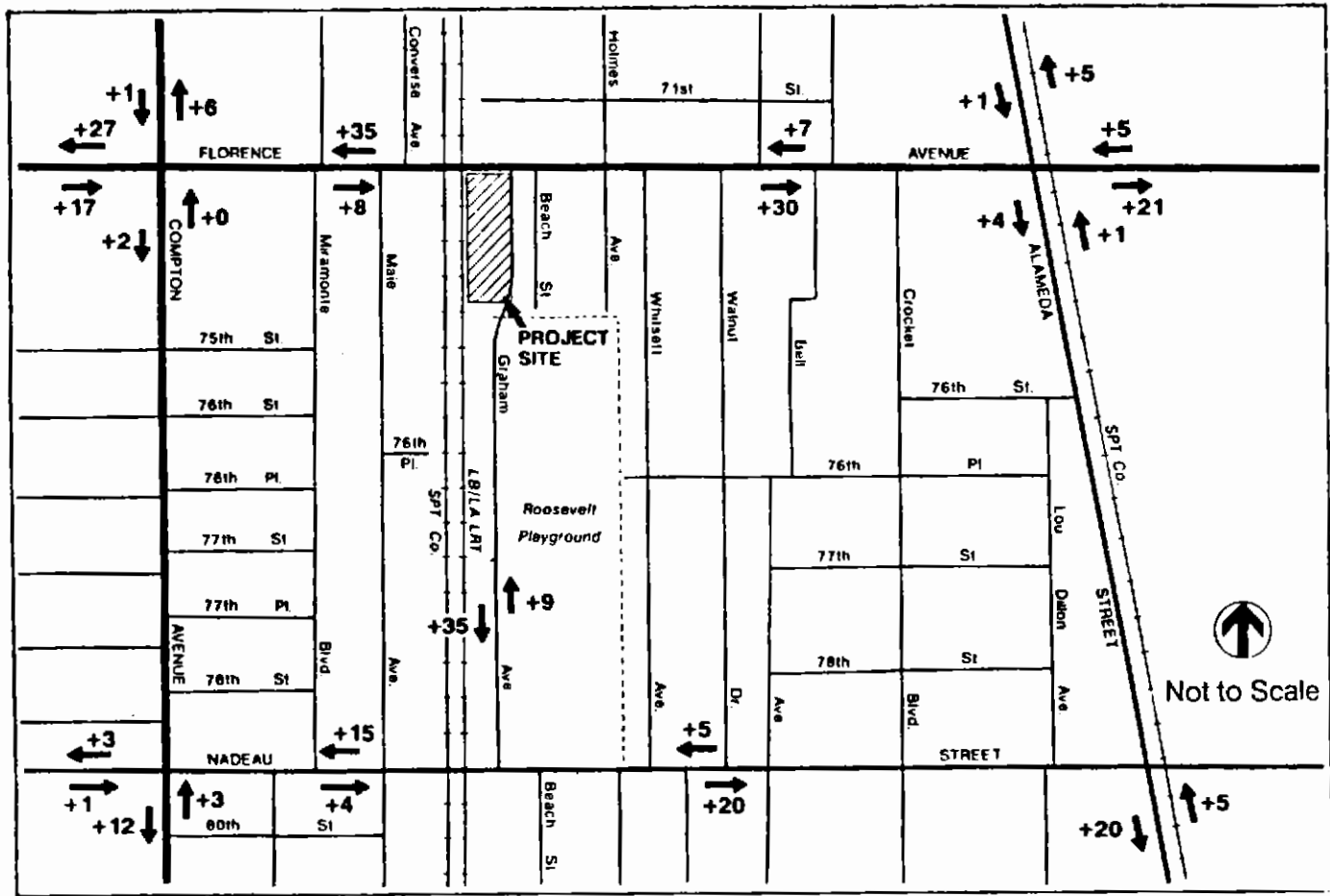


**Graham Avenue Roadway  
Improvements  
Environmental Impact Report**

Myra L. Frank & Associates

Figure 2.1-6

**Trip Distribution of  
Project Related Traffic**  
Source: Korve Engineering, Inc. 1989.



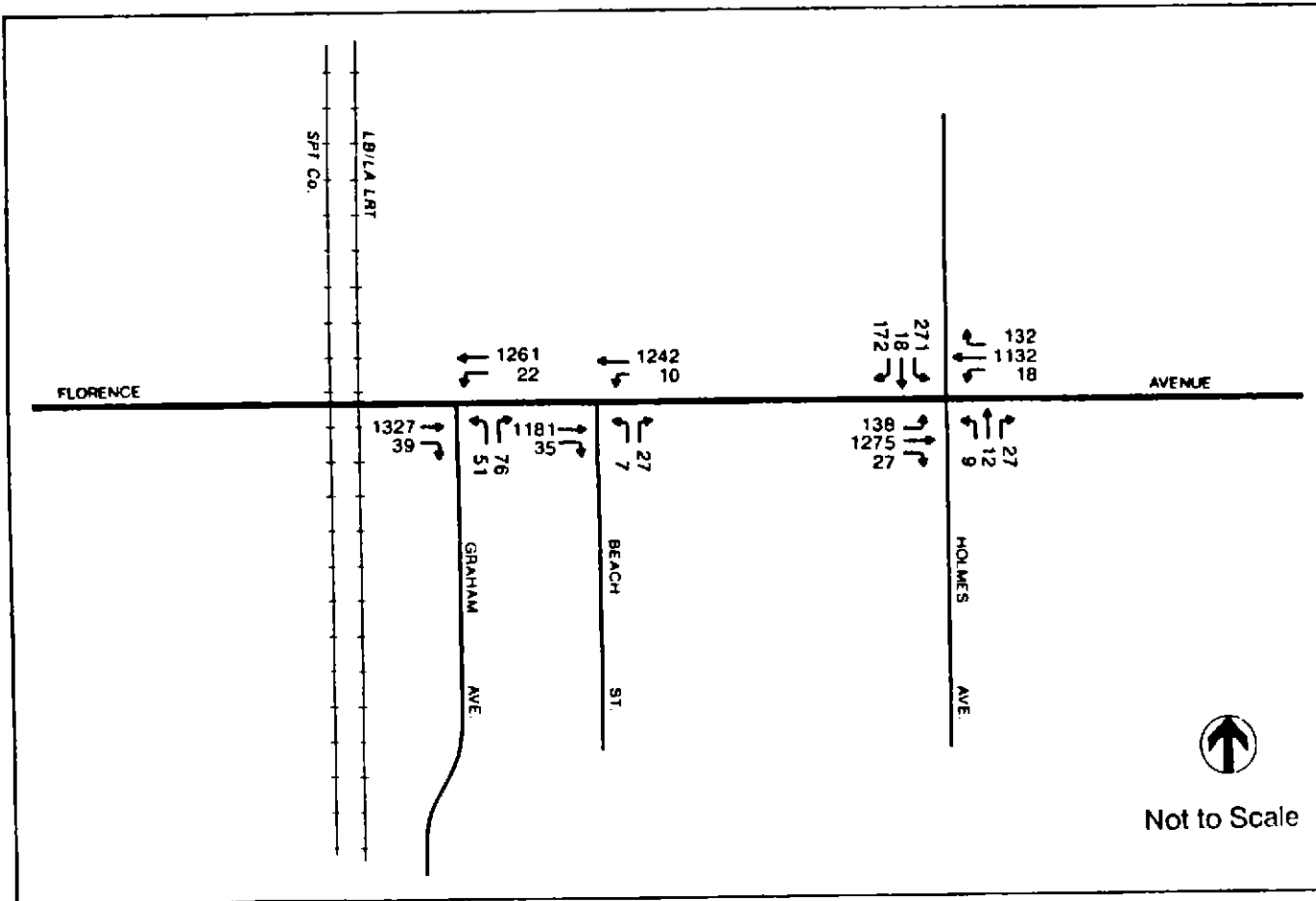
# Graham Avenue Roadway Improvements Environmental Impact Report

Myra L. Frank & Associates

Figure 2.1-7

Additional PM Peak Hour Trips To/From Project

Source: Korve Engineering, Inc. 1989.



# Graham Avenue Roadway Improvements Environmental Impact Report

Myra L. Frank & Associates

Figure 2.1-8

PM Peak Hour Traffic Volumes for Year 2000 With Project

Source: Korve Engineering, Inc. 1989.



**TABLE 2.I-4  
FUTURE WITH PROJECT INTERSECTION LEVELS OF SERVICE - P.M. PEAK HOUR**

	<u>Existing Condition</u>		<u>Future Without Project</u>		<u>Future With Project</u>	
	<u>V/C Ratio or Reserve Capacity<sup>1</sup></u>	<u>Level Of Service</u>	<u>V/C Ratio or Reserve Capacity<sup>1</sup></u>	<u>Level Of Service</u>	<u>V/C Ratio or Reserve Capacity<sup>1</sup></u>	<u>Level Of Service</u>
1. Florence & Graham	+60	E	N/A	N/A	-55	F
2. Florence & Beach	+129	D	+101	D	+96	E
3. Florence & Holmes	0.65	B	0.72	C	0.73	C

<sup>1</sup> Available Reserved Capacity for most constrained movement (minor street approach controlled by stop sign).

Source: Korve Engineering, Inc., July 1989.

No increase in LOS would occur at the intersection of Florence and Holmes Avenue with the proposed project. The small amount of project traffic added to Florence Avenue would reduce the reserve capacity of the Beach Street approach to the Florence/Beach intersection by a small amount, but just sufficiently for the Level of Service to decline from LOS D to LOS E. However, this difference in delay would hardly be perceptible to most motorists waiting to turn into Florence Avenue.

By relocating the Florence/Graham intersection away from the railroad tracks, the geometry of the Graham Avenue leg would be improved, and left turns could be allowed into and out of Graham Avenue.

However, as Table 2.I-4 indicates, the Graham Avenue approach would operate just above the LOS E threshold, at LOS F, during the P.M. peak hours. With the high traffic volumes on Florence Avenue, there will be insufficient gaps to accommodate all traffic wishing to turn out of Graham Avenue. Extreme delays would be encountered by vehicles turning out of Graham Avenue, particularly for left turns.

**Bus and Pedestrian Access**

The proposed project would improve bus access to the station, by consolidating bus stops on the east side of the tracks. Patrons would not have to cross the train tracks to reach buses in either direction (see Figure 2.I-5), which they will have to do for eastbound buses

without the project. Bus stops for westbound buses will remain in the same location with or without the project.

The proposed project will maintain a crosswalk for Florence Avenue. It would be to the west side of Graham Avenue in order to serve the bus stops.

### **3. Mitigation**

The only project impact requiring mitigation would be the Graham Avenue approach to the Florence/Graham intersection. With the proposed project, the number of vehicles exiting Graham Avenue during the P.M. peak hour would slightly exceed the capacity of an unsignalized approach to the intersection. Long delays would result to such traffic. This situation may lead to more users of the park-and-ride lot using Graham Avenue to the south, rather than Florence Avenue as an approach route to the station area. While Nadeau Street is not a major east-west street, it does provide good connections to Alameda Avenue and Compton Avenue, as alternate access routes to Florence Avenue.

The project proposes a 30-foot Graham Avenue curb-to-curb width which would only allow a single approach lane to the intersection. If the street were wider by about 2 to 4 feet, two approach lanes could be provided (one for left turns and one for right turns). With this configuration, the right turn from Graham would operate at LOS D. While the left turn would operate at the threshold of LOS E/F, it would be an improvement over the single lane approach as left-turning traffic would not block right-turning vehicles, which could proceed unimpeded.

This design, along with the possible tendency of some parking lot users to use Graham Avenue south to avoid the intersection, should result in the Florence/Graham intersection operating with levels of delay on the Graham approach not much worse than today's levels.

If delays still turn out to be significant, two further mitigations could be considered.

- o **Signal at Florence/Graham Intersection**

This intersection could be signalized, to facilitate left turns to/from Graham Avenue. However, this is not recommended, due to the proximity to the railroad/LRT crossing (120 feet to the west), and to the signal at Florence/Holmes (400 feet to the east).

A signal at this location would require close coordination with both the railroad crossings and the signal at Holmes. However, it would lead to potential problems of eastbound traffic backing up across the train tracks. It would also shorten the storage capacity for westbound traffic at the track crossing. For these reasons a signal is not recommended.

- o Provide Connection From Graham Avenue to Holmes Avenue

An alternative mitigation would be to use the area of the existing storage/maintenance area at the extreme northern end of the Roosevelt Playground to provide a connection from Graham Avenue to the parking lot at the south end of Beach Street and Holmes Avenue. This would provide a link from Graham Avenue, via the small parking area, to Holmes Avenue. Traffic could then reach Florence Avenue via the signalized intersection with Holmes Avenue.

By providing an alternate access and egress route, this would reduce the number of turning vehicles at Florence/Graham, and improve the Level Of Service.





## **J. Community Services**

The community services and facilities identified in this section include law enforcement, fire protection, parks and recreation, schools, and libraries.

### **1. Environmental Setting**

The Firestone Station of the Los Angeles County Sheriff's Department provides police protection services to the unincorporated area of Florence-Firestone, which includes the project site. Los Angeles County Fire Station #9, located at 7116 S. Makee Avenue, is less than one-quarter of a mile from the project site.

Adjacent to Graham Avenue is F.D. Roosevelt Playground, bounded to the east by Whitsett Avenue and to the south by Nadeau Street. Entrances to the park are located on Graham Avenue and Nadeau Street. Roosevelt Park, spanning over 24.6 acres, is one of the most heavily-used parks in the County of Los Angeles and provides the public with many recreational facilities, including a softball field, a baseball field, two tennis courts, an indoor swimming pool, a gymnasium and a picnic area. The park typically serves at least 850 children per day and is even more heavily used on the weekend. People who frequent Roosevelt Park use parking facilities near the swimming pool and near the picnic area. In addition, they also park on both sides of Graham Avenue and then walk to Roosevelt Park. Other parks in the area include Mary McCloud Bethune Park to the northwest of the intersection and Westside and Middleton Parks to the northeast.

Within a half-mile radius from the project site, there are four elementary schools, one of which is a parochial school. The other three public elementary schools are located at 7211 Bell Avenue, 1338 E. 76th Place, and 1400 E. 68th Street. In addition, Edison Junior High School is also located less than a mile away from the Florence/Graham intersection at 6500 Hooper Avenue. Florence Library is situated at the intersection of Florence Avenue and Miramonte Boulevard, two blocks away from the Florence/Graham intersection.

### **2. Impacts**

No significant impacts to police and fire protection, schools or libraries in the vicinity of the project site are expected.

Since Graham Avenue borders the F.D. Roosevelt Playground on the west side and serves as one of the primary automobile access routes to the park, access to the park may be diminished during the construction of the proposed project due to temporary detours or lane closures. However, once construction is finished, the improvement to the Florence/Graham intersection is expected to have beneficial impacts on automobile access to Roosevelt Park.

### **3. Mitigation**

During construction, at least one lane of Graham Avenue should remain open to provide emergency vehicle access to the area and to maintain public access to the park from Florence Avenue. If temporary closures of Graham Avenue are required, detour directions should indicate Whitsett Avenue and Nadeau Street as entrances to the park.

## **K. Energy**

### **1. Environmental Setting**

The proposed Florence/Graham Avenue improvements are located in an area that contains a mixture of residential and commercial establishments. Electrical service to the residents and businesses in the area is supplied by the Southern California Edison Company and natural gas is supplied by the Southern California Gas Company. Adequate supplies currently exist to serve the area into the foreseeable future.

At the present time, approximately 98,520 vehicle miles of travel per day occur on Florence and Graham Avenues combined. For purposes of this section, approximately five percent of that total is assumed to be trucks, which means that currently daily vehicle travel would be approximately 93,500 miles by automobiles and 5,000 miles by trucks. Using an estimated fuel consumption rate of 13.9 miles per gallon for autos and 5.2 miles per gallon for trucks (SCAG, "Energy Analysis for Long Beach - Los Angeles Rail Transit Project," 1984), current fuel consumption for vehicles traveling in the project vicinity is estimated to be 6,727 gallons per day for autos and 338 gallons per day for trucks, or a total of 7,689 gallons per day combined.

### **2. Impacts**

Energy would be consumed in relatively small quantities during construction of the proposed project. Construction equipment and vehicles and construction worker vehicles traveling to and from the construction site would consume energy from source such as natural gas, electricity and fossil fuels. Quantity estimates have not been prepared for the energy consumption directly associated with the construction of this proposed project. Past analysis of other similar projects has shown that the amount of energy consumed would be quite small and would not tax existing resources.

The proposed project would result in the removal of approximately 16 residential units, 6 retail businesses and one church. As a result there would be a very small reduction in local consumption of natural gas and electricity.

In the year 2000 without the project, it is estimated that approximately 106,960 daily vehicle miles of travel would be associated with vehicles operating on Florence and Graham Avenues combined, in the immediate vicinity of the intersection. Assuming five percent of this total would be accounted for by trucks, then 5,400 VMT of truck travel would occur. Assuming that truck fuel economy remains approximately the same as at present (5.2 miles per gallon) and that year 2000 automobile fuel economy improves to an estimated 24 miles

per gallon (SCAG, "Energy Analysis for Long Beach - Los Angeles Rail Transit Project" 1984), then 4,232 gallons per day of fuel consumption can be expected for automobiles traveling in the vicinity of the project and 1,038 gallons per day associated with truck travel in the area, or a total of 5,270 gallons per day. With the project in place, the respective vehicular travel and associated fuel consumption would be 109,000 VMT and 4,542 daily gallons by automobiles, 5,800 VMT and 1,115 gallons by trucks, for a total of 5,657 gallons of fuel consumed per day. As noted in the Air Quality section of this chapter, the provision of park-and-ride facilities would attract some small increase in transit patronage that would otherwise not occur. The amount of this increase has not been estimated; however, it would likely be of a sufficient amount to offset the increased fuel consumption resulting from increased local traffic.

### **3. Mitigation**

Because the park-and-ride provisions of the proposed project would enhance the opportunity to use the light rail system, the project itself is regarded as a mitigation measure in the context of energy consumption. No further mitigation measures are proposed, other than station-related measures such as energy-efficient area lighting in the parking areas.



## **L. Visual Quality and Aesthetics**

### **1. Environmental Setting**

The Florence/Graham area is generally characterized by low-rise commercial and industrial development along Florence Boulevard, and mainly one-story residential buildings along the side streets. The SPTC right-of-way, located immediately west of the project site, containing freight and light rail tracks and the Florence Light Rail Station, is a dominant visual element that creates a visual corridor separating the large one- and two- story warehouse and industrial buildings on the west from the residential area and F.D. Roosevelt Park to the east. Roosevelt Park encompasses about 27 acres of landscaped picnic areas, ballparks, and structures containing recreational facilities. The predominant residential architectural style in the area is the small, single-story California Bungalow.

The proposed project site itself is flat, and is improved with residential structures, several one-story commercial buildings and a church. Graham Avenue borders this residential area on the west. Currently, Graham Avenue is 26.5 feet wide between curbs, with one traffic lane in each direction. This portion of Graham Avenue currently receives light local traffic. Roosevelt Park borders the project site on the south.

### **2. Impacts**

Implementation of the proposed project will require acquiring all the properties on the east side of Graham Avenue, and moving the street at least 120 feet away from the Long Beach/Los Angeles Rail Track, placing it along the rear property line of the residences fronting on Beach Street. A park-and-ride lot with parking for 113 vehicles would be constructed in the area created between the tracks and the new alignment of Graham Avenue. As a result, the project would change the views and reduce the visual privacy of the residences immediately located on the west side of Beach Street, immediately east of the project site. In addition, the view from adjacent Roosevelt Park may be affected. The loss of several mature trees will result in a loss of visual amenities important to the character, as well as the comfort, of residential neighborhoods. Litter could be a negative impact if the park-and-ride lot is not well maintained. Light from the headlights of cars using the proposed park-and-ride lot could visually intrude into the residential area immediately east of the project site along Beach Street.

### **3. Mitigation**

The park-and-ride lot will include landscaping which will partially mitigate the visual impacts of the project. The landscaping for the park-and-ride lot will conform with the Design and Performance Criteria for the Long Beach - Los Angeles Rail Transit Project. According to the criteria, trees shall be planted in parking areas in order to reduce the visual monotony of the paved areas and to provide a comfortable transition between car and station. The criteria also specify either low evergreen shrub mass, masonry wall or combination of the two, generally less than three feet in height, along the street perimeter. A barrier wall or soundwall should also be provided immediately east of Graham Avenue to separate the residential area from the project site and restore visual privacy. A vine covering on all



barrier walls could protect them from graffiti. Although the visual impact from the project on the park is minimal, the existing landscape along the northeast border should be strengthened. A maintenance plan should include a program of regular and frequent maintenance of the project area. These measures, taken together, would actually enhance the visual character of the neighborhood by shielding the residential area fronting on Beach Street from the railroad right-of-way and industrial uses immediately to the west of the freight rail tracks.

**M. Cultural Resources**

**1. Environmental Setting**

An architectural/ historical survey was conducted in June 1989 to determine if any cultural resources existed which might be eligible for listing on the National Register of Historic Places. An Area of Potential Effect (APE) was established as the block bounded by Graham Avenue, Florence Avenue, Beach Street, and Franklin D. Roosevelt Park, and by a one parcel-width band extending along the north side of Florence Avenue between the Southern Pacific Railroad and Lot 15 of Block R of the Florencita Park Tract.

A field survey was performed for the entire Area of Potential Effect. All structures within the APE were visually examined and researched. National Register, State, and local lists of historic resources were inventoried, and no historic structures were found to exist within the study area.

The results of the survey indicate no structures presently recorded on any list of cultural resources, or any which appear to be potentially eligible for listing on the National, State, or local landmark rolls.

Only five structures were considered to be "Worthy of Note" for their architectural or historical significance. This level of significance does not legally require an impacts analysis, but the structures are listed below for reference only:

<u>Address</u>	<u>Historic Name</u>	<u>Year Built</u>
7400 Graham Avenue	Claude P. Jenkins Residence	1906
7303-7305 Beach Street	Eugene Landy Residence	1910
7319-21 Beach Street	Ross Bartlett Rental Property	1923
7401-7403 Beach Street	Ross Bartlett Rental Property	1923
1701 E. Florence Avenue	James P. Faucette Store	1931

## **2. Impacts**

No significant cultural resources were found within the Area of Potential Effect, and therefore no effect will result from implementation of this project.

## **3. Mitigation**

Since no significant cultural resources will be affected by this project, no mitigation measures are necessary.



## **CHAPTER 3 - IMPACT OVERVIEW**

### **A. Cumulative Effects**

CEQA defines "cumulative impacts" as "two or more individual effects which, when considered together, are considerable or which compound other environmental impacts... The cumulative impact from several projects is the change in the environment which results from the incremental impact of the project when added to other closely related past, present, and reasonably foreseeable projects. Cumulative impacts can result from individually minor but collectively significant projects taking place over a period of time (CEQA, Section 15355)." The analysis conducted for this EIR did not identify any specific projects in the vicinity which in combination with the proposed project could conceivably result in significant cumulative impacts. Although no specific projects were identified, the traffic impact analysis (see Section I of Chapter 2 for a detailed discussion) accounted for the cumulative impacts due to related projects and future growth in the area by assuming that traffic on surface streets in the vicinity would increase by an annual rate of one percent. The traffic analysis also considered the future traffic generated on the local street system by operation of the Long Beach - Los Angeles Rail Transit System. The results of the traffic analysis indicate that the only project impact requiring mitigation would be the Graham Avenue approach to the Florence/Graham intersection. With the proposed project, the number of vehicles exiting Graham Avenue during the P.M. peak hour would slightly exceed the capacity of an unsignalized approach to the intersection. Long delays would result to such traffic. This situation may lead to more users of the park-and-ride lot using Graham Avenue to the south, rather than Florence Avenue as an approach route to the station area.

### **B. Unavoidable Adverse Impacts**

The following impacts are considered to be unavoidable adverse impacts of the project after mitigation measures are implemented:

#### **1. Housing and Businesses**

The project would require the acquisition for right-of-way of 16 residential units and six businesses. As a result, an estimated 63 persons occupying the 16 units would have to be relocated. Relocation assistance and payments would be provided to tenants. However, residential relocation impacts could include: disruption of social patterns; possible decreased accessibility to employment; loss of time and energy involved in the relocation process itself; and potential increases in housing costs. In addition, although it is recommended that residences be offered for sale to the public for relocation to vacant parcels, the possible loss of 16 housing units in a low-income area where there is a high demand for affordable housing is considered to be unavoidable and adverse. Relocation payments and assistance will be provided to displaced businesses. However, relocation impacts on marginal businesses could result in financial hardship or liquidation.



### **C. Impacts Found Not to be Significant**

After implementation of mitigation measures identified in this document, the following impacts due to the project are found not to be significant:

Geology and Soils - Potential soil erosion and runoff would be mitigated through use of required construction and grading techniques. The risk of injury from an earthquake during demolition/construction phase should be mitigated by proper construction and earthquake safety procedures. Any contaminated soil encountered during construction will be analyzed and disposed of according to approved procedures.

Air Quality - Fugitive dust from construction would be reduced by watering the site. The pollutant emissions generated by vehicles using Graham Avenue and the park-and-ride facility are not expected to be significant.

Biology - The proposed project will not affect any endangered species or sensitive habitats. The loss of vegetation can be mitigated by relocating mature trees that can be successfully transplanted. The project will also include landscaping to mitigate the loss of existing vegetation.

Noise and Vibration - The noise impacts on residences along Beach Street due to future traffic on a realigned Graham Avenue can be mitigated by the construction of a soundwall at the property line east of realigned Graham Avenue, or partially mitigated by soundproofing affected residences or by purchasing noise easements.

Light and Glare - The project generated light and glare is not expected to have a significant impact on adjacent sensitive receptors. Fixtures which control the amount of light transmitted off-site will be installed. Vegetation and barrier walls would also reduce the impacts of project lighting and vehicle headlights on nearby residences.

Community Services - The project will not adversely affect police or fire services. Access to Roosevelt Park may be temporarily diminished during the construction of the project. However, completion of the project is expected to improve access to the park.

Energy - The increases in demand for electricity and natural gas resulting from the construction and operation of the project can be minimized through energy conservation. Given the availability of energy supply and infrastructure, these energy demands do not result in adverse impacts.

Visual Quality and Aesthetics - Extensive landscaping and barrier walls would mitigate the visual impacts of the project.

Cultural Resources - The project would not have any significant impacts on any historic cultural resources.

#### **D. Growth-Inducing Impacts**

The proposed realignment of Graham Avenue and construction of a park-and-ride facility serving Florence Station is not expected to result in any significant growth-inducing impacts. The park-and-ride facility is not expected to attract additional development to the area or result in a change in land uses near the project site.

## **CHAPTER 4 - ALTERNATIVES TO THE PROPOSED PROJECT**

### **A. Introduction**

The CEQA guidelines require a discussion of possible alternatives to the project proposed in an EIR. In addition to the required "No Project" alternative, three other alternatives were considered; one was proposed by the LACTC and two were developed by the County Department of Public Works. The alternatives discussed in this EIR were chosen because they provide a range of reasonable alternatives to the proposed project which could feasibly attain the basic objectives of the project.

### **B. Alternative A - No Project**

The No Project alternative would maintain the project site as it presently exists. Graham Avenue, which was recently reconstructed as part of the Long Beach - Los Angeles Rail Transit Project as a 26.5-foot roadway between curbs with a six-foot parkway on the east side, would remain in its present configuration. The residences, church and businesses fronting on the east side of Graham Avenue and south of Florence Avenue would remain. Under this alternative, no construction-related short-term impacts would occur, including noise, traffic or air quality impacts. No additional right-of-way would have to be acquired. As a result, residential and business tenants on Graham and Florence Avenues would not have to be relocated. Noise levels at those residences fronting on Graham Avenue would increase as a result of LRT operations. The increase in noise levels, at the residences fronting on Beach Street, due to future LRT operations and increased traffic would be less than under the proposed project.

The California Environmental Quality Act (CEQA) calls for a discussion of the "environmentally superior alternative" in consideration of avoiding adverse significant impacts of the proposed project. The environmentally superior alternative in these terms would be the No Project alternative, because of the lack of significant effects. However, the No Project alternative would result in a very small radius curb return on the southwest corner of Florence Avenue. The small radius return would make it difficult for vehicles, especially buses, to turn south on Graham from Florence Avenue and would not provide any pedestrian refuge area on this corner.

### **C. Alternative B - LACTC Planned Improvements**

Alternative B consists of the improvements planned by the LACTC. These improvements consist of creating a pedestrian refuge area at the southwest corner of Florence and Graham Avenues by narrowing Graham Avenue at Florence to 22 feet, with a 20-foot curb return radius. South of the intersection, Graham Avenue will be 26.5 feet curb to curb. This alternative would not require any additional right-of-way on the east side of Graham Avenue and would therefore not result in any significant effects. Alternative B would be the environmentally superior build alternative. However, this alternative does not provide room for a possible park-and-ride facility or improve circulation by allowing left turns into and out of Graham Avenue. Left turns into and out of Graham Avenue would be prohibited because of the proximity to the rail crossing on Florence Avenue. The curb return radius at the

southwest corner of Florence and Graham Avenues may make it difficult for vehicles to turn south on Graham from Florence Avenue.

**D. Alternative C - 30-foot Roadway**

Under Alternative C, about eight feet of right-of-way on the east side of Graham Avenue to provide a 30-foot street between curbs with 7-foot and 3-foot parkways on the east side and west side, respectively. Right-of-way acquisition would require relocation of one retail business, the occupants of one residence, and the removal of a dilapidated shed. Although the right-of-way impacts of this proposal would be significantly less than the proposed project, this alternative would still require a relatively small radius curb return on the southwest corner of Florence and Graham, making it difficult for vehicles to turn south on Graham from Florence Avenue. It would also not provide a pedestrian refuge area on this corner. This alternative may also increase noise levels slightly at residences fronting on Beach Street in comparison to the No Project alternative.

**E. Alternative D - Realigned 30-foot Roadway with 35-foot wide Park-and-Ride Lot**

Alternative D would require the acquisition of 42 feet of right of way on the east side of Graham Avenue to provide a realigned street with 30 feet between curbs (to match the alignment and width of Graham Avenue adjacent to the park). The resulting 35-foot strip between Graham Avenue and the Florence LRT Station could be used as a park-and-ride lot.

This alternative would provide a standard curb return radius and pedestrian refuge area on the southwest corner of Florence and Graham and would possibly move Graham far enough from the tracks so that left turns in and out of Graham at Florence Avenue could be allowed. This would improve access to and from the park and adjacent community.

The right-of-way acquisition would require relocation of 3 retail businesses, a church, and the occupants of 1 duplex and 7 houses.

This alternative would also increase noise levels at adjacent residences, though the increase may not be as large as under the proposed project.

The traffic impacts under this alternative would be similar to those under the proposed project. However, this alternative would not provide as much space for the park-and-ride facility as the proposed project would.

## **CHAPTER 5 - PERSONS AND ORGANIZATIONS CONSULTED**

The following persons and/or organizations were consulted during the preparation of the document.

California Department of Fish and Game

- Elaine Hambey: Natural Diversity Data Base (NDDDB)

Los Angeles County Department of Parks and Recreation

- Robert Malone, Jr.: Director of Roosevelt Park

Los Angeles County Department of Public Works

- Albert Anidi: Planning Division
- Dave Mings: Road Maintenance Division

Los Angeles County Internal Services Department

- Clare Braufman: Principal Real Property Agent

Los Angeles County Regional Planning Department





## CHAPTER 6 - BIBLIOGRAPHY

- California Department of Conservation, Division of Mines and Geology. Fault Rupture Hazard Zones in California, Special Publication 42. 1985.
- California Department of Conservation, Division of Mines and Geology. Planning Scenario for a Major Earthquake along the Newport-Inglewood Fault Zone, Special Publication 99. 1988.
- California Department of Parks and Recreation. California Historical Landmarks. 1979, revised 1982.
- California Office of Planning and Research, Office of Permit Assistance. Hazardous Waste and Substances Site List. August 1988.
- Environmental Protection Agency. National Priorities List. July 1987.
- Gebhard and Winter. Architecture in Los Angeles: A Complete Guide. Gibbs M. Smith and Peregrine Smith Books, Salt Lake City. 1985.
- Greenfelder, R. W. Map Sheet 23, California Department of Conservation, Division of Mines and Geology. 1976.
- Harris Miller Miller & Hanson, Inc. Memoranda, Long Beach - Los Angeles Rail Transit Project. November, 1985 and October, 1986.
- LeRoy Crandall and Associates. Geotechnical Investigation - LACTC-SPTC Mid Corridor. August, 1985.
- Los Angeles County Department of Regional Planning. Zoning Ordinance Summary. April, 1985.
- Los Angeles County. Relocation Assistance and Real Property Acquisition Rules and Regulations for the County of Los Angeles. 1977.
- The National Register of Historic Places, 1974, and Federal Register Annual Supplemental Listings of Historic Properties, 1979-1984.
- Parson Brinckerhoff / Kaiser Engineers. The Long Beach - Los Angeles Rail Transit Project Draft EIR. May, 1984.
- Richter, C. F., Elementary Seismology, W. H. Freeman and Company, San Francisco. 1958.
- Sedway Cooke Associates. Technical Report to the Long Beach - Los Angeles Transit Project EIR/EIS, Land Use Development Impacts. March, 1984.

South Coast Air Quality Management District. Air Quality Handbook for Preparing Environmental Impact Reports. 1987.

Webber, F. H., "Whittier Narrows Earthquake, Los Angeles County" in California Geology. California Department of Conservation, Division of Mines and Geology, Sacramento, California. December, 1987.

Ziony, J. I., editor, Evaluating Earthquake Hazards in the Los Angeles Region - An Earth-Science Perspective U. S. Geologic Survey Professional Paper 1360, United States Government Printing Office, Washington D. C. 1985.

**APPENDIX A**  
**INITIAL STUDY**



Project Title Los Angeles/Long Beach Light Rail System Florence/Graham Station

I. Location and Description of Project

A. Location (attach map)

City of community Los Angeles County unincorporated area between the City of Los Angeles and the City of Huntington Park.

Specific street or watercourse Florence Avenue and Graham Avenue.

B. Description of Work The proposed station improvement project consists of acquiring approximately 1.7 acres of land on the east side of Graham Avenue from Florence Avenue to 620 feet southerly. Realigning Graham adjacent to the back of existing lots which front on Beach Avenue. The right of way acquisition would require relocation of seven business, a church, and the occupants of four duplexes and 11 houses. The proposed project would also move Graham Avenue far enough from the tracks to allow left turns in and out of Graham Avenue at Florence Avenue thereby improving access for the park and adjacent community.

C. Purpose: To provide safe and efficient traffic circulation and provide ample room for a park-and-ride facility for Florence/Graham Station.

D. Phasing and Relationship to Other Projects

Describe the relationship to a larger project or series of projects and the time scheduled for completion. The proposed Florence/Graham Station Improvement is a part of the Long Beach/Los Angeles Rail Transit Project which is being planned as Conventional Light Rail system extending along a transportation corridor from downtown Los Angeles to downtown Long Beach.

I. Compatibility With General Plan (s)

Prepare a statement regarding the project's conformity with the general plan, or an element thereof, of the community in which the project is located: The project conforms with the County of Los Angeles General Plan which was adopted by the Board of Supervisors on November 25, 1980, "to emphasize development of an improved public transportation system that will support urban revitalization and to encourage the development and improvement of community level transit system."

II. Environmental Setting (cite source of information)

Briefly describe the project site as it exists before the project including information on topography and slope characteristics, soil stability, plants and animals, crops, and any cultural, historical, or scenic aspects. Describe any existing structure on the site and the use of the structures. The proposed project consists of acquiring 8 acres of land on the east side of Graham Avenue and will be located within a mixed business and residential developed area. The existing project area (Graham Avenue) is 30 feet wide between curbs on 40 feet of right of way with one traffic lane in each direction and parking on the east side. Within the existing project area there is a church, 3 duplexes and 10 houses on the east side of Graham Avenue and 7 retail business, 1 duplex and 1 house along Florence Avenue. The area is relatively flat and contains minimal vegetation. Currently, construction of the Los Angeles/Long Beach Rail Transit is in progress at the intersection of Graham and Florence Avenues.

Describe the surrounding properties including information on plants and animals and any cultural, historical, or scenic aspects. Indicate types of land use. The surrounding area includes a combination of retail business and residential area. Also the area is developed and relatively flat.

IV. Identification of Environmental Effects

(Explain all "yes" and "maybe" answers on attached sheets)

	YES	MAYBE	NO
1. Earth. Will the proposal result in:			
a. Unstable earth conditions or in changes in geologic structures?	___	___	<u>X</u>
b. Disruptions, displacements, compaction, or overcovering of the soil?	<u>X*</u>	___	___
c. Change in topography or ground surface relief features?	<u>X*</u>	___	___
d. The destruction, covering, or modification of any unique geologic or physical features?	___	___	<u>X</u>
e. Any increase in wind or water erosion of soils, either on or off the site?	___	<u>X*</u>	___
f. Changes in deposition or erosion of beach sands, or changes in siltation, deposition, or erosion which may modify the channel or a river or stream or the bed of the ocean or any bay, inlet, or lake?	___	___	<u>X</u>
g. Exposure of people or property to geologic hazards such as earthquakes, landslides, mudslides, ground failure, or similar hazards?	___	___	<u>X</u>
2. Air. Will the proposal result in:			
a. Substantial air emissions or deterioration of ambient air quality over the long term?	___	___	<u>X</u>
b. The creation of objectionable odors or dust?	<u>X*</u>	___	___
c. Alteration of air movement, moisture or temperature, or any change in climate, either locally or regionally?	___	___	<u>X</u>

\* See attached discussion.







	YES	MAYBE	NO
11. Population. Will the proposal alter the location, distribution, density, or growth rate of the human population of an area?	___	<u>X*</u>	___
12. Housing. Will the proposal affect existing housing, or create a demand for additional housing?	<u>X*</u>	___	___
13. Transportation/Circulation. Will the proposal result in:			
a. Generation of substantial additional vehicular movement?	___	<u>X*</u>	___
b. Effects on existing parking facilities, or demand for new parking?	<u>X*</u>	___	___
c. Substantial impact upon existing transportation systems?	<u>X*</u>	___	___
d. Alterations to present patterns or circulation or movement of people and/or goods?	<u>X*</u>	___	___
e. Alterations to waterborne, rail, or air traffic?	___	<u>X*</u>	___
f. Increase in traffic hazards to motor vehicles, bicyclists, or pedestrians?	___	___	<u>X</u>
14. Public Services. Will the proposal have an effect upon, or result in a need for, new or altered governmental services?	___	___	<u>X</u>
15. Energy. Will the proposal result in:			
a. Use of substantial amounts of fuel or energy?	___	___	<u>X</u>
b. A substantial increase in demand upon existing sources of energy, or require the development of new sources of energy?	___	___	<u>X</u>
16. Utilities. Will the proposal result in a need for new systems, or substantial alterations to utilities such as, but not limited to, gas, water, sewer, storm water drainage, or solid waste disposal?	___	___	<u>X</u>
17. Human Health. Will the proposal result in:			
a. Creation of any health hazard or potential health hazard (excluding mental health)?	___	___	<u>X</u>
b. Exposure of people to potential health hazards?	___	___	<u>X</u>

\* See attached discussion.



YES MAYBE NO

c. Does the project have impacts which are individually limited, but cumulatively considerable? (A project may impact on two or more separate resources where the impact on each resource is relatively small, but where 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\* \_\_\_

SUMMARY:

Factor	No Sig. Effect Possible	Possible Sig. Effect*	Explanation
Earth		X	Will be discussed in the EIR
Air		X	Will be discussed in the EIR
Water		X	Will be discussed in the EIR
Plant Life		X	Will be discussed in the EIR
Animal Life		X	Will be discussed in the EIR
Noise		X	Will be discussed in the EIR
Light and Glare		X	Will be discussed in the EIR
Land Use		X	Will be discussed in the EIR
Natural Resources	X		No effect
Risk of Upset		X	Will be discussed in the EIR
Population		X	Will be discussed in the EIR
Housing		X	Will be discussed in the EIR
Transportation/ Circulation		X	Will be discussed in the EIR
Public Services	X		No effect
Energy	X		No effect
Utilities	X		No effect
Human Health	X		No effect
Aesthetics		X	Will be discussed in the EIR
Recreation	X		No effect
Cultural Res., et al		X	Will be discussed in the EIR
Mandatory Findings of Significance		X	Will be discussed in the EIR

\*See County Guidelines, Section 601, and Appendix C, for examples of significant effects.

V. Initial Study Preparation

A. Conclusion of Initial Study

On the basis of this Initial Study:

1. The proposed project will not have a significant effect of the environment. Therefore, a Negative Declaration will be prepared. \_\_\_\_\_
2. The proposed project may have a significant effect on the environment, and an Environmental Impact Report is required. The potential significant effects have been identified above.  X

B. Preparation

This study was prepared by Albert Anidi of the Planning Division, Los Angeles County Department of Public Works, under the supervision of Don F. Keene. Date 05/17/89.

AA:ad/45-45.7

P-4

DISCUSSION  
OF  
ENVIRONMENTAL EFFECTS

1. Earth

Construction requires disruption, displacement, compaction, uncovering and backfilling of soil. Grading and earthwork will be done at the construction site. Topography will be affected since Graham Avenue will be realigned with a section adjacent to the park.

2. Air

Generally, construction activities cause dust due to the disruption of soil. Project specification will require control of dust by appropriate means such as sweeping or watering.

3. Water

Currently, rainfall runoff flows in Graham Avenue through an existing gutter at the east side of the street. Since the project calls for realignment and widening of Graham Avenue, there will be a change in the amount of flow. The general direction of flow will be unaffected.

4 & 5. Plant & Animal Life

The project area is developed and animal life is not readily noticed. A few landscape trees and grass exist within the project area. No biological impacts are expected. However, if there are any, they will be discussed in the EIR.

6. Noise

Noise and vibration levels are expected to increase due to the construction. This effect will only be temporary since this condition will not continue after construction.

7. Light and Glare

There is a possibility of light and glare coming from the construction equipment during construction period. This would only happen during the period of construction. Also, there is another possibility of light and glare coming from the station and park and ride.



8. Land Use

The existing project area land uses are mostly residential and retail businesses. The proposed project will move Graham Avenue at least 120 feet away from the Long Beach/Los Angeles Rail Track and require relocation of some residences and businesses and change the land use for transportation purposes.

10. Risk of Upset

Project specifications require that emergency access be available at all times during construction. Access can be disrupted during construction at the intersection of Florence into Graham Avenues and along the project alignment.

11. Population

The proposed project will require the acquisition of some properties and relocation of the residents from Graham and Florence Avenues. This will alter the location of the human population within this area.

12. Housing

The proposed project requires the acquisition of a church, 3 duplexes, and 10 houses on the east side of Graham Avenue and 7 retail businesses, 1 duplex and 1 house along Florence Avenue. The County will relocate and compensate the owners for their property at a fair market value.

13. Transportation/Circulation

The proposed project is aligned mostly in Graham Avenue which is a mixed business and residential street with light local traffic. Currently, Graham Avenue is 30 feet wide between curbs, with one traffic lane in each direction and parking on the east side of the street. The proposed project calls for acquisition of all the properties on the east side of Graham Avenue and moving the street at least 120 feet away from the Long Beach/Los Angeles Rail Track. This space will be enough to build a park and ride if the need arises.

Also the proposed project would move Graham Avenue far enough from the track to allow left turns in and out of Graham Avenue at Florence Avenue thereby improving access to the park and adjacent community.

18. Aesthetics

The proposed project could create visual impacts by changing the surrounding view from the existing residential and retail business to local street with possibility of a park-and-ride.

20. Cultural, Archaeological, Historical and Paleontological Resources

There are no known archaeological, or paleontological resources in the project area. However, a historical property survey will be done of affected properties in the project area.

21 . Mandatory Findings of Significance

There are potential significant impacts associated with the proposed project due to the relocation of residences and businesses.

AA:ad/49

P-4



**APPENDIX B**  
**NOTICE OF PREPARATION AND RESPONSES**



March 2, 1989

P-4

Gentlemen:

NOTICE OF PREPARATION OF A SUBSEQUENT ENVIRONMENTAL IMPACT REPORT ON THE  
LOS ANGELES/LONG BEACH METRO RAIL - FLORENCE/GRAHAM STATION  
IMPROVEMENT PROJECT

The Los Angeles County Department of Public Works is the lead agency for the preparation of a Subsequent Environmental Impact Report (SEIR) on the proposed Los Angeles/Long Beach Metro Rail - Florence/Graham Station Improvement Project. This Department needs your comments as to the scope and content of the SEIR. We have enclosed for your review a copy of the Initial Study of Environmental Factors.

We would appreciate your response at the earliest possible date within the 30-day time limit established by the California Environmental Quality Act.

Please direct your written response and any questions to Mr. Albert Anidi at the above address or at (818) 458-4316.

Very truly yours,

T. A. TIDEMANSON  
Director of Public Works

N. C. DATWYLER  
Assistant Deputy Director  
Planning Division

AA:ad/51

Enc.

bc: Planning

## DEPARTMENT OF TRANSPORTATION

DISTRICT 7, 120 SO. SPRING ST.  
LOS ANGELES, CA 90012  
TDD (213) 620-3550  
(213) 620-2376



May 18, 1989

810.5 Trans.

IGR/CEQA  
The County of Los Angeles' NOP  
for Los Angeles/Long Beach  
Metro Rail-Florence/Graham  
Station  
SCH No. 89041216

Mr. Albert Anidi  
County of Los Angeles  
900 S. Fremont Avenue  
Alhambra, CA 91803-1331

Dear Mr. Anidi:

Caltrans has reviewed the above referenced document and has no comments at this time.

Thank you for this opportunity to comment. We look forward to reviewing the draft environmental document. If you have any questions, please call Gary McSweeney at (213) 620-2376.

Sincerely,

A handwritten signature in cursive script, appearing to read "Gary McSweeney".

GARY MCSWEENEY  
Senior Transportation Planner  
IGR/CEQA Coordinator  
Transportation Planning and  
Analysis Branch

213  
6/20/89

CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD—  
LOS ANGELES REGION

107 SOUTH BROADWAY, SUITE 4027  
LOS ANGELES, CALIFORNIA 90012-4596  
(213) 620-4460



May 5, 1989

File : 700.300

210.25.1

Albert Anidi  
County of Los Angeles  
900 South Freemont Avenue  
Alhambra, CA 91803-1331

NOTICE OF PREPARATION OF A DRAFT EIR FOR THE COUNTY OF LOS ANGELES'  
LOS ANGELES/LONG BEACH METRO RAIL PROJECT, SCH# 89041216: COUNTY  
OF LOS ANGELES *Light*

We have reviewed the subject document regarding the proposed project, and have the following comments:

Based on the information provided, we recommend the following:

- We have no further comments at this time.
- The proposed project should address the attached comments.
- Negative Declaration. See attached comments.
- Mitigated Negative Declaration. See attached comments.
- EIR. See attached information on scope and content.

Thank you for this opportunity to review your document. If you have any questions, please contact Arthur Heath at (213) 620-3394.

*Anne Gaffell*  
ANNE GAFFELL  
Environmental Specialist IV

Attachment(s): EIR

cc: Garrett Ashley, State Clearinghouse

210.25.1

1. The Draft EIR must include the following:

- a. Description of the proposed project.
- b. Description of the present environmental setting of the project site.
- c. An estimate of the quantities of wastewaters to be contributed to the sanitary sewer system and the treatment plant that will serve the proposed development. The DEIR must demonstrate that the sanitary sewer system will have adequate capacity to collect, transport, treat and dispose of the additional flow in a satisfactory manner.
- d. An analysis of the cumulative flows generated by all proposed, pending and approved projects within the service area of the designated treatment plant. If expansion of the treatment plant facilities will be required to meet projected wastewater demand, the DEIR must demonstrate that additional capacity will be available prior to new connections for proposed development.
- e. Description of the quantity, quality, and location of discharges other than to the sanitary sewer system. The impacts of these discharges on groundwater and receiving water quality must be discussed.



Los Angeles County  
Transportation  
Commission  
403 West Eighth Street  
Suite 500  
Los Angeles  
California 90014-3096  
(213) 626-0370

April 17, 1989 ✓

Ref.: R01-F23-F208

Mr. Albert Anidi  
County of Los Angeles  
Dept. of Public Works  
P.O. Box 1460  
Alhambra, California 91802-1460

Dear Mr. Anidi:

This is in reply to your April 4, 1989 letter, file P-4, regarding notice of preparation of a subsequent Environmental Impact Report on the Long Beach/Los Angeles light rail, Florence/Graham station improvement project.

On page one suggest the project title be: "Metro Rail-Blue Line Florence Station-Graham Avenue Improvement Project."

On page one Item B, the area of the project on the east side of Graham Avenue is approximately 1.79 acres and extends southerly approximately 600 feet. In the last line suggest ..."improving access to Roosevelt Playground and for adjacent community."

On page 1, Item III, the proposed project consists of acquiring 1.79 acres... Suggest last sentence be changed to read "Currently, construction of the Los Angeles/Long Beach Rail Transit system is in progress across Florence Avenue, at Florence Station and along Graham Avenue."

On page two of section "Discussion of Environmental Effects." under Paragraph 13, suggest changing last line to "park and ride facility as part of the Florence Light Rail Station."

Under Paragraph 18, suggest last line be changed to read "local street, park and ride facility with landscaping and enhanced access from Florence Avenue to Roosevelt Playground."

Mr. Albert Anidi  
April 17, 1989  
Page 2

Our Real Estate staff has reviewed your enumeration of number of businesses and housing units involved and feel that you may have stated more than are actually involved. It is suggested the enumeration set forth in Paragraph B and Paragraph III, on page 1, be carefully checked.

Very truly yours,



EDWARD McSPEDON  
Director of  
Design and Construction

EM:JCM:ccs/im1

cc: Jerry Givens  
John Miller, LACTC  
Jim Wiley, LACTC  
Frank Lynch, TransCal  
Robin McCarthy, LACTC  
Ed Richardson, LACTC  
Manit Churanakoses, LACTC  
RMC/CHRON

JCM#5-letters\  
{anidi}





810.25.1

April 14, 1989

Mr. T. A. Tidemanson  
Director of Public Works  
Los Angeles County  
900 South Fremont Avenue  
Alhambra, California 91803-1331

Attention: Carl L. Blum, Assistant Deputy Director, Planning Division

Subject: Notice of Preparation of a Subsequent Environmental Impact  
Report (SEIR) on the Los Angeles/Long Beach Metro Rail -  
Florence/Grantham Station Improvement Project

Dear Mr. Tidemanson:

Thank you for requesting this department's comments on the scope and  
content of the SEIR which you will prepare for the above project.

Please note that the following errors were discovered in the project  
site description.

1. The area proposed to be acquired does not extend 2,800 feet southerly  
from Florence Avenue but instead extends 620 feet southerly to  
the northerly boundary of Franklin D. Roosevelt Playground. This  
was confirmed by a conversation between one of my staff members,  
Frank Meneses, and Albert Anidi, of your staff.
2. The area to be acquired is, thus, 1.7 acres rather than the 8  
acres described in the Initial Study.

We find that the subject site is located in an area generally designated  
for low to medium density residential on the General Plan Land Use Policy  
Map, however, we agree with your position that the project is consistent  
with other plan policies relative to providing an improved public transportation  
system in order to support urban revitalization.

We agree with your preliminary environmental assessment to acquire and  
develop land for right-of-way purposes and a park and ride facility.

It is our understanding that Franklin D. Roosevelt Playground, located  
adjacent to the project site, will not be affected by the acquisition,  
however, we urge you to keep the County Parks and Recreation Department  
abreast of the matter.

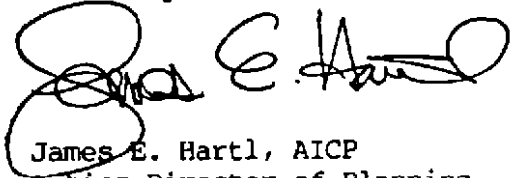
92 4/24

Mr. T. A. Tidemanson  
April 14, 1989

Page 2

Thank you again for the opportunity to comment on this project. If you have any questions, please call Frank Meneses of my staff at (213) 974-6461.

Sincerely,

A handwritten signature in black ink, appearing to read "James E. Hartl". The signature is written in a cursive style with some overlapping loops.

James E. Hartl, AICP  
Acting Director of Planning

JEH:FM:mts

**APPENDIX C**  
**LIST OF PREPARERS**



## **LIST OF PREPARERS**

### Myra L. Frank & Associates

Myra L. Frank, Principal  
Lee J. Lisecki, Project Manager  
Gary Petersen, Planner  
Deborah Redman, Planner  
Barbara Swartz, Planner  
Diep Vuong, Planner  
Richard Starzak, Architectural Historian  
Jack Ottoway, Planner

### Korve Engineering, Inc.

Michael Bates, Vice President  
Mahmoud A. Khodr, Transportation Engineer



**APPENDIX D**  
**TRAFFIC STUDY**





**DRAFT**

---

**TRAFFIC STUDY FOR**

**FLORENCE/GRAHAM STATION AREA**

---

**Submitted to:**

**Myra L. Frank & Associates**

**Submitted by:**

**Korve Engineering, Inc.**

**July, 1989**

---



## TABLE OF CONTENTS

	<u>Page</u>
I. INTRODUCTION . . . . .	1
Project Description	
Study Scope and Approach	
II. EXISTING CONDITIONS . . . . .	3
Streets and Highways	
Traffic Volumes	
Intersection Level Of Service	
Transit	
III. FUTURE CONDITIONS WITHOUT PROPOSED PROJECT . . . . .	11
Year 2000 Traffic Projections	
Future Baseline Configuration of LB/LA Rail Transit Project	
Traffic Conditions	
IV. FUTURE CONDITIONS WITH PROPOSED PROJECT . . . . .	14
Description of the Project	
Comparison of Roadway Geometrics	
Project Traffic Generation	
Project Traffic Distribution	
Traffic Analysis for Future Conditions With Project Traffic	
Bus and Pedestrian Access	
Mitigation Measures	



## **I. INTRODUCTION**

This report documents the results of a traffic study conducted by Korve Engineering, Inc., to evaluate the changes proposed by the County of Los Angeles in the area of the Florence/Graham Station on the Long Beach/Los Angeles Rail Transit Project currently under construction.

### **PROJECT DESCRIPTION**

The project site location, illustrated in Figure 1, is in an unincorporated area of Los Angeles County between the City of Los Angeles and the City of Huntington Park, at the intersection of Florence Avenue and Graham Avenue.

The Long Beach/Los Angeles Rail Transit Project, currently under construction, runs north-south, west of and immediately adjacent to, Graham Avenue. A transit station is currently being constructed just south of Florence Avenue and adjacent to Graham Avenue.

The County of Los Angeles is proposing to re-align a 600-foot section of Graham Avenue south of Florence, to the east by about 120 feet, and to construct a park and ride lot for the transit station between the rail tracks and re-aligned Graham Avenue. Access to the proposed station would be provided from the re-aligned Graham Avenue. The County is proposing these changes in order to provide a park and ride facility, to improve the roadway geometrics on Graham Avenue, and to allow for left turns in and out of Graham Avenue at Florence Avenue.

### **STUDY SCOPE AND APPROACH**

The study area coverage, along with technical assumptions and methods were coordinated with County of Los Angeles staff during preparation of the study.

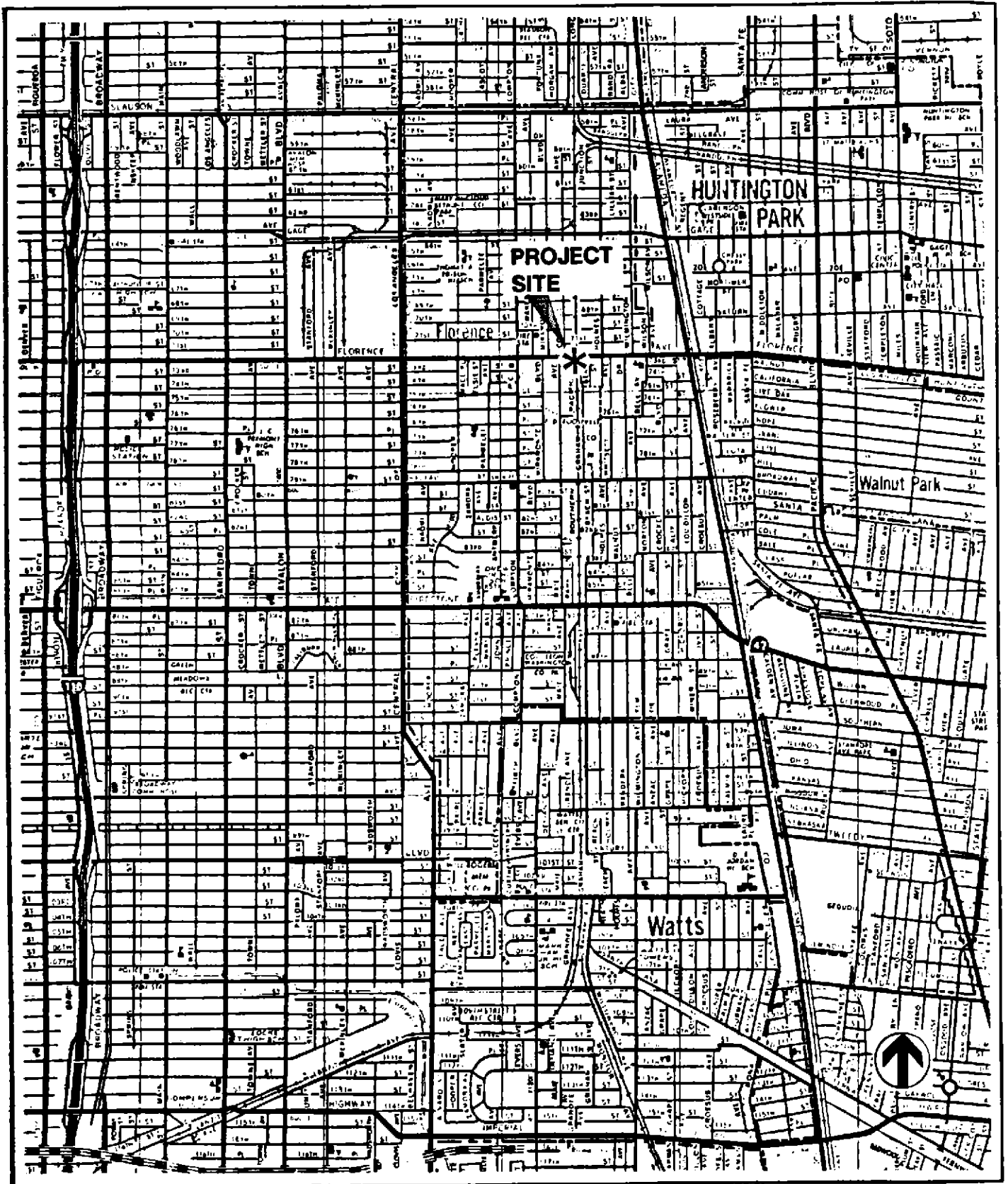
Three scenarios are addressed by the traffic study:

- o Existing Conditions
- o Future Conditions Without the Proposed Project
- o Future Conditions with the Proposed Project

In order to be consistent with the earlier environmental work conducted for the Long Beach/Los Angeles Rail Transit Project (LB/LA RTP), future conditions were analyzed for the year 2000. This was the future horizon year used in the LB/LA RTP environmental documentation.<sup>1</sup>

---

<sup>1</sup> The Long Beach-Los Angeles Rail Transit Project Draft and Final EIRs. Los Angeles County Transportation Commission, May 1984 and March 1985.



Korve  
Engineering,  
Inc.

**FLORENCE/GRAHAM STATION STUDY**

**PROJECT SITE LOCATION**

**FIGURE  
1**

## II. EXISTING CONDITIONS

The following review of existing traffic conditions in the area of the project site identifies streets, highways and transit serving the area, traffic volumes, and traffic conditions at key intersections adjacent to the project site.

### STREETS AND HIGHWAYS

The streets serving the study area are part of the street grid that is oriented north-south and east-west in the Florence/Huntington Park area. The project site is about two miles east of the Harbor Freeway (I-110) which runs north-south, and about 5-1/2 miles south of downtown Los Angeles.

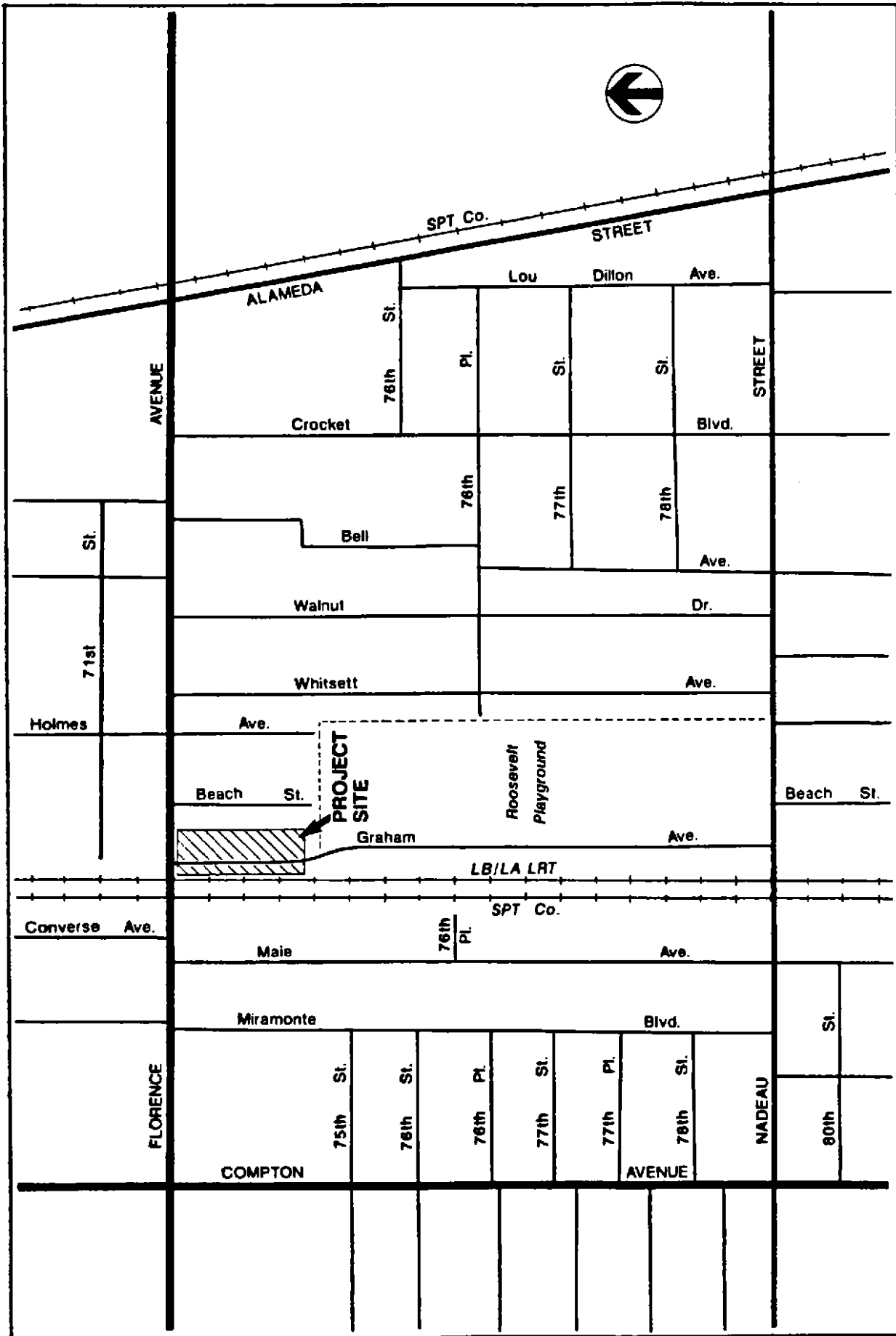
The following key streets serve the study site (see Figure 2):

The major street in the area is Florence Avenue which is 70' wide between curbs with 4 through lanes, two in each direction, and a median lane. This arterial runs in the east-west direction. On street parking is permitted on both sides of the street between 8:00 A.M. to 4:00 P.M., and prohibited during the evening peak period. It is a commercial street served by RTD Lines #111 & #112 travelling east-west and Line #56 travelling north-south along Florence Avenue between Male and Holmes Avenues.

Immediately west of Graham Avenue, 4 railroad tracks cross Florence Avenue at grade. Two of the tracks are active Southern Pacific Transportation Company freight tracks. The other two tracks are not currently in use, but have recently been installed for the Long Beach/Los Angeles light rail line which is planned to begin operation in 1990. The railroad crossing is controlled by two standard automatic gate-type signals with cantilevers.

Graham Avenue is a two-lane local road that intersects with Florence Avenue as a "T" intersection and runs south from Florence Avenue, providing access to the Roosevelt Playground park, before ending in a T-intersection at Nadeau Street. The intersection of Florence and Graham is unsignalized, with stop sign control on the Graham Avenue approach. The roadway striping along Florence Avenue does not permit left turns to be made legally out of or into Graham Avenue. Graham Avenue is 26.5' wide with a 6' wide sidewalk on the east side and a 12" A.C. curb on the west side immediately adjacent to the concrete wall of the LRT station. Parking is prohibited on both sides of Graham Avenue between Florence Avenue and the Roosevelt Playground.

Beach Street is a residential local north-south street. It is a cul-de-sac that runs south from Florence to the F.D. Roosevelt Park, serving a small parking area for the park of 19 parking spaces. The street has two lanes, one in each direction with parking on both sides. Beach Street is linked to Holmes Avenue on the east side through the parking lot. Beach Street is a 36.5' curb-to-curb roadway with a 7' sidewalk on the west side and a 6' sidewalk on the east side. The intersection of Florence and Beach is unsignalized, with stop sign control on the Beach Street approach. Left turns are permitted into and out of Beach Street.



**FIGURE 2**

**FLORENCE/GRAHAM STATION STUDY**

**PROJECT SITE AND LOCAL STREET SYSTEM**

Korve  
Engineering,  
Inc.



Holmes Avenue is a 70' wide collector street north of Florence Avenue with 2 lanes in each direction and one median lane, with parking permitted on both sides of the street. Holmes Avenue south of Florence Avenue is a local street, only 24' wide with one travel lane in each direction and parking permitted on the west side of the street only. It is a cul-de-sac south of Florence Avenue that provides access to residences and the north parking lot of F.D. Roosevelt Park. Access to Beach Street may be obtained through the parking area. The intersection of Holmes Avenue and Florence Avenue is signalized, with push button activated pedestrian signals. The signal cycle is 60 seconds, with two signal phases.

The intersection spacing along Florence Avenue is as follows. Graham Avenue is currently located immediately to the east of the rail tracks. Beach Street is about 235 feet to the east of Graham Avenue, and Holmes Avenue is about 255 feet east of Beach Street.

## **TRAFFIC VOLUMES**

Existing traffic volumes on key streets in the study area were obtained from Los Angeles County Department of Public Works (1988 count records), and traffic counts conducted for this study.

Florence Avenue carries 34,300 daily vehicles east of Graham Avenue (August, 1987), 25,100 daily vehicles west of Graham (near Compton Avenue) (May, 1988).

Three intersections were identified, in conjunction with the County of Los Angeles staff, for detailed analysis. These locations are at:

- o Florence Avenue and Graham Avenue
- o Florence Avenue and Beach Street
- o Florence Avenue and Holmes Avenue

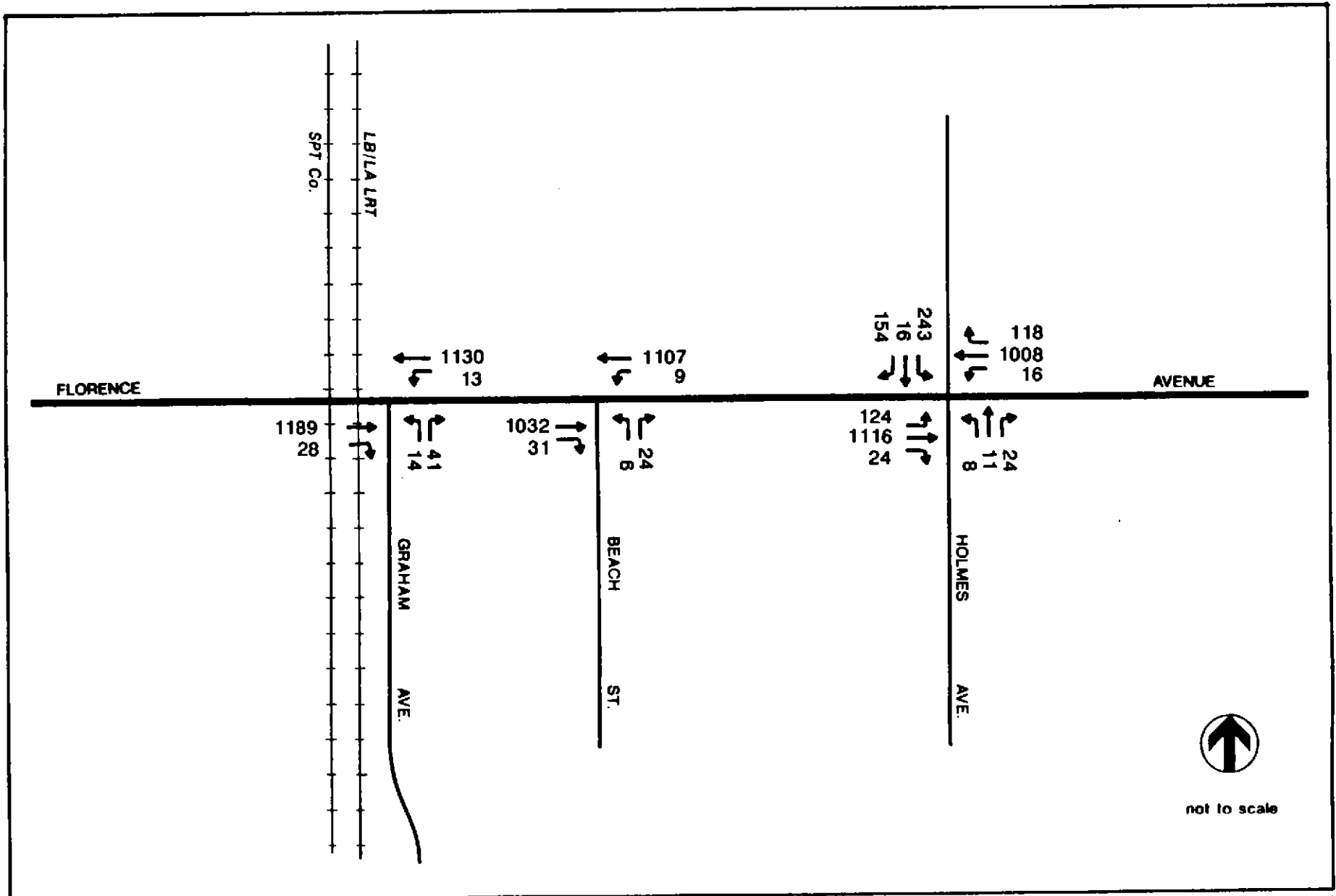
A review of Los Angeles County traffic volumes data indicated that no traffic turn counts were available, so new counts were conducted for the evening (P.M.) peak period (4-6 p.m.) at all three locations on June 11, 1989. Figure 3 shows existing traffic volumes for the evening peak hour at the three locations.

The major traffic volumes in the vicinity of the project area are on Florence Avenue and on Holmes Avenue north of Florence. Eastbound and westbound traffic volumes on Florence Avenue are approximately equal during the P.M. peak hour.

As Figure 3 indicates, there are very low volumes of turning traffic at the intersections of Florence Avenue with Graham Avenue and Beach Street.

Although not permitted by roadway striping there are 14 vehicles turning left from





Korve  
Engineering,  
Inc.

FLORENCE/GRAHAM STATION STUDY

EXISTING PM PEAK HOUR TRAFFIC VOLUMES

FIGURE  
3

Graham into Florence Avenue, and 13 vehicles turning left from Florence Avenue into Graham. At Beach Street, because it is a cul-de-sac, the number of turning vehicles is even lower.

## INTERSECTION LEVEL OF SERVICE

Traffic conditions were evaluated in terms of Level of Service (LOS) at the three study area intersections. This is a measure that describes traffic flow conditions at an intersection, ranging from LOS A for free-flow and insignificant delays to LOS F for overloaded conditions and excessive delays. LOS D is generally considered the acceptable operation standard for urban street systems. Level Of Service definitions are summarized in Table 1.

**TABLE 1  
LEVEL OF SERVICE DEFINITIONS**

<u>Level Of Service</u>	<u>Volume To Capacity Ratio</u>	<u>Description of Traffic Condition</u>
A	0.00-0.59	Insignificant Delays: No approach phase is fully utilized and no vehicle waits longer than one red indication.
B	0.60-0.69	Minimal Delays: An occasional approach phase is fully utilized. Drivers begin to feel restricted.
C	0.70-0.79	Acceptable Delays: Major approach phase may become fully utilized. Most drivers feel somewhat restricted.
D	0.80-0.89	Tolerable Delays: Drivers may wait through more than one red indication. Queues may develop but dissipate rapidly, without excessive delays.
E	0.90-0.99	Significant Delays. Volumes approaching capacity. Vehicles may wait through several signal cycles and long queues of vehicles form upstream.
F	N/A	Excessive Delays: Represents conditions at capacity, with extremely long delays. Queues may block upstream intersections and queues may form which do not dissipate.

Sources: Highway Capacity Manual, Highway Research Board, Special Report No. 87, Washington, D.C. 1965; Interim Materials on Highway Capacity, Transportation Research Board Circular 212, Washington, D.C., 1980; Highway Capacity Manual, Transportation Research Board Special Report No. 209, Washington, D.C., 1985; Korve Engineering, Inc.

The Critical Movement (CMA) method, as outlined in the Transportation Research Board Circular No. 212, was used to determine Levels Of Service for the P.M. peak hour at the signalized intersection of Florence and Holmes. Traffic volumes are compared to roadway capacity and the Volume/Capacity (V/C) ratio and corresponding Level Of Service determined.

The unsignalized intersections of Florence/Graham and Florence/Beach were analyzed using the Unsignalized Intersection Methodology in the Highway Capacity Manual (HCM), 1985, Transportation Research Board, Special Report 209. At these intersections, the traffic flow on Florence Avenue is uninhibited, and Level Of Service is determined for the constrained (turn) movements into and out of the minor streets. The results of the intersection analyses are summarized in Table 2.

**TABLE 2  
EXISTING EVENING PEAK HOUR INTERSECTION LEVEL OF SERVICE**

Intersection	V/C Ratio or Reserve Capacity <sup>+</sup>	Level Of Service
1. Florence Avenue & Graham Ave.	+60	E
2. Florence Avenue & Beach Street	+124	D
3. Florence Avenue & Holmes Avenue	.65	B

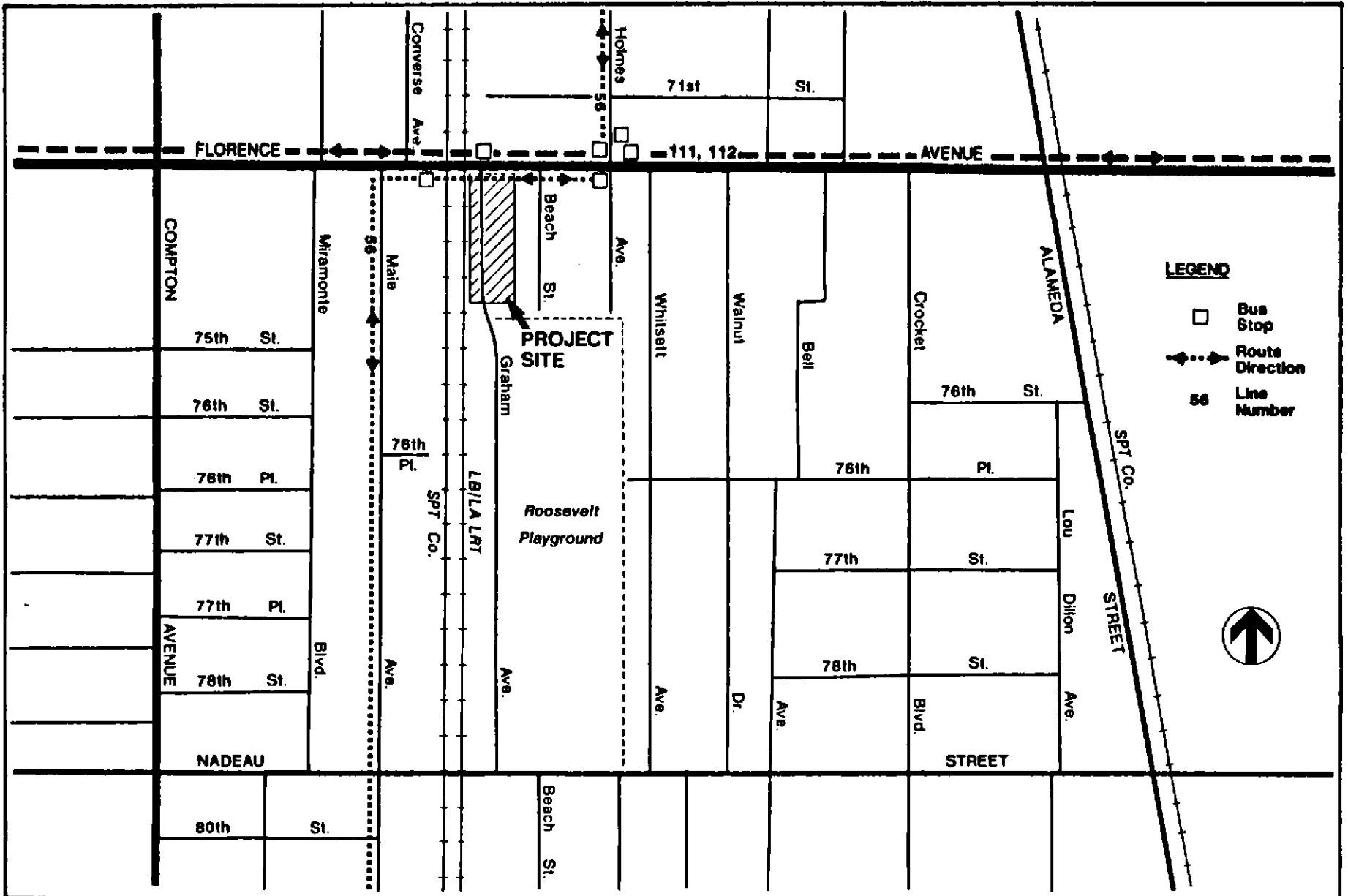
<sup>+</sup> Available reserve capacity for most constrained movement (minor street approach controlled by stop sign).

As illustrated in Table 2, the Florence/Holmes Intersection operates at Level Of Service (LOS) B. At the unsignalized intersections of Florence Avenue with Graham Avenue and with Beach Street, the minor street approaches operate at LOS E and LOS D respectively, indicating long to very long delays for traffic turning out of these streets into Florence Avenue.

#### TRANSIT

The project area is currently served by RTD Bus Lines #56, #111 and #112 as illustrated in Figure 4.

Line #56 (Carson-Wilmington Avenue-Los Angeles) runs from the Carson Mall to downtown Los Angeles. In the project area it travels along Maie Avenue, Florence Avenue, and Holmes Avenue in both directions. During the evening peak hour, four Line #56 buses run along Florence Avenue in each direction. Lines #111 and #112 (Los Angeles Airport-Florence Avenue-Leffingwell Road) and (Los Angeles Airport-Florence Avenue-Otis Street) run from Westchester to Lynnwood and Whittier, and travel



Korve Engineering, Inc.	<b>FLORENCE/GRAHAM STATION STUDY</b>		<b>FIGURE 4</b>
	<b>EXISTING BUS ROUTES SERVING PROJECT SITE</b>		

on Florence Avenue in the east-west direction within the project area. During the evening peak hour, six Line #111/112 buses run along Florence Avenue in each direction.

As illustrated in Figure 4, bus stops are located on Florence Avenue, west and east of the railroad tracks, and at the Florence/Holmes intersection.

### **III. FUTURE CONDITIONS WITHOUT PROPOSED PROJECT**

The analysis of future traffic conditions (with and without the project), is based on the year 2000. This was the year on which the LB/LA Rail Transit Project EIR was based, and was also the year used as a baseline for all previous traffic analysis conducted for the LB/LA Rail Transit Project.

#### **YEAR 2000 TRAFFIC PROJECTIONS**

Projections of future traffic levels along Florence Avenue were made assuming a general growth in traffic of 1% per annum. This rate was determined, in conjunction with County staff, to represent the most reasonable estimate of future traffic given that the surrounding area is already built out. Research of the County of Los Angeles, and the cities of Los Angeles, Huntington Park and Vernon, revealed no significant development projects planned in the areas surrounding the Florence/Graham Station.

Projections of future traffic were made for the Florence/Homes, Florence/Beach and Florence/Graham intersections. Figure 5 illustrates the future traffic volumes for the year 2000 P.M. peak hour, without the project.

#### **FUTURE BASELINE CONFIGURATION OF LB/LA TRANSIT PROJECT**

The LB/BA Light Rail System is planned to begin operation in mid-1990. A station will be located immediately south of Florence Avenue and west of Graham Avenue. No park and ride facilities are planned, and no further improvements to Graham Avenue are planned. Pedestrian access to the station will be from Florence Avenue.

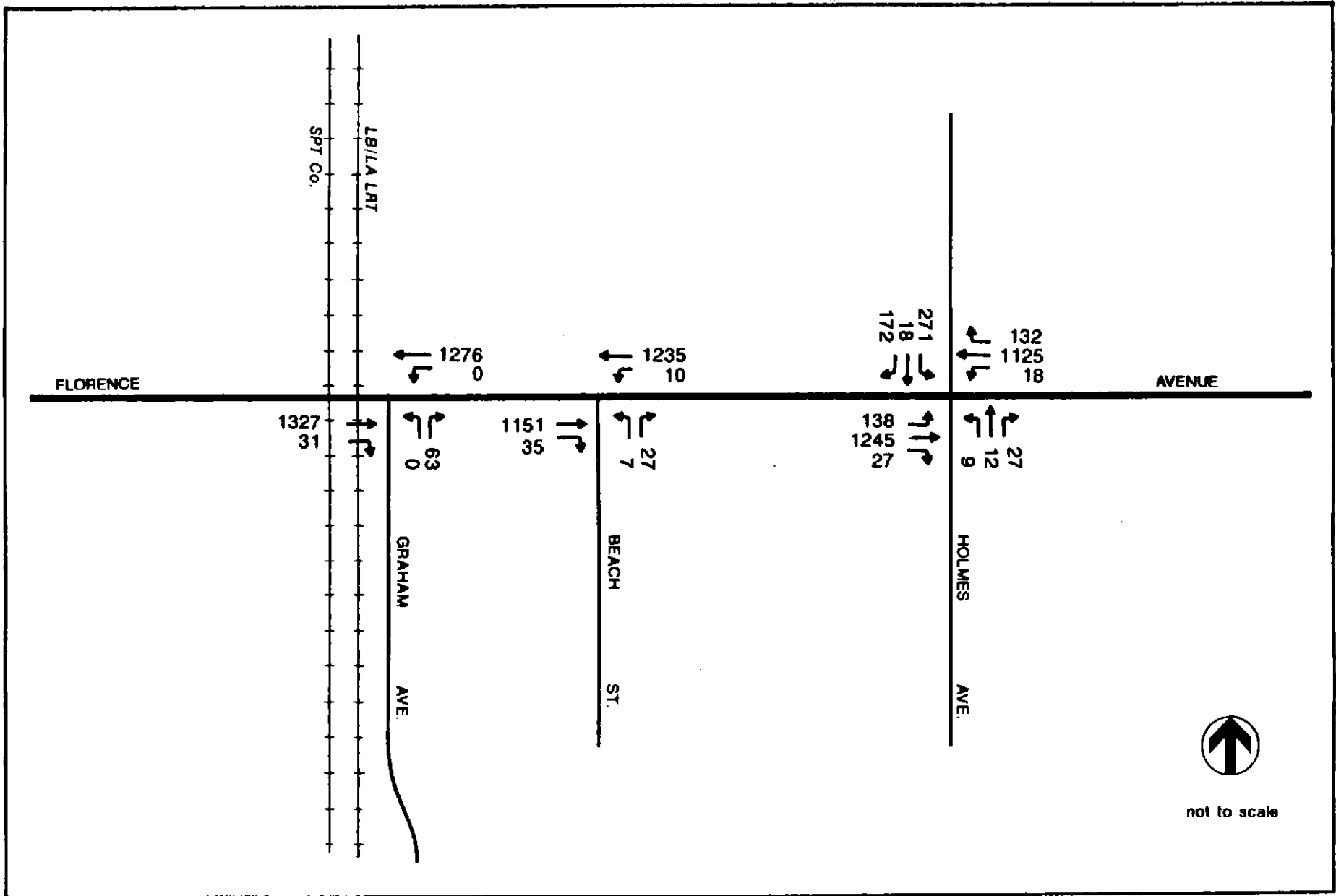
With the light rail line in operation, RTD expects to maintain the bus routes and service frequencies currently operating along Florence Avenue. RTD also plans to divert the Route #110 (Gage Avenue - Centinella Avenue - Fox Hills Mall) which runs from Commerce/Bell Gardens along Gage Avenue to Fox Hills Mall, south to run along Florence Avenue between Compton Avenue and Holmes Avenue, to serve the Florence/Graham light rail station.

RTD projects a total of 11 P.M. peak hour buses in each direction on Florence Avenue. No other route changes are planned, and there are no plans for buses to use Graham Avenue to serve the light rail station. Bus stops will be located on Florence Avenue, west of the tracks for eastbound buses, and east of the Graham Avenue intersection for westbound buses.

No park and ride facilities are planned at the station, and virtually all access is expected to occur by feeder bus or walking to the station. No significant changes in traffic volumes are expected in the area due to the light rail station.

The at-grade crossing of the light rail and Southern Pacific tracks at Florence will continue to be gate controlled. As part of the improvements being constructed for the LB/LA Rail Transit Project, a new island will be installed in the median of Florence to





Korve Engineering, Inc.	FLORENCE/GRAHAM STATION STUDY	<b>FIGURE 5</b>
	<b>PM PEAK HOUR TRAFFIC VOLUMES FOR YEAR 2000</b>	

the east of the tracks and opposite Graham Avenue. Movements to/from Graham Avenue from Florence Avenue will be restricted to right-in and right-out only. Left turns to and from Graham Avenue will be prohibited. (As the existing condition analysis noted, these turns are currently very few, numbering only 14 outbound left turns from Graham and 13 inbound left turns to Graham even though both movements are technically illegal.)

## TRAFFIC CONDITIONS

Future intersection conditions without the project are shown in Table 3 for the P.M. peak hour. The Florence/Holmes Avenues intersection will operate at Level Of Service (LOS) C in the year 2000 which is acceptable for urban conditions. The intersection of Florence Avenue and Beach Street is assumed to remain unsignalized, and would operate at LOS D for the minor street approach, similarly to today's conditions. The Florence/Graham intersection will also remain unsignalized. As left turns will not be permitted, Level Of Service is not applicable as there will be no constrained movements.

TABLE 3

### FUTURE WITHOUT PROJECT INTERSECTION LEVEL OF SERVICE - P.M. PEAK HOUR

	Existing Condition		Future Year 2000	
	V/C Ratio Or Reserve Capacity <sup>1</sup>	Level Of Service	V/C Ratio Or Reserve Capacity <sup>1</sup>	Level Of Service
1. Florence & Graham	+61	E	N/A <sup>2</sup>	N/A <sup>2</sup>
2. Florence & Beach	+129	D	+101	D
3. Florence & Holmes	.65	B	0.72	C

v

<sup>1/</sup> Available reserve capacity for most constrained movement (minor street approach controlled by stop sign).

<sup>2/</sup> Left turns not allowed at Florence/Graham

#### **IV. FUTURE CONDITIONS WITH THE PROPOSED PROJECT**

##### **DESCRIPTION OF THE PROJECT**

The changes proposed by Los Angeles County comprise the relocation of Graham Avenue about 120 feet to the east, and the provision of a 120 space park and ride lot between the re-aligned Graham Avenue and the LB/LA Light Rail Line. Access to/from the parking lot would be via two driveways on Graham Avenue.

The proposed realignment of Graham Avenue and the layout of the parking area are shown on the conceptual plan which was provided by Los Angeles County Department of Public Works, Planning Division, and illustrated in Figure 6. However, no dimensions have been provided and contact with Los Angeles County Department of Public Works Design Division revealed that no detailed plans for the proposed realignment of Graham Avenue and the parking area have been produced at this stage.

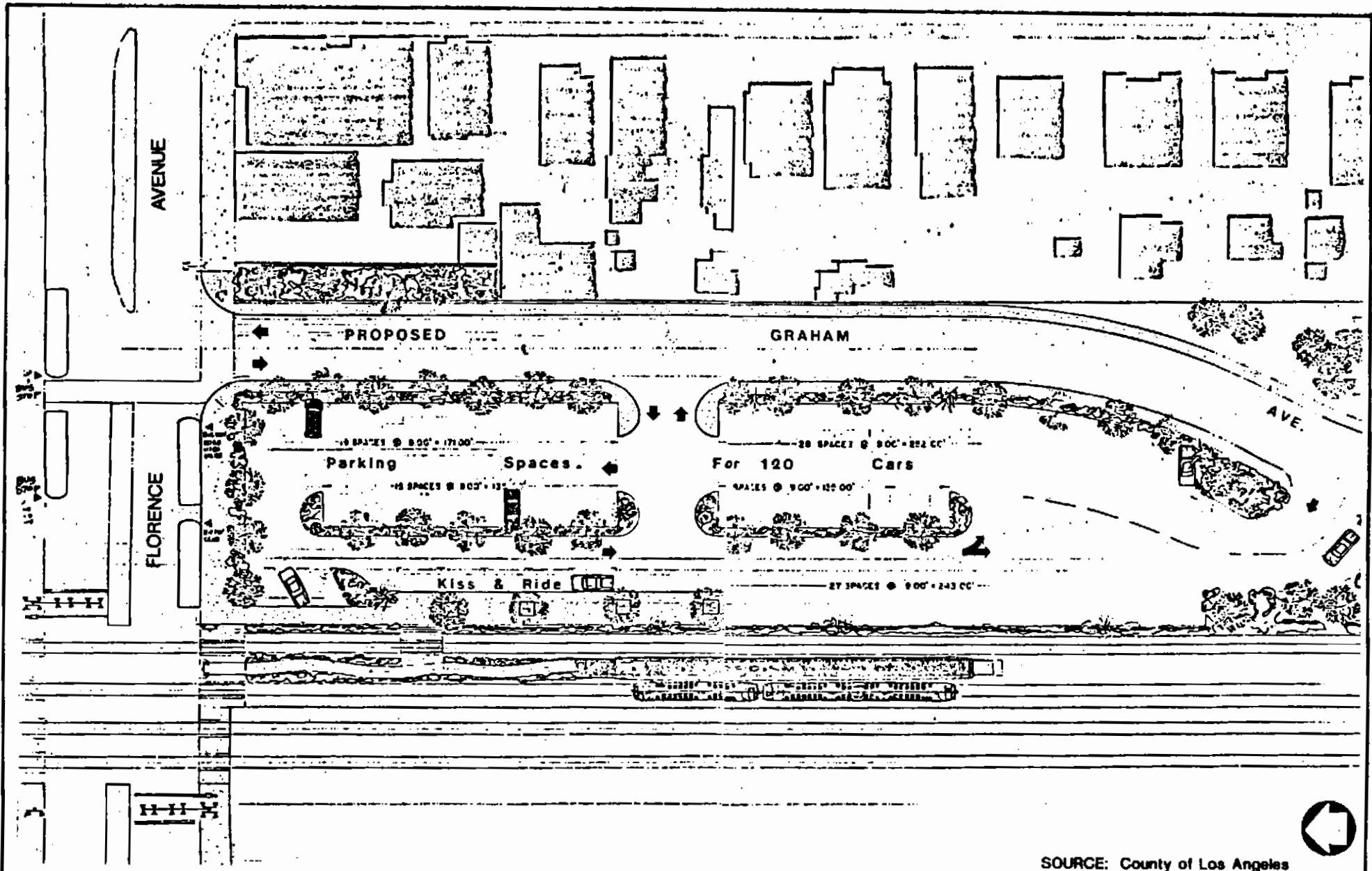
The County has indicated however (Mr. H. Haghani in a telephone conversation) that the proposed Graham Avenue will be 30' curb-to-curb in 42' right-of-way. Also, that the new curb return at Florence Avenue would be a 25' radii and the transition area of the curved section of Graham Avenue will be designed with a 320' radii.

The park and ride lot would contain 104 parking stalls and 9 "Kiss and Ride" spaces for pick-up and drop-off, for a total of 113 spaces. Access to the lot would be from Graham Avenue via two driveways, one about 210 feet from Florence Avenue, and the second about 550 feet from Florence Avenue. Circulation within the lot would be one-way, with a pick-up/drop-off area located adjacent to the station platform. Buses would not be directed down Graham into the parking lot, but would continue to stop on Florence Avenue as currently planned.

##### **COMPARISON OF ROADWAY GEOMETRICS WITH AND WITHOUT THE PROJECT**

The "without project" configuration of Graham Avenue is assumed to be that which will be in place after construction of the light rail line. Without the project, Graham Avenue will be located immediately to the east of the LB/LA light rail tracks. The width of Graham Avenue at Florence will be approximately 22' curb to curb, with 20' curb return radii. South of the intersection, Graham Avenue will be 28' wide curb to curb. Graham Avenue will be a two lane road with one lane in each direction. Left turns into and out of Graham Avenue will be prohibited because of the proximity to the rail crossing of Florence Avenue.

The "with project" configuration of Graham Avenue, as proposed by Los Angeles County, would place the intersection of Graham Avenue with Florence Avenue about 120' east of the rail tracks. The roadway would be 30' wide curb to curb, with 25' curb return radii. Graham Avenue would be a two lane road, with one lane in each direction. Left turns into and out of Graham Avenue could be allowed. With the project, the distance between the Florence/Graham and Florence/Beach intersections would be reduced from the current 235 feet, to about 120 feet.



Korve  
Engineering,  
Inc.

FLORENCE/GRAHAM STATION STUDY

PROPOSED PROJECT CONCEPT

FIGURE  
6

## **PROJECT TRAFFIC GENERATION**

The provision of a park and ride lot at the station will generate automobile trips to/from the station. The number of additional vehicle trips likely to be generated in the P.M. peak hour was estimated based on systemwide ridership forecasts recently prepared by SCAG for LACTC.

By comparing projected auto trip arrivals to park and ride lot sites at other stations along the Long Beach/Los Angeles Light Rail Line, and applying the average rate to the proposed Florence/Graham park and ride lot, indicates that an estimated 115 cars will use the lot.

It seems unlikely that the Florence/Graham park and ride lot would generate more cars than its 120 space capacity, as the Florence Station is relatively close to downtown Los Angeles, and also to the Imperial Station where a 1000 space park and ride lot is being constructed. Both these factors will tend to limit park and ride usage at stations between these two locations.

Virtually all users of the park and ride lot are expected to be commuters, i.e., they will arrive in the morning and depart in the evening. However, due to peoples' different work schedules and travel times to/from work, not everyone will arrive or depart during the actual peak hours.

A conservative assumption was taken that at most, two-thirds of the cars would exit the lot during the P.M. peak hour, thus generating 77 vehicle trips. It was further assumed there would be a negligible number of inbound trips to the park and ride lot during the evening peak hours.

Based on systemwide projections of SCAG, and LACTC, there would be an additional 24 "kiss and ride" vehicle trips generated during the P.M. peak hour. As these are pick-up/drop-off trips, there would be 24 inbound and 24 outbound trips.

The proposed park and ride lot is thus estimated to generate an additional 125 vehicle trips during the P.M. peak hour, of which 101 would be outbound and 24 would be inbound. Note that the County also proposes relocation of a church, four duplexes and eleven houses from Graham Avenue, and seven small businesses from Florence, in order to implement the project. The existing trips from these land uses would no longer travel on the street system. The volume of trips that would be eliminated would be almost negligible however. Trips to the existing small businesses on Florence are most likely largely "pass by" trips that will continue to travel along Florence without the businesses. During the peak hour, the residential uses probably generate about 15 total vehicle trips. Thus, in order to address a "worst case" evaluation, these trips were not deducted in the future traffic volume forecasts.

## **PROJECT TRAFFIC DISTRIBUTION**

The distribution of project generated traffic will be dependent on numerous factors, including the geographic origin of people who use the rail system, configuration of the surrounding street system and access routes to the station. These factors were all taken into account to determine the estimated trip distribution for this project, shown

in Figure 7.

The LB/LA rail line runs north-south, with the next northerly station at Slauson Avenue and the next southerly station at Firestone Boulevard. The principal access directions to the Florence/Graham station will thus tend to be from the east and west. Access would also be expected to focus on Florence Avenue as the major arterial roadway in the area. As shown in Figure 7, it is estimated that about two-thirds of trips will approach the station via Florence Avenue, split roughly equally from the east and the west. Approximately 35% of project trips will approach the station from the south, via Nadeau Street and Graham Avenue.

Figure 8 shows project traffic assignments for the P.M. peak hour. During the evening peak hour the project will add approximately 37 trips to Florence Avenue east of Graham Avenue, 43 trips to Florence Avenue west of Graham Avenue, and about 43 trips on Graham Avenue south of the park and ride lot.

#### TRAFFIC ANALYSIS FOR FUTURE CONDITIONS WITH PROJECT TRAFFIC

Forecast traffic volumes along Florence with the project are shown in Figure 9. Table 4 shows intersection Level Of Service for the P.M. peak hour for future conditions with the project.

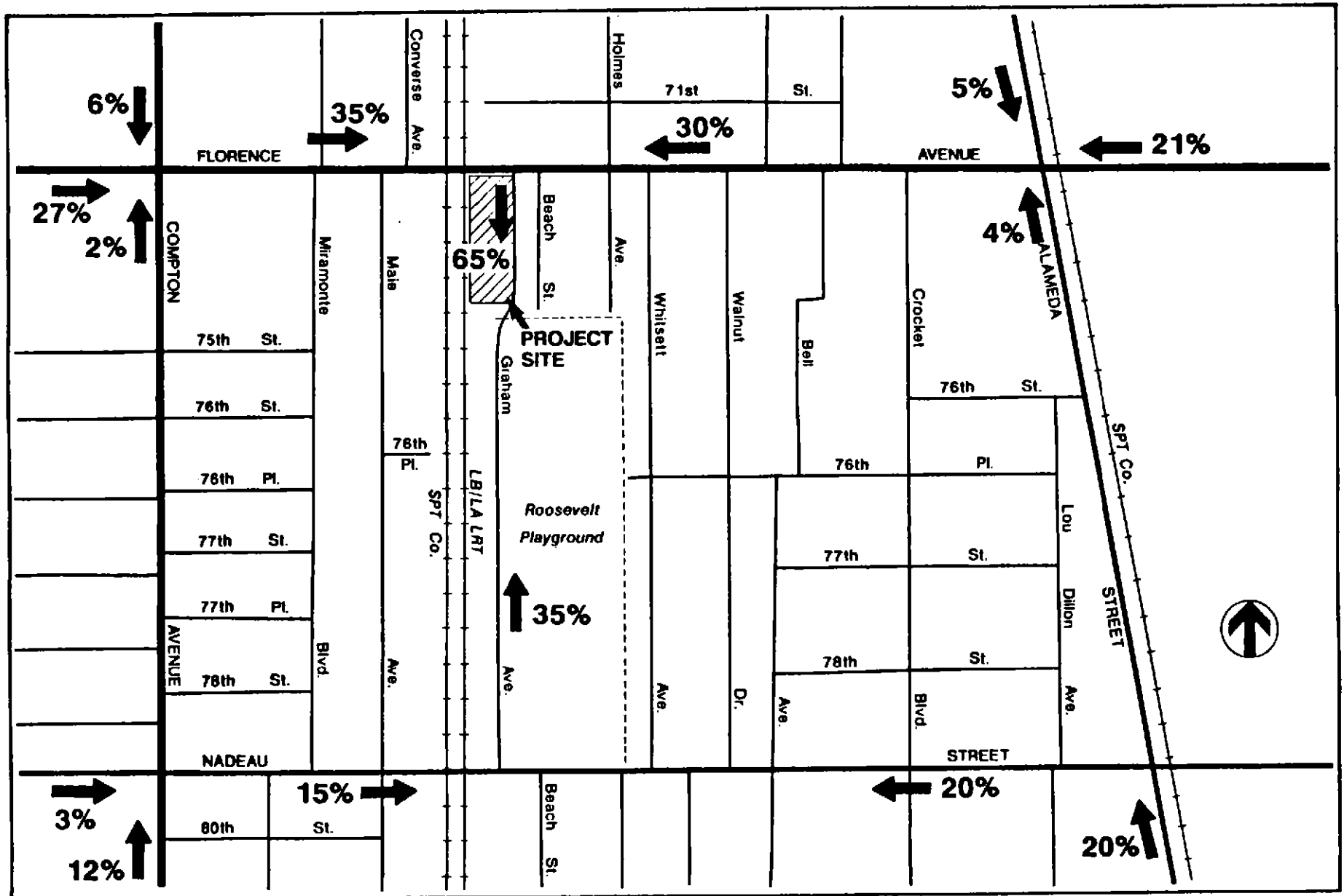
TABLE 4

#### FUTURE WITH PROJECT INTERSECTION LEVELS OF SERVICE - P.M. PEAK HOUR

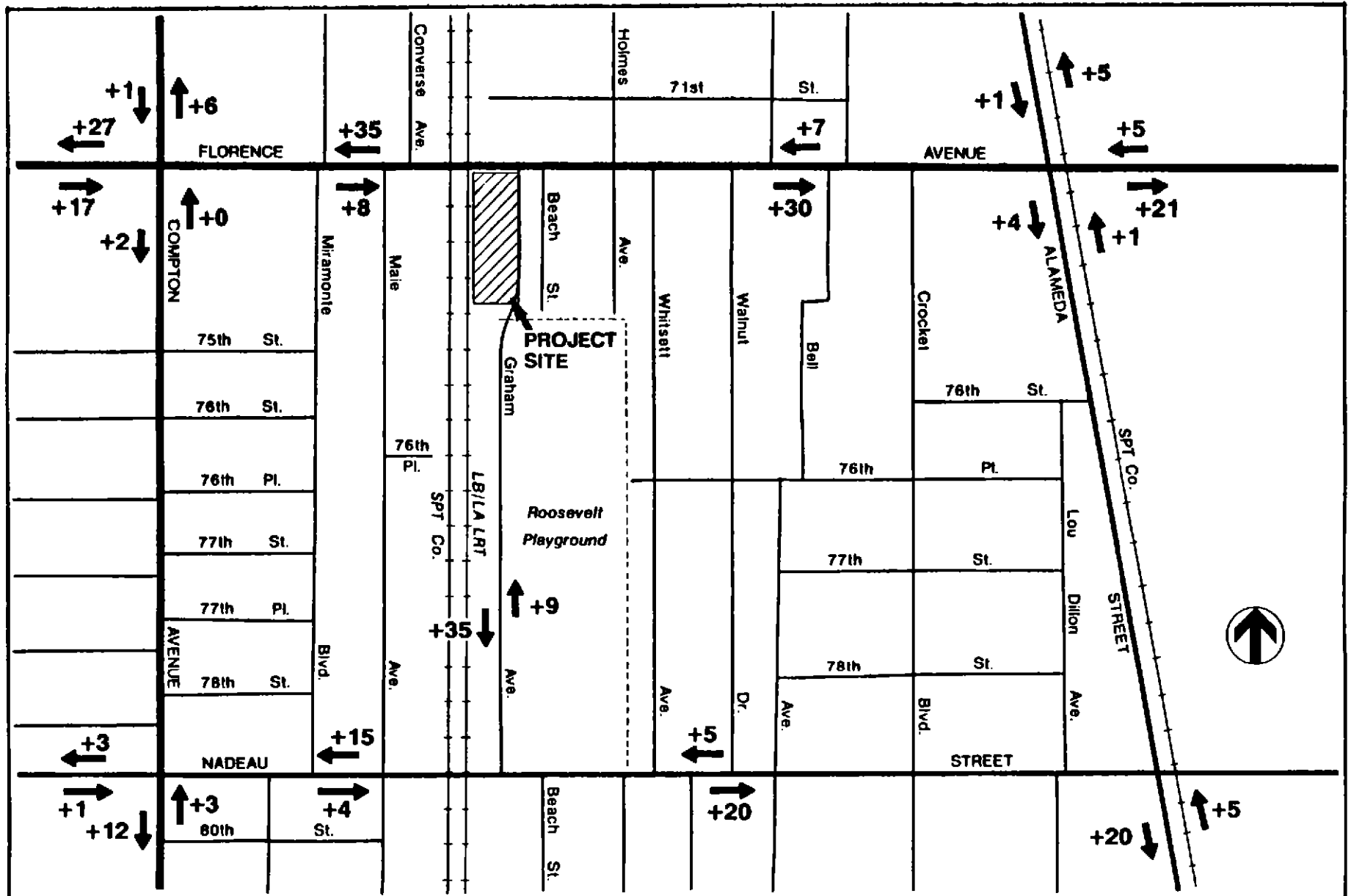
	<u>Existing Condition</u>		<u>Future Without Project</u>		<u>Future With Project</u>	
	V/C Ratio Or Reserve Capacity <sup>1</sup>	Level Of Service	V/C Ratio Or Reserve Capacity <sup>1</sup>	Level Of Service	V/C Ratio Or Reserve Capacity <sup>1</sup>	Level Of Service
1. Florence & Graham	+60	E	N/A	N/A	-55	F
2. Florence & Beach	+129	D	+101	D	+96	E
3. Florence & Holmes	.65	B	0.72	C	0.73	C

<sup>1/</sup> Available reserved capacity for most constrained movement (minor street approach controlled by stop sign).

No increase in LOS would occur at the intersection of Florence and Holmes Avenue with the proposed project. The small amount of project traffic added to Florence Avenue, would reduce the reserve capacity of the Beach Street approach to the

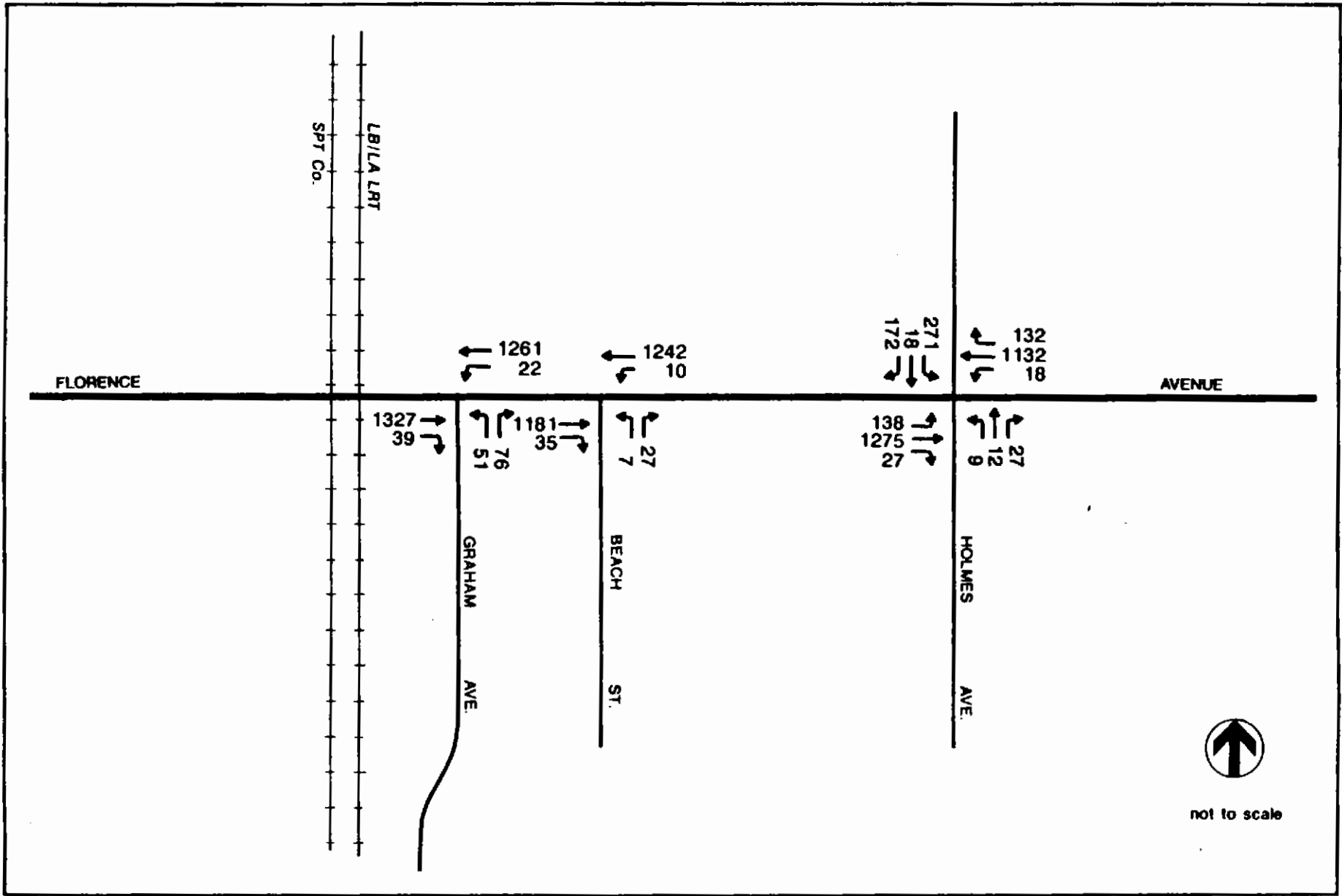


Korve Engineering, Inc.	FLORENCE/GRAHAM STATION STUDY		FIGURE 7
	TRIP DISTRIBUTION OF PROJECT RELATED TRAFFIC		



Korve Engineering, Inc.	FLORENCE/GRAHAM STATION STUDY		FIGURE 8
	ADDITIONAL PM PEAK HOUR TRIPS TO/FROM PROJECT		





Korve  
Engineering,  
Inc.

**FLORENCE/GRAHAM STATION STUDY**

**PM PEAK HOUR TRAFFIC VOLUMES FOR YEAR 2000 WITH PROJECT**

**FIGURE**  
**9**

Florence/Beach intersection by a small amount, but just sufficiently for the Level Of Service to reduce from LOS D to LOS E. However, as this approach was on the threshold of LOS E anyway (100 vehicle reserve capacity), there is undoubtedly to be a perceptible difference in delays to motorists waiting to turn into Florence Avenue.

By relocating the Florence Graham intersection away from the railroad tracks, the geometry of the Graham Avenue leg would be improved, and left turns could be allowed into and out of Graham Avenue.

However, as Table 4 indicates, the Graham Avenue approach would operate just above the LOS E threshold, at LOS F, during the P.M. peak hours. This means that with the high traffic volumes on Florence Avenue, there will be insufficient gaps to accommodate all traffic wishing to turn out of Graham Avenue. Extreme delays would be encountered by vehicles turning out of Graham Avenue, particularly for left turns.

#### **BUS AND PEDESTRIAN ACCESS**

The proposed project would improve bus access to the station, by consolidating bus stops on the east side of the tracks. Patrons would not have to cross the train tracks to reach buses in either direction (see Figure 6), which they will have to do for eastbound buses without the project. Bus stops for westbound buses will remain in the same location with the project as without.

The proposed project will maintain a crosswalk for Florence Avenue. It would be to the west side of Graham Avenue in order to serve the bus stops.

#### **MITIGATION MEASURES**

The only project impact requiring mitigation would be the Graham Avenue approach to the Florence/Graham intersection. With the proposed project, the number of vehicles exiting Graham Avenue during the P.M. peak hour would slightly exceed the capacity of an unsignalized approach to the intersection. Long delays would result to such traffic. This situation may lead to more users of the park and ride lot using Graham Avenue to the south, rather than Florence Avenue as an approach route to the station area. While Nadeau Street is not a major east-west street, it does provide good connections to Alameda Avenue and Compton Avenue, as alternate access routes to Florence Avenue.

The project proposes a 30' Graham Avenue curb-to-curb width which would only allow a single approach lane to the intersection. If the street were wider by about 2-4', two approach lanes could be provided (one for left turns and one for right turns). With this configuration the right turn from Graham would operate at LOS D. While the left turn would operate at the threshold of LOS E/F, it would be an improvement over the single lane approach as left turning traffic would not block right turning vehicles, which could proceed unimpeded.

This design, along with the possible tendency of some parking lot users to use Graham Avenue south, to avoid the intersection, should result in the Florence/Graham

Intersection operating with levels of delay on the Graham approach not much worse than today's levels.

If delays still turn out to be significant, two further mitigations could be considered.

#### Signal at Florence/Graham Intersection

This intersection could be signalized, to facilitate left turns to/from Graham Avenue. However, this is not recommended, due to the proximity to the railroad/LRT crossing (120' to the west), and to the signal at Florence/Holmes (400' to the east).

A signal at this location would require close coordination with both the railroad crossings and the signal at Holmes. However, it would lead to potential problems of eastbound traffic backing up across the train tracks. It would also shorten the storage capacity for westbound traffic at the track crossing. For these reasons a signal is not recommended.

#### Provide Connection From Graham Avenue to Holmes Avenue

An alternative mitigation would be to utilize the area of the existing storage/maintenance area at the extreme northern end of the Roosevelt Playground, to provide a connection from Graham Avenue to the parking lot at the south end of Beach Street and Holmes Avenue. This would provide a link from Graham Avenue, via the small parking area, to Holmes Avenue. Traffic could then access Florence Avenue via the signalized intersection with Holmes Avenue.

By providing an alternate access and egress route, this would reduce the number of turning vehicles at Florence/Graham, and improve the Level Of Service.

